

**MARYLAND DEPARTMENT OF THE ENVIRONMENT**  
**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**  
**MUNICIPAL SEPARATE STORM SEWER SYSTEM DISCHARGE PERMIT**

RECEIVED

**PART I. IDENTIFICATION**

A. **Permit Number:** MS-CL-95-007

JUN 12 1995

B. **Permit Area**

OFFICE OF  
ENVIRONMENTAL SERVICES

This permit covers stormwater discharges from the municipal separate storm sewer system in Carroll County, Maryland.

C. **Effective Date:** May 30, 1995

D. **Expiration Date:** May 30, 2000

**PART II. STANDARD PERMIT CONDITIONS**

A. **Legal Authority**

1. By 11/28/97, Carroll County shall provide certification from the County Attorney that it possesses the authority to directly perform the activities described in 40 Code of Federal Regulations (CFR) 122.26(d)(2)(i).
2. Carroll County shall maintain adequate legal authority, in accordance with National Pollutant Discharge Elimination System (NPDES) regulations 40 CFR 122.26(d)(2)(i), throughout the term of this permit. In the event that any provision of its legal authority is found to be invalid, the County shall make the necessary changes to maintain adequate authority.

B. **Source Identification**

1. By 5/30/96, Carroll County shall establish procedures for recording any new source identification information including the identification and mapping of storm sewer system outfalls, land use activities, population estimates, runoff coefficients, major structural controls, landfills and controls, publicly owned lands, NPDES dischargers, and industries organized by watershed and Standard Industrial Classification (SIC) codes on its Geographic Information System (GIS).
2. Source identification information shall be updated annually and submitted to the Maryland Department of the Environment (MDE) in accordance with Part IV. "ANNUAL PROGRESS REPORTS" of this permit.

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**C. Discharge Characterization**

1. By 11/30/95, Carroll County shall submit all outstanding Part 2 storm event monitoring data and analyses for its five approved monitoring sites to MDE on disk.
2. Within 6 months of MDE's approval of Carroll County's proposed long-term monitoring sites, the County shall commence sampling at an approved outfall and its appropriate in-stream monitoring station.
3. Sampling at the remaining outfalls and in-stream stations shall begin on a schedule of one outfall and its associated in-stream station every six months until sampling is being performed at all approved sites.
4. Carroll County shall complete the following minimum requirements:
  - a) A total of 12 storm events shall be monitored at each site per year with at least 3 storm events occurring per quarter. Quarters shall be based on calendar year. If extended dry weather periods occur, baseflow samples shall be taken at least once per month. If no flow is observed at the outfall during periods of dry weather, samples shall be taken at the in-stream monitoring stations only.
  - b) Three discrete samples shall be taken for stormwater flow at both outfall and in-stream monitoring stations. Samples submitted for analysis shall be representative of the approximate flow at the following three intervals along the hydrograph: the midpoint of the rising limb, the peak, and the midpoint of the falling limb.
  - c) Flow rates and water temperatures shall be recorded at points when discrete samples are taken.
  - d) Collected samples shall be submitted to a laboratory for analysis according to methods listed under 40 CFR Part 136 and analyzed for the following parameters:

BOD <sub>5</sub>	Fecal Coliform
TKN	Nitrate plus Nitrite
Total Phosphorus	Cadmium
Copper	Lead
Zinc	Oil and Grease
pH	TSS
5. For each storm event, a description of any equipment problems and weather conditions such as duration and intensity shall be recorded.
6. Reporting Frequency and Requirements
  - a) Laboratory results shall be recorded on MDE's long-term monitoring database (Appendix 3) and submitted with annual reports.

- b) Annual and seasonal pollutant load estimates, using data collected as a result of long-term monitoring, shall be submitted with annual reports.
- c) Pollutant loads shall be estimated for all identified municipal storm sewer outfalls.
- d) By 5/29/98, Carroll County shall use monitoring data from any existing in-stream monitoring stations to further refine pollutant load estimates.
- e) By 5/31/99, Carroll County shall assess its monitoring program and outline potential alternative sampling sites and procedures.

**D. Management Programs**

1. Carroll County shall maintain an acceptable stormwater management program in accordance with the Environment Article, Title 4, Subtitle 2, Annotated Code of Maryland.
2. Carroll County shall conduct maintenance inspections of all stormwater management facilities at least on a triennial basis. Inspections, necessary corrective action, and enforcement actions shall be documented and summarized in annual reports.
3. Carroll County shall submit information regarding stormwater management on the latest version of MDE's stormwater management spreadsheet (Appendix 4) in annual reports.
4. By 11/30/95, Carroll County shall propose an implementation schedule for its watershed evaluation and restoration project in the Longwell Branch. Evaluation and restoration work shall be coordinated with the County's long-term stormwater monitoring program.
5. By 12/31/96, Carroll County shall assess the effects of stormwater discharges on the Piney Run in Hampstead. This assessment shall be performed in cooperation with Baltimore County, the Town of Hampstead, the Piney Run Preservation Association, and MDE. Based on assessment results, Carroll County shall propose an implementation schedule for restoration work needed within Carroll County. Monitoring of benthic organisms and stream channel stability shall be coordinated with all assessment participants and continue for three years after the study is complete.
6. Annually, Carroll County shall provide a progress report of its Longwell Branch and Piney Run assessment and restoration projects. By 5/29/98, Carroll County shall submit a priority list for expanding watershed assessment and restoration projects to additional watersheds throughout the County.
7. By 5/30/96, Carroll County shall initiate a pilot program for pesticide, herbicide, and fertilizer control, including the use of integrated pest management techniques, at its Center Street government office building complex in Westminster. By 11/29/96,

Carroll County shall propose a schedule for expanding its pilot program for the control of pesticides, herbicides, and fertilizers to all other County owned properties.

8. By 11/28/97, Carroll County shall develop and implement an educational program for homeowners and businesses regarding the control of pesticides, herbicides, and fertilizers. This program shall be developed in coordination with MDE, Maryland Department of Agriculture (MDA), and the University of Maryland Cooperative Extension Service.
9. By 11/28/97, Carroll County shall provide educational materials on the control of pesticides, herbicides, and fertilizers to the Board of Education to be incorporated into the school system curriculum.
10. By 11/28/97, Carroll County shall do a feasibility study on the use of alternative deicing materials. The study shall include an analysis regarding the environmental effects of the County's current use of deicing materials, possible use of alternative deicing materials and potential environmental effects, and the cost associated with changing deicing procedures. Results shall be incorporated into the County's road maintenance procedures for fiscal year 1998.
11. By 11/30/95, Carroll County shall propose a two year pilot study for identifying illicit connections to its storm sewer system in the Westminster area. The County's Part 1 field screening data and source identification mapping shall be used to target outfalls for periodic inspections. Investigation and enforcement procedures shall be developed as part of this pilot study. By 5/30/96, Carroll County shall begin implementing its Westminster pilot study for illicit connection detection.
12. By 5/30/96, Carroll County shall implement a County-wide educational program regarding illicit connections and the reporting of violations. County procedures for responding to complaints, investigating illicit connections, and enforcement shall be developed.
13. By 5/30/97, Carroll County shall provide a progress report documenting its Westminster pilot study and County-wide educational program for illicit connection detection. By 5/29/98, Carroll County shall provide a report comparing the effectiveness of its Westminster pilot study and the County-wide educational program for illicit connection detection. This report shall document the number of outfalls screened, illicit connections identified, illicit connections eliminated, and make recommendations for future illicit connection detection activities.
14. Carroll County shall cooperate with MDE to ensure that all industrial dischargers secure NPDES permits from MDE.
15. By 5/29/98, Carroll County shall assess the effects of sanitary sewer system leaks on stormwater discharges. As sanitary sewer system leaks are discovered, Carroll County shall develop a schedule for correcting them in the next year's capital improvement program.

16. Carroll County shall maintain an acceptable erosion and sediment control program in accordance with the Environment Article, Title 4, Subtitle 1, Annotated Code of Maryland.
17. Carroll County shall continue its "Contractor's Forum" to educate construction site operators regarding erosion and sediment control requirements. By 5/30/96, Carroll County shall include responsible personnel certification classes as a component of these "Contractor's Forums."
18. Carroll County shall evaluate all management programs and identify any necessary changes in the annual reports.

**E. Program Funding**

1. By 5/30/96, Carroll County shall submit a fiscal analysis of the capital, operation, and maintenance expenditures necessary to comply with all conditions of this permit.
2. Carroll County shall maintain adequate program funding to comply with all conditions of this permit.

**F. Assessment of Controls**

1. Annually, Carroll County shall submit estimates of expected pollutant load reductions as a result of its proposed management programs.

**PART III. SPECIAL PROGRAMMATIC CONDITIONS**

Since the signing of the Chesapeake Bay Agreement in 1983, Maryland has been working toward meeting the goal of reducing by 40% the discharge of nutrients to the Chesapeake Bay by the year 2000. To achieve this nutrient goal, MDE has developed strategies to improve the water quality in the tributaries that drain to the Bay. MDE has subdivided the Bay watershed into ten major tributaries which have each been assigned a 40% nutrient reduction goal. Characterizations of specific tributaries have been made in terms of land use, nutrient loads, and water quality. Additionally, strategy options have been developed based on identified problems in order to guide the restoration effort in each individual tributary.

Carroll County lies within three of the Chesapeake Bay's ten major tributaries including the Upper Potomac, the Upper Western Shore, and the Patapsco/Back. This NPDES permit requires Carroll County to assist with the implementation of the strategy designed to meet the nutrient reduction goals in the Upper Potomac, the Upper Western Shore, and the Patapsco/Back tributaries. The specific permit conditions presented below will promote a watershed based approach to controlling the contribution of pollutants from stormwater runoff. Coordination between and among other jurisdictions is a major requirement and the identification of those appropriate jurisdictions will occur jointly with MDE. Additionally, deadlines, priorities, and scheduling to satisfy specific conditions will be determined in conjunction with MDE. In any case, progress toward meeting these conditions shall be reported to MDE.

**A. Programmatic Coordination**

1. Carroll County shall coordinate water quality restoration and protection efforts in watersheds shared with other jurisdictions. These efforts shall include:
  - a) the exchange of information on restoration/protection program effectiveness;
  - b) the definition of watershed management measures to support restoration/protection efforts;
  - c) the identification of appropriate watershed boundaries for planning and program development efforts; and
  - d) the coordination of planning and zoning activities to support the goals of watershed management.

