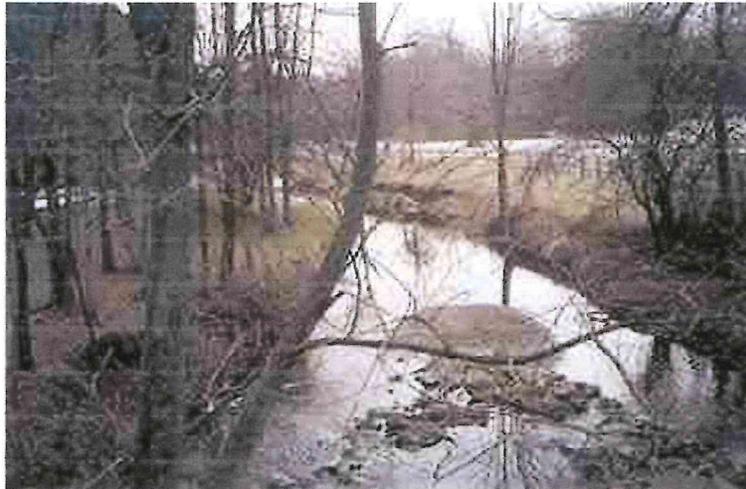


# Township of Chatham Municipal Stormwater Management Plan



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## **Executive Summary**

This Municipal Stormwater Management Plan (MSWMP) documents the ongoing strategy for the Township of Chatham (Township) to address stormwater management.

- The development of this plan is required by N.J.A.C. 7:14A-25 Municipal Stormwater Regulations.
- The MSWMP reference the previously adopted Stormwater Management Plan that applied primarily to the Great Swamp watershed. The MSWMP addresses stormwater management for the entire Township (Great Swamp Watershed and Passaic River Watershed) and contains all of the elements of the MSWMP required for completion in 2005 as described in N.J.A.C. 7:8-4 Stormwater Management Rules.
- The plan addresses groundwater recharge, stormwater quantity, and stormwater quality impacts of projects subject to the requirements of N.J.A.C. 7:8 by incorporating NJDEP required stormwater design and performance standards for major development.
- The MSWMP also sets the framework for consideration of future actions regarding stormwater-related impacts of existing land uses.

The NJDEP now requires that a stormwater management program is developed and implemented Township-wide; i.e., including the portion of the Township in the Passaic River watershed (1.8 square miles). The NJDEP required program includes activities to be performed by the Township such as additional management strategies for Township property, labeling stormwater inlets, eliminating illegal connections to the stormwater collection system, and several other activities, referred to as Statewide Basic Requirements (SBRs) as outlined in the Stormwater General Permit included in Appendix A of this document.

The Model Stormwater Control Ordinance included in Appendix B includes the minimum NJDEP requirements per the Stormwater General Permit. The requirements included in the Model Stormwater Control Ordinance (Model Ordinance), once adopted, will apply to the

Passaic River watershed portion of the Township and will be similar to those included in the existing *Great Swamp Watershed Overlay District Storm Water Management Ordinance* (*Great Swamp Ordinance*) with the following general exceptions:

- The applicability and standards included in the Great Swamp Ordinance were required by the NJDEP as part of approval of the Wastewater Management Plan and it applies only to the portion of the Township within the Great Swamp watershed;
- The Great Swamp Ordinance is currently in force and applies to projects in all zones within the Great Swamp Watershed that involve disturbances of 5,000 square feet or more that qualify as “projects” under N.J.S.A. 4:24-39 et seq; whereas the ordinance changes required by N.J.A.C. 7:8 and included in the Model Ordinance, will only apply to non-residential development that ultimately disturbs one or more acres of land. Note that the Residential Site Improvement Standards include the same requirements as the Model Ordinance, are currently in force, and only apply to residential properties.
- The Great Swamp Ordinance stipulates no-net increase in surface water runoff volume for the water quality storm event, whereas the Model Ordinance requires preservation of the existing volume of groundwater recharge. Per NJDEP requirements the Great Swamp ordinance must be amended to require that the applicant implement the greater of the two volume management strategies.
- The Model Ordinance requires that applicants for major developments establish a 300-foot special water resources protection area (SWRPA) on each side of specified streams. Per NJDEP requirements, The Great Swamp Ordinance must be amended to include this provision. Note if a project will require a land use permit from the NJDEP, the requirement for establishing the SWRPA will also trigger if it includes one-quarter acre of new impervious cover. There are detailed provisions for modifying this requirement based on the type of project, and nature of the disturbance. These are

outlined in the General Requirements for Stormwater Management Planning section of this MSWMP.

The NJDEP required standards are intended to minimize the adverse impact of stormwater runoff from new development and redevelopment projects (including projects operated by the Township itself) on water quality and water quantity and the loss of groundwater recharge that provides baseflow in receiving water bodies. The plan describes long-term operation and maintenance measures for existing and future stormwater facilities. The final component of this plan is a mitigation strategy for when a waiver or exemption of the design and performance standards is required.

### **Introduction**

Because of concerns regarding the impact of land use changes on stormwater entering the Great Swamp, the Township has pursued an active stormwater management program for the portion of the Township within the Great Swamp watershed (7.6 square miles). The 1997 adoption and implementation of the Township's *Great Swamp Watershed Overlay District Storm Water Management Ordinance* (Ordinance 97-001) was a condition that the New Jersey Department of Environmental Protection (NJDEP) placed on approval of Chatham Township's Wastewater Management Plan (WMP) in 1993.

The adoption of the *Great Swamp Watershed Overlay District Storm Water Management Ordinance* was intended to address secondary impacts associated with new development that will be served by the expanded and upgraded Tanglewood Lane Water Pollution Control Plant (WPC#1). Approval of the WMP was tied to Administrative Order No. 51, which was signed by the Commissioner of the NJDEP in September 1989. Administrative Order No. 51 formed the Great Swamp Watershed Advisory Committee (GSWAC) which was tasked to perform several functions, including advising the NJDEP on appropriate amendments to the Northeast New Jersey Water Quality Management Plan that would protect the Great Swamp National Wildlife Refuge (GSNWR). The Township's October 1999 Stormwater Management Planning

Report together with the January 2001 Addenda, documented actions taken by the Township of Chatham to develop and implement a stormwater management plan. These actions have been, and will continue to be performed within the context of the policies and goals adopted by the GSWAC, the Goal of the stormwater management plan and a set of 5 Guiding Principles that were included in the 1999 document have been applied to meet the mandates of Administrative Order 51. The Stormwater Management Report (Report) included the following components:

- Stormwater Management Plan
- Water Conservation Plan
- Black Brook Monitoring Program
- Capacity Assurance Plan
- Septic System Management Plan

This MSWMP includes NJDEP required changes to the Township's current stormwater management ordinance (Section 30-64.3 of the Township Code) that will implement NJDEP stormwater management design and performance standards to new non-residential development in areas outside of the Great Swamp watershed. Stormwater management for new residential development outside of the Great Swamp watershed is under the jurisdiction of the Residential Site Improvement Standards (RSIS). The MSWMP will also result in minor changes to Section 30-64.3A (for all development, as applicable) the previously mentioned *Great Swamp Watershed Overlay District Storm Water Management Ordinance*. These recommended changes will result in the Township meeting the requirements of the above referenced NJDEP Stormwater Management Rules as required by its NJPDES Tier A Municipal Stormwater General Permit.

## Regulatory Framework

According to the United States Environmental Protection Agency (USEPA) polluted stormwater runoff is a leading cause of impairment to the nearly 40 percent of surveyed U.S. water bodies which do not meet water quality standards. Over land or via storm sewer systems, polluted runoff is discharged, often untreated, directly into local water bodies. When left uncontrolled, this water pollution can result in the destruction of fish, wildlife, and aquatic life habitats; a loss in aesthetic value; and threats to public health due to contaminated food, drinking water supplies, and recreational waterways.

Mandated by Congress under the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) Stormwater Program is a comprehensive two-phased national program for addressing the non-agricultural sources of stormwater discharges, which adversely affect the quality of our nation's waters. The program uses the NPDES permitting mechanism to require the implementation of controls designed to prevent harmful pollutants from being washed by stormwater runoff into local water bodies.

In response to the requirements of the second phase of the USEPA's national NPDES Phase II regulations published in December 1999, the State of New Jersey developed the Municipal Stormwater Regulation Program. This program addresses pollutants entering our waters from storm drainage systems operated by local, county, state, interstate, and federal government agencies. These systems are referred to as "municipal separate storm sewer systems" or MS4s and are regulated under the New Jersey Pollutant Discharge Elimination System (NJPDES) Rules (N.J.A.C. 7:14A). The NJDEP created four (4) NJPDES Stormwater General Permits for the various Municipal Separate Storm Sewer System (MS4s). These general permits include the Tier A Municipal Stormwater General Permit, Tier B Municipal Stormwater General Permit, Public Complex Stormwater General Permit, and the Highway Agency Stormwater General Permit.

For each General Permit, NJDEP has mandated Statewide Basic Requirements (herein referred to as SBRs), which include minimum standards, measurable goals, and implementation

schedules. The minimum standards are one or more actions that must be taken to comply with the requirement of the permit. The measurable goals are the mechanism for reporting to the NJDEP the progress that the Municipality has made to implement the requirements of the permit and are accomplished primarily through the submittal of an Annual Report and Certification. The implementation schedule sets the deadlines for permit compliance.

All municipalities within the State of New Jersey have been classified as either Tier A or Tier B communities depending on population density as determined in the 2000 United States Census. The Township of Chatham is regulated under the NJPDES Stormwater Tier A General Permit, NJPDES No. NJ0141852. The unique NJPDES permit number NJG0153630 has been assigned to the Township's authorization under the Tier A Permit (Permit). Tier A Municipalities are generally located within the more densely settled regions of the State or along or near the Atlantic Ocean. There are currently 467 listed Tier A Municipalities, which contain about 70 percent of New Jersey's land area and 96 percent of New Jersey's population (2000 census). Tier A Municipalities are found in every county. As part of the Permit, several SBRs were mandated and an associated implementation schedule was established (refer to Appendix A of this plan for a copy of the Tier A Permit). To satisfy the permit requirements, each Tier A municipality is required to develop, implement, and enforce a Stormwater Program. A complete list of the required SBRs that apply to all Tier A municipalities, including the Township of Chatham is included as part of the Township's Permit (Appendix A).

Each requirement listed in the Tier A permit has a specific implementation schedule based on the effective date of permit authorization. This implementation schedule is summarized in Table 1.

<b>Table 1</b>	
<b>Tier A Permit Requirement Implementation Schedule for Township of Chatham</b>	
<b>Implementation Schedule<sup>1</sup></b>	<b>Permit Requirement</b>
April 1, 2004	Ensure public notice requirements are met when developing and implementing the municipal stormwater program.
April 1, 2004	Ensure major development projects comply with RSIS.
April 1, 2004	Ensure adequate O&M of BMPs on municipal property.
April 1, 2005	Adopt Township Stormwater Management Plan.
April 1, 2005	Adopt Township SPPP.
April 1, 2005	Ensure new municipal storm drain inlets meet design standards.
April 1, 2005	Establish Local Public Education Program.
April 1, 2005	Implement Solids and Floatable Controls programs, including street sweeping, storm drain inlet retrofits, stormwater facility maintenance, and roadside erosion control.
April 1, 2005	Adopt and comply with Maintenance Yard Operations Plan.
April 1, 2005	Implement Employee Training Program.
April 1, 2005	Adopt a municipal storm drain inlet labeling program.
May 2, 2005	Submit first Annual Report and Certification to NJDEP.
Sept. 1, 2005	Adopt and enforce improper waste disposal ordinances.
Sept. 1, 2005	Adopt and enforce Illicit Connections ordinance and implement Illicit Connection Elimination Program.
Sept. 1, 2005	Adopt and implement Roadside Erosion Control Program and Outfall Pipe Stream Scouring Detection, Remediation, and Maintenance Program.
April 1, 2006	Ensure adequate O&M of BMPs on private property.
April 1, 2006	Adopt stormwater control ordinances.
April 1, 2006	Ensure new storm drain inlets meet design standards for all projects.
April 1, 2007	Label 50% of municipal storm drain inlets.
April 1, 2007	Complete mapping of one sector of MS4 outfall pipes.
April 1, 2009	Label all municipal storm drain inlets.
April 1, 2009	Complete mapping of all MS4 outfall pipes.
April 1, 2009	Complete NJDEP's Illicit Connection Inspection Report.

<sup>1</sup> In his April 11, 2005 letter to William G. Dressel, Jr., Executive Director, New Jersey State League of Municipalities, Bradley Campbell, Commissioner, NJDEP stated that the NJDEP, in recognition of misunderstandings regarding some of the permit conditions and other considerations, will its exercise enforcement discretion and will not take any enforcement action prior to August 1, 2005. Essentially this results in the deadlines stated as April 1, 2005 in the NJPDES permit functionally becoming effective on August 1, 2005.



## **Overview of Jurisdiction of Township Stormwater Ordinances**

Section 30-64.3 of the Township Code includes design and performance standards for stormwater management for all applicable new development for the entire Township. The current Township standards are primarily based on the 1980s version of the NJDEP Stormwater Management Rules. Section 30-64.3 must be updated by April 2006 to reflect the revised NJDEP Stormwater Rules. The model ordinance included in Appendix B of the MSWMP includes the NJDEP required language and details per N.J.A.C. 7:8 and will be re-structured for inclusion in the Township Code. For projects outside of the Great Swamp Watershed Overlay District, the restructured ordinance will apply to all non-residential projects that ultimately disturb one or more acre (43,560 square feet) of land.

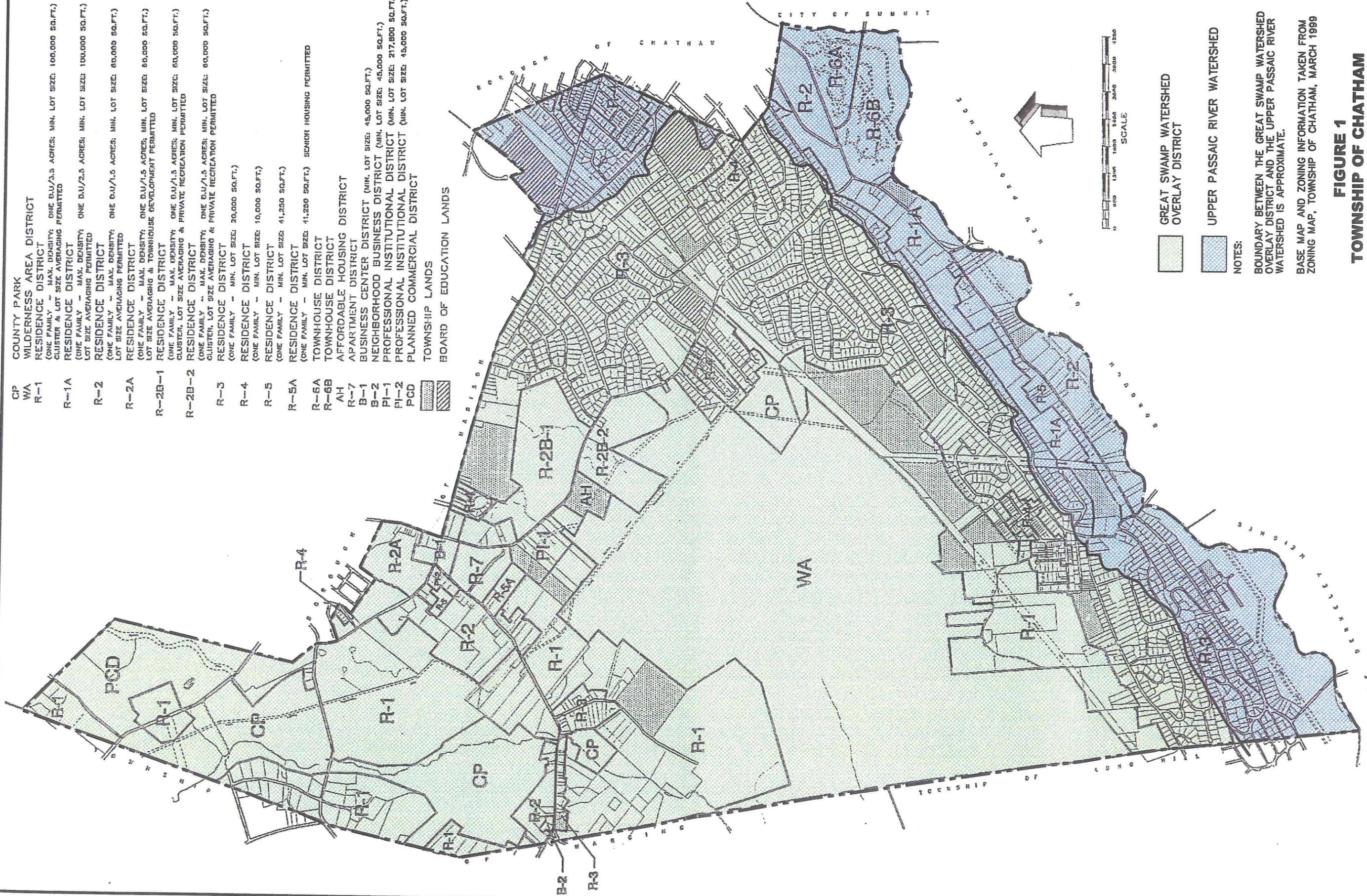
Section 30-64.3A of the Township Code includes special requirements for new projects proposed for development within the Great Swamp Watershed portion of the Township. Generally this is all of the Township except those properties along, or just above and draining to the Passaic River, and a small portion of the Township adjacent to Chatham Borough (see Figure 1). The “Great Swamp Watershed Overlay District Storm Water Management Ordinance” (30-64.3A) was adopted by Resolution 97-001 of the Township Committee as required by the NJDEP. It includes very stringent stormwater management requirements for projects disturbing 5,000 or more square feet of land. Ordinance 30.64.3A currently includes a mitigation plan that is configured to the NJDEP required special design and performance standards applicable to the Great Swamp watershed portion of the Township. Minor changes are required to this ordinance to meet NJDEP requirements and for consistency with the required revisions to 30-64.3.

