

TOWNSHIP OF CHESTERFIELD



MUNICIPAL STORMWATER MANAGEMENT PLAN

PREPARED FOR:

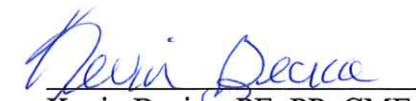
TOWNSHIP OF CHESTERFIELD
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1.0 Introduction

In 1972, Congress amended the Federal Water Pollution Control Act (commonly referred to as the Clean Water Act) to prohibit the discharge of any pollutant to waters of the United States from a point source unless the discharge is authorized by a New Jersey Pollutant Discharge Elimination System (NJPDES) permit. This act established the goal of making our nation's waters suitable for: the propagation of fish, aquatic and wildlife; recreational purposes; and the use of these waters for the public water supply, agricultural, industrial and other purposes. The act recognized the damaging effects that unmanaged stormwater can have on these national goals.

In 1987, Congress amended the Clean Water Act to require implementation, in two phases, of a comprehensive national program for addressing storm water discharges. The first phase of the program, commonly referred to as "Phase I" was promulgated on November 16, 1990 and required permits for stormwater discharges from priority sources including municipal separate storm sewer systems generally serving populations of 100,000 or more and several categories of industrial activity, including construction sites that disturbed five or more acres of land.

The second phase of the program, commonly referred to as "Phase II" was promulgated by the Federal government on December 8, 1999 and became effective on February 7, 2000. "Phase II" expanded the program to include discharges from smaller municipalities in urbanized areas and from construction sites that disturbed between one and five acres of land. The federal regulation required the implementation of six minimum measures and best management practices.

As a result of the U.S Environmental Protection Agency Phase II rules, the State of New Jersey Department of Environmental Protection developed the Municipal Stormwater Regulation program. The program addresses pollutants entering waters from storm drain systems owned or operated by local, county, state, interstate or federal agencies. The regulations refer to the storm systems as Municipal Separate Storm Sewer Systems (MS4s). New Jersey Pollutant Discharge Elimination System (NJPDES) permits have been issued to municipalities throughout the state as well as to public complexes and highway agencies. The Municipal Stormwater Regulation Program is being implemented through four types of NJPDES Permits, a Tier A Permit, a Tier B Permit, a Public Complex Permit and a Highway Permit.

2.0 Tier B NJPDES Requirements

The Township of Chesterfield is considered a Tier B municipality under the New Jersey Pollution Discharge Elimination System (NJPDES). The regulations for the NJPDES Tier B Permits were issued on February 2, 2004 and became effective March 3, 2004. The Township of Chesterfield was required to submit a Request for Authorization, known as an RFA on March 31, 2004 and the permit authorizations were dated April 1, 2004. April 1, 2004 is known as the effective date of the permit authorization or the EDPA date.

Under Section E.1 of the Tier B NJPDES Permit, the Township of Chesterfield is required to develop stormwater program that includes all the statewide basic requirements. The statewide basic requirements for a Tier B municipality include the following elements that will be fully described in this stormwater management plan:

A. Stormwater Program

A.1 Local Public Education

A.2. Storm Drain Inlet Labeling

A.3 Additional Measures (non numeric or numeric effluent limitations)

A.4 Other Voluntary Measures

B. Stormwater Management Plan

B.1 Stormwater Control Ordinance

B.2 Compliance with the Residential Site Improvement Standards

B.3 Long term operation and maintenance of Best Management Practices

2.1 Stormwater Program

Under Section F.3 of the Tier B NJPDES Permit, the Township of Chesterfield is required to develop and begin implementation of a Local Public Education Program that starts 12 months from the effective date of the permit authorization, or by April 1, 2005. The municipality is required to copy and distribute educational brochure material provided by the State Department of Environmental Protection to residents and businesses and conduct a yearly educational event with brochures. The yearly event will be held at the Crosswicks Village festival in September. A sample of the brochure material is shown on the following pages.

Solutions to Stormwater Pollution

Easy Things You Can Do Every Day To Protect Our Water

A Guide to Healthy Habits for Cleaner Water

Pollution on streets, parking lots and lawns is washed by rain into storm drains, then directly to our drinking water supplies and the ocean and lakes our children play in. Fertilizer, oil, pesticides, detergents, pet waste, grass clippings: You name it and it ends up in our water.

Stormwater pollution is one of New Jersey's greatest threats to clean and plentiful water, and that's why we're all doing something about it.

By sharing the responsibility and making small, easy changes in our daily lives, we can keep common pollutants out of stormwater. It all adds up to cleaner water, and it saves the high cost of cleaning up once it's dirty.

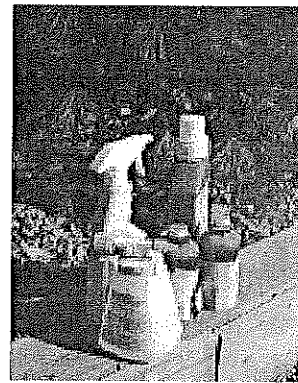
As part of New Jersey's initiative to keep our water clean and plentiful and to meet federal requirements, many municipalities and other public agencies including colleges and military bases must adopt ordinances or other rules prohibiting various activities that contribute to stormwater pollution. Breaking these rules can result in fines or other penalties.



As a resident, business, or other member of the New Jersey community, it is important to know these easy things you can do every day to protect our water.

Limit your use of fertilizers and pesticides

- Do a soil test to see if you need a fertilizer.
- Do not apply fertilizers if heavy rain is predicted.
- Look into alternatives for pesticides.
- Maintain a small lawn and keep the rest of your property or yard in a natural state with trees and other native vegetation that requires little or no fertilizer.
- If you use fertilizers and pesticides, follow the instructions on the label on how to correctly apply it.

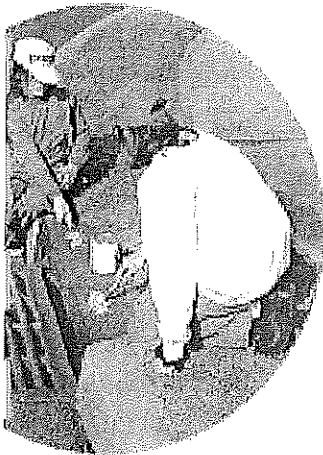


Make sure you properly store or discard any unused portions.

Properly use and dispose of hazardous products

- Hazardous products include some household or commercial cleaning products, lawn and garden care products, motor oil, antifreeze, and paints.
- Do not pour any hazardous products down a storm drain because storm drains are usually connected to local waterbodies and the water is not treated.

- If you have hazardous products in your home or workplace, make sure you store or dispose of them properly. Read the label for guidance.
- Use natural or less toxic alternatives when possible.
- Recycle used motor oil.
- Contact your municipality, county or facility management office for the locations of hazardous-waste disposal facilities.



Clean up after your pet

- Many municipalities and public agencies must enact and enforce local pet-waste rules.
- An example is requiring pet owners or their keepers to pick up and properly dispose of pet waste dropped on public or other people's property.
- Make sure you know your town's or agency's requirements and comply with them. It's the law. And remember to:

- Use newspaper, bags or pooper-scoopers to pick up wastes.
- Dispose of the wrapped pet waste in the trash or unwrapped in a toilet.
- Never discard pet waste in a storm drain.

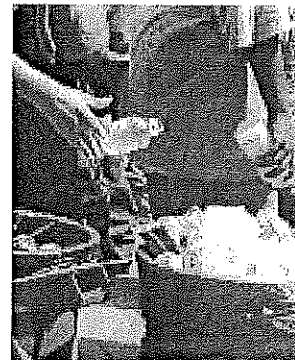


Don't litter

- Place litter in trash receptacles.
- Recycle. Recycle. Recycle.
- Participate in community cleanups.

Dispose of yard waste properly

- Keep leaves and grass out of storm drains.
- If your municipality or agency has yard waste collection rules, follow them.
- Use leaves and grass clippings as a resource for compost.
- Use a mulching mower that recycles grass clippings into the lawn.



Keep pollution out of storm drains

- Municipalities and many other public agencies are required to mark certain storm drain inlets with messages reminding people that storm drains are connected to local waterbodies.
- Do not let sewage or other wastes flow into a stormwater system.

Don't feed wildlife

- Do not feed wildlife, such as ducks and geese, in public areas.
- Many municipalities and other public agencies must enact and enforce a rule that prohibits wildlife feeding in these areas.

Contact information

For more information on stormwater related topics, visit www.njstormwater.org or www.nonpointsource.org

Additional information is also available at U. S. Environmental Protection Agency Web sites www.epa.gov/npdes/stormwater or www.epa.gov/nps

New Jersey Department of Environmental Protection
 Division of Water Quality
 Bureau of Nonpoint Pollution Control
 Municipal Stormwater Regulation Program
 (609) 633-7021



April 2004

Pet Waste Pollutes Our Waters

What You Can Do To Help Protect Our Water

Clean and plentiful water is important to our families, our environment, our economy and our quality of life.

Did you know that animal waste from pets can pollute our waters? When left on the ground, pet waste is washed by rain and melting snow and ice into storm drains that carry it to our rivers, lakes, the ocean and drinking water.

Animal waste contains a high concentration of nutrients as well as bacteria and disease-causing microorganisms that can cause problems.

What you can do

Pet owners or anyone who takes your pet for walks must properly dispose of the waste by picking it up, wrapping it and either placing it in the trash or flushing it unwrapped down the toilet.

Your municipality is required to adopt and enforce local pet-waste laws. At a minimum, your community must require that pet owners or their keepers **immediately and properly** dispose of their pet's solid waste deposited on **any public or private property not owned or possessed by that person**. People with assistance animals such as Seeing Eye dogs are exempt.

Make sure you know what your municipality requires – and follow it.

Thank you for doing your part to keep New Jersey's waters clean.

For more information, please contact the following:

New Jersey Department of Environmental Protection
Division of Water Quality
Bureau of Nonpoint Pollution Control
Municipal Stormwater Regulation Program
(609) 633-7021



Visit www.njstormwater.org or www.nonpointsource.org

Additional information is also available at U. S.
Environmental Protection Agency Web sites
www.epa.gov/npdes/stormwater or www.epa.gov/nps



Under Section F.3.b of the Tier B NJPDES Permit, the Township of Chesterfield is required to develop a Storm Drain Labeling Program that starts 12 months from the effective date of the permit authorization, or by April 1, 2005. Storm drain labels must be placed on municipal storm drains that are next to sidewalks or within municipal plazas, parking areas or maintenance yards. Fifty percent (50%) of the labeling is to be completed within 36 months of the effective date of the permit authorization, or by April 1, 2007. All remaining inlets are to be labeled within 60 months of the effective date of the permit authorization, or by April 1, 2009.

Under Section G.1 of the Tier B NJPDES Permit, the Township of Chesterfield may be required to take Additional Measures to improve non-point source pollution through non-numeric or numeric effluent limitations. As of April 2004, no Additional Measures have been adopted. The New Jersey Department of Environmental Protection will provide written notice of the adoption of any additional measures to Chesterfield Township.

Under Section G.2 of the Tier B NJPDES Permit, the Township of Chesterfield may voluntarily adopt other measures to prevent or reduce water pollution. In the Tier B Guidance Manual the suggested other measures are:

- Wildlife management
- Fertilizer and Pesticide Management Ordinances
- Retrofit of Existing Stormwater Management Measures
- Road De-icing
- Adoption of Abandoned Stormwater Management Basins
- Planting of Native Vegetation in Existing Landscapes

2.2 Statewide Basic Requirements

Under Section F.2.a.i of the Tier B NJPDES Permit, the Township of Chesterfield is required to adopt a municipal stormwater management plan in accordance with NJAC 7:8-4 within 12 months of the effective date of the permit authorization, or by April 1, 2005. The municipal stormwater management plan is abbreviated as the MSWMP.

Under Section F.2.a.ii of the Tier B NJPDES Permit, the Township of Chesterfield is required to adopt stormwater control ordinances to implement the municipal stormwater management plan 12 months after the adoption of the municipal stormwater plan. In effect, municipalities have 24 months from the effective date of the permit authorization, or by April 1, 2006 to implement ordinances that set forth exact stormwater management design standards for development and redevelopment.

The municipal plan is required to conform to the regional stormwater management plan and must be reviewed and approved by the County review agency and NJDEP. In the Township of Chesterfield, the municipal stormwater management plan and ordinances must be reviewed and approved by Burlington County.

Subchapter 4 of NJAC 7:8 sets forth the specific requirements of a Municipal Stormwater Management Plan. The more rigorous planning requirements of the municipal stormwater management plan, NJAC 7:8-4.2(c)8 and 9 requiring evaluation of the municipalities entire master plan, official map and development regulations, zoning ordinances, projected land use assuming full development, and future non-point source pollutant load assuming full build are required for municipalities with more than one square mile of vacant or agricultural land within the municipality. The planning evaluations required under subsections 8 and 9 are not required until February 2, 2006.

Subchapter 5 of NJAC 7:8 sets forth the groundwater recharge, water quantity, and water quality standards (reduction of total suspended solids). The Township of Chesterfield will not allow any exceptions from the design and performance standards for development projects submitted to the Land Use Planning Board. Therefore, the stormwater management plan does not include a mitigation option.

Under Section H.2.a of the Tier B NJPDES Permit, the Township of Chesterfield is required to file an Annual Report and Certification to the New Jersey Department of Environmental Protection on or before July 1, 2005 and every 12 months thereafter. The Annual Report and Certification shall be maintained by the municipality for a period of five years.

3.0 Stormwater Management Plan Goals

The goals of the Stormwater management Plan are to:

- Reduce flood damage, including damage to life and property.
- Minimize, to the greatest extent feasible, any increase in stormwater runoff from any new development.
- Reduce soil erosion from any development or construction project and consequent silting from total suspended solids.
- Assure the adequacy of existing and proposed culverts and bridges, and other in-stream structures.
- Improve baseflow to streams by maintaining groundwater recharge through site design practices that allow stream base flows to approximate pre-development conditions.
- Prevent, to the greatest extent feasible, an increase in nonpoint pollution.
- Protect public health, safeguard fish and aquatic life and scenic and ecological values, and enhance the domestic, municipal, recreational, industrial, and other uses of water.
- Protect public safety through the proper design and operation of stormwater basins.
- Identify methods to equitably distribute water supplies while encouraging water conservation and re-use.

To achieve these goals, this plan outlines specific stormwater design and performance standards for new development. Additionally, the plan proposes stormwater management controls to address impacts from existing development. Preventative and corrective maintenance strategies are included in the plan to ensure long-term effectiveness of stormwater management facilities. The plan also outlines safety standards for stormwater infrastructure to be implemented to protect public safety.

4.0 Stormwater Discussion

Land development can dramatically alter the hydrologic cycle (See Figure 1) of a site and, ultimately, an entire watershed. Prior to development, native vegetation can either directly intercept precipitation or draw that portion that has infiltrated into the ground and return it to the atmosphere through evapotranspiration.

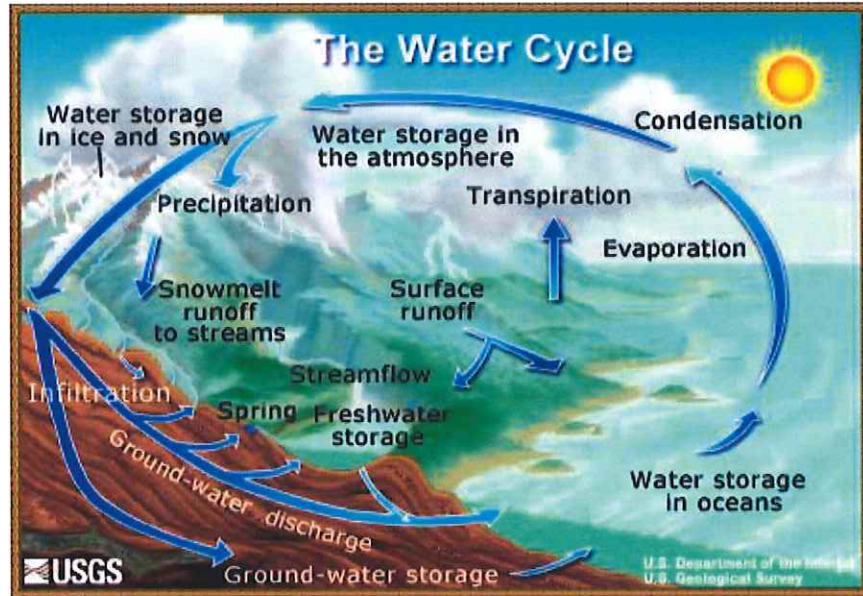


Illustration by John M. Evans, Colorado District, USGS

Figure 1. Hydrologic Cycle

Development can remove this beneficial vegetation and replace it with lawn or impervious cover, reducing the site's evapotranspiration and infiltration rates. Clearing and grading a site can remove depressions that store rainfall. Construction activities may also compact the soil and diminish its infiltration ability, resulting in increased volumes and rates of stormwater runoff from the site. Impervious areas that are connected to each other through gutters, channels, and storm sewers can transport runoff more quickly than natural areas. This shortening of the transport or travel time quickens the rainfall-runoff response of the drainage area, causing flow in downstream waterways to peak faster and higher than natural conditions. These increases can create new drainage conditions and aggravate existing downstream flooding and erosion problems and increase the quantity of sediment in the channel. Downstream erosion, sediment deposits can be seen in Photograph 1.



Photograph 1. Stream conditions in Chesterfield

Filtration of runoff and removal of pollutants by surface and channel vegetation is eliminated by storm sewers that discharge runoff directly into a stream. Increases in impervious area can also decrease opportunities for infiltration which, in turn, reduces stream base flow and groundwater recharge. Reduced base flows and increased peak flows produce greater fluctuations between normal and storm flow rates, which can increase channel erosion. Reduced base flows can also negatively impact the hydrology of adjacent wetlands and the health of biological communities that depend on base flows.