**B. Data Management**

1. Carroll County shall develop standards for record keeping and databases to meet the standard permit conditions in Part II of this permit. These standards shall be developed in concert with other appropriate jurisdictions and include:
  - a) management practice databases and GIS compatibility among jurisdictions for base maps, pollutant source area locations, stormwater management facility location and description, and land use and zoning designations;
  - b) comparable population estimates and growth projections; and
  - c) consistent land use and runoff coefficients.

**C. Discharge Characterization**

1. Carroll County shall develop standards for discharge characterization. These standards shall be developed in concert with other appropriate jurisdictions and include:
  - a) coordination of long-term monitoring site selection among other appropriate jurisdictions;
  - b) standards for field and laboratory methods;
  - c) standards for monitoring databases; and
  - d) standards for annual and seasonal pollutant load estimates.

**D. Management Programs**

1. Carroll County shall develop management program standards. These standards shall

be developed in concert with other appropriate jurisdictions and include:

- a) preventative maintenance procedures;
- b) watershed management plans and retrofit assessments;
- c) development and implementation of public information and educational programs;  
and
- d) watershed inventories, illicit discharge inspection programs, and water quality enforcement.

**E. Assessment of Controls and Annual Progress Reporting**

1. Carroll County shall develop standards for loading reduction estimates, annual progress reports, and stormwater management program effectiveness.
2. Along with other jurisdictions, Carroll County shall evaluate the cumulative impact of its stormwater management waiver policy with regard to receiving water quality.

**PART IV. ANNUAL PROGRESS REPORTS**

Annual progress reports required under 40 CFR 122.42(c) will facilitate the long-term assessment of Carroll County's NPDES stormwater program. According to EPA guidance, these reports shall be based on assessment techniques proposed by jurisdictions in Part 2 NPDES applications. These reports shall include:

*§122.42(c) "(1) The status of implementing the components of the storm water management program that are established as permit conditions;"*

*§122.42(c) "(2) Proposed changes to the storm water management programs that are established as permit conditions...;"*

*§122.42(c) "(3) Revisions, if necessary, to the assessment of controls and the fiscal analysis reported in the permit application...;"*

*§122.42(c) "(4) A summary of data, including monitoring data, that is accumulated throughout the reporting year;"*

*§122.42(c) "(5) Annual expenditures and budget for year following each annual report;"*

*§122.42(c) "(6) A summary describing the number and nature of enforcement actions, inspections, and public education programs;"*

*§122.42(c) "(7) Identification of water quality improvements or degradation;"*

MDE has developed a spreadsheet (Appendix 4) for the reporting and tracking of NPDES data. This spreadsheet lists components of Carroll County's NPDES stormwater program

along with appropriate reporting parameters. Annual progress reports, including MDE's spreadsheet, shall be submitted to MDE by the anniversary date of permit issuance for each year of the permit term.

## **PART V. ENFORCEMENT AND PENALTIES**

### **A. Program Review and Evaluation**

In order to assess the effectiveness of the permittee's NPDES program for eliminating non-stormwater discharges and reducing the discharge of pollutants to the maximum extent possible, MDE will review and evaluate program implementation, annual reports, and periodic data submittals on an annual basis. Procedures for the review of local erosion and sediment control and stormwater management programs exist in Maryland's Sediment Control and Stormwater Management Laws. Additional periodic reviews and evaluations will be conducted to determine compliance with the permit conditions. Continuation or reissuance of this permit beyond January 26, 2000 will be subject to MDE's review and evaluation of Carroll County's compliance and implementation of the conditions of this permit.

### **B. Discharge Prohibitions and Receiving Water Limitations**

The permittee shall effectively prohibit non-stormwater discharges through its municipal separate storm sewer system. NPDES permitted non-stormwater discharges are exempt from this prohibition. Discharges from the following will not be considered a source of pollutants when properly managed: water line flushing; landscape irrigation; diverted stream flows; rising ground waters; uncontaminated ground water infiltration to separate storm sewers; uncontaminated pumped ground water; discharges from potable water sources; foundation drains; air conditioning condensation; irrigation waters; springs; footing drains; lawn watering; individual residential car washing; flows from riparian habitats and wetlands; dechlorinated swimming pool discharges; street wash water; and fire fighting activities. The discharge of stormwater containing pollutants which have not been reduced to the maximum extent practicable is prohibited.

The permittee shall not cause the contamination or other alteration of the physical, chemical, or biological properties of any waters of the State, including a change in temperature, taste, color, turbidity, or odor of the waters or the discharge or deposit of any organic matter, harmful organism, or liquid, gaseous, solid, radioactive, or other substance into any waters of the State, that will render the waters harmful to:

- (1) Public health, safety, or welfare;
- (2) Domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial use;
- (3) Livestock, wild animals, or birds; or
- (4) Fish or other aquatic life.



**C. Duty to Mitigate**

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

**D. Duty to Comply**

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA) and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. The permittee shall comply at all times with the provisions of the Environment Article, Title 4, Subtitles 1, 2, and 4; Title 7, Subtitle 2; and Title 9, Subtitle 3 of the Annotated Code of Maryland.

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

**E. Sanctions**

**1. Penalties Under the CWA - Civil and Criminal**

The CWA provides that any person who violates any permit condition is subject to a civil penalty not to exceed \$25,000 per day for each violation. Any person who negligently violates any permit condition is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than 1 year, or both. Any person who knowingly violates any permit condition is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than 3 years, or both.

**2. Penalties Under the State's Environment Article - Civil and Criminal**

Nothing in this permit shall be construed to preclude the institution of any legal action nor relieve the permittee from civil or criminal responsibilities and/or penalties for noncompliance with Title 4, Title 7, and Title 9 of the Environment Article, Annotated Code of Maryland, or any federal, local, or other State law or regulation.

The Environment Article, §9-342, Annotated Code of Maryland, provides that any person who violates a permit condition is subject to a civil penalty up to \$1,000 for each violation, but not exceeding \$50,000 total. The Environment Article, §9-343, Annotated Code of Maryland, provides that any person who willfully or negligently violates a permit condition is subject to a criminal penalty not exceeding \$25,000 or imprisonment not exceeding 1 year, or both.

The Environment Article, §9-343, Annotated Code of Maryland, provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or both.

The Environment Article, §9-343, Annotated Code of Maryland, provides that any person who knowingly makes any false statement, representation, or certification in any records or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or both.

**F. Permit Revocation and Modification**

**1. Permit Actions**

This permit may be modified, revoked, or terminated for cause. The filing of a request by the permittee for a permit modification, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. A permit may be modified by the Department upon written request by the permittee and after notice and opportunity for a public hearing in accordance with and for the reasons set forth in the Code of Maryland Regulations (COMAR) 26.08.04.10 C.

After notice and opportunity for a hearing and in accordance with COMAR 26.08.04.10., the Department may modify, suspend, or revoke and reissue this permit in whole or in part during its term for causes including, but not limited, to the following:

- a) Violation of any terms or conditions of this permit;
- b) Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
- c) A change in any condition that requires either a temporary reduction or elimination of the authorized discharge; or
- d) A determination that the permitted discharge poses a threat to human health or welfare or to the environment and can only be regulated to acceptable levels by permit modification or termination.

**2. Duty to Provide Information**

The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit; or to determine compliance with this permit. The permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit.

**G. Property Rights**

The issuance of this permit does not convey any property rights in either real or personal

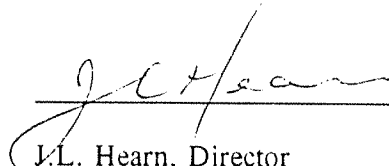
property, or any exclusive privileges nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, State, or local law or regulations.

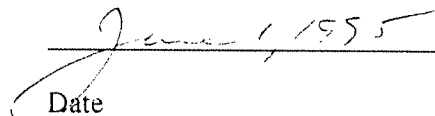
**H. Severability**

The provisions of this permit are severable. If any provision of this permit shall be held invalid for any reason, the remaining provisions shall remain in full force and effect. If the application of any provision of this permit to any circumstance is held invalid, its application to other circumstances shall not be affected.

**I. Signature of Authorized Administrator and Jurisdiction**

All applications, reports, or information submitted to the Department shall be signed as required by COMAR 26.08.04.01 D. As in the case of municipal or other public facilities, signatories shall be either a principal executive officer, ranking elected official, or other duly authorized employee.