### **Goals**

The 1999 Stormwater Management Report (Report) included a goal statement and a set of guiding principals for achieving the stated goal regarding the Great Swamp watershed portion

- CP COUNTY PARK
- WA WILDERNESS AREA DISTRICT
- R-1 RESIDENCE DISTRICT  
(ONE FAMILY - MAX. DENSITY: ONE DU/3.5 ACRES; MIN. LOT SIZE: 100,000 SQ.FT.)  
(CLUSTER & LOT SIZE AVERAGING PERMITTED)
- R-1A RESIDENCE DISTRICT  
(ONE FAMILY - MAX. DENSITY: ONE DU/2.5 ACRES; MIN. LOT SIZE: 100,000 SQ.FT.)  
(LOT SIZE AVERAGING PERMITTED)
- R-2 RESIDENCE DISTRICT  
(ONE FAMILY - MAX. DENSITY: ONE DU/1.5 ACRES; MIN. LOT SIZE: 80,000 SQ.FT.)  
(LOT SIZE AVERAGING PERMITTED)
- R-2A RESIDENCE DISTRICT  
(ONE FAMILY - MAX. DENSITY: ONE DU/1.5 ACRES; MIN. LOT SIZE: 80,000 SQ.FT.)  
(LOT SIZE AVERAGING & TOWNHOUSE DEVELOPMENT PERMITTED)
- R-2B-1 RESIDENCE DISTRICT  
(ONE FAMILY - MAX. DENSITY: ONE DU/1.5 ACRES; MIN. LOT SIZE: 60,000 SQ.FT.)  
(CLUSTER, LOT SIZE AVERAGING & PRIVATE RECREATION PERMITTED)
- R-2B-2 RESIDENCE DISTRICT  
(ONE FAMILY - MAX. DENSITY: ONE DU/1.5 ACRES; MIN. LOT SIZE: 60,000 SQ.FT.)  
(CLUSTER, LOT SIZE AVERAGING & PRIVATE RECREATION PERMITTED)
- R-3 RESIDENCE DISTRICT  
(ONE FAMILY - MIN. LOT SIZE: 20,000 SQ.FT.)
- R-4 RESIDENCE DISTRICT  
(ONE FAMILY - MIN. LOT SIZE: 10,000 SQ.FT.)
- R-5 RESIDENCE DISTRICT  
(ONE FAMILY - MIN. LOT SIZE: 41,250 SQ.FT.)
- R-5A RESIDENCE DISTRICT  
(ONE FAMILY - MIN. LOT SIZE: 41,250 SQ.FT.) SENIOR HOUSING PERMITTED
- R-6A TOWNHOUSE DISTRICT
- R-6B TOWNHOUSE DISTRICT
- AH AFFORDABLE HOUSING DISTRICT
- R-7 APARTMENT DISTRICT
- B-1 BUSINESS CENTER DISTRICT (MIN. LOT SIZE: 45,000 SQ.FT.)
- B-2 NEIGHBORHOOD BUSINESS DISTRICT (MIN. LOT SIZE: 45,000 SQ.FT.)
- PI-1 PROFESSIONAL INSTITUTIONAL DISTRICT (MIN. LOT SIZE: 217,800 SQ.FT.)
- PI-2 PROFESSIONAL INSTITUTIONAL DISTRICT (MIN. LOT SIZE: 45,000 SQ.FT.)
- PCD PLANNED COMMERCIAL DISTRICT

 TOWNSHIP LANDS  
 BOARD OF EDUCATION LANDS



 GREAT SWAMP WATERSHED  
 OVERLAY DISTRICT

 UPPER PASSAIC RIVER WATERSHED

NOTES:

BOUNDARY BETWEEN THE GREAT SWAMP WATERSHED OVERLAY DISTRICT AND THE UPPER PASSAIC RIVER WATERSHED IS APPROXIMATE.

BASE MAP AND ZONING INFORMATION TAKEN FROM ZONING MAP, TOWNSHIP OF CHATHAM, MARCH 1999

**FIGURE 1**  
**TOWNSHIP OF CHATHAM**  
**GREAT SWAMP WATERSHED**  
**OVERLAY DISTRICT**



of the Township. The goal and guiding principals are now applicable to the entire Township and are as follows:

Goal: Enhance, preserve and protect the ecological, aesthetic, recreational, and cultural resources of the Township. In addition, in accordance with the federal Clean Water Act, the Township of Chatham will take action to restore the water resources in the Great Swamp watershed.

### ***Guiding Principles***

The following five Guiding Principles were recommended for application to meet the mandates of Administrative Order 51 (CH2M HILL, 1992). Each guiding principle is stated followed by reference to activities in the Township that have been set in motion in conformance with the guidance:

*The First Guiding Principle is to follow the course of least regret. Development should be permitted and management decisions made, but they should occur with discretion and include provisions for possible contingencies. In other words, decision making should be prudent. Development should be phased and decisions to complete all phases should be reversible, so that if unexpected degradation results after early phases of development, it is not too late to fix it.* Use of the increased capacity of the Tanglewood Water Pollution Control Plant (WPC#1) was delayed until the Great Swamp Watershed Overlay District Storm Water Management Ordinance (97-001) was adopted and successfully implemented. This decision provided time for developers to understand the implications of the ordinance and the changes necessary to their site plans prior to approval. The Township will coordinate consideration of new applications for development within the context of each of the subbasins identified on the Township Stormwater System Maps.

*The Second Guiding Principle is that all permit and management decisions should consider individual and cumulative impacts. The development of a portion of a stream corridor, or of a residential lot is often insignificant until the effect of many similar actions is considered cumulatively. Similarly, expansions in wastewater treatment facilities should consider not only the direct effect of that expansion, but also the indirect effect of development that is stimulated by it.* In 1999, the Township had recently adopted Ordinance 99-022 that established stream setbacks for the purpose of protecting stream corridors from individual and cumulative impacts. In addition, the cumulative impacts of individual actions are managed by strict implementation of land use ordinances intended to manage the impacts on local drainage of new development or modified single family residential lots.

Efforts need to be made to determine actions that the Township can take to control existing sources of contamination such as fertilizers, herbicides and pesticides emanating from lawns,

fields and recreational facilities. Of particular concern are the long-term cumulative impacts of existing suburban developments on the natural systems within the Township, on the periphery of the Great Swamp National Wildlife Refuge (GSNWR) and elsewhere throughout the Township. Years of typical suburban land use changes including high percentages of impervious cover served by culverts and drainage ditches has changed the nature of the remaining downstream open channels. As part of the 1999 Report the Township has identified the most critical areas that require stream bank restoration and/or modification of culverts and soil erosion measures. The Township had applied at that time to the Ten Towns Great Swamp Watershed Management Committee for funding to address problems at the three most critical of these sites. The Township had also identified candidate locations for constructing BMPs for mitigating the water quality and quantity impacts from the two most highly developed areas of Chatham downstream of the central business district, and just upstream of WPC#1. Based on this guiding principle, the Township will continue to identify opportunities to rectify the cumulative impacts of existing and proposed developments.

*Closely related to the second principle is the Third Guiding Principle, that all management decisions and impact evaluations should consider watershed-wide and subwatershed or local impacts. As the Data Report and Analysis for a Study of the Great Swamp Watershed (CH2M HILL, 1992) concluded, changes in hydrology and pollutant levels that are insignificant on a watershed-wide basis, may be significant within a smaller area. As part of implementation of the Open Space Plan, the Township is actively engaged in identifying unique resources that will require special protection, including, as appropriate, acquisition of those lands. The Township has an open space tax and has State funding for open space acquisition.*

Additionally, the Township is actively engaged in the Ten Towns Great Swamp Watershed Management Committee where site specific experience from other portions of the watershed can be identified and used as instructive examples for Chatham's use.

*The Fourth Guiding Principle is that future policy, regulatory and management decisions should focus on performance rather than technology. Performance standards should be based on achieving both an acceptable and attainable level of performance. For example, a variety of stormwater management approaches may be acceptable, provided they reduce pollutants leaving a site to a sufficient level and control changes in the peak rate and total volume of runoff. Reliance on technological solutions means they must be well maintained with enforced standards. Reliance on non-technological solutions (e.g., vegetated stream corridors) means minimal or no maintenance and enforcement requirements. If the choice is a technological one, the technology should be monitored to ensure its performance. Section 30-64.3A of the Township Code mandates that nonstructural stormwater management practices shall be utilized prior to the use of structural management measures, unless it is demonstrated that these practices are not feasible from an engineering, environmental or economic perspective on a particular site. Furthermore, 30-64.3A requires development of a formal maintenance and monitoring plan. Responsibility for implementation of the plan is intended to remain with the property owner. Inspection, maintenance and repair of BMPs are the property owner's responsibility. The property owners are required to enter into an agreement with the Township stating that the stormwater facilities will be regularly maintained and,*

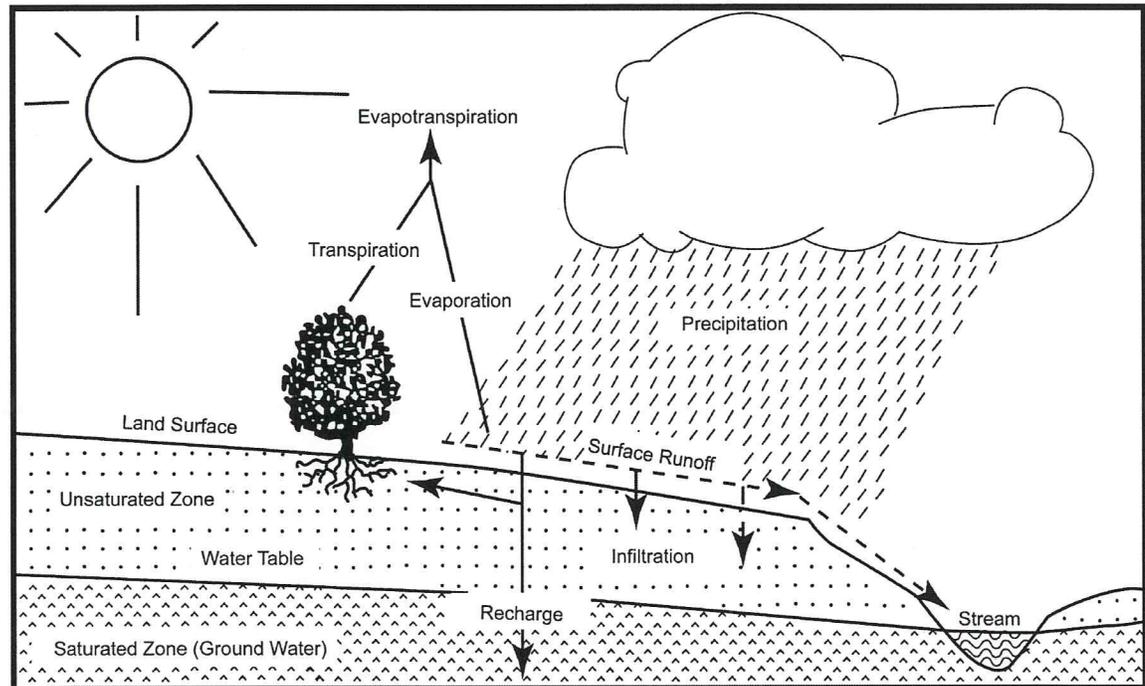


where necessary repaired by the property owner. If the agreement is violated, the property owners agree to pay the Township to perform the necessary activities. Typically these assurances will be formalized by referencing the Maintenance plan in the Developers Agreement. These same practices are now required by the NJDEP statewide and will be included in changes to Section 30.64.3.

The Township has identified all existing stormwater structures and practices (BMPs) and determined the condition and necessary maintenance and repairs. All stormwater and maintenance plans approved since the adoption of 30-64.3A and future adoption of the NJDEP required changes to the Township Stormwater Ordinances will be strictly enforced.

The Fifth and Final Guiding Principle is that everything is related to everything else. Efforts to enhance, preserve and protect the ecological, aesthetic, recreational, and cultural resources of the Great Swamp watershed are only as good as their *weakest link*. *All levels of government, public and private organizations, developers, and residents must work toward the common goals established by the GSWAC for the Great Swamp watershed. Land use regulations promoted by several but not all of the municipalities in the watershed will be ineffective in meeting their objectives. Similarly, local and state regulations and federal and local land management activities that work at cross-purposes will be equally ineffective.* To this end, the Township is active with the Ten Towns Great Swamp Watershed Management Committee.

## Stormwater Discussion



Source: New Jersey Geological Survey Report GSR-32.

**Figure 2 – Schematic of Hydrologic Cycle**

The NJDEP has developed a wealth of stormwater management information both as background for development of the stormwater rules @ N.J.A.C. 7:8 and as support for implementation of the municipal stormwater permitting program. This information has been made readily available on the NJDEP stormwater website at [www.njstormwater.org](http://www.njstormwater.org). The full text of the NJ Stormwater BMP manual can be found on that website. Of particular relevance to this section of the MSWMP is Chapter 1 of the manual entitled “Impacts of Development on Runoff”, from which the following information was excerpted.

Land development can dramatically alter the hydrologic cycle 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. 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 and aggravate existing downstream flooding and erosion problems and increase the quantity of sediment in the channel. 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. Finally, erosion and sedimentation can destroy habitat from which some species cannot adapt.

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.

As well as increasing pollutant loading, 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 cold water fish species such as trout. Development can remove trees along stream banks that normally provide shading,

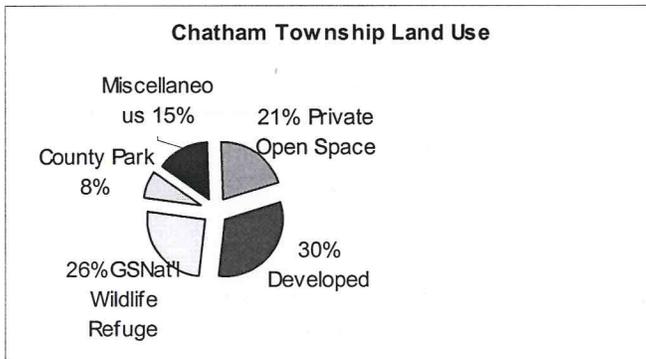
stabilization, and leaf litter that falls into streams and becomes food for the aquatic community.

### Township Background

The Township Master Plan includes a Natural Resources Inventory and a Conservation Element. These documents should be referred to for detailed environmental information. The following information was excerpted from the Draft 2005 Conservation Element of the Township Master Plan to provide background and context for the MSWMP:

*Chatham Township covers an area of approximately 6,008 acres. The chart below taken from the Natural Resources Inventory depicts the land use as of 1997. At that time approximately 30% of that area was developed, 26% was the Great Swamp National Wildlife Refuge, 8% was county park land, and about 15% was taken up by streets, school lands, municipal property and religious property. The remaining 21% at that time was privately owned open space in three principal locations: portions of the Loantaka Brook watershed outside the sewer service area, lands adjacent to the Great Swamp, and steep slopes and floodplains in the Passaic River watershed.*

*This open space provides distinctive natural, cultural, and historic resources, accommodates recreational activities, and supports surface and groundwater resources. And yet, this is the space that is shrinking as development occurs.*



*Chatham contains a multitude of natural resources which together help define the essential character of the Township. Anchoring the eastern terminus of the Great Swamp, Chatham's landscape is a contrast to that of its more developed neighbors. Besides being an aesthetic asset, the Great Swamp is a major regional ecological preserve that absorbs and filters the effects of man's activities. This rich wildlife habitat is the natural heart of the Township,*



*which lends a unique sense of place and is a central element in the character of the community.*

*The Township is characterized by rolling terrain and expansive lowlands, with higher elevations along the Third Watchung ridge to south. Chatham's topography is dominated by Long Hill, one of three parallel ridgelines of the Watchung Mountain, which divides the lowlands of the Great Swamp to the north, and the Passaic River along the Township's southern boundary. Significant relief is observed across the Township, with elevations ranging from 460' above sea level at Mt. Vernon, to the lower elevations of the Passaic River floodplain (El. 200) and the Great Swamp (El. 240). Hickory Tree to the north rises above the swamp to El. 290.*

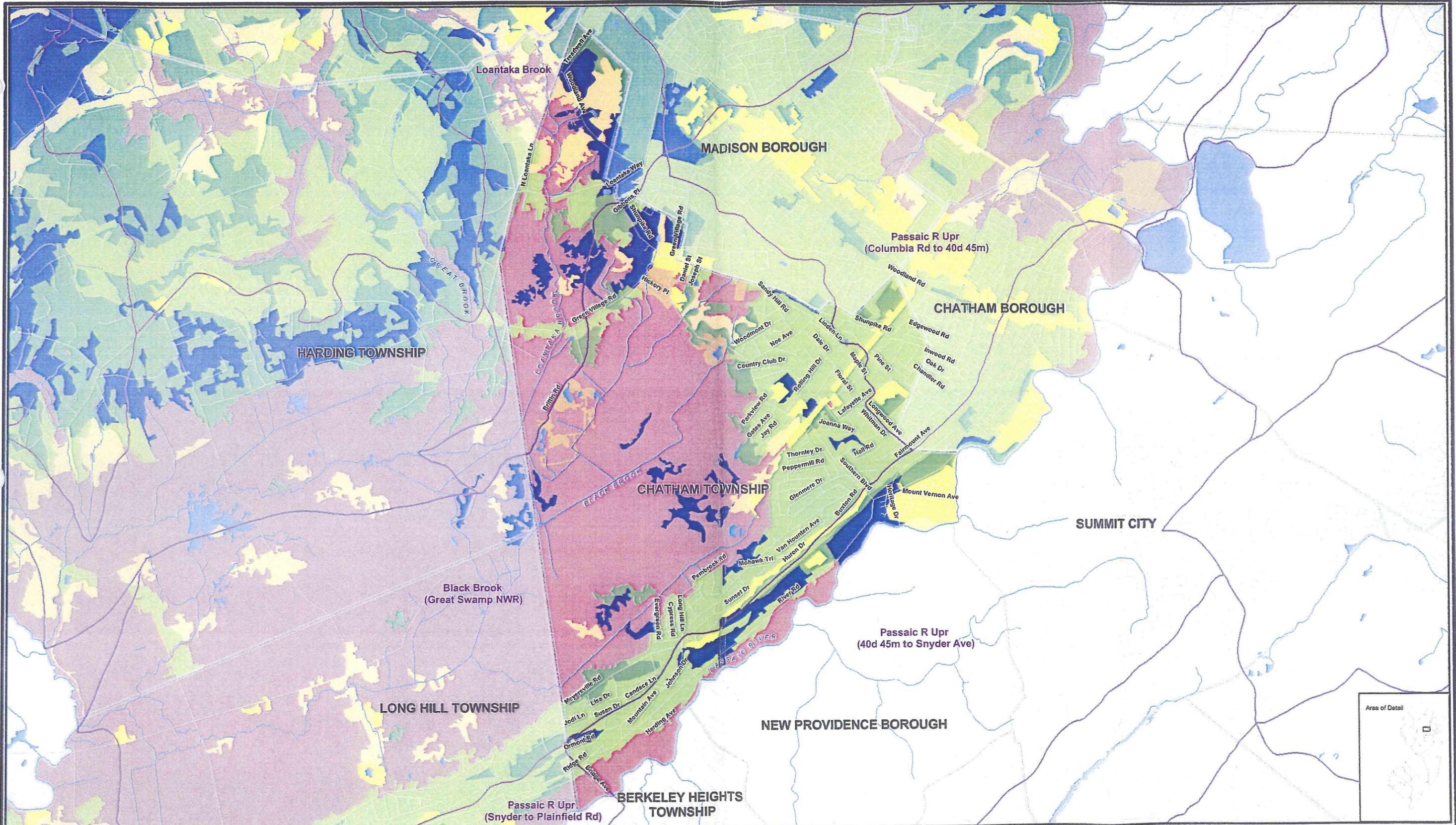
*Protection of groundwater resources requires the protection of aquifer recharge areas, where permeable soils and natural drainage patterns permit the infiltration of surface runoff into the underlying geologic structure. An area of exceptional recharge potential has been identified along Chatham's border with Madison, generally north and slightly south of Southern Boulevard. Protection of aquifer recharge areas requires limitations on impervious coverage, to limit the negative effects of contaminated stormwater and to assure that recharge areas remain open to infiltration. **Figure 3 illustrates the recharge areas, and Figure 4 illustrates wellhead protection areas.***

