

TOWNSHIP OF CHERRY HILL

MUNICIPAL STORMWATER MANAGEMENT PLAN

AND

STORMWATER POLLUTION PREVENTION PLAN

PREPARED FOR:

TOWNSHIP OF CHERRY HILL 820 Mercer Street Cherry Hill, New Jersey 08034

NJPES #NJG 0152374 PI ID # 171635 Camden County

DRAFT: APRIL 4, 2004 FINAL: JUNE 6, 2005 REVISED:

Vevin Becica, PE, PP, CME NJ PE #29940



ENVIRONMENTAL RESOLUTIONS, INC. ENGINEERS, SCIENTISTS & PLANNERS

815 East Gate Drive, Suite 103, Mount Laurel, New Jersey 08054-3415 TEL 856-235-7170 FAX 856-273-9239 mail@erinj.co

TABLE OF CONTENTS

<u>INDEX</u>

<u>PAGE</u>

1.0	Regulations Impacting Cherry Hill Township	2
2.0	Introduction to Cherry Hill Stormwater Management Plan	8
3.0	Goals	9
4.0	Stormwater Discussion	10
5.0	Cooper River Watershed Management Plan	12
6.0	Cherry Hill Township	12
7.0	Design and Performance Standards	15
8.0	Plan Consistency	16
9.0	Evaluation of Master Plan	16
10.0) Land Use/Build-Out Analysis	17
11.C	Mitigation Plans	17
12.0	Stormwater Pollution Prevention Plan Forms 1-17	23

APPENDICES

Map 1. Existing Conditions

Map 2. Groundwater Recharge and Wellhead Protection Areas (WPAs)

- Map 3. Soil Types
- Map 4. Land Use Wetlands Designations
- Map 5. HUC 14 Delineation on USGS Quadrangle Map

Map 6. New Jersey's Watershed, Watershed Management Areas, and Water Regions

- Map 7. Flood Prone Areas
- Map 8. AMNET and Stream Quality Monitoring Stations

ATTACHMENT 1. Township of Cherry Hill, Sample Stormwater Ordinance

ATTACHMENT 2. Sample Stream Buffer Ordinance

ATTACHMENT 3. Restoration of Urban Streams, Practical Evaluation of Options

ATTACHMENT 4. NJAC 7:8 Subchapter 4 Municipal Stormwater Management Planning

ATTACHMENT 5. New Jersey's Integrated List of Waterbodies, Sublist 1~5

1.0 Regulations Impacting Cherry Hill Township

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

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

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

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

The Township of Cherry Hill contains a Municipal Separate Storm Sewer Systems known as an MS4 and is considered a Tier A municipality under the New Jersey Pollutant Discharge Elimination System (NJPDES). The regulations for the NJPDES Tier A Permits were issued on February 2, 2004 and became effective March 3, 2004. The Township of Medford was required to submit a Request for Authorization, known as a RFA on March 31, 2004 and the permit authorizations was dated April 1, 2004. April 1, 2004 is known as the effective date of the permit authorization or the EDPA date.

Under Section F.3.b.ii of the Tier A NJPDES Permit, municipalities are required to adopt a municipal stormwater management plan in accordance with NJAC 7:8-4 within 12 months of the effective date of the permit authorization, or by April 1, 2005. The municipal stormwater management plan is abbreviated as the MSWMP.

Under Section E.2 of the Tier A NJPDES Permit, municipalities are required to prepare and implement a written stormwater pollution prevention plan within 12 months of the effective date of the permit authorization, or by April 1, 2005. The municipal stormwater pollution prevention plan is abbreviated as the SPPP. The basic SPPP consists of seventeen forms to be completed and implemented by the team members of the pollution prevention plan. The pollution prevention plan completed by April 1, 2005 will be signed and certified and kept on file within the municipality for inspection by NJDEP. The pollution prevention plan forms, maps and lists will become a "living document" that will change throughout the year and will track how the pollution prevention plan has been implemented by the municipality.

Under Section F.5 of the Tier A NJPDES Permit and as part of the municipal stormwater pollution prevention plan, the municipality must adopt improper disposal of waste ordinances to prevent pollution from entering the inlets and streams within the municipality by October 1, 2005. These ordinances include pet waste, litter control, improper disposal of waste, wildlife feeding, yard waste, and illicit connection ordinances.

