Summary Final Report

Maryland Stormwater Program Review

U.S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Prepared by:
PG Environmental, LLC
570 Herndon Parkway, Suite 500
Herndon, VA 20170

March 17, 2014

This page intentionally left blank.

Contents

List of Appendices

List of Tables

List of Abbreviations and Acronyms

Abbreviation	Corresponding Term
BMP	Best Management Practice
CO	Central Office
COMAR	Code of Maryland Regulations
CP	Compliance Program
CRO	Central Regional Office
CSO	Combined Sewer Overflow
CWA	Clean Water Act
DLS	Department of Legislative Services
DMR	Discharge Monitoring Report
EPA	[United States] Environmental Protection Agency
ERO	Eastern Regional Office
ESD	Environmental Site Design
FMIS	Financial Management Information System
ESC	Erosion and Sediment Control
FTE	Full-time equivalent
GIS	Geographic Information System
HSI	Hot spot investigation
IC/ID	Illicit connections/illicit discharges
ICIS	Integrated Compliance Information System
IDDE	Illicit Discharge Detection and Elimination
MCMs	Minimum Control Measures
MDE	Maryland Department of the Environment
MEP	Maximum Extent Practicable
MOUs	Memorandums of Understanding
MS4	Municipal Separate Storm Sewer System
NOI	Notice of Intent
NOT	Notice of Termination
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System

OAG	Office of Attorney General
OTJ	On the job [training]
PAF	Problem Activity Form
PCBs	Polychlorinated byphenol
PQRs	Permit Quality Review
RO	Regional Office
SCD	Soil Conservation District
SEP	Supplemental Environmental Project
SNC	Significant non-compliance
SOP	Standard Operating Procedure
SSO	Sanitary Sewer Overflow
SRF	State Review Framework
SSDSP	Sediment, Stormwater, and Dam Safety Program
SWM	stormwater management
TEMPO	Tools for Environmental Management and Protection Organizations
TMDL	Total Maximum Daily Load
TRIP	TEMPO Remote Inspection PROCESS
WIP	Watershed Implementation Plan
WLA	Wasteload Allocation
WMA	Water Management Administration
WPP	Wastewater Permits Program
WRO	Western Regional Office
WRP	Watershed Restoration Plan

This page intentionally left blank.

1. Executive Summary

The U.S. Environmental Protection Agency (EPA) Region III, with assistance from PG Environmental, LLC (PG), conducted a review of the Maryland Department of the Environment's (MDE) construction, municipal separate storm sewer system (MS4), and industrial stormwater programs on September 10–13, 2012 and September 17–20, 2012.

Maryland has solid authorities for regulating stormwater to minimize its impact on water quality. In many ways, the state has led the nation in this area due to concerns regarding the health of the Chesapeake Bay. The state first passed an erosion and sediment control (ESC) law in 1970 and a stormwater management law in 1982, both requiring programs for statewide implementation. The laws and regulations have evolved over the years to incorporate new science and improve implementation. ESC and stormwater management are local activities, which makes them difficult programs to implement from a national and statewide perspective. Maryland has made its statewide programs as comprehensive and uniform as possible by requiring county ordinances for ESC and stormwater management and requiring developers and others involved in construction to be trained and certified according to a state-based curriculum.

The *2000 Maryland Stormwater Design Manual Volumes I and II* and the *2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control* include progressive material. Representatives of the soil conservation districts (SCDs), counties, and others with whom the review team met consistently applauded the quality of these materials. Personnel of several medium-sized counties (in terms of population) commented that they based their own guidelines on these materials. Representatives of other state stormwater programs have also noted their use of Maryland's materials to EPA. In addition to solid program authorities, MDE has dedicated stormwater staff, many of whom have 20 or more years of experience in civil service and environmental management programs.

Maryland has had its share of budget problems in recent years, which has had an effect on MDE's budget and that of its stormwater programs. Representatives of these programs cite budget limitations and reduced staffing levels as the biggest challenges they face.

Along with the many positives witnessed, the review team did observe some areas of Maryland's programs that may need improvement. One of the team's most significant concerns relate to the backlog of Phase I MS4 individual permits and the two Phase II general permits. However, there are some factors contributing to the backlog that are beyond MDE control. Additional concerns include: the limited number of on-site MS4 inspections and follow up performed by the state; the insufficient process for identifying entities that have not submitted an NOI for coverage under the state's industrial stormwater general permit as well as the inspection priority scheme related to inspection of those who maintain coverage; an absence of annual report submittals by some Phase II MS4s and a lack of content when they are submitted; limited review of MS4 annual reports; and lack of triennial reviews of local stormwater management programs in recent years.

2. Purpose of Review and Approach

In this section of the report, the review team briefly summarizes the purpose of the state program review and the approach followed.

2.1 Purpose of EPA's Review

EPA conducts periodic reviews of state programs as part of its oversight responsibilities under the Clean Water Act (CWA). The Agency assesses the enforcement aspects of a state's CWA program under a process called the State Review Framework (SRF). It evaluates the technical and administrative aspects of the National Pollutant Discharge Elimination System (NPDES) program via periodic permit quality reviews (PQRs). These reviews tie into EPA's assessment of work plans submitted by states in order to receive annual CWA section 106 grant funding (subject to congressional appropriations). In general, stormwater is not a featured element of SRF reviews or PQRs. EPA Region III (hereinafter, "Region") aims to reverse this trend by integrating stormwater into its review processes over time. Toward that end, the Region has initiated reviews of stormwater programs in each of its states. The Region performed reviews in Pennsylvania and Virginia in 2011, in Maryland and Delaware in 2012, and in West Virginia in early 2013. This report describes the observations associated with the recent Maryland Department of the Environment (MDE) program review.

2.2 Review Approach

Members of the program review team included the following:

- **EPA Region III Review Team Members:** Andy Dinsmore, Liz Ottinger, Chuck Schadel, Kaitlin McCann, and Kaitlyn Bendik
- **PG Review Team Members:** Jan McGoldrick, Brittany Hale, and Max Kuker

In advance of the onsite review, team members prepared and forwarded a questionnaire / checklist (Appendix A) to MDE. The document requested an assortment of information concerning the state's various stormwater programs. Prior to sending the document, review team members inserted potential responses to questions based on data gleaned from MDE's Web site and from MDE's completed 2008 NPDES Permitting Authority Questionnaire (USEPA 2008). The review team undertook those steps to reduce the burden on MDE in preparing for the onsite review.

MDE returned a semi-completed questionnaire/checklist to EPA Region III a few days prior to the onsite review. The review team used this version of the checklist as the basis for questions posed during the onsite review.

Review team members met with program staff of MDE's central office (CO) and three regional offices (ROs). The team also met with staff of Allegany, Garrett, and Washington Counties and associated SCDs. Finally, review team members shadowed a central regional office (CRO) and two eastern regional office (ERO) inspectors on a few construction stormwater or industrial stormwater inspections. Appendix B provides lists of the review team members and MDE, county, and SCD staff who participated in each day of the review.

In general, the evaluation of operations at the CO and each RO consisted of two parts: (1) an interview of stormwater program staff, and (2) a brief review of stormwater program files, including general and individual permits, permittee inventories (universe lists), ESC plans, and compliance (i.e., inspection) and enforcement documents. An objective of the file review was to determine whether the CO and ROs are properly issuing permits, conducting compliance inspections and other reviews, performing enforcement duties where required, and documenting activities based on the state's stormwater program regulations and standard NPDES program procedures. The remainder of this report provides details from the interviews and file reviews.

The evaluation of western regional office (WRO) operations included separate discussions with personnel of three SCDs and those of the respective county planning and/or permitting offices. The SCDs visited operate in counties that have not elected to be delegated authorities for the ESC program. The counties, however, have their own construction and plan review processes. The purpose of the review team's discussions was to ascertain how staff of the SCDs interface with those of non-delegated counties and the WRO. The team was particularly interested in learning how members of each of the three groups work together to achieve reductions in stormwater pollution.

3. Items Applicable to Maryland's Three Stormwater Programs

In this section of the document, the review team briefly summarizes background material pertinent to MDE's stormwater programs. The team highlights issues pertinent to specific stormwater programs in subsequent sections.

3.1 Federal and State Authorities

EPA authorized Maryland to administer the CWA's NPDES program (33 U.S.C. § 1251 et seq.) in 1974. It further authorized Maryland to regulate federal facilities under the program in 1987 and under a general permits program in 1991. The Department of the Environment is the agency currently responsible for implementation of the NPDES program in Maryland. The department's central office (CO) is located in Baltimore.

The 1987 amendments to the Clean Water Act (Water Quality Act of 1987 [P.L. 100-4]) provided the framework for the current federal stormwater regulations. They allow for different conceptual classifications of stormwater discharges and various permit mechanisms for regulating them (Franzetti, N.D.). In 1990 and 1999, EPA issued regulations in response to the 1987 amendments (55 FR 47990, November 16, 1990) and (64 FR 68843, December 8, 1999). Those rulemakings are referred to as EPA's Phase I and II stormwater rules, respectively. In general, the Phase I rule requires permits for MS4s for medium and large communities (those with populations greater than 100,000), departments of transportation serving those communities, construction sites with land disturbance of five acres or more, and industries in 10 industrial categories. In general, the Phase II rule requires stormwater controls for smaller MS4s, smaller construction sites, and other industries discharging stormwater (Franzetti, N.D.). Water quality professionals typically refer to the federal stormwater regulations based on the category of dischargers affected: (1) construction-related entities, (2) MS4s, and (3) industries. EPA Region III has organized its review of state stormwater programs and this report accordingly. Some states organize and title their programs similarly, while others do not. MDE typically refers to its programs as follows: ESC, stormwater management, NPDES permits, and MS4s. NPDES permits include general and individual permits for construction and industrial stormwater.

In general, Maryland's authorities for administering the CWA stormwater programs and the state's sediment and erosion control law are contained in Titles 1,4, and 5 of the Maryland Annotated Code and Title 26 of the Code of Maryland Regulations (COMAR), subtitles, 1, 4, 8, and 17.

3.2 Organizational Structure

In general, MDE is organized on a functional basis with four key areas or administrations: (1) Air and Radiation Management, (2) Land Management, (3) Science Services, and (4) Water Management. (See organization chart in Appendix C.) Responsibilities for portions of the NPDES program reside within all but the Air and Radiation Management Administration. The Land Management Administration issues NPDES permits to the industrial mining sector and large oil terminals. The Science Services Administration (SSA) assigns designated uses to the state's waters, develops state water quality standards, administers a statewide water quality monitoring and biocriteria program, prepares the state's biennial reports on the health of the

state's waters (including a list of impaired waters), and develops and implements total maximum daily loads (TMDLs).[1] The Water Management Administration (WMA) administers the NPDES permitting program for all remaining discharge categories with the exception of concentrated animal feeding operations, which the Land Management Administration oversees. WMA, therefore, has primary responsibility for implementing Maryland's NPDES-related stormwater regulations along with additional state regulations for erosion and sediment control.

WMA staff reported that nutrients and sediments are the primary pollutants impairing Maryland's surface water sources.

WMA consists of six program offices: (1) Office of Operational and Administrative Services, (2) Wastewater Permits Program (WPP), (3) Water Supply Program, (4) Compliance Program (CP), (5) Wetlands and Waterways Program, and (6) Sediment, Stormwater, and Dam Safety Program (SSDSP). The WPP, CP, and SSDSP each have stormwater responsibilities. The WPP develops and issues the state's NPDES general and individual industrial stormwater permits. The CP issues individual and general NPDES permits for construction activity. The SSDSP is responsible for implementing the state's ESC regulations and stormwater requirements, including the MS4 permitting program. The CP, with support from three regional offices, is responsible for compliance and enforcement of WMA's programs, except for the drinking water and MS4 programs, which are enforced by WMA's Drinking Water Program and SSDS, respectively. RO personnel perform inspections and initiate some enforcement actions. With respect to stormwater, RO activities are limited to the ESC/construction and industrial programs. SSDSP personnel in the central office have oversight responsibilities for the state's MS4s and delegated entities under the ESC program.

MDE presently has three ROs: (1) western, (2) central, and (3) eastern. Personnel in the ROs conduct inspections associated with WMA's Compliance Program. Table 3–1 summarizes the location of each RO and the counties covered by each. Organizational charts of WMA's CO and RO stormwater operations are provided in Appendix D, and a map showing the boundaries of the ROs is in Appendix E.

Table 3–1. MDE Regional Office Locations and Covered Counties

WRO		CRO		ERO	
Location		**Location**		**Location**	
Frostburg with satellite office in Hagerstown		Baltimore City		Cambridge	
Covered Counties		**Covered Counties**		**Covered Counties**	
Garrett	Allegany	Baltimore City	Anne Arundel	Harford	Cecil
Washington	Frederick	Baltimore County	Charles	Kent	Queen Anne's
Carroll	Howard	Calvert		Talbot	Caroline
Montgomery	Prince George's	St. Mary's		Dorchester	Wicomico
				Somerset	Worcester

[1] CWA section 305(b) requires approved NPDES states to prepare biennial reports reporting on the health of all waters of the state. Historically, states used these reports to prepare their biennial CWA section 303(d) lists of impaired waters. Now those two reporting processes are integrated. The CWA also requires approved NPDES states to develop TMDLs for impaired waters, thereby establishing a "pollutant budget" for impaired waterways.

MDE issues both individual and general permits under each of its stormwater programs. The specifics of those permits are described in sections 3–5 of this report.[2]

3.3 Program Resources

During the recent review, a WMA manager reported that MDE's stormwater operating budget, the budget's distribution among program activities, and the department's number of full-time equivalents (FTEs) had remained similar to state fiscal year (FY) 2005–2009 data[3] the state reported in response to a fairly recent EPA survey (*Stormwater Management Including Discharges from Developed Sites: NPDES Permitting Authority Questionnaire*, USEPA 2008).

Table 3–2 shows Maryland's annual NPDES and stormwater operating budgets for FY 2005–2009.[4] A review of this table shows that Maryland's NPDES program experienced its greatest annual percentage increase (+3.73) between 2005 and 2006, and it realized its greatest percentage decrease (-1.45) between 2008 and 2009. WMA's stormwater operating budget increased modestly each year during the five-year period, except between 2005 and 2006 when a 2.69 percent reduction was realized.

Table 3–2. Maryland Annual NPDES and Stormwater Operating Budgets FYs 2005–2009

Budget	MDE Fiscal Year (June 1–July 31)				
	2005	2006	2007	2008	2009
NPDES Budget	$7,322,236	$7,595,619	$7,349,711	$7,599,920	$7,489,959
Stormwater Operating Budget	$4,020,480	$3,912,375	$3,919,170	$3,953,466	$4,033,535

Source: USEPA 2008.

Table 3–3 shows the program areas to which WMA allocated its FY 2009 stormwater operating budget.

Table 3–3. Allocation of WMA's FY 2009 Stormwater Operating Budget by Program Area

Program Activity	Allocation of Budget by Program Activity	Proportion of Total Budget Allocated
Management/administration	$254,542	6%
Regulation/rule/policy development	$222,196	6%
Permitting	$419,609	10%
Construction site inspections and enforcement	$2,417,532	60%

[2] In addition to stormwater, WMA issues NPDES and state permits for wastewater discharges, toxic materials, water and sewerage, water appropriation and use, well construction, non-tidal wetlands and waterways, tidal wetlands, and dam safety. WMA is also responsible for implementing several certification and licensing programs: drinking water laboratory certification, tidal wetland licenses, ESC responsible personnel certification, ESC responsible personnel training program approval, environmental sanitarian licenses, waterworks and waste systems operator certification, and well driller licenses.

[3] Use of the term "fiscal year" throughout this report refers to Maryland's fiscal year, which is July 1 to June 30, unless otherwise noted.

[4] Each WMA program has its own operating budget. Providing the data in Table 3–2 required MDE staff to survey multiple offices and then aggregate the data, a time-consuming exercise. The review team, therefore, did not require WMA to provide data for FYs 2010–2011.

Program Activity	Allocation of Budget by Program Activity	Proportion of Total Budget Allocated
Industrial site inspections/enforcement	$77,530	2%
MS4 inspections/enforcement/audits	$178,380	4%
State and federal construction plan reviews	$446,274	12%
Total	**$4,033,535**	**100%**

Source: USEPA 2008.

Table 3–4 shows the average number of FTEs Maryland devoted to the program areas in FYs 2005–2009. During the onsite review, one WMA manager noted that the program has not seen increases in staff since passage of the state Stormwater Management Act in 2007. Section 4 of this report provides further background on this Act.

Table 3–4. WMA Average FTEs by Stormwater Program Area, FY 2005–FY 2009

Program Activity	Average No. FTEs	Percent of Total
Management/administration	3.3	5.5%
Regulation/rule/policy development	3.3	5.5%
Permitting	5.0	8%
Construction site inspections and enforcement	34.3	57%
Industrial site inspections/enforcement	1.1	2%
MS4 inspections/enforcement/audits	3.0	5%
State and federal construction plan reviews	10.0	17%
Total	**60.0**	**100%**

Source: USEPA 2008.