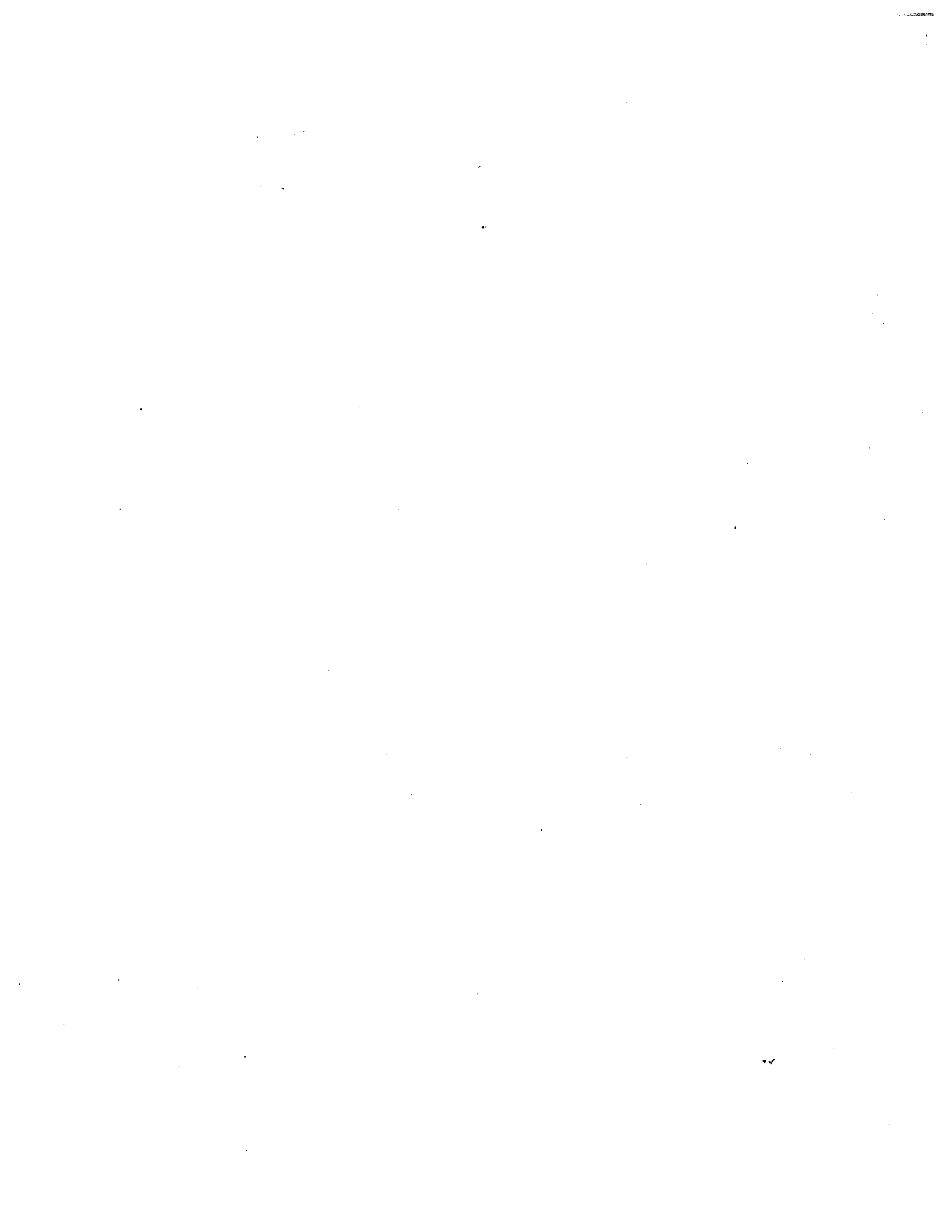
  
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J.L. Hearn, Director  
Water Management Administration

  
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Date



# **APPENDIX 1**

**DISCHARGE PERMIT APPLICATION SUMMARY**



## APPENDIX 1

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

## Carroll 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 greater than 100,000 and less than 250,000. Carroll County, according to the United States Department of Commerce's 1990 Census, has a total population of 123,372 and is therefore considered a medium municipality. As a result, the County was required to submit a two-part NPDES permit application. Carroll County has 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 outlined in Permit # MS-CL-95-007 and Appendix 2. Appendix 3 outlines MDE's long-term monitoring database and a spreadsheet for the reporting and tracking of NPDES data is included as Appendix 4. Additionally, NPDES regulatory requirements can be found in Appendix 5.

## **PART II. BACKGROUND**

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

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

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

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

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

Maryland's efforts to reduce stormwater pollution have focused on protecting and restoring the water quality of Chesapeake Bay. The Maryland General Assembly passed the Erosion and Sediment Control Law in 1970 to control runoff from construction sites and in 1982 passed the Stormwater Management Act which requires that appropriate Best Management Practices (BMP) be used for new development in order to maintain, 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**

Carroll County is located in north-central Maryland just south of the Mason Dixon line which separates it from the Commonwealth of Pennsylvania. The County is bounded on the east by Baltimore County and on the south and west by Howard and Frederick counties respectively. Westminster, the largest town and County seat, is near the center of the County. According to the United States Department of Agriculture's *Soil Survey, Carroll County, Maryland* (1969), the County's total land area is 289,920 acres, or 453 square miles. Although predominantly rural, Carroll County's population is growing as more people move to the County and commute to jobs in the Baltimore metropolitan area. Land use statistics provided by the Maryland Office of Planning (MdOP) (1990) show that agriculture accounts for 180,000 acres in the County. Developed land in the County accounts for 40,000 acres, however, between 1985 and 1990, development increased by 21%. New development is most prevalent around Westminster and in the southern and eastern portion of the County. Most growth is characterized by suburban residential and commercial development. Small areas of light industry also exist in the County, primarily located in and around Westminster. According to projections made by MdOP, Carroll County's population is expected to grow by 25% between 1990 and the year 2000, increasing its 1990 population from 123,372 to 154,300 by the turn of the century.

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

According to the Federal Insurance Administration's *Floodplain Insurance Study for Carroll County*, the most notable topographic feature in the County is a ridge which runs from the southwest corner around Mt. Airy in a northeasterly direction through Westminster to the northeast corner in Hamstead. Land to the east and south of the ridge system drains to the Patapsco River. Land to the north and west drains to the Monocacy River. The extreme northeast corner of the County drains to the Gunpowder River. Topography throughout the County is gently rolling to hilly. Elevations range from about 300 feet in the southeastern part of the County to about 1,000 feet in the northeastern section. The land is dissected by streams flowing through comparatively narrow valleys with relatively steep gradients.

Carroll County's weather conditions, according to the *Floodplain Insurance Study for Carroll County*, are defined as a continental climate with warm summers and moderately cold winters. The average annual temperature is 54°F with the average low temperature of 24° occurring in late January and early February and the average high temperature of 88° occurring in late July and early August. Precipitation in Carroll County is evenly distributed throughout the year with an annual average of 45.34 inches. Average annual snowfall is 27.8 inches.

Flooding in Carroll County is common during periods of intense or heavy rains along low lying lands adjacent to the County's stream system. According to the *Floodplain Insurance*

*Study for Carroll County*, Tropical Storm Agnes in 1972 brought unprecedented flood damage to the entire County and produced flood stages equal to or greater than the previous worst floods of record. Statistical evaluation of available data in the County indicates that the flood levels reached near Finksburg during Tropical Storm Agnes were of a 600 year return frequency. Flood waters caused a significant disruption to the transportation network in the County. Roads were closed at approximately eighty locations due to rampaging waters and numerous bridges were destroyed or severely damaged. Repair of the County road system amounted to \$4,500,000 and included the replacement of 28 bridges. Another major flooding event occurred in 1975 caused by rain associated with Hurricane Eloise. The storm event was of a 100 year return frequency and damaged three additional bridges. Total damage to the County road system from Hurricane Eloise exceeded \$1,000,000.

Numerous reports have documented the impact of urban runoff to Carroll County streams. As part of the CWA, and pursuant to sections 305(b) and 319, MDE produced two reports, a *Water Quality Assessment Report* and a *Nonpoint Source Assessment Report*. These reports implicate urban runoff in Carroll County as a significant source of sediment, bacteria, pesticides, nutrients, and thermal pollution to surface waters impacting aquatic life and limiting water contact recreation. Additionally, a Carroll County Government report was conducted to assess the impact of urban stormwater runoff on the Longwell Branch which runs through Westminster. Results from this study show that stormwater runoff is responsible for causing severe erosion along stream corridors, and elevated levels of oil, grease, sediment, and nutrients. Analyses of the biological community in the Longwell Branch show low species diversity. Also, this biological community is considered to be under extreme stress from the existing water quality conditions.

## B. Programmatic Components

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

### 1. Legal Authority

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

Carroll County operates under Board of Commissioners form of government and has only those legal authorities granted to it by the Maryland General Assembly. Many of these authorities are granted in Article 25 of the Annotated Code of Maryland. Others are specific authorizations in State statute, or in the Code of Public Laws for Carroll County. Even with

a specific grant of authority, the County must adopt local legislation in the form of Ordinances or Resolutions. The Ordinances which pertain to specific NPDES requirements are given below.

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

The County indicates that discharges of pollutants from industrial land uses are controlled by the following; Ordinance 1E, Zoning; Ordinance 22C, Stormwater Management; Ordinance 57, Regulations for Sewer Use; and Ordinance 100, Grading and Sediment Control.

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

Carroll County states that illicit discharges are controlled through its Stormwater Management Ordinance (22C), Building Code Ordinance (52B), and Grading and Sediment Control (100). The County acknowledges the lack of authority to carry out these illicit connection provisions of the NPDES program and has indicated it will amend its stormwater management ordinance. The County indicated that amendments should be adopted during 1994.

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

The County controls spills and dumping through its Zoning Ordinance (1E), Stormwater Management Ordinance (22C), Regulation of Sewer Use (57), Solid Waste Collection (94), Grading and Sediment Control (100), Septage Ordinance (103), and Protection Against Fire (202-90).

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

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

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

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

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

Carroll County claims that it has authority to inspect and monitor its storm drain system as deemed necessary through Ordinances 57, Sewer Use; 22C, Stormwater Management; 1E, Zoning; and 100, Grading and Sediment Control.

### Summary

Through the various Ordinances described above, Carroll County has the legal authority to comply with a majority of the NPDES stormwater program. Where the County is lacking authority, e.g., illicit connection detection and enforcement, it has proposed to amend Ordinance 22C, Stormwater Management, to obtain the necessary authority. The County will be required by MDE to include certification from the County Attorney stating that proper legal authority exists to directly perform all activities required by 40 CFR 122.26(d)(2)(i).

### 2. Source Identification

A summary of Carroll 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...*

Carroll County Ordinance 57, Sewer Use is used to restrict the discharge of pollutants to Publicly Owned Treatment Works. The County states that this ordinance prohibits the discharge of many substances which could conceivably be deposited into a storm drain system. These include low pH water and any liquid having a temperature higher than 100°F.

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

Carroll County's Geographic Information System Department used its Geographic Information System's (GIS) database and mapping capabilities to produce ten source identification maps of the County. These maps are based on USGS 7.5 minute topographic maps and are enlarged to a scale of 1" = 1,200'.

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

Carroll County identified 1,005 municipal separate storm sewer system outfalls through a combination of records research and field investigation. These outfalls are mapped on the County's USGS 7.5 minute topographic maps.

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

Land use for each major outfall is described as agricultural, commercial, light industrial, heavy industrial, and residential (low, medium, and high density). These land uses are presented on USGS 7.5 topographic maps and are color coded. Additionally, for each watershed, population figures are given based on the 1990 Census and population projections

to the year 2,000 are based on Baltimore Metropolitan Council of Governments Round V projections. Runoff coefficients were derived from the "Simple Method" as described in *Controlling Urban Runoff: A practical Manual For Planning and Designing Urban BMPs* (Schuler, 1987)

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

The Carroll County Board of Commissioners owns and operates two landfills, Hoods Mill, located at the intersection of MD Route 97 and Hoods Mill Road, and Northern, located on MD Route 140 southeast of Westminster. Also, the County owns three closed solid waste management facilities, Bark Hill, Hodges, and John Owings Landfill, and one closed tire disposal facility. Additionally, there are fifteen privately owned landfills, both active and inactive throughout the County. All public and private, active and inactive facilities are mapped on the County's 1,200 scale topographic maps.

