APPENDIX 1

MARYLAND DEPARTMENT OF THE ENVIRONMENT

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

PRINCE GEORGE'S 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 large municipal separate storm sewer systems. A large municipal separate storm sewer system is defined in the CWA as serving a population of 250,000 or more. Prince George's County, according to the United States Department of Commerce's 1990 Census, has a total population of 729,268 and is therefore considered a large municipality. As a result, the County was required to submit a two-part NPDES permit application. Prince George's 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-PG-93-001

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 large 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

Prince George's County is located in the south-central part of Maryland and encompasses approximately 450 square miles (288,000 acres) of land. The Patuxent River forms the County's northern and eastern boundaries while Washington, D.C., Montgomery County, and the Potomac River define its western boundary. Prince George's County lies primarily in the physiographic region known as the Atlantic Coastal Plain while a small portion to the northwest is in the Piedmont Province.

According to the 1990 Census, Prince George's County has an estimated population of 729,268. The Maryland Office of Planning (MdOP) estimates an annual growth rate between 1990-2000 of 0.73% which results in a projected population of 773,002 within the next 5 years. The County is highly urbanized in the Washington, D.C. suburban area to the north. There are also extensive rural and agricultural areas in the southern portion of the County. The urbanized areas consist of mostly older communities, however, there are many fast growing suburban and light industrial areas extending north and east from Washington, D.C. and southward along the Potomac River. There are 28 separate incorporated municipalities within Prince George's County and the County has authority over all public storm drain systems found in these localities except for those located in the Cities of Bowie and Takoma Park.

2. Hydrologic Information

Prince George's County's stream network can be divided into 14 major watersheds that are best described as gently rolling to hilly and moderately dissected by broad, shallow valleys. Elevation ranges from sea level to 365 feet above sea level. Hydrologically, one-half of the County drains easterly to the Patuxent River, while the remaining area drains southwesterly to the Anacostia River and other tributaries of the Potomac River. Many of the County's southern streams are tidally influenced.

According to the *Soil Survey of Prince George's County, Maryland (United States Department of Agriculture, April 1967)*, the climate is "semi-continental" and described as "humid and temperate with mild winters and warm, moist summers." Weather systems move predominantly from the west to the east. In its Part 2 NPDES stormwater application, the County estimated that the average annual precipitation, based on mean monthly precipitation, is 43.47 inches. Precipitation extremes of less than 18 inches to more than 60 inches have occurred. For the most part, precipitation is distributed evenly throughout the year and there are approximately 113.2 days with 0.1 inch or more of precipitation. The average annual snowfall is 17.0 inches. Of the total precipitation, the County estimates that approximately 15 inches results in surface runoff, 2 inches infiltrates into the ground water, and the remaining 26 inches completes the water cycle as a result of evapotranspiration.

Prince George's County has a history of modest flooding. Most flooding events have usually occurred during mid and late summer and are associated with tropical storms and hurricanes. Small sections of the County are also subject to occasional flooding due to the influence of tides. An August 1933 storm resulted in a flood one foot below the 100-year storm elevation on Western Run and inundated a large commercial section of Upper Marlboro as well as some buildings along the Piscataway Creek. Flooding has similarly resulted from storms that occurred in August 1971, September 1975 (Hurricane Eloise), and September 1979 (Hurricane David). The City of Laurel, communities adjacent to the Rocky Gorge Reservoir, and areas along the Potomac and Patuxent Rivers are the areas most susceptible to flooding in Prince George's County. The flood of record occurred in the City of Laurel area during June 1972 (Tropical Storm Agnes). This storm was considered slightly larger than a 100-year storm event.