Tables 3–3 and 3–4 show that a significant proportion of WMA's resources go toward construction site inspections and enforcement (60 percent in dollars and 57 percent in FTEs), followed by state and federal construction plan review activities (12 percent in dollars and 17 percent in FTEs), and permitting (10 percent in dollars and 8 percent in FTEs). In general, WMA spends 2 percent of its annual budget on industrial site inspections/enforcement and 4 percent on MS4 inspections/enforcement/audits. The majority of Maryland's industries have individual NPDES wastewater discharge permits with a stormwater component. This negates the need to issue those industries a separate individual or general permit for stormwater. The state also has a relatively small universe of Phase I and II MS4s (Section 5.2) when compared to other states in the nation.

> **Observation 3–1.** Federal Policy dictates that regulators perform inspections at 5-10% of all construction sites for compliance with regulations. While MDE inspection numbers far exceed this directive, the team recommends that resources be reviewed and shifted, if necessary, so that on-site inspections can be performed for industrial and MS4 permitted entities on a more frequent basis.

3.4 Data Systems Used to Support Maryland's Stormwater Programs

MDE has an enterprise environmental management system called TEMPO (Tools for Environmental Management and Protection Organizations). WMA uses this system and other databases to manage program information, including data associated with construction, municipal, and industrial stormwater.

In general, WMA has recorded key data for permittees in TEMPO. WMA inspectors use a laptop-based program called TRIP (TEMPO Remote Inspection PROCESS) to record results of environmental media[5] inspections. Regional inspectors can download inspection checklists for the applicable media from TRIP. Inspectors can also download information from TEMPO regarding the compliance status of facilities/sites they will inspect. This is especially valuable for an inspector who is new to a particular site. WMA inspectors write and print their inspection reports on TRIP. Some complete this step before leaving an investigated facility/site. One inspector whom the review team shadowed did just that. The inspector expressed a concern that the length of time it takes for TRIP to boot up on their laptop is excessive and can be a deterrent to completing reports on-site.

Inspectors are required to upload their completed inspection reports from TRIP to TEMPO. They must have access to MDE's network to complete this or other synchronization tasks between the systems. Inspectors only have access to MDE's network in their assigned regional office, so they must plan when they are going to be in the field, which is not always feasible. This issue is not as significant of a problem for an inspector who has covered the same sites or territory for several months or years. This inspector would rely on his memory as well as historical inspection reports to prepare for the inspection. Most inspectors keep copies of their inspection reports on TRIP. This practice allows the inspectors to reference former reports when revisiting a site. It also allows them to use a former report as the basis for a new report, meaning basic facility/site data does not have to be re-keyed. Thus, report writing is streamlined.

Most of the inspectors whom the review team interviewed said they were acclimated to TRIP. However, many inspectors stated that they find the TRIP system is not "user-friendly" and may be particularly challenging to those who are new to electronic recording/reporting. MDE's OIMT has developed a new version of TRIP called "TRIP Light" that is being implemented for Land Management Administration laptops first that essentially changes from entering information on multiple screens to filling out the standard inspection report selected like one would complete a paper inspection form. WMA has requested that OIMT deploy TRIP Light when new laptops using Windows 7 are provided to Compliance Program staff as planned within the next year.

The Compliance Program has acted to relocate the information from the Case Tracking Database to TEMPO to make it more readily available to all internal interested parties, including inspectors. Currently inspectors are asked to contact the Enforcement Coordinators at any time for current information on cases referred to the Office of the Attorney General. The Enforcement Coordinators regularly attend Inspection Division staff meetings and can provide updates on cases when asked by staff.

[5] EPA defines the term "environmental media" as "[o]ne of the major categories of material found in the physical environment that surrounds or contacts organisms, e.g., surface water, ground water, soil, or air, and through which chemicals or pollutants can move and reach the organisms." (EPA Health Effects Glossary). WMA uses the term in this fashion but also to distinguish among its permit types, which include surface water discharge, ground water discharge, toxic materials, mining, wetlands, and MS4, among others.

Based on inspection results and other compliance activities, RO and CO personnel enter violations into the Case Tracking Database, a database to record and track cases under development. TEMPO and the Case Tracking Database enable managers to ascertain the compliance status of particular sites and to prepare monthly and other compliance and enforcement reports.

In addition to TEMPO, TRIP, and the Case Tracking Database, WMA personnel make use of a number of other databases to support their program activities (see Table 3–5), including those associated with stormwater. Many of those other databases are capable of exchanging information with TEMPO. WMA's end goal is to synchronize all of its permitting, compliance, and enforcement databases with TEMPO and, in turn, with EPA's NPDES-ICIS (Integrated Compliance Information System) in order to provide greater efficiencies for staff.

Table 3–5. WMA Data Reporting Systems/Infrastructure Used for Tracking Compliance and Enforcement Activities

System Name	Description
TEMPO (Tools for Environmental Management and Protection Organizations)	MDE enterprise computer system
TRIP (TEMPO Remote Inspection PROCESS)	Inspectors enter information from individual inspections remotely to populate this system. TRIP and TEMPO can support reporting in all environmental media, so an inspector may have a report on more than one type of media.
NOI (Notices of Intent)	The Compliance Program uses the NOI database to track the receipt of NOIs (or individual NPDES permit applications for a construction project) and approvals. WMA is unable to modify the structure of the NOI database in response to program changes. It is presently contracting with information technology specialists to remedy this problem.
Approvals	The Compliance Program uses the Approvals database to track ESC and stormwater management plan approvals.
PAF (Problem Activity Form)	This database is used to record and track citizen complaints.
CASE TRACKING	The Compliance Program uses this database to record and track all cases under development.
SSO (Sanitary Sewer Overflows) **/CSO** (Combined Sewer Overflows) **/ BYPASS**	Users can access this database through MDE's Web site to obtain information about all sewage overflow events reported to WMA.
FMIS (Financial Management Information System)	This database is MDE's accounts receivable system.
VIOLATION/PENALTY	The Compliance Program uses this database to track completed enforcement actions and payment of penalty invoices.
Consent Order Tracker	The Compliance Program uses this Excel spreadsheet to track milestones in active orders. The Compliance Program maintains this spreadsheet in a shared folder.
E5/H5 List	The Compliance Program uses this table, which is also located on the shared directory, to track open cases that involve high levels of *actual* or *potential* environmental or public health impacts.
ICIS (Integrated Compliance Information System)	ICIS is a database system for use by EPA and authorized states. It consists of two components: ICIS-NPDES and ICIS-FE&C (Federal Enforcement and Compliance). The ICIS-NPDES enables users to track NPDES permits, limits, and discharge monitoring and other program reports. ICIS-FE&C enables

System Name	Description
	users to enter and track key enforcement data such as inspection dates, enforcement actions for NPDES majors and individual minors, and general permits (USEPA 2012). WMA uses ICIS for these purposes but does not report information relative to construction stormwater general permittees. The new electronic application system will automatically transfer NOI information to TRIP and MDE plans to exchange information between TRIP and ICIS using a newly developed electronic node as soon as the exchange system is fully functional.
DMR (Discharge Monitoring Reports) **Log**	WMA's ICIS staff use this spreadsheet-based log to track permittee submittals of DMRs.

Source: MDE 2012c.

MDE presently has hired a contractor to develop a system that will allow individuals to complete their permit applications and payments online. The system will also enable WMA to communicate "back and forth" with an applicant. Key elements from the applications will feed into TEMPO. MDE has also tasked the contractor with developing a link from the system to ICIS. MDE expects delivery of the new system by the end of 2013 so that it can be tested and used when the new general permit becomes effective in 2014.

> **Observation 3–2.** MDE is taking steps to ensure that field personnel have fully functional laptops and access to all databases with information related to their activities by systematically moving critical databases to TEMPO.

3.5 Compliance and Enforcement Procedures and Tools

The CP has two major functions: the inspection of permitted sites and associated compliance and enforcement activities. The program office consists of one enforcement division chief who is located in the central office and one inspection division chief in each of the three regional offices. Inspection personnel reside in the regional offices, while enforcement personnel are generally located in the central office. See Appendix D for organization charts of WMA's Compliance Program. RO inspectors conduct inspections for all permits administered by WMA, except for Drinking Water and MS4 programs as described previously. Typically, the RO managers assign engineers or senior staff to inspect NPDES sites, especially wastewater treatment plants and industrial sites, or to perform laboratory audits. Less senior inspectors inspect the remaining WMA permitted facilities/sites.[6] On a single visit to a facility/site, an inspector will generally perform inspections of multiple water program media.

3.5.1 Inspection Priority Scheme

CP personnel perform their duties in accordance with procedures outlined in *Inspection, Enforcement and Penalty Procedures for the Compliance Program in the Water Management Administration* (MDE 2012c). During the onsite review, WMA stormwater staff routinely referred review team members to "the SOP" to explain the basis for particular program actions. The review team secured a copy of the November 20, 2009 version of the standard operating procedure (SOP) while visiting the CO and a copy of the more recent version (August 3, 2012) when visiting the western regional office (WRO).[7]

WMA uses a tiered- or risk-based approach for determining inspection priorities. Its SOP directs inspectors to schedule and conduct inspections according to six criteria. Table 3–6 provides a listing of the criteria in order of importance. The first and second criterions, "Major NPDES individual permit sites (not MS4s)" and "NPDES and groundwater discharge permits in SNC

[6] NPDES construction activity, NPDES minor industrial surface water and groundwater, NPDES minor municipal surface water and groundwater, NPDES seafood processors, NPDES swimming pools and spas, NPDES tanks / pipes / structures, non-tidal wetlands, construction sediment, state and federal stormwater management, tidal wetlands, water appropriations, and waterway construction.

[7] It is important to note that the SOP refers only to the activities of WMA's CO and RO staff and not those of delegated entities, such as local governments or soil conservation districts. Moreover, WMA's inspections are limited to state and federal projects and permittees in non-delegated areas.

based on DMRs"[8] is in response to requests from EPA during SRF discussions to provide greater scrutiny to those sites. The philosophical underpinnings of WMA's inspection priorities are that the larger dischargers *and* the minor dischargers with significant noncompliance have greater capacity to cause pollution (i.e., harm public health or the environment). WMA inspectors interviewed during the review said they perform a combination of announced and unannounced inspections.

WMA regularly evaluates its inspection priorities and available resources. Recently, citizen complaints were placed in the fifth level of inspection priorities contingent on evaluation on a case-by-case basis using a triage approach involving the division chief, district manager and inspector. In order to make the best use of available resources, complaints that can be investigated by local agencies or other State agencies with authority to do so are referred to them for initial inspection or examination. There is coordination between WMA and the other agencies regarding follow up depending on the findings. MDE is responsible for inspection of construction sites in non-delegated areas and does not refer complaints for such sites, but follows up on complaints for sites in non-delegated areas and for state and federal projects based on the case-by-case triage process.

When RO personnel receive a complaint, they note it on a Problem Activity Form (PAF), and later add it to the PAF database. In general, the RO inspector records the PAF number associated with a complaint on his/her inspection report when investigating it. This means that the PAF number will show up with inspection data in TEMPO.

> **Observation 3–3.** WMA strives for consistency in its compliance program. CO and RO staff routinely referenced the SOP as the "go to" resource to determine program priorities and the appropriate compliance and enforcement methods to follow. RO managers reported that they, in general, have flexibility within the SOP to address problems unique to their regions. The review team compliments WMA for its efforts to establish greater consistency in WMA's handling of compliance and enforcement activities.

Some RO managers commented that it is more efficient to have inspectors cover multiple media as it eliminates many overlaps that would occur otherwise. However, they said this approach tends to produce inspectors that are "generalists" as opposed to "experts." The review team asked various inspectors on different days of the review what they thought of having multi-media responsibilities. None seemed to have any major problems with the approach.

[8] SNC = significant noncompliance and DMRs = Discharge Monitoring Reports.

Table 3–6. WMA's Priority-Setting Criteria for Scheduling and Conducting Inspections, 2012

Priority	Inspection Frequency
1. Major NPDES individual permit sites (except MS4s)	1+/year Conduct more frequent inspections if violations are identified *(on annual visit)* that impact the environment or public health.
2. NPDES and groundwater discharge permits in significant noncompliance (SNC)* based on DMRs	Within 1 month of SNC identification
Construction sites over 20 acres in non-delegated areas or state and federal projects	During 1st month of construction and 1/month thereafter when active construction
Combined sewer systems	1/year
Major wetland sites (10,000 square feet or more) (tidal, non-tidal, waterway construction)	During 1st month of project and 1/month thereafter when active construction
SSOs over 50,000 gallons *or* Unauthorized discharges of pollutants likely to have public health or environmental impacts	*As directed by* Program Director, Deputy Director, Division Chief, or District Manager
3. Significant violation follow-up	Concurrent with or shortly after an inspection at which a significant violation is identified (as general rule, no more than 30 days following identification of violation). Inspect and issue a Notice of Violation (NOV), Site Complaint, or Inspection Report. If NOV or Site Complaint extends an offer to resolve the Department's claim(s), the time period may be extended to 45 days following identification of the violation(s).
Minor violation follow-up at permitted sites	According to regular inspection priorities *unless* the follow-up inspection finds the site meets the significant violation threshold, in which case, WMA should proceed with an enforcement action.
4. Minor NPDES individual permit sites and general permit sites of concern (except concentrated animal feeding operations or surface and coal mining sites)	At least 1/five-year permit cycle.
Construction sites less than 20 acres but more than 3 acres of disturbance (non-delegated and state and federal projects)	Only if *not* triggered by a complaint *and* only if all greater priority assignments are completed and then at frequency necessary to determine compliance.
Minor wetlands sites (less than 10,000 square feet)—(tidal, non-tidal, waterway construction)	Only if *not* triggered by a complaint *and* inspect only if all greater priority assignments are completed and then at frequency necessary to determine compliance.
Other General Permits (not concentrated animal feeding operations or surface and coal mining sites)	Only if *not* triggered by a complaint *and* inspect only if all greater priority assignments are completed and then at frequency of 1/five-year permit cycle *unless* the same or

Priority	Inspection Frequency
	additional violations are identified that require re-inspection.
5. Citizen complaints (from Problem Activity Forms or PAFs)	Within timeframes established by Division's triage of the PAF *but only for* complaints related to MDE permitted sites or specific situations that MDE decides *not to* refer to a local, state, or federal agency because of certain considerations. *See bottom of Table 3-6 for example complaints that are to be uniformly referred to other local, state, or federal agencies.*
6. Construction sites less than 3 acres of disturbance (non-delegated and state and federal projects) including single family lots	Only if *not* triggered by a complaint *and* only if all greater priority assignments are completed and then at frequency necessary to determine compliance.
Example Complaints To Be Uniformly Referred to Other Local, State, or Federal Agencies	
All complaints related to agriculture sites.	*Refer to* MDA (Maryland Department of Agriculture).
All complaints related to septic systems or other wastewater treatment systems that do not have an MDE permit.	*Refer to* local health department in the county where located.
All complaints related to filling or destruction of wetlands for sites that do not have MDE permits or authorizations for work in wetlands.	*Refer to* ACoE (U.S. Army Corp of Engineers).
All complaints related to the construction of piers, bulkheads and other structures in waterways for sites that do not have MDE permits or authorizations	*Refer to* appropriate county agency or ACoE.
All complaints related to erosion and sediment control, except for those involving state and federal construction projects or construction sites disturbing 20 acres or more.	*Refer to* delegated program when there is one.
All complaints related to suspected discharges of small amounts of pollutants where the discharge is not believed to have entered state waters.	*Refer to* local health department.

*EPA uses the term SNC in its enforcement of the NPDES program. MDE has its own definition of SNC based, in part, on EPA's criteria. MDE's criteria extend to programs beyond the NPDES program. Therefore, the state's criteria are more extensive than EPAs.

Source: MDE 2012c .

3.5.2 Enforcement Processes and Tools

Table 3–7 lists WMA's available enforcement tools. The first tool is the inspection report, which WMA's inspectors typically provide to responsible parties at the time of an inspection. In addition, RO staff also issue Notices of Violation (NOVs) or Site Complaints and have authority to issue Stop Work Orders. RO and CO staff also share responsibility for determining penalty amounts. CO enforcement personnel are responsible for using and implementing the tools listed in the table below.

WMA's SOP provides guidance for making determinations of significant noncompliance and for arriving at the appropriate penalty in each of its programs. The ROs develop enforcement referral packages in cases involving a significant violation. CO enforcement personnel send the package to the state's Office of Attorney General (OAG) except where WMA may settle the violations using an OAG-approved template or by offers to settle if all violations have been resolved (MDE 2012c). WMA documents and tracks its violations in its Case Tracking database. Both RO and CO staff reported that there is considerable discussion between offices when enforcement packages are developed.

Table 3–7. Enforcement Tools Used in Association with WMA's Stormwater Programs

Enforcement Tools	Construction Program		Municipal Program		Industrial Program	
	General Permit	Individual Permit	General Permit	Individual Permit	General Permit	Individual Permit
Inspection report noting violation	•	•			•	•
Notice of Violation (NOV) or Site Complaint	•	•			•	•
Stop work order	•	•			•	•
Penalty settlement	•	•			•	•
Settlement agreement and penalty*	•	•			•	•
Administrative order and penalty*	•	•			•	•
Judicial order and penalty*	•	•			•	•
Referral or joint action with EPA	•	•			•	•
Informal NOV letter, reviews, and audits			•	•		

*If not already required by law, regulation, or permit, WMA may consider supplemental environmental projects (SEPs) as an offset for part of a penalty. The SEPs must benefit water quality or protection.