In addition to increases in runoff peaks, volumes, and loss of groundwater recharge, land development often results in the accumulation of pollutants on the land surface that runoff can mobilize and transport to streams. New impervious surfaces and cleared areas created by development can accumulate a variety of pollutants from the atmosphere, fertilizers, animal wastes, and leakage and wear from vehicles. Pollutants can include metals, suspended solids, hydrocarbons, pathogens, and nutrients.

Land development can adversely affect water quality and stream biota in more subtle ways. For example, stormwater falling on impervious surfaces or stored in detention or retention basins can become heated and raise the temperature of the downstream waterway, adversely affecting the stream biology. Development can remove trees along stream banks that normally provide shading, stabilization, and leaf litter that falls into streams and becomes food for the aquatic community.

5.0 Chesterfield Township Background

5.1 Population and Land Use

The Township of Chesterfield encompasses a 22 square mile area of Burlington County, New Jersey. In recent years the Township has been under significant development pressure, as indicated by the number of new construction permits issued since 1991 (see Table 1). The population of the Township has increased from 3867 in 1980 to 5126 in 1990 to 5955 in 2000. The resulting development has likely increased stormwater runoff volumes and pollutant loads to the waterways of the municipality.

| Year | Units |
|------|-------|
| 1991 | 3 |
| 1992 | 4 |
| 1993 | 11 |
| 1994 | 26 |
| 1995 | 33 |
| 1996 | 28 |
| 1997 | 26 |
| 1998 | 7 |
| 1999 | 12 |
| 2000 | 5 |
| 2001 | 9 |
| 2002 | 11 |
| 2003 | 22 |
| 2004 | 35 |

Chesterfield Township has embraced the principles of smart growth planning. Chesterfield has won a Smart Growth award for the Transfer Development Rights (TDR) Program. Chesterfield Township has developed a sending area comprised of maintaining farmland and a receiving area which is where the proposed growth will take place. The majority of development activity will be concentrated in the Township's centrally located redevelopment area.

Groundwater recharge and well head protection areas are shown in the Appendix, on **Map 2, Groundwater Recharge and Wellhead Protection Areas (WPAs)**. Soil types, which correspond to the recharge areas, are shown in the Appendix, on **Map 7, Soil Types**.

5.2 Description of Watershed

The State of New Jersey is divided into twenty major watershed areas as shown in the Appendix on **Map 6, New Jersey's Watershed, Watershed Management Areas and Water Regions**. Within each major watershed, the United States Geologic Survey (USGS) uses a 14 digit Hydrologic Unit Code (HUC 14) to delineate and name each sub-watershed.

The Township of Chesterfield is located in Watershed Management Area 20, which contains the Assiscunk Creek, Crosswicks Creek and Doctors Creek. The northern portion of Chesterfield drains to the Crosswicks Creek which flows in a westerly direction to the Delaware River. The majority of the southern portion of Chesterfield drains into Blacks Creek, Fern Brook and Bacons Run which then all flow into Blacks Creek and meet Crosswicks Creek right before it intersects with the Delaware River. The very southern tip of Chesterfield drains to the Crafts Creek and the Assiscunk Creek which flow in a westerly direction to the Delaware River.

There are nine sub-watersheds located within Chesterfield as shown the in the Appendix on **Map 4, HUC-14 Delineation on USGS Quadrangle Map**. The area flowing to Crosswicks Creek divides into three sub-watersheds, (1) the Ellisdale tributary, (2) Crosswicks Creek (Doctors Creek to Ellisdale tributary) , and (3) Crosswicks Creek (below Doctors Creek). The drainage sheds flowing to Blacks Creek divide into three sub-watersheds, (1) Blacks Creek above 40d06m10s, (2) Blacks Creek (Bacons Run to 40d06m10s, and (3) Blacks Creek below Bacons Run.

A small sub-watershed at the southern end of Chesterfield flows in a westerly direction and forms the headwaters of Crafts Creek. Another small sub-watershed at the southern end of Chesterfield flows in the southwesterly direction and is part of the headwaters of the Assiscunk Creek watershed. A third sub-watershed flows in a southerly direction to the North Run above the Wrightstown Bypass.

5.3 State Monitoring System

The New Jersey Department of Environmental Protection (NJDEP) and the USGS collect a variety of water quality information on the rivers within New Jersey. The NJDEP has established and maintains an Ambient Biomonitoring Network (AMNET) of monitoring sites to document the health of the state's

waterways. There are over 800 AMNET sites throughout the state of New Jersey. These sites are sampled for benthic macro invertebrates by NJDEP on a five-year cycle. Benthic macro invertebrates include aquatic insects, worms, snails, crayfish and clams. Every five years, streams are classified as non-impaired, moderately impaired, or severely impaired based on the AMNET data. The data is used to generate a New Jersey Impairment Score (NJIS), which is based on a number of bioethics related to benthic macroinvertebrate community dynamics. The AMNET sampling serves as an indicator of the stream health, but does not provide any information on the cause of the impairment. There are two AMNET sites within the Township of Chesterfield as shown in the Appendix on **Map 5, Amnet and Stream Quality Monitoring Stations**. These sites are at the following stations:

- AN0132, Chesterfield – Georgetown Road, Moderately Impaired
- AN0126A, Iron Bridge Road, Severely Impaired

The New Jersey Integrated Water Quality Monitoring and Assessment Report, 305(b) and 303(d) is required by the Federal Clean Water Act. The report identifies waters that are impaired by watershed area. Sublist 5 of the Integrated List constitutes the list of waters impaired or threatened by pollutants in priority order. The list for Watershed 20 is included in Appendix 3. A review of the on-line water information indicates that both station AN0126A and AN0132 are impaired based on biological criteria.

The total maximum daily load, abbreviated TMDL, is the amount of a pollutant that can be accepted by a water body without exceeding water quality standards or interfering with the ability to use a water body for one or more of its designated uses. A TMDL is a tool used to achieve water quality standards through mathematical analysis of the percent reduction of a pollutant from a particular source needed to meet the concentration specified in the water quality standards. The allowable load is allocated to the various sources of the pollutant, such as stormwater and wastewater discharges, which require a New Jersey Pollutant Discharge Elimination System (NJPDES) permit to discharge, and nonpoint source, which includes stormwater runoff from agricultural areas and residential areas, along with a margin of safety. Provisions may also be made for future sources in the form of reserve capacity. An implementation plan is developed to identify how the various sources will be reduced to the designated allocations. Implementation strategies may include improved stormwater treatment plants, adoption of ordinances, reforestation of stream corridors, retrofitting stormwater systems, and other best management practices or BMPs.

There are no TMDLs reported to the Federal Environmental Protection Agency for Crosswicks Creek, Blacks Creek, Crafts Creek or Assiscunk Creek. A TMDL was established for Doctors Creek at Allentown New Jersey on September 23, 2003 for fecal coliform. Doctors Creek runs parallel to Crosswicks Creek in Chesterfield and no sub-watersheds in Chesterfield drain into Doctors Creek. The TMDL for Doctors Creek will not impact Chesterfield Township. A TMDL was established for PCB's in the Delaware River on December 15, 2003. The Environmental Protection information indicates that the state impairment is a "placeholder to provide linkage for unlisted impairments and/or unlisted waters". Since the watersheds in Chesterfield drain to the Delaware River, Chesterfield may be required to take additional measures with regard to the Delaware River Zone 2 TMDL for PCBs.

6.0 Stormwater Management Plan

An aerial view of the Township, which illustrates the major waterways, is provided in the Appendix on **Map 1, Existing Conditions**. This Municipal Stormwater Management Plan documents the Township's strategy to manage the impact of stormwater and do its part to advance this goal for the region and state. Specifically, it addresses groundwater recharge, stormwater quantity, and stormwater quality impacts by incorporating design and performance standards for new development that disturb one or more acre of land. The plan describes long-term operation and maintenance measures for existing and future stormwater facilities by stressing best management practices.

The Township of Chesterfield Stormwater Management Plan is prepared to reflect advances in stormwater management practices and new regulations, stemming from the Clean Water Act, as reflected in the State of New Jersey's Municipal Stormwater Regulations (N.J.A.C. 7:14A-25). It contains the required elements described in the Stormwater Management Rules, N.J.A.C. 7:8 Subchapter 4. The plan addresses the review and update of existing ordinances, and other planning documents to allow for project designs that include non-structural strategies and low impact development techniques.

Chesterfield Township currently utilizes the Residential Site Improvement Standards (RSIS) for stormwater management design for all residential development before the Land Use Board.

Non-residential projects are currently reviewed under the Residential Site Improvement Standards as the design standards of the Township. In the Receiving Area of the Township the commercial development is integrated with the residential development, thus RSIS governs.

All non-residential development over one acre will be required to conform to the design and performance standards of N.J.A.C. 7:8 through the implementation of the Township of Chesterfield stormwater management plan. The Township of Chesterfield Stormwater Management Ordinance - Draft Language is provided as **Attachment 1**. As required by the New Jersey Department of Environmental Protection, alternative standards such as stormwater management plans from municipalities shall provide at least as much protection from stormwater-related loss of groundwater recharge, stormwater quantity and water quality impacts of major development projects as would be provided under the standards in N.J.A.C. 7:8-5.

The Township will adopt the design and performance standards for stormwater management measures as presented in N.J.A.C. 7:8-5 to minimize the adverse impact of stormwater runoff on water quality and water quantity and loss of groundwater recharge in receiving water bodies. The design and performance standards include the language for maintenance of stormwater management measures consistent with the stormwater management rules at N.J.A.C. 7:8-5.8 Maintenance Requirements, and language for safety standards consistent with N.J.A.C. 7:8-6 Safety Standards for Stormwater Management Basins. The ordinances will be submitted to Burlington County for review and approval prior to final adoption.

During construction, Township inspectors will observe the construction of the project to ensure that the stormwater management measures are constructed and function as designed.



**Storm Inlet in Conformance with
Attachment C of Stormwater Regulations**

7.0 Evaluation of Master Plan

Element 8 of N.J.A.C. 7:8-4.2. requires the evaluation of the Township's entire master plan (including the land use element), official map and development regulations (including the zoning ordinance). An illustration of the Township's agricultural, forest, and wetlands is provided in the Appendix on **Map 3, Land Uses** to help guide any revisions to land use and zoning code amendments. As described in the schedule for adoption of municipal stormwater management plan and ordinances Section NJAC 7:8-4.3 the requirements of 4.2(c) 8 and 9 are not operative until February 2, 2006. The completed element of N.J.A.C. 7:8-4.2(c) 8 will be provided on or before February 2, 2006.

8.0 Land Use Build-Out Analysis

The Land Use/Build-Out Analysis is element 9 of N.J.A.C. 7:8-4.2. This analysis determines the pollutant loads to the streams in the municipality under maximum development permitted in the zoning code. Under Section NJAC 7:8-4.3, the schedule for the adoption of municipal stormwater management plans, the requirements of 4.2(c) 8 and 9 are not required until February 2, 2006. The completed element of N.J.A.C. 7:8-4.2(c) 9 will be provided on or before February 2, 2006.

9.0 Exemptions from Standards

The Township of Chesterfield will not grant exemption or waivers from the proposed stormwater design standards. All future development in Chesterfield has been carefully planned through the transfer of development rights program and should meet all design standards. A mitigation plan is not proposed as part of the stormwater management plan.

10.0 Summary

The Stormwater Management Plan is presented for adoption on July 27, 2005 to the Township of Chesterfield Land Use Board. The adoption of this plan is required for the Township of Chesterfield to

meet the requirements of the Chesterfield Township NJPDES MS4 permit. If adopted the stormwater management plan will become an element of the Chesterfield Township Master Plan.

The ordinances included as Attachments to the Township of Chesterfield Municipal Stormwater Management Plan must be reviewed and adopted by the Township of Chesterfield Council prior to April 1, 2006 in order to go into effect and to meet the requirements of the Chesterfield Township NJPDES MS4 permit.

A copy of the adopted Township of Chesterfield Stormwater Management Plan will be submitted to Burlington County Planning for review and approval.

The Township of Chesterfield Stormwater Management Plan represents the beginning of a new process in which municipalities participate in improving water quality conditions from non-point source pollution. The Township of Chesterfield Stormwater Management Plan will improve the non-point source pollution conditions to the Delaware River, Crosswicks Creek, and Blacks Creek.

ATTACHMENT 1

Township of Chesterfield
Stormwater Ordinance

Chesterfield Stormwater Ordinance

This ordinance is provided within the Stormwater Management Plan as a requirement of NJAC 7:8-4.1(c)12. The Model Ordinance should be used in the forthcoming months in the development of specific municipal stormwater control ordinances and design and performance standards specific to Chesterfield Township. This ordinance does not include a section on fees. The costs of reviewing development applications under this ordinance can be defrayed by fees charged for review of subdivisions and site plans under N.J.S.A. 40:55D-8.b.

Section 1: Scope and Purpose

A. Policy Statement

Flood control, groundwater recharge, and pollutant reduction through nonstructural or low impact techniques shall be explored before relying on structural BMPs. Structural BMPs should be integrated with nonstructural stormwater management strategies and proper maintenance plans. Nonstructural strategies include both environmentally sensitive site design and source controls that prevent pollutants from being placed on the site or from being exposed to stormwater. Source control plans should be developed based upon physical site conditions and the origin, nature, and the anticipated quantity or amount of potential pollutants. Multiple stormwater management BMPs may be necessary to achieve the established performance standards for water quality, quantity, and groundwater recharge.

B. Purpose

It is the purpose of this ordinance to establish minimum stormwater management requirements and controls for “major development,” as defined in Section 2.

C. Applicability

1. This ordinance shall be applicable to all site plans and subdivisions for the following major developments that require preliminary or final site plan or subdivision review:

- . Non-residential major developments; and
- . Aspects of residential major developments that are not pre-empted by the Residential Site Improvement Standards at N.J.A.C. 5:21.

2. This ordinance shall also be applicable to all major developments undertaken by Chesterfield Township.

D. Compatibility with Other Permit and Ordinance Requirements

Development approvals issued for subdivisions and site plans pursuant to this ordinance are to be considered an integral part of development approvals under the subdivision and site plan review process and do not relieve the applicant of the responsibility to secure required permits or approvals for activities regulated by any other applicable code, rule, act, or ordinance. In their interpretation and application, the provisions of this ordinance shall be held to be the minimum requirements for the promotion of the public health, safety, and general welfare. This ordinance is not intended to interfere with, abrogate, or annul any other ordinances, rule or regulation, statute, or other provision of law except that, where any provision of this ordinance imposes

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restrictions different from those imposed by any other ordinance, rule or regulation, or other provision of law, the more restrictive provisions or higher standards shall control.

Section 2: Definitions

Unless specifically defined below, words or phrases used in this ordinance shall be interpreted so as to give them the meaning they have in common usage and to give this ordinance its most reasonable application. The definitions below are the same as or based on the corresponding definitions in the Stormwater Management Rules at N.J.A.C. 7:8-1.2.

“CAFRA Planning Map” means the geographic depiction of the boundaries for Coastal Planning Areas, CAFRA Centers, CAFRA Cores and CAFRA Nodes pursuant to N.J.A.C. 7:7E-5B.3.

“CAFRA Centers, Cores or Nodes” means those areas within boundaries accepted by the Department pursuant to N.J.A.C. 7:8E-5B.

“Compaction” means the increase in soil bulk density.

“Core” means a pedestrian-oriented area of commercial and civic uses serving the surrounding municipality, generally including housing and access to public transportation.

“County review agency” means an agency designated by the County Board of Chosen Freeholders to review municipal stormwater management plans and implementing ordinance(s). The county review agency may either be:

A county planning agency; or

A county water resource association created under N.J.S.A 58:16A-55.5, if the ordinance or resolution delegates authority to approve, conditionally approve, or disapprove municipal stormwater management plans and implementing ordinances.

“Department” means the New Jersey Department of Environmental Protection.

“Designated Center” means a State Development and Redevelopment Plan Center as designated by the State Planning Commission such as urban, regional, town, village, or hamlet.

“Design engineer” means a person professionally qualified and duly licensed in New Jersey to perform engineering services that may include, but not necessarily be limited to, development of project requirements, creation and development of project design and preparation of drawings and specifications.

“Development” means the division of a parcel of land into two or more parcels, the construction, reconstruction, conversion, structural alteration, relocation or enlargement of any building or structure, any mining excavation or landfill, and any use or change in the use of any building or other structure, or land or extension of use of land, by any person, for which permission is required under the Municipal Land Use Law , N.J.S.A. 40:55D-1 et seq. In the case of development of agricultural lands, development means: any activity that requires a State permit; any activity reviewed by the County Agricultural Board (CAB) and the State Agricultural Development Committee (SADC), and municipal review of any activity not exempted by the Right to Farm Act , N.J.S.A 4:1C-1 et seq.

