

APPENDIX 1

MARYLAND DEPARTMENT OF THE ENVIRONMENT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM MUNICIPAL SEPARATE STORM SEWER SYSTEM DISCHARGE PERMIT APPLICATION SUMMARY

CHARLES 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 between 100,000 and 250,000. Charles County, according to the United States Department of Commerce's 1990 Census, has a total population of 113,661 and is therefore considered a medium municipality. As a result, the County was required to submit a two-part NPDES permit application. Charles County has submitted an NPDES stormwater application prepared to satisfy the EPA's regulations for permitting stormwater discharges from municipal separate storm sewer systems. 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-CH-96-010 and in Appendix 2. Appendix 3 outlines MDE's long-term monitoring database. 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. The 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 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 each 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 requiring that appropriate Best Management Practices (BMP) be used to maintain after development, as nearly as possible, the pre-development runoff conditions. Additionally, the Chesapeake Bay Program, a cooperative effort between 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

Charles County is located in the south-central portion of Maryland. It is bordered to the north by Prince George's County, to the east by Calvert and St. Mary's Counties, and to the west and south by the Potomac River. According to the *Soil Survey of Charles County, Maryland (United States Department of Agriculture, 1973)*, the County's total land area encompasses approximately 420.7 square miles (269,248 acres).

According to the 1990 Census, Charles County has a population of 113,661. The core of existing and new development is located in the Charles County Development District. Development in this area is concentrated along the Route 301 and Route 5 corridors in the northwest section of the County. Residential development, resulting from the expanding Washington, D.C. suburbs, surrounds the Route 301 corridor and includes some areas of industrial land use. Management programs and activities outlined in this permit will concentrate primarily on the County's Development District because of the accelerated growth that has taken place there in the last ten years.

2. Hydrologic Information

Charles County lies entirely within the Atlantic Coastal Plain province. The western boundary of the County is six to eight miles east of the edge of the Piedmont province in the Commonwealth of Virginia. Approximately two-thirds of the County is 100 feet or more above sea level with the maximum elevation being 240 feet near Waldorf. The County's climate is continental with well-defined seasons. However, the Chesapeake Bay and the Potomac River have a modifying influence on the climate thus minimizing extreme heat or cold. The warmest period of the year is the last half of July when the afternoon maximum temperature averages 89 degrees. Temperatures of 90 degrees or higher occur on the average of 34 days per year. The coldest period is the last part of January and the beginning of February when the early morning temperature averages 21 degrees. The number of days when the daily minimum temperature is 32 degrees or lower is 100. The average annual precipitation is 47 inches with monthly distribution being uniform throughout the year. July and August are the wettest months and February and November the driest. Precipitation in the colder months is mainly the result of low-pressure systems moving north or northeast along the Atlantic Coast. Summer precipitation occurs primarily as showers and thunderstorms. The average annual snowfall is 18 inches.

Charles County is located between the Potomac and Patuxent Rivers and the entire Development District lies within the Lower Potomac River Area. According to the County's permit application, its Development District contains portions of four major watersheds including the Potomac River, Mattawoman Creek, Port Tobacco Creek, and Zekiah Swamp. Most of the Development District is drained by the Mattawoman Creek with the remaining portions discharging to the Zekiah Swamp, the Port Tobacco Creek, or directly into the Potomac River.

All water bodies in the Charles County Development District are considered Class I which are

suitable for water contact sports, play and leisure activities, fishing, growth and propagation of fish, agricultural water supply, and industrial water supply. The Wicomico River and Zekiah Swamp are considered "State Scenic Rivers." Charles County has established Resource Protection Zones (RPZ) to further protect stream valley habitat and stream water quality for these and other areas.

The *1991-1993 Maryland Water Quality Inventory* (MDE, 1988) indicated that water quality in the Lower Potomac River Sub-Basin is generally good and waters are well suited for recreation, aquatic life, and shellfish harvesting. However, agricultural runoff, failing septic systems, poor tidal flushing, and inadequate buffer zone areas around municipal discharges have contributed to high bacteria levels causing periodic closing of shellfish harvesting. Swimming has been discouraged along the County shoreline due to high levels of bacteria resulting from failing septic systems, point sources, and marinas.