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

Within Carroll County there are 58 NPDES waste water permits which have been issued by MDE, seventeen of which are for waste water treatment plants. The remaining permits are for waste water associated with industrial activity. All NPDES waste water dischargers have been mapped on Carroll County's 1,200 scale topographic maps.

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

The County has identified 372 stormwater management facilities throughout the County. Included with the County's application is information on type of facility, grid coordinates, drainage area, owner, and condition. All of these stormwater management facilities have been mapped on the County's 1,200 scale topographic maps.

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

There are 224 County owned properties which have been mapped on Carroll County's 1,200 scale topographic maps. Additionally, the County's application included information on land use and acreage associated with these County owned lands.

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

Carroll County provided an inventory of over 300 facilities which may discharge stormwater associated with industrial activity. This inventory is organized by watershed and includes the name, address, and Standard Industrial Classification (SIC) code of each facility.

### Summary

Carroll County has satisfied the NPDES stormwater requirements for source identification. The County's permit will require any new source identification information to be compiled annually on Carroll County's GIS databases and maps.

### 3. Discharge Characterization

A summary of Carroll 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..."*

Monthly mean rain and snow fall estimates have been collected at a weather station located just north of Westminster. The station has been approved by the National Oceanic and Atmospheric Administration's National Weather Service. The data, which have been collected since 1969, show average monthly rainfall to range between 2.87 inches in February and 4.59 inches in June. The fewest number of days/month with precipitation is 8.1 which occurs in October and the greatest number of days/month with precipitation is 13.6 which occurs in May.

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

Although no stormwater monitoring has been done in Carroll County, numerous monitoring sites have been established to monitor surface water and groundwater throughout the County. Monitoring has occurred in the Piney Run Watershed, Gillis Falls Watershed, Cranberry Watershed, Big Pipe Creek, Double Pipe Creek, Union Mills Reservoir, Beaver Run, Morgan Run, North Branch of the Patapsco River, South Branch of the Patapsco, Middle Potomac, Alloway Creek, Monocacy River, Gunpowder River, and Liberty Reservoir.

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

Carroll County provided a list of waterways that receive stormwater discharges from the County's storm drain system. The three major watersheds which receive these discharges are the Gunpowder, Monocacy, and Patapsco Rivers.

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

Carroll County personnel identified, mapped, and field screened ninety-nine "major" municipal storm sewer system outfalls. Twenty-six were observed with flow at the time of inspection. Field screening was conducted during the months of December 1992 and January 1993. Lamotte Company storm drain kits, model SSDK-Code 7446, were used to test for the required five parameters, pH, total chlorine, detergents, phenols, and total copper. Quality control/quality assurance testing procedures as recommended by the Lamotte Company were followed.

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

Carroll County's characterization plan of five representative outfalls included three residential land uses of varying densities, one commercial land use, and one industrial land use. The County generated aerial photographs of the sites which included land use, drainage areas, and the storm drain system. From these aerial photographs and a 4/20/93 field visit, MDE approved the County's sites for Part 2 monitoring requirements.

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

MDE approved Carroll County's sampling plan to monitor five representative outfalls for three storm events. In the County's Part 2 application, data were provided for five storm events. Monitoring of storm events in Carroll County is on-going. NPDES stormwater regulations require the County to provide MDE with data for 15 storm events.

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

Estimates of annual pollutant loads were developed for cumulative discharges from all major outfalls. Pollutant loads were computed using the "Simple Method." Default values were used for event mean concentration (EMC) because there were not enough data available from testing in Carroll County to provide accurate estimates. Computed pollutant loads are presented in Appendix D of the County's Part 2 application.

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

Carroll County will estimate seasonal pollutant loads and representative EMC for all major outfalls. Loads will be estimated for each constituent detected at all five outfalls tested for Part 2 monitoring. Default values may be used to determine EMC if more accurate data are not available.

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

Carroll County proposes to establish one in-stream monitoring station and three major outfall monitoring stations within the same watershed. The in-stream station will be located on the West Branch of the Patapsco River in Bennett Cerf Memorial Park just north of Route 27. The three major outfalls to be monitored represent primarily homogenous commercial, industrial, and residential land uses. Two of these outfalls, the John's Street commercial site and the Air Business Center were monitoring sites for the County's Part 2 application. The John's Street site is located in the Longwell Branch, a tributary to the West Branch of the Patapsco River. The County is receiving funding from MDE to construct various retrofit projects to improve water quality in the stream. The proposed location of the in-stream monitoring station will help the County monitor the success of its retrofit efforts.

### **Summary**

Carroll County will need to complete Part 2 stormwater monitoring. The County's Part 2 submittal contained data for 5 storm events. The NPDES stormwater regulations require the submittal of data for 15 storm events. Once these data have been submitted to MDE, the County's application will be complete for discharge characterization.

#### 4. Management Programs

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

Carroll County has numerous management programs that address NPDES stormwater requirements. Most notably are those management programs developed in response to ordinances 1E, Zoning; 22C, Stormwater Management; 57, Regulation of Sewer Use; and 100, Grading and Sediment Control. Other NPDES stormwater management measures have been proposed as components in a pilot program in the Longwell Branch of the Patapsco River. This watershed which includes sections of urban Westminster has been heavily impacted by urban stormwater pollution. Proposed management programs include retrofit projects, restoration projects, watershed plans, public education, and pollution prevention plans. The effectiveness of these management programs will be assessed and successful components will be expanded to other watersheds in the County.

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

Carroll County performs stormwater management facility maintenance inspections at least once every two years. Inspections are performed by the Bureau of Stormwater Management and Sediment Control. Maintenance reports are forwarded to facility owners for corrective action. County owned facilities are maintained by the Bureau of Land Management and Maintenance.

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

Stormwater management planning procedures for new development are completed in accordance with Ordinance 22C which was approved by the MDE and adopted on August 8, 1991. Any construction plan that must be reviewed and approved by the Carroll County Planning and Zoning Commission or a Town/City Commission must be submitted to the Carroll County Office of Environmental Services (OES) for stormwater management review prior to approval. Numerous environmental provisions in other ordinances allow the County to develop a holistic approach to designing subdivisions including clustering, reducing paved surfaces, using open section road, and applying stream buffer and forest conservation requirements.

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

The Carroll County Bureau of Roads Operations has procedures for controlling pollutants washed from road surfaces. Deicing salt is stored in 4 domed buildings located throughout the County. Salt loads in trucks are always covered and salt piles are moved under roof upon delivery. Salt sprayers on County vehicles are calibrated at least once a year to assure that excess salt is not used. The Bureau of Roads Operations avoids using herbicides for vegetation control whenever possible. Growth along County roads is controlled by mowing. Any vegetative spraying is done by an MDA certified applicator.



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

Carroll County currently has only one major flood management project not specifically constructed as a stormwater management facility. The Piney Run Dam and Reservoir, in the Patapsco River Basin, was constructed in 1974 for flood control, water supply, and recreation. A Citizen Monitoring Program, using laboratory chemical analyses, was initiated in 1990 to help determine if the reservoir's water quality meets Safe Drinking Water Act standards. The reservoir will be brought on-line as a County water supply in 1995 to serve the Freedom District in Carroll County. The reservoir is currently managed by the Carroll County Department of Parks and Recreation. Two additional flood management and reservoir water supply projects have been proposed for Gillis Falls and Union Mills. These projects are currently under State and federal review for wetlands and habitat protection.

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

The Carroll County Board of Commissioners owns and operates two landfills, Hoods Mill (located at the intersection of MD Route 97 and Hoods Mill Road, three miles west of Sykesville) and Northern (located on MD Route 140 southeast of Westminster). Both Hoods Mill and Northern landfills are self contained with no point source discharge of either runoff or leachate. At Hoods Mill Landfill, surface runoff and leachate are collected in a subsurface tank. The tank is regularly pumped into a truck and transported to the Freedom District sewage treatment plant. At Northern Landfill, clean runoff is diverted to an infiltration facility. A groundwater discharge permit was secured from MDE in 1993 for this infiltration facility. Leachate at Northern Landfill is collected in ponds with impervious liners. Leachate collected in these ponds is regularly pumped into a truck and transported to the Westminster Septage facility for treatment.

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

The Carroll County's OES is involved with efforts of the Governor's Pesticide Council to develop and distribute educational materials to homeowners concerning the control of pesticides, herbicides and fertilizers, the use of integrated pest management (IPM), and the benefits of composting. Joint educational programs with the University of Maryland Cooperative Extension Service regarding the control of chemical runoff associated with cultivation management at home are also conducted. Additionally, Carroll County is proposing to introduce IPM programs for government owned properties.

*§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...;"*

A proposed Water Resources Management Program will be used to prevent illicit discharges to Carroll County's separate storm sewer system. This program will require new businesses to propose and implement pollution prevention plans for chemical storage. In some

environmentally sensitive areas, chemical storage will be prohibited. The Water Resource Management Program will also require businesses that use toxic substances or oil to prepare and file a spill contingency plan with the OES:

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

The Carroll County OES, as part of the NPDES Part 1 Permit Application, screened all major outfalls in the municipal storm drain system for illicit discharges. To continue field screening efforts, OES will organize stream walks with citizens and environmental professionals. For example, as part of the County's stream restoration project in the Longwell Branch, all discharges to the stream will be investigated. Additionally, OES is currently sponsoring a citizen water quality monitoring program in the Piney Run Watershed. A component of this program is to teach the citizens about illicit discharges and encourage them to report any suspected violations. This program will be expanded to other watersheds throughout the County.

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

Inspectors from Carroll County's OES and the Health Department will investigate illicit connection complaints. No description was given in Carroll County's application regarding investigatory procedures.