Observation 3–4. CO and RO compliance staff interviewed said they had positive working relationships with either the CO or RO, respectively, on compliance and enforcement matters. The review team believes these relationships contribute to the strength of MDE's

overall stormwater program. The team has found other states to have challenges in this area because of limited communication.

3.5.3 Enforcement and Compliance Reporting

During the onsite review, WMA staff provided the review team with a summary of inspection totals for FY 2012 (Table 3–8). Of the 3,161 inspections conducted during the fiscal year, 1,944 (62 percent) were associated with WMA's stormwater programs (i.e., the highlighted rows in the table). Of the 1,944 stormwater-associated inspections performed, the majority were for ESC (51 percent). NPDES construction sites followed at 28 percent, state and federal stormwater management at 19 percent, and industrial stormwater at 2 percent. The percentages are similar to the breakdown of WMA's FTEs presented in Table 3–4 as follows: 57 percent for construction stormwater, 17 percent for state and federal stormwater management, and 2 percent for industrial stormwater.

Table 3–8. Summary of WMA Inspection Totals (7-1-11 to 6-30-12)

Type[1]	Initial Yearly Inspections	Initial Quarterly Inspections	PAFs[2]	Compliance	Non-compliance	Compliance Assistance	Correction Needed	Additional Investigation Required	Total Inspections[3]
CAV-Compliance Asst.	0	0	0	1	0	0	0	0	1
FUI-Follow up	0	0	0	2	5	0	0	1	9
Follow up	0	2	0	1	0	0	0	2	4
NPDES CON Activity	806	1,095	56	1,285	544	16	0	59	1897[4]
NPDES IND GW	21	22	12	17	17	0	0	11	45
NPDES IND Major SW	51	54	16	37	20	0	0	18	76
NPDES IND Minor SW	222	237	180	192	161	0	0	39	394
NPDES IND StW	57	67	34	47	59	0	0	26	133
NPDES Marinas	25	29	13	23	21	1	0	2	46
NPDES MUNI GW	40	45	13	23	47	0	0	8	78
NPDES MUNI Major SW	81	72	22	72	32	0	1	28	136
NPDES MUNI Minor SW	162	177	135	158	107	0	0	33	306
NPDES Seafood Processors	6	6	2	2	8	0	0	0	10
NPDES Swimming Pools & Spas	11	15	7	4	14	0	0	3	21
NPDES Tanks, Pipes, & Structures	1	1	3	3	1	0	0	1	5
Nontidal Wetlands	774	853	185	1,132	272	7	0	65	1489
Other	7	7	23	9	3	0	0	11	29
Sediment / Erosion	1,300	1,610	285	2,026	762	24	0	102	2,931[4]
State / Federal SWM	382	495	17	713	156	12	0	21	900[4]
Tidal Wetlands	737	839	176	718	346	9	0	35	1,107
Water Approp, GW	7	9	3	10	2	0	0	1	13
Water Approp, SW	2	2	3	3	1	0	0	0	4
Waterway	330	313	75	395	89	2	0	34	524

Type[1]	Initial Yearly Inspections	Initial Quarterly Inspections	PAFs[2]	Compliance	Non-compliance	Compliance Assistance	Correction Needed	Additional Investigation Required	Total Inspections[3]
Construction									
Total	**5,022**	**5,950**	**1,260**	**6,873**	**2,667**	**71**	**1**	**500**	**10,158**

[1]CON = Construction; IND = Industrial; GW = Groundwater; SW = Surface Water; StW = Stormwater; MUNI = Municipal; SWM = Stormwater Management; Approp = Appropriation.
[2]PAF = Problem Activity Form.
[3]The total number of inspections does not equate to the number of site visits. An inspector may perform inspections of multiple media per visit.
[4]The construction stormwater inspection numbers reported are those performed by WMA staff only. They do not include inspections performed by delegated local jurisdictions.
Source: MDE 2012e.

Each year, MDE prepares an Annual Enforcement and Compliance Report in accordance with state law (Environment Article §1-301(d) enacted in 1997). The purpose of the report is to provide the Maryland legislature with annual performance results for specific department programs and total penalties collected under specific funds (MDE 2011a). The report includes data indicating the number of ESC and stormwater management plan approvals MDE has issued during the fiscal year, the number of inspections performed, significant violations found, dispensation of violations, the number of enforcement actions by type, and penalties collected. MDE presents similar data for all NPDES permits, which includes NPDES construction stormwater and industrial stormwater general and individual permits. Further information on the contents of the report is provided in Sections 4–6 of this document.

3.6 File Review

The review team examined a random sample of general and individual permit files and a similar number of compliance and enforcement files for all three stormwater programs. The review team found the files to be, in general, satisfactory.

3.7 Training, Outreach, and Education

Review team members asked most WMA personnel interviewed what types of technical training they have received relative to their stormwater program responsibilities. A brief overview of responses to this question follows.

3.7.1 Internal Training for CO and RO Staff

WMA stormwater personnel receive training on an "as needed" basis. One could characterize most of the training received as "on-the-job" (OTJ). CO and RO Compliance Program personnel participate in semiannual meetings. Those meetings provide a forum for staff to exchange information on new policies, permit requirements, or SOPs.

WPP and SSDSP personnel provide training to RO staff when the CO makes changes to stormwater general permits and related guidance documents. RO managers and senior inspectors further provide OTJ training to regional inspectors. RO inspectors commented that they would like technical inspection training on industries with NPDES discharge and other permits. They noted it is difficult for inspectors to keep abreast of changing industrial technologies, plus the inspections overall are more complex.

3.7.2 External Training for CO and RO Staff

The review team did not discuss this topic in enough detail with WMA personnel. However, EPA conducts a States Meeting each year and Maryland is an active participant. Likewise, MDE staff attended EPA's MS4 Inspector training in Harrisburg. Most external training is dependent upon available funding

3.7.3 Training and Outreach Provided to Local Jurisdictions, Conservation Districts, and Regulated Communities

Training for the above noted audiences is discussed in Section 4 of this document.

3.8 Oversight of Regional Offices

Compliance program managers in the CO perform oversight of RO operations by hosting weekly manager meetings and reviewing monthly inspector activity reports. CP managers in the CO also attend regional staff meetings several times per year. The CO also holds semi-annual compliance program meetings for CO and RO staff. Finally, the CP issues quarterly enforcement reports for MDE senior managers.

3.9 Overall Program Strengths Cited

WRO and ERO staff cited the experience of their inspectors as their greatest strength. The majority of the region's inspectors have 20–30 years of experience. This experience coupled with staff knowledge and relationships with local community members eases implementation and oversight of WMA's regulatory programs.

> **Observation 3–5.** With the resource challenges at MDE, it is difficult to fill staff positions; however, it would be helpful to pass on the experience that is so valuable to the program prior to those most knowledgeable leaving the Department.

One interviewee stated that the language in state law enabling MDE to take action when there is a potential discharge to waters of the state is powerful. It allows MDE to be proactive in working with regulated parties to address potential problems prior to actual harm. This same individual said the features of the state's administrative penalty requirements are an additional strength of the program because they do not require parties to go to court.

3.10 Overall Program Challenges Cited

MDE staff cites limited staff and resources as their biggest challenge.

MDE representatives said they are concerned that they may lose some of the senior inspectors in coming years, which will leave them with a considerable knowledge gap. MDE identified this as a primary concern several years ago and is implementing a number of strategies to try to minimize the impact.

Some field vehicles have 150,000 miles or more and require repairs at an increasing rate. WMA recently replaced five Compliance Program inspector vehicles with high mileage and MDE is developing an overall strategy for regular fleet replacement.

4. Observations and Recommendations—Erosion and Sediment Control *and* Stormwater Management Program for Construction Projects

4.1 Program Background and Authorities

Maryland's construction stormwater program consists of requirements for erosion and sediment control, stormwater management, and NPDES permit coverage. The requirements apply based on project size and type. The sidebar identifies the statutes, regulations, and guidance that provide the basis for the program.

Maryland's ESC, Stormwater Management, and NPDES Construction Stormwater Permit Authorities

- **Erosion and Sediment Control:** Annotated Code of Maryland, Environment Article, Title 4, subtitle 1; COMAR 26.17.01
- **Stormwater Management:** Annotated Code of Maryland, Environment Article, Title 4, subtitle 2; COMAR 26.17.02.
- **NPDES General Permit Requirements for Construction Activities:** Annotated Code of Maryland, Environment Article, Title 9, subtitle 3; COMAR 26.08.04.
- ***2011 Maryland Standards & Specifications for Soil & Sediment Control*** The document contains MDE's minimum criteria for effective erosion and sediment control practices; the ESC regulations incorporate the document by reference (MDE 2011b).
- ***2000 Maryland Stormwater Design Manual Volumes I and II. Supplement 1***. This document contains design standards to minimize water quality impacts in urban environments; it provides guidance on the most effective planning techniques and nonstructural and structural best management practices (BMPs) for development sites. The stormwater management regulations incorporate the document by reference along with USDA Natural Resources Conservation Service Maryland Conservation Practice Standard Pond Code 378 (January 2000) and 40 CFR sections 122.26(b)(14)(i)–(xi) (MDE 2000).

ESC plan approval is required for projects that will disturb more than 5,000 square feet or 100 cubic yards of soil and for single-family homes on parcels of two acres or more that will disturb less than half an acre of land. The purpose of an ESC plan is to prevent siltation due to sediment runoff from an active construction site.

Stormwater management (SWM) plan approval is required for *new development* projects that will disturb 5,000 square feet or more of land. The goal of a SWM plan is to prevent stream bank erosion by controlling the rate of stormwater runoff (MDE 2008a).

Finally, **NPDES general permit coverage** is required for projects with a planned total disturbance of one or more acres. One of the conditions of the permit is to comply with approved ESC and SWM plans. Since 2009, MDE has required owners or organizations with projects that disturb 150 acres or more and discharge to an impaired surface water body to apply for an individual NPDES permit. Under the new general permit MDE is proposing to consider the need for an individual permit on a case-by-case basis and if requested to do so by an interested party.

Maryland has had an ESC program since its General Assembly passed the Sediment Control Act in 1970. The state has modified its program over the years based on lessons learned. For example, in 1980, the state began requiring personnel in charge of onsite clearing and grading operations or the implementation and maintenance of an ESC plan to receive training and certification from the state. The program shifted enforcement authority from local to state control in 1984. Also at that time, the state established program delegation criteria. Maryland revised its

program to require NPDES stormwater discharge permits for construction activity in 1991, following the promulgation of federal NPDES construction stormwater requirements. The following year, the state began subjecting agricultural land management practices to enforcement action for sediment pollution (MDE 2012a).

In January 2012, MDE adopted revised ESC regulations and the *2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control* (Standards and Specifications) (MDE 2011b). The changes establish more stringent stabilization requirements and grading unit criteria (MDE 2012d).

The Stormwater Management Act of 2007 requires project owners to develop ESC and SWM plans in an integrated manner. It further requires a comprehensive review process for both plans to ensure that environmental site design (ESD) (sidebar) is implemented to the maximum extent practicable (MEP) on all sites. MDE has revised its Standards and Specifications in addition to the *2000 Maryland Stormwater Design Manual Volumes I and II* (MDE 2000) to aid developers and designers in preparing their integrated ESC and SWM plans. Those materials will also assist plan reviewers in performing comprehensive reviews of both plans.

Environmental Site Design

The Stormwater Management Act of 2007 defines ESD as "using small-scale stormwater management practices, nonstructural techniques, and better site planning to mimic natural hydrologic runoff characteristics and minimize the impact of land development on water resources."

4.2 Program Assistance and Delegation

The ESC regulations require each county and municipality to adopt an ESC ordinance with the same intent and requirements of the Sediment Control Law and the Standards and Specifications. MDE has provided guidance to counties and municipalities toward this end by publishing a *Model Erosion and Sediment Control Ordinance* (MDE 2012d). Maryland's stormwater management regulations further require each county and municipality to adopt ordinances to implement a stormwater management program. MDE has published a *Model Stormwater Management Ordinance* to support local government efforts in this area (MDE 2009 and 2010). Under both the ESC and stormwater management regulations, a municipality can adopt the ordinance(s) of its respective county.

MDE reviews and approves ESC plans and SWM plans for state and federal projects. MDE also conducts inspections and enforces state standards applicable to those projects. Local authorities (counties, municipalities, and SCDs) perform these tasks for private and local government projects if delegated.

4.2.1 ESC Delegation

The ESC regulations allow MDE to delegate enforcement authority to a county or municipality for private and local government projects. Delegation means a local jurisdiction will conduct inspections to verify project compliance with an approved erosion control ordinance, approved ESC regulations, and approved ESC plans. A jurisdiction must apply to MDE on October 1 preceding the calendar year in which it seeks a delegation term (a period of no more than two years). MDE's initial delegation review involves an assessment of the local jurisdiction's

ordinance to ensure it is consistent with state law. Reapplication reviews involve WMA performing field assessments of random (or stratified random) samples of construction sites. MDE acknowledges its approval of enforcement delegation to a county or municipality via letter. MDE has determined that a formal delegation agreement is unnecessary since program requirements appear in an approved jurisdiction's ordinance, and MDE's authority is in state law. If MDE identifies problems with a jurisdiction's program during one of its biennial field reviews, it will meet with key personnel of that jurisdiction to discuss the problem and identify the steps to mitigate it. MDE issues a letter to the jurisdiction either approving or disapproving of the delegation and summarizes any problems identified, discussed, and scheduled for resolution. To date, MDE has been able to resolve identified problems without having to withhold delegation from a local jurisdiction.

The Sediment Control Law requires SCDs to review ESC plans for private development for compliance with state law and regulations and applicable permit requirements. It authorizes SCDs to collect plan review fees. Furthermore, an MOU enables MDE to contract with SCDs to inspect sites for compliance with ESC plans in non-delegated areas and authorizes the Districts to collect inspection fees. Table 4–1 shows the entity or entities presently responsible for ESC plan approval and inspections in each county (or local jurisdiction). Note that, under state law, counties are the SWM plan approval and inspection authority, with a few exceptions (Baltimore City).

Table 4–1. ESC Plan Approval and Inspection Authorities for Private and Local Construction Projects by County (or other local jurisdiction) in Maryland

County or Municipality	MDE Regional Office	ESC Plan Approval Authority		ESC Inspection Authority		
		County SCD	Other	County	City or Town	State
Allegany	WRO	√[1]				√[1]
Anne Arundel	CRO	√		√		
Baltimore County	CRO	√		√		
Baltimore City	CRO		√ Baltimore City Department of Public Works		√	
Calvert	CRO	√		√ (single family homes only)		√ (all other)
Caroline	ERO	√[1]				√[1]
Carroll	WRO	√		√		
Cecil	ERO	√		√ (single family homes only)		√ (all other)
Charles *except*	CRO	√		√		
Town of Indian Head	CRO	√				√
Town of La Plata	CRO	√				√
Dorchester	ERO	√		√		
Frederick *except*	WRO	√[1]		√		
City of Frederick	WRO	√				√[1]

County or Municipality	MDE Regional Office	ESC Plan Approval Authority		ESC Inspection Authority		
		County SCD	Other	County	City or Town	State
Garrett	WRO	√				√
Harford *except*	ERO	√		√		
City of Aberdeen	ERO	√			√	
Town of Bel Air	ERO	√			√	
Howard	WRO	√		√		
Kent	ERO	√		√		
Montgomery *except*	WRO		√ Montgomery County Department of Permitting Services	√		
City of Gaithersburg	WRO		√ City of Gaithersburg Department of Public Works		√	
City of Rockville	WRO		√ City of Rockville Department of Public Works, Engineering Division		√	
Prince George's *except*	WRO	√		√		
City of Bowie	WRO	√			√	
City of Greenbelt	WRO	√			√	
City of Laurel	WRO	√			√	
Queen Anne's	ERO	√				√
St. Mary's	CRO	√				√
Somerset	ERO	√				√
Talbot	ERO	√				√
Washington	WRO	√[1]				√[1]
Wicomico	ERO	√				√
Worcester	ERO	√		√		

[1]MDE has MOUs with these four SCDs to perform inspections of certain construction sites with approved ESC plans.

As indicated in Table 4–1, MDE has MOUs with four county SCDs to perform inspections of certain construction sites with approved ESC plans. The WRO has MOUs with Allegany, Frederick, and Washington SCDs, while the ERO has an MOU with Caroline SCD. When meeting with WRO staff, the review team requested copies of MDE's MOUs with the applicable SCDs. The MOU with the Allegany SCD formalizes the District's willingness to inspect standard ESC plan construction sites. The MOU with the Frederick SCD acknowledges that the District will take over inspection of construction sites with approved ESC plans in the City of Frederick. Finally, the MOU with the Washington County SCD formalizes the District's willingness to conduct preconstruction conferences and post-construction reviews with recipients of approved ESC plans. The review team did not request a copy of MDE's MOU with the Caroline SCD when visiting the ERO.

Review team members were told that, in an ideal world, it would be nice to see the region's SCDs take on a role similar to that of the Washington County SCD, where the SCD conducts preconstruction meetings and performs post-construction inspections. By being "local," SCD personnel live closer to sites and usually know or are familiar with builders and contractors

doing work in their areas. The services the SCDs provide enables the WRO to obtain greater inspection coverage than it otherwise might or to focus the work of its inspectors on greater priority sites per the SOP.