The *Nonpoint Source Pollution Assessment Report* (MDE, 1989) indicates that the Zekiah Swamp is a watershed impaired by toxic substances and the Port Tobacco Creek is a watershed impaired by conventional substances. These two watersheds, along with the Mattawoman Creek watershed, have water quality impacts due to agriculture, construction, urban runoff, waste disposal, and natural sources. The Potomac River from Marshall Hall to Smith Point is impaired by toxic and conventional substances originating from either point or nonpoint sources of pollution.

B. Programmatic Components

The NPDES stormwater permit application process for municipal separate storm sewer systems is specified in 40 Code of Federal Regulations (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 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 Charles County's application.

1. Legal Authority

A summary of Charles 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...;"

Chapter 244 of the Charles County Code contains the Grading and Sediment Control Ordinance that requires anyone intending to perform clearing or grading activities to obtain an approved erosion and sediment control plan. Grading permits are reviewed and issued by the Department of Planning and Growth Management and the County is responsible for enforcement. These

permits are not required for single family construction, for accessory structures on lots greater than two acres, or for disturbances involving less than 100 cubic yards. The Charles Soil Conservation District (SCD) reviews and approves erosion and sediment control plans. Sediment control plans are not required for agricultural land management practices, single family residences on lots greater than two acres, or clearing and grading that disturb less than 5,000 square feet and less than 100 cubic yards. MDE's Water Management Administration (WMA) is responsible for coordinating and enforcing the erosion and sediment controls.

Charles County's stormwater management regulations were recently amended to incorporate recommendations made during MDE's 1993 triennial review of the County's stormwater management program. The County's Stormwater Management Ordinance, adopted on January 1, 1994, requires development of quantitative and qualitative site controls for any new development. The ordinance contains several stormwater management measures designed to reduce adverse impacts to non-tidal wetlands and stream systems. These measures require that stormwater management and road drainage outfalls be designed to ensure that no direct discharge to non-tidal or tidal wetlands occurs, stormwater management facilities not be located in stream channels or an identified RPZ, and that stormwater management plans include an examination of the "first flush" for water quality control. Exempt activities include new development disturbing less than 5,000 square feet, residential lots greater than two acres, and redevelopment. When additions or modifications are made to a redevelopment site, the County may require stormwater management facilities for the entire site.

Industrial facilities are required to comply with the County's pretreatment regulations contained in the Rates, Rules, and Regulations for Water and Sewer. However, the County has not developed any ordinance that specifically controls the discharge of pollutants associated with industrial activities to its storm sewer system.

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

Charles County lacks specific ordinances or regulations prohibiting illicit connections to the municipal separate storm sewer system. Legal authority to control illicit connections exists indirectly through stormwater management inspection procedures and the review of building and grading permit applications and construction drawings. If illicit connections are identified, the permit applicant is required to make any necessary corrections or enforcement action will result. The Rates, Rules, and Regulations for Water and Sewer contains sections that prohibit the connection of storm drains to the public sewer during construction.

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

Charles County's pretreatment regulations address direct and indirect discharges to the wastewater collection and treatment system. A variety of enforcement tools are available to the County for correcting any violation of water and sewer regulations. Potential remedies include revocation of permits, injunctions, final corrective orders, civil penalties, and criminal penalties with violators being subject to fines of \$1000 per day and/or imprisonment for six months.

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

Charles County is investigating initiating Memorandums of Understanding (MOU) with various State and federal agencies to address storm drain systems within these entities. Throughout its source identification process, the County will identify those entities that may share the County's storm drain system. Specifically, the Maryland State Highway Administration (SHA), among others, will be addressed.

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

Charles County's Grading and Sediment Control Ordinance contains enforcement and penalty provisions. Available enforcement tools range from stop work orders to injunctions with violators being subject to civil and criminal penalties. Any violation is a misdemeanor and upon conviction is subject to fines and/or imprisonment. Civil actions may result in the County receiving damages equal to or double the cost of making necessary corrections. Compliance is also ensured through bond requirements.

Violations of the Stormwater Management Ordinance include misdemeanor charges subject to a fine of \$5000 or imprisonment not exceeding one year, or both. This ordinance requires bonds for all proposed stormwater management facilities before any permit may be issued. Bonds remain in effect until facilities are completed.

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

As described above, Charles County has inspection authority through its Grading and Sediment Control Ordinance and its Stormwater Management Ordinance.