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

Spill response procedures in Carroll County have been developed by the County Hazardous Material Steering Committee. The steering committee has designated two levels of response. As part of the County's initial response, two fire engine companies are dispatched. The lead officer assesses the situation upon arrival and, if necessary, initiates a second level of response. The second level response includes a Hazardous Materials (Haz-Mat) unit from out of County. Additionally, a trained Haz-Mat volunteer from within Carroll County may be notified to aid in the spill response. The Haz-Mat teams that have agreed to assist Carroll County are Baltimore County, Fort Detrick, Washington County, Montgomery County, and York County, Pa. Although these units are capable of handling most incidents, response time may pose a problem.

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

OES sponsors a citizen water quality monitoring program in the Piney Run watershed. The Citizen monitoring program may be expanded to other watersheds. This program, which requires public education and understanding of the watershed to be monitored, will help the citizens, in conjunction with OES, identify sources of illicit discharges.

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

OES will concentrate on innovative methods of increasing public awareness of environmental concerns such as illicit discharges. Brochures and newspaper articles will be published for distribution throughout the County. As part of yearly workshops with the local Board of Education, information on stormwater management will be provided to education professionals so that this issue can be incorporated into the Carroll County school system curriculum.

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

The Carroll County Health Department addresses complaints of suspected sewage discharge into the storm drain system. Upon locating the source of the illicit discharge, the Health Department issues an abatement order. This abatement order requires the discharge to be eliminated. If the abatement order is not followed, a criminal case will be filed in court against the violator.

§122.26(d)(2)(iv) "(C) A description of a program to monitor and control pollutants...from municipal landfills...The program shall:"

Carroll County has received an NPDES industrial discharge permit from MDE to control stormwater runoff from landfill facilities. The County provided a list of over 300 industries that may require coverage under MDE's NPDES industrial stormwater general permit.

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

Carroll County did not describe a program to control pollutants in stormwater discharges from industrial facilities. Although permit issuance, inspection, enforcement, and monitoring will remain MDE's responsibility, nothing should preclude Carroll County from bringing enforcement action against a source of pollution from either an illicit connection or an industrial activity. Therefore, the County will need to coordinate efforts with MDE to assure that unpermitted non-stormwater dischargers acquire permits.

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

As stated above, the County did not describe a program to control pollutants in stormwater discharges from industrial facilities. Monitoring downstream of landfills, hazardous waste sites, and industrial facilities is required by MDE through industrial NPDES permits. Quarterly testing is performed and results are compared to background data. If any pollutants are detected above the background data, further monitoring is required to identify specific pollutant quantities. Again, the County will need to coordinate efforts with MDE to assure that industrial facilities are in compliance with stormwater discharge permit requirements.

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

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

MDE has delegated erosion and sediment control enforcement authority to Carroll County since 1987. The last program review was completed by MDE in December 1992. At that time, Carroll County was delegated enforcement authority for a two year period through June 30, 1995.

§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. Compliance with the regulations contained in the County's Sediment Control and Stormwater Management Ordinances should adequately control the quantity and quality of stormwater that is discharged to Carroll 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.

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

The Carroll County Bureau of Stormwater Management and Sediment Control has hosted three workshops on sediment control over the past 2 years. These forums give contractors a chance to discuss their concerns and ideas with engineers, surveyors, and local government officials. The Bureau hopes to organize additional contractor's forums beginning in the fall of 1994.

### Summary

Carroll County has numerous management programs which directly address NPDES municipal stormwater management requirements. Where management programs are lacking, the County has proposed new programs. Many of the new initiatives are proposed as pilot programs in targeted watersheds, such as the Longwell Branch, so that each program's effectiveness can be assessed before expansion to other areas of the County's storm drain system. The County's proposal for illicit connection detection is designed for responding to complaints from County residents. A more pro-active program for searching out and eliminating illicit connections will need to be proposed for satisfying NPDES program requirements. Additionally, MDE will require the County to hold "green card" certification classes as part of its contractor's forums.

### 5. Program Funding

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

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

The Carroll County Board of Commissioners has dedicated general funds for the continued operation of the County stormwater management program and other related programs. In addition, at the end of the NPDES Part 2 permit application preparation, approximately \$35,000 in Capital budget funds dedicated to meeting NPDES permit requirements will remain. Also, the County is currently using an MDE grant to complete the feasibility study in the Longwell Branch and shall continue to pursue State and federal funding options for subsidizing County programs.

### Summary

Carroll County has identified several sources of funds for implementing the requirements of the NPDES stormwater program. Funding options include the County's General Funds, the County's Capital Budget, and State and federal grants.

### 6. Assessment of Controls

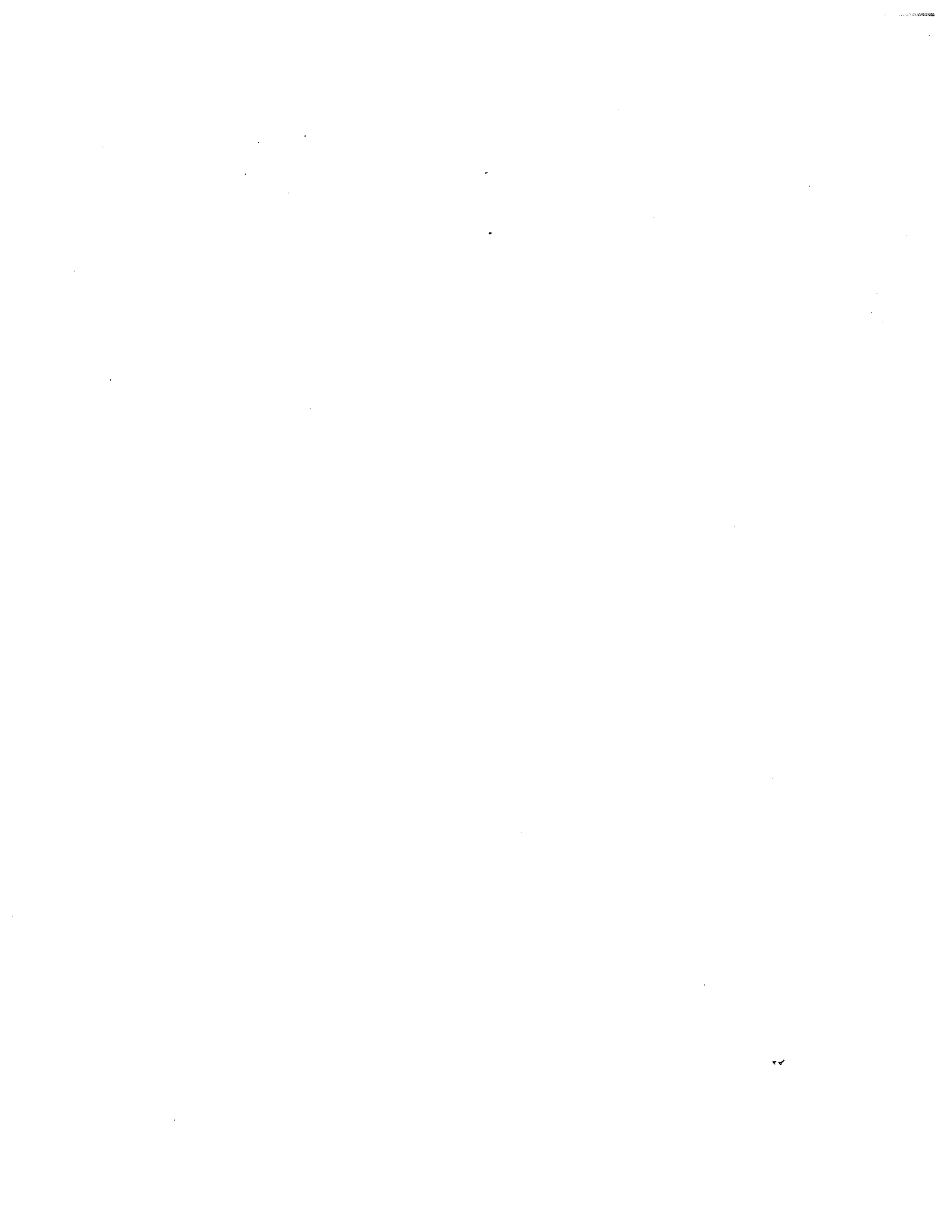
A summary of Carroll County's NPDES application submittal, specific to the regulatory requirements for assessment of controls, is as follows:

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

Carroll County will provide annual estimates of pollutant load reductions as a result of its proposed management programs based on available information. Various direct and indirect measures of program effectiveness will be employed to compute these estimates. The most straightforward method of measurement will include estimates of pollutant load reductions from BMPs required for stormwater management. Retrofits of existing structures or existing areas developed prior to the County's stormwater management program will be considered. Improvements required as part of the stormwater management facility maintenance program will be included in the pollutant load estimates. Education programs will be assessed by quantifying number of pamphlets distributed, attendants and evaluation forms from workshops and seminars, and illicit discharges reported or discovered.

### Summary

Carroll County has proposed both direct and indirect measurements for assessing the effectiveness of its stormwater management components. These assessments shall evolve with the implementation of the County's stormwater management programs and will be used to direct the County's NPDES program implementation.