The *1985-1987* and *1987-89 Maryland Water Quality Inventory* describe the surface water quality in Prince George's County as "fair to good" with fishing and water contact sports as acceptable uses. However, the Patuxent River from Ferry Landing to Rt. 214 and from Rt. 214 to the Rocky Gorge Dam; the Anacostia River; the Western Branch; and the Piscataway Creek have been listed as impaired by toxic or conventional pollutants in the *1987-89 Maryland Water Quality Inventory*. Additionally, both the Oxon Hill and Mattawoman watersheds are listed as impacted by nonpoint source pollution in Maryland's *Nonpoint Source Pollution Assessment Report for Section 319, April 1989*. Lakes listed as trophic, in *1987-89 Maryland Water Quality Inventory*, include: Allen Pond, Laurel Lake, Cosca Lake, and Greenbelt Lake. The only water body in Prince George's County determined to be threatened by excessive nutrient enrichment and sediment pollution is Greenbelt Lake. Water bodies of special interest include the Patuxent River which extends 110 miles through Maryland and has been designated as one of five original State Scenic Rivers by the Maryland General Assembly. Additionally, Jug Bay is a designated estuary under the National Estuary Program.

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 large 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 Prince George's County's application.

1. Legal Authority

A summary of Prince George's 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, Prince George's 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 regulations contained in the County's Grading, Drainage, and Erosion Control Ordinance and its Stormwater Management Ordinance should adequately control the quantity and quality of stormwater that is discharged to Prince George's County's municipal separate storm sewer system from construction activities and new development. The County presently does not have adequate legal authority to control the contribution of pollutants from other industrial activities or areas developed prior to implementation of its stormwater management program. In its NPDES stormwater application, the County reported that it is currently amending Subtitle 4, Sections 4-278(d) and 4-308(b) of the County Code to obtain adequate legal authority to control and prohibit discharges from industrial activities.

'122.26(d)(2)(i) "(B) Prohibit...illicit discharges...;"

Subtitle 4, Sections 4-229.1 through 4-229.22 of the County Code regulate the design, construction, and maintenance of the municipal separate storm sewer system. Connections to the system are regulated through a permitting process. Subtitle 4, Sections 4-278 and 4-308 of the County Code are being revised to prohibit illicit connections to the municipal separate storm sewer system that may have occurred prior to implementation of the permitting process.

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

Subtitle 21 of the County Code regulates the storage, collection, transportation, and disposal of solid and hazardous wastes. The County does not have any ordinances that control spills or dumping into the municipal separate storm sewer system. As a result, the County is revising its Grading, Drainage, and Erosion Control Ordinance to control spills or dumping into the municipal separate storm sewer system.

'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, there are 28 separate incorporated municipalities within Prince George's County and the County has authority over all public storm drain systems except for those located in the Cities of Bowie and Takoma Park. The County has authority to enter into agreements with other municipalities. For example, the County could draft an agreement with the City of Bowie that would allow for identification of storm drain outfalls within

the City's jurisdiction.

MDE will issue an NPDES general permit that will include the Cities of Bowie and Takoma Park. 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 Prince George's County. Regarding neighboring jurisdictions, Anne Arundel County, Howard County, Montgomery County and the State Highway Administration (SHA) are required to apply to MDE for separate NPDES discharge permits for their respective storm sewer systems. Final 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 present erosion and sediment control, stormwater management, and various other health programs. Enforcement actions such as stop work orders, violation notices, civil citations, and injunctive relief may be utilized to promote compliance with associated regulations.

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

Prince George's County has inspection authority for construction and maintenance of its municipal separate storm sewer system. Existing regulations do not include provisions for inspection and enforcement to control illicit discharges. Additionally, MDE's concern regarding the County's ability to enter, inspect, and monitor suspect facilities for the purpose of eliminating illicit discharges has not been addressed.

Summary

Prince George's 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).

2. Source Identification

A summary of Prince George's 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 Prince George's County, the Washington Suburban Sanitary Commission (WSSC) has authority over the sanitary sewer system and uses Chapter 9 of its Code, *Industrial Waste Regulations of the Plumbing and Gas Fitting Regulations*, to control the discharge of pollutants to publicly owned treatment works. Chapter 9 requires permits for significant discharges. These permits require adherence to EPA pretreatment standards and establishes WSSC's authority to enforce and initiate penalties in cases of violation. WSSC 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..."