Summary

Charles County needs to develop the ability to address industrial activity and illicit connections as described in 40 CFR 122.26(d)(2)(i) and provide MDE with certification by its attorney that adequate legal authority exists.

2. Source Identification

A summary of Charles 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..."

The pretreatment regulations, contained in the Rates, Rules, and Regulations and adopted by the County Commissioners on October 16, 1990, are the primary historic ordinance that prohibits discharges to Publicly Owned Treatment Works (POTW). The purpose of these regulations is to prevent the introduction of pollutants into the County's wastewater system that could interfere with operations or contaminate resulting sludge. These regulations establish general requirements for users, authorize development of local effluent limits, and require reporting, monitoring, and inspections for industrial dischargers.

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

Charles County has developed 1 inch = 200 foot-scale topographic maps that cover the entire Development District. These topographic maps, developed from aerial photographs taken in June 1993, contain storm drain information digitized from record and construction drawings. Storm drain pipes, inlets, manholes, outfalls, cross culverts and stormwater management facilities for County and privately owned systems were digitized. During the permit term, the County will investigate strategies for mapping storm drain systems constructed since its topographical maps were created in 1993.

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

Charles County has identified 139 major outfalls and several cross culverts that meet the size criteria and collect drainage directly from areas that do not have major outfalls. To make topographic maps more accurate, field investigations were performed for all developed areas that lacked record or construction plans. The maps were thoroughly examined for sites where storm drain systems were not located. Potential locations were highlighted and personnel from the Tri-County Council performed field investigations. Additional storm drain outfalls, pipes, inlets, manholes, ditches and other structures were sketched on the maps and subsequently digitized. All new outfalls discovered during this process were screened for illicit discharges.

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

Drainage areas to major outfalls have been defined and land use activities, population densities, projected growth for a ten-year period, percent impervious, and an average runoff coefficient for each land use type were estimated using the County's Geographic Information System (GIS). Land use and land cover maps prepared in 1990 by the Maryland Office of Planning (MdOP) were imported into the GIS and used to define land uses in each drainage area. The County will contact MdOP for future updates to its land use maps.

The Charles County Traffic Analysis Zones and Subzones (TAZ) maps and data were incorporated into the GIS to define population densities. The TAZ maps are 1:63,636 scale and include County population housing units and employment data for 1990 and projections for 2000 and 2010. A relational database was developed using TAZ statistics and GIS databases to compute population totals for 1990 and 2010 within each statistical area. The County periodically updates its population projections and will include GIS analysis computations in its annual reports.

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

Charles County operates one municipal sanitary landfill, five permanent recycling centers, three mobile recycling centers, and seven oil and antifreeze recycling centers. These sites, located in the Development District, are digitized on the topographic maps.

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

The locations and permit numbers of all NPDES permitted industrial facilities located in the

Development District have been digitized on the County topographic maps. A supplementary database inventory of these sites also has been compiled by the County.

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

Charles County currently has 215 stormwater management facilities. Most of these are located in the Development District and include infiltration facilities, flow attenuation facilities, retention and detention facilities, porous pavement, oil/grit separators, and storm drain conveyance systems. The County continues to work on digitizing these facilities on its GIS.

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

Charles County has digitized publicly owned parks on its GIS.

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

Charles County has obtained data from MDE regarding industries that submitted a Notice of Intent (NOI) for NPDES industrial general permit coverage for stormwater dischargers. MDE maintains a database that includes a control number, the facility name, address, location (i.e., longitude and latitude), SIC code, drainage basin code, the owner's name, the operator's name, a contact person, the operator's address, and the date the NOI was received. MDE updates the database inventory as NOIs are received and permits are issued.

The County has developed a list of 221 industries and businesses that have permitted discharges to the sanitary sewer system. The majority of permitted companies are located in the Development District and could potentially discharge pollutants to the storm sewer system.

Summary

Charles County has compiled the necessary data to satisfy source identification requirements. The implementation and maintenance of a GIS will be emphasized during the permit term.

3. Discharge Characterization

A summary of Charles 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..."

Charles County does not have any precipitation recording stations and does not record any meteorological data. As a result, the County submitted information collected at Baltimore/Washington International (BWI) airport for annual and monthly precipitation as well as snowfall, number of days with noticeable precipitation, and mean number of days with thunderstorms. The County did provide local values for rainfall frequency, intensity, volume, and duration information.