Under Section H.3.a of the Tier A NJPDES Permit, the Township of Cherry Hill is required to file an Annual Report and Certification to the New Jersey Department of Environmental Protection on or before May 2, 2005 and every 12 months thereafter. The Annual Report and certification shall be maintained by the municipality for a period of five years. The Annual Report and Certification is the only document required to be sent to NJDEP.

Under Section F.3.b.ii of the Tier A NJPDES Permit, municipalities are required to adopt ordinances to implement the municipal stormwater management plan 12 months after the adoption of the municipal stormwater plan. In effect, municipalities have 24 months from the effective date of the permit authorization, or by April 1, 2006 to adopt stormwater management ordinances that set forth exact stormwater management design standards for development and redevelopment.

The municipal plan is required to conform to the regional stormwater management plan and must be reviewed and approved by the County review agency and NJDEP. For the Township of Cherry Hill, the municipal stormwater management plan and ordinances must be reviewed and approved by Camden County and must conform to the Cooper River Regional Stormwater Management Plan Guidance Document dated May 2004 prepared by the Camden County Soil Conservation District.

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

Subchapter 5 of NJAC 7:8 sets forth the groundwater recharge, water quantity, and water quality standards for stormwater design. If any exceptions are required from the design and performance standards for development projects over one acre submitted to the Planning or Zoning Board, the stormwater management plan identifies mitigation options to offset the exceptions. Cherry Hill has unique characteristics and the mitigation plan provides the municipality with the power to correct and repair deficiencies that may be creating water quality impairments within each sub watershed.

To summarize, the Stormwater Management Plan is one of the many requirements that the Township of Cherry Hill must complete in order to fulfill the MS4 Permit and receive grand funds. The adoption of the stormwater management plan as part of the municipal master plan through a public hearing is required as part of the MS4 permit. The adoption of the stormwater management plan will be followed by the adoption of the stormwater management ordinances by April 1, 2006.

The timeline to complete the requirements of the Municipal Separate Storm Sewer (MS4) Permit is shown in graphical form on the next page. The requirements are listed in a tabular form on the Tier A Matrix on the next page. The Tier A matrix is prepared by NJDEP as part of the Municipal Stormwater Regulation Program.

- MS4 Tier A Permit Timeline

Į.	2609	ROF](10 .		di evi	
	(EDPA)	April 1, 2005 (12 Months)	Oct 1, 2005 (18 Months)	April 1, 200 (24 Months)	6 M	April 1, 20 (36 Month	07 5)	
				Feb. 2, 2006 (22 Months)				
Stomwater Pollution Prevention Plan (SWPPP)							++++	
Municipal Stormwater Management Plan (MSWMP)								
Adopt Improper Disposal Ordinances			a colo					
Adopt Municipal Stormwater Ordinances								
Annual Report III Cost May 2, 2005							++++	
Distribution of NIDEP Edu Material							++++	
Once Each Year							++++	
Conduct Annual Educational Event			\otimes					
Each September								
Create 2-Sector Storm Drain Map								┿╋┿
50% Storm Drain Labeling		20001000000	50% OF INL	ETS ADJACENT TO SIL	DEWALKS			
51%-100% Storm Drain Labeling							100%	OF INLETS ADJ
Create Street Sweepings Map	TO AND SALES AND TO HARD TO						+++++	
Monthly Street SweepIngs								
Employee Training								
Create 2-Sector Outfall Map								
50% Outfall Pipe Mapping		Contraction of the second	5	% OF OUTFALL PIPES				
51%-100% Outfall Pipe Mapping								100% OF OU
Develop Illicit Connection Program						┫┼┼┼┼┼	++++	
Illicit Connection Inspections				11111				
Outfall Pipe Scour Detection								
Pipe Repair Schedule								
Maintenance Yard Operations - S.O.P.								
Employee Training					TIT			

Environmental Resolutions, Inc.



