

## APPENDIX 1

### MARYLAND DEPARTMENT OF THE ENVIRONMENT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM MUNICIPAL SEPARATE STORM SEWER SYSTEM DISCHARGE PERMIT APPLICATION SUMMARY

#### FREDERICK COUNTY

##### PART I. STATEMENT OF AUTHORITY

###### A. United States Environmental Protection Agency

Section 402 of the Clean Water Act (CWA) prohibits the discharge of any pollutant to waters of the United States from a point source, unless that discharge is authorized by a National Pollutant Discharge Elimination System (NPDES) permit. Under the provisions of the NPDES regulations, stormwater discharges from municipal separate storm sewer systems are considered point sources that require an NPDES permit.

###### B. State of Maryland

The Maryland Department of the Environment (MDE) has been granted authority by the United States Environmental Protection Agency (EPA) to issue NPDES permits in accordance with statutory requirements promulgated by the CWA. The Environment Article, Title 9, Subtitle 3, Part IV, Annotated Code of Maryland requires a discharge permit for any activity that could cause or increase the discharge of pollutants into waters of the State. Additionally, Code of Maryland Regulations (COMAR) 26.08.04 requires MDE to administer the NPDES program as part of the State's own discharge permit system. These regulations also define municipal separate storm sewer systems as point sources of pollution subject to NPDES permit requirements.

###### C. Permittee Responsibilities

Section 402(p) of the CWA, as amended by the Water Quality Act of 1987, requires NPDES permits for stormwater discharges from medium municipal separate storm sewer systems. A medium municipal separate storm sewer system is defined in the CWA as serving a population of 100,000 or more but less than 250,000. Frederick County, according to the United States Department of Commerce's 1990 Census, had a total population of 92,123. Based on data supplied by the Maryland Office of Planning (MdOP), the unincorporated population of Frederick County was expected to exceed 100,000 in 1994. As a result, the County was required to submit a two-part NPDES permit application. Frederick County submitted an NPDES stormwater application that was prepared to satisfy the EPA's regulations for permitting stormwater discharges from municipal separate storm sewer systems. Appendix 1 summarizes the County's NPDES stormwater application. NPDES regulations require permit conditions that effectively prohibit non-stormwater discharges and reduce the discharge of pollutants to the "maximum extent practicable." Specific permit conditions are summarized in Permit #MS-FR-95-009 and Appendix 2. Appendix 3 outlines MDE's long-term monitoring database and a spreadsheet for the reporting and tracking of NPDES data is included as Appendix 4. Additionally, NPDES regulatory requirements can be found in Appendix 5.

## **PART II. BACKGROUND**

### **A. Problems Associated with Stormwater Pollutants**

Pollutants in stormwater discharges from many sources are largely uncontrolled. The *National Water Quality Inventory, 1990 Report to Congress* provides a general assessment of water quality based on biennial reports submitted by the States under Section 305(b) of the CWA. This report indicates that roughly 30% of identified cases of water quality impairment are attributable to stormwater discharges. During rain events that produce runoff, numerous pollutants including sediment, nutrients, bacteria, oil, metals, and pesticides are washed into storm sewer systems from diffuse sources such as construction sites, residential neighborhoods, commercial areas, parking lots, roads, and industrial facilities. Additionally, illegal dumping, sanitary sewer system leaks, and illicit connections to storm sewer systems can be significant sources of pollutants. Some of the more serious effects to receiving waters are the contamination of drinking water supplies, restrictions on water contact recreation, loss of wildlife habitat, decreases in the number and variety of aquatic organisms, and fish kills.

### **B. History of NPDES Stormwater Program**

Efforts to improve water quality under the NPDES program have traditionally focused on reducing pollutants in point source discharges from industrial facilities and municipal sewage treatment plants. In response to the need for controlling stormwater discharges, Congress amended the CWA in 1987 requiring the EPA to establish NPDES requirements for stormwater discharges. In November 1990, EPA issued final stormwater regulations for eleven categories of industry and certain municipal separate storm sewer systems. As part of the municipal stormwater program, jurisdictions in Maryland operating medium municipal storm sewer systems must submit a two-part application to MDE outlining programs for monitoring and controlling stormwater discharges. Required information includes Legal Authority, Source Identification, Discharge Characterization, Management Programs, Assessment of Controls, and Fiscal Resources.