When asked if the other SCDs were close to taking on responsibilities like those that Washington County has, the review team was told they had interest, but each has challenges such as funding constraints that hinder the process. The review team found the remarks by representatives of the SCDs with whom the team met to be consistent with those made by MDE personnel.

Occasionally, MDE experiences problems with the assignment of plan review authority to the SCD. One of the regions had a situation in which the federal government was funding a local project. The SCD was operating as the project manager. MDE viewed this situation as a conflict of interest because the SCD was reviewing and approving plans for a project it operated. Moreover, the SCD was not keeping the local inspector informed of activities.

4.2.2 Local Stormwater Management Programs

As noted previously, the Stormwater Management Act of 2007 requires local governments to develop and implement stormwater management programs. Under the law, MDE is to review and approve county and municipal stormwater management ordinances, ensure local implementation and operation of those programs, and inspect and enforce stormwater management requirements with local government authorities. MDE is to conduct triennial reviews of the effectiveness of the local programs once approved. The criteria MDE is to use to determine acceptability is listed in the sidebar to the right. MDE is to document its findings to the applicable local jurisdiction within 30 days following a review.

Criteria for an Acceptable Local Stormwater Management Program

COMAR 26.17.02.

- An MDE-approved stormwater management ordinance in effect;
- Stormwater management planning and approval processes that provide:
  - Stormwater management for every land development subject to the Stormwater Management Act of 2007;
  - The implementation of ESD to the MEP; and
  - The ability and the information necessary to review adequately proposed installation and maintenance measures for stormwater management;
- Inspection and enforcement procedures that ensure the proper construction and maintenance of approved stormwater management measures.

If MDE finds a county or municipality does *not* have an acceptable stormwater program, the law provides the department the authority to issue an order requiring corrective action within a prescribed time or to impose other sanctions authorized by law.

MDE has a long history of reviewing local programs and requiring local program improvements for compliance with State stormwater laws. In 2009 and 2010, local ordinance reviews were conducted for every county and municipality, which included rounds of correspondence before local governments, could move ahead with final adoption of ordinances. During the review, MDE staff reported that to date they have not found any local programs to be unacceptable. WMA, however, has not kept up to date with the required schedule of triennial reviews in recent years. MDE has instead focused its limited resources on revising program standards and specifications and design manuals. Recently this work has been completed and MDE intends to

direct its resources to return to the field and conduct triennial reviews. The program has five FTEs to manage MS4 programs and implementation aspects of ESC and construction stormwater programs.

Observation 4–1. MDE's current statutory and regulatory authority for construction stormwater is more stringent than federal CWA standards. Federal rules apply to projects with a planned total disturbance of one or more acres, whereas, Maryland's *ESC requirements* apply to projects that will disturb more than 5,000 square feet or 100 cubic yards of soil (and single-family homes on parcels of two acres or more and that will disturb less than half an acre of land). Maryland's *stormwater management regulations* apply to new development projects that will disturb 5,000 square feet or more of land. Finally, Maryland requires its counties to have ESC and stormwater management ordinances. MDE has developed model ordinances that meet minimum control requirements that local governments may elect to adopt or they can develop their own; however, they must meet the minimum requirements. Maryland's approach provides a level playing field for the development and construction communities because the same general standards apply statewide.

Observation 4–2. MDE has made constructive changes to its ESC laws and regulations based on lessons learned. For example, the state added a provision in the early 1970s that requires a local agency to ensure an applicant has obtained ESC plan approval before issuing a building or grading permit. MDE made this change to ensure all projects have ESC plans and to promote collaboration when plan review and building/grading permit entities are different, which is often the case. More recently, the 2011 update included the following regulatory changes: limiting development to a 20-acre grading unit; increased stabilization (from 7-14 day requirements to 3-7 day requirements); and better integrating of the State's stormwater management plan review with ESC review.

Observation 4–3. The SCDs have played an important role in the WRO by expanding the universe of sites inspected as well as the number of visits made to each site. The WRO manager has actively sought the involvement of the SCDs, and the Washington SCD has creatively undertaken tasks on its own initiative that strengthen the intent of the state's ESC and stormwater programs. Much of the success in this area is due to an understanding by the principals involved that partnerships must be cultivated.

Observation 4–4. In recent years, WMA has not met its own target to conduct triennial reviews of local stormwater management programs. The basis for not completing the reviews is resource capacity. While MDE has not conducted the required triennial reviews in recent years, it has developed new program regulations, guidance materials, model ordinances, and the review of all local ordinances statewide, all of which are fundamental components in the technical exchange and oversight of local programs. MDE is now conducting reviews again with three regional conferences planned for fall 2013. See also Observation 4–9.

4.3 Facility Universe

MDE grants NPDES permit coverage to entities involved in construction projects that will disturb one or more acres under a general or individual permit. During the onsite review, WMA reported that it had 8,721 general and individual construction stormwater permittees (private, local, state, and federal government). Of this number, 4,298 were in the WRO (49 percent), 3,080 in the CRO (35 percent), and 1,343 in the ERO (16 percent). WMA further reported that of the 8,721, approximately 308 were individual permittees (3.5 percent), and the remaining were general permittees. The project owners are responsible for seeking applicable permits at the local and state levels. During the onsite review, CO and RO staff reported that, in general, they identify non-filers by visual observation, tips, and complaints.

When asked, the RO was readily able to provide review team members with a list of general permittees for which it was responsible, organized by county. The list included all general permit types under the authority of the WMA. For each permittee, the list included application number, general permit type, NPDES permit number, and inspection priority type. The RO also provided review team members with a list of general permittees in, or formerly in, significant noncompliance, organized by county. The RO generated the list from the Case Tracking Database. For each general permittee, the list included the SNC date; the first, second, and third violations; the enforcement priority assigned; and date resolved.

4.4 Permitting Activities

In this section, the review team presents brief overviews of WMA's general and individual ESC and construction stormwater permits. The team has further included observations and recommendations where it determined appropriate.

4.4.1 General Permit

The CO develops and issues the NPDES construction stormwater general permit. The current permit (NPDES Permit Number MDR10, State Discharge Permit Number 09GP) expires on December 31, 2013. WMA staff indicated that they expect to issue the next edition of the general permit in approximately July 2013, with an effective date of January 2014.

The current general permit indicates that coverage will expire when the general permit is reissued or expires, or when a Notice of Termination (NOT) has been completed by the permittee and received by MDE. WMA staff reported that a significant number of permittees fail to submit their NOTs. During the state's FY 2011, WMA sent letters to more than 10,000 permittees who had obtained coverage under the previous general permit indicating that if their project was continuing they must comply with the 2009 general permit. Moreover, if their project was completed, they were to submit an NOT. In response, WMA received approximately 3,400 NOTs (MDE 2011a).

Applicants seeking coverage under MDE's general construction stormwater permit must submit an NOI to MDE in Baltimore. Applicants can also apply for an individual NPDES permit regardless of project size or MDE can require it. Section 4.4.2 of this report describes the situations in which MDE requires an individual permit. CO staff generally perform completeness reviews of the NOIs.

Private and federal project applicants are required to pay filing fees along with their NOIs. MDE bases the fee amount on the size of disturbance as follows:

- 1 to less than 10 acres = $100.
- 10 to less than 15 acres = $500.
- 15 to less than 20 acres = $1,500.
- greater than 20 acres = $2,500.

State and local government projects are exempt from the filing fee.

> **Observation 4–5.** WMA does not have a routine mechanism in place to obtain NOTs. WMA relies on permittees to fulfill the requirement to submit NOTs upon completion of construction activities and stabilization. When inspectors visit a site that has reached final stabilization, they remind permittees to file NOTs, but some still fail to send them. After issuance of the general permit in 2009, WMA did a mass mailing to permittees that resulted in closing permit coverage to thousands of sites. When the electronic NOI system is implemented in concert with the new permit effective in 2014, all sites that are to be covered will be required to reapply for permit coverage so it is expected that many more NOTs will be submitted. This will also have the effect of clearing the active permit list of all those who fail to apply for the 2014 permit.

As noted previously, a general permittee must have ESC and SWM plans (depending on project size and state laws and regulations) approved by either the MDE or local entities. Those plans must meet the state's Standards and Specifications for Soil Erosion and Sediment Control (MDE 2011b) and the *2000 Maryland Stormwater Design Manual* (MDE 2000). MDE will not issue general permit coverage or an individual permit until the applicant documents that the appropriate approval authority has approved the ESC. The permit requires that there be no earth disturbance on a site with a permit until such time the SWM plans are also approved.

The general permit does not include numeric effluent limits, benchmarks, or specific stormwater controls. Rather, MDE requires permittees to select, install, implement, and maintain BMPs that will minimize pollutants in their discharges to meet applicable water quality standards. If the controls are developed, implemented, and updated consistent with state laws and regulations as cited in the permit, MDE notes that in general they are considered as stringent as necessary to avoid violations of applicable water quality standards.

MDE requires permittees to implement their control measures from the commencement of construction until permanent stabilization is completed. The state reserves the right to require the permittee to modify its controls if it finds that the permittee's stormwater discharges may cause, or have reasonable potential to cause, an excursion above any applicable water quality standard. General permittees are required to conduct self-inspections using a standardized form developed by MDE and to maintain the results on site. The permit specifies that the permittee must conduct inspections weekly and the day after a rainfall event resulting in runoff.

The general permit further requires permittees who discharge to a water body with an approved TMDL to implement measures to control the discharge of pollutants from the site consistent with requirements of a TMDL, including any established wasteload allocations (WLAs) applicable to the discharge (MDE 2009).

Outside parties contested MDE's general permit in 2009. During that time, MDE issued individual construction stormwater permits. Approximately 98 percent of the current 308 individual permits are a product of this circumstance, according to WMA staff. When an individual permit expires and a project is incomplete, MDE advises responsible parties that they may seek coverage under the no-longer-contested general permit or seek to renew the individual permit.

4.4.2 Individual Permits

Since 2009, MDE required owners or organizations with projects that disturbed 150 acres or more and discharged to an impaired surface water body to apply for an individual NPDES permit. Under the new GP MDE will consider the need for an individual permit on a case-by-case basis and if requested to do so by an interested party.

MDE also requires individual permits for "Sites disturbing between 30 and 150 acres that discharge to waters impaired by pollutants associated with construction activity if MDE receives a timely objection to the NOI that credibly supports the conclusion that, due to site-specific issues, applicable technical standards included under the general permit are not sufficient to ensure the protection of water quality standards." (MDE 2010c).

Applicants for individual permits fill out the required NPDES application form available on MDE's Web site. WMA processes and issues individual construction stormwater permits in the same manner as all other individual NPDES permits (i.e., provides opportunity for public input). WMA organizes the permit similar to any other NPDES permit.

> **Observation 4–6.** The review team performed a cursory review of an individual permit issued for a large site (disturbance greater than or equal to 150 acres) subsequent to the onsite review. It found the language and requirements to be similar with those in the general permit. The review team's impression was that an individual permit was being required for the larger sites to include stricter controls or a schedule for phasing projects. A review team member posed a follow-up question to a WMA staff member in this area after the review. The staff member explained that the individual permit process provides a more robust opportunity for public participation and MDE review, which can result in stricter requirements. While an individual permit may not contain additional requirements, MDE could have required additional controls when reviewing the permittee's ESC and SWM plans (Jesse Salter, WMA, personal communication, February 25, 2013).

4.5 Plan Review Activities

In general, Maryland's ESC and stormwater management laws and regulations require ESC plans and SWM plans based on project size. MDE central office staff review and approve those

plans for state and federal projects. The SCDs perform plan review for ESC and local authorities (counties, municipalities) perform stormwater management plan review for private and local government projects. See Table 4–1 in Section 4.2.1 of this report for a listing of local review authorities.

4.5.1 MDE Guidance Documents

Those involved in construction projects that will disturb greater than 5,000 square feet of land are required to have an approved ESC plan before a local jurisdiction issues a building permit. They are to develop their ESC plans in accordance with the minimum criteria specified in the document entitled, *2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control* (MDE 2011a). SSDSP staff interviewed noted that they had invested considerable staff resources in the last couple of years developing the revised standards and specifications. They undertook the task by establishing a technical workgroup with members from the Maryland Soil Conservation Districts, Natural Resources Conservation Service, local Maryland governments, Maryland State Highway Administration, Maryland Environmental Service, and others. A key objective of the document is to assist developers in planning projects to meet the legal criterion of "ESD to the MEP" through a three-step process: (1) concept plan, (2) site development plan, and (3) final plan. MDE describes this same process in a 2009 supplement to the *2000 Maryland Stormwater Design Manual* (Chapter 5, Supplement #1).

MDE's original stormwater management law required post development conditions to mimic pre-development hydrology. The 2000 Design Manual and regulation update shifted the focus from primarily a flood control program to a program where smaller storm events are managed for water quality and stream channel protection. The manual includes standards WMA developed for BMP groups and associated variants to achieve water quality treatment and stream channel protection. Stormwater BMPs that do not appear in the manual must go through MDE's review and approval process before they are acceptable for field implementation.

The Stormwater Management Act and associated regulations support Maryland's "Smart Growth" policies to concentrate development where it currently exists to reduce urban sprawl. The manual reiterates a state policy for redevelopment. The policy "specifies a 50% reduction in impervious surface area below existing conditions. Because this may be impractical due to site constraints, environmental site design…practices are to be used to the maximum extent practicable…to meet the equivalent in water quality control of a 50% decrease in impervious surface area." (MDE 2000)

Table 4–2 summarizes an MDE PowerPoint slide showing the major shifts in Maryland's stormwater regulations between 2000 and 2009. The noted changes are reflected in updates to MDE's Standards and Specifications for Soil Erosion and Control and Stormwater Design Manual.

Table 4–2. Major Changes in Maryland's Stormwater Regulations: 2000 and 2009

2000	2009
Nonstructural practices create incentive for environmentally friendly designs. Intended to encourage planning for stormwater early in	ESD to the MEP. Approvals required during three phases of project design: concept, site development, and final.

design.	Stormwater planning now required during concept design.
Move from flood control to water quality. Filtering practices (WQv) and control of frequent events (1-year, Cpv). BMP design criteria based on water quality (pollutant removal) performance (80 TSS/40 P).	Small scale ESD practices are required for minimum "1" of rainfall. ESD criteria based on replicating hydrology for "woods in good condition" (about 2.7" rainfall).
Water quality for redevelopment. 20% reduction in impervious area. Onsite or off-site BMPs. Alternatives.	Water quality for redevelopment. 50% impervious area reduction. Onsite or off-site BMPs. Alternatives.

WQv = water quality volume, CPv = channel protection volume, TSS = total suspended solids, and P = phosphorus.
Source: MDE N.D.a.

Observation 4–7. SCD and local jurisdiction personnel with whom the review team met spoke highly of the MDE guidance materials referenced throughout this document. Other state stormwater programs have also commented to EPA Region III on the value of these materials.

In addition to the guidance already mentioned, MDE has produced a substantial number of other documents to aid the ESC and stormwater management community. The materials include the following:

- *Maryland's Stormwater Management Guidelines for State and Federal Projects*. April 15, 2010. (MDE 2010c).
- *Environmental Site Design (ESD) Processes and Computations*. July 2010 (MDE 2010b).
- *Environmental Site Design (ESD) Redevelopment Examples.* October 2010 (MDE 2010a).
- *Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated: Guidance for National Pollutant Discharge Elimination System Stormwater Permits* (Draft). June 2011 (MDE 2011b).
- *Model Standard Plan for Poultry House Site Development on Maryland's Eastern Shore*, March 2011 (MDE 2011e).

Observation 4–8. Local jurisdictions are delegated the responsibility to inspect construction sites for erosion and sediment control only. The review team encourages the local jurisdictions to expand their review/inspections to include pollutants beyond sediment or to use authority under their local Illicit Discharge ordinance to control and eliminate sources of non-sediment pollutants in stormwater. Presently, there are no statewide legal requirements for local jurisdictions to consider or address these situations. EPA Region III has also identified this gap when conducting MS4 inspections in Maryland and other Region III states.

4.5.2 Local Materials

Local jurisdictions and SCDs have developed or updated their materials in response to changes in state ESC and stormwater management regulations. Examples of some of the materials SCDs

have produced include ESC plan development guidelines, ESC plan checklists, owner/developer certification forms, design certification forms, standard plans for minor earth disturbances, and drywell infiltration requirements for single-family residences.

4.6 Data Management

WMA keeps track of applicants seeking coverage under the general permit and individual construction stormwater-only permits via its stand-alone NOI database. The general public and regulated community have viewing access to this database via MDE's Web site. The ROs have similar access via MDE's internal network. Users can query the database by permit number, site name, approval authority, county, watershed number or name, project size, comment deadline, and status (e.g., issued, pending, terminated, or withdrawn). Only a few staff members in the central office have read/write access to the NOI database in order to ensure data integrity.

4.7 Compliance and Enforcement Activities

Section 3.5 of this report provides an overview of WMA's compliance and enforcement procedures and tools. To avoid redundancy, the review team has not repeated that information here. The information discussed below is generally unique to the construction stormwater program.