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

Charles County reviewed existing reports, databases, and other information and found that no significant quality or quantity monitoring data have been collected at storm sewer outfalls. Furthermore, monitoring of receiving water bodies in the County is limited. No water body monitoring currently is performed in the County by either Federal or State agencies. The County has not performed any significant or continuous water quality monitoring other than short term monitoring performed by High School students as part of their educational program.

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

The NPDES regulations require that water bodies receiving discharges from the municipal separate storm sewer system and resulting water quality impacts be identified. Most of the information regarding the Lower Potomac Sub-basin is from the 1985-1987 Maryland Water Quality Inventory.

Charles County is located between the Potomac River and the Patuxent River, although the entire Development District lies in the Lower Potomac River Area. Most of the Development District is in the Mattawoman Creek watershed discharging to the Potomac River. A section of the Development District borders the Potomac River and some lands drain directly to the Potomac. Part of the Development District discharges to the Zekiah Swamp which then flows to the Wicomico River, ultimately emptying into the Potomac River. The Port Tobacco Creek watershed encompasses the remaining Development District area and also outlets to the Potomac River.

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

Charles County provided field screening information for 110 major outfalls in the Development District. Thirty (28%) of the 110 outfalls screened had dry weather flow. Approximately half the outfalls receive drainage from residential areas.

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

Charles County located four outfalls for its Part 2 monitoring efforts. These outfalls included two industrial outfalls, one high density residential, and one single family residential outfall. Each outfall was located along the Route 301 corridor in the Development District. MDE waived the requirement for the County to sample at a fifth site due to problems locating a suitable outfall draining a commercial land use.

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

The County began tracking rainfall events in late spring of 1995 and started monitoring in September 1995. All sampling has been completed, however, data have yet to be submitted on disk.

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

Charles County developed a GIS model to estimate pollutant loads for the entire Development District. The model uses the "Simple Method" and will be applied directly to the County's major outfalls by using local historic precipitation information, using runoff coefficient values based on local land use conditions, and refining event mean concentrations (EMCs) based on storm and long-term sampling results. Pollutant load and EMC estimates will be used to provide baseline information regarding existing pollutant contributions to the County's storm sewer system. Additionally, the pollutant loads and EMCs will be used to identify locations for developing specific management programs during the permit term.

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

Charles County will develop and provide seasonal pollutant loads for all major outfalls by refining EMCs using seasonal rainfall depths. Initial data will include monitoring results from other NPDES jurisdictions and results from past studies such as the Nationwide Urban Runoff Program (NURP).

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

Charles County has proposed a long term monitoring plan in cooperation with the Smithsonian Environmental Research Center. This monitoring plan will monitor nutrients in the Mattawoman Creek Watershed. Monitoring also will be performed at reference land uses such as forested areas to provide baseline water quality data. Subsequent monitoring and documentation of land use effects and land development methods on water quality will facilitate detailed analyses of stormwater management program effectiveness.

In addition to the Smithsonian monitoring plan, the County will integrate biological and physical monitoring. Furthermore, a storm drain outfall draining primarily residential land use will be selected and monitored upstream of a proposed ambient monitoring station. The County intends to add chemical parameters such as copper, cadmium, lead, total Kjeldahl nitrogen, nitrate plus nitrite and oil and grease to the nutrients proposed to be sampled as part of its long term monitoring plan.

Summary

Charles County completed its Part 2 monitoring requirements. Implementation of its long term monitoring program will be the County's primary concern while refinement of pollutant load estimates will be subsequently performed.

4. Management Programs

A summary of Charles 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..."

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

The State has established regulations for stormwater management facility maintenance which require all jurisdictions to inspect, or cause to be inspected, facilities once every three years. The County has adopted these requirements in its Stormwater Management Ordinance which became effective January 1, 1994. MDE/WMA reviewed the County's Stormwater Management program in October 1996 and found it to be acceptable.

Most BMPs are ponds that are privately owned and the County does not plan to assume ownership and maintenance responsibilities for new or existing ponds in the future. The County Department of Planning and Growth Management is responsible for inspecting both publicly and privately owned stormwater management facilities. Facilities are inspected upon completion to verify construction according to as-built plans, within the first year after construction, and then once every three years after that. All inspection reports are maintained in separate files and a database system has been established for tracking purposes.