*Loantaka Brook, which drains the northern portion of the Township and Black Brook, which drains from the terminal moraine pass through the Great Swamp and then discharges into the Passaic River. Along their course, they traverse diverse areas and encounter pollution sources that affect water quality.*

*Loantaka Brook receives treated sewage effluent and non-point runoff before it flows through the Loantaka Brook Reservation, one of the most heavily used Morris County parks, into the Great Swamp National Wildlife Refuge. Loantaka Brook is the most degraded stream in the watershed, meeting none of the standards set by the Great Swamp Ten Towns Committee in June 2002 as a result of non-point source pollution and an excessive volume of water in the stream channel.*

*Black Brook has numerous tributaries, two of which arise near the heavily developed Hickory Square shopping center, and carry significant volumes of non-point runoff from parking lots, roads and buildings. Other tributaries drain a municipal playground and ball fields, traverse the Fairmount Country Club and accept treated effluent from the Tanglewood Lane Wastewater Treatment Plant.*

*The effects of stormwater runoff from developed areas and chemical fertilizers used on lawns make the Black Brook second only to Loantaka in degraded water quality, failing to meet Ten Towns Committee 2002 water quality standards under both baseflow and storm conditions.*



**Legend**

- Road
- Rivers & Streams
- Lakes & Ponds
- Watershed Boundary (HUC14)
- Municipal Boundary

**Groundwater Recharge Areas**

- 19 to 23 in/yr
- 15 to 18 in/yr
- 12 to 14 in/yr
- 1 to 11 in/yr
- 0 in/yr
- Hydric Soils
- Wetlands and Open Water
- No Recharge Calculated

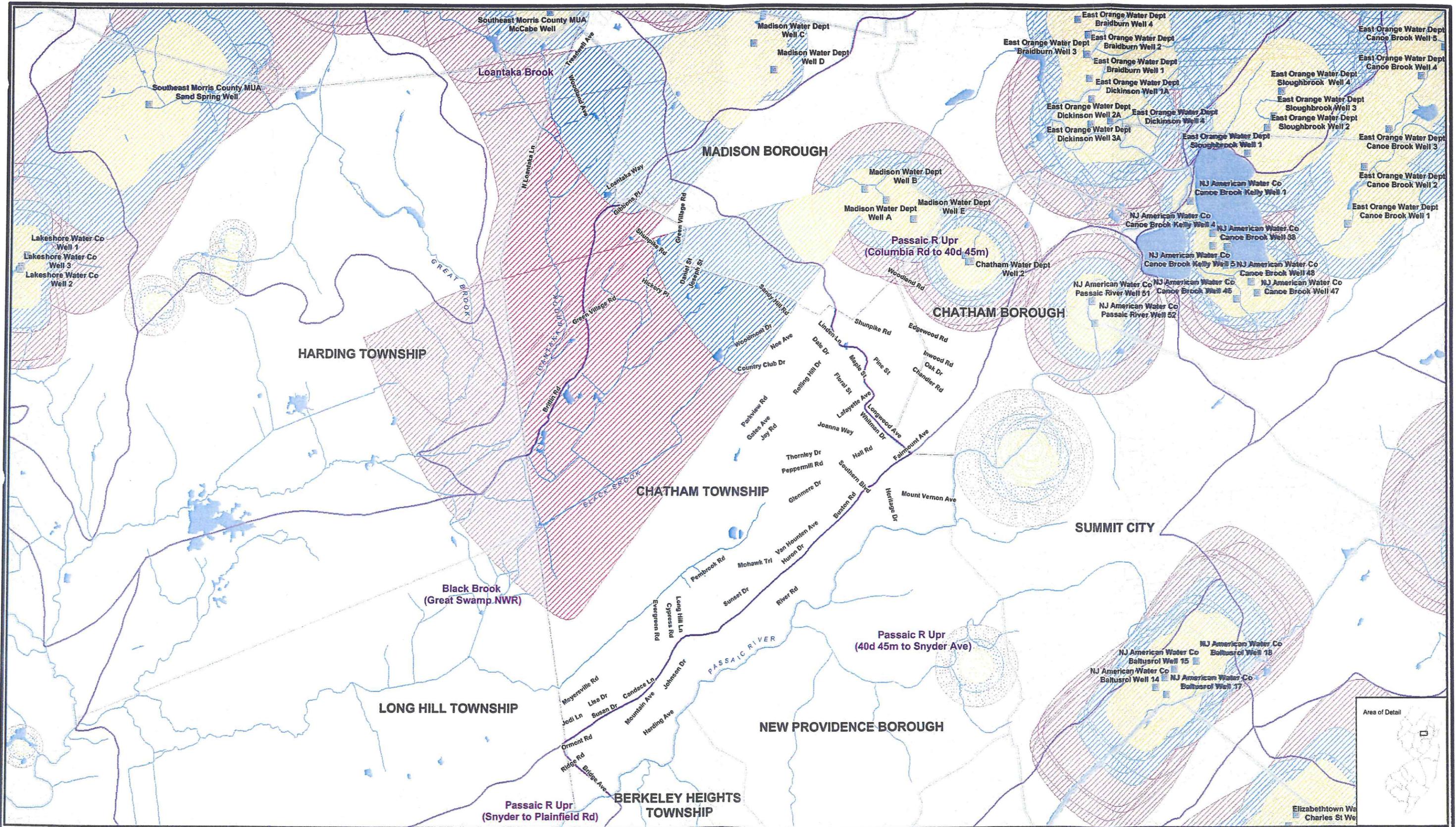


This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not state-authorized.



	<b>TOWNSHIP OF CHATHAM</b> MORRIS COUNTY, NEW JERSEY <b>MUNICIPAL STORMWATER MANAGEMENT PLAN</b> <b>FIGURE 3 - GROUNDWATER RECHARGE AREAS</b>				
	27 Bleeker Street Millburn, New Jersey 07041	Designed RLB	Drawn RLB	Checked DSC	Approved [Signature]

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**Legend**

	<b>Public Community Water Supply Wellhead Protection Area</b>
	<b>Public Non-Community Water Supply Wellhead Protection Area</b>

0 3,500 7,000 Feet

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 NJDEP and is not state-authorized.

	<b>TOWNSHIP OF CHATHAM</b> MORRIS COUNTY, NEW JERSEY <b>MUNICIPAL STORMWATER MANAGEMENT PLAN</b> <b>FIGURE 4 - WELLHEAD PROTECTION AREAS</b>				
	27 Bleeker Street Millburn, New Jersey 07041	Designed RLB	Drawn RLB	Checked DSC	Approved [Signature]



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*Studies also show Black Brook having one of the lowest macroinvertebrate species counts of the watershed's five feeder streams, reflecting the negative impacts of pollution.*

*Wetlands are a central landscape element in Chatham, with the largest contiguous massing of wetlands found within the Great Swamp, extending northward from Meyersville Road/Fairmount Road to Green Village Road. Wetlands are also found along the floodplains of the Loantaka Brook and the Passaic River. Wetlands within Chatham play an important role in filtering contaminants as well as retaining precipitation and slowly feeding it to headwater streams.*

### **General Requirements for Stormwater Management Planning**

Subchapter 2 of N.J.A.C. 7:8 includes general requirements for municipal and regional stormwater management planning. For municipal stormwater management planning the requirements are, at a minimum, applicable to management of stormwater related impacts of major developments, defined in this case as projects that ultimately disturb one or more acres of land. For new developments in the Great Swamp watershed, the threshold is 5,000 square feet of disturbance. Accordingly, this stormwater management plan and the revised stormwater control ordinances (30.64.3 and 30.64.3A) under review by the Township shall be designed in the context of the following goals for major developments:

- reduce flood damage, including damage to life and property;
- minimize, to the extent practical, any increase in stormwater runoff from any new development;
- reduce soil erosion from any development or construction project;
- assure the adequacy of existing and proposed culverts and bridges, and other in-stream structures;
- maintain groundwater recharge;
- prevent, to the greatest extent feasible, an increase in nonpoint pollution;
- maintain the integrity of stream channels for their biological functions, as well as for drainage;



- minimize pollutants in stormwater runoff from new and existing development to restore, enhance, and maintain the chemical, physical, and biological integrity of the waters of the state, to protect public health, to safeguard fish and aquatic life and scenic and ecological values, and to enhance the domestic, municipal, recreational, industrial, and other uses of water; and
- protect public safety through the proper design and operation of stormwater basins.

To achieve these goals for new development and redevelopment projects outside of the Great Swamp watershed the Township will modify Section 30-64.3 of the Township Code to include the NJDEP-required components of the model stormwater control ordinance (Appendix B) including specific stormwater design and performance standards for new development; preventative and corrective maintenance strategies to ensure long-term effectiveness of stormwater management facilities; and safety standards for stormwater infrastructure to be implemented to protect public safety. The existing ordinance that applies to the Great Swamp watershed portion of the Township (30.64.3A) already includes most of the above attributes, and will be updated to reflect changes in the NJDEP Stormwater Best Management Practices Manual (BMPs), and Tier A Guidance Document, and updated requirements as included in N.J.A.C 7:8.

Furthermore, the above goals will be considered in regards to stormwater-related water quality, groundwater recharge, and water quantity impacts of existing land uses. For example, issues with stormwater impacts of redevelopment on existing lots will also be evaluated. Finally, consideration will be made in cooperation with the property owners, NRCS, Soil Conservation District, and affected stakeholders, of mechanisms for improved management of stormwater runoff and groundwater recharge associated with existing and new open space and land use management of existing properties in farmland preservation.

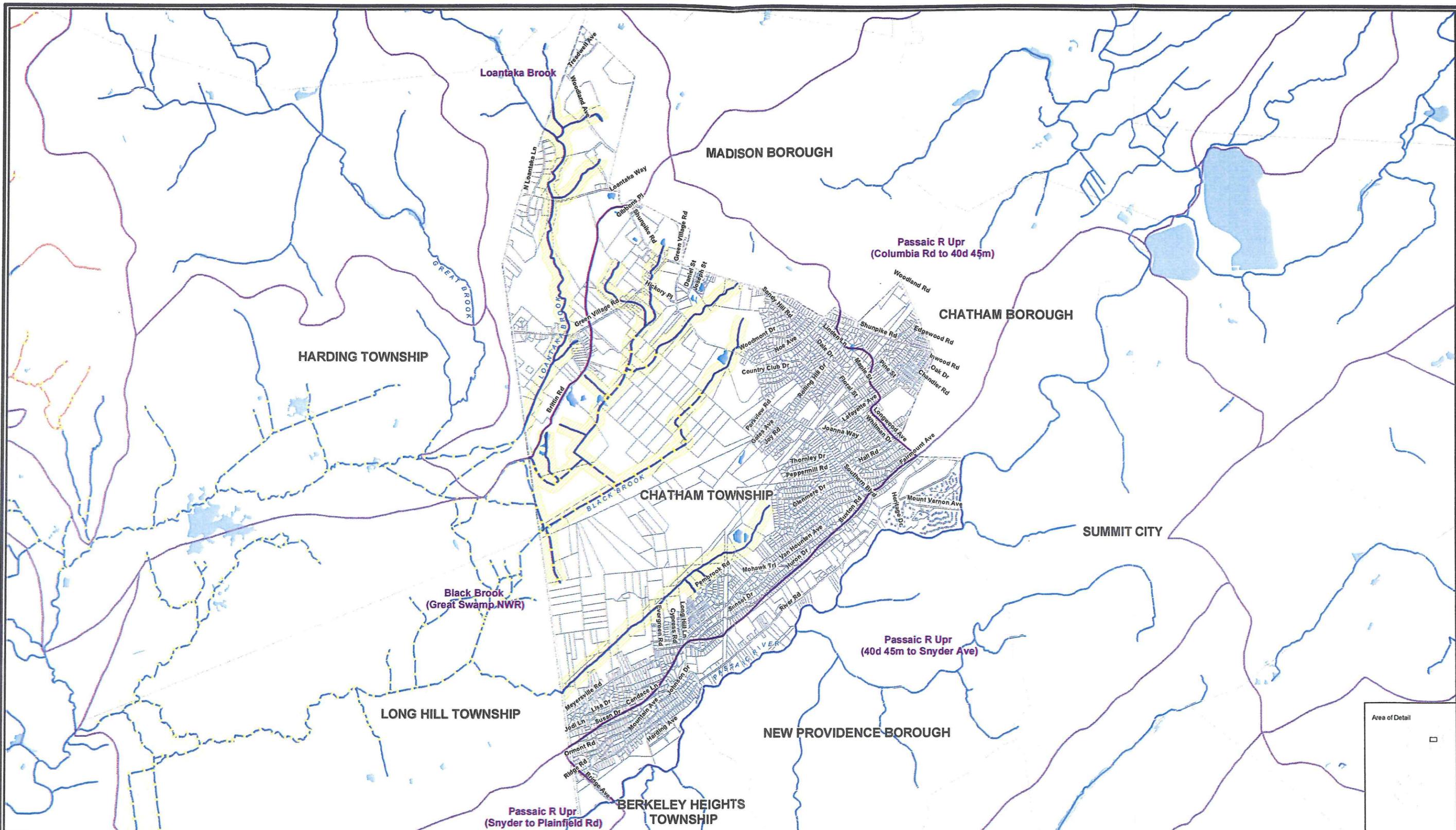


According to N.J.A.C. 7:8 5.5(h) special water resource protection areas shall be established (by applicants for “major developments” as defined in N.J.A.C. 7:8 and by the RSIS<sup>2</sup>) along all waters designated Category One at N.J.A.C. 7:9B and perennial or intermittent streams that drain into or upstream of the Category One waters as shown on the USGS Quadrangle Maps or in the County Soil Surveys, within the associated Hydrologic Unit Code 14 (HUC 14) drainage. Figure 5 illustrates the location of HUC14s, water bodies and the special water resource protection areas within the Township. 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 (C1) waters. These areas must be designated and protected per the requirements of N.J.A.C. 7:8 5.5(h) as follows:

1. The applicant shall preserve and maintain a special water resource protection area in accordance with one of the following:
  - i. 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 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. Encroachment within the designated special water resource protection area under (h)1i 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 encroachments proposed under this subparagraph shall be subject to review and approval by the Department.
2. All stormwater shall be discharged outside of but may 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. (See N.J.A.C. 2:90-1.3).
3. 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

---

<sup>2</sup> Per N.J.A.C. 7:8-1.2 a “major development” is defined as any “development” that provides for ultimately disturbing one or more acres of land or increasing impervious surface by one-quarter acre or more. However, the one-quarter acre of impervious surface threshold does not apply unless the development requires land use permits such as wetlands or stream encroachment permits from the NJDEP.



**Legend**

Road

Lakes & Ponds

Watershed Boundary (HUC14)

300ft Riparian Buffer

Parcels

Municipal Boundary

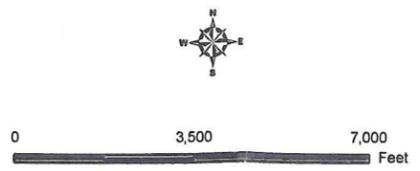
**Surface Water Quality Standards**

FW2-NT

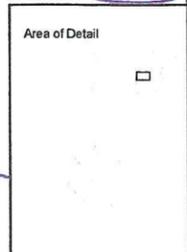
FW2-NTC1

FW2-TP

FW2-TPC1



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 NJDEP and is not state-authorized.

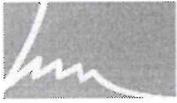


TOWNSHIP OF CHATHAM  
MORRIS COUNTY, NEW JERSEY  
MUNICIPAL STORMWATER MANAGEMENT PLAN  
FIGURE 5 - MUNICIPAL WATER BODIES WITH 300 FT. SPECIAL WATER RESOURCE PROTECTION AREAS

27 Bleeker Street  
Millburn, New Jersey 07041

Designed	Drawn	Checked	Approved	Date
RLB	RLB	DSC		3/14/2005

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the Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq., (see N.J.A.C. 2:90-1.3), 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:

- i. Stabilization measures shall not be placed within 150 feet of the waterway;
- ii. Stormwater associated with discharges allowed by this paragraph shall achieve a 95 percent TSS post construction removal rate;
- iii. Temperature shall be addressed to ensure no impact on receiving waterway;
- iv. 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;
- v. A conceptual project design meeting shall be held with the appropriate Department staff and Soil Conservation District staff to identify necessary stabilization measures; and
- vi. All encroachments proposed under this section shall be subject to review and approval by the Department.

4. 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 this subsection has been approved by the Department, 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 this subsection shall maintain or enhance the current functional value and overall condition of the special water resource protection area as defined above in (h)1i. In no case shall a stream corridor protection plan allow reduction of the Special Water Resource Protection Area to less than 150 feet as measured perpendicular to the waterway subject to this subsection.

5. This subsection 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.

Table 2 includes a breakdown of the drainage areas within each of the HUC14s in the Township, by percent of the Township and by percent of the total HUC 14 within the Township. For example, 65% of the Township is within the 14.2 square mile Black Brook subwatershed designated as “Great Swamp NWR”. This basic geographic data will be utilized along with zoning and associated annual non-point source load estimates to assist the Township make decisions regarding potential projects for improving stormwater runoff quality.