4.7.1 Inspections

MDE has delegated or partially delegated inspection and enforcement authority for erosion and sediment control to 14 counties, Baltimore City, and 10 other municipalities (See Table 4–1). Those entities are responsible for conducting inspections of private and local government projects within their respective jurisdictions. RO staff perform inspections of private and local government projects in non-delegated areas and of all state and federal construction projects.

State law requires that local jurisdictions approve SWM plans for all private and local projects. MDE RO staff inspect stormwater management facilities for state and federal projects only. Local jurisdictions may invite MDE to get involved in situations where they desire a stronger enforcement presence.

RO inspectors perform pre-construction, construction, follow-up, and final stabilization inspections. MDE will not accept an NOT until the final stabilization inspection is completed. MDE instructs permittees to submit their NOTs after the site is permanently stabilized, temporary erosion and sediment controls have been or are scheduled to be removed, and detrimental stormwater discharges have been eliminated. Table 3–6 of this report summarizes WMA's inspection priorities. Inspections of construction stormwater sites are Priority 4 or 5 on the six-point priority scale. In general, WMA inspects sites with 20 acres or more of disturbance before they inspect smaller sites. MDE responds to complaints for sites in its areas and forwards complaints in delegated areas to the appropriate jurisdiction. WMA regularly evaluates its inspection priorities and available resources. Recently citizen complaints were placed in the fifth level of inspection priorities contingent on evaluation on a case-by-case basis using a triage approach involving the division chief, district manager and inspector. In order to make the best use of available resources complaints that could be investigated by local agencies or other State agencies with authority to do so are referred to them for initial inspection or examination.

Complaints related to problems that are WMA's primary responsibility, such as wastewater treatment plants, are handled by the Compliance Program. There is coordination between WMA and the other agencies regarding follow up depending on the findings.

The RO inspectors interviewed said, for the most part, they have good working relationships with their county/municipality counterparts and have confidence in their programs. They sometimes see local inspectors providing more assistance to responsible parties more often than they would. MDE's practice is for its inspectors to take a very explicit view when it comes to assessing compliance. Something is either "in compliance" or "out of compliance" with requirements. There is no "in between." WMA's inspectors help educate site personnel regarding requirements during inspections and through inspection reports and NOVs. They do not provide education, however, in lieu of issuing an NOV. In contrast, some local inspectors might tend to provide compliance assistance prior to initiating enforcement. Regional inspectors said there is consideration given in some communities to avoid delays in construction projects.

> **Observation 4–9**. The review team recommends that WMA inspectors document their concerns regarding the willingness of local jurisdictions to take on enforcement responsibility and make them known to CO staff who perform the biennial ESC reviews and triennial stormwater management program reviews. See also Observation 4–4.

4.7.2 Compliance and Enforcement Reporting

The SSDSP annually prepares a table of ESC compliance and enforcement data for the preceding *calendar year*. A subset of SSDSP's 2011 draft table is presented in Table 4–3 (next page). Note that the table contains data for delegated entities. SSDSP derives these numbers through an audit of current delegation applications. The Compliance Program provides the data for the WMA line item of the table. That line reflects compliance and enforcement data for state and federal projects and private and local projects in non-delegated areas.

CO staff said the primary reasons for enforcement are due to (1) failure to have an approved ESC plan or SWM plan, (2) failure to follow the plan(s) resulting in a sediment discharge or potential for discharge to waters of the state, and (3) failure to obtain an NPDES permit. The RO inspectors interviewed reported similar findings.

WMA's Compliance Program maintains statistics for compliance and enforcement activities related to the sites for which WMA is responsible (i.e., project sites in non-delegated areas and all state and federal projects). The program reports data *on a fiscal year basis* for permittees in SNC in annual enforcement and compliance reports. See Section 3.5 for further background on those reports.

Table 4–3. State and Local Erosion and Sediment Control: Draft Inspection and Enforcement Data 2011[a,b]

	Entity[1]	Permits		Inspectors and Inspections				Enforcement				
		No. Active	Disturbed Acreage	No. Inspectors	Permits Per	Acres Per	Annual No. Inspections	Complaints Rec'd	Vio Notices	Stop Work Orders	Court Cases	Penalties $
County	Anne Arundel	747	1,016	14.0	53.0	73	17,380	890	1,405	191	853	148,086
	Baltimore	235	2,032	7.0	34.0	290	6,158	348	660	120	3	75,900
	Calvert (partial)	344	805	3.0	115.0	268	3,095	92	147	50	3	625
	Carroll	133	2,422	5.0	27.0	484	2,144	72	13	29	0	0
	Cecil (partial)	135	200	2.0	68.0	100	339	20	89	21	0	0
	Charles	545	4,444	5.5	99.0	808	2,804	55	58	58	58	29,814
	Dorchester	3	47	1.0	3.0	47	210	1	1	1	0	0
	Frederick	78	377	3.0	26.0	126	1,896	21	263	2	5	3,875
	Harford	161	775	5.0	32.0	155	2,540	118	1,636	78	0	0
	Howard	63	666	19.5	3.0	34	6,201	53	136	5	1	250
	Kent	1	55	2.0	11.0	28	93	4	3	3	3	6,400
	Montgomery	483	2,653	11.0	44.0	241	15,569	265	492	47	190	65,263
	Prince George's	949	10,545	17.0	56.0	620	11,787	312	103	24	15	21,225
	Worcester	135	200	2.0	67.5	100	339	20	89	21	0	0
	Subtotal	**4,012**	**26,237**	**97.0**	**46.0**	**241**	**70,555**	**2,271**	**5,095**	**650**	**1,131**	**$351,438**
Municipality	Annapolis	21	33	1.0	21	33	964	34	223	25	5	10,675
	Aberdeen	7	142	1.0	13	142	100	4	20	1	0	0
	Baltimore City	25	58	2.5	10	23	712	20	4	4	0	500
	Bel Air	2	14	1.0	2	14	88	1	2	0	0	0
	Bowie	10	161	3.0	3	54	84	0	4	2	0	0
	Gaithersburg	7	14	1.5	5	9	221	10	9	1	0	100
	Greenbelt	4	79	2.0	2	40	89	2	25	1	0	750

	Entity[1]	Permits		Inspectors and Inspections				Enforcement				
		No. Active	Disturbed Acreage	No. Inspectors	Permits Per	Acres Per	Annual No. Inspections	Complaints Rec'd	Vio Notices	Stop Work Orders	Court Cases	Penalties $
Muni. cont.	Laurel	3	25	2.0	2	13	50	0	2	0	0	0
	Rockville	68	231	1.0	68	231	857	2	0	3	0	0
	Subtotal	**147**	**757**	**15.0**	**14**	**62**	**3,165**	**73**	**289**	**37**	**5**	**$12,025**
State	WSSC	60	162	4.0	15	41	1,274	29	98	1	0	625
	WMA	12,608	69,069	13.5	934	5,116	3,657	259	79	9	0	795,040
	Subtotal	**12,668**	**69,231**	**17.5**	**474**	**2,578**	**4,931**	**288**	**177**	**10**	**0**	**$795,665**
Total		**16,827**	**96,225**	**129.5**	**178**	**960**	**78,651**	**2,612**	**5,561**	**697**	**368**	**$1,159,128**

[a] Since delegation agreements extend for periods of two years and renewals do not occur all in the same year, SSDSP averages the total number of inspections reported in each delegation agreement over the two-year reporting period.

[b] The data for the counties and municipalities shaded in gray are from the jurisdictions' 2010 delegation applications.

Source: Brian Clevenger, WMA, personal communication, February 15, 2013.

Table 4–4 shows a subset of data from MDE's FY 2011 *Annual Enforcement and Compliance Report*. A review of this table shows that MDE issued 301 ESC or stormwater plan approvals for state and federal projects during the year, ending the fiscal year with 12,936 approvals (i.e., active projects including ESC for private development in non-delegated areas of the state).[9] Of this universe, MDE inspected and evaluated compliance at 2,097 sites.[10] The number of compliance activities that resulted from the inspections was 4,320.

MDE determined that 97 of the inspected sites/facilities (5 percent) had significant violations. Ninety-four of the 97 had significant violations involving environmental or health impacts, and three had significant violations based on technical/preventive deficiencies. MDE inspected 16 percent of its overall universe of permit sites during the fiscal year.

Table 4–4. FY 2011 Compliance and Enforcement Data, ESC and Stormwater Management for Construction Activity, Private and Local Government Projects in Non-delegated Counties and State and Federal Projects Only

Permitted Sites	
Number of approvals issued	301
Number of approvals in effect at fiscal year end	12,936
Inspections	
Number of sites inspected ("inspected" defined as "at the site")	2,097
Number of sites audited but not inspected (places where MDE reviewed submittals but did not go to the site)	0
Number of sites evaluated for compliance (sum of the two measures above)	2,097
Number of inspections, spot checks (captures number of compliance activities at sites)	4,320
Number of audits (captures number of reviews of file/submittals for compliance	0
Number of inspections, audits, spot checks (sum of the two measures above)	4,320
Compliance Profile	
Number of inspected sites/facilities with significant violations	97
Percentage of inspected sites/facilities with significant violations	5%
Inspection coverage rate (number of sites inspected/coverage universe)	16%
Significant Violations	
Number of significant violations involving environmental or health impact	94
Number of significant violations based on technical/preventive deficiencies	3
Number of significant violations carried over awaiting disposition from previous fiscal year	73
Total number of significant violations (sum of above three measures)	170
Disposition of Significant Violations	
Resolved	77
Ongoing	93
Enforcement Actions	
Number of compliance assistance rendered	65

[9] The data do not include inspections performed related to an NPDES permit for the discharge of stormwater associated with construction activities.

[10] The 2,097 ESC sites inspected in FY 2011 include some sites smaller than an acre or otherwise not regulated by the NPDES program (e.g., forest harvest operations).

	Administrative	Civil/Judicial	Total
Number of show cause, remedial, corrective actions issued	5	2	7
Number of stop work orders	4	0	4
Number of injunctions obtained	0	0	0
Number of penalty and other enforcement actions	67	3	70
Number of referrals to Attorney General for possible criminal action			0
Penalties			
Amount of administrative or civil penalties collected in fiscal year			$716,666

*Stormwater and sediment control are combined because at the state level these projects are reviewed and approved as one project. The table does not include compliance and enforcement data for the NPDES general construction stormwater permit or individual construction stormwater permits.
Source: MDE 2011a.

Observation 4–10. In FY 2011, WMA devoted 60 percent of its program dollars and 57 percent of its program FTEs to construction site inspections and enforcement. Refer to Tables 3–3 and 3–4 for a more complete review of WMA program resources. Within that budget, WMA was able to complete inspections at 16 percent of total sites for which it was responsible (Table 4–4).

MDE's FY 2011 *Annual Enforcement and Compliance Report* aggregates data for inspections related to NPDES construction stormwater permits with that for NPDES municipal and industrial permits. See Table 6–2 in Section 6 of this document. Therefore, one cannot distinguish data that is applicable to the construction stormwater program alone. If asked, WMA could produce this data but it would likely have to tabulate this data by hand based on a review of files and other resources.

4.7.3 Internal State Audit

In November 2011, the Department of Legislative Services (DLS) for the Maryland General Assembly conducted an audit of MDE for the period from April 1, 2007 to June 30, 2010. In its audit report, DLS found that MDE was not performing onsite ESC inspections at the frequency of once every two weeks as specified in the ESC regulations (Finding 3). MDE management advised DLS at the time of the audit that ESC inspections should be frequent because of the continuously evolving land conditions of active construction sites. DLS goes on to note that MDE's FY 2010 *Annual Enforcement and Compliance Report* indicated 2,213 inspections were performed, which resulted in 73 significant violations. However, as of June 30, 2010 (i.e., the end of the fiscal year), there were approximately 12,900 active plans for which MDE was responsible for inspecting. In the FY 2010 report, MDE disclosed that it did not have a sufficient number of inspectors to meet the inspection requirements and did not expect to increase that number any time in the near future. Therefore, MDE would continue to prioritize the inspections it performs.

DLS recommended that MDE take action to comply with state regulations regarding the frequency of inspections for ESC sites. It further states, "If MDE determines that the inspection requirement cannot be achieved with current resources, MDE should either seek additional resources through the budget process or pursue modifying the State regulations to include a risk-based approach." (MGA 2011)

In response to the audit report, MDE indicated that it concurred with DLS Finding 3, but the department could not fully implement the associated recommendation. It noted that because of a lack of resources at MDE and local delegated jurisdictions, it was impossible to inspect every active construction site for ESC plan compliance once every two weeks, on average, as required by state law. MDE indicated that a fiscal analysis performed in 2007 and updated in 2010 estimated the department to be understaffed by 342 positions to comply with minimum mandated standards. MDE went on to say, "MDE will continue to seek additional resources to increase the frequency of inspections. However, even with additional resources, the Department will still be required to prioritize inspections… Finally, MDE will evaluate existing resources and consider whether it is appropriate to propose changes to the regulatory requirement."

4.8 Training, Outreach, and Education

Section 3.7. of this report provides a brief overview of WMA staff comments regarding training. Only those comments pertinent to the construction stormwater program are summarized below.

4.8.1 Internal Training for CO and RO Staff

In 2009, WPP and SSDSP personnel provided training to RO staff after updating the construction stormwater general permit. Program representatives said once the new permit is developed, they will provide training to CO and RO staff on key changes. In 2012, SSDSP staff provided training to CO and RO staff on the revised ESC Standards and Specifications.

4.8.2 External Training for CO and RO Staff

WMA staff reported participating in conferences of professional organizations. In general, they did not provide specific examples.

4.8.3 Training and Outreach to Local Jurisdictions, Conservation Districts, and Regulated Communities

MDE personnel cited their construction stormwater general permit web site as one vehicle through which the department provides outreach and education to the regulated community and others.[11] On an ongoing basis, staff give presentations at meetings of professional organizations throughout the state on general permit requirements and MDE's Standards and Specifications and Design Manual. The audiences that attend these presentations are varied. They have included design engineers and consultants, builders, city planners, and others. WMA plans to make presentations through various venues on the new general permit once it is developed.

Maryland's Sediment Control Law requires contractors, developers, and other construction industry personnel who will serve as responsible parties on construction sites to undergo MDE-sponsored sediment control training and receive a certification to that effect. WMA refers to this training as its "Green Card Certification Program." To obtain certification, an interested party must register and attend a training class and pass an examination. MDE mails certification cards to participating parties within two weeks of a class. The certifications are valid for a three-year

[11] http://www.mde.state.md.us/programs/Permits/WaterManagementPermits/WaterDischargePermitApplications/Pages/Permits/watermanagementpermits/water_applications/gp_construction.aspx

period and are automatically renewed unless the department determines that additional training is required.

> **Observation 4–11.** The Green Card Certification Program is an effective approach for ensuring that responsible parties receive training on the state's ESC expectations and requirements. Interviewed representatives of the ROs and local jurisdictions said they believe the program to be an effective one. Inspectors said the contractors, developers, and construction personnel with whom they work are required to have certification.

The SCD and local government staff interviewed reported that they do not have money in their budgets to travel to training programs. They rely mainly upon webinars, which are not always the best venue through which to receive training. They noted the following as areas in which they would like training for themselves or colleagues:

- Training on ESC and stormwater management BMPs.
- On-the-ground construction training for city planners.
- Stormwater management in karst areas.

4.9 Oversight of Regional Offices

See Section 3.8 for information on this topic.

4.10 Program Strengths Cited

MDE personnel said they believe the biggest strength of their program is the requirement that the appropriate approval authority review all ESC plans and SWM plans for compliance with state and local standards and specifications.

The SCD representatives interviewed during the review said they believe their relationships with the RO and local jurisdictions to be "a program strength." An SCD representative who conducts inspections in addition to plan review activities said it is effective to threaten MDE intervention when discussions at a site break down. Local government representatives made similar comments. The bottom line is that local agents believe the threat of MDE intervention is an effective motivator for compliance. Finally, an SCD representative said he is proudest of the quality of plan reviews his office performs.

Several of the non-delegated county representatives interviewed said they believe their ordinances to be the most positive asset of their program, followed by the positive working relationships between the SCDs and local jurisdictions. Several commented on the fact that they interact with the SCDs or vice versa on a daily basis. The SCDs and local jurisdiction personnel tend to view each other as extensions of themselves in part.

See Section 3.9 for cited strengths applicable to all WMA's stormwater programs.

4.11 Program Challenges Cited

MDE commenters said that lack of resources (staff and dollars) limits WMA's implementation of the program. The review team recommends that WMA request the budgetary resources necessary to meet state legal requirements under the program as discussed in Observations 4–4, and 4–9 of this document.

One MDE inspector said he would like ESC to be a component of other MDE permits, such as those for railroads and oil and gas lines. He noted that these latter permits allow for activities near streams and in the floodplain, which can negatively affect water quality and hydrology.

MDE inspectors commented that they know and hear of ESC and stormwater management problems in some of the delegated areas in their region. The SOP, however, means that RO inspectors do not generally visit active projects in the delegated areas. The review team believes it is critical for WMA to encourage its inspectors to visit potential problem areas and document findings. Moreover, personnel in the delegated area should discuss inspector concerns on an ongoing basis and not just during the review process.

An SCD representative said one of his major challenges is replacing experienced plan reviewers and inspectors who have retired. Some SCDs also face challenges in getting approval by their commissions to charge fees or adequate fees for program activities.

