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New Castle County/DeIDOT Phase I Permit Fact Sheet

NPDES Permit Number: DE0051071

State Permit Number: WPCC 3063A/96

Applicant

New Castle County, the Delaware Department of Transportation (principal permittees), the towns of Bellefonte, Newport, and Elsmere, and the cities of Delaware City, New Castle, and Wilmington (co-permittees) have jointly applied for a National Pollutant Discharge Elimination System (NPDES) permit for the discharge of storm water from/through the applicants' municipal separate storm sewer system (MS4) to all surface waters of the State that are located within New Castle County.

This permit does not cover discharges from municipal separate storm sewer systems owned, operated or maintained by the Cities of Arden, Ardencroft, Ardentown, Middletown, Newark, Odessa, Townsend or areas within the City of Wilmington covered by individual NPDES permit # DE0020320; State Permit No. WPCC 3074D/74.

Federal regulations in 40 CFR Part 122, §122.26, outline a two part NPDES permit application process for discharges of storm water from large municipal separate storm sewer systems. Accordingly, the applicants submitted Part 1 of the application on April 5, 1993. They followed up with submission of a draft Part 2 application on September 27, 1996, which was subsequently revised December 17, 1997 and October 8, 1998. DNREC issued an NPDES permit on May 1, 2001 which expired on April 30, 2006 but has been administratively extended. This draft permit will replace the 2001 permit.

Activity Description

DeIDOT owns, maintains, and operates Best Management Practices (BMPs) within the MS4. New Castle County oversees maintenance to the BMPs within the unincorporated boundaries of New Castle County, Delaware. Bellefonte, Elsmere, Delaware City, Newport, New Castle, and Wilmington maintain the MS4 and oversee maintenance of BMPs within the areas of the MS4 that those towns and cities respectively own.

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Statutory and Regulatory Basis

The Delaware Department of Natural Resources and Environmental Control (DNREC) proposes to issue New Castle County, the Delaware Department of Transportation (DelDOT) and the municipalities listed in the application a NPDES permit for the storm water discharges from the MS4 located in New Castle County, Delaware subject to the discharge limitations, terms and conditions outlined in the draft permit. Section 402 of the Federal Clean Water Act of 1977, as amended by the Water Quality Act of 1987 and as subsequently modified, and 7 Del. C., Chapter 60 provide the statutory authority for permit issuance. Regulations promulgated pursuant to these statutes are the regulatory basis for permit development and issuance.

Background Information

Section 402 of the federal Clean Water Act prohibits the discharge of any pollutant to waters of the United States from a point source, unless that discharge is authorized by a NPDES permit. Similarly, 7 Del. C., Chapter 60, §6003(a)(2), prohibits the conduct of any activity “in a way which may cause or contribute to the discharge of a pollutant into any surface or ground water” without first having obtained a permit from the Secretary of the Department of Natural Resources and Environmental Control.

Efforts to improve water quality under the NPDES program have traditionally focused on reducing pollutants in discharges of industrial process wastewater and municipal sewage. As pollution control measures have been implemented for these discharges, it has become evident that diffuse sources of water pollution (those occurring over a wide area) are also major contributors to water quality degradation. Past studies, including the Nationwide Urban Runoff Program (NURP) study (EPA 1983), have shown that storm water runoff from urban and industrial areas typically contain the same general types of pollutants that are often found in industrial wastewater discharges, with similar impacts on surface water quality. Pollutants commonly found in storm water runoff include heavy metals, pesticides, herbicides, and synthetic organic compounds such as fuels, waste oils, solvents, lubricants and grease. These compounds can have damaging effects on both human health and aquatic ecosystems. In addition, the high volumes of storm water discharged from municipal storm sewer systems in areas of rapid urbanization have had significant impacts on aquatic ecosystems due to physical modifications such as bank erosion and widening of channels.

With the growing concern and realization that urban storm water runoff and storm runoff from industrial sites greatly contribute to surface water quality impairment, Congress added specific provisions to the Clean Water Act in 1987 (the Water Quality Act of 1987) to address storm water. Congress directed the United States Environmental Protection Agency (EPA) to develop regulations and require NPDES permits for discharges of storm water from sites of industrial activities and from large and medium sized urbanized areas.

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EPA published its municipal storm water regulations in November, 1990. The storm sewers servicing New Castle County, Delaware were specifically identified as a “large municipal separate storm sewer system” (or “MS4”) in those regulations. As such, a NPDES permit was issued in 2001 to authorize discharges of storm water from that system.