### **C. Maryland's Perspective**

Maryland's efforts to reduce stormwater pollution have focused on protecting and restoring the water quality of Chesapeake Bay. The Maryland General Assembly passed the Erosion and Sediment Control Law in 1970 to control runoff from construction sites and in 1982 passed the Stormwater Management Act which requires that appropriate Best Management Practices (BMP) be used in order to maintain after development, as nearly as possible, the pre-development runoff conditions. Additionally, the Chesapeake Bay Program, a cooperative effort among the major Bay states and the federal government, has elevated the importance of stormwater management programs in Maryland by establishing a 40% nutrient reduction goal to the Chesapeake Bay and, more recently, by focusing cleanup efforts on the Bay's tributaries. Although Maryland's existing programs will aid local jurisdictions in satisfying NPDES stormwater requirements, additional stormwater control measures will be needed for full compliance with the federal program.

## **PART III. APPLICATION SUMMARY**

### **A. Jurisdiction Description**

#### **1. Physical Data**

Frederick County is located in the northwestern part of Maryland and encompasses approximately 664 square miles (424,960 acres), excluding the water surface of the Potomac River. The Potomac River forms a boundary between the State of Virginia and Frederick County. Politically, this segment of the Potomac River is a part of Frederick County. The southernmost point in Frederick County is at the confluence of the Monocacy and Potomac Rivers with the Potomac also forming the County's southwestern boundary. The western boundary is Washington County while the Mason and Dixon Line and Adams County, Pennsylvania forms the northern boundary. Frederick County is bounded on the east by Carroll County and the southeast by Montgomery County. Frederick County lies within two of the three geologic provinces located in Maryland, the Appalachian Province and the Piedmont Province.

According to the 1990 Census, Frederick County has an estimated population of 92,123. The Maryland Office of Planning (MdOP) estimates an annual growth rate between 1990-2000 of 2.10% which results in a projected population of 102,210 within the next 5 years. The County is rapidly becoming urbanized in the central area surrounding the City of Frederick, the southeastern area west of Mt. Airy, and the southwestern Brunswick-Rosemont-Knoxville area. For the most part, the County is underdeveloped with extensive rural and agricultural (approximately 66% of total land) areas remaining throughout. Existing urbanized areas consist of older communities, however, there are many fast growing suburban residential and commercial areas. There are 12 separate incorporated municipalities within Frederick County. The County has authority over the storm drain systems found in these localities except in the Town of Mt. Airy and the City of Frederick.

#### **2. Hydrologic Information**

Frederick County's stream network is part of the Upper Potomac drainage basin (Middle Potomac River Sub-basin) and can be divided into two major watersheds, the Catoctin Creek and Monocacy River watersheds. Hydrologically, approximately 99.9% of the County drains southerly to the Potomac River, with the remaining 0.1% draining southeastward to the Patapsco/Back River and Patuxent watersheds. The western area of Frederick County is located in the physiographic region known as the Appalachian Province and can be best described as mountainous, heavily rolling terrain, with deep and restricted fast-flowing streams. The eastern area of the County is in the Piedmont Province and is characterized by gently rolling terrain with slow-flowing streams. Generally, elevation in Frederick County ranges from less than 400 feet to more than 1600 feet above sea level.

According to the *Soil Survey, Frederick County, Maryland (United States Department of Agriculture, September 1960)*, the climate in Frederick County is "continental marked by temperate contrasts between short, warm, and humid summers and rigorous but not severe winters." Weather systems move predominantly from the west to the east. Average annual precipitation, based on mean monthly precipitation, is 41 inches. Extremes of less than 20 inches to more than 53 inches have occurred. For the most part, precipitation is distributed evenly throughout the year and there are approximately 76 days with 0.1 inch or more of precipitation. The average annual snowfall is 21 inches but varies considerably from year to year.

Frederick County has a history of occasional flooding. Most flooding events have occurred during late summer or early fall and are associated with tropical storms, hurricanes, and locally-intense thunderstorms. Major areas susceptible to flooding include portions of the City of Frederick along Carroll Creek and portions of the Brunswick and Knoxville communities along the Potomac River. Maryland Geological Survey estimates that approximately 38% of the total rainfall in the Catoctin Creek watershed results in runoff. The steep topographic features of the watershed and rate of runoff contribute to rapid flows and flooding conditions. The largest peak discharge on record for Catoctin Creek at the Middletown gaging station (55% of watershed drainage area) occurred on October 9, 1972. This flow crested 14.13 feet above the gage altitude of 385 feet. The greatest rise on Catoctin Creek (18 feet) was observed in 1885 below the Route 340 bridge at Jefferson (92% of watershed drainage area). Approximately 45% of the total rainfall in the Monacacy River watershed results in runoff. The highest peak discharge on record for the Monacacy at the Jug Bridge station occurred on June 23, 1972 with a stage height of 35.9 feet. The highest flow on record for the Potomac River at Point of Rocks was recorded in 1936 with a gage height of 41.03 feet.