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- “Drainage area” means a geographic area within which stormwater, sediments, or dissolved materials drain to a particular receiving waterbody or to a particular point along a receiving waterbody.
- “Environmentally critical areas” means an area or feature which is of significant environmental value, including but not limited to: stream corridors; natural heritage priority sites; habitat of endangered or threatened species; large areas of contiguous open space or upland forest; steep slopes; and well head protection and groundwater recharge areas. Habitats of endangered or threatened species are identified using the Department’s Landscape Project as approved by the Department’s Endangered and Nongame Species Program.
- “Empowerment Neighborhood” means a neighborhood designated by the Urban Coordinating Council “in consultation and conjunction with” the New Jersey Redevelopment Authority pursuant to N.J.S.A 55:19-69.
- “Erosion” means the detachment and movement of soil or rock fragments by water, wind, ice or gravity.
- “Impervious surface” means a surface that has been covered with a layer of material so that it is highly resistant to infiltration by water.
- “Infiltration” is the process by which water seeps into the soil from precipitation.
- “Major development” means any “development” that provides for ultimately disturbing one or more acres of land. Disturbance for the purpose of this rule is the placement of impervious surface or exposure and/or movement of soil or bedrock or clearing, cutting, or removing of vegetation.
- “Municipality” means any city, borough, town, township, or village.
- “Node” means an area designated by the State Planning Commission concentrating facilities and activities which are not organized in a compact form.
- “Nutrient” means a chemical element or compound, such as nitrogen or phosphorus, which is essential to and promotes the development of organisms.
- “Person” means any individual, corporation, company, partnership, firm, association, Chesterfield Township, or political subdivision of this State subject to municipal jurisdiction pursuant to the Municipal Land Use Law , N.J.S.A. 40:55D-1 et seq.
- “Pollutant” means any dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, refuse, oil, grease, sewage sludge, munitions, chemical wastes, biological materials, medical wastes, radioactive substance (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.), thermal waste, wrecked or discarded equipment, rock, sand, cellar dirt, industrial, municipal, agricultural, and construction waste or runoff, or other residue discharged directly or indirectly to the land, ground waters or surface waters of the State, or to a domestic treatment works. “Pollutant” includes both hazardous and nonhazardous pollutants.
- “Recharge” means the amount of water from precipitation that infiltrates into the ground and is not evapotranspired.
- “Sediment” means solid material, mineral or organic, that is in suspension, is being transported, or has been moved from its site of origin by air, water or gravity as a product of erosion.

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“Site” means the lot or lots upon which a major development is to occur or has occurred.

“Soil” means all unconsolidated mineral and organic material of any origin.

“State Development and Redevelopment Plan Metropolitan Planning Area (PA1)” means an area delineated on the State Plan Policy Map and adopted by the State Planning Commission that is intended to be the focus for much of the state’s future redevelopment and revitalization efforts.

“State Plan Policy Map” is defined as the geographic application of the State Development and Redevelopment Plan’s goals and statewide policies, and the official map of these goals and policies.

“Stormwater” means water resulting from precipitation (including rain and snow) that runs off the land’s surface, is transmitted to the subsurface, or is captured by separate storm sewers or other sewage or drainage facilities, or conveyed by snow removal equipment.

“Stormwater runoff” means water flow on the surface of the ground or in storm sewers, resulting from precipitation.

“Stormwater management basin” means an excavation or embankment and related areas designed to retain stormwater runoff. A stormwater management basin may either be normally dry (that is, a detention basin or infiltration basin), retain water in a permanent pool (a retention basin), or be planted mainly with wetland vegetation (most constructed stormwater wetlands).

“Stormwater management measure” means any structural or nonstructural strategy, practice, technology, process, program, or other method intended to control or reduce stormwater runoff and associated pollutants, or to induce or control the infiltration or groundwater recharge of stormwater or to eliminate illicit or illegal non-stormwater discharges into stormwater conveyances.

“Tidal Flood Hazard Area” means a flood hazard area, which may be influenced by stormwater runoff from inland areas, but which is primarily caused by the Atlantic Ocean.

“Urban Coordinating Council Empowerment Neighborhood” means a neighborhood given priority access to State resources through the New Jersey Redevelopment Authority.

“Urban Enterprise Zones” means a zone designated by the New Jersey Enterprise Zone Authority pursuant to the New Jersey Urban Enterprise Zones Act, N.J.S.A. 52:27H-60 et. seq.

“Urban Redevelopment Area” is defined as previously developed portions of areas:

- (1) Delineated on the State Plan Policy Map (SPPM) as the Metropolitan Planning Area (PA1), Designated Centers, Cores or Nodes;
- (2) Designated as CAFRA Centers, Cores or Nodes;
- (3) Designated as Urban Enterprise Zones; and
- (4) Designated as Urban Coordinating Council Empowerment Neighborhoods.

“Waters of the State” means the ocean and its estuaries, all springs, streams, wetlands, and bodies of surface or ground water, whether natural or artificial, within the boundaries of the State of New Jersey or subject to its jurisdiction.

“Wetlands” or “wetland” means an area that is inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances

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does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation.

Section 3: General Standards

A. Design and Performance Standards for Stormwater Management Measures

1. Stormwater management measures for major development shall be developed to meet the erosion control, groundwater recharge, stormwater runoff quantity, and stormwater runoff quality standards in Section 4. To the maximum extent practicable, these standards shall be met by incorporating nonstructural stormwater management strategies into the design. If these strategies alone are not sufficient to meet these standards, structural stormwater management measures necessary to meet these standards shall be incorporated into the design.
2. The standards in this ordinance apply only to new major development and are intended to minimize the impact of stormwater runoff on water quality and water quantity in receiving water bodies and maintain groundwater recharge. The standards do not apply to new major development to the extent that alternative design and performance standards are applicable under a regional stormwater management plan or Water Quality Management Plan adopted in accordance with Department rules.

Note: Alternative standards shall provide at least as much protection from stormwater-related loss of groundwater recharge, stormwater quantity and water quality impacts of major development projects as would be provided under the standards in N.J.A.C. 7:8-5.

Section 4: Stormwater Management Requirements for Major Development

- A. The development shall incorporate a maintenance plan for the stormwater management measures incorporated into the design of a major development in accordance with Section 10.
- B. Stormwater management measures shall avoid adverse impacts of concentrated flow on habitat for threatened and endangered species as documented in the Department' Landscape Project or Natural Heritage Database established under N.J.S.A. 13:1B-15.147 through 15.150, particularly *Helonias bullata* (swamp pink) and/or *Clemmys muhlnebergi* (bog turtle).
- C. The following linear development projects are exempt from the groundwater recharge, stormwater runoff quantity, and stormwater runoff quality requirements of Sections 4.F and 4.G:
 1. The construction of an underground utility line provided that the disturbed areas are revegetated upon completion;
 2. The construction of an aboveground utility line provided that the existing conditions are maintained to the maximum extent practicable; and
 3. The construction of a public pedestrian access, such as a sidewalk or trail with a maximum width of 14 feet, provided that the access is made of permeable material.
- D. A waiver from strict compliance from the groundwater recharge, stormwater runoff quantity, and stormwater runoff quality requirements of Sections 4.F and 4.G may be obtained for the

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enlargement of an existing public roadway or railroad; or the construction or enlargement of a public pedestrian access, provided that the following conditions are met:

1. The applicant demonstrates that there is a public need for the project that cannot be accomplished by any other means;
2. The applicant demonstrates through an alternatives analysis, that through the use of nonstructural and structural stormwater management strategies and measures, the option selected complies with the requirements of Sections 4.F and 4.G to the maximum extent practicable;
3. The applicant demonstrates that, in order to meet the requirements of Sections 4.F and 4.G, existing structures currently in use, such as homes and buildings, would need to be condemned; and
4. The applicant demonstrates that it does not own or have other rights to areas, including the potential to obtain through condemnation lands not falling under D.3 above within the upstream drainage area of the receiving stream, that would provide additional opportunities to mitigate the requirements of Sections 4.F and 4.G that were not achievable on-site.

E. Nonstructural Stormwater Management Strategies

1. To the maximum extent practicable, the standards in Sections 4.F and 4.G shall be met by incorporating nonstructural stormwater management strategies set forth at Section 4.E into the design. The applicant shall identify the nonstructural measures incorporated into the design of the project. If the applicant contends that it is not feasible for engineering, environmental, or safety reasons to incorporate any nonstructural stormwater management measures identified in Paragraph 2 below into the design of a particular project, the applicant shall identify the strategy considered and provide a basis for the contention.
2. Nonstructural stormwater management strategies incorporated into site design shall:
 - a. Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss;
 - b. Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces;
 - c. Maximize the protection of natural drainage features and vegetation;
 - d. Minimize the decrease in the "time of concentration" from pre-construction to post construction. "Time of concentration" is defined as the time it takes for runoff to travel from the hydraulically most distant point of the watershed to the point of interest within a watershed;
 - e. Minimize land disturbance including clearing and grading;
 - f. Minimize soil compaction;
 - g. Provide low-maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticides;

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- h. Provide vegetated open-channel conveyance systems discharging into and through stable vegetated areas;
 - i. Provide other source controls to prevent or minimize the use or exposure of pollutants at the site, in order to prevent or minimize the release of those pollutants into stormwater runoff. Such source controls include, but are not limited to:
 - (1) Site design features that help to prevent accumulation of trash and debris in drainage systems, including features that satisfy Section 4.E.3. below;
 - (2) Site design features that help to prevent discharge of trash and debris from drainage systems;
 - (3) Site design features that help to prevent and/or contain spills or other harmful accumulations of pollutants at industrial or commercial developments; and
 - (3) When establishing vegetation after land disturbance, applying fertilizer in accordance with the requirements established under the Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq., and implementing rules.
3. Site design features identified under Section 4.E.2.i.(2) above shall comply with the following standard to control passage of solid and floatable materials through storm drain inlets. For purposes of this paragraph, "solid and floatable materials" means sediment, debris, trash, and other floating, suspended, or settleable solids. For exemptions to this standard see Section 4.E.3.c below.
- a. Design engineers shall use either of the following grates whenever they use a grate in pavement or another ground surface to collect stormwater from that surface into a storm drain or surface water body under that grate:
 - (1) The New Jersey Department of Transportation (NJDOT) bicycle safe grate, which is described in Chapter 2.4 of the NJDOT Bicycle Compatible Roadways and Bikeways Planning and Design Guidelines (April 1996); or
 - (2) A different grate, if each individual clear space in that grate has an area of no more than seven (7.0) square inches, or is no greater than 0.5 inches across the smallest dimension.
- Examples of grates subject to this standard include grates in grate inlets, the grate portion (non-curb-opening portion) of combination inlets, grates on storm sewer manholes, ditch grates, trench grates, and grates of spacer bars in slotted drains. Examples of ground surfaces include surfaces of roads (including bridges), driveways, parking areas, bikeways, plazas, sidewalks, lawns, fields, open channels, and stormwater basin floors.
- b. Whenever design engineers use a curb-opening inlet, the clear space in that curb opening (or each individual clear space, if the curb opening has two or more clear spaces) shall have an area of no more than seven (7.0) square inches, or be no greater than two (2.0) inches across the smallest dimension.
 - c. This standard does not apply:

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- (1) Where the review agency determines that this standard would cause inadequate hydraulic performance that could not practicably be overcome by using additional or larger storm drain inlets that meet these standards;
 - (2) Where flows from the water quality design storm as specified in Section 4.G.1 are conveyed through any device (e.g., end of pipe netting facility, manufactured treatment device, or a catch basin hood) that is designed, at a minimum, to prevent delivery of all solid and floatable materials that could not pass through one of the following:
 - (a) A rectangular space four and five-eighths inches long and one and one-half inches wide (this option does not apply for outfall netting facilities); or
 - (b) A bar screen having a bar spacing of 0.5 inches.
 - (3) Where flows are conveyed through a trash rack that has parallel bars with one-inch (1") spacing between the bars, to the elevation of the water quality design storm as specified in Section 4.G.1; or
 - (4) Where the New Jersey Department of Environmental Protection determines, pursuant to the New Jersey Register of Historic Places Rules at N.J.A.C. 7:4-7.2(c), that action to meet this standard is an undertaking that constitutes an encroachment or will damage or destroy the New Jersey Register listed historic property.
4. Any land area used as a nonstructural stormwater management measure to meet the performance standards in Sections 4.F and 4.G shall be dedicated to a government agency, subjected to a conservation restriction filed with the appropriate County Clerk's office, or subject to an approved equivalent restriction that ensures that measure or an equivalent stormwater management measure approved by the reviewing agency is maintained in perpetuity.
5. Guidance for nonstructural stormwater management strategies is available in the New Jersey Stormwater Best Management Practices Manual. The BMP Manual may be obtained from the address identified in Section 7, or found on the Department's website at www.njstormwater.org.

F. Erosion Control, Groundwater Recharge and Runoff Quantity Standards

1. This subsection contains minimum design and performance standards to control erosion, encourage and control infiltration and groundwater recharge, and control stormwater runoff quantity impacts of major development.
 - a. The minimum design and performance standards for erosion control are those established under the Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq. and implementing rules.
 - b. The minimum design and performance standards for groundwater recharge are as follows:
 - (1) The design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at Section 5, either:

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- (a) Demonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measures maintain 100 percent of the average annual pre-construction groundwater recharge volume for the site; or
 - (b) Demonstrate through hydrologic and hydraulic analysis that the increase of stormwater runoff volume from pre-construction to post-construction for the 2-year storm is infiltrated.
 - (2) This groundwater recharge requirement does not apply to projects within the “urban redevelopment area,” or to projects subject to (3) below.
 - (3) The following types of stormwater shall not be recharged:
 - (a) Stormwater from areas of high pollutant loading. High pollutant loading areas are areas in industrial and commercial developments where solvents and/or petroleum products are loaded/unloaded, stored, or applied, areas where pesticides are loaded/unloaded or stored; areas where hazardous materials are expected to be present in greater than “reportable quantities” as defined by the United States Environmental Protection Agency (EPA) at 40 CFR 302.4; areas where recharge would be inconsistent with Department approved remedial action work plan or landfill closure plan and areas with high risks for spills of toxic materials, such as gas stations and vehicle maintenance facilities; and
 - (b) Industrial stormwater exposed to “source material.” “Source material” means any material(s) or machinery, located at an industrial facility, that is directly or indirectly related to process, manufacturing or other industrial activities, which could be a source of pollutants in any industrial stormwater discharge to groundwater. Source materials include, but are not limited to, raw materials; intermediate products; final products; waste materials; by-products; industrial machinery and fuels, and lubricants, solvents, and detergents that are related to process, manufacturing, or other industrial activities that are exposed to stormwater.
 - (4) The design engineer shall assess the hydraulic impact on the groundwater table and design the site so as to avoid adverse hydraulic impacts. Potential adverse hydraulic impacts include, but are not limited to, exacerbating a naturally or seasonally high water table so as to cause surficial ponding, flooding of basements, or interference with the proper operation of subsurface sewage disposal systems and other subsurface structures in the vicinity or downgradient of the groundwater recharge area.
- c. In order to control stormwater runoff quantity impacts, the design engineer shall, using the assumptions and factors for stormwater runoff calculations at Section 5, complete one of the following:
- (1) Demonstrate through hydrologic and hydraulic analysis that for stormwater leaving the site, post-construction runoff hydrographs for the two, 10, and 100-year storm events do not exceed, at any point in time, the pre-construction runoff hydrographs for the same storm events;
 - (2) Demonstrate through hydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater

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leaving the site for the two, 10, and 100-year storm events and that the increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site. This analysis shall include the analysis of impacts of existing land uses and projected land uses assuming full development under existing zoning and land use ordinances in the drainage area;

- (3) Design stormwater management measures so that the post-construction peak runoff rates for the 2, 10 and 100 year storm events are 50, 75 and 80 percent, respectively, of the pre-construction peak runoff rates. The percentages apply only to the post-construction stormwater runoff that is attributable to the portion of the site on which the proposed development or project is to be constructed. The percentages shall not be applied to post-construction stormwater runoff into tidal flood hazard areas if the increased volume of stormwater runoff will not increase flood damages below the point of discharge; or
 - (4) In tidal flood hazard areas, stormwater runoff quantity analysis in accordance with (1), (2) and (3) above shall only be applied if the increased volume of stormwater runoff could increase flood damages below the point of discharge.
2. Any application for a new agricultural development that meets the definition of major development at Section 2 shall be submitted to the appropriate Soil Conservation District for review and approval in accordance with the requirements of this section and any applicable Soil Conservation District guidelines for stormwater runoff quantity and erosion control. For the purposes of this section, "agricultural development" means land uses normally associated with the production of food, fiber and livestock for sale. Such uses do not include the development of land for the processing or sale of food and the manufacturing of agriculturally related products.

G. Stormwater Runoff Quality Standards

1. Stormwater management measures shall be designed to reduce the post-construction load of total suspended solids (TSS) in stormwater runoff by 80 percent of the anticipated load from the developed site, expressed as an annual average. Stormwater management measures shall only be required for water quality control if an additional 1/4 acre of impervious surface is being proposed on a development site. The requirement to reduce TSS does not apply to any stormwater runoff in a discharge regulated under a numeric effluent limitation for TSS imposed under the New Jersey Pollution Discharge Elimination System (NJPDES) rules, N.J.A.C. 7:14A, or in a discharge specifically exempt under a NJPDES permit from this requirement. The water quality design storm is 1.25 inches of rainfall in two hours. Water quality calculations shall take into account the distribution of rain from the water quality design storm, as reflected in Table 1. The calculation of the volume of runoff may take into account the implementation of non-structural and structural stormwater management measures.

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| Table 1: Water Quality Design Storm Distribution | | | |
|--|------------------------------------|-------------------|------------------------------------|
| Time (Minutes) | Cumulative Rainfall (Inches) | Time (Minutes) | Cumulative Rainfall (Inches) |
| 0 | 0.0000 | 65 | 0.8917 |
| 5 | 0.0083 | 70 | 0.9917 |
| 10 | 0.0166 | 75 | 1.0500 |
| 15 | 0.0250 | 80 | 1.0840 |
| 20 | 0.0500 | 85 | 1.1170 |
| 25 | 0.0750 | 90 | 1.1500 |
| 30 | 0.1000 | 95 | 1.1750 |
| 35 | 0.1330 | 100 | 1.2000 |
| 40 | 0.1660 | 105 | 1.2250 |
| 45 | 0.2000 | 110 | 1.2334 |
| 50 | 0.2583 | 115 | 1.2417 |
| 55 | 0.3583 | 120 | 1.2500 |
| 60 | 0.6250 | | |

2. For purposes of TSS reduction calculations, Table 2 below presents the presumed removal rates for certain BMPs designed in accordance with the New Jersey Stormwater Best Management Practices Manual. The BMP Manual may be obtained from the address identified in Section 7, or found on the Department’s website at www.njstormwater.org. The BMP Manual and other sources of technical guidance are listed in Section 7. TSS reduction shall be calculated based on the removal rates for the BMPs in Table 2 below. Alternative removal rates and methods of calculating removal rates may be used if the design engineer provides documentation demonstrating the capability of these alternative rates and methods to the review agency. A copy of any approved alternative rate or method of calculating the removal rate shall be provided to the Department at the following address: Division of Watershed Management, New Jersey Department of Environmental Protection, PO Box 418 Trenton, New Jersey, 08625-0418.