As a component of its overall NPDES public outreach and education program, the County will provide maintenance information to owners of stormwater management facilities through checklists, fact sheets, brochures, and newspaper advertisements. The information will focus on owner responsibilities for managing and maintaining structures and provide contacts for questions or emergencies. Owners of new stormwater management facilities and those facilities that do not pass inspection will be specifically targeted for public outreach education activities.

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

Charles County has implemented planning procedures to develop, implement, and enforce controls for reducing stormwater runoff pollutant discharges from new development. Existing procedures include regulatory requirements and other environmental planning programs affecting new development. The County's existing procedures include the land use planning and zoning processes, watershed planning, development review process, candidate stormwater quality structural control measures, and other environmental planning programs. Future development will be managed according to several types of areas or districts which will be used to help preserve sensitive, agricultural, and rural lands.

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

Charles County has an existing program for operation and maintenance of public streets, roads, and highways including responsibilities for snow removal and deicing operations. All roadway ditching, pipe replacement, and grading are compacted, seeded, and mulched according to State and SCD guidelines. The County has "blanket authority" for exemption from preparing erosion and sediment control plans when performing small roadway repairs which are typically completed in less than one day. Roadside mowing is completed in-house with 4100 lane-miles being maintained per year. The herbicide Roundup is used at 20 ounces per 1000 square feet and is hand sprayed. A certified "Maryland Tree Care Expert" supervises tree planting and maintenance activities along roads. An existing street sweeping program covers 220 lane-miles of roadway.

The County has comprehensive procedures for snow management and deicing. Salt and liquid magnesium chloride are stored in bulk at the Department of Public Facilities La Plata Shop in a 4000 ton salt dome and a 4000 gallon polyethylene tank, respectively. Liquid magnesium chloride is used only when temperatures drop below 20 degrees and is then mixed with a salt/sand mixture at a rate of 2.68 gallons per ton. Both the salt and liquid magnesium chloride storage units are located on an asphalt pad and are covered. All surrounding stormwater drainage collects in a sediment trap behind both storage units which is cleaned out biannually with the resulting waste material hauled to the County Landfill.

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

Charles County has a stringent and effective Floodplain Management Program. Only a small portion of County land is located in the flood plain and only one permit application for development in a flood plain has been submitted to the County in the last two years. The Floodplain Management Ordinance also has strict criteria for granting variances which requires the applicant to meet minimum criteria and perform an analysis of alternative measures. The Federal Emergency Management Agency (FEMA) issued a letter on September 15, 1995 stating that the County's program is acceptable.

The County has outlined a comprehensive retrofit program that will begin by defining water quality standards for stormwater management facility discharges. These standards will include establishing inadequate levels of physical, chemical, and biological components. Subsequently, techniques and criteria for evaluating stormwater management facility outfalls for water quality will be established. Stormwater management facilities and their outfalls initially will be assessed as part of the County's illicit discharge sampling program. Investigations will be performed in watersheds and drainage areas to outfalls that exhibit poor water quality. Retrofits will be planned for structures with poor water quality and where improvements are found feasible and cost-effective. To fund potential retrofit projects, the County will continue to submit applications to MDE for stormwater pollution control cost share funds.

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

Charles County currently monitors pollutants from municipal waste management facilities that include the operating Charles County and the closed Pisgah municipal landfills. The Charles County Sanitary Landfill is currently operating under an NPDES permit. Stormwater runoff and leachate are daily operating concerns and are managed by two sediment ponds and one leachate collection basin. The Pisgah Landfill and Recycling Center is currently awaiting final closure. This site has three stormwater management ponds, has been stabilized, and is monitored for erosion and leachate. Visual inspection procedures and monitoring programs for all County landfills and other waste management facilities will continue to be evaluated to ensure that they satisfy NPDES goals, objectives, and criteria.

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

Charles County has existing programs that manage pesticide, herbicide, and fertilizer applications. The County, through existing public outreach and education activities, provides the public with information about the proper use of pesticides, herbicides, and fertilizers. Regulatory requirements include a licensing requirement by Maryland Department of Agriculture (MDA) for all businesses that perform application or consultation. Certification is required for pest control applicators, pest control consultants, and public agency applicators. Private applicators of restricted use pesticides are also required to be certified by the State.