See Section 3.10 for cited challenges applicable to all WMA's stormwater programs.

5. Observations and Recommendations—MS4 Stormwater Program

This section of the report provides a summary of the review team's observations of MDE's MS4 Program. Where applicable, it also includes review team recommendations.

5.1 Program Background and Authorities

SSDSP staff administer MDE's MS4 program under the program authorities shown in the sidebar. SSDSP presently has five FTEs to administer the program, a reduction of three FTEs, or 38 percent of overall staff capacity, in the last year.

MS4 Program Authorities

Federal: CWA 402, 33 U.S.C. §1251

State: COMAR 26.08.01, 26.17.01, and 26.17.02.

SSDSP MS4 personnel perform the following functions:

- Identify and notify entities requiring permit coverage.
- Review NOIs and individual permit applications.
- Compose, negotiate, and issue individual Phase I and general Phase II MS4 permits.
- Administer public outreach, hearings, opportunities for comment, and response to comments as part of permit promulgation process.
- Draft revisions to the ESC and stormwater management laws and regulations on a regular basis to improve implementation and reflect current science.
- Develop, write, and update Maryland's technical ESC handbook and Stormwater Management manual.
- Evaluate new ESC and stormwater management technology for incorporation into the State's programs.
- Develop model ESC and other stormwater ordinances for local governments.
- Review and approve local ESC and other stormwater ordinances.
- Develop and provide ESC and stormwater management training and conferences for local governments and SCDs.
- Approve delegation of enforcement authority for state ESC program to selected local governments.
- Review watershed management plans of Phase I MS4s.
- Develop guidance to facilitate MS4s in achieving permit requirements.
- Review Phase I and Phase II annual reports.
- Inspect random samples of construction sites for compliance with ESC requirements in delegated jurisdictions on a biennial basis.
- Inspect random sites for compliance with stormwater management requirements across the state on a triennial basis.
- Perform periodic audits of MS4 programs.
- Provide oversight feedback to local governments in the form of compliance assistance and informal enforcement actions.

- Undertake formal enforcement actions where necessary.

5.2 Facility Universe

Maryland presently has 11 Phase I MS4s and 87 Phase II MS4s. Table 5–1 shows the breakdown of the MS4s by entity type. Table 5–2 contains a list of the Phase I MS4s, while Appendix F includes a list of the Phase II entities.

Table 5–1. Maryland Phase I and Phase II MS4s by Jurisdiction Type

Jurisdiction Type	Phase I MS4s	Phase II MS4s
Counties	9	2
Cities / Towns	1	49
State Highway Administration	1	1
Other Federal / State Agencies (many with multiple properties)	0	36
Totals	**11**	**87**
Percent of Total Universe	**11%**	**89%**

Source: MDE / WMA / SSDSP listing provided onsite.

Table 5–2. Maryland Phase I MS4s by Jurisdiction

Large Jurisdictions	Medium Jurisdictions	State Storm Drain Systems
Anne Arundel County	Carroll County	State Highway Administration
Baltimore County	Charles County	
Baltimore City	Frederick County	
Montgomery County	Harford County	
Prince George's County	Howard County	

Source: MDE N.D.b.

In response to a 2008 EPA survey of state NPDES permitting authorities, MDE reported that approximately 3.3 million acres (56 percent) of Maryland's total land area is covered by Phase I and II permittees (USEPA 2008). A map showing the locations and boundaries of Maryland's MS4s is included in Appendix G.

5.3 Permitting Activities

MDE issues individual NPDES permits to its Phase I MS4s and provides coverage for Phase II MS4s under one of two general permits. As noted previously, SSDSP reviews the permit applications/NOIs and develops and issues the permits.

MDE recently completed a Watershed Implementation Plan (WIP)[12] in response to the Chesapeake Bay TMDL. Counties are developing WIPs as well. Each WIP will address goals

[12] In May 2009, President Obama issued an Executive Order that substantially expanded the federal commitment to the Chesapeake Bay region. EPA subsequently moved forward with the Chesapeake Bay TMDL. The Executive Order required the six Bay states and the District of Columbia to develop and submit WIPs. It gives EPA enforcement authority if states miss established goals. The first round of WIPs is referred to as Phase I WIPs, and the second round is referred to as Phase II WIPs. The latter add local details and add more specificity and accountability to the Phase I WIPs.

and action steps that each respective entity will take to achieve reductions in point and nonpoint source pollutants, including stormwater sources. The WIPs are not enforceable; however, MS4 permits are required to be consistent with WIP commitments. In this way, MDE can make WIP elements enforceable as MS4 permits are reissued.

MDE's WIP establishes a goal for restoration of impervious cover in the watershed. According to SSDSP, 75 percent of that cover resides in Phase I MS4 jurisdictions and 10 percent lies in Phase II jurisdictions. SSDSP staff said MDE is going to include requirements for restoration of impervious cover by 20 percent in each new Phase I individual permit and in the revised Phase II general permits. MDE's goal is to achieve 100 percent reduction in impervious cover over five NPDES permit cycles (20% per term over a 25-year timeframe).

SSDSP staff said protecting and restoring the Chesapeake Bay Watershed has been an aim of state legislators and MDE since the early 1970s. It was the impetus for passage of sediment control and stormwater management legislation in 1970 and 1982, respectively. SSDSP is keenly focused on ensuring its MS4 permits meet Bay TMDLs (e.g., including 20 percent restoration of impervious cover in stormwater permits). SSDSP staff believes the restoration of MS4 impervious surfaces will address water quality concerns and TMDL requirements in smaller watersheds. Moreover, they believe the restoration will achieve measurable water quality improvements in the Chesapeake Bay by 2017, when the model used to develop the Bay TMDL is re-evaluated.

> **Observation 5–1.** Review team members believe MDE's focus and inclusion of impervious cover restoration in its MS4 permits will advance the quality of MS4 permits in other states with geographically significant watersheds such as the Chesapeake Bay.

Some of the state's TMDLs call for 99 percent reductions in bacteria and polychlorinated byphenols (PCBs). SSDSP staff are aware of the difficulties that local governments may have in developing and implementing TMDL implementation plans in these areas. It will take communication and coordination with the TMDL program staff to provide guidance to local governments on implementation plans that can be developed to reasonably address these allocations.

5.3.1 Phase I MS4 Individual Permits

SSDSP staff reported that 10 of the 11 Phase I individual permits are expired but have been administratively continued[13] for periods ranging from three to six years (Appendix H). Montgomery County is the only Phase I MS4 operating under a current permit.

The Phase I MS4 permits require municipalities to implement ESD to the MEP. Some of the key permit requirements include the following:

[13] EPA considers NPDES permits that are "administratively continued" to be "backlogged permits." EPA requires the amount of backlogged NPDES permits for major and minor facilities to be no more than 10 percent each calendar year. Phase I MS4 permits are "major" NPDES permits according to EPA's major/minor rating sheet (http://www.epa.gov/npdes/pubs/owm0116.pdf). Phase I MS4s are called out at the outset and are assigned a score of 700, which automatically places them in the "major" category.

- Identify sources of pollutants in stormwater runoff and link these sources to specific water quality impacts on a watershed basis. Submit source information in geographic information system (GIS) format.
- Develop watershed restoration plans (WRPs). Conduct watershed assessments and establish restoration goals.
- Implement stormwater management design policies, principles, methods and practices as found in MDE's 2000 Design Manual.
- Maintain an acceptable ESC program, conduct inspections, and undertake enforcement where needed.
- Retrofit 10 percent of impervious areas each permit term. SSDSP staff said new permits will require municipalities to retrofit 20 percent of uncontrolled or poorly controlled impervious area over the next permit term.
- Comply with waste load allocations (WLAs) of EPA-approved TMDLs. Develop TMDL implementation plans for watersheds or portions of a watershed covered by the MS4 permit.
- Ensure an NOI has been submitted to MDE and a pollution prevention plan has been developed for each permittee-owned facility requiring general permit coverage.
- Conduct in-stream monitoring of biological, chemical and physical parameters; outfall monitoring during dry and wet weather; and monitoring to assess effectiveness of stormwater controls.
- Conduct annual fiscal analyses of the capital, operation, and maintenance expenditures necessary to comply with the MS4 permit. Maintain adequate program funding.
- Submit annual reports to MDE.

SSDSP staff said the new Phase I MS4 permits will include additional requirements pertaining to detection and elimination of illicit discharges and conducting education / outreach on stormwater control issues. The new permits will also require the MS4s to comply with WLAs of applicable TMDLs and will include a WIP section similar to the Chesapeake Bay TMDL. An element of the WIP section will require restoration of impervious cover by 20 percent per permit term.

Observation 5–2. The review team believes MDE's intentions for strengthening its MS4 permits to improve protection for the Chesapeake Bay are admirable. However, the current permits have been administratively extended for long periods, and the new permits have yet to be reissued, though some of the factors in the delay are beyond MDE's control. WMA personnel report they are looking to these new MS4 permits to contribute substantially to restoration of the Chesapeake Bay and achieving WLAs and load allocations in smaller watersheds. The review team believes WMA should establish a schedule for issuing this cycle of Phase I MS4 permits, if it has not already done so.

EPA and MDE have discussed a schedule for reissuance of the backlog of permits that exists in the MS4 universe. As of the date of this report, three Phase I MS4 permits have gone to Final

Determination, with the remainder expected to follow suit in the near future. Additionally, the Phase II MS4 permits are slated for submittal to EPA for review in 2014.

5.3.2 Phase II MS4 General Permits

MDE provides coverage for Phase II MS4s under one of the following two general permits:

Permit Title (Permit Numbers)	Effective Date	Expiration Date
General Permit for Discharges from Small MS4s (General Discharge Permit No. 03-IM-5500; NPDES Permit No. MDR055500)	April 14, 2003	April 14, 2008
General Discharge Permit for Discharges from State and Federal Small MS4s (General Discharge Permit No. 05-SF-5501; NPDES Permit No. MDR055501)	November 12, 2004	November 12, 2009

SSDSP staff acknowledged that both general permits have expired, but they have been administratively extended. The extension period is four or five years, depending on the permit.

> **Observation 5–3.** The review team recommends that MDE reissue these two permits as soon as possible. EPA's policy regarding general permits remains that while current permittees have their coverage extended until a new permit is issued, new coverages under an expired general permit are not permitted. Since new census data is available that could bring additional Phase II MS4s into the program, this becomes an important issue.

The general permits require the Phase II MS4s to implement ESD to the MEP. Permittees are required to achieve the objectives of the six Minimum Control Measures (MCMs). [14] The permittees are further encouraged to approach stormwater management on a watershed-wide basis and to develop institutional management plans for specific facilities. The permittees are not required to conduct analytical monitoring, but they are required to prepare and submit annual reports.

As shown in Appendix G, many Phase II MS4s are located or nested within a Phase I MS4. Several Phase II MS4s have memorandums of understanding (MOUs) with the corresponding Phase I MS4 that encompasses their respective jurisdiction. The MOUs typically authorize the Phase I MS4 to conduct some of the required activities for the Phase II MS4. There are benefits to both parties for such arrangements. For example, Phase I MS4s can ensure uniformity in the application of programs for construction and other industries that discharge stormwater. On the other hand, the Phase II MS4s may not have the capacity (staff and resources) to fully achieve

[14] The six MCMs are (1) public education and outreach, (2) public participation and involvement, (3) illicit discharge detection and elimination (IDDE), (4) construction site stormwater runoff control, (5) post construction stormwater runoff control, (6) pollution prevention and good housekeeping.

the six MCMs on their own and can collectively pool resources in a way that benefits the broader group of MS4 permittees in their geographic areas.

In the new general permits, MDE plans to require Phase II MS4s to achieve a 20 percent restoration of impervious surfaces over a permit term, for a minimum of five permit cycles. According to SSDSP staff, this requirement may further incentivize Phase I and II MS4s (when the Phase I envelopes a Phase II) to work collectively toward the 20 percent goal. Some Phase II MS4s, such as Gaithersburg, are already requiring their developers to perform restoration that will be counted toward the MS4's 20 percent restoration requirement.

5.4 Plan Review Activities

The review team did not explicitly discuss plan review activities under the MS4 program with SSDSP personnel.

5.5 Data Management

SSDSP personnel told the review team that the Phase I permits require the MS4s to submit GIS data noting locations of storm drain components (major outfalls, inlets, and associated drainage areas); BMPs; the location of controlled and uncontrolled impervious surfaces; the location of water quality monitoring sites; and restoration projects proposed, under construction, or completed for each drainage area.

See Section 3.4 for additional information on the data systems used to support MDE's stormwater programs.

5.6 Compliance and Enforcement Activities

In this section, the review team presents its observations and recommendations associated with MDE's compliance and enforcement activities pertaining to the MS4 stormwater program.

5.6.1 Annual Report Review

Pursuant to federal requirements at 40 CFR 122.42(c), MDE requires its Phase I and Phase II MS4 permittees to submit annual reports. Table 5–3 lists the items the MS4s are required to submit. MDE provides permittees with example report templates in addition to other items.

Table 5–3. Phase I and Phase II Annual Report Items

Phase I MS4 Annual Report Items	Phase II MS4 Annual Report Items
The status of implementing the components of the MS4 program that have been established as permit conditions.	The status of compliance with permit conditions, an assessment of the identified BMPs, and the progress toward achieving the identified measurable goals for each of the MCMs.
A narrative summary describing the results and analyses of data, including analytical monitoring data that was accumulated throughout the reporting year.	Results of information collected and analyzed, including analytical monitoring data, if any, during the annual reporting period.
Expenditures for the reporting period and the proposed budget for the upcoming year.	A summary of the stormwater activities the permittee plans to undertake during the next annual reporting period.

Phase I MS4 Annual Report Items	Phase II MS4 Annual Report Items
A summary describing the number and nature of enforcement actions, inspections, and public education programs.	A change to any identified measurable goals that apply to the MCMs.
The identification of water quality improvements or degradation.	A description of the coordination efforts with other agencies regarding the implementation of the MCMs including the status of any MOU or other agreement executed between the permittee and another entity.
Databases for the following information: • storm drain system mapping. • urban BMP locations. • impervious surfaces. • chemical monitoring. • watershed restoration project locations. • certification information for responsible personnel. • quarterly grading permit information. • illicit discharge detection and elimination (IDDE) activities. • fiscal analyses—cost for NPDES-related implementation.	A fiscal analysis of capital and operating expenditures to implement the MCMs. The fiscal analysis shall include only those expenditures by the agency authorized coverage under the general permit and not those for MCMs implemented by other entities.

MDE includes the same language in the individual and general MS4 permits regarding the program review activities it will perform:

> *In order to assess the effectiveness of the County's NPDES program for eliminating non-stormwater discharges and reducing the discharge of pollutants to the maximum extent practicable, MDE will review program implementation, annual reports, and periodic data submittal on an annual basis. Procedures for the review of local erosion and sediment control and stormwater management programs exist in Maryland's Sediment Control and Stormwater Management Laws. Additional periodic evaluations will be conducted to determine compliance with permit conditions.*

SSDSP personnel reported that they do not review annual reports on a routine basis except when conducting a Phase I MS4 audit due to limited capacity. See Appendix H for the dates of the latest Phase I audits/annual report reviews and for a link to MDE's web site to obtain copies of the reports.

> **Observation 5–4.** It is time consuming for an MS4 community to submit annual reports and MDE is obligated to review them for compliance assessment purposes. SSDSP staff indicated during the review that 56 percent of Maryland's land area is within MS4s. In addition, the majority of the impervious cover in the state is in MS4s. The review team suggests that MDE establish formal review and enforcement procedures for all Phase I and Phase II annual reports and on-site inspections. Pursuant to 40 CFR 123.26(a), "State programs shall have procedures for receipt, evaluation, retention and investigation for possible enforcement of all notices and reports required of permittees and other regulated persons (and for investigation for possible enforcement of failure to submit these notices and reports)."

Observation 5–5. The review team is concerned about MDE's failure to track the required submittals, and the lack of enforcement to ensure the timely submittal of annual reports that meet the requirements of the Phase II general permits. After the expiration date of the Phase II general permits, some permittees did not submit Annual Reports. When a permit is administratively extended, all conditions of the permit remain, including the requirement to develop and submit annual reports. The review team recommends that MDE rectify this situation when the permits are reissued.

5.6.2 EPA Region III Assessment of Phase II MS4 Annual Report Contents

In December 2010, PG visited MDE's office in Baltimore, MD to assess the contents of its Phase II MS4 permittee filing system. The purpose of the site visit was to determine a baseline level of effort needed to conduct a comprehensive review of the most recent annual reports for Phase II permittees in Maryland. The results of this assessment indicated that MDE's filing system did not contain annual reports for numerous Phase II MS4 permittees and that a review of the annual reports was not feasible at that time due to the number of missing reports. EPA Region III requested that MDE remedy this situation. For those permittees that had not submitted annual reports, MDE required the submittal of "catch-up" annual reports covering the unreported periods.

In December 2011 and May 2012, PG again visited MDE's office in Baltimore to obtain documentation for each Phase II permittee. SSDSP staff informed PG during these visits that numerous Phase II permittees completed their annual reporting requirements in collaboration with a Phase I permittee; therefore, permittee-specific reports were not contained within the respective permit file.