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3. If more than one BMP in series is necessary to achieve the required 80 percent TSS reduction for a site, the applicant shall utilize the following formula to calculate TSS reduction:

$$R = A + B - (AXB)/100$$

Where

R = total TSS percent load removal from application of both BMPs, and

A = the TSS percent removal rate applicable to the first BMP

B = the TSS percent removal rate applicable to the second BMP

| Best Management Practice | TSS Percent Removal Rate |
|--------------------------------|--------------------------|
| Bioretention Systems | 90 |
| Constructed Stormwater Wetland | 90 |
| Extended Detention Basin | 40-60 |
| Infiltration Structure | 80 |
| Manufactured Treatment Device | See Section 6.C |
| Sand Filter | 80 |
| Vegetative Filter Strip | 60-80 |
| Wet Pond | 50-90 |

4. If there is more than one onsite drainage area, the 80 percent TSS removal rate shall apply to each drainage area, unless the runoff from the subareas converge on site in which case the removal rate can be demonstrated through a calculation using a weighted average.
5. Stormwater management measures shall also be designed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticipated load from the developed site in stormwater runoff generated from the water quality design storm. In achieving reduction of nutrients to the maximum extent feasible, the design of the site shall include nonstructural strategies and structural measures that optimize nutrient removal while still achieving the performance standards in Sections 4.F and 4.G.
6. Additional information and examples are contained in the New Jersey Stormwater Best Management Practices Manual, which may be obtained from the address identified in Section 7.

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7. In accordance with the definition of FW1 at N.J.A.C. 7:9B-1.4, stormwater management measures shall be designed to prevent any increase in stormwater runoff to waters classified as FW1.
8. Special water resource protection areas shall be established along all waters designated Category One at N.J.A.C. 7:9B, and perennial or intermittent streams that drain into or upstream of the Category One waters as shown on the USGS Quadrangle Maps or in the County Soil Surveys, within the associated HUC14 drainage area. These areas shall be established for the protection of water quality, aesthetic value, exceptional ecological significance, exceptional recreational significance, exceptional water supply significance, and exceptional fisheries significance of those established Category One waters. These areas shall be designated and protected as follows:
 - a. The applicant shall preserve and maintain a special water resource protection area in accordance with one of the following:
 - (1) A 300-foot special water resource protection area shall be provided on each side of the waterway, measured perpendicular to the waterway from the top of the bank outwards or from the centerline of the waterway where the bank is not defined, consisting of existing vegetation or vegetation allowed to follow natural succession is provided. (2) Encroachment within the designated special water resource protection area under Subsection (1) above shall only be allowed where previous development or disturbance has occurred (for example, active agricultural use, parking area or maintained lawn area). The encroachment shall only be allowed where applicant demonstrates that the functional value and overall condition of the special water resource protection area will be maintained to the maximum extent practicable. In no case shall the remaining special water resource protection area be reduced to less than 150 feet as measured perpendicular to the top of bank of the waterway or centerline of the waterway where the bank is undefined. All encroachments proposed under this subparagraph shall be subject to review and approval by the Department.
 - b. All stormwater shall be discharged outside of and flow through the special water resource protection area and shall comply with the Standard for Off-Site Stability in the "Standards For Soil Erosion and Sediment Control in New Jersey," established under the Soil Erosion and Sediment Control Act , N.J.S.A. 4:24-39 et seq.
 - c. If stormwater discharged outside of and flowing through the special water resource protection area cannot comply with the Standard For Off-Site Stability in the "Standards for Soil Erosion and Sediment Control in New Jersey," established under the Soil Erosion and Sediment Control Act , N.J.S.A. 4:24-39 et seq., then the stabilization measures in accordance with the requirements of the above standards may be placed within the special water resource protection area, provided that:
 - (1) Stabilization measures shall not be placed within 150 feet of the Category One waterway;
 - (2) Stormwater associated with discharges allowed by this section shall achieve a 95 percent TSS post-construction removal rate;
 - (3) Temperature shall be addressed to ensure no impact on the receiving waterway;

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- (4) The encroachment shall only be allowed where the applicant demonstrates that the functional value and overall condition of the special water resource protection area will be maintained to the maximum extent practicable;
 - (5) A conceptual project design meeting shall be held with the appropriate Department staff and Soil Conservation District staff to identify necessary stabilization measures; and
 - (6) All encroachments proposed under this section shall be subject to review and approval by the Department.
- d. A stream corridor protection plan may be developed by a regional stormwater management planning committee as an element of a regional stormwater management plan, or by a municipality through an adopted municipal stormwater management plan. If a stream corridor protection plan for a waterway subject to Section 4.G(8) has been approved by the Department of Environmental Protection, then the provisions of the plan shall be the applicable special water resource protection area requirements for that waterway. A stream corridor protection plan for a waterway subject to G.8 shall maintain or enhance the current functional value and overall condition of the special water resource protection area as defined in G.8.a.(1) above. In no case shall a stream corridor protection plan allow the reduction of the Special Water Resource Protection Area to less than 150 feet as measured perpendicular to the waterway subject to this subsection.
- e. Paragraph G.8 does not apply to the construction of one individual single family dwelling that is not part of a larger development on a lot receiving preliminary or final subdivision approval on or before February 2, 2004 , provided that the construction begins on or before February 2, 2009.

Section 5: Calculation of Stormwater Runoff and Groundwater Recharge

- A. Stormwater runoff shall be calculated in accordance with the following:
1. The design engineer shall calculate runoff using one of the following methods:
 - a. The USDA Natural Resources Conservation Service (NRCS) methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph, as described in the NRCS National Engineering Handbook Section 4 – Hydrology and Technical Release 55 – Urban Hydrology for Small Watersheds; or
 - b. The Rational Method for peak flow and the Modified Rational Method for hydrograph computations.
 2. For the purpose of calculating runoff coefficients and groundwater recharge, there is a presumption that the pre-construction condition of a site or portion thereof is a wooded land use with good hydrologic condition. The term “runoff coefficient” applies to both the NRCS methodology at Section 5.A.1.a and the Rational and Modified Rational Methods at Section 5.A.1.b. A runoff coefficient or a groundwater recharge land cover for an existing condition may be used on all or a portion of the site if the design engineer verifies that the hydrologic condition has existed on the site or portion of the site for at least five years without interruption prior to the time of application. If more than one land cover have existed on the

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site during the five years immediately prior to the time of application, the land cover with the lowest runoff potential shall be used for the computations. In addition, there is the presumption that the site is in good hydrologic condition (if the land use type is pasture, lawn, or park), with good cover (if the land use type is woods), or with good hydrologic condition and conservation treatment (if the land use type is cultivation).

3. In computing pre-construction stormwater runoff, the design engineer shall account for all significant land features and structures, such as ponds, wetlands, depressions, hedgerows, or culverts, that may reduce pre-construction stormwater runoff rates and volumes.
4. In computing stormwater runoff from all design storms, the design engineer shall consider the relative stormwater runoff rates and/or volumes of pervious and impervious surfaces separately to accurately compute the rates and volume of stormwater runoff from the site. To calculate runoff from unconnected impervious cover, urban impervious area modifications as described in the NRCS Technical Release 55 – Urban Hydrology for Small Watersheds and other methods may be employed.
5. If the invert of the outlet structure of a stormwater management measure is below the flood hazard design flood elevation as defined at N.J.A.C. 7:13, the design engineer shall take into account the effects of tailwater in the design of structural stormwater management measures.

B. Groundwater recharge may be calculated in accordance with the following:

0. The New Jersey Geological Survey Report GSR-32 A Method for Evaluating Ground-Water Recharge Areas in New Jersey, incorporated herein by reference as amended and supplemented. Information regarding the methodology is available from the New Jersey Stormwater Best Management Practices Manual; at <http://www.state.nj.us/dep/njgs/>; or at New Jersey Geological Survey, 29 Arctic Parkway, P.O. Box 427 Trenton, New Jersey 08625-0427; (609) 984-6587.

Section 6: Standards for Structural Stormwater Management Measures

A. Standards for structural stormwater management measures are as follows:

1. Structural stormwater management measures shall be designed to take into account the existing site conditions, including, for example, environmentally critical areas, wetlands; flood-prone areas; slopes; depth to seasonal high water table; soil type, permeability and texture; drainage area and drainage patterns; and the presence of solution-prone carbonate rocks (limestone).
2. Structural stormwater management measures shall be designed to minimize maintenance, facilitate maintenance and repairs, and ensure proper functioning. Trash racks shall be installed at the intake to the outlet structure as appropriate, and shall have parallel bars with one-inch (1") spacing between the bars to the elevation of the water quality design storm. For elevations higher than the water quality design storm, the parallel bars at the outlet structure shall be spaced no greater than one-third (1/3) the width of the diameter of the orifice or one-third (1/3) the width of the weir, with a minimum spacing between bars of one-inch and a maximum spacing between bars of six inches. In addition, the design of trash racks must comply with the requirements of Section 8.D.

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3. Structural stormwater management measures shall be designed, constructed, and installed to be strong, durable, and corrosion resistant. Measures that are consistent with the relevant portions of the Residential Site Improvement Standards at N.J.A.C. 5:21-7.3, 7.4, and 7.5 shall be deemed to meet this requirement.
4. At the intake to the outlet from the stormwater management basin, the orifice size shall be a minimum of two and one-half inches in diameter.
5. Stormwater management basins shall be designed to meet the minimum safety standards for stormwater management basins at Section 8.

B. Stormwater management measure guidelines are available in the New Jersey Stormwater Best Management Practices Manual. Other stormwater management measures may be utilized provided the design engineer demonstrates that the proposed measure and its design will accomplish the required water quantity, groundwater recharge and water quality design and performance standards established by Section 4 of this ordinance.

C. Manufactured treatment devices may be used to meet the requirements of Section 4 of this ordinance, provided the pollutant removal rates are verified by the New Jersey Corporation for Advanced Technology and certified by the Department.

Section 7: Sources for Technical Guidance

- A. Technical guidance for stormwater management measures can be found in the documents listed at 1 and 2 below, which are available from Maps and Publications, New Jersey Department of Environmental Protection, 428 East State Street, P.O. Box 420, Trenton, New Jersey, 08625; telephone (609) 777-1038.
1. Guidelines for stormwater management measures are contained in the New Jersey Stormwater Best Management Practices Manual, as amended. Information is provided on stormwater management measures such as: bioretention systems, constructed stormwater wetlands, dry wells, extended detention basins, infiltration structures, manufactured treatment devices, pervious paving, sand filters, vegetative filter strips, and wet ponds.
 2. The New Jersey Department of Environmental Protection Stormwater Management Facilities Maintenance Manual, as amended.
- B. Additional technical guidance for stormwater management measures can be obtained from the following:
1. The "Standards for Soil Erosion and Sediment Control in New Jersey" promulgated by the State Soil Conservation Committee and incorporated into N.J.A.C. 2:90. Copies of these standards may be obtained by contacting the State Soil Conservation Committee or any of the Soil Conservation Districts listed in N.J.A.C. 2:90-1.3(a)4. The location, address, and telephone number of each Soil Conservation District may be obtained from the State Soil Conservation Committee, P.O. Box 330, Trenton, New Jersey 08625; (609) 292-5540;
 2. The Rutgers Cooperative Extension Service, 732-932-9306; and

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3. The Soil Conservation Districts listed in N.J.A.C. 2:90-1.3(a)4. The location, address, and telephone number of each Soil Conservation District may be obtained from the State Soil Conservation Committee, P.O. Box 330, Trenton, New Jersey, 08625, (609) 292-5540.

Section 8: Safety Standards for Stormwater Management Basins

A. This section sets forth requirements to protect public safety through the proper design and operation of stormwater management basins. This section applies to any new stormwater management basin.

B. Requirements for Trash Racks, Overflow Grates and Escape Provisions

1. A trash rack is a device designed to catch trash and debris and prevent the clogging of outlet structures. Trash racks shall be installed at the intake to the outlet from the stormwater management basin to ensure proper functioning of the basin outlets in accordance with the following:
 - a. The trash rack shall have parallel bars, with no greater than six inch spacing between the bars.
 - b. The trash rack shall be designed so as not to adversely affect the hydraulic performance of the outlet pipe or structure.
 - c. The average velocity of flow through a clean trash rack is not to exceed 2.5 feet per second under the full range of stage and discharge. Velocity is to be computed on the basis of the net area of opening through the rack.
 - d. The trash rack shall be constructed and installed to be rigid, durable, and corrosion resistant, and shall be designed to withstand a perpendicular live loading of 300 lbs/ft sq.
2. An overflow grate is designed to prevent obstruction of the overflow structure. If an outlet structure has an overflow grate, such grate shall meet the following requirements:
 - a. The overflow grate shall be secured to the outlet structure but removable for emergencies and maintenance.
 - b. The overflow grate spacing shall be no less than two inches across the smallest dimension.
 - c. The overflow grate shall be constructed and installed to be rigid, durable, and corrosion resistant, and shall be designed to withstand a perpendicular live loading of 300 lbs./ft sq.
3. For purposes of this paragraph 3, escape provisions means the permanent installation of ladders, steps, rungs, or other features that provide easily accessible means of egress from stormwater management basins. Stormwater management basins shall include escape provisions as follows:
 - a. If a stormwater management basin has an outlet structure, escape provisions shall be incorporated in or on the structure. With the prior approval of the reviewing agency identified in Section 8.C a free-standing outlet structure may be exempted from this requirement.

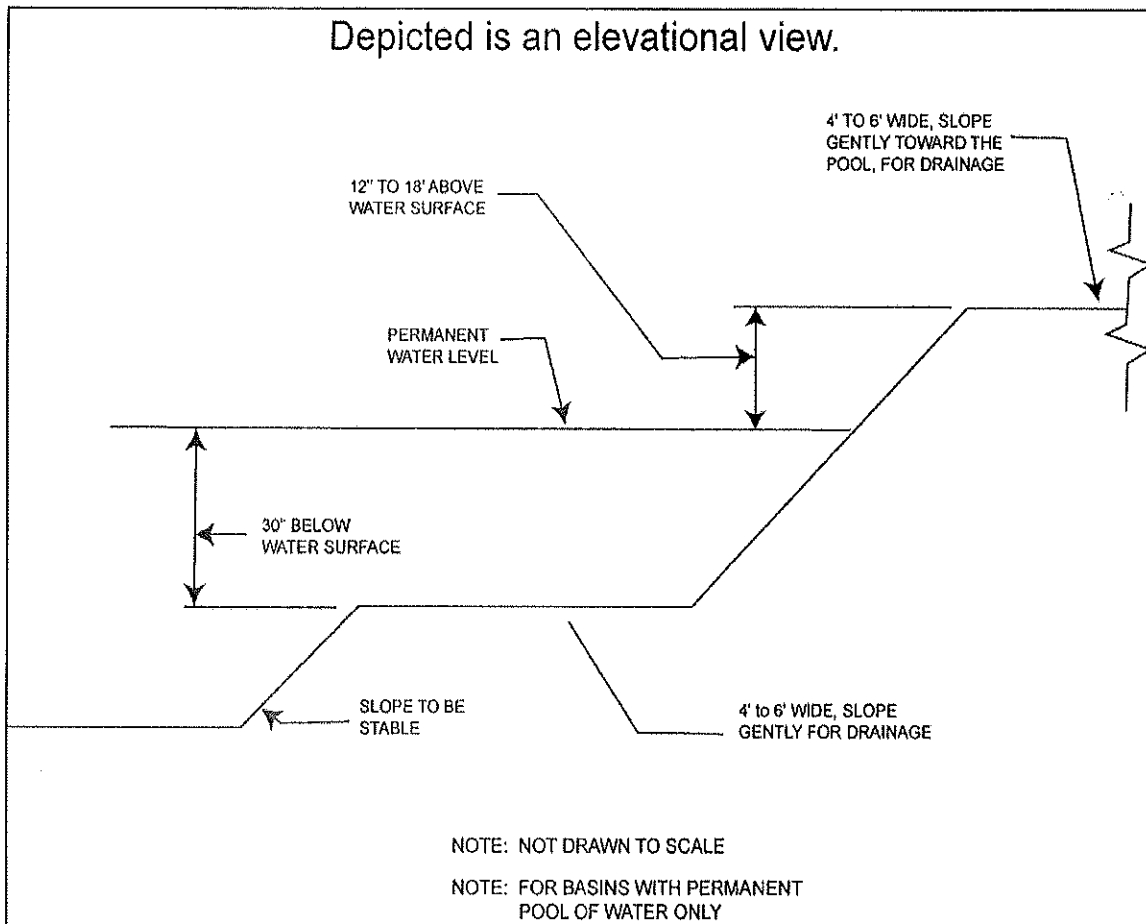
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- b. Safety ledges shall be constructed on the slopes of all new stormwater management basins having a permanent pool of water deeper than two and one-half feet. Such safety ledges shall be comprised of two steps. Each step shall be four to six feet in width. One step shall be located approximately two and one-half feet below the permanent water surface, and the second step shall be located one to one and one-half feet above the permanent water surface. See Section 8.D for an illustration of safety ledges in a stormwater management basin.
- c. In new stormwater management basins, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than 3 horizontal to 1 vertical.

C. Variance or Exemption from Safety Standards

1. A variance or exemption from the safety standards for stormwater management basins may be granted only upon a written finding by the appropriate reviewing agency (municipality, county or Department) that the variance or exemption will not constitute a threat to public safety.