N	UPDES Municipal Stormwater Regulation Program	
S	ummary of Statewide Basic Requirements (SDD	n ~)
	Tier A Municipal Stormwater Permit (NI0141852)	s)
	(Please refer to final permit for details on SBRs)	
Statewide Basic Requirement	Minimum Standard	Implementation Schedule
Prevention Plan (SPPP)	SPPP describes the municipality's stormwater program, which includes details on the implementation of required SBRs.	12 months from effective date of permit authorization
Public Notice	Comply with applicable State and local public notice requirements when providing for public participation.	Upon EDPA
Post-Construction	Stormwater Management in New Development and Redevelopment	
Stormwater	Adopt stormwater management (SWM) plan in accordance with N I A C	ient
Management Plan	7:8-4.	from EDPA
Ordinance	Adopt and implement stormwater control ordinance in accordance with N.J.A.C. 7:8-4.	Adopt ordinance 12 months from SWM
Residential Site Improvement Standards	Ensure compliance with Residential Site Improvement Standards for stormwater management (N.J.A.C. 5:21-7), including any exception, waiver, or special area standard approved under N I A C 5:21.2	Upon EDPA
BMP Operation and Maintenance	Ensure adequate long-term operation and maintenance of BMPs.	EDPA for BMPs on municipal property, 24 months for BMPs elsewhere.
Design Standard for New Construction	Attachment C of the permit.	12 months from EDPA if municipally installed. Otherwise 24 mos.
Local Public Educat	ion	from EDPA
Local Public Education Program	Copy and distribute educational brochure (provided by the Department) annually to residents and businesses, and conduct a yearly educational "event". Have brochure available at this event.	Start 12 months from EDPA
Storm Drain Labeling	Label all municipal storm drain inlets that are next to sidewalks, or within plazas, parking areas or maintenance yards. Coordinate efforts with watershed groups and volunteer organizations	Within 60 months from EDPA
Improper Disposal o	f Waste	
Pet Waste Ordinance	Adopt and enforce an ordinance requiring owners and keepers to immediately and properly dispose of their pet's solid waste. Distribute information with pet licenses regarding the ordinance and the environmental benefits of proper disposal of pet waste.	Complete 18 mos. and ongoing
Litter Ordinance	Adopt and enforce a litter ordinance, or enforce the existing State litter statute (N.J.S.A. 13:1E-99.3).	Complete 18 mos.
Improper Waste Disposal Ordinance	Adopt and enforce an ordinance prohibiting spilling, dumping or disposal of any materials other than stormwater into the MS4.	Complete 18 mos. from EDPA and ongoing

Wildlife Feeding	Adopt and enforce an ordinance that and it is a stress	
Ordinance	wildlife in any public parts or proparty own of	Complete 18
	(except environmental education centers)	months from
Yard Waste	Adopt and enforce an ordinance that prohibits placing and in the	EDPA and ongoing
	yard waste in the street, OR collect yard waste monthly Oct. Day	Start 18 months
	spring, and "as needed" during remainder of year. Non-containering during	from EDPA and
IIII-h C	waste cannot be placed any closer than 10' from a storm drain inlet	ongoing
Ordinance	Develop, implement and enforce a ordinance, to the extent allowable under	Develop &
Orumance	State law, to prohibit illicit connections to the MS4.	implement 18
Illicit Connection	D. I. I.	months from EDPA
Elimination Program	Develop, implement and enforce a program to detect and eliminate illicit	Develop &
	connections into the municipality's small MS4.	implement 18
MS4 Outfall Pipe	Man all municipal storm and the	months from EDPA
Mapping	water by dividing the municipality int pipes which discharge to surface	Map 1st sector 36
	outfall mapping.	mos. from EDPA.
	11-6	Map 2 nd sector 60
Solids and Floatab	le Controls	mos. from EDPA
Street Sweeping	In predominantly commercial areas conduct monthly supervise of a latit	Lauria
	streets, roads and highways (with a speed limit < 35 mph) wasther and	Start 12 months
Chan D. L. L.	street surface conditions permitting.	from EDPA and
Storm Drain Inlet	Retrofitting of storm drain inlets during road repair, reconstruction	Start 12 months
Reconting	alterations or repaying with inlets that meet the design standards specified	from EDPA and
Stormwater Facility	In Attachment C of the permit.	ongoing
Maintenance	Develop and implement a stormwater facility maintenance program that	Start 12 months
	operation of all municipally caused and ensures proper function and	from EDPA and
Road Erosion Control	Develop a roadside erogion control mainten	ongoing
Maintenance	stabilize roadside erosion. Make repairs in accordance with the Sta	Start 18 months
	for Soil Erosion and Sediment Control in New Jersey (N LA C 2:00 1)	from EDPA and
Outfall Pipe Stream	Develop and implement a stormwater outfall pine scouring detection	ongoing
Scouring Remediation	remediation and maintenance program to identify and stabilize localized	from EDPA and
	stream and stream bank scouring in the vicinity of outfall pipes operated by	ongoing
	the municipality. Repairs shall be in accordance with the Standards for Soil	cu bound
Maintenance Vard	Operations	
De-icing Material	Constructions	
Storage	materials Seasonal territor in the storage with an impermeable floor for deicing	Comply w/ tarping
	permanent structure is completed. Unsequend as an interim BMP until the	& sand storage
	a 50' setback is maintained from any storm sever islat	requirements w/in
	and any storm sewer milet.	12 mos, complete
		perm. structure
		w/in 36 mos. from
Fueling Operations	Develop and implement SOPs for vehicle fueling and bulk delivery on the	EDPA.
	implement with the required practices contained in Attachment D of the	Start 12 months
1.1.1.1.1.1.	permit.	from EDPA and
venicle Maintenance	Implement required practices for vehicle maintenance contained in	Start 12 mag from
Good Houseless !	Attachment D of the permit.	EDPA & ongoing
Good Housekeeping	Implement required practices for good housekeeping, contained in	Start 12 mos from
Employee Trate	Attachment D of the permit.	EDPA & ongoing
Employee Training		angoing
Employee Training	Develop and conduct an employee training program for appropriate	Start 12 mos from
	employees that covers the required topics contained in the permit.	EDPA & ongoing