§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...;"

Charles County's illicit connection detection program will target commercial and residential areas. These areas will be prioritized based on Part 1 field screening results, Part 2 sampling results, and information from other NPDES counties. Initially, the County will pursue field investigations in pilot watersheds and commercial areas only. Illicit discharge investigations on a Development District-wide basis will be performed only if the storm sampling results indicate high pollutant concentrations in areas other than commercial land uses.

Prior to beginning field investigations, the County will select a pilot watershed. Field screening activities will commence with the identification of areas that have the greatest potential for illicit connections. The County has a variety of informational sources other than those listed above that could be used for identifying illicit discharges. The County's pretreatment program files include commercial and industrial dischargers to the County's sanitary sewer system and offer information about the type of business, processes, permits, discharge monitoring results, and historic problems. Results of the proposed pilot watershed study will be used to help identify sources of potential illicit discharges within the investigated watershed area.

Existing programs such as stormwater management facility inspections and grass cutting provide opportunities to observe and report potential sources of illicit discharges. The County will investigate cross-training personnel who work in these programs regarding illicit discharge detection.

§122.26(d)(2)(iv)(B) "(2) A description of...ongoing field screening activities...;"

To effectively investigate and sample discharges, Charles County will determine baseline pollutant levels and limits for dry weather, characterize data from the Part 1 field screening, and identify sites or land uses that show high levels of pollutants. Other efforts will include performing additional testing within a pilot watershed or targeted areas using field investigations, outfall screening, and random dry-weather sampling.

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

Charles County will use identification procedures that include notification, type and location of

illicit discharge, methods used to identify sources, requirements for control action by the owner/operator, NPDES permit requirements, and further actions if specific discharges are not controlled. If flow is observed, testing will be performed, the owner will be identified, any existing permits and operating conditions will be reviewed, a determination will be made whether an industrial NPDES permit is required, and potential alternative control options will be identified. The owner/operator will be notified about the discharge and required action to rectify the problem. Subsequently, the outfall will be reevaluated by the County to determine whether compliance has been attained. If corrective action is not taken and noncompliance continues, enforcement action will be used.

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

Charles County maintains an adequate spill management program that does not require additions or modifications for the NPDES municipal stormwater program. The County's Superfund Amendments and Reauthorization Act (S.A.R.A.) Hazardous Materials Plan assigns responsibilities for notification, response, and support to various County agencies and related support organizations. Seventeen agencies have been assigned responsibilities in case of emergency including the County Fire Department, Rescue Squad, Police, Physicians Memorial Hospital, Health Department, Red Cross, and Oil Spill Division of MDE.

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

Charles County will develop and implement workshops and other public meetings to convey information to the public regarding methods to prevent illicit discharges. Furthermore, brochures will be developed as supplemental information. Public reporting will include identification of an agency or department that will accept reports of illicit discharges and dumping and respond to them. The public outreach and education strategy will include methods to educate the public about the importance of reporting illicit discharges.

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

An assessment by Charles County concluded that County agencies, State agencies, and other organizations now conduct a wide range of environmentally-oriented public outreach activities which overlap with those needed for the NPDES permit. Environmental public education is available through the curriculum in the County school system, press releases, and distributions of educational materials by various County departments, nonprofit organizations, and businesses.

Seminars, workshops, and other meetings provide information about County agency contacts, regulatory requirements, methods for prevention of illicit discharges, and sources of help. The County will develop and distribute brochures, fact sheets, and other publications that describe the NPDES program requirements, approaches for environmental management, and how to obtain more information. Inserts in utility bills, hotline numbers, and cable television time all will be used.

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

Under the Rates, Rules, and Regulations for Water and Sewer, Charles County has repair and maintenance responsibilities for seepage problems located in the sewer line up to residential or commercial clean outs. Conversely, privately owned sewer systems are not covered. As a result, any illegal discharges discovered must be addressed by the County's illicit discharge program.