D. Illustration of Safety Ledges in a New Stormwater Management Basin



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Section 9: Requirements for a Site Development Stormwater Plan

A. Submission of Site Development Stormwater Plan

1. Whenever an applicant seeks municipal approval of a development subject to this ordinance, the applicant shall submit all of the required components of the Checklist for the Site Development Stormwater Plan at Section 9.C below as part of the submission of the applicant's application for subdivision or site plan approval.
2. The applicant shall demonstrate that the project meets the standards set forth in this ordinance.
3. The applicant shall submit 15 copies of the materials listed in the checklist for site development stormwater plans in accordance with Section 9.C of this ordinance.

B. Site Development Stormwater Plan Approval

The applicant's Site Development project shall be reviewed as a part of the subdivision or site plan review process by the municipal board or official from which municipal approval is sought. That municipal board or official shall consult the engineer retained by the Planning and/or Zoning Board (as appropriate) to determine if all of the checklist requirements have been satisfied and to determine if the project meets the standards set forth in this ordinance.

C. Checklist Requirements

The following information shall be required:

1. Topographic Base Map

The reviewing engineer may require upstream tributary drainage system information as necessary. It is recommended that the topographic base map of the site be submitted which extends a minimum of 200 feet beyond the limits of the proposed development, at a scale of 1"=200' or greater, showing 2-foot contour intervals. The map as appropriate may indicate the following: existing surface water drainage, shorelines, steep slopes, soils, erodible soils, perennial or intermittent streams that drain into or upstream of the Category One waters, wetlands and flood plains along with their appropriate buffer strips, marshlands and other wetlands, pervious or vegetative surfaces, existing man-made structures, roads, bearing and distances of property lines, and significant natural and manmade features not otherwise shown.

2. Environmental Site Analysis

A written and graphic description of the natural and man-made features of the site and its environs. This description should include a discussion of soil conditions, slopes, wetlands, waterways and vegetation on the site. Particular attention should be given to unique, unusual, or environmentally sensitive features and to those that provide particular opportunities or constraints for development.

3. Project Description and Site Plan(s)

A map (or maps) at the scale of the topographical base map indicating the location of existing and proposed buildings, roads, parking areas, utilities, structural facilities for stormwater

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management and sediment control, and other permanent structures. The map(s) shall also clearly show areas where alterations occur in the natural terrain and cover, including lawns and other landscaping, and seasonal high ground water elevations. A written description of the site plan and justification of proposed changes in natural conditions may also be provided.

4. Land Use Planning and Source Control Plan

This plan shall provide a demonstration of how the goals and standards of Sections 3 through 6 are being met. The focus of this plan shall be to describe how the site is being developed to meet the objective of controlling groundwater recharge, stormwater quality and stormwater quantity problems at the source by land management and source controls whenever possible.

5. Stormwater Management Facilities Map

The following information, illustrated on a map of the same scale as the topographic base map, shall be included:

- a. Total area to be paved or built upon, proposed surface contours, land area to be occupied by the stormwater management facilities and the type of vegetation thereon, and details of the proposed plan to control and dispose of stormwater.
- b. Details of all stormwater management facility designs, during and after construction, including discharge provisions, discharge capacity for each outlet at different levels of detention and emergency spillway provisions with maximum discharge capacity of each spillway.

6. Calculations

- a. Comprehensive hydrologic and hydraulic design calculations for the pre-development and post-development conditions for the design storms specified in Section 4 of this ordinance.
- b. When the proposed stormwater management control measures (e.g., infiltration basins) depends on the hydrologic properties of soils, then a soils report shall be submitted. The soils report shall be based on onsite boring logs or soil pit profiles. The number and location of required soil borings or soil pits shall be determined based on what is needed to determine the suitability and distribution of soils present at the location of the control measure.

7. Maintenance and Repair Plan

The design and planning of the stormwater management facility shall meet the maintenance requirements of Section 10.

8. Waiver from Submission Requirements

The municipal official or board reviewing an application under this ordinance may, in consultation with the municipal engineer, waive submission of any of the requirements in Sections 9.C.1 through 9.C.6 of this ordinance when it can be demonstrated that the information requested is impossible to obtain or it would create a hardship on the applicant to obtain and its absence will not materially affect the review process.

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Section 10: Maintenance and Repair

A. Applicability

1. Projects subject to review as in Section 1.C of this ordinance shall comply with the requirements of Sections 10.B and 10.C.

B. General Maintenance

1. The design engineer shall prepare a maintenance plan for the stormwater management measures incorporated into the design of a major development.
2. The maintenance plan shall contain specific preventative maintenance tasks and schedules; cost estimates, including estimated cost of sediment, debris, or trash removal; and the name, address, and telephone number of the person or persons responsible for preventative and corrective maintenance (including replacement). Maintenance guidelines for stormwater management measures are available in the New Jersey Stormwater Best Management Practices Manual. If the maintenance plan identifies a person other than the developer (for example, a public agency or homeowners' association) as having the responsibility for maintenance, the plan shall include documentation of such person's agreement to assume this responsibility, or of the developer's obligation to dedicate a stormwater management facility to such person under an applicable ordinance or regulation.
3. Responsibility for maintenance shall not be assigned or transferred to the owner or tenant of an individual property in a residential development or project, unless such owner or tenant owns or leases the entire residential development or project.
4. If the person responsible for maintenance identified under Section 10.B.2 above is not a public agency, the maintenance plan and any future revisions based on Section 10.B.7 below shall be recorded upon the deed of record for each property on which the maintenance described in the maintenance plan must be undertaken.
5. Preventative and corrective maintenance shall be performed to maintain the function of the stormwater management measure, including repairs or replacement to the structure; removal of sediment, debris, or trash; restoration of eroded areas; snow and ice removal; fence repair or replacement; restoration of vegetation; and repair or replacement of nonvegetated linings.
6. The person responsible for maintenance identified under Section 10.B.2 above shall maintain a detailed log of all preventative and corrective maintenance for the structural stormwater management measures incorporated into the design of the development, including a record of all inspections and copies of all maintenance-related work orders.
7. The person responsible for maintenance identified under Section 10.B.2 above shall evaluate the effectiveness of the maintenance plan at least once per year and adjust the plan and the deed as needed.
8. The person responsible for maintenance identified under Section 10.B.2 above shall retain and make available, upon request by any public entity with administrative, health, environmental, or safety authority over the site, the maintenance plan and the documentation required by Sections 10.B.6 and 10.B.7 above.

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9. The requirements of Sections 10.B.3 and 10.B.4 do not apply to stormwater management facilities that are dedicated to and accepted by the municipality or another governmental agency.

10. In the event that the stormwater management facility becomes a danger to public safety or public health, or if it is in need of maintenance or repair, the municipality shall so notify the responsible person in writing. Upon receipt of that notice, the responsible person shall have fourteen (14) days to effect maintenance and repair of the facility in a manner that is approved by the municipal engineer or his designee. The municipality, in its discretion, may extend the time allowed for effecting maintenance and repair for good cause. If the responsible person fails or refuses to perform such maintenance and repair, the municipality or County may immediately proceed to do so and shall bill the cost thereof to the responsible person.

B. Nothing in this section shall preclude the municipality in which the major development is located from requiring the posting of a performance or maintenance guarantee in accordance with N.J.S.A. 40:55D-53.

Section 11: Penalties

Any person who erects, constructs, alters, repairs, converts, maintains, or uses any building, structure or land in violation of this ordinance shall be subject to the following penalties: [*Chesterfield to Specify*].

Section 12: Effective Date

This ordinance shall take effect immediately upon the approval by the county review agency, or sixty (60) days from the receipt of the ordinance by the county review agency if the county review agency should fail to act.

Section 13: Severability

If the provisions of any section, subsection, paragraph, subdivision, or clause of this ordinance shall be judged invalid by a court of competent jurisdiction, such order of judgment shall not affect or invalidate the remainder of any section, subsection, paragraph, subdivision, or clause of this ordinance.

ATTACHMENT 2

NJAC 7:8
SUBCHAPTER 4

Municipal Stormwater Management Planning

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(c) Modifications to an adopted regional stormwater management plan shall be processed as an amendment or revision in accordance with N.J.A.C. 7:15-3.4(b)5 or 3.5(b)5, as applicable.

7:8-3.10 Implementation of adopted regional stormwater management plan

(a) Once the regional stormwater management plan has been adopted pursuant to N.J.A.C. 7:8-3.9, implementation responsibilities are as follows:

1. The Department will use the adopted regional stormwater management plan as the basis for reviewing the stormwater management aspects of projects or activities regulated pursuant to Coastal Permit Program rules, N.J.A.C. 7:7; the Freshwater Wetland Protection Act rules, N.J.A.C. 7:7A; the Coastal Zone Management rules, N.J.A.C. 7:7E; the Flood Hazard Area Control Act rules, N.J.A.C. 7:13; the New Jersey Pollutant Discharge Elimination System rules, N.J.A.C. 7:14A; and the Dam Safety Standards, N.J.A.C. 7:20. The requirements of this chapter are considered to be the minimum stormwater standards. Additional requirements may be imposed as necessary under the respective programs.

2. Each municipality in the regional stormwater management planning area shall incorporate the applicable provisions of the regional stormwater management plan into a new or amended municipal stormwater management plan and ordinances.

3. In accordance with the Residential Site Improvement Standards at N.J.A.C. 5:21-7, if a stormwater management plan for the region has been approved by the Department, stormwater management systems must conform with that plan.

4. The Department shall not issue a permit for a project or activity that conflicts with an Areawide Water Quality Management Plan pursuant to N.J.A.C. 7:15-3.1.

SUBCHAPTER 4. MUNICIPAL STORMWATER MANAGEMENT PLANNING

7:8-4.1 Scope

This subchapter describes stormwater management planning and implementation at the municipal level, including plan elements, county review and technical assistance, the schedule for adoption of the plan and ordinances, and variance or exemption from design and performance standards for stormwater management measures.

7:8-4.2 Municipal stormwater management plan and elements

(a) A municipal stormwater management plan shall address stormwater-related water quality, groundwater recharge and water quantity impacts of major development, and may also address stormwater-related water quality, water quantity and groundwater

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recharge impacts of existing land uses. For purposes of this subchapter, major development is limited to projects that ultimately disturb one or more acres of land.

(b) A municipal stormwater management plan and stormwater control ordinance(s) shall conform with applicable regional stormwater management plan(s).

(c) A municipal stormwater management plan shall, at a minimum:

1. Describe how the municipal stormwater management plan will achieve the goals of stormwater management planning set forth at N.J.A.C. 7:8-2.3;
2. Include maps showing water bodies based on Soil Surveys published by the U.S. Department of Agriculture; the U.S. Geological Survey Topographic Map, 7.5 minute quadrangle series; or other sources of information depicting water bodies in similar or greater detail;
3. Map groundwater recharge areas and well head protection areas based on maps prepared by the Department under N.J.S.A. 58:11A-13 or a municipal ordinance;
4. Describe how the municipal stormwater management plan incorporates design and performance standards in N.J.A.C.7: 8-5 or alternative design and performance standards adopted as a part of a regional stormwater management plan or water quality management plan;
5. Describe how adequate long-term operation as well as preventative and corrective maintenance (including replacement) of the selected stormwater management measures will be ensured;
6. Describe how the plan will ensure compliance with Safety Standards for Stormwater Management Basins at N.J.A.C. 7:8-6;
7. Describe how the municipal stormwater management plan is coordinated with the appropriate Soil Conservation District and any other stormwater management plans, including any adopted regional stormwater management plan, prepared by any stormwater management planning agency related to the river basins or drainage areas to which the plans and/or ordinances apply;
8. Evaluate the extent to which the municipality's entire master plan (including the land use plan element), official map and development regulations (including the zoning ordinance) implement the principles expressed in N.J.A.C. 7:8-5.3(b). This evaluation shall also be included (with updating as appropriate) in the reexamination report adopted under N.J.S.A. 40:55D-89;
9. Include a map of the municipality showing:

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- i. Projected land uses assuming full development under existing zoning, and
- ii. The hydrologic unit code 14 (HUC14) drainage areas as defined by the United States Geological Survey; and an estimate, for each HUC14 drainage area, of the total acreage in the municipality of impervious surface and associated future nonpoint source pollutant load assuming full build out of the projected land uses.

10. At the option of the municipality, document that it has a combined total of less than one square mile of vacant or agricultural lands rather than provide the information required in (c)8 and 9 above. Agricultural lands may be excluded if the development rights to these lands have been permanently purchased or restricted by covenant, easement or deed. Vacant or agricultural lands in environmentally constrained areas may be excluded if the documentation also includes an overlay map of these areas at the same scale as the map under (c)10i below.

- i. Documentation shall include an existing land use map at an appropriate scale to display the land uses of each parcel within the municipality. Such a map shall display the following land uses: residential (which may be divided into single family, two-to-four family, and other multi-family), commercial, industrial, agricultural, parkland, other public uses, semipublic uses, and vacant land;

11. In order to grant a variance or exemption from the design and performance standards in N.J.A.C. 7:8-5, include a mitigation plan that identifies what measures are necessary to offset the deficit created by granting the variance or exemption. The mitigation plan shall ensure that mitigation is completed within the drainage area and for the performance standard for which the variance or exemption was granted;

12. Include a copy of the recommended implementing stormwater control ordinance(s) requiring stormwater management measures, and

13. The municipal stormwater management plan may also include a stream corridor protection plan to address protection of areas adjacent to waterbodies. For waterbodies subject to N.J.A.C. 7:8-5.5(h), the plan shall provide, at a minimum, protections equivalent to those provided at N.J.A.C. 7:8-5.5(h) and be approved by the Department.

7:8-4.3 Schedule for adoption of municipal stormwater management plan and ordinances

(a) A municipality shall adopt a municipal stormwater management plan as an integral part of its master plan and official map in accordance with the schedule in (a)1 or 2 below, whichever is sooner. The requirements in N.J.A.C. 7:8-4.2(c)8 and 9 are not operative until February 2, 2006.

1. By the deadline established in a New Jersey Pollutant Discharge Elimination System permit obtained by the municipality for a municipal separate storm sewer system under N.J.A.C. 7:14A; or

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2. By the next reexamination of the master plan under N.J.S.A. 40:55D-89, if a grant for 90 percent of the costs for the preparation of the municipal stormwater management plan has been made available to a municipality by the Department;

(b) Within one year after the municipality adopts the municipal stormwater management plan, the municipality shall adopt stormwater control ordinance(s) to implement the adopted plan and shall submit the adopted municipal stormwater management plan and ordinance(s) to the county review agency for approval. The adopted municipal stormwater management plan and ordinance(s) shall not take effect without approval by the county review agency.

(c) The municipality shall amend the municipal stormwater management plan and stormwater control ordinance(s) as necessary and submit the amended plan and amended ordinance(s) to the county review agency for approval.

(d) The municipality shall reexamine the municipal stormwater management plan at each reexamination of the municipality's master plan in accordance with N.J.S.A. 40:55D-89.

(e) Within one year of the adoption of a regional stormwater management plan as an amendment to the Areawide Water Quality Management Plan, or an amendment thereto, each municipality within the regional stormwater management planning area shall amend their respective municipal stormwater management plans and stormwater control ordinance(s) to implement the regional stormwater management plan.

7:8-4.4 County review process

(a) A municipality shall submit a copy of the adopted stormwater management plan and stormwater control ordinance(s) to the county review agency and the Department.

(b) In reviewing the adopted municipal stormwater management plan and ordinance(s), the county review agency shall consider whether the plan and ordinance(s) conform with the requirements of this chapter.

(c) In accordance with N.J.S.A. 40:55D-97, it is the county review agency's responsibility to review and approve, conditionally approve (specifying the necessary amendments to the plan and ordinance(s)) or disapprove the adopted municipal stormwater management plan and ordinance(s) within 60 calendar days of receipt of the plan and ordinance(s). If the county review agency does not approve, conditionally approve, or disapprove the plan or ordinance(s) within 60 calendar days, the plan and ordinance(s) shall be deemed approved. The county review agency shall issue a written decision to the municipality, with a copy to the Department.

(d) A municipal stormwater management plan and ordinance(s) approved under (c) above shall take effect immediately. A municipal stormwater management plan and

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ordinance(s) conditionally approved under (c) above shall take effect upon adoption by the municipality of the amendments specified by the county review agency.

(e) Within 30 days of the effective date of the municipal stormwater management plan and ordinance(s) under (d) above, the municipality shall place the plan and ordinance(s) on its website and notify the Department, the Soil Conservation District and State Soil Conservation Committee, or:

1. Submit a copy of the approved municipal stormwater management plan and ordinance(s) to the Department; and
2. Provide notice of such approval to the Soil Conservation District and the State Soil Conservation Committee and, upon request, submit a copy of the approved plan and ordinance(s).

7:8-4.5 Reservation of rights

The Department reserves the right to review stormwater management plans and ordinances for compliance with this subchapter and make recommendations to correct any deficiencies.

7:8-4.6 Variance or exemption from the design and performance standards for stormwater management measures

A municipality may grant a variance or exemption from the design and performance standards for stormwater management measures set forth in its approved municipal stormwater management plan and stormwater control ordinance(s), provided the municipal plan includes a mitigation plan in accordance with N.J.A.C. 7:8-4.2(c)11 and the municipality submits a written report to the county review agency and the Department describing the variance or exemption and the required mitigation.