MDE's *Maryland Water Quality Inventory, 1991-1993* describes the surface water quality in Frederick County as "fair to good" with fishing, water contact sports, and public water supply as acceptable uses. However, elevated suspended sediments, bacterial, and nutrient levels occur due to agricultural, municipal, and urban runoff.

Waters of special interest include the Monacacy and Potomac Rivers. Both have been designated as State Scenic Rivers by the Maryland General Assembly. This designation is designed to preserve and protect the natural values of these waters. However, the Monocacy River only partially supports its designated uses due to water quality problems associated with agricultural runoff and has been listed as impacted by nonpoint source pollution in MDE's 1989 *Nonpoint Source Assessment Report*. Additionally, the Potomac River (Shenandoah to Monacacy River) has been included in MDE's 304(l)(1)(a)(ii) list of waters impaired by toxic substances from point or nonpoint sources of pollution. Water quality impacts due to agricultural and waste disposal activities have been noted in the Catoctin Creek watershed. Periodically, water temperatures have exceeded standards for recreational trout in the lower segments of Catoctin Creek.

Hunting Creek Lake was listed as threatened in the *Maryland Water Quality Inventory, 1991-1993*. Nutrient enrichment is the source of Hunting Creek Lake's water quality problems. Additionally, high bacterial levels from agricultural runoff and suburban development have resulted in periodic swimming restrictions at Lake Linganore.

## **B. Programmatic Components**

The NPDES stormwater permit application process for municipal separate storm sewer systems is specified in 40 CFR 122.26(d). The two-part application process was devised to provide a basis for reducing and eliminating pollutants in stormwater discharges from medium municipal separate storm sewer systems. Part 1 of the application process requires applicants to submit information regarding existing programs and legal authority, identify sources of pollutants, field screen major outfalls to detect illicit connections, and propose strategies to characterize discharges. The Part 2 application process requires the demonstration of adequate legal authority, additional information on pollutant source identification, characterization of stormwater discharges, a proposed stormwater management program, an estimate of the effectiveness of stormwater controls, and a fiscal analysis. The following sections (1 through 6) provide a summary of Frederick County's application.

## **1. Legal Authority**

A summary of Frederick County's NPDES stormwater application submittal, specific to the regulatory requirements for adequate legal authority, is as follows:

*§122.26(d)(2)(I) "(A) Control...the contribution of pollutants...associated with industrial activity...;"*

Pursuant to the Environment Article, Title 4, Annotated Code of Maryland, Frederick County has adopted ordinances necessary to implement a stormwater management program. Additionally, the County has been delegated erosion and sediment control enforcement authority since 1985. Compliance with the requirements in the County Code, Chapter 1-10 (Grading, Erosion, and Sediment Control) and Chapter 1-15.2 (Stormwater Management) should adequately control the quantity and quality of stormwater that is discharged to Frederick County's municipal separate storm sewer system from construction activities and development. In its NPDES stormwater application, the County reported that it is amending its Stormwater Ordinance to include requirements for stormwater quality permits. These permits will be required for new development, existing industrial facilities, and other activities that may contribute to erosion and sedimentation, pollution (including nonpoint sources), or the degradation of aquatic and riparian habitat.

*§122.26(d)(2)(I) "(B) Prohibit...illicit discharges...;"*

Frederick County's Industrial Waste ordinance includes requirements for pretreatment of industrial discharges to its wastewater collection system. Section 5.0 of the Industrial Waste Ordinance sets specific requirements and penalties for any industrial discharge bypass of the County's wastewater system. Additionally, the County's Plumbing Code regulates all plumbing work including connections to public systems.

*§122.26(d)(2)(I) "(C) Control...spills, dumping or disposal of materials other than storm water;"*

Spill prevention is addressed, in part, by the County's Industrial Waste Program that requires industrial operations to provide certification regarding the presence of chemicals and the potential for discharge to the wastewater collection system or surface waters. Under Section 1-11-5 of the Frederick County Code, the County Health Officer can order the removal of nuisances such as contaminated water, garbage, and rubbish. Similarly, Section 1-11-27 makes it unlawful to dispose of garbage or other refuse anywhere other than at a County approved dump or landfill. Section 1-11-30 defines hazardous and prohibited waste and makes it unlawful to dispose of these materials in any normal refuse facility.