# **APPENDIX 2**

**PERMIT CONDITIONS**





## APPENDIX 2

NPDES Permit Conditions and Compliance Schedule – Carroll County		
Standard Permit Conditions	Permit Condition	Due Date
A. Legal Authority	1. Carroll County shall provide certification from the County Attorney that it possesses the authority to directly perform the activities described in 40 CFR 122.26(d)(2)(i).	11/28/97
	2. Carroll County shall maintain adequate legal authority, in accordance with the National Pollutant Discharge Elimination System (NPDES) regulation 40 CFR 122.26(d)(2)(i), throughout the term of this permit. In the event that any provision of its legal authority is found to be invalid, the County shall make the necessary changes to maintain adequate authority.	Ongoing
B. Source Identification	1. Carroll County shall establish procedures for recording any new source identification information including the identification and mapping of storm sewer system outfalls, land use activities, population estimates, runoff coefficients, major structural controls, landfills and controls, publicly owned lands, NPDES dischargers, and industries organized by watershed and Standard Industrial Classification (SIC) codes on its Geographic Information System (GIS).	5/30/96
	2. Source identification information shall be updated annually and submitted to the Maryland Department of the Environment (MDE) in accordance with Part IV. "ANNUAL PROGRESS REPORTS" of this permit.	Annually
C. Discharge Characterization	1. Carroll County shall submit all outstanding Part 2 storm event monitoring data and analyses for its five approved monitoring sites to MDE on disk.	11/30/95
	2. Within 6 months of MDE's approval of Carroll County's long-term monitoring sites, the County shall commence sampling at an approved outfall and its appropriate in-stream monitoring station.	Contingent on MDE Approval
	3. Sampling at the remaining outfalls and in-stream stations shall begin on a schedule of one outfall and its associated in-stream station every six months until sampling is being performed at all approved sites.	Contingent on MDE Approval
	4. Carroll County shall complete the following minimum requirements:	Ongoing
	a) A total of 12 storm events shall be monitored at each site per year with at least 3 occurring per quarter. Quarters shall be based on calendar year. If extended dry weather periods occur, baseflow samples shall be taken at least once per month. If no flow is observed at the outfall during periods of dry weather, samples shall be taken at the in-stream monitoring stations only.	Monthly
	b) Three discrete samples shall be taken for stormwater flow at both outfall and in-stream monitoring stations. Samples submitted for analysis shall be representative of the approximate flow at the following three intervals along the hydrograph: the midpoint of the rising limb, the peak, and the midpoint of the falling limb.	Monthly

**NPDES Permit Conditions and Compliance Schedule -- Carroll County**

Standard Conditions	Permit Condition	Due Date
(Discharge Char. - cont.)	<p>c) Flow rates and water temperatures shall be recorded at points when discrete samples are taken.</p>	Each Sample
	<p>d) Collected samples shall be submitted to a laboratory for analysis according to methods listed under 40 CFR Part 136 and analyzed for the following parameters: BOD5, Fecal Coliform, TKN, Nitrate plus Nitrite, Total Phosphorus, Cadmium, Copper, Lead, Zinc, Oil and Grease, TSS, and pH.</p>	Each Sample
5.	For each storm event, a description of equipment problems and weather conditions such as duration and intensity shall be recorded.	Each Sample
6.	Reporting Frequency and Requirements:	
a)	Laboratory results shall be recorded on MDE's long-term monitoring database (Appendix 3) and submitted along with annual reports.	Annually
b)	Annual and seasonal pollutant load estimates, using data collected as a result of long-term monitoring, shall be submitted with annual reports.	Annually
c)	Pollutant loads shall be estimated for all identified municipal storm sewer outfalls.	Annually
d)	Carroll County shall use monitoring data from any existing in-stream monitoring stations to further refine pollutant load estimates.	5/29/98
e)	Carroll County shall assess its monitoring program and outline potential alternative sampling sites and procedures.	5/31/99
D. Management Programs	1. Carroll County shall maintain an acceptable stormwater management program in accordance with the Environment Article, Title 4, Subtitle 2, Annotated Code of Maryland.	Ongoing
2.	Carroll County shall conduct maintenance inspections of all stormwater management facilities at least on a triennial basis. Inspections, necessary corrective action, and enforcement actions shall be documented and summarized in annual reports.	Annually
3.	Carroll County shall submit information regarding stormwater management on the latest version of MDE's stormwater management spreadsheet (Appendix 4) in annual reports.	Annually
4.	Carroll County shall propose an implementation schedule for its watershed evaluation and restoration project in the Longwell Branch. Evaluation and restoration work shall be coordinated with the County's long-term stormwater monitoring program.	11/30/95

**NPDES Permit Conditions and Compliance Schedule -- Carroll County**

Standard Conditions	Permit Condition	Due Date
(Management Prog. - cont.)	<p>5. By 12/31/96, Carroll County shall assess the effects of stormwater discharges on the Piney Run in Hampstead. This assessment shall be performed in cooperation with Baltimore County, the Town of Hampstead, the Piney Run Preservation Association, and MDE. Based on assessment results, Carroll County shall propose an implementation schedule for restoration work needed within Carroll County. Monitoring of Benthic organisms and stream channel stability shall be coordinated with all assessment participants and continue for three years after the study is complete.</p> <p>6. Annually, Carroll County shall provide progress reports of its Longwell Branch and Piney Run assessment and restoration projects. By 5/29/98, Carroll County shall submit a priority list for expanding watershed assessment and restoration projects to additional watersheds throughout the County.</p> <p>7. Carroll County shall initiate a pilot program for pesticide, herbicide, and fertilizer control, including the use of integrated pest management techniques, at its Center Street government office building complex in Westminster. By 11/29/96, Carroll County shall propose a schedule for expanding its pilot program for the control of pesticides, herbicides, and fertilizers to all other County owned properties.</p> <p>8. Carroll County shall develop and implement an educational program for homeowners and businesses regarding the control of pesticides, herbicides, and fertilizers. This program shall be developed in coordination with MDE, Maryland Department of Agriculture (MDA), and the University of Maryland Cooperative Extension Service.</p> <p>9. Carroll County shall provide educational materials on the control of pesticides, herbicides, and fertilizers to the Board of Education to be incorporated into the school system curriculum.</p> <p>10. Carroll County shall do a feasibility study on the use of alternative deicing materials. The study shall include an analysis regarding the environmental effects of the County's current use of deicing materials, possible use of alternative deicing materials and potential environmental effects, and the cost associated with changing deicing procedures. Results shall be incorporated into the County's road maintenance procedures for fiscal year 1998.</p> <p>11. Carroll County shall propose a two year pilot study for identifying illicit connections to its storm sewer system in the Westminster area. The County's Part 1 field screening data and source identification mapping shall be used to target outfalls for periodic inspections. Investigation and enforcement procedures shall be developed as part of this pilot study. By 5/30/96, Carroll County shall begin implementing its Westminster pilot study for illicit connection detection.</p> <p>12. Carroll County shall implement a County-wide educational program regarding illicit connections and the reporting of violations. County procedures for responding to complaints, investigating illicit connections, and enforcement shall be developed.</p> <p>13. Carroll County shall provide a progress report documenting its Westminster pilot study and County-wide educational program for illicit connection detection. By 5/29/98, Carroll County shall provide a report comparing the effectiveness of its Westminster pilot study and the County-wide educational program for illicit connection detection. This report shall document the number of outfalls screened, illicit connections identified, illicit connections eliminated, and make recommendations for future illicit connection detection activities.</p>	<p>12/31/96</p> <p>Annually 5/29/98</p> <p>5/30/96 11/29/96</p> <p>11/28/97</p> <p>11/28/97</p> <p>11/28/97 1998</p> <p>11/30/95 5/30/96</p> <p>5/30/96</p> <p>5/30/97 5/29/98</p>

**NPDES Permit Conditions and Compliance Schedule -- Carroll County**

<b>Standard Permit Conditions</b>		<b>Permit Condition</b>	<b>Due Date</b>
(Management Prog. - cont.)	14.	Carroll County shall cooperate with MDE to ensure that all industrial dischargers secure NPDES permits from MDE	Ongoing
	15.	Carroll County shall assess the effects of sanitary sewer system leaks on stormwater discharges. As sanitary sewer system leaks are discovered, Carroll County shall develop a schedule for correcting them in the next year's capital improvement program.	5/29/98
	16.	Carroll County shall maintain an acceptable erosion and sediment control program in accordance with the Environment Article, Title 4, Subtitle 1, Annotated Code of Maryland.	Ongoing
	17.	Carroll County shall continue its "Contractor's Forum" to educate construction site operators regarding erosion and sediment control requirements. By 5/30/96, Carroll County shall include responsible personnel certification classes as a component of these "Contractor's Forums."	5/30/96
E. Program Funding	18.	Carroll County shall evaluate all management programs and identify any necessary changes in the annual report.	Annually
	1.	Carroll County shall submit a fiscal analysis of the capital, operation, and maintenance expenditures necessary to comply with all conditions of this permit.	5/30/96
F. Assessment of Controls	2.	Carroll County shall maintain adequate program funding to comply with all conditions of this permit.	Ongoing
	1.	Carroll County shall submit estimates of expected pollutant load reductions as a result of its proposed management programs.	Annually
<b>Special Conditions</b>		<b>Permit Conditions</b>	<b>Due Date</b>
A. Programmatic Coordination	1.	Carroll County shall coordinate water quality restoration and protection efforts in watersheds shared with other jurisdictions. These efforts shall include:	
	a)	the exchange of information on restoration/protection program effectiveness;	
	b)	the definition of watershed management measures to support restoration/protection efforts;	
	c)	the identification of appropriate watershed boundaries for planning and program development efforts; and	
	d)	the coordination of planning and zoning activities to support the goals of watershed management.	
B. Data Management	1.	Carroll County shall develop standards for record keeping and databases to meet the standard permit conditions in Part II of this permit. These standards shall be developed in concert with other appropriate jurisdictions and include:	
	a)	management practice databases and GIS compatibility among jurisdictions for base maps, pollutant source area locations, stormwater management facility location and description, and land use and zoning designations;	
	b)	comparable population estimates and growth projections; and	