SUBCHAPTER 5 DESIGN AND PERFORMANCE STANDARDS FOR STORMWATER MANAGEMENT MEASURES

7:8-5.1 Scope

- (a) This subchapter establishes design and performance standards for stormwater management measures for major development intended to minimize the adverse impact of stormwater runoff on water quality and water quantity and loss of groundwater recharge in receiving water bodies.
- (b) The standards specified in this subchapter do not apply to major development if alternative design and performance standards that are at least as protective as would be achieved through this subchapter when considered on a regional stormwater management area basis are applicable under a regional stormwater management plan adopted in

ATTACHMENT 3

New Jersey's Integrated List of Waterbodies,
Sublist 1-5

New Jersey Integrated List of Waterbodies

Sublist 1-5
Watershed 20

| | | | | | |
|---|----------------|----|---|--------------------|---|
| 1 | Lower Delaware | 20 | Annaricken Brook near Jobstown | 01464578 | Temperature, Dissolved Oxygen, Nitrate, Dissolved Solids, Unionized Ammonia |
| 1 | Lower Delaware | 20 | Bacons Creek near Mansfield Square | 01464529 | Temperature, Dissolved Oxygen, Nitrate, Dissolved Solids, Total Suspended Solids, Unionized Ammonia |
| 1 | Lower Delaware | 20 | Barkers Brook N Br near Jobstown | 01464583 | Temperature, Dissolved Oxygen, Nitrate, Dissolved Solids, Unionized Ammonia |
| 1 | Lower Delaware | 20 | Blacks Creek at Chesterfield - Georgetown Rd | 01464527 | Temperature, Dissolved Oxygen, pH, Nitrate, Dissolved Solids, Unionized Ammonia |
| 1 | Lower Delaware | 20 | Crafts Creek at Old York Rd in Mansfield | AN0137 | Benthic Macroinvertebrates |
| 1 | Lower Delaware | 20 | Crosswicks Creek at Extonville | 01464500, 20-CRO-1 | Temperature, pH, Dissolved Oxygen, Nitrate, Dissolved Solids, Total Suspended Solids, Unionized Ammonia, Chromium, Copper, Lead, Nickel, Selenium, Zinc |
| 1 | Lower Delaware | 20 | Crosswicks Creek at Extonville Rd in Hamilton | AN0125 | Benthic Macroinvertebrates |
| 1 | Lower Delaware | 20 | Crosswicks Creek at Groveville Rd at Groveville | 01464504, 20-CRO-2 | Temperature, pH, Dissolved Oxygen, Nitrate, Dissolved Solids, Total Suspended Solids, Unionized Ammonia, Chromium, Copper, Lead, Nickel, Selenium, Zinc |
| 1 | Lower Delaware | 20 | Crosswicks Creek at Walnford Rd in Upper Freehold | 2 | Nitrate |
| 1 | Lower Delaware | 20 | Crosswicks Creek near New Egypt | 01464420 | Fecal Coliform, Temperature, pH, Nitrate, Dissolved Solids, Unionized Ammonia |
| 1 | Lower Delaware | 20 | Doctors Creek At Allentown | 01464515 | Temperature, pH, Dissolved Oxygen, Nitrate, Dissolved Solids, Total Suspended Solids, Unionized Ammonia |
| 1 | Lower Delaware | 20 | Doctors Creek at Route 539 in Upper Freehold | 3 | Fecal Coliform, Nitrate |

New Jersey Integrated List of Waterbodies

Sublist 1-5

Watershed 20

| | | | | | |
|---|----------------|----|--|--------------------|---|
| 1 | Lower Delaware | 20 | Lahaway Creek At Rt 537 At Mercerville | 01464440 | Fecal Coliform, Temperature, Dissolved Oxygen, Nitrate, Dissolved Solids, Total Suspended Solids |
| 1 | Lower Delaware | 20 | Liberty Lake-20 | Liberty Lake | Fecal Coliform |
| 1 | Lower Delaware | 20 | North Run at Cookstown | 01464380 | Temperature, Dissolved Oxygen, pH, Nitrate, Dissolved Solids, Total Suspended Solids, Unionized Ammonia |
| 1 | Lower Delaware | 20 | Prosperstown Lake-20 | Prosperstown Lake | Fish Community |
| 3 | Lower Delaware | 20 | Annaricken Brook at Island Rd in Springfield | AN0139 | Benthic Macroinvertebrates |
| 3 | Lower Delaware | 20 | Annaricken Brook near Jobstown | 01464578 | pH, Total Suspended Solids |
| 3 | Lower Delaware | 20 | Assiscunk Creek at Cedar Lane at Springfield | 20-AS-1 | Copper, Nickel, Selenium, Zinc |
| 3 | Lower Delaware | 20 | Assiscunk Creek at Columbus - Georgetown Rd in Springfield | AN0138 | Benthic Macroinvertebrates |
| 3 | Lower Delaware | 20 | Assiscunk Creek UNK Trib at Oxmead Rd in Burlington | AN0142C | Benthic Macroinvertebrates |
| 3 | Lower Delaware | 20 | Bacon Run at White Pine Rd in Mansfield | AN0133 | Benthic Macroinvertebrates |
| 3 | Lower Delaware | 20 | Bacons Creek near Mansfield Square | 01464529 | Phosphorus |
| 3 | Lower Delaware | 20 | Barkers Brook N Br at Juliustown Rd in Springfield | AN0140 | Benthic Macroinvertebrates |
| 3 | Lower Delaware | 20 | Barkers Brook N Br near Jobstown | 01464583 | Total Suspended Solids |
| 3 | Lower Delaware | 20 | Blacks Creek at Chesterfield - Georgetown Rd | 01464527 | Total Suspended Solids, Fecal Coliform |
| 3 | Lower Delaware | 20 | Crafts Creek at Gaunts Bridge Rd in Mansfield | AN0135 | Benthic Macroinvertebrates |
| 3 | Lower Delaware | 20 | Crosswicks Creek at Extonville | 01464500, 20-CRO-1 | Arsenic, Cadmium, Copper, Mercury |
| 3 | Lower Delaware | 20 | Crosswicks Creek at Groveville Rd at Groveville | 01464504, 20-CRO-2 | Arsenic, Cadmium, Mercury |
| 3 | Lower Delaware | 20 | Crosswicks Creek at Walnford Rd In Upper Freehold | 2 | pH, Total Suspended Solids |
| 3 | Lower Delaware | 20 | Crosswicks Creek near New Egypt | 01464420 | Total Suspended Solids |
| 3 | Lower Delaware | 20 | Crystal Lake-20 | Crystal Lake | Phosphorus |

New Jersey Integrated List of Waterbodies
Sublist 1-5
Watershed 20

| | | | | | |
|---|----------------|----|--|--------------------|---|
| 3 | Lower Delaware | 20 | Doctors Creek at Red Valley Rd in Upper Freehold | AN0127 | Benthic Macroinvertebrates |
| 3 | Lower Delaware | 20 | Doctors Creek at Route 539 in Upper Freehold | 3 | pH, Total Suspended Solids |
| 3 | Lower Delaware | 20 | Ivanhoe Brook at Millers Mill Rd in Upper Freehold | AN0123 | Benthic Macroinvertebrates |
| 3 | Lower Delaware | 20 | Lahaway Creek At Rt 537 At Mercerville | 01464440 | Phosphorus, pH |
| 3 | Lower Delaware | 20 | Miry Run at Holmes Mill Rd in Upper Freehold | AN0125B | Benthic Macroinvertebrates |
| 3 | Lower Delaware | 20 | Negro Run at Red Valley Rd in Upper Freehold | AN0128, MB-122 | Benthic Macroinvertebrates |
| 3 | Lower Delaware | 20 | North Run at Cookstown | 01464380 | Phosphorus |
| 3 | Lower Delaware | 20 | Oakford Lake-20 | Oakford Lake | Phosphorus |
| 3 | Lower Delaware | 20 | Prosperstown Lake-20 | Prosperstown Lake | Phosphorus |
| 3 | Lower Delaware | 20 | Shappen Run at Holmes Mill Rd in Upper Freehold | MB-120 | Benthic Macroinvertebrates |
| 3 | Lower Delaware | 20 | South Run at Cookstown Rd in New Hanover | AN0119A | Benthic Macroinvertebrates |
| 4 | Lower Delaware | 20 | Annaricken Brook near Jobstown | 01464578 | Fecal Coliform |
| 4 | Lower Delaware | 20 | Bacons Creek near Mansfield Square | 01464529 | Fecal Coliform |
| 4 | Lower Delaware | 20 | Barkers Brook N Br near Jobstown | 01464583 | Phosphorus, pH |
| 4 | Lower Delaware | 20 | Crosswicks Creek at Groveville Rd at Groveville | 01464504, 20-CRO-2 | Fecal Coliform |
| 4 | Lower Delaware | 20 | Crosswicks Creek at Walnford Rd in Upper Freehold | 2 | Fecal Coliform |
| 4 | Lower Delaware | 20 | Doctors Creek at Allentown | 01464515 | Fecal Coliform |
| 4 | Lower Delaware | 20 | Imlaystown Lake-20 | Imlaystown Lake | Phosphorus |
| 4 | Lower Delaware | 20 | Lower Sylvan Lake-20 | Lower Sylvan Lake | Phosphorus |
| 4 | Lower Delaware | 20 | Spring Lake-20 | Spring Lake | Phosphorus |
| 5 | Lower Delaware | 20 | Allentown Lake-20 | Allentown Lake | Phosphorus |
| 5 | Lower Delaware | 20 | Annaricken Brook near Jobstown | 01464578 | Phosphorus |
| 5 | Lower Delaware | 20 | Assiscunk Creek at Cedar Lane at Springfield | 20-AS-1 | Arsenic, Cadmium, Chromium, Lead, Mercury |
| 5 | Lower Delaware | 20 | Assiscunk Creek at Hedding Rd (near Jacksonville) in Mansfield | AN0141 | Benthic Macroinvertebrates |

New Jersey Integrated List of Waterbodies

Sublist 1-5

Watershed 20

| | | | | | |
|---|----------------|----|--|--------------------|----------------------------|
| 5 | Lower Delaware | 20 | Back Creek at Yardville-Hamilton Sq Rd in Hamilton | AN0131A | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Bacon Run at Georgetown - Bordentown Rd in Georgetown | AN0133A | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Bacons Creek near Mansfield Square | 01464529 | pH |
| 5 | Lower Delaware | 20 | Barkers Brook at Jacksonville-Smithville Rd in Springfield | AN01410 | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Barkers Brook N Br near Jobstown | 01464583 | Phosphorus, pH |
| 5 | Lower Delaware | 20 | Blacks Creek at Chesterfield - Georgetown Rd | 01464527 | Phosphorus |
| 5 | Lower Delaware | 20 | Blacks Creek at Chesterfield - Georgetown Rd in Chesterfield | AN0132 | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Crafts Creek at Island Rd in Mansfield | AN0136 | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Crosswicks Creek | Crosswicks Creek | Fish-Mercury |
| 5 | Lower Delaware | 20 | Crosswicks Creek at Extonville | 01464500, 20-CRO-1 | Phosphorus, Fecal Coliform |
| 5 | Lower Delaware | 20 | Crosswicks Creek at Groveville Rd at Groveville | 01464504, 20-CRO-2 | Phosphorus |
| 5 | Lower Delaware | 20 | Crosswicks Creek at Main St in Hamilton | AN0126 | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Crosswicks Creek at Rt 528 (blw Oakford Lk) in New Egypt | AN0121D | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Crosswicks Creek at Rt 537 in Plumsted | AN0121 | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Crosswicks Creek at Wainford Rd in Upper Freehold | 2 | Phosphorus |
| 5 | Lower Delaware | 20 | Crosswicks Creek near New Egypt | 01464420 | Phosphorus |
| 5 | Lower Delaware | 20 | Crosswicks Creek Trib S at Cookstown - New Egypt Rd in Cookstown | AN0121B | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Crosswicks Creek UNK Trib at Iron Bridge Rd in Chesterfield | AN0126A | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Crystal Lake-20 | Crystal Lake | Fish-Mercury |
| 5 | Lower Delaware | 20 | Doctors Creek at Allentown | 01464515 | Phosphorus |
| 5 | Lower Delaware | 20 | Doctors Creek at Breza Rd in Upper Freehold | AN0129, MB-123 | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Doctors Creek at Route 539 in Upper Freehold | 3 | Phosphorus |

New Jersey Integrated List of Waterbodies
 Sublist 1-5
 Watershed 20

| | | | | | |
|---|----------------|----|---|----------------------|----------------------------|
| 5 | Lower Delaware | 20 | Doctors Creek at Rt 130 in Hamilton | AN0130 | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Doctors Creek at Sharon Station Rd in Upper Freehold | MB-PARK1 | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Doctors Creek at Spring Rd in Millstone | AN0127A | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Ivanhoe Brook at Olde Noah Hunt Rd in Millstone | MB-FA | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Jumping Brook at Bunting Bridge Rd in New Hanover | AN0119 | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Lahaway Creek at New Egypt - Allentown Rd in Upper Freehold | AN0124 | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Lahaway Creek at Rt 537 in Upper Freehold | AN0122, MB-117 | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Miry Run at Meirs Rd in Cream Ridge | AN0125A | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Moorhouse Brook Trib S at Moorhouse Rd in New Egypt | AN0121A | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | North Community Lake | North Community Lake | Fish Community |
| 5 | Lower Delaware | 20 | North Run at Cookstown | 01464380 | Fecal Coliform |
| 5 | Lower Delaware | 20 | North Run at Main St in North Hanover | AN0120 | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | North Run Trib at Highland Ave in Wrightstown | AN0120A | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Pleasant Run at Extonville Rd in Hamilton | AN0126B | Benthic Macroinvertebrates |
| 5 | Lower Delaware | 20 | Upper Sylvan Lake-20 | Sylvan Lake | Phosphorus, Fecal Coliform |

New Jersey Integrated List of Waterbodies
Sublist 1-5
Watershed 20

| |
|------------------------------|
| NJDEP/USGS Data |
| NJDEP/USGS Data |
| NJDEP/USGS Data |
| NJDEP/USGS Data |
| NJDEP AMNET |
| NJDEP/USGS Data, Metal Recon |
| NJDEP AMNET |
| NJDEP/USGS Data, Metal Recon |
| Monmouth Co HD |
| NJDEP/USGS Data |
| NJDEP/USGS Data |
| Monmouth Co HD |

New Jersey Integrated List of Waterbodies
Sublist 1-5
Watershed 20

| |
|--|
| |
| NJDEP/USGS Data |
| Burlington Co HD |
| |
| NJDEP/USGS Data |
| NJDEP Freshwater Fisheries |
| NJDEP AMNET |
| NJDEP/USGS Data |
| NJDEP Metal Recon |
| NJDEP AMNET |
| NJDEP AMNET |
| NJDEP AMNET |
| NJDEP/USGS Data |
| NJDEP AMNET |
| NJDEP/USGS Data |
| NJDEP/USGS Data |
| NJDEP AMNET |
| NJDEP/USGS Data, Metal Recon |
| NJDEP/USGS Data, Metal Recon |
| Monmouth Co HD |
| NJDEP/USGS Data |
| NJDEP Clean Lakes, NJDEP Fish Tissue Monitoring |

New Jersey Integrated List of Waterbodies
Sublist 1-5
Watershed 20

| |
|--|
| NJDEP AMNET |
| Monmouth Co HD |
| NJDEP AMNET |
| NJDEP/USGS Data |
| NJDEP AMNET |
| NJDEP AMNET, Monmouth Co HD |
| NJDEP/USGS Data |
| NJDEP Clean Lakes |
| NJDEP Clean Lakes |
| Monmouth Co HD |
| NJDEP AMNET |
| NJDEP/USGS Data |
| NJDEP/USGS Data |
| NJDEP/USGS Data |
| NJDEP/USGS Data, Metal Recon |
| Monmouth Co HD |
| NJDEP/USGS Data |
| NJDEP Clean Lakes |
| NJDEP Clean Lakes |
| NJDEP Clean Lakes, NJDEP Fish Tissue Monitoring |
| NJDEP Clean Lakes |
| NJDEP/USGS Data |
| NJDEP Metal Recon |
| NJDEP AMNET |

New Jersey Integrated List of Waterbodies
Sublist 1-5
Watershed 20

| |
|------------------------------|
| NJDEP AMNET |
| NJDEP AMNET |
| NJDEP/USGS Data |
| NJDEP AMNET |
| NJDEP/USGS Data |
| NJDEP/USGS Data |
| NJDEP AMNET |
| NJDEP AMNET |
| NJDEP Fish Tissue Monitoring |
| NJDEP/USGS Data, Metal Recon |
| NJDEP/USGS Data, Metal Recon |
| NJDEP AMNET |
| NJDEP AMNET |
| NJDEP AMNET |
| Monmouth Co HD |
| NJDEP/USGS Data |
| NJDEP AMNET |
| NJDEP AMNET |
| NJDEP Fish Tissue Monitoring |
| NJDEP/USGS Data |
| NJDEP AMNET, Monmouth Co HD |
| Monmouth Co HD |

New Jersey Integrated List of Waterbodies
Sublist 1-5
Watershed 20

| |
|-------------------------------------|
| NJDEP AMNET |
| Monmouth Co HD |
| NJDEP AMNET |
| Monmouth Co HD |
| NJDEP AMNET |
| NJDEP AMNET |
| NJDEP AMNET, Monmouth Co HD |
| NJDEP AMNET |
| NJDEP AMNET |
| NJDEP Freshwater Fisheries |
| NJDEP/USGS Data |
| NJDEP AMNET |
| NJDEP AMNET |
| NJDEP AMNET |
| NJDEP Clean Lakes, Burlington Co HD |

**DRAFT MODIFICATION OF
TIER B MUNICIPAL STORMWATER GENERAL PERMIT
NJPDES PERMIT NO. NJ0141861**

Additions indicated by underlining and bolding **thus**; deletions indicated in brackets [thus].

State of New Jersey
Department of Environmental Protection
Division of Water Quality
Bureau of Nonpoint Pollution Control
June 2, 2005

Tier B Municipal Stormwater General Permit (NJ0141861)

PART I NARRATIVE REQUIREMENTS:

A. Authorization Under this Permit

1. (No change.)

2. Eligibility

a. (No change.)