Amendments to the County's Stormwater Ordinance will also specifically prohibit discharge of waters containing toxic material or any substance which will result in the pollution of waters within the County.

*§122.26(d)(2)(I) "(D) Control...pollutants from one portion of the municipal system to another portion of the municipal system;"*

As stated above, the County has authority over all storm drain systems except those located in the Town of Mt. Airy and the City of Frederick. However, the County has authority to enter into

agreements with these municipalities. For example, the County could draft an agreement with the City of Frederick that would allow for identification of storm drain outfalls within the City's jurisdiction.

MDE will issue an NPDES general permit that will cover the stormwater discharges from the separate incorporated municipalities in Frederick County. Permit conditions will define specific municipal roles, responsibilities, and points of coordination that will control the contribution of pollutants from one portion of the storm sewer system to another. In addition, MDE will issue an NPDES general permit for State (other than the State Highway Administration) and an NPDES general permit for federal facilities located in Frederick County. Three of Frederick County's neighboring jurisdictions (Carroll, Howard, and Montgomery Counties) and the State Highway Administration (SHA) are required to apply to MDE for separate NPDES discharge permits for their respective storm sewer systems. Special permit conditions will be used to address inter-jurisdictional issues.

*§122.26(d)(2)(I) "(E) Require compliance..."*

Enforcement authority exists for the County's erosion and sediment control, stormwater management, pretreatment, and various other programs. Enforcement actions such as violation notices and civil citations may be utilized to promote compliance with associated regulations.

*§122.26(d)(2)(I) "(F) Carry out all inspection, surveillance, and monitoring procedures..."*

Frederick County has inspection authority for construction and maintenance of its municipal separate storm sewer system. Existing regulations include provisions for inspection and enforcement to control illicit discharges.

## **Summary**

Frederick County needs to complete the necessary revisions to the County Code that will provide it with the authority to perform the activities described in 40 CFR 122.26(d)(2)(I). Additionally, certification that Frederick County possesses adequate legal authority according to 40 CFR 122.26(d)(2)(I) needs to be provided by the County Attorney.

## **2. Source Identification**

A summary of Frederick County's NPDES stormwater application submittal, specific to the regulatory requirements for source identification, is as follows:

*§122.26(d)(1)(iii) "(A) A description of the historic use of ordinances..."*

In Frederick County, the DPW has authority over the sanitary sewer system and uses its Industrial Waste Ordinance No. 92-12-047 to control the discharge of pollutants to publicly owned treatment works. This ordinance requires industrial dischargers to adhere to EPA pretreatment standards and establishes the County's authority to enforce and initiate penalties in cases of violation. Frederick County has enforced its industrial waste regulations to prevent the introduction of pollutants that will interfere with the operation of the sewer system; contaminate waste sewage sludge; pass through the sewer system into receiving waters; or adversely affect the public health, safety, and welfare.

*§122.26(d)(1)(iii) "(B) A USGS 7.5 minute topographic map..."*

Frederick County submitted USGS 7.5 minute topographic maps that included major outfall locations and associated identification numbers. The identified outfalls constitute the discharge points of structural stormwater management facilities. NPDES industrial dischargers were also located on USGS topographic maps. The County has completed the mapping requirements specified in the NPDES regulations.

*§122.26(d)(1)(iii)(B) "(1) The location of known municipal storm sewer system outfalls..."*

Two-hundred fifty-one (251) major outfalls were identified by Frederick County on USGS topographic maps. Additionally, the County listed each outfall by watershed and included information regarding outfall number for identification purposes, drainage area, runoff curve number, and time of concentration. Facility type and ownership were submitted in tabular format.

*§122.26(d)(1)(iii)(B) "(2) A description of the land use activities...population densities...average runoff coefficient..."*

Land use was submitted on a 1992 Generalized Zoning Map at a scale of 1:48,000. Agriculture accounts for approximately 66% of the existing (1991) land use in Frederick County. Historic and projected population estimates were computed and listed for the County by watershed. Population density computations were also submitted. Additionally, runoff coefficients for each land use within the County were submitted. Runoff coefficient estimates were obtained by using specific hydrologic soil groups and land uses for each major outfall.