Prince George's County's application stated that United States Geological Survey (USGS) 7.5 topographic maps are available upon request. As noted below, the County has not completed many of the mapping requirements specified in the NPDES regulations. The County reports that it is developing a Geographic Information System (GIS). The GIS will be used to complete the required maps, as well as discharge characterization information.

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

Prince George's County submitted its storm drain system maps. More than 4,000 major outfalls were identified and highlighted on these maps. The County stated that its storm sewer system outfalls will be mapped on USGS 7.5 minute topographic maps by the end of 1996.

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

Land use information was obtained from the Maryland-National Capital Park and Planning Commission (M-NCPPC) which generates Master Plans for the physical development of Prince George's County. The County submitted an example of these land use maps in their application. The remaining maps are on file with M-NCPPC and the Prince George's County Department of Environmental Resources (DER). Runoff coefficients were not submitted and the County stated that population data can be easily calculated from information on file with the Flood Management Section of DER or M-NCPPC.

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

Prince George's County submitted information on the location and description of two existing and two closed municipal landfill facilities within the County. The County also submitted information regarding one existing and three closed private landfill facilities. Mapping of landfill facilities was not submitted.

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

Prince George's County obtained information on existing NPDES stormwater permits from MDE. Fifty sites were identified and a database containing information on facility name, permit number, Maryland Grid Coordinate System location, receiving stream, and watershed basin was submitted. Mapping of these facilities was not submitted.

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

Prince George's County submitted a database describing major structural stormwater management controls including information on structure name, County map grid location, storm drain number,

storm drain map sheet number, and structure type. Mapping of these stormwater management structures on topographic maps was not submitted.

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

Prince George's County submitted an informational map showing all publicly owned park and recreation facilities.

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

Prince George's County submitted an inventory of 13,000 industrial facilities including information on company name, address, watershed location, and a description of principal activity or service.

Summary

Prince George's County collected most of the data to satisfy source identification requirements. The implementation of a GIS and subsequent completion of topography based maps will assist the County in establishing priorities to control nonpoint source pollutant contributions from its storm sewer system.

3. Discharge Characterization

A summary of Prince George's 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..."

Prince George's County submitted precipitation data that included monthly mean rainfall and snowfall. The mean number of days with thunderstorms and precipitation of .01 inches or more was also submitted. The mean monthly data were tabulated to present a yearly total as well. The precipitation data reported by Prince George's County are contained in Part III.A.2. of Appendix 1.

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

Historically, monitoring of in-stream conditions rather than discharges associated with the County's storm sewer system has occurred. Local, State, and federal agencies, and other organizations have conducted periodic stream sampling and monitoring in Prince George's County since the early 1960's. Water quality samples have been collected for many reasons including one-time samples, routine or special government programs, special monitoring investigations, and emergency sampling. The number of samples collected and analyzed varies from a single sample to many years of data. The locations of sampling stations also varies widely among streams and watersheds in the County. The storage and management of sampling results also differ among the agencies and organizations responsible for data assimilation.

Prince George's County summarized past sampling efforts in its Part 1 NPDES stormwater application. This summary included sampling station identification, location and watershed, sponsor, dates of sampling, number of samples, parameters/constituents sampled, and sampling methodology. Most of the information supplied was from EPA's STORET database, MDE's database, and USGS's WATSTOR database. The County also submitted summaries of water quality sampling efforts that have been conducted by MDE, USGS, the Prince George's Health Department (PGHD), M-NCPPC, Metropolitan Washington Council of Governments (MWCOG), and other organizations.

Current water quality monitoring programs in Prince George's County include the MDE/USGS Western Branch station at Upper Marlboro; MDE stations along the Patuxent River, Anacostia River at Bladensburg Road, and two stations along the Piscataway Creek; M-NCPPC stations in the Anacostia and Western Branch watersheds; and PGHD stations in the Anacostia watershed.