2.0 Introduction to Cherry Hill Stormwater Management Plan

This Municipal Stormwater Management Plan documents the strategy for Cherry Hill Township to address stormwater-related impacts. The creation of this plan is required by NJAC 7:1 4A-25 Municipal Stormwater Regulations. This plan contains all of the elements required by April 1, 2005 as described in NJAC 7:8 Section 4.2 of the Stormwater Management Rules. Cherry Hill Township contains more than one square mile of open space and agricultural land. As described in schedule for adoption of the stormwater management plan and ordinances NJAC 7:8 Section 4.3, the completed elements of NJAC 7:8-4.2(c)8 and 9 will be provided on or before February 10, 2006.

An aerial view of the Township, which illustrates the major waterways, is provided in the Appendix, Map 1, Existing Conditions. This Municipal Stormwater Management Plan addresses groundwater recharge, stormwater quantity, and stormwater quality impacts by incorporating stormwater design and performance standards for new major development, defined as projects that disturb one or more acre of land. Note that the definition of major development for the Stormwater Management Plan does not include the increase of impervious area by more than one quarter acre. The implementation of these standards into the Cherry Hill Master Plan is intended to minimize the adverse impact of stormwater runoff on water quality and water quantity and the loss of groundwater recharge that provides baseflow in receiving water bodies. The plan stresses best management practices with long term operation and maintenance measures for existing and future stormwater facilities that perform well in the soil and water table conditions within Cherry Hill Township and can be maintained by the Cherry Hill Township Public Works Department.

Residential projects must meet the Residential Site Improvement Standards for stormwater management design before the Cherry Hill Planning and Zoning Boards. The RSIS standards are the same as the design and performance standards for stormwater management under NJAC 7:8-5 and the design and performance standards being implemented in the Cherry Hill Stormwater Management Plan.

Non-residential development projects are currently reviewed under the design standards of the Ordinance 68-1, Cherry Hill Land Subdivision Ordinance, Article X, Design Standards and Specifications, Section M, Storm Drainage, for peak rate of runoff. Under the design standards, the post construction runoff should not be greater than pre-construction runoff to the greatest extent possible. The detention basin design standard controls the post development peak rate of runoff from a 25 year storm even to be less than pre-development peak rate of runoff from a 10 year storm event. The adoption of the NJPDES stormwater management design ordinances for projects greater than one acre will require the stormwater management basin design to meet water quality, water quantity and recharge requirements. Therefore, the implementation of this plan will have a significant impact on the design of commercial development projects.