Permit History

The existing NPDES permit No. DE 0051071 issued by DNREC became effective May 1, 2001 and expired April 30, 2006. The 2001 permit covered New Castle County (NCC) and DelDOT along with twelve other MS4s that included the Village of Arden, the Village of Ardentown, the Village of Ardencroft, the Town of Bellefonte, the City of Delaware City, the Town of Elsmere, the Town of Middletown, the Town of Newport, the City of New Castle, the Town of Odessa, the Town of Townsend and the City of Wilmington.

Under EPA regulations (Appendix H to 40 CFR Part 122), only New Castle County with a 1990 unincorporated urbanized population of almost 300,000 was required to be covered under the Phase I MS4 permit. As an operator of the roadway MS4 within unincorporated urbanized New Castle County, DelDOT was also included as a permittee. The other 12 MS4s (all under 100,000 in population and not specifically listed in EPA regulations as Phase I MS4s) opted to be co-applicants and join NCC and DelDOT under the NPDES permit.

EPA issued Phase II regulations in 1999 that designated small MS4s in urbanized areas. EPA regulations allowed NPDES permitting authorities to waive permit coverage if the MS4 serves a population of less than 1,000 within the urbanized area and does not contribute to stormwater impairments (40 CFR 122.32(d)). Because the Phase II rule allows a waiver for MS4s below 1,000 in population, DNREC is proposing to exclude the five MS4s with population below 500 (Arden, Ardencroft, Ardentown, Odessa, and Townsend) from the new NCC MS4 permit. These five MS4s are excluded because they are not contributing substantially to the pollutant loadings of physically interconnected MS4s.

Newark has been issued a Phase II individual permit that has expired on June 30, 2008, and is functioning under an administrative extension. DNREC plans to issue Middletown a Phase II individual permit in the future.

Based on these findings, New Castle County and DelDOT are considered principal permittees while the towns of Bellefonte, Elsmere, and Newport, and the the cities of Delaware City, Newport, New Castle, and Wilmington will be co-permittees. The permit requires that New Castle County and DelDOT coordinate with all permittees to clearly define roles and responsibilities as necessary to comply with all permit provisions.

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This draft permit authorizes all existing and new point source discharges of storm water from the covered MS4. In addition, the permit authorizes discharge of spilled material when necessary to prevent loss of life, personal injury, or severe property damage. The permit does not authorize the following discharges, separately or commingled with storm water:

- a. Discharge of pollutants that could cause, have the reasonable potential to cause, or contribute to an exceedance or violation of any applicable surface water quality standards.
- b. Discharge of substances or materials in amounts that are toxic, or that would be toxic to humans, fish, aquatic life or wildlife as defined in the Delaware Surface Water Quality Standards (June 11, 2011).
- c. Discharges of floatable debris, oils, scum, foam, or grease in quantities other than trace amounts.
- d. Discharge of non-storm water (except as provided in special provisions within the permit as follows: water line flushing; diverted stream flows; rising groundwaters; uncontaminated groundwater infiltration to separate storm sewers; uncontaminated pumped groundwater; discharges from potable water sources; foundation drains; air conditioning condensate; springs; water from crawl space pumps; footing drains; individual residential vehicle washing; flows from riparian habitats and wetlands; dechlorinated swimming pool discharges; street wash waters; and discharges or flows from emergency fire fighting activities.).
- e. Discharges that cause or contribute to degradation or loss of State-designated beneficial uses of the receiving waters.

Receiving Waters and Stream Classification

The receiving waters for the storm water discharges to be authorized by this permit include all streams located in New Castle County: the Appoquinimink River, Army Creek, Blackbird Creek, Brandywine Creek, the Christina River, the Chesapeake and Delaware Canal, Dragon Run Creek, Naaman's Creek, Red Clay Creek, Red Lion Creek, Shellpot Creek, the Smyrna River and White Clay Creek, and tributaries of the Chesapeake Bay including the Chester, Choptank, and Marshyhope rivers.

The designated uses for these waters are identified in the State of Delaware Surface Water Quality Standards, as amended June 11, 2011, and include public water supply (freshwater segments only), industrial water supply, primary contact recreation, secondary contact recreation, propagation of fish, aquatic life and wildlife, propagation of cold water fish species, agricultural water supply and waters of exceptional recreational and ecological significance (ERES waters).