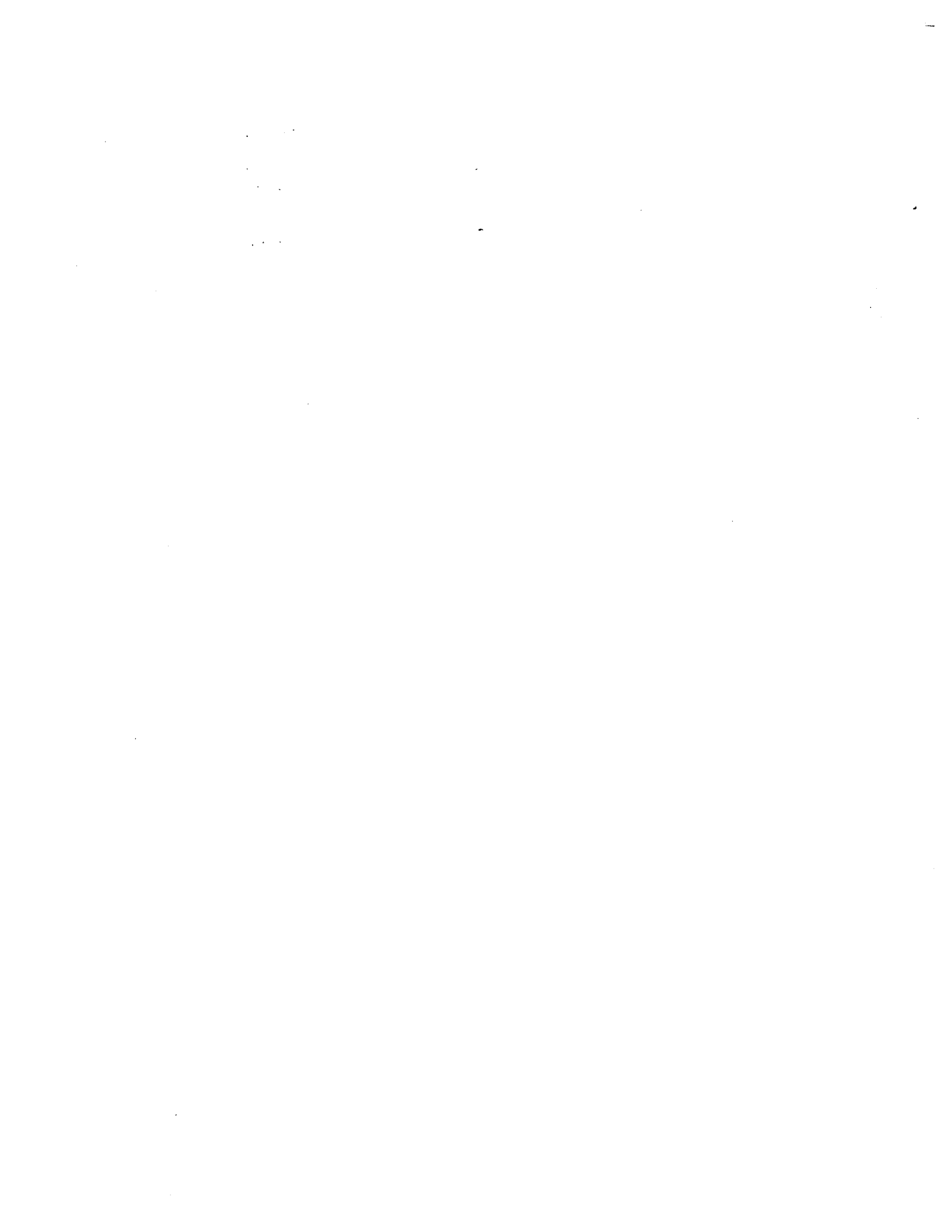
**NPDES Permit Conditions and Compliance Schedule -- Carroll County**

<b>Special Permit Conditions</b>		<b>Permit Condition</b>		<b>Due Date</b>
(Data Management - cont.)		c)	consistent land use and runoff coefficients.	
C. Discharge Characterization	1.		Carroll County shall develop standards for discharge characterization. These standards shall be developed in concert with other appropriate jurisdictions and include:	
		a)	coordination of long term monitoring site selection among other jurisdictions;	
		b)	standards for field and laboratory methods;	
		c)	standards for monitoring databases; and	
		d)	standards for annual and seasonal pollutant load estimates.	
D. Management Programs	1.		Carroll County shall develop management program standards. These standards shall be developed in concert with other appropriate jurisdictions and include:	
		a)	acceptable preventative maintenance procedures;	
		b)	watershed management plans and retrofit assessments;	
		c)	development and implementation of public information and educational programs; and	
		d)	watershed inventories, illicit discharge inspection programs, and water quality enforcement.	
E. Assessment of Controls and Annual Progress Reporting	1.		Carroll County shall develop standards for loading reduction estimates, annual progress reports, and stormwater management program effectiveness.	
		2.	Along with other jurisdictions, Carroll County shall evaluate the cumulative impact of its stormwater management waiver policy with regard to receiving water quality.	



# **APPENDIX 3**

**LONG-TERM MONITORING DATABASE**

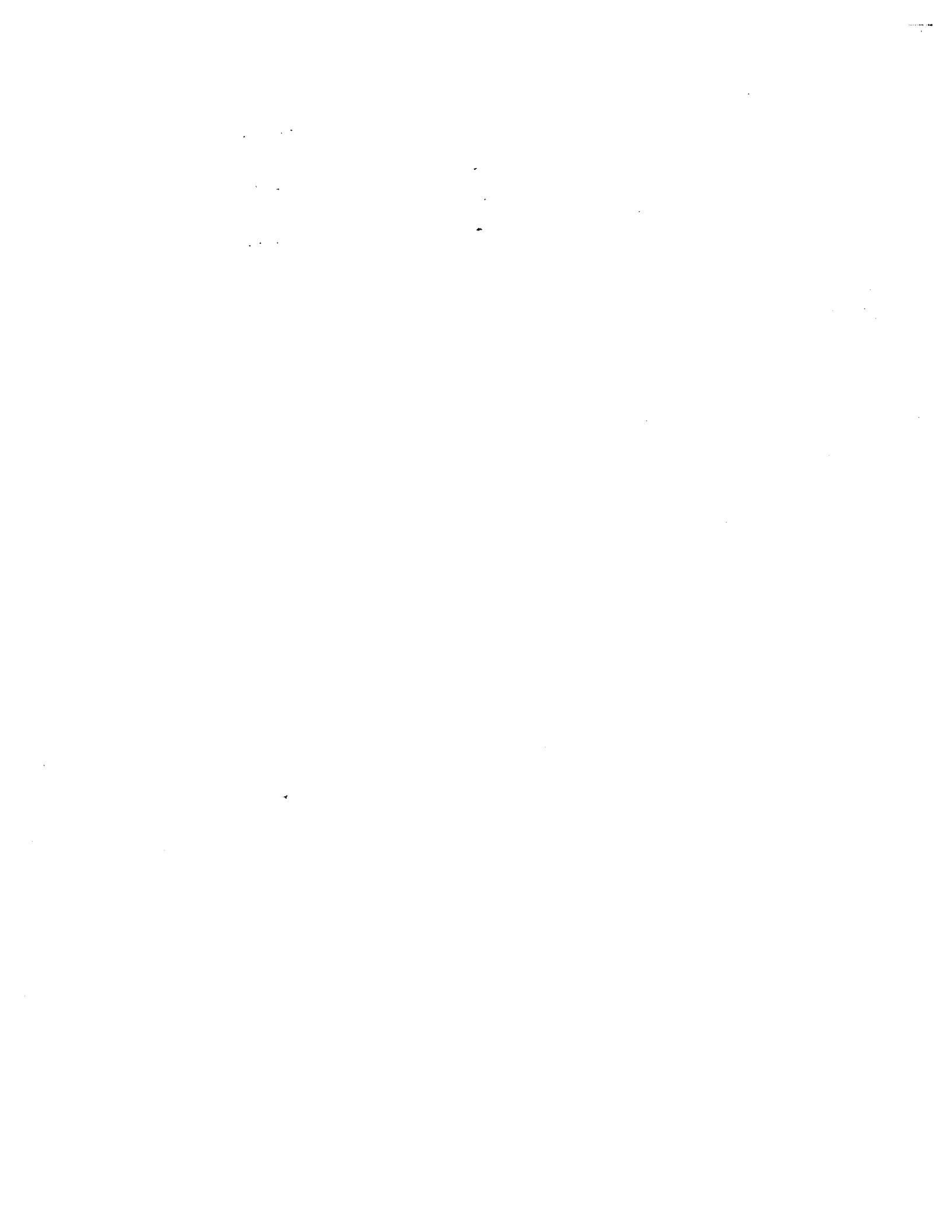




### APPENDIX 3

The following is information regarding the long-term monitoring database. The database has been modified from the Part 2 monitoring database to include more site information for each storm event sampled.

<u>FIELD NAME</u>	<u>DESCRIPTION</u>
JURIS	Jurisdiction name
WATSHED	Watershed name
DATE	Date
TIME	Time of Day
INST	Instream or Outfall Station Sample?
LAT	Latitude of monitoring location
LONG	Longitude of monitoring location
STAT	Storm flow or base flow sampled?
DEPTH	Rainfall amount during sampled period
DURAT	Duration of Storm Event
INTENS	Intensity of Storm Event
BOD	Biological Oxygen Demand
TKN	Total Kjeldahl Nitrogen
PHOSPH	Total Phosphorus
COPPER	Copper
ZINC	Zinc
PH	pH
COLIF	Fecal Coliform
NITRATE	Nitrate plus Nitrite
CADMIUM	Cadmium
LEAD	Lead
O&G	Oil and Grease
WATEMP	Water Temperature in Celsius
TSS	Total Suspended Solids



# **APPENDIX 4**

**STORMWATER MANAGEMENT SPREADSHEET  
for  
ANNUAL REPORTING**



## APPENDIX 4

The following are hard copies of IMPROV spreadsheets that have been constructed to store annual reporting data. The IMPROV software is an advanced version of Lotus 1-2-3 and is compatible with older Lotus software. The following data will be recorded by watershed.

<b>B. Source Identification</b>			
<b>Criteria\Watershed</b>	<b>Gunpowder</b>	<b>Patapsco</b>	<b>Monocacy</b>
major outfalls			
minor outfalls			
commercial landuse %			
industrial landuse %			
residential landuse %			
population			
watershed acreage			
NPDES permitted facilities			

<b>D. Management Programs - Illicit Connection Detection</b>			
<b>Criteria/Watershed</b>	<b>Gunpowder</b>	<b>Patapsco</b>	<b>Monocacy</b>
Visual screening			
Chemical screening			
Permits granted			
Permits denied			
Complaints			
Dry weather flow - yes			
Sources identified			
Sources removed			
Enforcement actions			
Fines issued			
Money collected			
Program funding			

**D. Management Programs - Stormwater Management**

Criteria\Watershed	Gunpowder	Patapsco	Monocacy
Building permits issued			
Grading permits issued			
SWM exempt projects			
SWM project plans reviewed			
Plans reviewed			
SWM waivers requested			
Waivers denied			
Waivers granted (Qn)			
Waivers granted (Ql)			
Total (Qn + Ql)			
Fees-in-lieu approved			
Total \$ collected			
Plan approvals			
SWM facil. required on plans			
Infiltration facilities			
Retention ponds			
Detention ponds			
Extended detention ponds			
Vegetated swales			
Wetlands/shallow marshes			
Oil/grit separators			
Other			
Total facilities			
Total # facilities completed			
Acres land developed			
Acres land served by SWM			
Facilities under construction			
Retrofits			
Const. inspections completed			
NOVs/SWOs issued			
Private facilities inspected			
Maint. agreements enforced			
Public facilities inspected			
Complaints			

**D. Management Programs - Miscellaneous**

<b>Criteria\Watershed</b>	<b>Gunpowder</b>	<b>Patapsco</b>	<b>Monocacy</b>
Gallons oil recycled			
Gallons antifreeze recycled			
Tons recycled material			
Recycling pamphlets distrib.			
Pest./herb. pamphlets distrib.			
Miles street sweeping			
Total street miles			
Feet storm drains cleaned			
Total length of storm drain system			
Tons sand/salt applied			
Spill responses			

Reporting on a watershed basis does not apply to the following information. Rather, this information will be recorded for each year of the permit term.