**Table 2**

**Chatham Township HUC 14s**

<b>HUC 14</b>	<b>Total Sq Miles</b>	<b>Sq Miles Inside Twp</b>	<b>Percent of Twp</b>	<b>Percent of HUC14 in Twp</b>
Black Brook (Great Swamp NWR)	14.2	6.1	65%	43%
Loantaka Brook	5.1	1.5	16%	30%
Passaic R. Upr (40d 45m to Snyder Ave)	12.4	1.3	14%	11%
Passaic R. Upr (Columbia Rd to 40d 45m)	8.4	0.4	4%	5%
Passaic R. Upr (Snyder to Plainfield Rd)	5.4	0.1	1%	1%
		9.4	100%	

**Long Term Challenges of Stormwater Management**

As discussed in the Regulatory Framework Section of this document the municipal stormwater permitting program was founded in response requirements in the Federal Clean Water Act (CWA). For surface waters of the state, the CWA goals are in part expressed in policy and standards included in N.J.A.C. 7:9B Surface Water Quality Standards. The standards include requirements for maintenance and protection of the designated uses of surface waters of the state and where economically feasible, are attained wherever these uses are not precluded by natural conditions. Where the instream water quality parameters exceed the applicable state water quality criteria, the water is considered impaired, and the NJDEP may be required to develop a Total Maximum Daily Load (TMDL) for those pollutants for that waterway. When the non-point source pollution component of the TMDL is considered to be contributing to exceedance of water quality parameters action may be necessary by the Township regarding addressing stormwater related impacts of existing land uses.

A TMDL is the amount of a pollutant that can be accepted by a waterbody without causing an exceedance of water quality standards or interfering with the ability to use a waterbody for one or more of its designated uses. The allowable load is allocated to the various sources of the

pollutant, such as stormwater and wastewater discharges, which require an 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 adoption of ordinances, reforestation of stream corridors, retrofitting stormwater systems, and other BMPs.

The New Jersey Integrated Water Quality Monitoring and Assessment Report (305(b) and 303(d)) (Integrated List) is required by the federal Clean Water Act to be prepared biennially and is a valuable source of water quality information. This combined report (<http://www.state.nj.us/dep/wmm/sgwqt/wat/integratedlist/integratedlist2004.html>) presents the extent to which New Jersey waters are attaining water quality standards, and identifies waters that are impaired. Sublist 5 of the Integrated List constitutes the list of waters impaired or threatened by pollutants, for which one or more TMDLs are needed.

### **Plan Consistency**

The Township is not currently within an adopted Regional Stormwater Management Planning Area (RSWMP). However, significant and comprehensive watershed-based studies have been performed and additional studies are planned or underway. If any RSWMPs or TMDLs are developed in the future, this Municipal Stormwater Management Plan will be updated, as appropriate, to be consistent with those programs. In addition there are several stakeholder groups such as, but not limited to the Great Swamp Watershed Association, and also the Ten Towns Great Swamp Watershed Management Committee that have information that will be useful and important to successful implementation of the MSWMP.

The Municipal Stormwater Management Plan is consistent with the Residential Site Improvement Standards (RSIS) at N.J.A.C. 5:21. Note that the Great Swamp Watershed Overlay District Stormwater Management Ordinance (30.64.3A) requirements are in addition to those included in the RSIS regarding stormwater management requirements for projects

with at least 5,000 square feet of disturbance. The municipality will utilize the most current update of the RSIS in the stormwater management review of residential applications outside of the Great Swamp watershed. This Municipal Stormwater Management Plan will be updated to be consistent with any future updates to the RSIS.

The Township's Stormwater Management Ordinance will require applicable new development and redevelopment plans to comply with New Jersey's Soil Erosion and Sediment Control Standards. The Township is an "exempt community" under the Soil Erosion and Sediment Control Act and administers the requirements thereof through its local ordinance. During construction, Township staff will observe on-site soil erosion and sediment control measures.

### **Design and Performance Standards**

As part of adoption of updates to existing stormwater ordinances (see Appendix A for model ordinance) 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 applicability of the model Stormwater Control Ordinance is limited to non-residential developments that ultimately involve one or more acre of disturbance as defined by N.J.A.C. 7:8. Note that the RSIS is applicable to residential development outside of the Great Swamp watershed; it carries the requirements of the NJDEP stormwater rules, and has been in force, in general, for projects not receiving at least preliminary subdivision or site plan approval prior to February 2004. The design and performance standards in the ordinance 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. Once the ordinance is configured to be compatible with the Township Code, and as required by the Permit, it will be submitted to the county for review and approval prior to April 1, 2006.

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

### **Nonstructural Stormwater Management Strategies**

As required by N.J.A.C. the Township will review the Master Plan, Official Map and Ordinances to incorporate nonstructural stormwater management strategies. As appropriate, the Township will adopt an ordinance to provide opportunities for implementation of NJDEP's nonstructural stormwater management strategies. Once the ordinance texts are completed, per MLUL, they will be submitted to Morris County for review and approval within 24 months of the effective date of the NJPDES Stormwater Permit (April 1, 2006). A copy will be sent to the Department of Environmental Protection at the time of submission.

### **Land Use/Build-Out Analysis**

If appropriate, a build-out analysis will be undertaken. There are four steps to preparing a build-out analysis that satisfies the requirements for a municipal stormwater management plan:

1. Determine the total land area within each of the HUC14s of the municipality.
2. Determine the area of constrained lands within each HUC14 of the municipality.
3. Determine the land available for development by simply subtracting the constrained lands from the total land area for each HUC14. In essence, the land available within each HUC14. Existing residential, commercial, and industrial areas are also eligible for redevelopment and should be considered as land available for development.
4. For each HUC14, complete a build-out analysis by using the municipal zoning map and applicable ordinances to determine the acreage of new development. Once the build-out acreage of each land use is determined for each HUC14, nonpoint source loadings can be determined for the build-out scenario.

A detailed land use analysis for the Township has not been conducted at this time. This requirement is not operative until February 2, 2006.

### **Mitigation Plan**

Municipal stormwater management plans must incorporate design and performance standards that are as protective as those outlined in the Stormwater Management Rules or alternative standards in an adopted regional stormwater management plan. These design and performance standards focus on three areas: maintaining groundwater recharge from proposed development, minimizing the proposed development's impact on flooding, and minimizing the proposed development's water quality impact on state waters. Some projects have unique, site-specific conditions that prevent them from strict compliance with the performance standards. In order for the municipality to grant a waiver or exemption from strict compliance with the groundwater recharge and stormwater runoff quality and quantity requirements, the MSWMP must include a mitigation process documented in a mitigation plan contained within the larger MSWMP. However, mitigation should not be an option until it is clearly demonstrated that on-site compliance is not practical. The mitigation plan must identify the measures required to offset any potential impact created by granting the waiver or exemption to the performance standards. Several strategies can be used to mitigate a development project and its impacts. Applicants can: identify, design, and implement a compensating measure to mitigate impacts; complete a project identified by the municipality as equivalent to the environmental impact created by the exemption or variance; or, provide funding for municipal projects that would address existing stormwater impacts.

If the applicant for a proposed development demonstrates to the satisfaction of the reviewing Board that on-site compliance with the stormwater performance standards as outlined in this MSWMP is not practical, the Board will entertain a request for a waiver or exemption from said standards. In order to obtain the waiver or exemption from strict compliance with the groundwater recharge, stormwater quantity and/or stormwater quality requirements as outlined

in this Municipal Stormwater Management Plan and ordinances, the applicant must provide mitigation in accordance with the following:

1. A mitigation project must be implemented in the same drainage area as the proposed development. The project must provide additional groundwater recharge benefits, or protection from stormwater runoff quality and quantity from previously developed property that does not currently meet the design and performance standards outlined in the Municipal Stormwater Management Plan.

- The applicant can select a project listed in the Municipal Stormwater Management Plan to compensate for the deficit from the performance standards resulting from the proposed project. The MSWMP will be amended from time to time to include these projects as they are identified by the various entities and programs performing land use and watershed studies including Chatham Township. The applicant, in configuring a mitigation proposal should utilize water resources information included in the Natural Resources Inventory and Conservation Elements of the municipal master plan.
- The applicant must demonstrate the ability to obtain the necessary agreements to create a project to compensate for the deficit from the performance standards resulting from the proposed project.
- The applicant must ensure the long-term maintenance of the project including the maintenance requirements under Chapters 8 and 9 of the NJ Stormwater BMP Manual.

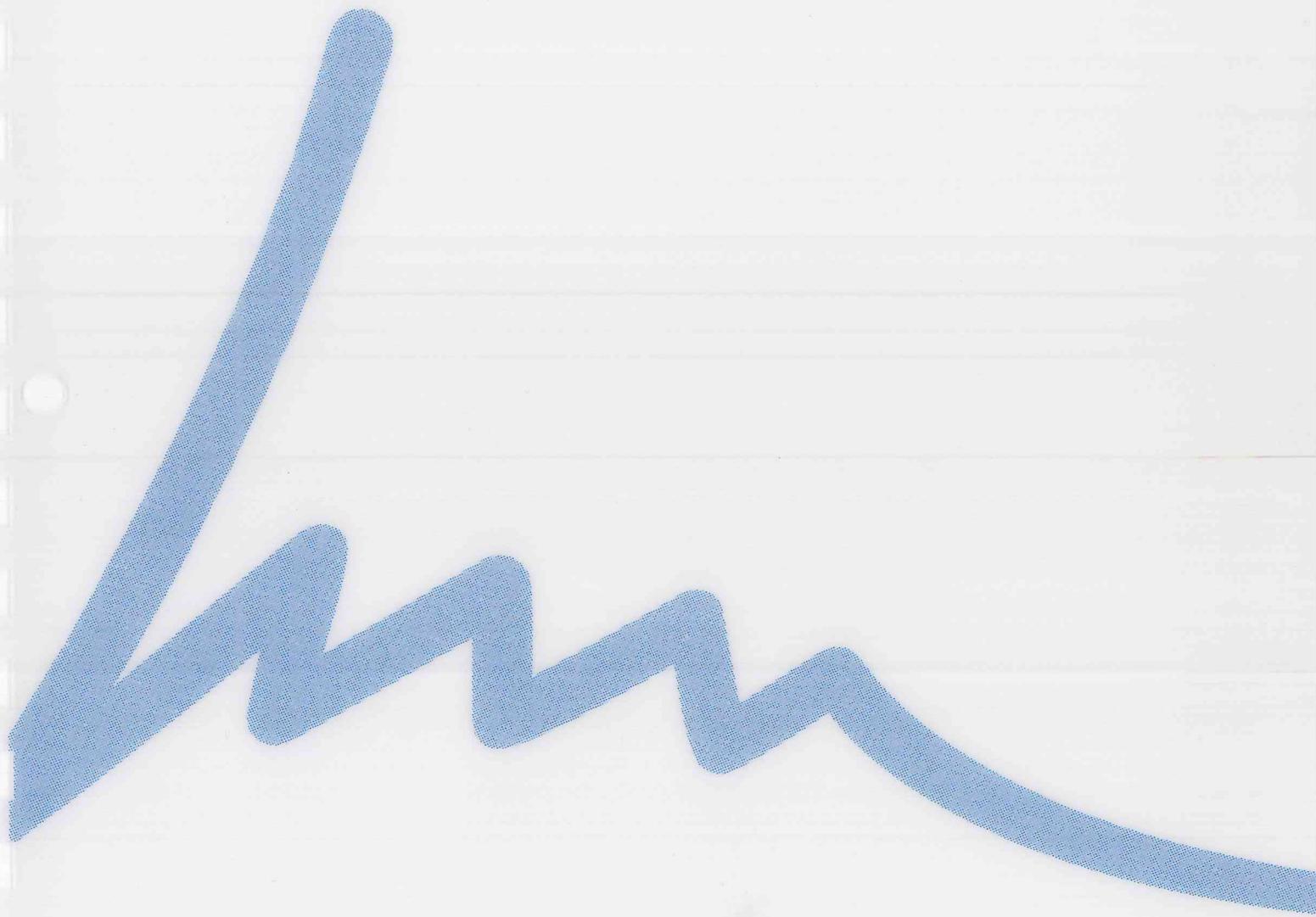
2. If a suitable mitigation site cannot be located in the same drainage area as the proposed development, as discussed under Option 1, the municipality may allow the applicant to provide funding to the municipality for an environmental enhancement project that has been identified in this Municipal Stormwater Management Plan as amended. The funding must be equal to or greater than the cost to implement the mitigation outlined above, including the

costs associated with purchasing the property or easement for mitigation and the costs associated with the long-term maintenance requirements of the mitigation measure.

Adequate documentation must be provided by applicants for evaluation of proposals for mitigation projects. Information must include, but not be limited to the following:

- 1) Detailed technical justification for the waiver request, including relevant site specific soils, hydrologic, hydrogeologic, topographic and other environmental data based on in-situ testing. The information must be presented in a technical report format suitable for review by reviewing Board members and Board professionals.
- 2) Description of opportunities for acquisition of or deed restriction of nearby (within same drainage area) private land, preferably adjacent to State Open Waters that would be dedicated for preservation or reforestation to offset shortfall in recharge. The report must also include documentation that the waiver, if granted, will not result in near-field soil erosion or sedimentation, or negative impacts on wetlands or other critical areas.
- 3) Evaluation of options for retrofit of public or private property nearby (within same drainage area) with equivalent water resource value to “avoided” project.
- 4) Documentation that the mitigation project is sized based at a minimum on the monetary value of avoided project assuming average constraints.
- 5) Determination of the water resources value of the proposed mitigation project to ongoing regional or other stormwater planning must be provided.

June 6, 2005



H.B.  
T.G.2



State of New Jersey

Department of Environmental Protection  
Bureau of Nonpoint Pollution Control  
Division of Water Quality  
P.O. Box 029  
Trenton, N.J. 08625-0029  
Tel: 609-633-7021, 292-0407  
FAX: 609-984-2147  
www.state.nj.us/dep/dwq/nonpoint.htm

James E. McGreevey  
Governor

Bradley M. Campbell  
Commissioner

*COPY  
M. Almoneta  
CONFIDENTIAL  
LETTER  
TO  
TWP.  
CAMPBELL  
→*

03/22/2004

Joseph Smith  
Chatham Twp  
58 Meyersville Rd  
Chatham Twp, NJ 07928

Re: R9 -Tier A Municipal Stormwater General Permit  
NJPDES: NJG0153630 / PI ID #: 171633  
Chatham Twp  
Morris

Dear Joseph Smith:

Enclosed please find your municipality's Authorization to Discharge (Authorization) under the New Jersey Pollutant Discharge Elimination System (NJPDES) Tier A Municipal Stormwater General Permit NJ0141852 (Tier A Permit), and a copy of the final permit. The "Effective Date" on the enclosed Authorization, 04/01/2004, is your municipality's "Effective Date of Permit Authorization" (EDPA) under this final permit. The implementation schedules contained in the final permit are based on your municipality's EDPA.

A unique NJPDES permit number NJG0153630 has been assigned for your municipality's authorization under the Tier A Permit. In any future correspondence or inquiries, please use or refer to that NJPDES permit number.

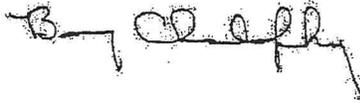
The enclosed final permit includes some technical corrections and changes to the advance copy that the Department of Environmental Protection (Department) mailed to your municipality in late January. Please replace the advance copy with the official final permit contained in this mailing. Also enclosed with this mailing is a summary of these technical corrections and changes.

A compact disk (CD) that contains guidance for the Tier A Permit and the informational brochure for the Local Public Education Program will be mailed to you under separate cover. The guidance will have blank and completed example Stormwater Pollution Prevention Plan (SPPP) forms to assist your municipality in preparing its SPPP. The CD will also contain other guidance including courtesy copies of the amended NJPDES Stormwater rules (N.J.A.C. 7:14A) and Stormwater Management rules (N.J.A.C.7:8), model ordinances, the New Jersey Stormwater Best Management Practices Manual, and additional educational materials supplied by the Department's Division of Watershed Management.

Any information about your municipality in this letter or the enclosed Authorization (i.e., mailing address, Municipal Stormwater Program Coordinator, etc.) is incorrect or has changed or changes in the future, please contact the Bureau of Nonpoint Pollution Control for an Administrative Update Form.

The Department appreciates your efforts toward accomplishing the goal of providing cleaner water for our State and looks forward to working together with you in the future. If you have any questions please contact Tara Wood at the Bureau of Nonpoint Pollution Control at (609) 633-7021, or (609) 292-0407.

Sincerely,



Barry Chalofsky, P.P., Chief  
Bureau of Nonpoint Pollution Control

Enclosures: (3)

Authorization to Discharge  
NJPDES General Permit No. NJ0141852  
Summary of technical corrections and changes

7: (w/AUTHORIZATION Form): NJDEP Water Compliance and Enforcement Region Office  
Debbie Esposti, BPM



**New Jersey Department of Environmental Protection**

Bureau of Nonpoint Pollution Control  
Division of Water Quality  
PO Box 029  
Trenton, NJ 08625-0029  
Phone: (609) 633-7021  
Fax: (609) 984-2147

**AUTHORIZATION TO DISCHARGE  
R9 -Tier A Municipal Stormwater General Permit**

**Facility Name:**

Chatham Twp

**PLID #:** 171633

**Facility Address:**

58 Meyersville Rd  
Chatham Twp, NJ 07928

**NJPDES #:** NJG0153630

**Type of Activity:** Stormwater Discharge General Permit Authorization New

**Owner:**

Chatham Twp  
58 Meyersville Rd  
Chatham Twp, NJ 07928

**Operating Entity:**

Chatham Twp  
58 Meyersville Rd  
Chatham Twp, NJ 07928

**Issuance Date:**

03/22/2004

**Effective Date:**

04/01/2004

**Expiration Date:**

02/28/2009

Your Request for Authorization under NJPDES General Permit No. NJ0141852 has been approved by the New Jersey Department of Environmental Protection.