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Proposed Permit Term and Conditions

DNREC proposes to issue the co-applicants' NPDES permit for a period not to exceed five (5) years, unless administratively extended, subject to the discharge goals, limitations, monitoring requirements and other terms and conditions as outlined in the draft permit.

Basis for Proposed Discharge Limitations and Other Permit Conditions

A wide range of land uses and activities exist within the urbanized area of New Castle County. Many of these generate or have the potential to generate pollutants that may become waterborne when exposed to precipitation, transported by storm runoff and discharged to the storm sewer system. With various levels and types of ongoing residential, commercial, industrial, institutional and construction activity, it is difficult to pinpoint the specific pollutants or pollutant levels expected for individual activities or locations. However, it has been shown that urban development and the subsequent storm water runoff from these areas contribute pollutants to surface waters.

The quality of the storm water discharged from/through the MS4 depends upon the sources of pollutants exposed to the elements and thereby available to be transported offsite via storm water runoff. Minimizing such pollutant sources and the potential for exposure reduces the pollutant impact of storm water discharges. With this in mind, DNREC strongly supports and promotes a source reduction/pollution prevention approach for managing storm water runoff. On the local level, this type of management program may include a variety of strategies for minimizing the exposure and transport of pollutants in storm runoff. Examples are sedimentation and erosion control programs for construction and land disturbing activities, land use planning and ordinances in those areas subject to new development or redevelopment, municipal programs for recycling and hazardous waste collection, public education and training programs, spill response and cleanup programs, and programs to detect and eliminate, where possible, unauthorized non-storm water discharges to the MS4. From a cost and management standpoint, such measures or practices are believed to be the most efficient and effective methods for managing and controlling pollutants in storm water discharges. In some situations, however, it must be recognized that the use of engineered storm water control structures may be warranted. The municipality must therefore evaluate the land uses and activities within its jurisdiction and determine which measures or practices are the most appropriate to manage and control storm water discharges to their MS4.

The discharge goals, limitations, terms and conditions outlined in the draft permit were developed to further the policy and purposes of the State of Delaware's Water and Air Resources Act (Title 7, Delaware Code, Chapter 60) and to achieve the water quality protection goals of the Federal Clean Water Act and the implementing regulations.

The statutory provisions governing discharges from MS4s are contained in Section 402 (p)(3)(B) of the Clean Water Act, as amended. In general, Congress provided that permits for discharges from MS4s:

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- May be issued on either a system-wide or jurisdiction-wide basis;
- Shall effectively prohibit any non-storm water discharges into the MS4s; and
- Shall require controls to reduce the discharge of pollutants from MS4s to the maximum extent practicable.

The proposed provisions in the draft permit recognize the site-specific nature of the discharges to be controlled and the need for flexibility in developing and implementing a program that considers local conditions, land uses, activities and existing programs.

The existing MS4 permit largely follows the Phase I application identified in federal regulations [40 CFR Part 122, §122.26 (d)(2)(iv)]. However, since the issuance of the NPDES Phase II regulation, most EPA stormwater guidance documents, and many Phase I MS4 permits, have been based around EPA's six minimum control measures from the Phase II regulations. For this reason, this permit includes requirements organized according to the six minimum measures – public education, public involvement, illicit discharge detection and elimination, construction, new development, good housekeeping – in addition to applicable industrial and monitoring provisions. For the purposes of this permit, the public education and involvement requirements have been combined into one permit provision.

The draft permit also includes provisions that require adequate legal authority be secured to control discharges to and from/through the MS4 and that require sufficient resources – financial, staff, equipment and support – be maintained to implement the storm water management program and administer it effectively. Appropriate monitoring and reporting are to be undertaken as well, to assess progress and overall program effectiveness. As appropriate, DNREC may specify additional requirements or compliance schedules for any and all components of the co-permittees' comprehensive storm water pollution prevention and management program in order to meet the intent of the NPDES municipal storm water permit program and to achieve the level of implementation and progress deemed necessary to achieve water quality protection. This would include any area-specific or site-specific requirements identified through DNREC's whole-basin or watershed assessment activities (i.e., the development of any applicable TMDLs and/or pollution control strategies to address specific ambient water quality problems).

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Storm Water Pollution Prevention and Management Program (SWPP&MP) (Part II)

A Consent Decree (Civil No. 01-586), effective on December 19, 2001, was issued which applied to both NCC and DelDOT (the other MS4 permittees were not included in the Consent Decree) and the State of Delaware. The purpose of the Consent Decree was to ensure that NCC and DelDOT achieve and maintain full compliance with CWA and applicable NPDES Permit (NPDES Permit No. DE 0051071) and any other applicable provisions. The 2001 Permit and the Consent Decree establish the framework for the Storm Water Pollution Prevention and Management Program (SWPP&MP).