*§122.26(d)(1)(iii)(B) "(3) The location...of each currently operating or closed municipal landfill..."*

Frederick County submitted information on the location and a description of the Reich's Ford Landfill which is the only landfill owned and operated by the County that currently accepts refuse. The County also operates 13 recyclable drop-off sites. Municipal facilities include a rubble fill site that is operated by the City of Frederick. The Towns of Rosemont and Brunswick previously operated a landfill. However, the landfill is no longer in operation. Additionally, Fort Detrick Army Post operates a landfill for its military and civilian personnel and the EASTALCO plant operates a landfill for the disposal of potliner brick and other wastes associated with its manufacturing process. There are also three incinerators within Frederick County. The incinerators accept specialized materials such as medical and institutional waste and dead animals.

*§122.26(d)(1)(iii)(B) "(4) The location and permit number of any known discharge...that has been issued a NPDES permit;"*

Frederick County obtained information on existing NPDES stormwater permits from MDE. Five (5) sites were identified and a database containing information on facility name, permit number, and location was submitted.

*§122.26(d)(1)(iii)(B) "(5) The location of major structural controls..."*

Frederick County submitted a database describing major structural stormwater management

controls including information on structure name, structure type, outfall size, drainage area, location, and NPDES map sheet number.

*§122.26(d)(1)(iii)(B) "(6) The identification of publicly owned parks..."*

Frederick County identified all publicly owned parks, recreation facilities, and open lands.

*§122.26(d)(2) "(ii)...an inventory, organized by watershed...of each facility associated with industrial activity..."*

Frederick County submitted an inventory of 74 industrial facilities including information on company name, address, and phone number. Information regarding a description of principal activity or service was not included. The County will identify industrial discharges from information obtained in its proposed mandatory Industrial Waste Survey.

### **Summary**

Frederick County has collected the data necessary to satisfy the source identification requirements. As new source identification data become available, the County will need to update its information systems. Permit conditions will require the continued updating of the County's information systems to assist the County in establishing priorities to control nonpoint source pollutants discharged from its storm sewer system.

### **3. Discharge Characterization**

A summary of Frederick County's NPDES stormwater application submittal, specific to the regulatory requirements for discharge characterization, is as follows:

*§122.26(d)(1)(iv) "(A) Monthly mean rain and snow fall estimates..."*

Frederick County submitted precipitation data that were compiled locally between 1925 and 1970. These data include total monthly and annual precipitation. Additionally, a climatological summary of means and extremes for temperature and precipitation based on records from 1893-1970 was submitted. The average mean rainfall is 40.81 inches while snowfall is 21.3 inches. Precipitation exceeds 0.01 inches on an average of 76 days each year.

*§122.26(d)(1)(iv) "(B) Existing quantitative data..."*

Frederick County reported that it has never performed any quantitative monitoring of discharges from its storm sewer system. However, according to the *Maryland Water Quality Inventory, 1991-1993*, MDE routinely monitors water quality at four CORE and five other long-term monitoring stations in the Middle Potomac River Sub-basin. Additionally, bioassessment surveys are conducted at 34 sites located throughout the watershed.

*§122.26(d)(1)(iv) "(C) A list of water bodies that receive discharges..."*

In its Part 1 application, Frederick County provided a description of waters that receive discharges from its storm sewer system.

*§122.26(d)(1)(iv) "(D) Results of a field screening analysis for illicit connections..."*

Using LaMotte Test Kits, the County completed field screening at 251 outfalls. Twenty-one (21) of the 247 outfalls that were identified on MDE's field screening database exhibited dry weather flow. An analysis of the collected data indicated that copper, phenol, and detergents were prevalent while chlorine was occasionally detected.

*§122.26(d)(1)(iv) "(E)...the location of outfalls or field screening points appropriate for representative data collection..."*

In its proposed characterization plan, Frederick County selected five major outfalls to be used for Part 2 stormwater monitoring purposes. All of the proposed outfalls were reviewed by MDE for potential problems. While some were discovered to be influenced by backwater making sample collection difficult, others did not represent homogeneous land use. As a result, alternative outfalls were selected and the County's characterization plan was subsequently approved. The five approved outfalls included three draining predominately residential land uses and two draining predominantly light industrial land use.

*§122.26(d)(2)(iii) "(A) Quantitative data from...between five and ten outfalls representative of commercial, industrial, and residential..."*

Frederick County is required to monitor three storm events at five land use specific outfalls for a total of 15 samples. The County has completed monitoring of two storms at three outfalls for a total of six samples. Frederick County will need to submit storm event monitoring data and analysis upon obtaining the remaining nine samples.