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

Prince George's County submitted a list of water bodies that receive discharges from its municipal separate storm sewer system. These water bodies were also identified by coordinates corresponding to the County's watershed reference maps. A narrative summary of the water bodies in Prince George's County that have been assessed by the State was also submitted. This assessment considered water bodies that were impaired by toxic or conventional substances; impacted by nonpoint source pollution; trophic; or threatened. Portions of the assessment, as well as other impacted water bodies in Prince George's County are contained in Part III.A.2. of Appendix 1.

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

Prince George's County reports that there are 4,000 County owned storm drain outfalls located within its jurisdiction. The number of outfalls to be sampled in each of the County's 14 watersheds was determined by weighing the percentage of impervious acreage to the total number of outfalls located within each watershed. The County completed field screening for 500 outfalls as specified in the NPDES regulations. LaMotte Test Kits were used to perform the required chemical analyses for total copper, phenols, total residual chlorine, detergents, and pH. In addition to collecting chemical parameter data, visual observations were performed to provide further information regarding illicit discharges. Results of the County's field screening efforts were recorded on a database to enable a detailed analysis and future targeting of potential illicit connections. An examination of these data indicates that 62% of the major outfalls screened had dry weather flow.

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

In its proposed characterization plan, Prince George's County selected five major outfalls to be used for Part 2 stormwater monitoring purposes. These five outfalls were located within a 15 square mile area of the lower Beaverdam Creek watershed. The criteria used for selecting the sampling stations included land use considerations, hydraulic factors,

accessibility, and safety. Of the five outfalls selected for representative sampling, two represented industrial land use, two represented residential land use, and one represented commercial land use.

The two industrial areas are considered typical of the light industry found in Prince George's County. The industrial areas are primarily light manufacturing, warehousing, and distribution. The two residential areas were representative of older, well-established communities with single-family detached dwellings. The commercial site was representative of retail shopping centers that are comprised of parking lots and several large buildings. The proposed characterization plan was reviewed and approved by MDE.

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

Prince George's County has completed all of its stormwater monitoring requirements in accordance with 40 CFR 122.26(d)(2)(iii)(a). Monitoring at the five representative outfalls was performed over a period of eight months from August 11, 1992 to March 4, 1993. Data were collected for the required 138 pollutant parameters for three storm events at each outfall and recorded on a database. Of the 138 pollutants monitored, 21 were consistently above the detection limit for laboratory testing procedures.

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

Prince George's County used the Storm Water Management Model (SWMM) to estimate annual pollutant loads and event mean concentrations for stormwater discharges from its storm sewer system. Rainfall conditions for an 8-year period (1980-87) were simulated and processed to determine the mean annual loads and representative event mean concentrations. Annual pollutant loads were determined for the five representative outfalls and a cumulative discharge was determined from all major outfalls. The County also submitted average monthly pollutant loads and event mean concentrations for each of the five representative outfalls. As additional data become available, calibration of the model will be possible resulting in greater accuracy of the pollutant load estimates.

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

Prince George's County submitted a proposed schedule for estimating seasonal pollutant loads and event mean concentrations for all major outfalls that extends over a three-year period (1993-95). This period will allow the County to collect sufficient site-specific stormwater quantity and quality data for calibration and verification of SWMM.

'122.26(d)(2)(iii) "(D) A proposed monitoring program...for the term of the permit..."
Prince George's County proposed to monitor five outfalls and three in-stream stations to collect long-term representative data. Three of the five outfalls were used for the

County's Part 2 sampling and are located in the Beaverdam Creek watershed. These outfalls are representative of commercial, residential, and industrial land use. Stormwater runoff representative of forest and agricultural land use will be monitored at the remaining two proposed outfalls which are located in the Western Branch watershed. Due to an existing USGS/MDE station downstream of the two outfall sampling sites in the Western Branch watershed, one in-stream station will be located in the middle and a second station in the upper portion of the watershed. The third in-stream station will be located downstream of the three outfall monitoring sites in the Beaverdam Creek watershed.