**Date:** 03/22/2004

Barry Chalofsky, P.P., Chief  
Bureau of Nonpoint Pollution Control  
Division of Water Quality  
New Jersey Department of Environmental Protection



# NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM

Permit Number: NJ0141852  
P.I. ID #50577

Final: Tier A Municipal Stormwater Master General Permit

Permittee:

Division Of Water Quality  
401 E State Street  
Trenton, New Jersey 08625

Co-Permittee:

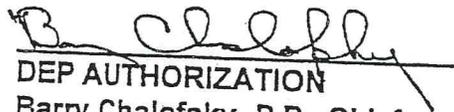
Property Owner:

Location Of Activity:

NJPDES Master General Permit Program  
Interest  
401 E State Street  
Trenton, New Jersey 08625

Authorization(s) Covered Under This Approval	Issuance Date	Effective Date	Expiration Date
R9 -Tier A Municipal Stormwater General Permit	02/02/2004	03/03/2004	02/28/2009

By Authority of:  
Commissioner's Office

  
DEP AUTHORIZATION  
Barry Chalofsky, P.P., Chief  
Bureau of Nonpoint Pollution Control  
Division of Water Quality

(Terms, conditions and provisions attached hereto)

# Tier A Municipal Stormwater General Permit (NJ0141852)

## PART I NARRATIVE REQUIREMENTS:

### A. Authorization Under this Permit

#### 1. Permit Area

- a. This permit applies to all areas of the State of New Jersey.

#### 2. Eligibility

- a. This permit may authorize all new and existing stormwater discharges to surface water and groundwater from small municipal separate storm sewer systems (MS4s) owned or operated by municipalities assigned to Tier A under N.J.A.C. 7:14A-25.3(a)1 (Tier A Municipalities), except as provided in A.5 below.
- b. On a case-by-case basis, the Department may use this permit to authorize new and existing stormwater discharges to surface water and groundwater from small MS4s (or portions of small MS4s) owned or operated by Tier B Municipalities. As used in this permit, the term "Tier A Municipality" includes Tier B Municipalities that seek or obtain authorization pursuant to this provision of this permit.
- c. 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 A Municipalities:
  - i. Water line flushing and discharges from potable water sources
  - ii. Uncontaminated ground water (e.g., infiltration, crawl space or basement sump pumps, foundation or footing drains, rising ground waters)
  - iii. Air conditioning condensate (excluding contact and non-contact cooling water)
  - iv. Irrigation water (including landscape and lawn watering runoff)
  - v. Flows from springs, riparian habitats and wetlands, water reservoir discharges and diverted stream flows
  - vi. Residential car washing water, and residential swimming pool discharges
  - vii. Sidewalk, driveway and street wash water
  - viii. Flows from fire fighting activities
  - ix. Flows from rinsing of the following equipment with clean water:
    - Beach maintenance equipment immediately following their use for their intended purposes; and
    - Equipment used in the application of salt and de-icing materials immediately following salt and de-icing material applications. Prior to

rinsing with clean water, all residual salt and de-icing materials must be removed from equipment and vehicles to the maximum extent practicable using dry cleaning methods (e.g., shoveling and sweeping). Recovered materials are to be returned to storage for reuse or properly discarded.

Rinsing of equipment in the above situations is limited to exterior, undercarriage, and exposed parts and does not apply to engines or other enclosed machinery.

d. If any of the discharges listed in 2.c above are identified by the municipality as a significant contributor of pollutants to or from the MS4, the Tier A Municipality must address the discharge as an illicit connection or as an improper disposal of waste as specified in Part I, Section F of this permit

### 3. Authorization

a. In order to obtain authorization under this permit (except for automatic renewal of authorization under A.4 below) a complete Request for Authorization (RFA) shall be submitted in accordance with the requirements of this permit. Upon review of the RFA, the Department may, in accordance with N.J.A.C. 7:14A-6.13, either:

- i. Issue notification of authorization under this permit, in which case, authorization is deemed effective the first day of the following month of the date of the notification of authorization;
- ii. Deny authorization under this permit and require submittal of an application for an individual permit; or
- iii. Deny authorization under this permit and require submittal of an RFA for another general permit.

b. For discharges from a small MS4 authorized by this permit, the Tier A Municipality is exempt from N.J.A.C. 7:14A-6.2(a)2. This exemption means that the discharge of any pollutant not specifically regulated in the NJPDES permit or listed and quantified in the NJPDES application or RFA shall not constitute a violation of the permit.

c. Authorization under this permit shall cease to be effective under N.J.A.C. 7:14A-6.13(f), (h), (j) and (o), where applicable.

### 4. Automatic Renewal of Authorization

a. Authorization under this permit will be automatically renewed when this general permit is reissued as provided by N.J.A.C. 7:14A-6.13(d)9 and 25.4(a)3 so long as the discharge authorized under the general permit continues to be eligible. The Department shall issue a notice of renewed authorization to the Tier A Municipality.

b. If the Tier A Municipality is aware of any information in the most recently submitted RFA that is no longer true, accurate, and/or complete, the Tier A Municipality shall provide the correct information to the Department within 90 days of the effective renewal authorization notice.

### 5. Stormwater Discharges Not Authorized

a. This permit does not authorize "stormwater discharge associated with industrial

activity” as defined in N.J.A.C. 7:14A-1.2. Types of facilities that a Tier A Municipality may operate and that are considered to be engaging in “industrial activity” include but are not limited to certain landfills and recycling facilities, certain transportation facilities (including certain local passenger transit and air transportation facilities), certain facilities handling domestic sewage or sewage sludge, steam electric power generating facilities, and construction activity that disturbs five acres or more (see N.J.A.C. 7:14A-1.2 for the full definition of “stormwater discharge associated with industrial activity”). Any municipality that operates an industrial facility with such a discharge must submit a separate request for authorization (RFA) or individual permit application for that discharge. An RFA submitted for the Tier A Municipal Stormwater General Permit does not qualify as an RFA for such a discharge.

- i. Deadlines to apply for a NJPDES permit for “stormwater discharge associated with industrial activity” are set forth in N.J.A.C. 7:14A-24.4(a)1. If such a discharge is from a facility (other than an airport, powerplant, or uncontrolled sanitary landfill) that is owned or operated by a municipality with a population of less than 100,000, the municipality shall submit the RFA or individual permit application by March 3, 2004. If such a discharge is from any other industrial facility, N.J.A.C. 7:14A-24.4(a)1 specifies earlier deadlines to apply.
- b. This permit does not authorize “stormwater discharge associated with small construction activity” as defined in N.J.A.C. 7:14A-1.2. In general, this is the discharge to surface water of stormwater from construction activity that disturbs at least one but less than five acres (see N.J.A.C. 7:14A-1.2 for the full definition). Any municipality that operates a construction site with such a discharge must submit a separate RFA or individual permit application for that discharge. An RFA submitted for the Tier A Municipal Stormwater General Permit does not qualify as an RFA for such a discharge.
- c. This permit does not authorize any stormwater discharge that is authorized under another NJPDES permit. A municipality does not have to implement measures contained in this NJPDES permit for stormwater discharges at facilities owned or operated by that municipality that are regulated under a separate NJPDES stormwater permit authorizing those discharges.
- d. This permit does not authorize stormwater discharges from projects or activities that conflict with an adopted areawide or Statewide WQM plan.

## **B. Requests for Authorization Requirements**

### **1. Deadline for Requesting Authorization for an Existing Discharge**

- a. An RFA for the existing discharges from the small MS4 owned or operated by a Tier A Municipality must be submitted to the Department on or before March 3, 2004, except as provided below.
  - i. If a municipality receives notice from the Department that it has been reassigned from Tier B to Tier A, or that a special designation is made under N.J.A.C. 7:14A-25.2(a)4, the deadline to submit an RFA is 180 days after the receipt of that notice, unless the Department approves a later date.
  - ii. The Department may, in its discretion, accept an RFA submitted after the

foregoing deadline; however, the municipality may still be held liable for violating the deadline to apply in accordance with N.J.A.C. 7:14A-25.4 and for discharging pollutants without a valid NJPDES permit in accordance with N.J.A.C. 7:14A-2.1(d).

## **2. Deadline for Requesting Authorization for a New Discharge**

a. An RFA for discharges from a new small MS4 owned or operated by a Tier A Municipality must be submitted to the Department at least ninety (90) days prior to the operation of the new MS4 system.

i. A Tier A Municipality that already has authorization to discharge from a small MS4 under the Tier A Municipal Stormwater Permit does not need to submit an additional RFA for the expansion of an existing small MS4.

ii. A new small MS4 is a small MS4 that did not exist on March 3, 2004 and results in a new discharge to surface or ground waters of the State.

## **3. Requesting Authorization**

a. A separate RFA shall be submitted by each Tier A Municipality applying for authorization under this permit.

b. A single RFA is required for the entire stormwater discharge from the small MS4 owned or operated by and located within a single municipality. Multiple RFAs are not required for multiple municipal operations (e.g., municipally owned and operated maintenance facilities, garages, and/or offices).

## **4. Contents of the Request for Authorization**

a. A completed RFA shall include all of the following information regarding the Tier A Municipality and shall be completed using the Department's RFA form:

i. The name of the municipality that operates the small MS4, county it is located in, and the address of the main municipal office (e.g., city hall, town hall, or municipal building).

ii. The name and mailing address of the Municipal Stormwater Program Coordinator who will submit any reports or certifications required by the permit and to whom the Department shall send all correspondence concerning the permit.

iii. A certification acknowledging the best management practices and measurable goals specified in the permit.

iv. Additional information may be required by the Department to be included as part of the RFA if the Department determines that such additional information (including other data, reports, specifications, plans, permits, or other information) is reasonably necessary to determine whether to authorize the discharge under this permit.

## **5. Where to Submit**

a. A completed and signed RFA shall be submitted to the Department at the address specified on the Department's RFA form.

## C. Definitions

### 1. The following definitions apply to this permit.

- a. "EDPA" means Effective Date of Permit Authorization.
- b. "Illicit connection" means any physical or non-physical connection that discharges the following to a municipal separate storm sewer system, unless that discharge is authorized under a NJPDES permit other than the NJPDES permit for discharges from that system (non-physical connections may include, but are not limited to, leaks, flows, or overflows into the municipal separate storm sewer system):
  - i. Domestic sewage;
  - ii. Non-contact cooling water, process wastewater, or other industrial waste (other than stormwater); or
  - iii. Any category of non-stormwater discharges that the Tier A Municipality identifies as a source or significant contributor of pollutants pursuant to 40 C.F.R. 122.34(b)(3)(iii).
- c. "MS4" means a municipal separate storm sewer system.
- d. "Municipality" means a "municipality" as defined in the Municipal Land Use Law at N.J.S.A. 40:55D-5, that is, any city, borough, town, township, or village.
- e. "Municipal separate storm sewer" means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):
  - i. Owned or operated by the United States, an interstate agency, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface water or groundwater;
  - ii. Designed and used for collecting or conveying stormwater;
  - iii. Which is not a combined sewer;
  - iv. Which is not part of a POTW; and
  - v. Which is not either of the following:
    - A separate storm sewer(s) that is at an industrial facility, and that collects or conveys stormwater discharges associated with industrial activity that occurs at that facility; or
    - A separate storm sewer(s) that is at a construction site, and that collects or conveys stormwater discharges associated with small construction activity that occurs at that site.

- f. "Small municipal separate storm sewer system" or "small MS4" means all municipal separate storm sewers (other than "large" or "medium" municipal separate storm sewer systems as defined in N.J.A.C. 7:14A-1.2) that are:
- i. Owned or operated by municipalities described under N.J.A.C. 7:14A-25.1(b);
  - ii. Owned or operated by county, State, interstate, or Federal agencies, and located at public complexes as described under N.J.A.C. 7:14A-25.2(a)2; or
  - iii. Owned or operated by county, State, interstate, or Federal agencies, and located at highways and other thoroughfares as described under N.J.A.C. 7:14A-25.2(a)3; or
  - iv. Owned or operated by county, State, interstate, Federal, or other agencies, and receive special designation under N.J.A.C. 7:14A-25.2(a)4.
- g. "Solid and floatable materials" means sediment, debris, trash, and other floating, suspended, or settleable solids.
- h. "Stormwater" means water resulting from precipitation (including rain and snow) that runs off the land's surface, is transmitted to the subsurface, is captured by separate storm sewers or other sewerage or drainage facilities, or is conveyed by snow removal equipment.

#### D. Special Conditions

##### 1. Sharing of Responsibilities

- a. A Tier A Municipality may rely on another governmental, private, or nonprofit entity (for example, a watershed association) to satisfy the municipality's NJPDES permit obligations to implement one or more control measures (or components (s) thereof) pursuant to N.J.A.C. 7:14A-25.7(a) if:
- i. The other entity, in fact, implements the measure(s), or component(s) thereof;
  - ii. The particular measure(s), or component(s) thereof, is at least as stringent as the corresponding NJPDES permit requirement;
  - iii. The other entity agrees in writing (or is required by law) to implement the measure(s), or component(s) thereof, on the Tier A Municipality's behalf. The municipality is responsible for compliance with this permit if the other entity fails to implement the measure(s), or component(s) thereof. In the annual reports the municipality must submit under Part I, Section H.3, the municipality shall specify that it is relying on another entity to satisfy some of the Tier A Municipality's NJPDES permit obligations.
  - iv. If the municipality is relying on another entity regulated under the NJPDES permit program to satisfy all of that Tier A Municipality's NJPDES permit obligations, including that municipality's obligation to file these annual reports, the municipality shall notify the Department of this reliance in writing, and shall also note this reliance in the municipality's SPPP.

## E. Stormwater Program and Stormwater Pollution Prevention Plan

### 1. Stormwater Program

a. Tier A Municipalities are required to develop, implement, and enforce a stormwater program. This program shall be designed to reduce the discharge of pollutants from the municipality's small MS4 to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the Federal Act and the State Act by including the Statewide Basic Requirements (SBRs) set forth in Part I, Section F and any Additional Measures (AMs) required under Part I, Section G below. At the municipality's discretion, the stormwater program may also include Optional Measures (OMs) also in accordance with Part I, Section G below.

### 2. Stormwater Pollution Prevention Plan (SPPP)

a. Tier A Municipalities shall prepare and implement a written Stormwater Pollution Prevention Plan (SPPP) that describes the Tier A Municipality's stormwater program and serves as the mechanism for the implementation of the Statewide Basic Requirements. The SPPP must address stormwater quality issues related to new development, redevelopment and existing development. The SPPP shall be prepared and implemented in accordance with the deadlines specified in Part I, Section H. The SPPP shall include, at a minimum, all of the information and items identified in Attachment A.

i. The SPPP shall be signed, dated and retained by the Municipal Stormwater Program Coordinator.

b. For any projects or activities which the municipality contracts out to private contractors after the EDPA, the awarded contract must contain conditions that the contractor must conduct such projects or activities in such a manner that is in compliance with the municipality's SPPP and this permit's conditions. The municipality is responsible for any violations of this permit resulting from a contractor's noncompliance.

c. SPPPs may be amended so long as they continue to meet the requirements of this permit. Any amended SPPPs shall be signed, dated, implemented, retained, and otherwise treated in the same manner as the original SPPP. The Tier A Municipality shall retain each previous SPPP for a period of at least five years from the date of that previous SPPP. This period may be extended by written request of the Department at any time.

## F. Statewide Basic Requirements (SBRs)

1. Stormwater quality issues related to new development, redevelopment and existing development are to be addressed through the implementation of the following Statewide Basic Requirements (SBRs). The permit specifies the BMPs that will be implemented for those SBRs. These SBRs and related BMPs are to be detailed in the municipality's SPPP.

a. Additional information is provided and each of the SBRs and related BMPs are described in more detail in the Department's Tier A Municipal Stormwater Permit Guidance Document.

## 2. Public Notice

- a. Minimum Standard - Tier A Municipalities shall comply with applicable State and local public notice requirements when providing for public participation in the development and implementation of the Tier A Municipality's stormwater program.
- b. Measurable Goal - Tier A Municipalities shall certify annually that all applicable State and local public notice requirements were followed.
- c. Implementation - Upon the effective date of permit authorization (EDPA).

## 3. Post-Construction Stormwater Management in New Development and Redevelopment

- a. Minimum Standard - To prevent or minimize water quality impacts, the Tier A Municipality shall develop, implement, and enforce a program to address stormwater runoff from new development and redevelopment projects (including projects operated by the municipality itself) that disturb one acre or more, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into the municipality's small MS4. The municipality shall in its post-construction program:
  - i. Adopt and reexamine 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.
  - ii. Adopt and implement a municipal stormwater control ordinance or ordinances in accordance with N.J.A.C. 7:8-4. The ordinance(s) will control stormwater from non-residential development and redevelopment projects.
  - iii. Ensure that any residential development and redevelopment projects that are subject to the Residential Site Improvement Standards for stormwater management (N.J.A.C. 5:21-7) comply with those standards (including any exception, waiver, or special area standard that was approved under N.J.A.C. 5:21-3).
  - iv. Where necessary to implement the municipal stormwater management plan, the municipal stormwater control ordinance(s) will also:
    - Control aspects of residential development and redevelopment projects that are not pre-empted by the Residential Site Improvement Standards; and
    - Set forth special area standards approved by the Site Improvement Advisory Board for residential development or redevelopment projects under N.J.A.C. 5:21-3.5.
  - v. Ensure adequate long-term operation and maintenance of BMPs.
  - vi. Enforce, through the stormwater control ordinance(s) or a separate ordinance, compliance with standards set forth in Attachment C of the permit to control passage of solid and floatable materials through storm drain inlets.
  - vii. This post-construction program shall also require compliance with the applicable design and performance standards established under N.J.A.C. 7:8 for major development, unless:

- Those standards do not apply because of a variance or exemption granted under N.J.A.C. 7:8; or
  - Alternative standards are applicable under an areawide or Statewide Water Quality Management Plan adopted in accordance with N.J.A.C. 7:15.
- b. Measurable Goal – Tier A Municipalities shall certify annually that that they have developed, implemented, and are actively enforcing a program to address stormwater runoff from new development and redevelopment projects that discharge into the Tier A Municipality's small MS4 in accordance with the minimum standard.

c. Implementation

i. Upon the effective date of permit authorization, Tier A Municipalities shall for new development and redevelopment projects:

- Ensure that any residential development and redevelopment projects that are subject to the Residential Site Improvement Standards for stormwater management (N.J.A.C. 5:21-7) comply with those standards (including any exception, waiver, or special area standard that was approved under N.J.A.C. 5:21-3).
- Ensure adequate long-term operation and maintenance of BMPs on property owned or operated by the municipality.

ii. Within 12 months from the effective date of permit authorization, Tier A Municipalities 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);
- Comply with the standards set forth in Attachment C 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 A Municipality's small MS4.

iii. Within 12 months from the adoption of the municipal stormwater management plan, Tier A 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.

iv. Tier A Municipalities shall enforce stormwater control ordinance(s) when approved in accordance with N.J.A.C. 7:8-4.

v. Within 24 months from the effective date of permit authorization Tier A Municipalities shall:

- Ensure adequate long-term operation and maintenance of BMPs on property not owned or operated by the municipality;
- Enforce, through the stormwater control ordinance(s) or a separate ordinance compliance with the standards set forth in Attachment C of the permit to control passage of solid and floatable materials through storm drain inlets for storm drain inlets not installed by the Tier A Municipality.