*§122.26(d)(2)(iii) "(B) Estimates of annual pollutant loads...and the event mean concentration..."*

Pollutant load estimates were calculated using Schueler's "Simple Method". Rather than using the limited results from its Part 2 monitoring, Frederick County used default values for event mean concentration calculations. Use of the "Simple Method", in addition to default values, is acceptable until more comprehensive data are collected. As additional data become available, the County will need to provide more accurate pollutant load estimates.

*§122.26(d)(2)(iii) "(C) A proposed schedule to provide estimates...of the seasonal pollutant load..."*

The County stated it will initially use the "Simple Method" to estimate pollutant loads. Annual and seasonal pollutant loads will be calculated and refined as additional water quality data are collected from the remaining Part 2 storm events and during the permit term. Seasonal pollutant loads will be estimated as additional monitoring data are collected.

*§122.26(d)(2)(iii) "(D) A proposed monitoring program...for the term of the permit..."*

For its long-term monitoring program, the County proposed to monitor three outfall sites and one in-stream monitoring station. Stormwater runoff representative of residential and industrial land use will be monitored at the proposed outfalls. The residential sites and the in-stream station that were selected are outfalls of stormwater management facilities. The County did not specify whether the sampling will occur above or below these facilities. Additionally, all proposed sampling locations are in different watersheds and only three storm events per year are proposed to be sampled at the outfalls.

The County has also proposed to conduct sampling at all stormwater management facilities during maintenance inspections that occur once every three years. LaMotte test kits will be used for analysis of the basic parameters sampled during the County's Part 1 dry-weather screening efforts and grab samples will be analyzed for total coliform.

### **Summary**

Frederick County needs to complete its Part 2 monitoring requirements for characterizing the discharges from its five outfalls representing residential and industrial land uses. It is unlikely, that the sampling of stormwater management facility outfalls will provide representative data that are needed to establish baseline water quality conditions and to assess the effectiveness of management program implementation for specific land uses. Additionally, all Maryland NPDES localities are meeting to evaluate the current monitoring program and to make suggestions for improving existing chemical testing requirements. Therefore, WMA will continue to work with the County to develop an acceptable approach to sampling. Based upon the outcome from the above meetings, annual and seasonal pollutant load estimates, using data collected as a result of the long-term monitoring, will need to be computed.

### **4. Management Programs**

A summary of Frederick County's NPDES stormwater application submittal, specific to the regulatory requirements for management programs, is as follows:

*§122.26(d)(2)(iv) "(A) A description of structural and source control measures..."*

In addition to existing programs such as erosion and sediment control, stormwater management, and structural and source control, emphasis will be placed on public education and implementation of an illicit connection detection program.

*§122.26(d)(2)(iv) "(A)(1) A description of maintenance activities...for structural controls...;"*

The County reported that it inspects all stormwater management facilities after the first year of operation, conducts maintenance inspections at least once every 3 years thereafter, and requires any necessary corrective action. Information submitted in its NPDES municipal separate storm sewer system permit application indicates that Frederick County possesses adequate inspection and enforcement procedures to ensure maintenance of stormwater management facilities.

*§122.26(d)(2)(iv)(A) "(2) A description of planning procedures...to reduce...pollutants...from areas of new development and significant redevelopment...;"*

Frederick County has an extensive planning and development review process that addresses the reduction of pollutant discharges from areas of new development. The County's existing stormwater management program requires pre-development discharge levels to be maintained after development. The proposed revisions to the County Code should ensure that present deficiencies regarding the lack of stormwater quality control requirements for residential development and significant redevelopment will be addressed. As part of the planning process, projects must meet the County's zoning code, subdivision regulations, road specifications, Health Department regulations, stormwater management regulations, etc.

Various environmental requirements are encompassed in the County's development review process. Compliance with programs that minimize the impacts to wetlands, require tree preservation, etc. is required in order to obtain project approval and permits. Upon receiving technical approval of a stormwater management plan, fees and performance bonds must be submitted in order to receive applicable permits.

*§122.26(d)(2)(iv)(A) "(3) A description of practices for operating and maintaining public streets...;"*

Frederick County's Bureau of Highways is responsible for road maintenance activities. The County did not describe any preventative practices to reduce nonpoint source pollutants. Salt used for deicing roads was reported to be stockpiled and covered with tarps at a central and district-wide locations. Sand and cinders are typically mixed with the salt to reduce the total tonnage used.