C. Discharge Characterization						
Criteria/Permit Year	Permit Year 1	Permit Year 2	Permit Year 3	Permit Year 4	Permit Year 5	Total
Is database completed?						
Added pollutant monitored #1						
Added pollutant monitored #2						
Added pollutant monitored #3						
Added pollutant monitored #4						
Added pollutant monitored #5						
Monitoring program costs						

F. Fiscal Analyses						
Criteria/Permit Year	Permit Year 1	Permit Year 2	Permit Year 3	Permit Year 4	Permit Year 5	TOTAL
NPDES budget						
NPDES staff #						
GIS budget						
GIS staff #						
Is a stormwater utility being proposed?						
Anticipated utility revenue						
Actual utility revenue generated						



# **APPENDIX 5**

**NPDES REGULATORY REQUIREMENTS**



## APPENDIX 5 SPECIFIC CWA REGULATORY REQUIREMENTS

### 1. Legal Authority

The specific regulatory requirements contained in 40 CFR 122.26(d) for adequate legal authority are as follows:

§122.26(d)(2)(i) "(A) Control through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from sites of industrial activity;"

§122.26(d)(2)(i) "(B) Prohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer;"

§122.26(d)(2)(i) "(C) Control through ordinance, order or similar means the discharge to a municipal separate storm sewer of spills, dumping or disposal of materials other than storm water;"

§122.26(d)(2)(i) "(D) Control through interagency agreements among coapplicants the contribution of pollutants from one portion of the municipal system to another portion of the municipal system;"

§122.26(d)(2)(i) "(E) Require compliance with conditions in ordinances, permits, contracts or orders; and"

§122.26(d)(2)(i) "(F) Carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the municipal separate storm sewer."

### 2. Source Identification

The specific regulatory requirements contained in 40 CFR 122.26(d) for source identification are as follows:

§122.26(d)(1)(iii) "(A) A description of the historic use of ordinances, guidance or other controls which limited the discharge of non-storm water discharges to any Publicly Owned Treatment Works serving the same area as the municipal separate storm sewer system..."

§122.26(d)(1)(iii) "(B) A USGS [United States Geological Survey] 7.5 minute topographic map (or equivalent topographic map with a scale between 1:10,000 and 1:24,000 if cost effective) extending one mile beyond the service boundaries of the municipal storm sewer system ..."

§122.26(d)(1)(iii)(B) "(1) The location of known municipal storm sewer system outfalls discharging to waters of the United States;"

§122.26(d)(1)(iii)(B) "(2) A description of the land use activities...accompanied with estimates of population densities and projected growth for a ten year period within the drainage area

*served by the separate storm sewer. For each land use type, an estimate of an average runoff coefficient...*"

*§122.26(d)(1)(iii)(B) "(3) The location and description of the activities of the facility of each currently operating or closed municipal landfill or other treatment, storage or disposal facility for municipal waste;"*

*§122.26(d)(1)(iii)(B) "(4) The location and permit number of any known discharge to the municipal separate storm sewer that has been issued a NPDES permit;"*

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

*§122.26(d)(1)(iii)(B) "(6) The identification of publicly owned parks, recreational areas, and other open lands."*

*§122.26(d)(2) "(ii) [A]n inventory, organized by watershed of the name and address, and a description (such as SIC [Standard Industrial Codes] codes) which best reflects the principal products or services provided by each facility which may discharge, to the municipal separate storm sewer, storm water associated with industrial activity..."*

### **3. Discharge Characterization**

NPDES stormwater regulations divide discharge characterization into two parts. The specific regulatory requirements contained in Part 1, described in 40 CFR §122.26(d)(1)(iv), include providing the following information in an effort to characterize storm sewer discharges:

*§122.26(d)(1)(iv) "(A) Monthly mean rain and snow fall estimates...and the monthly average number of storm events."*

*§122.26(d)(1)(iv) "(B) Existing quantitative data describing the volume and quality of discharges from the municipal storm sewer, including a description of the outfalls sampled, sampling procedures and analytical methods used."*

*§122.26(d)(1)(iv) "(C) A list of water bodies that receive discharges from the municipal separate storm sewer system...and a brief description of known water quality impacts...the description of impacts shall include a description of whether the water bodies receiving such discharges have been: [(1)] Assessed and reported in section 305(b) reports...[(2)] listed under section 304(l)...[(3)] listed in State Nonpoint Source Assessments required by section 319(a)...[(4)] identified and classified according to eutrophic condition of publicly owned lakes listed in State reports required under Section 314(a)..."*

*§122.26(d)(1)(iv) "(D) Results of a field screening analysis for illicit connections and illegal dumping for...major outfalls...A screening analysis shall include a narrative description...of visual observations made during dry weather periods. If any flow is observed, two grab samples shall be collected during a 24 hour period...For all such samples, a narrative description of the color, odor, turbidity, the presence of an oil sheen shall be provided...In addition, a narrative description of the results of a field analysis using suitable methods to estimate pH, total chlorine, total copper, total phenol, and detergents...shall be provided..."*

*§122.26(d)(1)(iv) "(E)...the location of outfalls or field screening points appropriate for representative data collection..." required in Part 2.*

Part 2 of the NPDES regulations, described in 40 CFR §122.26(d)(2)(iii), requires that applicants sample stormwater discharges from the municipal separate storm sewer system. Applicants must propose between five and ten outfalls representative of commercial, residential, and industrial land uses for stormwater monitoring. This will include a description of why the outfall or field screening point is representative, the seasons during which sampling is intended, and a description of the sampling equipment. The specific regulatory requirements for Part 2 NPDES permit applications include the following:

*§122.26(d)(2)(iii) "(A)...Quantitative data from...between five and ten outfalls or field screening points as representative of the commercial, residential, and industrial land use...[(1)] For each outfall...samples shall be collected of storm water discharges from three storm events occurring at least one month apart...[(3)] quantitative data shall be provided for: the organic pollutants listed in Table II; the pollutants listed in Table III (toxic metals, cyanide, and total phenols) of appendix D of 40 CFR part 122, and for the following pollutants: Total suspended solids (TSS), Total dissolved solids (TDS), COD, BOD<sub>5</sub>, Oil and grease, Fecal coliform, Fecal streptococcus, pH, Total Kjeldahl nitrogen, Nitrate plus nitrite, Dissolved phosphorus, Total ammonia plus organic nitrogen, Total phosphorus..."*

*§122.26(d)(2)(iii) "(B) Estimates of the annual pollutant load...and the event mean concentration of the cumulative discharges to waters of the United States from all identified municipal outfalls during a storm event..."*

*§122.26(d)(2)(iii) "(C) A proposed schedule to provide estimates for each major outfall...of the seasonal pollutant load and of the event mean concentration of a representative storm for any constituent detected in any sample..."*

*§122.26(d)(2)(iii) "(D) A proposed monitoring program for representative data collection for the term of the permit that describes the locations of outfalls or field screening points to be sampled...why the location is representative, the frequency of sampling, parameters to be sampled, and a description of sampling equipment."*

#### **4. Management Programs**

The specific regulatory requirements contained in 40 CFR §122.26(d) for management programs are as follows:

*§122.26(d)(2)(iv) "(A) A description of structural and source control measures to reduce pollutants...from commercial and residential areas...accompanied with an estimate of the expected reduction of pollutant loads and a proposed schedule for implementing such controls. At a minimum, the description shall include:"*

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

*§122.26(d)(2)(iv)(A) "(2) A description of planning procedures...to develop, implement, and enforce controls to reduce the discharge of pollutants...from areas of new development and significant redevelopment..."*

§122.26(d)(2)(iv)(A) "(3) A description of practices for operating and maintaining public streets, roads and highways...including deicing activities;"

§122.26(d)(2)(iv)(A) "(4) A description of procedures to assure that flood management projects assess the impacts on the water quality...and that existing structural flood control devices have been evaluated to determine if retrofitting...is feasible;"

§122.26(d)(2)(iv)(A) "(5) A description of a program to monitor pollutants from operating or closed municipal landfills or other treatment, storage or disposal facilities for municipal waste...;"

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

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

§122.26(d)(2)(iv)(B) "(1) A description of a program...to prevent illicit discharges...the description shall address all types of illicit discharges...;"

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

§122.26(d)(2)(iv)(B) "(3) A description of procedures...to investigate portions of the separate storm sewer system that...indicate illicit discharges or other sources of non-stormwater...;"

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

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

§122.26(d)(2)(iv)(B) "(6) A description of educational activities, public information activities...to facilitate the proper management and disposal of used oil and toxic materials; and"

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

§122.26(d)(2)(iv) "(C) A description of a program to monitor and control pollutants...from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and industrial facilities...The program shall:"

§122.26(d)(2)(iv)(C) "(1) Identify priorities and procedures for inspections and establishing...control measures for such discharges;"

§122.26(d)(2)(iv)(C) "(2) Describe a monitoring program...including the submission of quantitative data on...oil and grease, COD, pH, BOD5, TSS, total phosphorus, total Kjeldahl

*nitrogen, nitrate plus nitrite nitrogen, and any discharges required under 40 CFR 122.21(g)(7)(iii) and (iv)."*

*§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 which incorporate consideration of potential water quality impacts;"*

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

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

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

## **5. Program Funding**

The specific regulatory requirement contained in 40 CFR 122.26(d) for program funding is as follows:

*§122.26(d)(2) "(vi) For each fiscal year to be covered by the permit, a fiscal analysis of the necessary capital and operation and maintenance expenditures necessary to accomplish the activities of the programs under paragraphs (d)(2)(iii) and (iv) of this section. Such analysis shall include a description of the source of funds that are proposed to meet the necessary expenditures, including legal restrictions on the use of such funds."*