The County proposes to conduct discrete sampling for its long-term monitoring and sample a total of twelve discharges. Eight storm events, based on the seasonal distribution of rainfall, will be sampled while four base flow discharges will be sampled during periods of dry weather. Collection of the four base flow samples will be distributed over a three season period.

Summary

Prince George's 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 Prince George's 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..."

Prince George's County proposes to phase-in its newly developed management program components during the term of this permit. Pilot studies regarding pollutant source control, illicit connection determination, investigation, inspection, and public education will be implemented. Successful features of the pilot studies will be expanded and systematically implemented on a watershed basis.

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

Prince George's County is required by the Environment Article, Title 4, Subtitle 2, Annotated Code of Maryland, to inspect stormwater management facilities once every three years. Additionally, the County is required to perform, or cause to be performed, maintenance on existing stormwater management facilities. The County has an average annual budget of $7 million for the maintenance of public stormwater management facilities. These facilities consist of ponds, pipes, and channels that convey runoff from more than one property. Agreements requiring perpetual maintenance exist for private stormwater facilities. The County reported that it inspects all stormwater management facilities at least once every 2 to 3 years and any necessary corrective action is initiated based on the results of these inspections. Information submitted in its NPDES municipal separate storm sewer system permit application indicates that Prince George's 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...;"

Prince George's County has an extensive planning and development review process that addresses the reduction of pollutant discharges from areas of new development and significant redevelopment. The County's existing stormwater management program requires predevelopment discharge levels to be maintained after development. Additionally, water quality is addressed by managing the first one-half inch ("first flush") of runoff. The County reports that waivers are seldom granted for water quality control. As part of the planning process, projects must meet the zoning and intensity of development requirements contained in the County's Comprehensive Area Master Plan. Additionally, projects must be consistent with the flood control and water quality management requirements in the County's watershed management plan.

Various environmental requirements are encompassed in the County's development review process. Compliance with programs that minimize the impacts to wetlands, establish stream buffers, require tree preservation, reduce phosphorous levels by 10% or more, 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. In addition to the above requirements, the County has proposed to expand its existing on-site stormwater management facility maintenance agreement to include property and housekeeping requirements. These requirements will prohibit the use of chemicals and limit the use of abrasives for deicing, restrict the use of detergents when washing parking lots, and require routine trash removal and litter control.

The County has proposed to implement a Water Quality Improvement Program for existing development. This pilot program will consist of collecting baseline data by field reconnaissance of a study area. The field reconnaissance will enable the identification of pollution sources and possible solutions for reducing or eliminating pollutants. Upon assessment of the information obtained during the reconnaissance study, a work plan will be developed. This plan will include a pollution source control strategy with abatement measures. Additionally, the communities and industries in the study area will be targeted for public education. The County completed a pilot study at the University of Maryland's College Park Campus in March 1992. The study was conducted to develop investigation techniques for identifying sources of nonpoint source pollution. Active pilot studies include: the Kettering Environmental Enhancement Project which was initiated in March 1992 and should be completed by July 1996, and the Maryland 50 Industrial Park Project which began June 1992 and is scheduled for completion by June 1994. Proposed pilot studies include: the Prince George's Plaza Redevelopment Project and the Palmer Park Community Project.

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

The Prince George's County Department of Public Works and Transportation (DPW&T) performs road maintenance including trash and debris cleanup, mowing, pesticide application, and storm drain maintenance. As a preventative practice to reduce nonpoint

source pollutants, the DPW&T conducts street sweeping twice per year on subdivision roads and four or more times per year on all other roads. Additionally, more than 5,500 tons of roadside litter is collected annually. Herbicides used for vegetative control are applied by County employees that are "certified applicators." Prince George's County reported that salt and sand used for deicing roads are stored in dome-type structures and under canvas covers, respectively. The County has proposed to study ways to reduce the use of salt for deicing roads.