The majority of projects within Cherry Hill in recent years have been for the rebuilding or expansion of existing sites. For example, the liquor store at the Ellisburg Circle is not a bank,

the single retail use on Haddonfield Road is now a multi-tenant retail center with an expanded parking lot, and the previous garden center on Kresson Road is being rebuilt as residential townhouses.

The final component of this plan is a mitigation strategy for when an exemption of the design and performance standards is sought. As part of the mitigation section of the stormwater plan, specific and general stormwater management projects within Cherry Hill are identified as alternative projects if a development cannot meet the stormwater standards. Exemptions are provided to ensure that commercial redevelopment of existing sites will continue to occur in Cherry Hill where the current stormwater standards cannot be imposed. Exemptions are not to be granted for proposed development on vacant or undeveloped property.

This plan has been prepared in conformance with the Cooper River Regional Stormwater Management Plan Guidance Document dated May 2004 prepared by the Camden County Soil Conservation District.

3.0 Goals

The goals of the Cherry Hill Municipal Stormwater Management Plan are to:

- Reduce the impact of stormwater runoff for all stormwater events, especially high frequency events. High frequency events are storms that occur frequently with low rainfall amounts (water quality storm)
- Improve base flow to streams by maintaining groundwater recharge
- Reduce silting of lakes and ponds by providing total suspended solids reduction and reduction of soil erosion from any development or construction project;
- Improving in-stream and riparian habitat for all watershed residents (humans, wildlife, flora and fauna)
- Reduce flood damage, including damage to life and property;
- Prevent further degradation of existing stream features and structures
- 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 best management practices.

To achieve these goals, a variety of management strategies are proposed for implementation. These strategies have been developed from the Cooper River Regional Stormwater Management Plan Guidance Document dated May 2004 prepared by the Camden County Soil Conservation District. The Cooper River Watershed Management Plan examined the Cooper River system within twelve municipalities; including Cherry Hill Township.

4.0 Stormwater Discussion

Land development can dramatically alter the hydrologic cycle (See figure F1) of a site and, ultimately, an entire watershed. Prior to development, native vegetation can either directly intercept precipitation or draw that portion that has infiltrated into the ground and return it to the atmosphere through evapotranspiration



Illustration by John M. Evans, Colorado District, USGS F1. Hydrologic Cycle

Development can remove this beneficial vegetation and replace it with lawn or impervious cover, reducing the site's evapotranspiration and infiltration rates. Clearing and grading a site can remove depressions that store rainfall. Construction activities may also compact the soil and diminish its infiltration ability, resulting in increased volumes and rates of stormwater runoff from the site. Impervious areas that are connected to each other through gutters, channels, and storm sewers can transport runoff more quickly than natural areas. This shortening of the transport or travel time quickens the rainfall-runoff response of the drainage area, causing flow in downstream waterways to peak faster and higher than natural conditions. These increases can create new and aggravate existing downstream flooding and erosion problems and increase the quantity of sediment in the channel. Downstream erosion, sediment deposits can be seen in photograph P1.



P1. Downstream Erosion and Sediment Deposits

Filtration of runoff and removal of pollutants by surface and channel vegetation is eliminated by storm sewers that discharge runoff direction into a stream. Increases in impervious area can also decrease opportunities for infiltration which, in turn, reduces stream base flow and groundwater recharge. Reduces 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. Groundwater recharge and well head protection areas are shown in the Appendix, on Map 2, Groundwater Recharge and Wellhead Protection Areas (WPAs). Soil types, which correspond to the recharge areas, are shown in the Appendix, on Map 3, Soil Types.

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

5.0 Cooper River Watershed Management Plan – Guidance Document

The regional watershed management plan for the Cooper River Watershed involves 11 municipalities in Camden County and 1 municipality in Burlington County. The watershed encompasses 30 square miles with a signification portion of the land being fully developed. The NJDEP funded the Cooper River Watershed Management Plan. The scope of work for the Cooper River Watershed grew out of a pilot program to study five different but typical watershed regions in various parts of Southern New Jersey. The plan is the result of work done since September of 2000 by the Camden County Soil Conservation District, NJDEP, Burlington, Cape-Atlantic and Gloucester Soil Conservation Districts and to some extent the stakeholders of the watershed. Due to policy changes at NJDEP during 2002, funding of the Public Advisory Committee (PAC) disrupted the stakeholder process. The product created as of April of 2004 is a Guidance Document.