In addition, EPA Region III conducted an MS4 audit on April 4-6, 2006 at New Castle County, DelDOT, Delaware City, the Town of Middletown, and the Town of Newport. The audit findings were documented in an MS4 audit report dated July 24, 2006.

SWPP&MP Requirements

Part II requires the principal permittees, in cooperation with the co-permittees to submit a revised SWPP&MP to the Department that meets the requirements in Part II. An outline of the SWPP&MP is due within six months of permit issuance, the final draft for Department review is due within one year, and the final SWPP&MP for EPA review is due within 15 months.

The permittees are already implementing many of these activities in compliance with the 2001 permit. The 2001 permit was organized around eleven SWPP&MP program elements. To be consistent with EPA's six minimum control measures from the Phase II rule, this draft permit has been reorganized to more closely follow the minimum measures. The table below compares the new SWPP&MP program elements with the 2001 SWPP&MP elements.

New SWPP&MP Program Elements	2001 SWPP&MP Program Element
Public Education/Public Involvement	10. Public education
Illicit Discharge Detection and Elimination	6. Illicit discharges and improper disposal
	7. Spill prevention and response
Construction	9. Construction site runoff
New Development	2. Areas of new development & significant redevelopment
	4. Flood control projects
Good Housekeeping	1. Structural controls and operations
	3. Roadways
	5. Pesticides, herbicides, and fertilizer application
Industrial	8. Industrial & high risk runoff
Monitoring	11. Monitoring programs

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Public Education/Involvement

The permit requires the permittees to develop and implement a public education strategy, conduct statistically-valid public education surveys, develop a public involvement process, and hold annual meetings to coordinate implementation of the SWPP&MP.

The permittee shall develop and implement an education and outreach program utilizing available media of their choosing, in an effort to (1) increase the knowledge of the target communities regarding MS4s, impacts of urban runoff on receiving waters, and potential BMP solutions for the target audience; and (2) change the behavior of target communities and thereby reduce pollutant releases to MS4s and the environment, including but not limited to decreasing the discharge of pollutants to the MS4 and involving and engaging the public in mitigating the impacts of storm water pollution.

There are significant resources and examples to assist the permittees in implementing a public education strategy. For example, see EPA's Getting in Step guides and the EPA Nonpoint Source Outreach Toolbox (<http://www.epa.gov/nps/outreach.html>). The permittees are required to ensure a minimum of 250,000 impressions per year are made on the general public about storm water quality. These impressions can be measured in a variety of ways (for example, the estimated listening audience during a radio ad, or the total subscription numbers for a newspaper ad).

Illicit Discharge Detection and Elimination

The permittees are required to continue to implement an illicit discharge detection program.

Construction and Post Construction Stormwater Management

The permittees are required to develop a stormwater program for both construction and post-construction stormwater, both having specific guidelines pertaining to content.

Good Housekeeping

The permittees are required to continue, and modify as necessary, existing activities such as street sweeping, pesticide/fertilizer application, storage and disposal, deicing practices, litter, and employee training.

Industrial Stormwater

The permit requires the permittees to assist the Department by conducting inspections of facilities considered to be "high risk", according to guidance provided by the Department.

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Mapping Requirement

The permit requires the permittees to annually revisit and update as necessary storm sewer BMP GIS data layers.

Pollutant Minimization Plan (PMP) for PCBs

The permit requires that the principal permittees submit a Pollutant Minimization Plan (PMP) for addressing PCBs in the Delaware River watershed as a part of the SWPP&MP. The required elements of the PMP are described in the permit.

Total Maximum Daily Load (TMDL) Waste Load Allocations (WLAs)

At the time of permit issuance, a number of TMDLs have been approved or established by the U.S. Environmental Protection Agency for waters located in New Castle County to which the MS4 system discharges. These TMDLs assign specific numeric WLAs to watersheds located within the New Castle County MS4 and/or DelDOT permit area, and represent all pollutant sources including urban stormwater, industrial stormwater, agriculture, and septic.