'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. This plan is updated annually and proposed flood management projects are subject to an exhaustive review process that includes environmental

impact assessments. Structural control projects are evaluated for their water quality and wetland impacts. State water quality certification and waterway construction permits are required prior to flood control project construction.

The County reported that it is conducting studies to determine the feasibility of retrofitting existing stormwater management and flood control facilities for water quality. Similarly, streams and wetlands are also being evaluated for potential restoration and enhancement efforts. The County has completed an assessment of potential retrofit sites in the Anacostia River Basin. One hundred and seventeen sites have been identified for water quality enhancements and fifty projects are currently in the planning, design, or construction stage.

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

Prince George's County has two active municipal landfills and both of these facilities have 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 reports that it conducts triennial inspections of both active and closed landfill facilities. Information was not submitted for any treatment, storage, or disposal facilities such as municipal recycling or transfer stations.

'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 periodically checks for applicator certification by conducting field investigations and cross-referencing phone book advertisements with a list of certified applicators. The County requires area posting before and after lawn pesticide application occurs.

The County presently does not have any programs that address the responsible use of fertilizers or herbicides but proposes to initiate a Public Outreach Program to educate communities and industries regarding proper herbicide, pesticide, and fertilizer use. Programs will be developed that motivate the public to exercise responsible use and instill a general awareness of the impacts to water quality. For example, water pollution control information will be incorporated into the County's Police Community Relations program. Educational programs will be implemented as pilot studies through the development and dissemination of brochures, newsletters, public displays, seminars, workshops, and surveys. Topics to be covered will include lawn care, fertilizer use, pesticide application, animal waste control, septic system care, car care, etc. Successful features of the educational programs will be expanded and implemented on a watershed basis.

'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...;"

WSSC has a program to detect and remove illicit connections to the sewage system in Prince George's County. Similarly, the County has developed a program to detect and remove illicit connections, address water quality complaints, investigate and monitor water quality problems, and to obtain baseline sampling data for discharges to its storm sewer system. The stated goal for this program is that all identified illicit connections, dumping activities, and non-stormwater discharges will be stopped, removed, or properly permitted through appropriate action. Additionally, the County proposes to develop grounds and housekeeping plans for existing commercial and industrial sites.

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

Prince George's County proposes to conduct field screening of outfalls in targeted communities and watersheds. Field screening will continue as part of the County's pilot studies and will be expanded to cover all outfalls. The County proposes to complete watershed inventories so that potential pollutant sources can be identified. As the watershed inventory progresses, mapping of outfalls will allow for identification of suspect discharges and a prioritization for field screening efforts. Industries will be targeted based on their respective Standard Industrial Classification (SIC) code, baseline water quality data, and complaints. Visual observations for pollutant discharge, illicit connections, and improper storage, handling, and transportation will be conducted. Additional field screening will occur by implementing stream surveys and macroinvertebrate sampling.

'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 investigative procedures for identifying illicit connections and discharges. Illicit connection investigations will be conducted in response to citizen complaints, field screening efforts, and routine inspections. Chemical testing, macroinvertebrate sampling, visual and olfactory observation, storm drain system video-taping, and dye testing will be utilized as investigative measures.

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

The Prince George's County Fire Department (PGFD), Inspection and Special Hazards Division is the County's primary responder for spills. The PGFD interacts with MDE to contain spills. Additionally, the PGFD has developed an Emergency Operations Plan that requires facilities with targeted hazardous materials (combustible liquids, poisons, and corrosives) to install a Fire Department Information Box outside of the facility or structure. Transportation corridors have been established to control the transport routes of hazardous materials. Reporting spills can be accomplished by the use of the "911" emergency response system. The Community Emergency Coordinator of the County's Hazardous Materials Local Emergency Planning Committee is notified and initiates local spill response in the event of hazardous material release.

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

As part of its proposed Public Outreach Program, the County will hold public meetings for communities and industries. These meetings will be held to encourage reporting violations of dumping and non-stormwater discharges, as well as general water pollution information. Additionally, a Water Quality Hotline phone number is planned.