- b. After the Effective Date of Permit Authorization (EDPA), the permit authorizes the following new and existing non-stormwater discharges from small MS4s owned or operated by Tier B Municipalities except if identified by the municipality as a significant contributor of pollutants to or from the MS4. If any of the following discharges are identified as a significant contributor, the Tier B Municipality shall contact the Department so appropriate actions may be taken:

i. – vii. (No change.)

viii. Flows from fire fighting activities including the washing of fire fighting vehicles

ix. Existing discharges of equipment and vehicle wash water from municipal maintenance yard operations until February 28, 2009 (except in x. below). After February 28, 2009 Tier B Municipalities shall have no unpermitted discharge of equipment and vehicle wash wastewater to the waters of the State pursuant to N.J.A.C. 7:14A-2.1(d). Acceptable methods of handling of equipment and vehicle wash wastewater include:

- installing a vehicle wash reclaim system;
- capturing and hauling the wastewater for proper disposal;
- connecting to sanitary sewer (where applicable and approved by local authorities);
- ceasing the activity; or
- applying for and obtaining a separate NJPDES permit

[ix] x. (No change in text.)

3. – 5. (No change.)

B. – E. (No change.)

F. Statewide Basic Requirements (SBRs)

1. (No change.)

2. Post-Construction Stormwater Management in New Development and Redevelopment

a. – b. (No change.)

b. Implementation

- i. (No change.)
- ii. Within 12 months from the effective date of permit authorization, Tier B Municipalities shall:
 - Adopt a municipal stormwater management plan (or adopt amendments to an existing municipal stormwater management plan) in accordance with N.J.A.C. 7:8-4 **except as provided in iii below**;
 - Comply with the standards set forth in Attachment A of the permit to control passage of solid and floatable materials through storm drain inlets for storm drain inlets the municipality installs within the Tier B Municipality's small MS4.

iii. Within 3 months from the date the Department provides a draft model "Pinelands" Municipal Stormwater Control Ordinance, Tier B Municipalities within the Pinelands Area as defined by N.J.S.A. 13:18A-11 shall adopt a municipal stormwater management plan (or adopt amendments to an existing municipal stormwater management plan) pursuant to the Stormwater Management Rules (N.J.A.C. 7:8-4) for those areas of the municipality within the Pinelands Area.

Tier B Municipalities partially within the Pinelands Area shall adopt a municipal stormwater management plan (or adopt amendments to an existing municipal stormwater management plan) pursuant to the Stormwater Management Rules (N.J.A.C. 7:8-4) within 12 months from the effective date of permit authorization for those areas of the municipality not within the Pinelands Area.

[iii] **iv. Within 12 months from the adoption of the municipal stormwater management plan, Tier B Municipalities shall adopt a stormwater control ordinance(s) to implement that plan, and shall submit the adopted municipal stormwater management plan and ordinance(s) to the appropriate county review agency for approval pursuant to N.J.A.C. 7:8-4.4 (and, where N.J.A.C. 7:50-3 is applicable, to the Pinelands Commission for certification).**

- **If a county review agency conditionally approves the adopted municipal stormwater management plan and ordinance(s) the Tier B Municipality shall, within 180 days of the conditional approval, adopt the amendments to the municipal stormwater management plan and ordinance(s) specified by the county review agency and resubmit the amended municipal stormwater management plan and ordinance(s).**
- **If a county review agency disapproves the adopted municipal stormwater management plan and ordinance(s) the Tier B Municipality shall, within 180 days of the disapproval, resubmit an amended municipal stormwater management plan and ordinance(s) to the county review agency.**
- **If the Pinelands Commission disapproves or conditionally certifies the adopted municipal stormwater management plan and ordinance(s) the Tier B Municipality shall submit its modified plan and ordinance(s) to the Pinelands Commission in accordance with N.J.A.C. 7:50-3.**

APPENDIXES

Maps 1-8

EXISTING CONDITIONS

MUNICIPAL STORMWATER MANAGEMENT PLAN
TOWNSHIP OF CHESTERFIELD
BURLINGTON COUNTY, NEW JERSEY

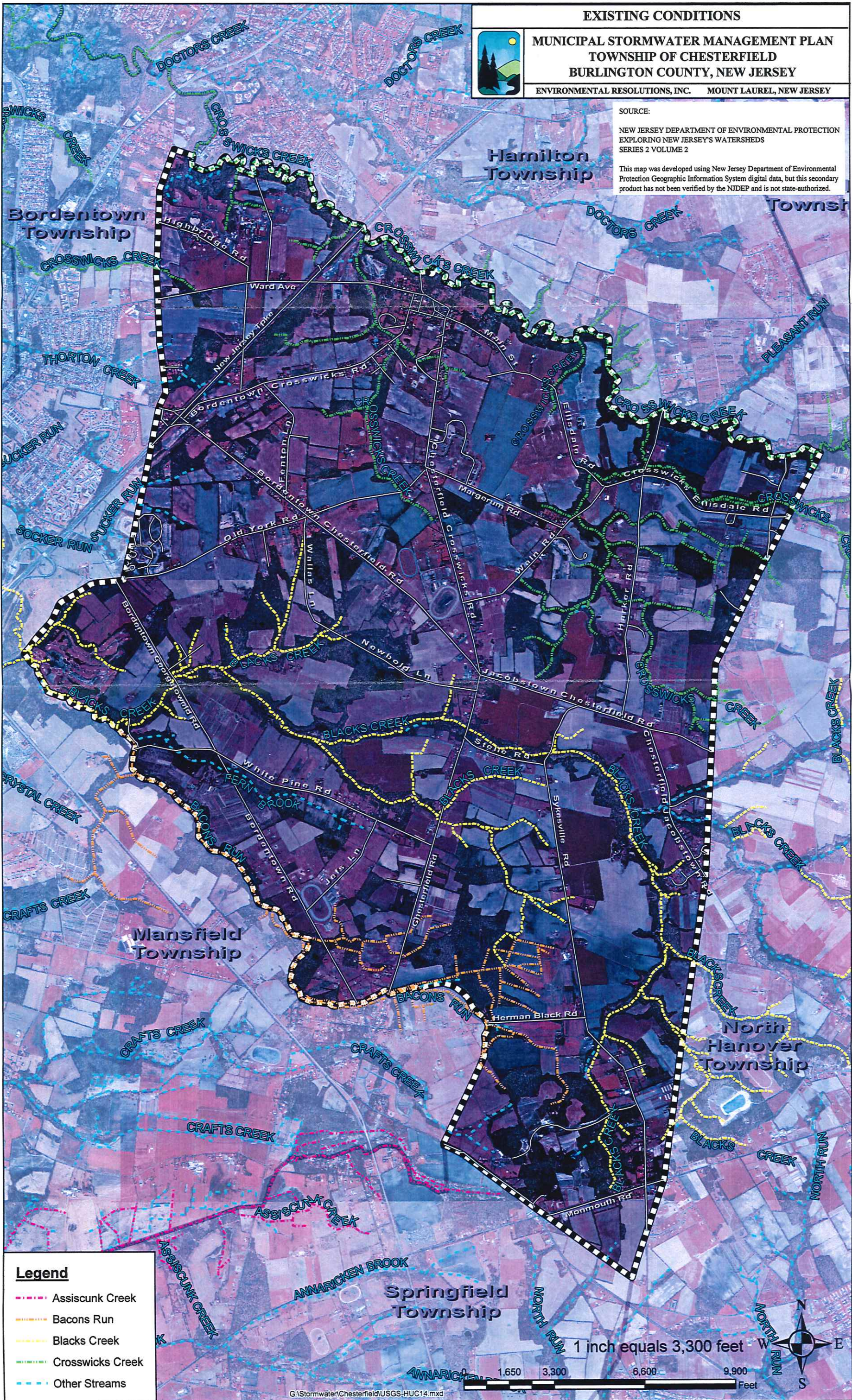


ENVIRONMENTAL RESOLUTIONS, INC. MOUNT LAUREL, NEW JERSEY

SOURCE:

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
EXPLORING NEW JERSEY'S WATERSHEDS
SERIES 2 VOLUME 2

This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by the NJDEP and is not state-authorized.



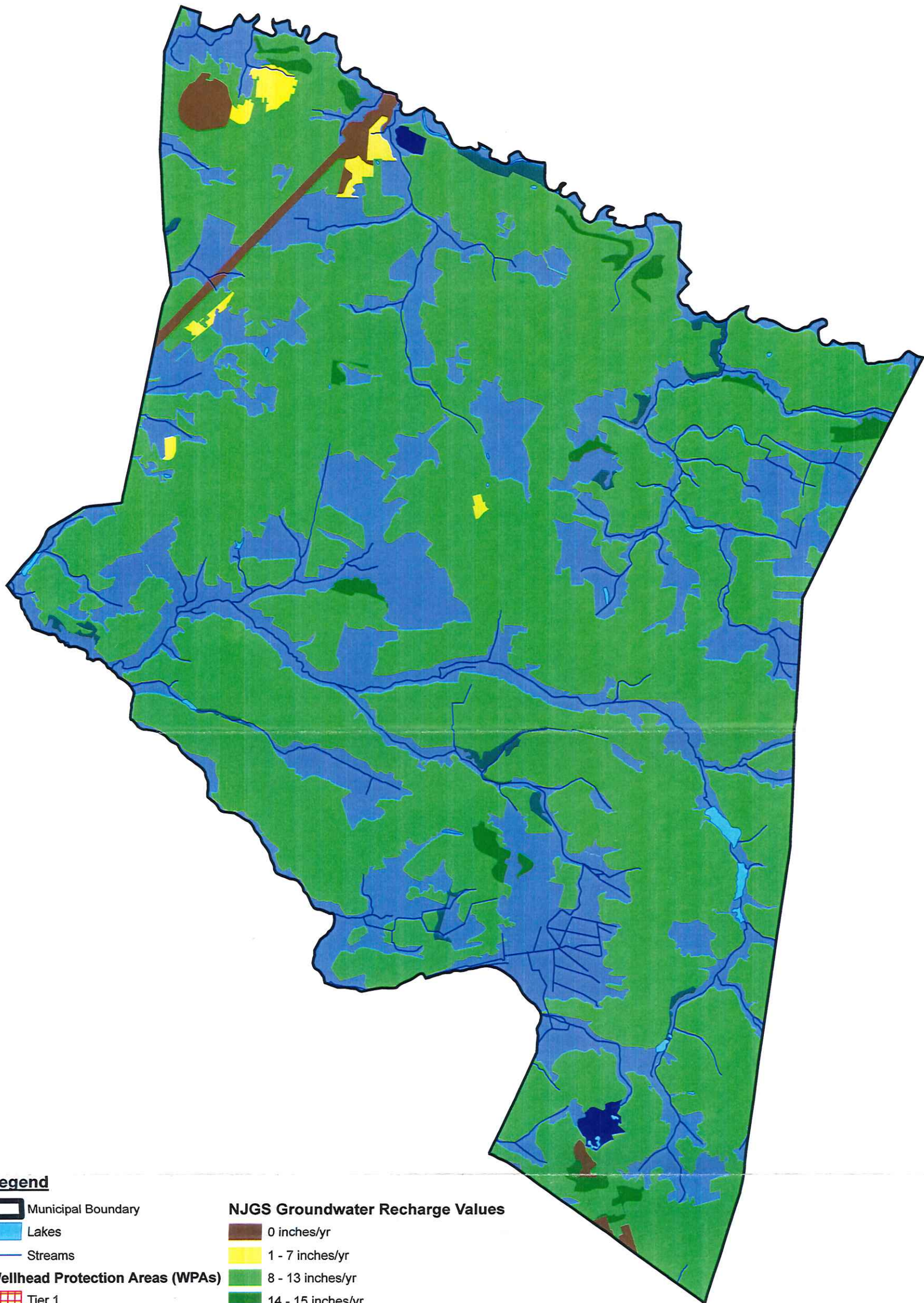
Legend

- Assiscunk Creek
- Bacons Run
- Blacks Creek
- Crosswicks Creek
- Other Streams



0 0.5 1 Miles

1 inch equals 3,300 feet



Legend

Municipal Boundary

Lakes

Streams

Wellhead Protection Areas (WPAs)

Tier 1

Tier 2

Tier 3

NJGS Groundwater Recharge Values

0 inches/yr

1 - 7 inches/yr

8 - 13 inches/yr

14 - 15 inches/yr

16+ inches/yr

Hydric Soils

Wetlands and Open Water

SOURCE:

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
EXPLORING NEW JERSEY'S WATERSHEDS
SERIES 2 VOLUME 2

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GROUNDWATER RECHARGE AND WELLHEAD PROTECTION AREAS (WPAs)