The Cooper River Watershed Management Plan Guidance Document is a stream characterization and assessment from a hydrologic viewpoint. The assessment includes evaluation of the stream channel, stream bank, and riparian buffer. The Camden County Soil Conservation Service has located all stormwater outfalls, stormwater management basins, significant features and degraded areas within the watershed. The Cooper River Watershed Management Plan provides specific guidance regarding basin design requirements, mitigation planning, existing basin retrofitting and stream restoration locations.

6.0 Cherry Hill Township

6.1 Population and Land Use

The Township of Cherry Hill encompasses a 24.3 square mile area of Camden County, New Jersey. The Township is a regional commercial and residential center. Although Cherry Hill is mostly developed, it continues to experience significant development pressure, as indicated by the number of new residential dwellings constructed over the past few years (See Table 1). The population of the Township has increased from 64,395 in 1970 to 68,785 in 1980 to 68,348 in 1990 to 69,965 in 2000.

The Township has targeted particular areas of the community for redevelopment, such as the Garden State Park. The Stormwater Management Plan anticipates and plans for this new development activity in order to mitigate any negative effects on the City's waterways, such as increased stormwater runoff volumes and pollutant loads. Appendix **Map 8** illustrates the

streams in the Township boundaries. Appendix Map 5, HUC 14 Delineation depicts the Township's boundaries on the USGS quadrangle maps and shows the sub-watershed of each stream.

Table 1 – New Residential Structures			
Year	Units		
1999~2000	175		
1995~1998	779		
1990~1994	952		
1980~1989	3772		
1970~1979	5686		
1960-1969	8908		

As shown on Appendix, **Map 4, Land Use**, the overwhelming majority of land use within Cherry Hill Township is urban. Limited areas of forest, agriculture and wetlands remain within the Township.

6.2 Description of Watershed

There are six separate sub watershed drainage delineations within Cherry Hill Township. Each is delineated by a code called HUC 14 shown in the Appendix on Map 5, HUC 14 Delineation on USGS Quadrangle Map. The sub-watersheds belong to one of the twenty major watersheds in the State of New Jersey shown in the Appendix on Map 6, New Jersey's Watershed, Watershed Management Areas and Water Regions.

The central and southern portions of Cherry Hill Township contain tributaries to the Cooper River and are located within the Cooper River Watershed within the Lower Delaware Watershed Management Area 18. The northern boundary of Cherry Hill and its tributaries drain to the South Branch of the Pennsauken Creek within the Pennsauken Creek Watershed within the Lower Delaware Watershed Management Area 18. As documented in the Cooper River Regional Stormwater Management Plan, the land area flowing to the Cooper River is 68% developed and the stream corridor has degraded stream channels, stream bank erosion, channel erosion, degraded aquatic habitat and impaired water quality. The waterways, potential flood prone areas and flood prone areas are shown in the Appendix on Map 7, Flood Prone Areas.

The four watersheds within Cherry Hill that drain to the Cooper River and are located in Watershed Management Area 18 are:

- Cooper River (Rt. 130 to Wallworth Gage), 02040202110050
- North Branch Cooper River (below Springdale Road), 02040202110020
- Cooper River (Wallworth Gage to Evesham Road), 02040202110040
- North Branch Cooper River (above Springdale Road), 02040202110010

The two watersheds within Cherry Hill that drain to the South Branch of the Pennsauken Creek and are located in Watershed Management Area 18 are:

- South Branch Pennsauken Creek (below Rt. 41), 02040202100050
- South Branch Pennsauken Creek (above Rt. 41), 02040202100040

6.3 Stream Conditions

The New Jersey Department of Environmental Protection (NJDEP) has established an Ambient Biomonitoring Network (AMNET) to document the health of the state's waterways. There are over 800 AMNET sites throughout the state of New Jersey. These sites are sampled for benthic macroinvertebrates by NJDEP on a five-year cycle. Streams are classified as non-impaired, moderately impaired, or severely impaired based on the AMNET data. The data is used to generate a New Jersey Impairment Score (NJIS), which is based on a number of biometrics related to benthic macroinvertebrate community dynamics. The AMNET sites within Cherry Hill Township are shown in the Appendix on **Map 8, AMNET and Stream Quality Monitoring Stations**.