'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 to herbicides, pesticides, and fertilizer, the County will disseminate information to communities and industries regarding the proper management of used oil, toxics, and hazardous materials. The County will also continue to mark inlets to inform the public that the ultimate discharge of stormwater is to the Chesapeake Bay.

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

Routine inspection and repair of the County's sewer system is conducted through WSSC's Trunk Sewer Inspection Program. Under this program, all stream crossing locations and sewer manholes of 15 inches in diameter or greater are inspected. Complete inspection of the sewer system is conducted over a 4 year period with approximately 2,000 manholes inspected per year.

'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...;"

In its NPDES municipal separate storm sewer system permit application, Prince George's County stated that it would rely on MDE's NPDES permitting program to monitor and inspect industrial facilities.

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

The County proposed to coordinate efforts with MDE to assure that unpermitted non-stormwater dischargers acquire permits. Permit issuance, inspection, enforcement, and monitoring will remain MDE's responsibility. However, nothing should preclude Prince George's County from bringing an enforcement action against a source of pollution from either an illicit connection or an industrial activity.

'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 Prince George's County since 1985. The DER performs erosion and sediment control inspections. Erosion and sediment control plan review and approval is performed by the Prince George's Soil Conservation District (SCD). As stated above, Prince George's County has an extensive planning and development review process that addresses the reduction of pollutants being discharged from areas of new development and redevelopment.

'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 Section III.B.1.b. of Appendix 1, Prince George's County has adopted ordinances necessary to implement a stormwater management program. Compliance with the regulations contained in the County's Grading, Drainage, and Erosion Control Ordinance and its Stormwater Management Ordinance should adequately control the quantity and quality of stormwater that is discharged to Prince George's 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 detailed description of inspection procedures is contained in MDE's December 1991 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. Prince George's County conducts "responsible personnel" certification classes to educate construction site operators regarding erosion and sediment control requirements. Since March 1988, 1,038 construction personnel have satisfactorily completed the County's certification program.

Summary

Comprehensive management programs for erosion and sediment control and stormwater management currently exist in Prince George's County. Implementation of proposed management programs, based on the results of ongoing pilot studies, will be phased-in during the permit term. Additionally, emphasis will be placed on public education and participation programs and implementation of an illicit connection detection program.

5. Program Funding

A summary of Prince George's 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..."

Prince George's County submitted a capital and operating budget for its Stormwater Management Enterprise Fund (SMEF) for fiscal years 90-93. The SMEF accounts for the financial needs associated with stormwater management functions in Prince George's County and is funded primarily by a stormwater management ad valorem tax rate set at 13.5 cents per $100.00 of assessed property value. Other revenues include various plan review and permit fees and interest income from reinvested surplus monies in the County's Stormwater Fund. The County reported that the current revenue sources are adequate to fund the many components of its stormwater management and NPDES programs.

Prince George's County's budget submission covers the activities of two of its agencies, the DER and DPW&T. Stormwater management functions will be carried out by 102 full-time employees in the DER and 119 employees in the DPW&T. In summary, the County's budget totals $23,435,299.00 for the capital, operation, and maintenance activities associated with stormwater management and NPDES program implementation for FY93.

Summary

Prince George's County's current revenue sources are adequate to fund the many components of its stormwater management and NPDES programs. A fiscal analysis of the capital, operation, and maintenance expenditures necessary to comply with NPDES requirements will need to be developed by the County.

6. Assessment of Controls

A summary of Prince George's 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..."

Prince George's County reported that it plans to develop a GIS based Hydrologic Simulation Program Fortran (HSPF) water quality model to assess the effectiveness of the proposed management programs for each major watershed. Also, the County has contracted the University of Maryland to conduct a water quality trend analysis based upon existing water quality data. Other assessment techniques have been proposed including surveys for determining the effectiveness of public education programs, and inventories for tracking potential pollutant sources.

Summary

Prince George's County will need to estimate the expected reductions in pollutant loads as a result of its proposed management programs.