During an inventory of the files collected from MDE for the Phase II MS4 permittees, PG collected documentation for a total of 61 permittees. It was determined that approximately 60 percent of the permittees for which documentation was collected were non-traditional (state and federal) permittees, and the remaining 40 percent were for traditional (local government) permittees. The documentation collected did not include permittees that implement/report their MS4 activities through a Phase I permittee.

A preliminary assessment of the documentation collected for the 61 permittees showed that 39 of the permittees had submitted an annual report, 13 of the permittees did not have annual reports on file, and 9 permittees had unclear permit status. Based on the documentation contained within the files, PG was not able to determine whether the permittees with an "unclear permit status" actually had permit coverage, had pending permit coverage, or were not required to obtain permit coverage. The permittees in this "unclear" status, however, are listed as permittees on MDE's web site. In addition, there were 13 permittees that appeared to have permit coverage (an NOI in the file), but did not have annual reports present.

Observation 5–6. The team recommends that MDE review those permittees with "unclear permit status" to determine whether they require coverage. It is important that files be accurate, consistent with the web listing, and reflect the correct status of all permittees.

In 2011, PG conducted an evaluation of the annual reports to assess their potential adequacy and found that 27 permittees had submitted annual reports that were deemed to be "potentially adequate" with the remaining 12 permittees having annual reports deemed to be "likely inadequate." Annual reports that were only a few pages long (generally those covering multiple years) were deemed to be "likely inadequate" because they did not contain sufficient information to meet the reporting requirements specified in the permits. Appendix J contains a summary of the results of the preliminary file reviews for the traditional and non-traditional Phase II MS4s. Appendix K lists Phase II permittees that are reporting in combination with a Phase I MS4.

5.6.3 MS4 Audits

SSDSP personnel reported that they have audited all 11 of their Phase I MS4s and 12 (14 percent) of their Phase II MS4s at least once. SSDSP's audit priorities are the Phase I MS4s because of the large urban areas that they span. SSDSP performs Phase II audits as resources allow. SSDSP's policy is to conduct comprehensive audits of its MS4s on a permit term basis. SSDSP integrates the MS4 audits with the biennial ESC and triennial stormwater management program reviews to create combined efficiencies. See Appendix H for the dates of the latest Phase I MS4 audits and for a link to MDE's web site where copies of the audit reports can be obtained.

SSDSP personnel told review team members that they investigate complaints regarding Phase I or II MS4s. Both the complaint and the outcome of the investigation are documented in the applicable MS4 permittee's file. Complaint investigations vary, depending on the nature of the problem.

SSDSP does not have a written enforcement response plan that outlines the actions it will take when it identifies violations of permit conditions under the MS4 program. The actions that SSDSP takes involve issuing letters identifying deficiencies in the MS4's program and corrections to be made. SSDSP representatives also verbally discuss their audit findings with key MS4 personnel prior to issuing the letters. In FY 2011, SSDSP issued 27 such letters to Phase I MS4s and 64 to Phase II MS4s. Staff said the majority of the deficiencies specified in the letters were associated with failures to maintain structural stormwater management facilities and ensure their effectiveness. Other deficiencies included failures to meet MCM requirements.

SSDSP personnel said they have been using the MS4 permits to bolster state requirements for structural stormwater management facility maintenance and to increase permittee accountability. They would also like to develop SNC criteria relative to the planned 20 percent impervious surface restoration requirement in the new MS4 permits.

> **Observation 5–7**. As noted in Section 5.3, the Phase I MS4 permits are "major" NPDES permits. The CP's SOP explicitly excludes MS4s in its list of inspection priorities, presumably because it does not have responsibilities for that program. Therefore, SSDSP should develop its own SOP, CMS or enforcement response plan for the MS4 program.

5.6.4 EPA Region III Inspections of Selected Phase I MS4s in Maryland

Since April 2009, EPA Region III has completed three MS4 program compliance inspections in the state of Maryland with the assistance of PG. The inspected permittees include Baltimore City, Baltimore County, and Prince George's County, all of which are Phase I MS4s with generally similar MS4 permits. Inspection observations were compared to identify common issues in the permittees' MS4 program development and implementation.

> **Observation 5–8**. Comparison of inspection observations revealed common issues identified at the permittee level; these may be partially attributed to needed improvements in the content of the permits, MDE's oversight and education of the MS4 permittees.

Although EPA Region III has used other contractors to inspect MS4 permittees in Maryland, the results of those inspections are not included here because the PG-led inspections are more directly comparable. Common issues in the permittees' MS4 program development and implementation are presented below by program area.

5.6.4.1 Stormwater Management

Maryland Phase I MS4 permits require the permittees to maintain a stormwater management (SWM) program that is in accordance with the Environment Article, Title 4, Subtitle 2 (COMAR 26.17.02). Two of the three inspections identified that SWM best management practices (SWM-BMPs) had not been inspected at the frequency required by the respective MS4 permit and specified in COMAR 26.17.02.11.

5.6.4.2 Illicit Discharge Detection and Elimination

Maryland Phase I MS4 permits require the permittees to maintain an illicit connection detection and elimination program to ensure that all discharges to and from the municipal separate storm sewer system that are not composed entirely of stormwater are either permitted by MDE or eliminated.

Importantly, Maryland Phase I MS4 permits do not include a separate program area for industrial/commercial facility oversight. Instead, these MS4 permits address industrial/commercial facilities under the illicit discharge detection and elimination program area. Specifically, the MS4 permits require routine surveys of commercial and industrial watersheds for discovering and eliminating pollutant sources. The inspections identified that one permittee had not conducted routine surveys of commercial and industrial watersheds as required. The other two permittees were using hot spot investigations (HSIs) for surveying commercial and industrial watersheds, but the MS4 inspections identified deficiencies regarding the permittees' completion of HSIs and/or followup on potential pollutant sources identified during HSIs.

All three inspections identified deficiencies regarding the permittees' methods for receiving, routing, tracking, and/or resolution of public or employee-generated complaints pertaining to illicit connections/discharges.

Two of the three inspections identified deficiencies regarding education and training of the public and/or employees pertaining to illicit connections/discharges.

5.6.4.3 Property Management

Maryland Phase I MS4 permits require the permittees to identify all facilities they own that require NPDES stormwater general permit coverage and submit NOIs to MDE for each. The status of pollution prevention plan development and implementation must also be submitted annually.

Due to the nature of the activities that may be carried out at permittee-owned facilities, certain facilities may have received coverage under the industrial general permit (Discharge Permit Number 02-SW), effective December 1, 2002.

The inspections identified two permittee-owned facilities with industrial activities where NOIs had not been submitted to MDE. These same two facilities had deficiencies regarding the permittees' tracking and/or reporting of pollution prevention plan development and implementation. The inspections identified one permittee with reporting discrepancies related to industrial general permit coverage.

Moreover, the issues identified regarding industrial general permit coverage may indicate a need for MDE to better educate its MS4 permittees on its expectations for compliance with the industrial general permit.

5.7 Training, Outreach, and Education

SSDSP personnel receive training through MDE on an as-needed and as-offered basis. MDE-delivered training has included ESC certification, leadership development, sensitivity and harassment training, and vehicle responsibilities. SSDSP staff also routinely attend external conferences regarding stormwater BMPs, stormwater permitting and enforcement, and water pollution. They develop and deliver training to SCDs and local jurisdictions on programmatic and technical matters related to ESC and stormwater management. Members of SSDSP's MS4 team also regularly attend and participate in panel discussions regarding stream restoration and the protection and restoration of the Chesapeake Bay. They work with experts to incorporate the latest Chesapeake Bay program science and data models in the program's restoration and accounting guidance.

5.8 Oversight of Regional Offices

This item is not applicable to the administration of MDE's MS4 program.

5.9 Program Strengths Cited

One of the primary strengths cited is that the five members of SSDSP's MS4 team have more than 100 combined years of state service and water resource management experience. Staff believe the restoration goals they will include in the new MS4 permits will significantly contribute to achieving Chesapeake Bay TMDL goals. Staff also cited delegation of the ESC program to a dozen local jurisdictions to be a program accomplishment.

5.10 Program Challenges Cited

SSDSP's greatest challenge with respect to the MS4 program is limited capacity. As noted, the program experienced a 38 percent reduction in staff capacity in the past year. In order to accomplish program objectives, the program needs to develop more effective mechanisms to assess compliance and enforce permit conditions. SSDSP personnel want to maintain some field presence to continue educating affected parties of the purpose and intent of permit conditions.

Some improvements to the program suggested by staff include: (1) improving MS4 auditing procedures, (2) including more-enforceable schedules for structural stormwater management facilities in MS4 permits to encourage greater accountability on the part of permittees, (3) developing GIS-based systems for tracking stormwater data, and (4) developing SNC criteria for the 20 percent impervious surface restoration goal to be included in the new MS4 permits.

6. Observations and Recommendations—Industrial Stormwater Program

6.1 Overview

WPP oversees the development and issuance of all NPDES permits for industrial stormwater. CP personnel in the central and regional offices handle the inspections and enforcement tasks of the program. The WPP has approximately eight FTEs to develop NPDES permits. One WPP manager estimated that 60 percent of staff time is stormwater-related since stormwater is an element of most permits the office issues.

State authority for the industrial stormwater program is Environment Article, Title 9, Subtitle 3; COMAR 26.08.01 through 26.08.04.

6.2 Facility Universe

MDE has several general permits applicable to industry, and most have a stormwater component. MDE also issues individual industrial permits that can contain a stormwater component. Table 6–1 lists the numbers of active individual and general industrial permittees as of the date of the onsite program review.

Table 6–1. Number of Active NPDES General and Individual Industrial Permittees

Permits	Number of Permittees (as of 9/11/12)
Individual Industrial Permits Majors—29 Minors—234	263*
Coal Mine General Permit	36
Hydrostatic Testing General Permit	Information not requested/provided
Industrial Stormwater General Permit	1,083
Marina General Permit	148
Mineral Mines General Permit	234
No Exposure Certification	Information not requested/provided
Seafood Processing General Permit	33
Swimming Pools and Spas General Permit	Information not requested/provided

*WMA does not track which individual permits have a stormwater component.

6.3 Permitting Activities

MDE issued its current general permit for industrial stormwater (Discharge Permit Number 02-SW) on December 1, 2002. It expired on November 30, 2007. MDE has administratively extended the permit since that time for covered facilities as of the permit's expiration date. At the time of the review, WPP staff said they expect to issue a Notice of Tentative Determination on a

revised permit in September 2012. (MDE actually issued the notice in early October 2012; it included public hearing dates of November 26 and 30, 2012 and a closing date of January 4, 2013 for receipt of public comments.)

If an industry has a condition of no exposure on a facility-wide basis (not allowed for individual outfalls), it is required to submit a signed No Exposure Certification form to MDE. The Department's requirements are the same as those authorized at the federal level under 40 CFR Part 122.26.

WPP representatives said the revised general permit is substantially different from the current permit. The current permit requires a Stormwater Pollution Prevention Plan (SWPPP) and some monitoring. The new permit will require much more. In addition to permit changes, additional information will be required on the NOI (information on local stream impairments or TMDLs, calculated area of impervious surfaces, etc.) and an electronic copy of a SWPPP including a site map of discharge locations.

WPP personnel said the eight industrial general permits (Table 6–1) have staggered expiration dates to spread the redevelopment workload. WPP staff said they are behind schedule in issuing the new general permit for coal mines and the new general permit for industrial stormwater. They reported having the following backlog of individual industrial permits (counted as any expired permit): four of 29 majors (14 percent) and approximately 20 percent of minors.

Those industries seeking coverage under the industrial stormwater general permit must complete an NOI form for submittal to MDE along with an application fee. There are two fee options for coverage under the industrial stormwater general permit: (1) $120 annually or (2) $550 with the NOI as a onetime payment.

If a facility seeking coverage under the general permit discharges stormwater associated with industrial activity to a Phase I MS4, they must concurrently submit signed copies of the NOI to the operator of the MS4 to which they discharge. The NOI instructions provide contact information for the Phase I MS4s.

As noted, MDE issues individual NPDES industrial permits. The majority of these, however, are for industrial wastewater discharges. A WPP staff member estimated that approximately 60 percent of the individual permits have stormwater language. That language is similar to the text of the industrial stormwater general permit. WPP staff said they only have a few stormwater-exclusive individual permits. WPP does not track the number and type of its individual industrial permits beyond those that are major versus minor. When the individual permits are renewed, WPP will modify the stormwater language to match that in the new general permit (when finalized) or require individual permittees to register for the general permit for stormwater coverage.

6.4 Plan Review Activities

When visiting a site, WMA inspectors ask to see the SWPPP. The purpose of this exercise is to verify the permittee is maintaining the SWPPP onsite and complies with it.

6.5 Data Management

WPP uses TEMPO to track general and individual industrial stormwater permittees. In addition to basic facility information, WPP tracks whether monitoring requirements are submitted on time and maintains a billing list for individual permittees.

Inspectors use TRIP to access and complete inspection checklists and reports. The inspector uploads the report to TEMPO when in the office, generally about once per week. WMA logs violations into the Case Tracking database. See Section 3.4 for further information on WMA's data systems.

6.6 Compliance and Enforcement Activities

In this section of the report, the review team summarizes procedures and the team's observations of activities relative to the industrial stormwater program only. Consult Section 3.5 of this report for an overview of WMA's compliance and enforcement tools applicable to all stormwater programs.

6.6.1 Inspections

WMA's SOP ranks inspections of any major NPDES permittee as Priority 1. This means WMA inspects those facilities at least once a year or more frequently if it has identified violations with potential human or environmental impacts. Some of WMA's individual NPDES industrial permittees fall into this category, and a number of them have a stormwater component to their permits. WMA inspectors can collect compliance samples at a site if they identify potential pollution to waters of the state. When asked if inspectors are able to focus on stormwater when conducting inspections of large industrial facilities, RO managers and inspectors responded affirmatively.

WMA inspects sites based on a priority scheme that places general permits at a lower priority than individual permits. WMA ranks minor NPDES individual permit sites and general permit sites of concern, if not triggered by a complaint, as Priority 4 in its SOP. Limited resources prevent WMA from inspecting a greater percentage of general permit sites in any given year, but citizen complaints often identify specific sites that warrant WMA inspections within a time frame set by a triage evaluation process. A WPP staff member estimated WMA conducts inspections at approximately 5 percent of these general permit sites per year. See also Table 3–8 in Section 3 of this report.

CO staff said, in large part, WMA inspects general industrial stormwater permittees in response to tips and complaints. The CO and ROs log complaints on paper PAFs and assign an inspector to follow-up. WMA logs complaints into the PAF database. An inspector investigating a complaint will typically note the PAF number on his report. That number will then show up in TEMPO.

The review team shadowed a CRO inspector conducting inspections of two general industrial stormwater permittees and found her performance satisfactory. One site was a major NPDES wastewater treatment facility that also had separate general permit coverage for industrial stormwater. (WMA will integrate the stormwater component into the wastewater discharge

permit when it is renewed.) The second site was a concrete washout facility. The owner/operator of this latter site was off premises at the time of the inspection. The facility's office manager participated in the inspector's walk through of the site. The inspector's major finding was the facility was not implementing its SWPPP. The inspector is issuing an NOV to the facility because materials are in a position to cause pollution to waters of the state, an authority that is broader than federal authority (Environment Article, Title 9). The inspector indicated she would contact the site owner and go meet with him the following week to review her findings and discuss follow-up actions. She would also conduct follow-up visits.

An inspector speculated that there may be a large number of facilities operating without a permit in their inspection area. WPP and the Compliance Program regularly exchange information about sites covered under an NOI for the general industrial stormwater permit. WPP follows up on information about sites that may need coverage but have not applied and the Compliance Program performs visits and takes enforcement action as warranted when a site required to have permit coverage does not follow through with the application process.

> **Observation 6–1.** The review team encourages WMA to identify industrial sites that are operating without permits and determine appropriate activities to conduct in order to bring unpermitted sites under permit coverage.

Review team members also shadowed an ERO inspector as she reviewed an individual NPDES industrial permit site with a stormwater discharge and found her performance satisfactory.

6.6.2 Compliance and Enforcement Reporting

CP staff reported that WMA performed 117 industrial stormwater general permit inspections in *federal* FY2011 and took four formal enforcement actions.

In its FY2011 Annual Compliance and Enforcement Report (based on state fiscal year), WMA reported the numbers shown in Table 6–2 for surface water (municipal and industrial) State and NPDES permits, including data relative to the NPDES general and individual construction stormwater permits. As noted elsewhere, WMA does not track which of its individual NPDES permittees have a stormwater component.