#### 4. Local Public Education

##### a. Local Public Education Program

i. Minimum Standard – The Local Public Education Program shall describe how the Tier A Municipality will distribute educational information and specifics on how educational activities, including the educational event, will be conducted to satisfy this minimum standard. The following SBR and/or BMP topics shall be included in the Local Public Education Program:

- Stormwater/Nonpoint Source Education – impact of stormwater discharges on surface and ground waters of the State and steps that the public can take to reduce pollutants in stormwater runoff.
- Storm Drain Inlet Labeling – hazards of dumping materials into the storm drain, and fact that storm drains are usually connected to water bodies and do not receive treatment.
- Fertilizer/Pesticide Education –proper application, storage and disposal of pesticides and fertilizers, and the benefits of using native or well adapted vegetation that requires little or no fertilization.
- Waste Disposal Education – identification, proper handling and proper disposal of wastes (including the locations of hazardous waste collection facilities in the area) and the hazards associated with illicit connections and improper disposal of waste.
- Pet Waste Ordinance – information regarding the pet waste ordinance and the benefits of proper disposal of pet waste.
- Litter Ordinance - information regarding litter control and fines associated with littering
- Improper Disposal of Waste Ordinance - information regarding this ordinance.
- Wildlife Feeding Ordinance - information regarding the wildlife feeding prohibition.
- Yard Waste - information regarding home composting and yard waste recycling.

Tier A Municipalities shall provide for the duplication and annual mailing (or other means of delivery) to all residents and businesses within the municipality of the informational brochure provided by the Department. The informational

brochure covers all the topics above. The Department may periodically provide the Tier A Municipality with an updated brochure for duplication and distribution.

As part of this program, Tier A Municipalities shall also conduct each year, at minimum, one education effort in the form of an "event." An event may be an activity established primarily to satisfy this requirement or may be part of a bigger existing event such as municipal festivals, county fairs, or an Earth Day, Arbor Day or 4th of July celebration. During this event, the informational brochure shall also be made available to the public.

ii. Measurable Goal - Tier A Municipalities shall certify annually that they have met the Local Public Education Program minimum standard and shall provide the date(s) of the annual mailing (or other means of delivery) and annual event (including a description of the event).

iii. Implementation - Within 12 months from the effective date of permit authorization, Tier A Municipalities shall have developed and begun implementing the Local Public Education Program minimum standard.

b. Storm Drain Inlet Labeling

i. Minimum Standard - Tier A Municipalities shall establish a storm drain inlet labeling program and label all storm drain inlets that are along municipal streets with sidewalks, and all storm drain inlets within plazas, parking areas, or maintenance yards that are operated by the municipality. The program shall establish a schedule for labeling, develop a long term maintenance plan, and when possible, coordinate efforts with watershed groups and volunteer organizations.

ii. Measurable Goal - Tier A Municipalities shall certify annually that a storm drain inlet labeling program has been developed or is being implemented, and shall identify the number of storm drain inlets labeled within each year.

iii. Implementation - Within 12 months from the effective date of permit authorization, Tier A Municipalities shall develop an inlet labeling program for the storm drains identified in the minimum standard. Tier A Municipalities must either:

- Label a minimum of 50% of the storm drain inlets within 36 months from the EDPA; and label all remaining storm drain inlets on or before 60 months from EDPA; or
- Divide the municipality into two sectors for the purposes of storm drain inlet labeling and include a map of the two sectors in the SPPP. Label the storm drain inlets in one sector within 36 months from the EDPA; and label all remaining storm drain inlets on or before 60 months from EDPA.

## 5. Improper Disposal of Waste

### a. Pet Waste Ordinance

- i. Minimum Standard - Tier A Municipalities shall adopt and enforce an ordinance that requires pet owners or their keepers to immediately and properly dispose of their pet's solid waste deposited on any property, public or private, not owned or possessed by that person. Information on the Pet Waste Ordinance and the benefits of proper disposal of pet solid waste shall be distributed with pet licenses.
- ii. Measurable Goal - Tier A Municipalities shall certify annually that they have met the Pet Waste Ordinance minimum standard.
- iii. Implementation - Within 18 months from the effective date of permit authorization, Tier A Municipalities shall have fully implemented the Pet Waste Ordinance minimum standard.

### b. Litter Ordinance

- i. Minimum Standard - Tier A Municipalities shall adopt and enforce a litter ordinance or enforce the existing State litter statute (N.J.S.A 13:1E-99.3).
- ii. Measurable Goal - Tier A Municipalities shall certify annually that they have met the Litter Ordinance minimum standard.
- iii. Implementation - Within 18 months from the effective date of permit authorization, Tier A Municipalities shall have fully implemented the Litter Ordinance minimum standard.

### c. Improper Disposal of Waste Ordinance

- i. Minimum Standard - Tier A Municipalities shall adopt and enforce an ordinance prohibiting the improper spilling, dumping, or disposal of materials other than stormwater into the small MS4 (excluding those authorized in Part I, Section A.2.c).
- ii. Measurable Goal - Tier A Municipalities shall certify annually that they have met the Improper Waste Disposal Ordinance minimum standard.
- iii. Implementation - Within 18 months from the effective date of permit authorization, Tier A Municipalities shall have fully implemented the Improper Disposal of Waste Ordinance minimum standard.

### d. Wildlife Feeding Ordinance

- i. Minimum Standard - Tier A Municipalities shall adopt and enforce an ordinance that prohibits the feeding in any public park or on any other property owned or operated by the Tier A Municipality of any wildlife (excluding confined animals, for example, wildlife confined in zoos, parks, or rehabilitation centers or unconfined wildlife at environmental education centers).
- ii. Measurable Goal - Tier A Municipalities shall certify annually that they have met the Wildlife Feeding Ordinance minimum standard.
- iii. Implementation - Within 18 months from the effective date of permit

authorization, Tier A Municipalities shall have fully implemented the Wildlife Feeding Ordinance minimum standard.

e. Yard Waste Ordinance / Collection Program

i. Minimum Standard - Tier A Municipalities shall either adopt and enforce an ordinance that prohibits placing non-containerized yard wastes in the street or shall develop a yard waste collection and disposal program. The yard waste collection program shall include monthly yard waste pickups from October through December, once in the spring ("spring clean-up"), and on an "as needed" basis for the rest of the year. The frequency of the "as needed" pickups shall be determined at the discretion of the Tier A Municipality. Any area, which the municipality determines to have no yard waste, will be exempt from the collections. The yard waste collection program shall also include the adoption and enforcement of an ordinance prohibiting all yard wastes from being placed at the curb or along the street more than seven (7) days prior to scheduled collection or the placing of yard waste closer than 10 feet from any storm sewer inlet along the street, unless they are bagged or otherwise containerized.

ii. Measurable Goal - Tier A Municipalities shall certify annually that they have met the Yard Waste minimum standard.

iii. Implementation - Within 18 months from the effective date of permit authorization, Tier A Municipalities shall have either developed and begun implementing a Yard Waste Collection Program or have fully implemented the Yard Waste Ordinance in accordance with the Yard Waste Ordinance / Collection Program minimum standard.

6. Illicit Connection Elimination and MS4 Outfall Pipe Mapping

a. Minimum Standard

i. Storm Sewer Outfall Pipe Mapping - Tier A Municipalities must develop a map showing the location of the end of all MS4 outfall pipes that are operated by the Tier A Municipality, and that discharge within the Tier A Municipality's jurisdiction to a surface water body (e.g., a lake, ocean, or stream including an intermittent stream). This map shall also show the location (and name, where known to the Tier A Municipality) of all surface water bodies receiving discharges from those outfall pipes. Each outfall pipe mapped shall be given an individual alphanumeric identifier, which shall be noted on the map. The outfall pipes shall be mapped on either a tax map prepared in accordance with Title 18, Chapter 23A of the New Jersey Administrative Code or on another map drawn to equal or larger (more detailed) scale. A municipality regulated under the Sewage Infrastructure Improvement Act (SIIA) regulations (N.J.A.C. 7:22A) may use a preliminary or final map prepared pursuant to those regulations. The Tier A Municipality shall submit a copy of its outfall pipe map to the Department upon request.

ii. Ordinance Prohibiting Illicit Connections - Each Tier A Municipality shall, to the extent allowable under State law, effectively prohibit through

ordinance, illicit connections to the Tier A Municipality's small MS4, and implement appropriate enforcement procedures and actions.

iii. Illicit Connection Elimination Program - Each Tier A Municipality must develop and implement a program to detect and eliminate illicit connections into the Tier A Municipality's small MS4. The program, at minimum, must include an initial physical inspection of all its outfall pipes. All outfall pipes that are found to have dry weather flow are to be further investigated.

The inspections of outfall pipes and investigations of dry weather flows are to be conducted in accordance with the procedures for detecting, investigating, and eliminating illicit connections contained in Attachment B of the permit. Results of the inspections of outfall pipes and dry weather flows are to be recorded on the Department's Illicit Connection Inspection Report form. Inspection reports for dry weather flows discovered as a result of initial physical inspections or as part of the ongoing program must be submitted to the Department with the annual certification. If the dry weather flow is intermittent the Tier A Municipality must perform, at minimum, three (3) additional investigations in an attempt to locate the illicit connection. If an illicit connection cannot be located or is found to emanate from another public entity, Tier A Municipalities must submit to the Department a written explanation detailing the results of the investigation and notify that public entity. The Department will determine if such measures were adequate and will notify the Tier A Municipality of the determination. All illicit connections found and subject to the ordinance prohibiting illicit connections must be eliminated within six (6) months of the discovery.

After the completion of the initial physical inspection of all outfall pipes, Tier A Municipalities must maintain an ongoing program to detect and eliminate illicit connections. The ongoing program will respond to complaints and reports of illicit connections, including those from operating entities of interconnected small MS4s, and continue to investigate dry weather flows discovered during routine inspections and maintenance of the small MS4.

b. Measurable Goal

i. Tier A Municipalities shall certify annually that an outfall pipe map has been completed or is being prepared in accordance with permit conditions and shall report the number of outfall pipes mapped within the year being reported and the total number of outfall pipes mapped to date.

ii. Tier A Municipalities shall submit an annual certification to the Department certifying that an ordinance prohibiting illicit connections is in place and is being actively enforced.

iii. Tier A Municipalities shall certify annually that an illicit connection elimination program has been developed in accordance with permit conditions to detect and eliminate illicit connections into the Tier A Municipalities' small MS4. Annual certifications shall also include the number of outfalls physically inspected, the number of outfalls found to have dry weather flow, the number of

illicit connections found and the number of illicit connections eliminated. Copies of inspection reports shall be submitted with the annual certification for those outfalls found to have dry weather flow.

c. Implementation

- i. Storm Sewer Outfall Pipe Mapping – Tier A Municipalities shall divide the municipality into two (2) sectors for the purposes of outfall mapping. A diagram of the municipality showing the two (2) sectors shall be part of the Tier A Municipality's SPPP. Tier A Municipalities shall map the location of the end of small MS4 outfall pipes in one sector 36 months from the EDPA; and map the location of the end of all small MS4 outfall pipes on or before 60 months from the EDPA.
- ii. Ordinance Prohibiting Illicit Connections - Within 18 months from the EDPA, Tier A Municipalities shall effectively prohibit through ordinance, illicit connections to the Tier A Municipality's small MS4, and implement appropriate enforcement procedures and actions.
- iii. Illicit Connection Elimination Program - Within 18 months from the effective date of permit authorization, Tier A Municipalities shall have developed and begun implementing a program to detect and eliminate illicit connections into the Tier A Municipality's small MS4. Tier A Municipalities shall perform an initial physical inspection of all outfall pipes using the Department's Illicit Connection Inspection Report form within 60 months from the EDPA.

7. Solids and Floatable Controls

a. Street Sweeping

- i. Minimum Standard - Tier A Municipalities shall sweep all municipally owned or operated curbed streets (including roads or highways) with storm drains that have a posted speed limit of 35 mph or less (excluding all entrance and exit ramps) in predominantly commercial areas at a minimum of once per month, weather and street surface conditions permitting.
- ii. Measurable Goal - Tier A Municipalities shall certify annually that they have met the Street Sweeping minimum standard. Tier A Municipalities must maintain records including the date and areas swept, number of miles of streets swept and the total amount of materials collected. Information shall be reported to the Department in the annual report and certification.
- iii. Implementation - Beginning 12 months after the effective date of permit authorization Tier A Municipalities shall have developed and begun implementing a street sweeping program that meets the minimum standard above.

b. Storm Drain Inlets

- i. Minimum Standard - Retrofitting of existing storm drain inlets to meet the standard contained in Attachment C of the permit is required where such inlets are in direct contact with repaving, repairing (excluding repair of

individual potholes), reconstruction or alterations of facilities owned or operated by the Tier A Municipality. For exemptions to this standard, refer to "Exemptions" in Attachment C.

ii. Measurable Goal – Tier A Municipalities shall certify annually that such storm drain inlets have been retrofitted to meet the minimum standard contained in Attachment C, unless otherwise exempted.

iii. Implementation - Within 12 months of effective date of permit authorization and thereafter, Tier A Municipalities shall retrofit all such storm drain inlets in accordance with the Storm Drainage Inlets minimum standard.

c. Stormwater Facility Maintenance

i. Minimum Standard - Tier A Municipalities shall develop and implement a stormwater facility maintenance program for cleaning and maintenance of all stormwater facilities operated by the Tier A Municipality. Stormwater facilities include, but are not limited to: catch basins, detention basins, filter strips, riparian buffers, infiltration trenches, sand filters, constructed wetlands, wet basins, bioretention systems, low flow bypasses, and stormwater conveyances. The stormwater facility maintenance must be performed as required to ensure the proper function and operation of the stormwater facility. Tier A Municipalities shall also clean all catch basins annually to remove accumulated sediment, trash and debris.

ii. Measurable Goal - Tier A Municipalities shall certify annually that all stormwater facilities are properly functioning and that all catch basins have been cleaned in accordance with the minimum standard. If stormwater facilities were found not to be functioning properly and repairs were not made, a schedule for such repairs shall be included in the annual report and certification. Tier A Municipalities shall also maintain records of inspections, maintenance and repairs that were performed which shall be reported in the annual report and certification.

iii. Implementation - Within 12 months from the effective date of permit authorization, Tier A Municipalities shall have developed and begun implementing a stormwater facility maintenance program in accordance with the minimum standard.

d. Road Erosion Control Maintenance

i. Minimum Standard - Tier A Municipalities shall develop a roadside erosion control maintenance program to identify and repair erosion along streets (including roads or highways) operated by the municipality. Tier A Municipalities are also required to regularly inspect and maintain the stability of shoulders, embankments, ditches and soils along these streets to ensure that they are not eroding and contributing to sedimentation of receiving waters. Repairs shall be made in accordance with the Standards for Soil Erosion and Sediment Control in New Jersey (N.J.A.C. 2:90-1).

ii. Measurable Goal - Tier A Municipalities shall certify annually that they have developed and are implementing a Roadside Erosion Control Maintenance

program. The certification shall also indicate the locations of all problem areas corrected and any maintenance done during that year. The dates of all inspections and employee training sessions shall also be reported in the annual report and certification.

iii. Implementation - Within 18 months from the effective date of permit authorization, Tier A Municipalities shall have developed and begun implementing a roadside erosion control maintenance program in accordance with the minimum standard.

e. Outfall Pipe Stream Scouring Remediation

i. Minimum Standard - Tier A Municipalities shall develop and implement a stormwater outfall pipe scouring detection, remediation and maintenance program to detect and control localized stream and stream bank scouring in the vicinity of outfall pipes operated by the municipality. This program shall identify all areas where localized stream and bank scouring occurs as a result of stormwater discharges from the Tier A Municipality's MS4. These areas shall then be prioritized and repairs shall be scheduled and completed. Repairs shall be made in accordance with the Standards for Soil Erosion and Sediment Control in New Jersey at N.J.A.C. 2:90-1 (e.g., Conduit Outlet Protection 12-1).

ii. Measurable Goal - Tier A Municipalities shall certify annually that they have met the Outfall Pipe Stream Scouring Remediation minimum standard. In addition, the Tier A Municipality shall list the location of outfall scouring identified, the dates control measures are to begin, and the dates any control measures were completed.

iii. Implementation - Within 18 months of the effective date of permit authorization, Tier A Municipalities shall have developed and begun implementing an outfall pipe stream scouring detection, remediation and maintenance program. This program shall identify and prioritize all stormwater outfall pipes needing repairs, and then schedule and complete the repairs.

**8. Maintenance Yard Operations (including maintenance activities at Ancillary Operations)**

a. De-icing Material Storage

i. Minimum Standard - Tier A Municipalities must construct a permanent structure (a permanent building or permanent structure that is anchored to a permanent foundation with an impermeable floor, and that is completely roofed and walled) for the storage of salt, and other de-icing materials. Once completed, Tier A Municipalities shall perform regular maintenance and inspections of the permanent structure. Seasonal tarping shall be used as an interim BMP until the permanent structure is completed. Sand may be stored outside and uncovered if a 50-foot setback is maintained from storm sewer inlets, ditches or other stormwater conveyance channels, and surface water bodies.

ii. Measurable Goal - Tier A Municipalities shall certify annually that they have met the De-icing Material Storage minimum standard.

iii. Implementation - Within 12 months from the effective date of permit authorization, Tier A Municipalities shall implement the interim seasonal tarping BMP. Within 12 months of the effective date of permit authorization, Tier A Municipalities will comply with the 50-foot buffer requirement for the outside storage of sand. Within 36 months from the effective date of permit authorization Tier A Municipalities shall store all salt and de-icing materials in a permanent structure.

b. Fueling Operations

i. Minimum Standard - Tier A Municipalities must develop and implement standard operating procedures for vehicle fueling, and receiving of bulk fuel deliveries at maintenance yard operations. The standard operating procedures shall incorporate the required practices listed in Attachment D.

ii. Measurable Goal - Tier A Municipalities must certify annually that there is a vehicle fueling and bulk receiving standard operating procedures in place.

iii. Implementation - Within 12 months of the effective date of permit authorization, Tier A Municipalities shall have developed and begun implementing the required standard operating procedures for fueling operations.

c. Vehicle Maintenance

i. Minimum Standard - Tier A Municipalities shall develop and implement a standard operating procedure (SOP) for vehicle maintenance and repair activities that occur at municipal maintenance yard operations. The SOP shall include the required practices listed in Attachment D. The SOP shall include regular inspections of all maintenance areas and activities.

ii. Measurable Goal - Tier A Municipalities must certify annually that there is a vehicle maintenance standard operating procedure in place and that regular inspections and maintenance are being performed.

iii. Implementation - Within 12 months of the effective date of permit authorization, Tier A Municipalities shall have developed and begun implementing the required standard operating procedures for Vehicle Maintenance.

d. Good Housekeeping Practices

i. Minimum Standard - Tier A Municipalities must implement good housekeeping procedures for all materials or machinery listed in the Inventory Requirements for Municipal Maintenance Yard Operations prepared in accordance with Attachment D. These good housekeeping procedures include, but not limited to, the required practices listed in Attachment D at all municipal maintenance yard operations (including maintenance operations at ancillary operations).

ii. Measurable Goal - Tier A Municipalities must certify annually that they have met the Good Housekeeping Practices minimum standard.

iii. Implementation - Within 12 months of the effective date of permit authorization, Tier A Municipalities shall have developed and begun

implementing the required standard operating procedures for Good Housekeeping.