*§122.26(d)(2)(iv)(A) "(4) A description of procedures to assure that flood management projects assess the impacts on the water quality...;"*

The Federal Emergency Management Agency (FEMA) and Maryland Department of Natural Resources (DNR) require the County to have a comprehensive flood management plan. Proposed flood management projects are evaluated for their water quality and wetland impacts and are subject to a review process that includes environmental impact assessments. State water quality certification and waterway construction permits are required prior to flood control project construction. Additionally, the County has proposed to develop and administer a stormwater management facility retrofit program.

*§122.26(d)(2)(iv)(A) "(5) A description of a program to monitor pollutants from operating or closed municipal landfills...;"*

The Reich's Ford Landfill is Frederick County's only active municipal landfill and the facility has stormwater management controls implemented in accordance with landfill permits issued by MDE's Waste Management Administration (WAS). Landfills are also subject to the County's erosion and sediment control and stormwater management plan review processes and implementation requirements. The County's application did not include information regarding monitoring of pollutants at the landfill.

*§122.26(d)(2)(iv)(A) "(6) A description of a program to reduce...pollutants...associated with the application of pesticides...;"*

The Maryland Department of Agriculture's (MDA) Pesticide Application Law requires certification and licensing of pesticide applicators. The County presently does not have any programs that specifically address the responsible use of fertilizers or herbicides but proposes to initiate an outreach program to educate the public regarding the proper use of these potential pollutants. Educational programs will be implemented through the development and dissemination of pamphlets and public displays.

*§122.26(d)(2)(iv) "(B) A description of a program...to detect and remove...illicit discharges...The program shall include:"*

*§122.26(d)(2)(iv)(B) "(1) A description of a program...to prevent illicit discharges...;"*

The County proposes to field screen outfalls receiving industrial land use discharges in each watershed at least once every three years.

*§122.26(d)(2)(iv)(B) "(2) A description of...on-going field screening activities...;"*

As part of its program to prevent illicit discharges, Frederick County proposes to conduct field screening of outfalls in each watershed at least once every three years in conjunction with stormwater management facility maintenance inspections.

*§122.26(d)(2)(iv)(B) "(3) A description of procedures...to investigate portions of the separate storm sewer system...;"*

The County submitted a detailed outline of procedures for identifying illicit connections and discharges. Chemical testing, as well as visual and olfactory observation will be utilized as investigative measures. The County is also considering the use of biological assessments as part of its long-term monitoring and illicit connection detection programs.

*§122.26(d)(2)(iv)(B) "(4) A description of procedures to prevent, contain, and respond to spills...;"*

Frederick County reported that it does not have any departments that are directly responsible for the response and containment of spills. However, the County does have an agreement with Montgomery County for the use of its HAZMAT teams and their local fire departments for response to spills. Frederick County's Fire Marshall or the DPW are the contact and liaison agencies for coordination of response efforts. Spill prevention, in part, will be addressed by the development of pollution prevention plans by industrial facilities.

*§122.26(d)(2)(iv)(B) "(5) A description of a program to promote...public reporting of...illicit discharges...;"*

As part of its public outreach program, the County will utilize a variety of media that will include general water quality information. The County's application did not indicate that promoting public reporting of illicit discharges as a component of its outreach efforts.

*§122.26(d)(2)(iv)(B) "(6) A description of educational activities...;"*

The County proposes to initiate a public outreach program as discussed above. In addition, the County will disseminate information to the public regarding the proper management of used oil, used antifreeze, toxics, and hazardous materials. The County's application did not include incorporation of environmental education into its Public School System curriculum.

*§122.26(d)(2)(iv)(B) "(7) A description of controls to limit infiltration of seepage...;"*

Frederick County reported that it presently does not have a preventative maintenance inspection program. An underground camera has been acquired to facilitate inspection. However, policies and procedures for its use have not been developed.

*§122.26(d)(2)(iv) "(C) A description of a program to monitor and control pollutants...from*

*municipal landfills...The program shall:"*

*§122.26(d)(2)(iv)(C) "(1) Identify priorities and procedures for inspections...;"*

Frederick County will identify potential industrial dischargers and require the development of pollution prevention plans. Although permit issuance, inspection, enforcement, and monitoring will remain MDE's responsibility, nothing should preclude Frederick County from bringing an enforcement action against a source of pollution from either an illicit connection or an industrial activity. Therefore, the County will need to coordinate efforts with MDE to assure that unpermitted non-stormwater dischargers acquire permits.