Permittees shall address the TMDL WLAs for stormwater associated with the MS4 through the iterative implementation of programmatic BMPs. At this time, this permit does not contain actual effluent limits relating to TMDLs. Working toward meeting TMDLs will be accomplished by implementing all components within the SWPP&MP and developing and implementing Water Quality Improvement Plans within the permitted area. Specific elements within the SWPP&MP which can be used to demonstrate load reductions are contained in the requirements for BMP monitoring and analysis.

BMP Performance Monitoring Plan

The permit requires the permittees to develop a proposed BMP performance monitoring plan as part of the SWPP&MP. As part of this permit, the permittees shall develop and implement an appropriate method for monitoring and analyzing the expected pollutant load reductions to fulfill the SWPP&MP requirements and to work toward achieving requirements of applicable TMDLs and WLAs.

As part of the SWPP&MP, the permittees shall implement a wet-weather monitoring program for the municipal separate storm sewer system to provide the data necessary for the multiple tasks as described in the permit.

Dry Weather Screening Plan

The permittees are required to implement a program to detect illicit discharges and require that the party responsible for the illicit discharge takes the appropriate corrective action, by either elimination of the discharge or by obtaining an NPDES permit for continuous discharges.

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In-Stream Monitoring

This permit allows state 305(b) reports to be used as a substitute for all in-stream monitoring.

Water Quality Improvement Plan (Part III)

In order to work toward meeting state water quality standards and TMDLs, in addition to implementing the SWPP&MP throughout the permit area, the permittees are required to develop then begin implementation of two Water Quality Improvement Plans within the permit term, submitted at year four (4) of this permit. The permittees will first prioritize watersheds, then develop the plans which outline potential projects that will improve water quality and work toward addressing TMDLs.

Evaluation of the SWPP&MP (Part IV)

No later than four (4) years from the effective date of this permit, the permittees shall conduct a comprehensive effectiveness analysis of the SWPP&MP, with analysis measures to be described in the SWPP&MP Monitoring Plan. This analysis shall quantify the associated expected load reductions to estimate the anticipated progress toward achieving the WLAs.

The permit requires the permittees to conduct an analysis of the existing BMPs being implemented and select the most appropriate supplemental BMPs, if necessary, to work toward achieving the numeric WLAs. The 2002 EPA Memorandum states that where the NPDES permitting authority allows for a choice of BMPs, a discussion of the BMP selection and assumptions needs to be included in the permit's administrative record, including the fact sheet when one is required. (40 C.F.R. §§ 124.8, 124.9 & 124.18.)

The permittees can review existing permitting resources for assistance in developing a method to (1) analyze the expected pollutant load reductions from selected BMPs and (2) provide a preliminary indicator of anticipated progress toward achieving WLAs. EPA Region 3's fact sheet *Understanding Impaired Waters and TMDL Requirements for Municipal Stormwater Programs* (available at http://www.epa.gov/npdes/pubs/region3_factsheet_tmdl.pdf) provides a step-by-step approach for addressing WLAs in MS4 stormwater management programs, including selecting and implementing BMPs to address WLAs. This fact sheet also references the City of Portland's approach for reviewing and updating their stormwater management program to implement the WLAs assigned to the city's MS4. The City of Portland's MS4 stormwater management plan describes the approach used to develop performance measures to quantify the expected pollutant load reductions from each BMP and benchmarks to quantify the estimated total pollutant load reduction with an approved WLA. The City of Portland's stormwater management website provides more information on the approaches used to develop BMP performance measures and benchmarks for measuring progress toward achieving WLAs. The City of Portland's

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BMP Effectiveness Evaluation Report is available online at <http://www.portlandonline.com/bes/index.cfm?c=43352> and the city's MS4 stormwater management plan with both performance measures and benchmarks is available online at <http://www.portlandonline.com/bes/index.cfm?c=46961&a=98424>.

Sampling and Reporting Procedures (Part V)

In addition to the BMP performance monitoring, the permittees are required to monitor wet-weather events in order to characterize the discharge from major outfalls, estimate loadings from the MS4, identify portions of the MS4 which require additional BMPs, and identify any changes in receiving water quality.

Part V.F requires the permittees to submit an annual report by June 30 that covers the activities of the previous calendar year. A template for the annual report is included in the permit.

Summary of Special Conditions for the City of Wilmington

The permit allows the City of Wilmington to submit an independent SWPP&MP, monitoring plan, and PMP for PCBs that shall be consistent with the goals and expectations outlined within relevant sections of the permit. For the development and implementation of Water Quality Improvement Plans, the City of Wilmington is required to participate if the watershed falls within city limits.

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