## 9. Employee Training

a. Minimum Standard - Tier A Municipalities shall develop and conduct an annual employee training program for appropriate employees on appropriate topics. At a minimum, annual employee training will include the following topics:

- i. Waste Disposal Education – Training shall include how to respond to inquires regarding proper waste disposal.
- ii. Municipal Ordinances – Training shall include an overview of the Pet Waste Ordinance, Litter Ordinance, Illicit Connection Ordinance and Improper Waste Disposal Ordinance, Wildlife Feeding Ordinance, and Yard Waste Ordinance (if applicable), their requirements, enforcement policy, and hazards associated with improper waste disposal.
- iii. Yard Waste Collection Program (if applicable) – Training shall include frequency of yard waste pickups and schedule, policy for when yard waste can be placed curbside, and alternatives such as composting and recycling.
- iv. Illicit Connection Elimination and Outfall Pipe Mapping – Training shall include information regarding the hazards associated with illicit connections and details of the program including investigation techniques, physical observations, field sampling, and mapping procedures.
- v. Street Sweeping – Training shall include sweeping schedules and record keeping requirements.
- vi. Stormwater Facility Maintenance - Training shall include catch basin cleaning schedules and record keeping requirements.
- vii. Road Erosion Control and Outfall Pipe Stream Scouring Remediation – Training shall include identifying road erosion and outfall pipe scouring and repairs.
- viii. Maintenance Yard Operations (including Ancillary Operations) – Training shall include de-icing material storage, fueling, vehicle maintenance, equipment/vehicle washing and good housekeeping SOPs.
- ix. Construction Activity / Post-Construction Stormwater Management in New Development and Redevelopment – Training shall include information regarding the requirement to obtain a NJPDES construction activity stormwater permit (see Part I, Section A.5.a and A.5.b of this permit) and requirements for Post-Construction Stormwater Management in New Development and Redevelopment (See Part I, Section F.3 of this permit) for the permittee's own construction activities and projects that disturb one acre or more.

b. Measurable Goal - Tier A Municipalities must certify annually the date of the annual employee training.

c. Implementation – Training shall begin 12 months from the effective date of permit authorization.

## 10. Construction Site Stormwater Runoff Control

- a. Pursuant to N.J.A.C. 7:14A-25.6(b)2 and 25.7(b), the Department is responsible for developing, implementing, and enforcing a NJPDES permit program to reduce pollutants in stormwater runoff to small MS4s from construction activities. The Tier A Municipality is not required to include this SBR in its stormwater program or discuss this SBR in its SPPP.

## G. Additional Measures and Optional Measures

### 1. Additional Measures

- a. Additional Measures (AMs) are non-numeric or numeric effluent limitations that are expressly required to be included in the stormwater program by an adopted areawide or Statewide Water Quality Management Plan (WQM plan). AMs may modify or be in addition to SBRs. AMs may be required by a TMDL approved or established by USEPA, a regional stormwater management plan, or other elements of adopted areawide or Statewide WQM plans.
- b. The Department will provide written notice of the adoption of an AM to each Tier A Municipality whose stormwater program will be affected; and will list each adopted AM in the permit by making a minor modification to the permit. The AMs, other than numeric effluent limitations, will specify the BMPs that must be implemented and the measurable goals for each BMP. The AMs will also specify time periods for implementation.

### 2. Optional Measures

- a. At the Tier A Municipality's discretion, the stormwater program may also include Optional Measures (OMs), which are BMPs that are not implemented for SBRs or AMs but that prevent or reduce the pollution of the waters of the State.

## H. Deadlines and Certifications

### 1. Stormwater Pollution Prevention Plan

- a. Within twelve (12) months from the effective date of permit authorization, the Tier A Municipality shall prepare an SPPP.
- b. The SPPP shall include, at a minimum, all of the information and items identified in Attachment A. The SPPP shall be signed, dated and retained by the Tier A Municipality.

### 2. Statewide Basic Requirements

- a. Each SBR contained in Part I, Section F of the permit has a specific implementation schedule based on the effective date of permit authorization. Each SBR shall be implemented in accordance with that schedule. Tier A Municipalities shall certify in the Annual Report and Certification the status of the implementation of each SBR and the date implementation was completed, as appropriate.

- i. The Department may grant a six-month extension to the deadlines contained in an implementation schedule for any of the SBRs if the Tier A Municipality submits a written request for such extension, at least 30 days prior to the deadline, establishing to the Department's satisfaction that the Federal,

State and local permits and approvals necessary for the construction of best management practices could not with due diligence be obtained within the time period set forth in Section F above. The written request shall be submitted to:

NJDEP  
 Division of Water Quality  
 Bureau of Nonpoint Pollution Control  
 Municipal Stormwater Regulation Program  
 P.O. Box 029  
 Trenton, NJ 08625-0029

### 3. Annual Report and Certification

a. Tier A Municipalities shall complete an Annual Report (on a form provided by the Department) summarizing the status of compliance with this permit including measurable goals and the status of the implementation of each SBR contained in Part I, Section F of the permit. This report shall include a certification that the municipality is in compliance with its stormwater program, SPPP and this permit, except for any incidents of noncompliance. Any incidents of noncompliance with permit conditions shall be identified in the Annual Report and Certification. A copy of each Annual Report and Certification shall be kept at a central location and shall be made available to the Department for inspection.

i. If there are incidents of noncompliance, the report shall identify the steps being taken to remedy the noncompliance and to prevent such incidents from recurring.

ii. The Annual Report and Certification shall be signed and dated by the Tier A Municipality, and shall be maintained for a period of at least five years. This period may be extended by written request of the Department at any time.

b. The Annual Report and Certification shall be submitted to the Department pursuant to the following submittal schedule:

i. Submit an Annual Report and Certification: on or before May 2, 2005 and every 12 months thereafter.

### I. Standard Conditions

1. The following general conditions are incorporated by reference. The Tier A Municipality is required to comply with the regulations, which were in effect as of March 2, 2004.

- a. General Permits N.J.A.C. 7:14A-6.13
- b. Penalties for Violations N.J.A.C. 7:14-8.1 et seq.
- c. Incorporation by Reference N.J.A.C. 7:14A-2.3
- d. Toxic Pollutants N.J.A.C. 7:14A-6.2(a)4i
- e. Duty to Comply N.J.A.C. 7:14A-6.2(a)1 & 4
- f. Duty to Mitigate N.J.A.C. 7:14A-6.2(a)5 & 11
- g. Inspection and Entry N.J.A.C. 7:14A-2.11(e)
- h. Enforcement Action N.J.A.C. 7:14A-2.9
- i. Duty to Reapply N.J.A.C. 7:14A-4.2(e)3
- j. Signatory Requirements for Applications and Reports N.J.A.C. 7:14A-4.9

- k. Effect of Permit/Other Laws N.J.A.C. 7:14A-6.2(a)6 & 7 & 2.9(c)
- l. Severability N.J.A.C. 7:14A-2.2
- m. Administrative Continuation of Permits N.J.A.C. 7:14A-2.8
- n. Permit Actions N.J.A.C. 7:14A-2.7(c)
- o. Reopener Clause N.J.A.C. 7:14A-6.2(a)10, 16.4(b) & 25.7(b)
- p. Permit Duration and Renewal N.J.A.C. 7:14A-2.7(a) & (b)
- q. Consolidation of Permit Process N.J.A.C. 7:14A-15.5
- r. Confidentiality N.J.A.C. 7:14A-18.2 & 2.11(g)
- s. Fee Schedule N.J.A.C. 7:14A-3.1
- t. UIC Corrective Action N.J.A.C. 7:14A-8.4
- u. Additional Conditions Applicable to UIC Permits N.J.A.C. 7:14A-8.9
- v. UIC Operating Criteria N.J.A.C. 7:14A-8.16

## 2. Operation And Maintenance

- a. Need to Halt or Reduce not a Defense N.J.A.C. 7:14A-2.9(b)
- b. Proper Operation and Maintenance N.J.A.C. 7:14A-6.12

## 3. Monitoring And Records

- a. Monitoring N.J.A.C. 7:14A-6.5
- b. Recordkeeping N.J.A.C. 7:14A-6.6
- c. Signatory Requirements for Monitoring Reports N.J.A.C. 7:14A-6.9

## 4. Reporting Requirements

- a. Planned Changes N.J.A.C. 7:14A-6.7
- b. Reporting of Monitoring Results N.J.A.C. 7:14A-6.8
- c. Noncompliance Reporting N.J.A.C. 7:14A-6.10 & 6.8(h)
- d. Hotline/Two Hour & Twenty-four Hour Reporting N.J.A.C. 7:14A-6.10(c) & (d)
- e. Written Reporting N.J.A.C. 7:14A-6.10(e) & (f) & 6.8(h)
- f. Duty to Provide Information N.J.A.C. 7:14A-2.11, 6.2(a)14 & 18.1
- g. Compliance Schedules N.J.A.C. 7:14A-6.4
- h. Transfer N.J.A.C. 7:14A-6.2(a)8 & 16.2

5. Copies of the NJPDES rules may be purchased by contacting West Group, St. Paul, Minnesota, 1-800-808-WEST.

## J. Additional Conditions

### 1. Agency and Public Review

- a. The Tier A Municipality shall make the SPPP available upon request to an authorized representative of the Department and to the owner of and operating entity for any municipal separate storm sewer system that receives discharges from the Tier A Municipality's small MS4.
- b. Upon review by an authorized representative, the Department may notify the Tier A Municipality at any time that the SPPP does not meet one or more of the minimum requirements. Within 30 days after receiving such notification (unless otherwise specified by the Department), the SPPP shall be amended to adequately address all deficiencies, and written certification of such amendments shall be submitted to the Department.
- c. Tier A Municipalities shall make records required by this permit, including its

SPPP, available to the public at reasonable times during regular business hours (see N.J.A.C. 7:14A-18 for confidentiality provisions).

## **2. Other Laws**

a. In accordance with N.J.A.C. 7:14A-6.2(a)7, this permit does not authorize any infringement of State or local law or regulations, including, but not limited to the Pinelands rules (N.J.A.C. 7:50), N.J.A.C. 7:1E (Department rules entitled "Discharges of Petroleum and other Hazardous Substances"), the New Jersey Register of Historic Places Rules (N.J.A.C. 7:4), and all other Department rules. No discharge of hazardous substances (as defined in N.J.A.C. 7:1E-1.6) resulting from an onsite spill shall be deemed to be "pursuant to and in compliance with [this] permit" within the meaning of the Spill Compensation and Control Act at N.J.S.A. 58:10-23.11c.

## **3. Operations and Maintenance Manual**

a. In accordance with N.J.A.C. 7:14A-6.12(c), for a discharge authorized by this permit, the Tier A Municipality is exempt from the requirement to prepare an operations and maintenance manual.

## Attachment A

### CONTENTS OF THE STORMWATER POLLUTION PREVENTION PLAN

- A. SPPP Team
1. The Stormwater Pollution Prevention Plan (SPPP) shall identify the person or persons responsible for implementing or coordinating the SPPP activities (including at the Tier A Municipality's discretion, OMs).
- B. Description of Required Best Management Practices
1. The SPPP shall identify and discuss each Statewide Basic Requirement (SBR) and best management practice (BMP) required by the Tier A Municipal Stormwater General Permit.
  2. The SPPP shall identify and discuss each Additional Measure (AM), if any, required by the Tier A Municipal Stormwater General Permit.
  3. The SPPP shall identify and discuss any Optional Measures (OMs) the Tier A Municipality chooses to include in its stormwater program.
  4. For each SBR, AM, or OM included in the Tier A Municipality's stormwater program, the SPPP shall:
    - a. Describe the method of implementation;
    - b. Include detailed record keeping, as appropriate or as required;
    - c. Include an implementation schedule consistent with permit requirements, including interim milestones;
    - d. Include any special diagrams required by the permit (i.e., Storm Drain Inlet Labeling and Illicit Connection Elimination and MS4 Outfall Pipe Mapping);
    - e. Sharing responsibilities (If the Tier A Municipality wants to share responsibilities for implementing one or more control measures (other than OMs) with one or more other entities pursuant to N.J.A.C. 7:14A-25.7(a), the SPPP must describe which measure(s) the Tier A Municipality will implement, and identify the entity(ies) that will implement the other measure(s));
    - f. Include maintenance schedules, as appropriate; and
    - g. Include inspection schedules, as appropriate.
- C. Identifying Areas Served by Combined Sewer
1. Tier A Municipalities that want to exclude any "combined sewer area" from the stormwater program must include a map showing the boundaries of the combined sewer area. A "combined sewer area" is an area that is excluded because all stormwater from that area (and operated by the municipality) is discharged to combined (or sanitary) sewer systems.

## Attachment B PROCEDURES FOR DETECTING, INVESTIGATING, AND ELIMINATING ILLICIT CONNECTIONS

### Detection

An illicit connection for the purposes of this permit, is any physical or non-physical connection that discharges domestic sewage, non-contact cooling water, process wastewater, or other industrial waste (other than stormwater) to the Tier A Municipality's small MS4, unless that discharge is authorized under a NJPDES permit other than this Tier A Municipal Stormwater General Permit (non-physical connections may include, but are not limited to, leaks, flows, or overflows into the municipal separate storm sewer system). An illicit connection is also any category of non-stormwater discharges that a Tier A Municipality identifies as a source or significant contributor of pollutants pursuant to 40 C.F.R. 122.34(b)(3)(iii).

MS4 outfall pipes, for the most part, should not be discharging during substantial dry periods (72 hours after a rain event). Such flow is frequently referred to as "dry weather flow", which may be the result of an illicit connection. All dry weather flows are generally non-stormwater discharges, however not all dry weather flows are illicit connections. Some non-stormwater flows result from the improper disposal of waste (e.g., radiator flushing, engine degreasing, improper disposal of oil) and some may be the result of allowable discharges such as residential car washing, irrigation runoff, permitted (NJPDES) discharges and natural waters (e.g., spring water and groundwater infiltration). By using the Department's Illicit Connection Inspection Report form and making physical observations, a Tier A Municipality will compile information that will help determine if the dry weather flow is an illicit connection and the most likely source of the illicit connection. After making these physical observations, additional chemical field testing will enable a Tier A Municipality to further narrow the potential source(s) of the illicit connection.

The first physical observation is to observe if there is a dry weather flow. Some dry weather discharges are continuously flowing and some are intermittent. Observations will allow the Tier A Municipality to establish with reasonable certainty if there is an intermittent flow. If there are indications of intermittent flows (staining, odors, deterioration of outfall structure) follow-up investigations are required (see Investigation section). An estimate of the flow rate of the discharge shall also be noted (flow rate can be estimated by various methods, including timing how long it takes to fill a container of a known size). Additional physical observations and measurements shall be made for odor, color, turbidity, floatable matter, temperature, deposits and stains, vegetation and algal growth and condition of outfall structure (see Illicit Connection Inspection Report form). Information compiled from physical observations and field monitoring should be used to help identify potential sources. These observations are very important since they are the simplest method of identifying grossly contaminated dry weather flows. If physical observations alone are sufficient to warrant further investigation, then field testing is not required.

If a dry weather flow exists, and after making all physical observations (unless physical observations are enough to warrant further investigation), the Tier Municipality shall field test for surfactants (detergents). If these flows contain surfactants in excess of the detection limit, Tier A Municipalities shall field test for ammonia (as N) and potassium to help distinguish sanitary wastewater sources from other non-stormwater flows that contain detergents. Non-stormwater

discharges that are absent of surfactants shall be tested for fluoride to help distinguish potable from non-potable sources. Municipalities should refer to the Tier A Stormwater General Permit Guidance Manual for assistance and interpretation of field testing results.

All of the tests for the tracing of illicit connections may be performed in the field by employees of the Tier A Municipality or may be contracted out. Lab certification for those parameters is **not** required, however all person(s) responsible for calibrating, maintaining, and taking field samples shall be trained in the use of the equipment and appropriate field testing protocol.

#### Investigation

Any storm sewer outfall pipe found during the initial inspection or on any subsequent inspection to have a non-stormwater discharge or indications of an intermittent non-stormwater discharge requires further investigation by the Tier A Municipality to identify and locate the specific source. Non-stormwater discharges suspected of being sanitary sewage and/or significantly contaminated shall be prioritized and investigated first. Investigations of non-stormwater discharges suspected of being cooling water, washwater, or natural flows may be delayed until after all suspected sanitary sewage and/or significantly contaminated discharges have been investigated, eliminated and/or resolved.

Dry weather flows believed to be an immediate threat to human health or the environment shall be reported immediately to the Department's Action Hotline at 1-877-WARNDEP (1-877-927-6337).

Physical observations and field testing can help narrow the identification of potential sources of a non-stormwater discharge. However it is unlikely that either will pinpoint the exact source. Therefore, Tier A Municipalities will need to perform investigations "upstream" to identify illicit connections to systems with identified problem outfalls.