*§122.26(d)(2)(iv)(C) "(2) Describe a monitoring program...."*

The County proposed to monitor stormwater discharges from industrial facilities through implementation of its illicit connection detection program, triennial monitoring of outfalls, and investigation of biological monitoring. Again, the County will need to coordinate efforts with MDE to assure that industrial facilities are in compliance with stormwater discharge permit requirements.

*§122.26(d)(2)(iv) "(D) A description of a program to implement and maintain structural and non-structural best management practices to reduce pollutants in storm water runoff from construction sites...which shall include:"*

*§122.26(d)(2)(iv)(D) "(1) A description of procedures for site planning...;"*

MDE has delegated erosion and sediment control enforcement authority to Frederick County since 1985. The Department of Public Works (DPW) performs erosion and sediment control inspections. Erosion and sediment control plan review and approval is performed by the Frederick Soil Conservation District (SCD). As stated above, Frederick County has proposed to amend its Stormwater Ordinance to include requirements for stormwater quality permits. These permits will be required for new development, existing industrial facilities, and other activities that may contribute to erosion and sedimentation.

*§122.26(d)(2)(iv)(D) "(2) A description of requirements for non-structural and structural best management practices;"*

Erosion and sediment control plan approval is required prior to initiating any earth disturbance greater than 5,000 square feet or 100 cubic yards. As stated in the Legal Authority Section, Frederick County has adopted ordinances necessary to implement a stormwater management program. Compliance with the regulations contained in the County's proposed Stormwater Ordinance should adequately control the quantity and quality of stormwater that is discharged to Frederick County's municipal separate storm sewer system from construction activities.

*§122.26(d)(2)(iv)(D) "(3) A description of procedures for inspecting sites...;"*

Erosion and sediment control inspections are performed at construction sites once every two weeks as required by State law to ensure compliance with approved erosion and sediment control plans. A description of inspection procedures is contained in MDE's December 1994 review of the County's erosion and sediment control program.

*§122.26(d)(2)(iv)(D) "(4) A description of appropriate educational and training measures for construction site operators."*

Maryland law requires persons in charge of on-site clearing and grading operations or sediment control to obtain "responsible personnel" certification by completing an approved training class. Frederick County did not submit any proposed program for conducting "responsible personnel" certification classes to educate construction site operators regarding erosion and sediment control requirements.

### **Summary**

Comprehensive management programs for erosion and sediment control and stormwater management currently exist in Frederick County. Emphasis will be placed on public education and implementation of an illicit connection detection program. Additionally, the County will need to coordinate industrial permitting and monitoring efforts with MDE and initiate procedures to limit infiltration of seepage from sewer lines to its storm sewer system.

### **5. Program Funding**

A summary of Frederick County's NPDES application submittal, specific to the regulatory requirements for program funding, is as follows:

*§122.26(d)(2) "(vi) For each fiscal year to be covered by the permit, a fiscal analysis...shall include a description of the source of funds...to meet the necessary expenditures..."*

The County reported that its primary source of revenue to support its NPDES stormwater program originates from general funds that include both property and income taxes. A five-year summary indicates that approximately \$895,000 will be needed to implement the education, illicit connection detection, and ambient station sampling components of the County's program. Financial details were not provided for other program components such as Geographic Information System (GIS) development.

### **Summary**

The County needs to provide estimates of the associated costs needed to implement all components of its stormwater program and should indicate their source(s) of funding.

### **6. Assessment of Controls**

A summary of Frederick County's NPDES application submittal, specific to the regulatory requirements for assessment of controls, is as follows:

*§122.26(d)(2) "(v) Estimated reductions in loadings...expected as a result of the... management program..."*

The County computed reductions in annual pollutant loads for each stormwater management facility. Pollutant removal efficiency of structural controls was based on information provided in the U.S. Environmental Protection Agency's (EPA) "Guidance Manual for the Preparation of

Part 2 of the NPDES Permit Application for Discharges from Municipal Separate Storm Sewer

Systems." The County did not provide a description of methods it would use to assess pollutant load reductions from the implementation of nonstructural controls.

**Summary**

Frederick County needs to provide WMA with estimates of the effectiveness of nonstructural controls and for each of its proposed water quality management programs. Additionally, estimates of reductions for structural controls will need to be refined as data is obtained from the County's long-term monitoring program.