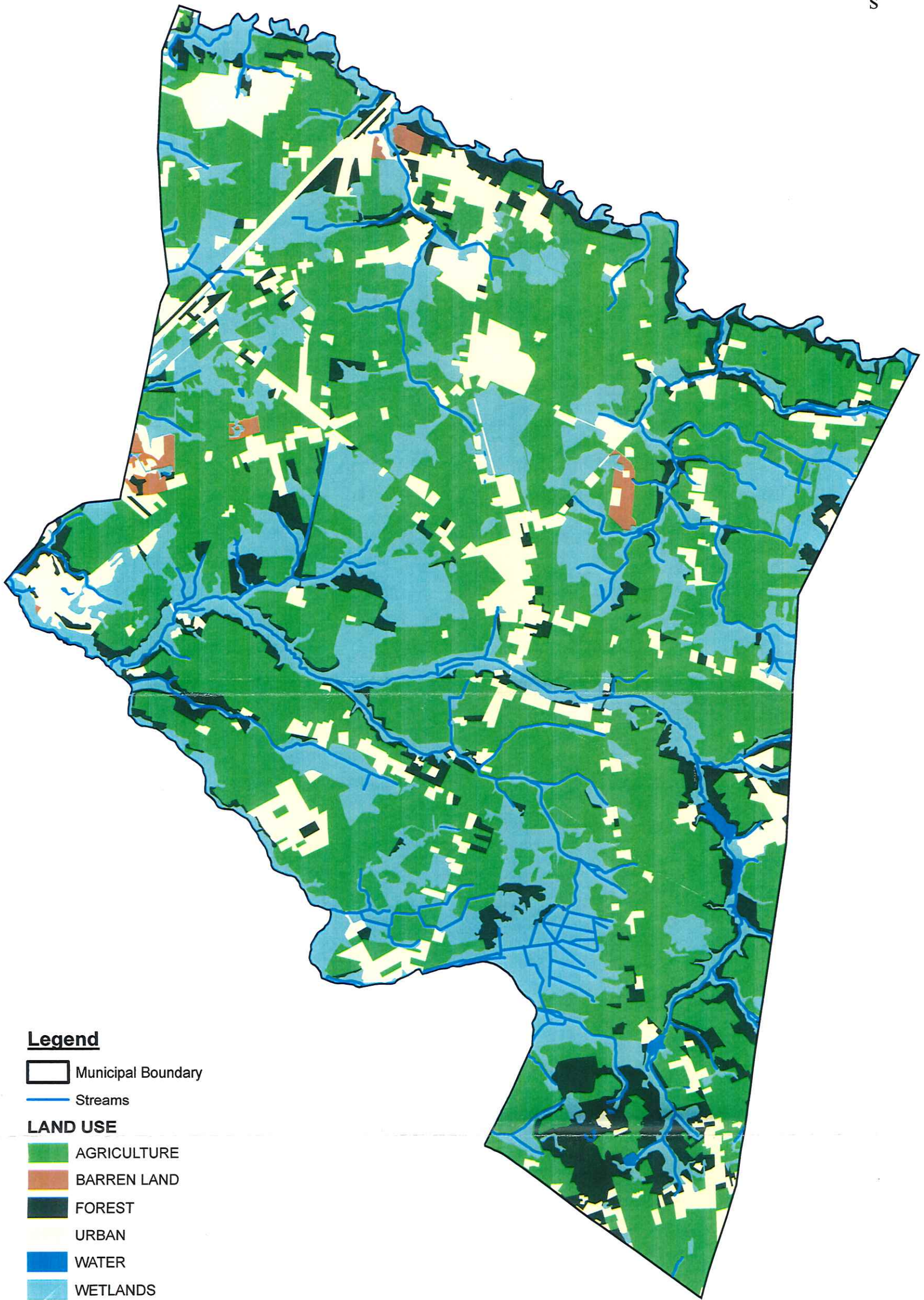


**MUNICIPAL STORMWATER MANAGEMENT PLAN
TOWNSHIP OF CHESTERFIELD
BURLINGTON COUNTY, NEW JERSEY**

ENVIRONMENTAL RESOLUTIONS, INC. MOUNT LAUREL, NEW JERSEY

0 1500 3000 6000 9000 Feet

1 inch equals 3,300 feet



Legend

Municipal Boundary

Streams

LAND USE

AGRICULTURE

BARREN LAND

FOREST

URBAN

WATER

WETLANDS

SOURCE: NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
EXPLORING NEW JERSEY'S WATERSHEDS
SERIES 2 VOLUME 2

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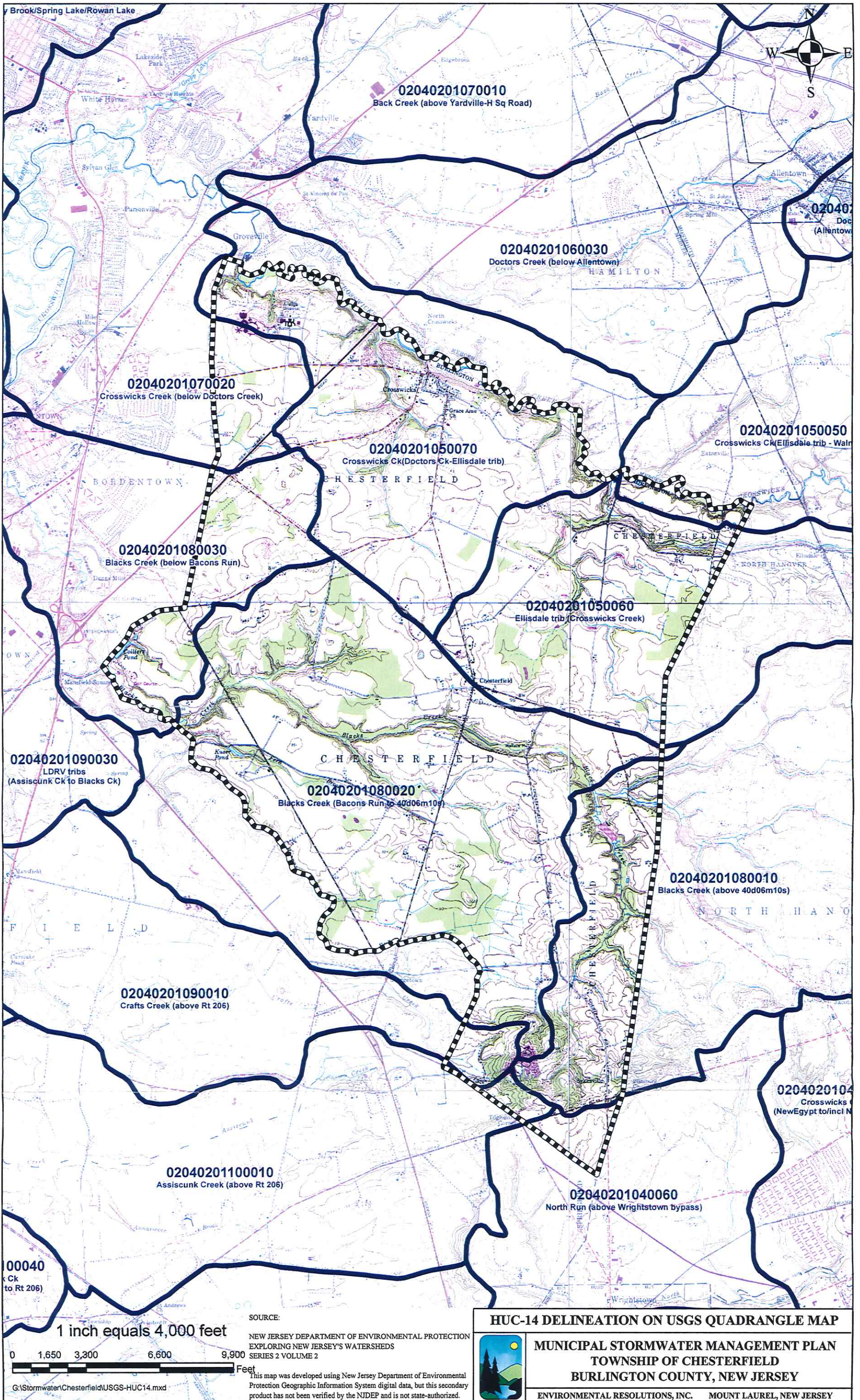
G:\Stormwater\Chesterfield\Wetlands.mxd

LAND USE - WETLANDS DESIGNATIONS



**MUNICIPAL STORMWATER MANAGEMENT PLAN
TOWNSHIP OF CHESTERFIELD
BURLINGTON COUNTY, NEW JERSEY**

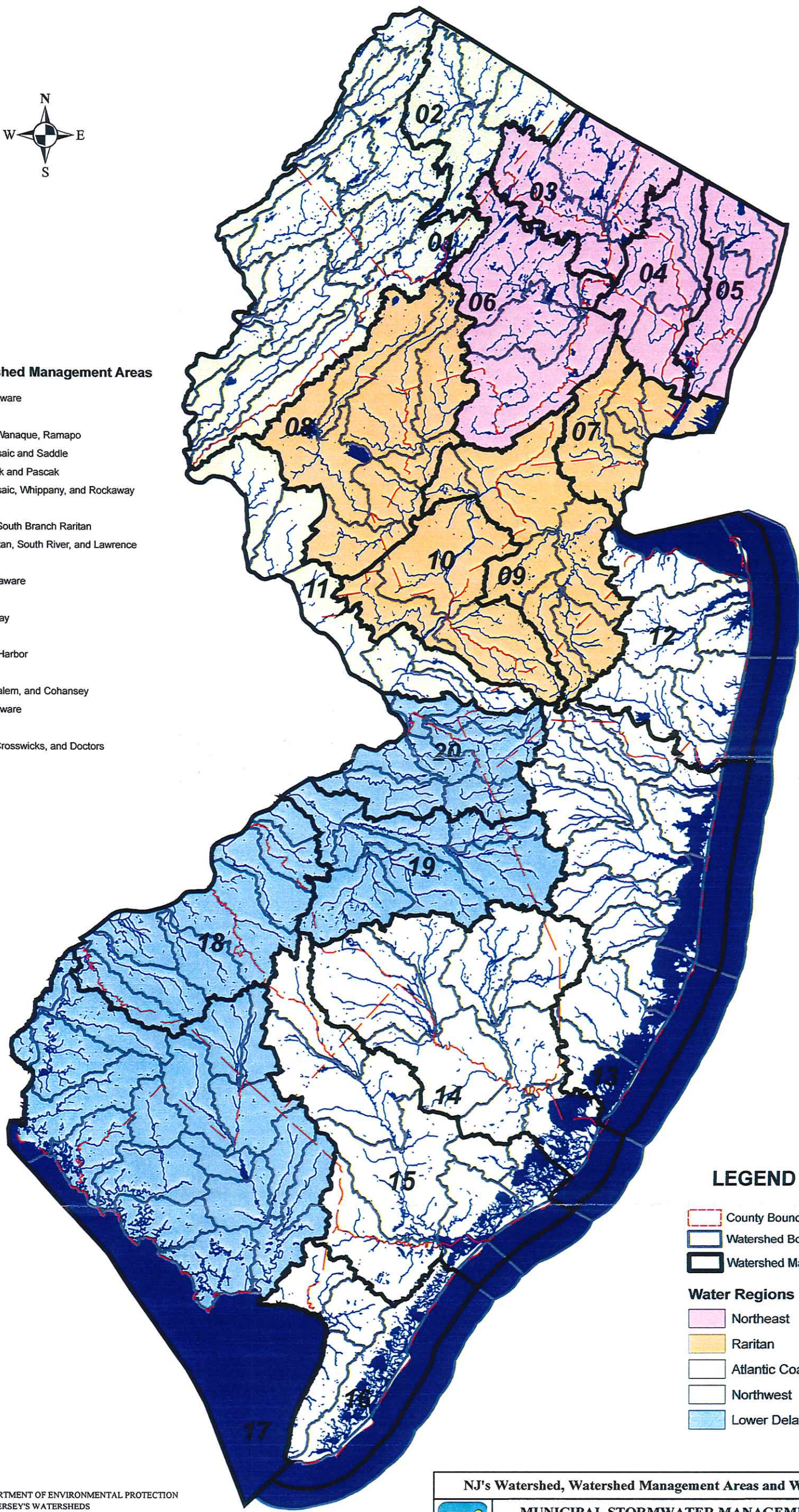
ENVIRONMENTAL RESOLUTIONS, INC. MOUNT LAUREL, NEW JERSEY





Watershed Management Areas

- 01. Upper Delaware
- 02. Walkkill
- 03. Pompton, Wanaque, Ramapo
- 04. Lower Passaic and Saddle
- 05. Hackensack and Pascack
- 06. Upper Passaic, Whippany, and Rockaway
- 07. Arthur Kill
- 08. North and South Branch Raritan
- 09. Lower Raritan, South River, and Lawrence
- 10. Millstone
- 11. Central Delaware
- 12. Monmouth
- 13. Barnegat Bay
- 14. Mullica
- 15. Great Egg Harbor
- 16. Cape May
- 17. Maurice, Salem, and Cohansey
- 18. Lower Delaware
- 19. Rancocas
- 20. Assiscuk, Crosswicks, and Doctors



LEGEND

- County Boundaries
 - Watershed Boundaries
 - Watershed Management Areas
- Water Regions**
- Northeast
 - Raritan
 - Atlantic Coastal
 - Northwest
 - Lower Delaware

SOURCE:
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
EXPLORING NEW JERSEY'S WATERSHEDS
SERIES 2 VOLUME 2

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20 Miles

NJ's Watershed, Watershed Management Areas and Water Regions



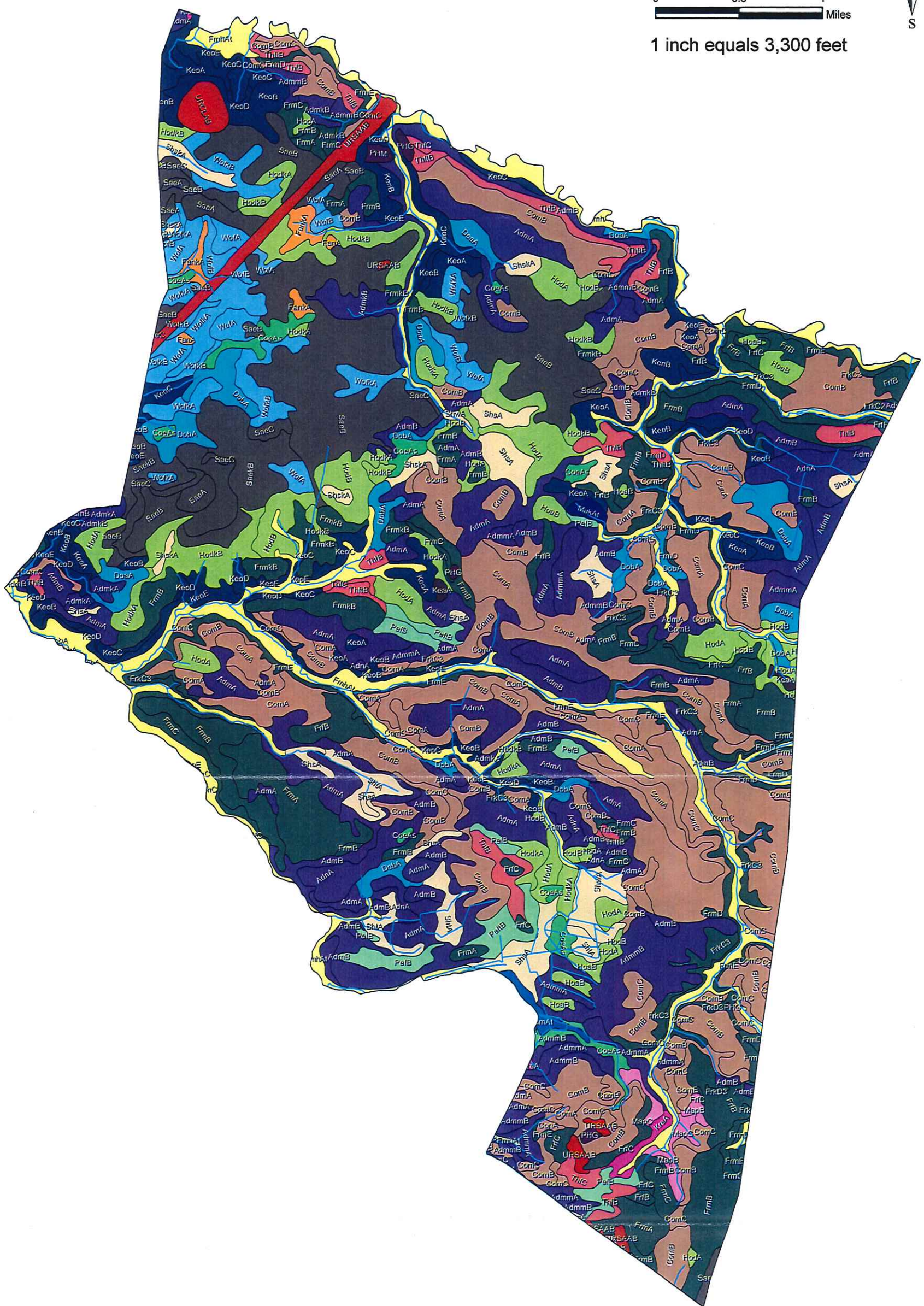
**MUNICIPAL STORMWATER MANAGEMENT PLAN
VOORHEES TOWNSHIP
CAMDEN COUNTY, NEW JERSEY**

ENVIRONMENTAL RESOLUTIONS, INC. MOUNT LAUREL, NEW JERSEY



0 0.5 1 Miles

1 inch equals 3,300 feet



Legend - Soil Types

- Adelphia
- Colemantown
- Collington
- Donlonton
- Fallsington
- Fluvaquents
- Freehold
- Holmdel
- Humaquepts
- Keansburg
- Keyport
- Kresson
- Manahawkin
- Marlton
- Pemberton
- Pits
- Sassafras
- Shrewsbury
- Tinton
- Urban
- Water
- Woodstown

SOURCE:
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
EXPLORING NEW JERSEY'S WATERSHEDS
SERIES 2 VOLUME 2

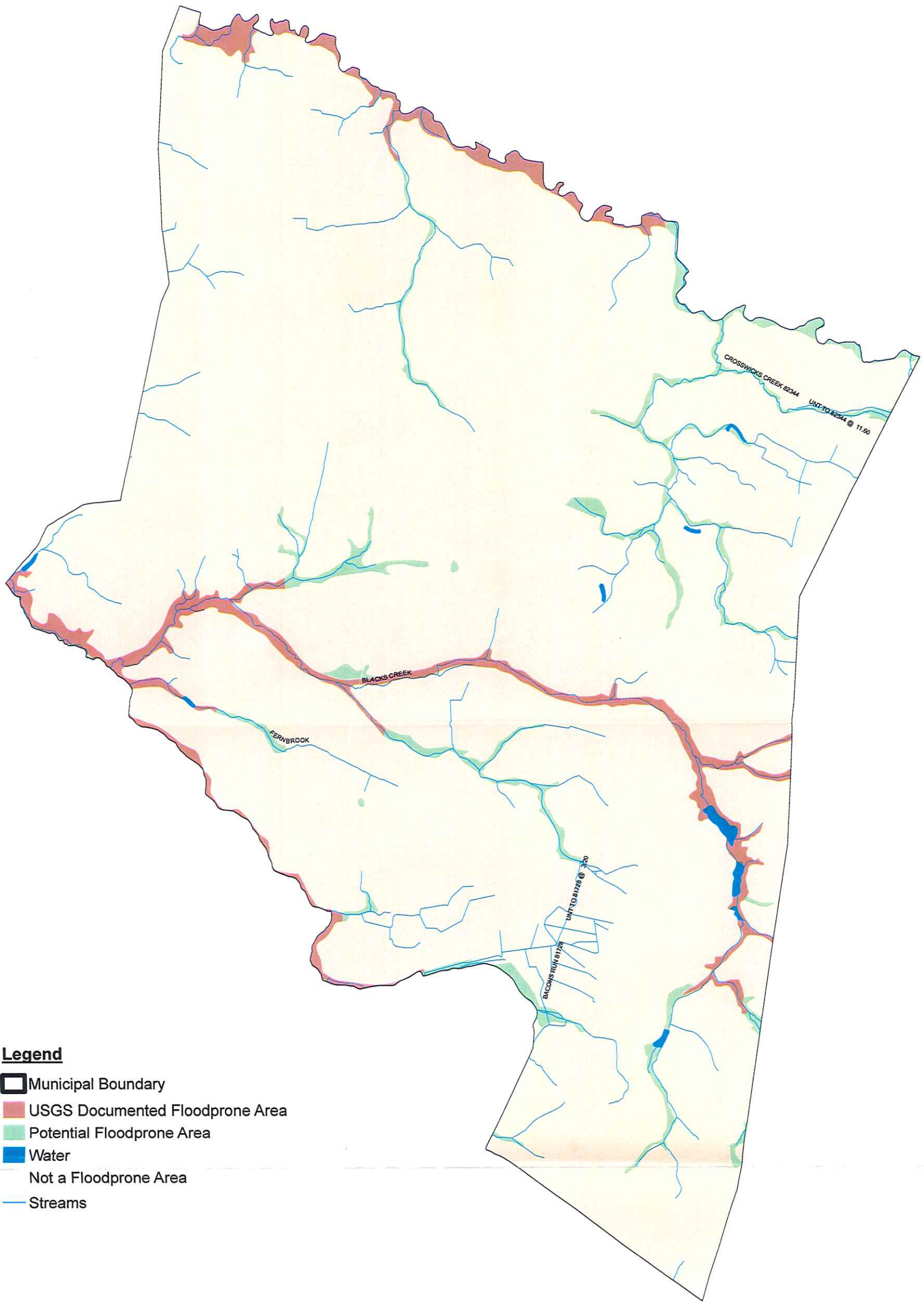
This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by the NJDEP and is not state-authorized.

SOIL TYPES







**MUNICIPAL STORMWATER MANAGEMENT PLAN
TOWNSHIP OF CHESTERFIELD
BURLINGTON COUNTY, NEW JERSEY**

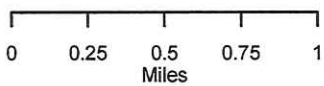


ENVIRONMENTAL RESOLUTIONS, INC. MOUNT LAUREL, NEW JERSEY



Legend

-  Municipal Boundary
-  USGS Documented Floodprone Area
-  Potential Floodprone Area
-  Water
-  Not a Floodprone Area
-  Streams



1 inch equals 3,300 feet

SOURCE:
 NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
 EXPLORING NEW JERSEY'S WATERSHEDS
 SERIES 2 VOLUME 2

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FLOODPRONE AREAS



**MUNICIPAL STORMWATER MANAGEMENT PLAN
 TOWNSHIP OF CHESTERFIELD
 BURLINGTON COUNTY, NEW JERSEY**

ENVIRONMENTAL RESOLUTIONS, INC. MOUNT LAUREL, NEW JERSEY

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