All non-stormwater discharges, whether continuous or intermittent must be investigated by the Tier A Municipality. All investigations must be resolved. If the source is found to be a non-stormwater discharge authorized under Part I, Section A.2.c of the permit, no further action is required. If a non-stormwater discharge is found but no source is able to be located within six (6) months of beginning the investigation, then the Tier A Municipality shall submit to the Department a Closeout Investigation form to close out the investigation. The Tier A Municipality must document that a good faith effort was made to find the source of the dry weather discharge and document each phase of the investigation. If the observed discharge is intermittent the Tier A Municipality must document, in the Illicit Connection Inspection Report form, that a minimum three (3) separate investigations were made to observe the discharge when it is flowing. If these attempts are unsuccessful, the Tier A Municipality shall submit to the Department the Closeout Investigation form noted above. However, since this is an ongoing program, the Tier A municipality should periodically recheck these suspected intermittent discharges.

#### Elimination

Non-stormwater discharges traced to their source and found to be illicit connections subject to the ordinance prohibiting illicit connections shall be eliminated. At the time the illicit connection is detected the responsible party shall be cited for violation of the municipal ordinance prohibiting

illicit connections and given thirty (30) days to cease the non-stormwater discharge. The responsible party may apply for a NJPDES permit for the discharge, but the discharge shall be ceased until a valid NJPDES permit has been issued by the Department. Tier A Municipalities are required to verify that the illicit discharge was eliminated by the responsible party within the specified timeframe and ensure that measures taken to eliminate the discharge are permanent and are not done in such a manner that would allow easy reconnection to the MS4.

When a responsible party fails to eliminate the discharge, Tier A Municipalities shall take the necessary steps to enforce their ordinance, including court action. In such instances the Department shall be notified by written correspondence so it is aware of any pending action and is able to provide assistance if needed.

If an illicit connection cannot be located or is found to emanate from another public entity, Tier A Municipalities must submit to the Department a written explanation detailing the results of the investigation and notify that public entity.

## Attachment C DESIGN STANDARD - STORM DRAIN INLETS

This standard applies to storm drain inlets installed as part of new development and redevelopment projects (public or private) that disturb one acre or more. In addition, retrofitting of existing storm drain inlets to this standard is required where such inlets are in direct contact with repaving, repairing (excluding repair of individual potholes), reconstruction or alterations of facilities owned or operated by the Tier A Municipality. For exemptions to this standard see "Exemptions" below.

### Grates in Pavement or Other Ground Surfaces

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).
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.

(In regard to whether the different grate must also be bicycle safe, the Residential Site Improvement Standards include requirements for bicycle-safe grates.)

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.

### Curb-Opening Inlets (Including Curb-Opening Inlets in Combination Inlets)

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.

### Exemptions

#### *Retrofitting Exemptions*

1. Repaving, repairing, reconstruction or alterations projects that began construction prior to March 3, 2004, and projects that were awarded bid prior to March 3, 2004, are exempted from the storm drain inlet design standard.
2. Existing curb-opening inlets do not need to be retrofitted to meet the design standard if each individual clear space in the curb opening has an area of no more than nine (9.0) square inches.

### *Hydraulic Performance Exemptions*

1. New Development and Redevelopment Projects - 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. Retrofitting of existing storm drain inlets - Where the review agency determines that this standard would cause inadequate hydraulic performance.

### *Alternative Device Exemptions*

1. Where flows from the water quality design storm as specified in N.J.A.C. 7:8 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.
2. 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 N.J.A.C. 7:8.

Note - The preceding exemptions do not authorize any infringement of requirements in the Residential Site Improvement Standards for bicycle-safe grates in new residential development (N.J.A.C. 5:21-4.18(b)2 and 7.4(a)).

### *Historic Places Exemption*

Where the Department 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.

**Attachment D**  
**REQUIRED PRACTICES FOR FUELING OPERATIONS, VEHICLE  
MAINTENANCE, AND GOOD HOUSEKEEPING SBRs**

A. The following BMPs must be implemented at maintenance yards including maintenance activities at ancillary operations (for example, impound yards, solid waste transfer stations, mobile fueling), where applicable, operated by Tier A Municipalities:

**1. Inventory Requirements for Municipal Maintenance Yard Operations (including Ancillary Operations)**

a. Tier A Municipalities shall include for municipal maintenance yard operations an inventory that includes the following:

i. A list to be made part of the SPPP of general categories of all materials or machinery located at the municipal maintenance yard, which could be a source of pollutants in a stormwater discharge. The materials in question include, but are not limited to: raw materials; intermediate products; final products; waste materials; by-products; machinery and fuels; and lubricants, solvents, and detergents that are related to the municipal maintenance yard operations or ancillary operations. Materials or machinery that are not exposed to stormwater or that are not located at the municipal maintenance yard or related to its operations do not need to be included.

**2. Fueling**

a. No topping off vehicles, mobile fuel tanks, and storage tanks. Drip pans must be used under all hose and pipe connections and other leak-prone areas during bulk transfer of fuels.

b. Block storm sewer inlets, or contain tank trucks used for bulk transfer, with temporary berms or temporary absorbent booms during the transfer process. If temporary berms are being used instead of blocking the storm sewer inlets, all hose connection points associated with the transfer of fuel must be within the temporary berms during the loading/unloading of bulk fuels. A trained employee must always be present to supervise during bulk fuel transfer.

c. Clearly post, in a prominent area of the facility, instructions for safe operation of fueling equipment, and appropriate contact information for the person(s) responsible for spill response.

d. Any equipment, tanks, pumps, piping and fuel dispensing equipment found to be leaking or in disrepair must immediately be repaired or replaced.

**3. Vehicle Maintenance**

a. Perform all vehicle and equipment maintenance at an indoor location with a paved floor whenever possible. For projects that must be performed outdoors that last more than one day, portable tents or covers must be placed over the equipment being serviced when not being worked on, and drip pans must be used.

#### 4. General Good Housekeeping

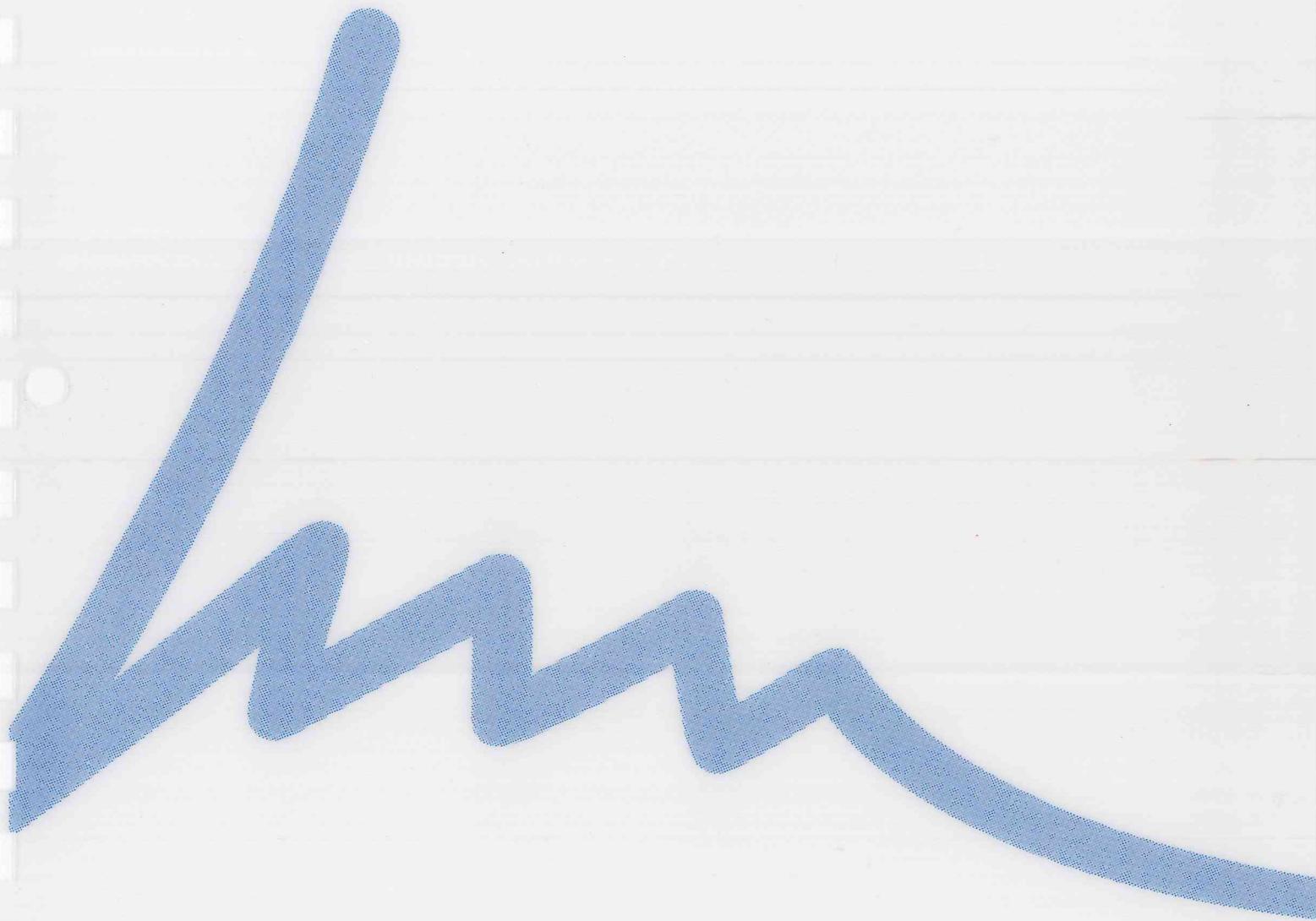
- a. Properly mark or label all containers. Labels must be kept clean and visible. All containers must be kept in good condition and tightly closed when not in use. When practical, containers must be stored indoors. If indoor storage is not practical, containers may be stored outside as long as they are covered and placed on spill platforms. An area that is graded and/or bermed that prevents run-through of stormwater may be used in place of spill platforms. Outdoor storage locations must be regularly maintained.
- b. Conduct cleanups of any spills or liquids or dry materials immediately after discovery. Clean all maintenance areas with dry cleaning methods only. Spills shall be cleaned up with a dry, absorbent material (i.e., kitty litter, sawdust, etc.) and the rest of the area is to be swept. Collected waste is to be disposed of properly. Clean-up materials, spill kits and drip pans must be kept near any liquid transfer areas, protected from rainfall.

#### 5. Good Housekeeping Practices for Salt and De-icing Material Handling

- a. The SPPP for De-icing Material Storage shall include the following required practices to ensure that Municipal Maintenance Yard Operations prevent or minimize the exposure of salt and de-icing materials to stormwater runoff from storage, loading and unloading areas and activities:
  - i. Prevent and/or minimize the spillage of salt and de-icing materials during loading and unloading activities.
  - ii. At the completion of loading and unloading activities, spilled salt and de-icing materials shall be removed using dry cleaning methods and either reused or properly discarded.
  - iii. Sweeping by hand or mechanical means of storage and loading/unloading areas shall be done on a regular basis. More frequent sweeping is required following loading/unloading activities. Sweeping shall also be conducted immediately following, as practicable, loading/unloading activities.
  - iv. Tracking of materials from storage and loading/unloading areas shall be minimized.
  - v. Minimize the distance salt and de-icing materials are transported during loading/unloading activities.
- b. Interim Seasonal Tarping - All Tier A Municipalities must tarp all de-icing materials until a permanent structure is built. Interim storage measures must include, but are not limited to the following:
  - i. Tarping materials that are not actively being used.
  - ii. The storage of de-icing materials (salt and de-icing products) outside is limited to October 15<sup>th</sup> through April 30<sup>th</sup>. All salt and de-icing materials must be removed from the site prior to May 1<sup>st</sup> and may not be stored outside again until October 15<sup>th</sup>.
  - iii. The implementing of a regular inspection, sweeping and housekeeping program to ensure that the material is maintained and stored in a proper manner.

## 6. Inspections

- a. Inspections of all Municipal Maintenance Yard Operations shall be conducted regularly.
- b. Discharge of Stormwater from Secondary Containment
  - i. The discharge pipe/outfall from a secondary containment area must have a valve and the valve must remain closed at all times except as described below. A municipality may discharge stormwater that accumulated in the secondary containment area if a visual inspection is performed to ensure that the contents of aboveground storage tank have not come in contact with the stormwater to be discharged. Visual inspections are only effective when dealing with materials that can be observed, like petroleum. If the contents of the tank are not visible in stormwater, the municipality must rely on previous tank inspections to determine with some degree of certainty that the tank has not leaked. If the municipality cannot make a determination with reasonable certainty that the stormwater in the secondary containment area is uncontaminated by the contents of the tank, then the stormwater shall be hauled for proper disposal.



# New Jersey Stormwater Best Management Practices Manual

April 2004

## A P P E N D I X D

# Model Stormwater Control Ordinance for Municipalities

*Important note: This sample ordinance is provided to assist municipalities in the development of municipal stormwater control ordinances and the incorporation of design and performance standards into municipal stormwater management plans. It is provided for information purposes only. It is important that current regulations are carefully reviewed before any portion of this draft ordinance is adopted.*

*This model ordinance does not include a section on fees. The Department expects that the review of development applications under this ordinance would be an integral part of the municipal review of subdivisions and site plans. As a result, the costs to municipalities 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.*

*Notes are provided in italics throughout this model stormwater control ordinance, and are not intended to be adopted as part of the ordinance.*

An editable Word version of this model ordinance is available at <http://www.state.nj.us/dep/watershedmgt/bmpmanualfeb2004.htm>.

## 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.

*Note: Municipalities are encouraged to participate in the development of regional stormwater management plans, and to adopt and implement ordinances for specific drainage area performance standards that address local stormwater management and environmental characteristics.*

### 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:

- a. Non-residential major developments; and
- b. 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 [*insert name of municipality*].

### 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 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. 7:8E-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.

"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, [*insert name of municipality*], 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.

"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 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 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;
  - 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
    - (4) 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:

- (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](http://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:

(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 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.

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](http://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.
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.
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;
- (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 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:
1. 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.

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

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.

*Note: The provisions of this section are not intended to preempt more stringent municipal or county safety requirements for new or existing stormwater management basins. Municipal and county stormwater management plans and ordinances may, pursuant to their authority, require existing stormwater management basins to be retrofitted to meet one or more of the safety standards in Sections 8.B.1, 8.B.2, and 8.B.3 for trash racks, overflow grates, and escape provisions at outlet structures.*

### 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.

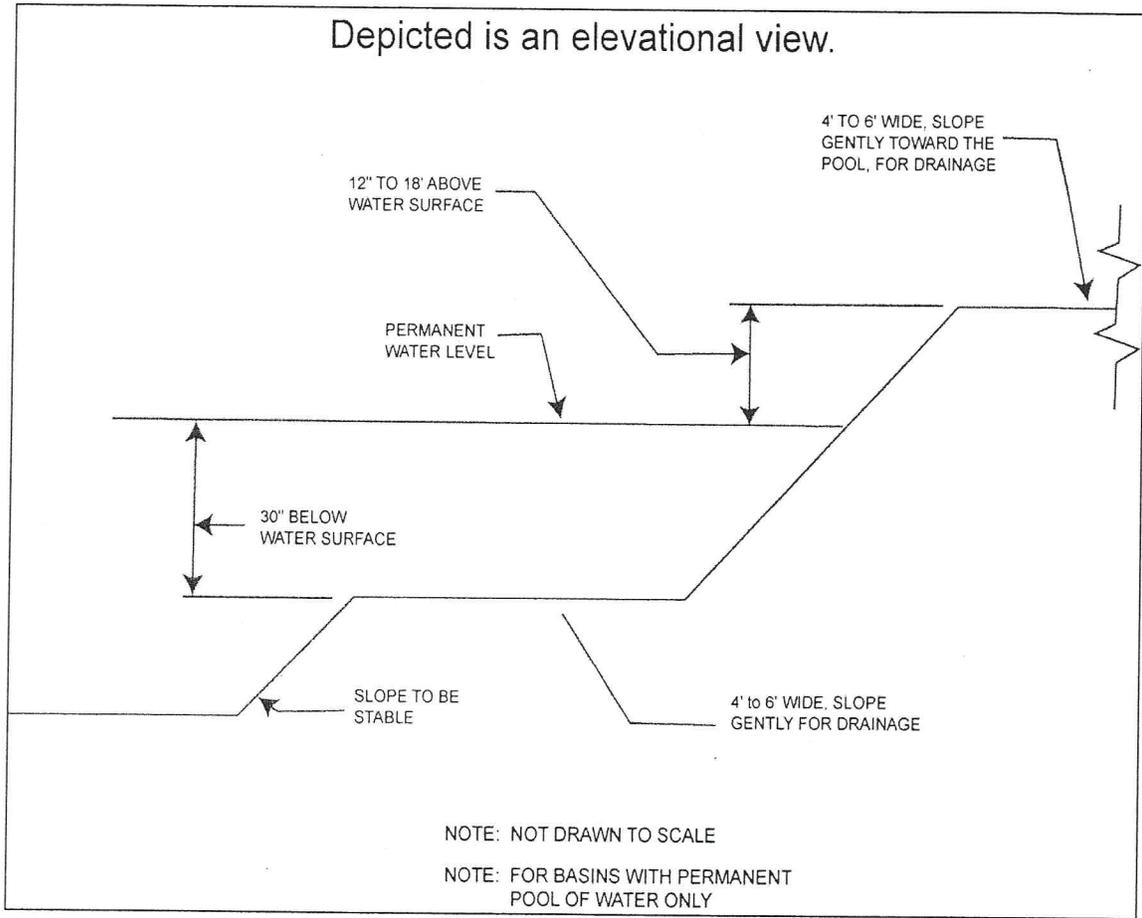
- c. The overflow grate shall be constructed and installed to be rigid, durable, and corrosion resistant, and shall be designed to withstand a perpendicular live loading of 300 lbs./ft sq.
3. For purposes of this paragraph 3, escape provisions means the permanent installation of ladders, steps, rungs, 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.
    - 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

Depicted is an elevational view.



## 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 [*specify number*] 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 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.

## 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.
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.

*(Note: It may be appropriate to delete requirements in the maintenance and repair plan that are not applicable if the ordinance requires the facility to be dedicated to the municipality. If the municipality does not want to take this responsibility, the ordinance should require the posting of a two year maintenance guarantee in accordance with N.J.S.A. 40:55D-53. Guidelines for developing a maintenance and inspection program are provided in the New Jersey Stormwater Best Management Practices Manual and the NJDEP Ocean County Demonstration Study, Stormwater Management Facilities Maintenance Manual, dated June 1989 available from the NJDEP, Watershed Management Program.)*

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:  
[Municipality 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.