Table 6–2. FY 2011 Compliance and Enforcement Data, Surface Water (Municipal and Industrial) State and NPDES Permits

Permitted Sites	
Number of permits/licenses issued[1]	1,322
Number of permits/licenses in effect at fiscal year end	11,296
Inspections	
Number of sites inspected ("inspected" defined as "at the site")	1,288
Number of sites audited but not inspected (places where MDE reviewed submittals but did not go to the site)	649
Number of sites evaluated for compliance (sum of the two measures above)	1,937
Number of inspections, spot checks (captures number of compliance activities at sites)	2,332
Number of audits (captures number of reviews of file/submittals for compliance	6,583
Number of inspections, audits, spot checks (sum of the two measures above)	8,915

Compliance Profile			
Number of inspected sites/facilities with significant violations			117
Percentage of inspected sites/facilities with significant violations			9%
Inspection coverage rate (number of sites inspected/coverage universe)			11%
Significant Violations			
Number of significant violations involving environmental or health impact			159
Number of significant violations based on technical/preventive deficiencies			15
Number of significant violations carried over awaiting disposition from previous fiscal year			114
Total number of significant violations (sum of above three measures)			225
Disposition of Significant Violations			
Resolved			63
Ongoing			225
Enforcement Actions			
Number of compliance assistance rendered			85
	Administrative	**Civil/Judicial**	**Total**
Number of show cause, remedial, corrective actions issued	2	2	4
Number of stop work orders	0	0	0
Number of injunctions obtained	0	0	0
Number of penalty and other enforcement actions	57	2	59
Number of referrals to Attorney General for possible criminal action			0
Penalties			
Amount of administrative or civil penalties collected in fiscal year			$545,990

*The number includes new permits, renewals, and conversions/modifications of permits.
Source: MDE 2011a.

6.7 Training, Outreach, and Education

Refer to Section 3.7 of this report for pertinent subject matter.

6.8 Oversight of Regional Offices

Consult Section 3.8 of this report for information on this topic.

6.9 Program Strengths Cited

See Section 3.9.

6.10 Program Challenges Cited

See Section 3.10.

7. Summary of Observations and Recommendations

This section provides a sequential list of the review team's observations of MDE's construction, MS4, and industrial stormwater programs based on a program review performed in September 2012. The team's recommendations, where made, are also included.

- Federal Policy dictates that regulators perform inspections at 5-10% of all construction sites for compliance with regulations. While MDE inspection numbers far exceed this directive, the team recommends that resources be reviewed and shifted, if necessary, so that on-site inspections can be performed for industrial and MS4 permitted entities as well. *(Observation 3–1, Section 3.3, "Program Resources")*
- MDE is taking steps to ensure that field personnel have fully functional laptops and access to all databases with information related to their activities by systematically moving critical databases to TEMPO. *(Observation 3–2, Section 3.4, "Data Systems Used to Support Maryland's Stormwater Programs")*
- CO and RO staff use the Compliance Program's Standard Operating Procedures to determine inspection priorities and enforcement actions vis-à-vis the ESC, construction stormwater, and industrial stormwater programs. The review team recognizes the consistency the SOP has brought to bear in WMA's compliance and enforcement activities. *(Observation 3–3, Section 3.5, "Compliance and Enforcement Procedures and Tools")*
- CO and RO Compliance Program personnel appear to work cooperatively, which strengthens WMA's compliance and enforcement activities. *(Observation 3–4, Section 3.5, "Compliance and Enforcement Procedures and Tools")*
- With the resource challenges at MDE, it is difficult to fill staff positions; however, it would be helpful to pass on the experience that is so valuable to the program prior to those most knowledgeable leaving the Department. *(Observation 3–5, Section 3.9, "Overall Program Strengths Cited")*
- Maryland ESC and construction stormwater laws and regulations are more stringent than the federal government. Maryland's laws apply control requirements to projects that will disturb more than 5,000 square feet of land versus one acre as under federal rule. By requiring local governments to adopt ordinances that meet baseline conditions, they ensure statewide application. *(Observation 4–1, Section 4.2.2, "Local Stormwater Management Programs")*
- Maryland has modified its state laws and regulations based on real world experience. These actions have strengthened or streamlined implementation of the state's ESC and stormwater management programs. *(Observation 4–2, Section 4.2.2, "Local Stormwater Management Programs")*
- WRO and area SCD managers have invested in developing mutual respect and, as a result, are cooperatively promoting ESC and stormwater management beyond what each organization could do separately. The activities in Washington County serve as perhaps one of the best examples:

  Washington County does not have enforcement authority for the ESC program, yet it is proactive in stormwater management. The WRO is responsible for performing inspections of ESC sites. Washington SCD is responsible for reviewing and approving

ESC plans. SCD staff appreciate that stormwater is a legitimate water quality concern. They recognize that their working relationships with local landowners and other community members puts them in a strong position to influence community ESC and stormwater practices. They also are cognizant of the capacity limitations of the WRO and county planning and engineering offices. The SCD offered to coordinate pre-construction meetings to allow county and SCD representatives to inform those undertaking projects of their responsibilities. The SCD also offered to conduct post-construction inspections to ensure installation and operation of long-term controls. These activities offload considerable burden from county and WRO staff. *(Observation 4–3, Section 4.2.2, "Local Stormwater Management Programs")*

- In recent years, WMA has not met its own requirements at COMAR 26.17.02.03 to conduct triennial reviews of local stormwater management programs. The review team urges WMA to request the resources necessary through the state budgeting process to implement the requirements of state law. *(Observation 4–4, Section 4.2.2, "Local Stormwater Management Programs")*
- WMA does not have a routine mechanism in place to obtain NOTs; rather they rely on permittees to fulfill the requirement to submit NOTs upon completion of construction activities and stabilization. The review team recommends that MDE consider alternative methods to increase the frequency of NOT submittals. Some states have increased the success of submittals by billing an annual fee until they receive the NOT. *(Observation 4–5, Section 4.4.1, "General Permit")*
- The review team performed a cursory review of an individual permit issued for a large site (disturbance greater than or equal to 150 acres) subsequent to the onsite review. It found the language and requirements to be similar with those in the general permit. *(Observation 4–6, Section 4.4.2, "Individual Permits")*
- The review team recognizes SSDSP staff efforts in the past year or more to revise WMA's design manual and specifications and standards. Team members heard favorable comments regarding the quality of the documents by those interviewed during the onsite review as well as by representatives of other state stormwater programs. *(Observation 4–7, Section 4.5.1, "MDE Guidance Documents")*
- The review team acknowledges the point that there is a gap between federal and state regulations. Local jurisdictions should be encouraged to expand their review to include not only erosion and sediment control, but also non-sediment related water quality pollutants in stormwater. *(Observation 4–8, Section 4.5.1, "MDE Guidance Documents")*
- The review team recommends WMA's inspectors be encouraged to document instances regarding the willingness of local jurisdictions to take on enforcement responsibility so the matter can be discussed and, hopefully, remedied during the review process. *(Observation 4–9, Section 4.7.1, "Inspections")*
- WMA completed inspections at 16 percent of the ESC and stormwater management sites for which it was responsible in state FY 2011. *(Observation 4–10, Section 4.7.2, "Compliance and Enforcement Reporting")*

- The Green Card Certification Program is an effective approach for ensuring that responsible parties receive training on the state's ESC expectations and requirements. *(Observation 4–11, Section 4.8.3, "Training and Outreach to Local Jurisdictions, Conservation Districts, and Regulated Communities")*
- MDE's MS4 permit requirement to reduce impervious cover could serve as a model to other states with geographically significant watersheds such as the Chesapeake Bay. *(Observation 5–1, Section 5.3, "Permitting Activities")*
- MDE has administratively extended the majority of its Phase I MS4 permits for significant periods. The same is true for the department's Phase II MS4 general permits. The review team recommends that WMA establish a schedule for issuing the next cycle of permits, if it has not already done so. *(Observations 5–2 and 5–3, Section 5.3.1, "Phase I MS4 Individual Permits" and Section 5.3.2, "Phase II MS4 General Permit")*
- The review team suggests that MDE establish formal review and enforcement procedures for all Phase I and Phase II annual reports. *(Observation 5–4, Section 5.6.1, "Annual Report Review")*
- After the expiration date of the Phase II permit, some permittees did not submit Annual Reports. When a permit is administratively extended, all conditions of the permit remain, including the requirement to develop and submit annual reports. *(Observation 5–5, Section 5.6.1, "Annual Report Review")*
- The review team recommends that MDE review their list of permitted entities with "unclear permit status" to determine whether they require permit coverage. *(Observation 5–6 , Section 5.6.2, "EPA Region III Assessment of Phase II MS4 Annual Report Contents")*
- SSDSP does not have an SOP detailing inspection priorities or the sequence of enforcement activities for the MS4 program. The review team strongly encourages the development of this material. MDE is reminded that Phase I MS4s constitute "major" NPDES permittees. Such permittees should be inspected once each year or more frequently if violations that result in impacts to human health or the environment have occurred. One challenge noted by one SSDSP staff member is that the program needs a definition for SNC. SNC criteria could be developed as an element of the larger SOP suggested above. *(Observation 5–7, Section 5.6.3, "MS4 Audits")*
- In separate EPA Region III/PG inspections of three Phase I MS4s, the following deficiencies were identified for one or more of the MS4s: (1) a failure to inspect SWMP-BMPs at the required frequency (2 of 3 MS4s); (2) a failure to conduct routine surveys of commercial and industrial watersheds to identify IDDEs (1 of 3 MS4s); (3) problems in how HSIs were being conducted or lack of follow-up on the potential pollutant sources identified (2 of 3 MS4s); (4) problems with methods used to receive, route, track, and/or resolve public or employee-generated complaints pertaining to IC/IDs (3 of 3 MS4s); (5) issues regarding education and training of the public and/or employees pertaining to IC/IDs (2 of 3 MS4s); (6) failure to seek coverage for permittee-owned facilities with industrial facilities under the state's general industrial stormwater permit (2 of 3 MS4s); (7) problems with tracking and/or reporting of SWPPP development and implementation (2 of 3 MS4s). These deficiencies possibly suggest a need for MDE to better educate its MS4 permittees on permit requirements, including those

associated with the industrial stormwater general permit. *(Observation 5–8, Section 5.6.4, "EPA Region III Inspection of Selected Phase I MS4s in Maryland")*

- The review team encourages WMA to identify industrial sites that are operating without permits and determine appropriate activities to conduct in order to bring those sites under permit coverage. *(Observation 6.1, Section 6.6.1, "Inspections")*

8. References

CBF (Chesapeake Bay Foundation). 2004. *A Citizen's Guide to Erosion and Sediment Control in Maryland*. Chesapeake Bay Foundation: Annapolis, Maryland.

Clevenger, B. February 15, 2013. E-mail from Brian Clevenger, Sediment, Stormwater, and Dam Safety Program, Water Management Administration, Maryland Department of the Environment, to Jan McGoldrick, PG Environmental, LLC; regarding annual inspection and enforcement data for erosion and sediment control sites.

Franzetti, Susan M. N.D. *Background and History of Stormwater Regulations*. Franzetti Law Firm P.C., Chicago, Illinois. <http://www.nijmanfranzetti.com/articles/Background%20and%20History%20of%20Stormwater%20Regulations.pdf >. Accessed October 1, 2012.

MDE (Maryland Department of the Environment). N.D.a. *Maryland's Stormwater, Sediment Control and Dam Safety Program: Stormwater Management Update* (PowerPoint slides). Maryland Department of the Environment, Baltimore, Maryland. <http://mda.maryland.gov/about_mda/Documents/stormwater_ppt.pdf >. Accessed February 21, 2013.

MDE. N.D.b. Maryland's NPDES Municipal Stormwater Permits - Phase II (tables). Maryland Department of the Environment, Baltimore, Maryland. <http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/Pages/Programs/WaterPrograms/sedimentandstormwater/storm_gen_permit.aspx >. Accessed August 28, 2012.

MDE. N.D.c. "Standard Stormwater Management Plan for Single Lot Residential Construction: Model." (Worksheet). Maryland Department of the Environment, Baltimore, Maryland. <http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/Documents/www.mde.state.md.us/assets/document/Standard%20Stormwater%20Management%20Plan%202009.pdf>. Accessed February 21, 2013.

MDE. 2000. *2000 Maryland Stormwater Design Manual Volumes I and II. Supplement 1*. Maryland Department of the Environment, Baltimore, Maryland. <http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/MarylandStormwaterDesignManual/Pages/programs/waterprograms/sedimentandstormwater/stormwater_design/index.aspx>. Accessed February 5, 2013.

MDE. 2008. "Erosion/Sediment Control and Stormwater Management Plan Approvals." *MDE Guide to Environmental Permits and Approvals*. Maryland Department of the Environment, Baltimore, Maryland. < http://www.mde.state.md.us/programs/Permits/Pages/busguide.aspx>. Accessed November 15, 2012.

MDE. 2009. *General Permit for Stormwater Associated with Construction Activity, General NPDES Permit Number MDR10, State Discharge Permit Number 09GP*. Maryland Department of the Environment, Baltimore, Maryland. <http://www.mde.state.md.us/programs/Permits/WaterManagementPermits/WaterDischargePermitApplications/Pages/Permits/watermanagementpermits/water_applications/gp_construction.aspx>. Accessed February 12, 2013.

MDE. 2009 and 2010. *Maryland Model Stormwater Management Ordinance*. Maryland Department of the Environment, Baltimore, Maryland. < http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/PublicationsList/Documents/Model%2

0Stormwater%20Ordinance%20w%20emerg%20reg%20revisions%2004-12-2010.pdf>. Accessed February 5, 2013.

MDE. 2010a. *Environmental Site Design (ESD) Redevelopment Examples*. October 2010. Maryland Department of the Environment, Baltimore, Maryland. <http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/Documents/ESD%20Redevelopment%20Example.pdf>. Accessed on February 21, 2013.

MDE. 2010b. *Environmental Site Design (ESD) Process and Computations*. July 2010. Maryland Department of the Environment, Baltimore, Maryland. <http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/SedimentandStormwaterHome/Documents/www.mde.state.md.us/assets/document/ESD%20Process%20Computations%20Review.pdf>. Accessed February 21, 2013.

MDE. 2010c. *Maryland's Stormwater Management Guidelines for State and Federal Projects*. April 15, 2010. Maryland Department of the Environment, Baltimore, Maryland. <http://www.mde.state.md.us/assets/document/State%20and%20Federal%20SWM%20Guidelines%20final.pdf>. Accessed February 21, 2013.

MDE. 2010d. "Status Update on Proposed Modification to the General Permit for Stormwater Associated with Construction Activity (NPDES Permit MDR10, State Discharge Permit Number 09GP)." <http://www.mde.state.md.us/programs/Permits/WaterPermits/Pages/permits/watermanagementpermits/mdr10.aspx>. Accessed February 11, 2013.

MDE. 2011a. *2011 Maryland Standards & Specifications for Soil & Sediment Control***.** Maryland Department of the Environment, Baltimore, Maryland. <http://www.mde.maryland.gov/programs/water/stormwatermanagementprogram/soilerosionandsedimentcontrol/pages/programs/waterprograms/sedimentandstormwater/erosionsedimentcontrol/esc_standards.aspx>. Accessed February 5, 2013.

MDE. 2011b. *Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated: Guidance for National Pollutant Discharge Elimination System Stormwater Permits* (Draft). June 2011. <http://www.mde.state.md.us/programs/Water/StormwaterManagement Program/Documents/NPDES%20Draft%20Guidance%206_14.pdf>. Accessed February 21, 2013.

MDE. 2011c. *Annual Enforcement and Compliance Report.* p. 108. Maryland Department of the Environment, Baltimore, Maryland. <http://www.mde.state.md.us/aboutmde/DepartmentalReports/Pages/fy11_enforcementcompliancereport.aspx.> Accessed February 5, 2013.

MDE. 2011d. *Model Standard Plan for Poultry House Site Development on Maryland's Eastern Shore.* Maryland Department of the Environment, Baltimore, Maryland. <http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/Documents/Poultry%20House%20Standard%20Plan%20March%202011%20Final.pdf>. Accessed February 21, 2013.

MDE. 2012a. "Erosion and Sediment Control in Maryland." MDE Web site. <http://www.mde.maryland.gov/programs/Water/StormwaterManagementProgram/SoilErosionandSedimentControl/Pages/Programs/WaterPrograms/SedimentandStormwater/erosionsedimentcontrol/index.aspx.> Accessed October 9, 2012.

MDE. 2012b. "Erosion and Sediment Control Plan Approval Authorities." MDE Web site. <http://www.mde.state.md.us/programs/Permits/WaterManagementPermits/WaterDischargePermitApplications/Pages/ListofApprovalAuthorityContacts.aspx>. Accessed February 7, 2013.

MDE. 2012c. *Inspection, Enforcement and Penalty Procedures for the Compliance Program in the Water Management Administration*. Maryland Department of the Environment, Baltimore, Maryland.

MDE. 2012d. *Maryland Model Erosion and Sediment Control Ordinance*. Maryland Department of the Environment, Baltimore, Maryland.

MDE. 2012e. "Summary of WMA Inspection Totals: Inspected from 07/01/2011 thru 06/30/2012" as of 09/18/2012 (one page spreadsheet provided via email). Maryland Department of the Environment, Water Management Administration, Baltimore, Maryland.

MGA (Maryland General Assembly). November 2011. *Audit Report: Department of the Environment*. Maryland General Assembly, Department of Legislative Services, Office of Legislative Audits, Baltimore, Maryland.

USEPA (U.S. Environmental Protection Agency). 2008. *Stormwater Management including Discharges from Developed Sites: NPDES Permitting Authority Questionnaire.* Survey ID NPDE89210. U.S. Environmental Protection Agency, Washington, D.C.

USEPA. 2012. "The Integrated Compliance Information System (ICIS)." ICIS homepage. <http://www.epa. gov/compliance/ data/systems/icis/>. Last updated October 12, 2012. Accessed October 16, 2012.