§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...;"

As previously described, the Charles County Sanitary Landfill is currently operating under an existing NPDES permit. Stormwater runoff and leachate are managed by two sediment ponds and one leachate collection basin. The leachate is monitored monthly and is tested for conventional pollutants and metals. The Pisgah Landfill and Recycling Center is currently awaiting final closure. This site has three stormwater management ponds, has been stabilized, and is closely monitored for erosion and leachate.

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

Charles County will continue visual inspections and monitoring programs for all County landfills and other waste management facilities. These programs will occasionally be evaluated to ensure that they satisfy NPDES municipal permitting 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 stormwater runoff from construction sites...which shall include:"

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

Charles County is responsible for coordination and enforcement of the grading provisions of its Grading and Sediment Control Ordinance. However, MDE is responsible for erosion and sediment control enforcement. The SCD reviews and approves erosion and sediment control plans and grading permits are not issued without SCD approval. The County indicated in an October 1, 1996 letter that it does not wish to pursue delegation of erosion and sediment control enforcement authority at this time. However, the County will review its Grading and Sediment Control Ordinance yearly to ensure that it is consistent with MDE and SCD regulations.

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

As stated in Section III.B.1.b of Appendix 1, Charles County has adopted ordinances necessary to implement a stormwater management program. MDE inspection and enforcement activities in conjunction with compliance with the regulations contained in the County's Stormwater Management Ordinance should adequately control the quantity and quality of stormwater discharged to the County's storm sewer system from construction activities.

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

MDE performs erosion and sediment control inspections at construction sites once every two weeks as required by State law to ensure compliance with approved erosion and sediment control plans.

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

Charles County will identify and advertise training and education activities for “responsible personnel” provided by MDE or other jurisdictions at convenient locations.

Summary

Comprehensive stormwater management programs currently exist in Charles County. The County will continue to rely on the State for enforcement of erosion and sediment control. During the permit term, the County will concentrate on implementing its illicit connection detection and public educational programs.

5. Program Funding

A summary of Charles 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..."

Charles County estimates that \$650,000 will be required to implement new NPDES activities during the five-year permit term. The fiscal requirement may also include repayment of funds for costs incurred during the permit application process of an additional \$250,000. This cost estimate does not include ongoing activities that must be funded despite NPDES requirements.

The County has several funding sources for stormwater related projects. The general operating fund provides project review funding. Stormwater management review fees are a minimum of \$200 per project plus \$32 for each additional study point. Part of the road maintenance budget is allocated toward maintenance of stormwater management conveyance systems.

The County Commissioners have approved funding for NPDES activities required throughout the remaining permit period (FY98 and beyond). Part of the NPDES budget will be funded using fees charged for each new lot recorded in the County and the remaining funds will be generated by the existing Environmental Services Fee. However, language in County Ordinances must be changed to allow this fee to be used for projects other than recycling and solid waste disposal. The County Attorney believes that 1992 State Legislation allows the County to charge fees for stormwater related programs such as NPDES. Through this mechanism, the County will dedicate part of the Environmental Services Fee to NPDES requirements.

Summary

Charles County's current funding sources are adequate to fund many components of its stormwater management and NPDES programs.

6. Assessment of Controls

A summary of Charles 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..."

Charles County will estimate pollutant reductions from BMPs by predicting the number of future stormwater management facilities using existing County databases. An analysis of the existing facility inventory will provide estimates of the number and types of structural BMPs, period of development, and approximate total drainage area managed by each BMP type.

Estimates of pollutant removal effectiveness of the structural BMPs will be performed. The County will refer to the EPA's post-construction management practices removal efficiency summary table for pollutant removal effectiveness values for structural BMPs. Pollutant removal efficiencies combined with storm sampling data and estimated pollutant loading rates will be used to estimate pollutant removal efficiencies for future stormwater management facilities. The County will perform this task on a Development District-wide basis using the projected amount of land expected to be developed for each land use type. Residual pollutant loads for each land use will then be summarized within the Development District.

The County's non-structural approach for measuring the effectiveness of NPDES management programs includes the use of "surrogate" parameters. The County will select parameters that represent the effectiveness of management programs on improving the quality of stormwater runoff. Examples of "surrogate" parameters include the number of illicit connections detected or reported, the number of residents that attend meetings or seminars about illicit discharges, and the number of brochures developed and distributed annually.

Summary

Charles County will need to refine pollutant load estimates during the permit term as more water quality data are collected and public education programs are implemented.