The New Jersey Integrated Water Quality Monitoring and Assessment Report, 205(b) and 303(d) are required by the Federal Clean Water Act. The report identifies waters that are impaired by watershed area. Sublist 5 of the Integrated List constitutes the list of waters impaired or threatened by pollutants. The list for Watershed 18 is included in Attachment 5 of the Appendix.

There are four AMNET Biological Monitoring Stations within Cherry Hill listed as severely impaired:

- ANO188, Cooper River North Branch at River Drive, Benthic Macroinvertebrates (Pg. 3)
- AN0187, Cooper River North Branch at Springdale Road, Benthic Macroinvertebrates (Pg. 3)
- AN0191, Cooper River South Branch at Route 41, Benthic Macroinvertebrates (Pg. 3)
- AN0183, Pennsauken Creek South Branch at Route 41, Benthic Macroinvertebrates (Pg.6)

The total maximum daily load, abbreviated TMDL, is the amount of a pollutant that can be accepted by a water body without exceeding water quality standards or interfering with the ability to use a water body for one or more of its designated uses. 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 plans, adoption of ordinances, reforestation of stream corridors, retrofitting stormwater systems, and other <u>best management practices</u>, or BMPs.

A TMDL Report was issued for the Cooper River by the NJDEP on April 19, 2004 entitled Amendment to the Tri-County Water Quality Management Plan, Total Maximum Daily Loads for Total Phosphorus to Address Four Stream Segments and Two Lakes in Cooper River Watershed, Camden County Lower Delaware Water Region.

A TMDL Report was issued for the Cooper River by the NJDEP on April 21, 2003 entitled Amendment to the Lower Delaware Water Quality Management Plan, Mercer County Water Quality Management Plan, Monmouth County Water Quality Management Plan, Ocean County Water Quality Management Plan and Tri-County Water Quality Management Plan, Total Maximum Daily Loads for Fecal Coliform Address 27 Streams in the Lower Delaware Water Region.

7.0 Design and Performance Standards

Cherry Hill Township currently utilizes the Residential Site Improvement Standards for stormwater management design for all residential development before the Planning and Zoning Boards. By adoption the RSIS standards, the design and performance standards for stormwater management under NJAC 7:8-5 have been applied to residential.

Non-residential development projects are currently reviewed under the design standards of the Ordinance 68-1, Cherry Hill Land Subdivision Ordinance, Article X, Design Standards and Specifications, Section M, Storm Drainage. The design requirements are that to the greatest extent possible, post construction runoff should not be greater than pre-construction runoff. Detention basin design is controlled by the post development peak rate of runoff from a 25 year storm event must be less that the pre-development peak rate of runoff from a 10 year storm event. The adoption of the NJPDES stormwater management basin design ordinances for projects greater than one acre will require the stormwater management basin design to meet water quality, water quantity and recharge requirements. The predevelopment peak rate of runoff from a 10 year storm will be reduced 75%; and the peak rate of runoff from a 100 year storm will be reduced 75%; and the peak rate of runoff from a 100 year storm will be reduced to be infiltrated or recharged after development. 80% of the total suspended solids will have to be removed from the water before it is discharged to the stream or storm pipe system through the use of one or more approved BMPs.

The Planning and Zoning Board review development plans to meet the stormwater regulations of the Residential Site Improvement Standards for residential development and to meet all Township standards for non-residential development. Under the Cherry Hill Engineering Department, Cherry Hill Township inspectors observe construction of all projects to ensure that the stormwater management measures are installed and constructed as shown on the approved plans.



P2. Storm Inlet in Conformance with Attachment C of Stormwater Regulations

8.0 Plan Consistency

Cherry Hill Township Stormwater Management Plan is consistent with Cooper River Regional Stormwater Management Plan Guidance Document dated May 2004, prepared by the Camden County Soil Conservation District.

9.0 Evaluation of Master Plan

The evaluation of the Cherry Hill entire master plan (including the land use element), official map and development regulations (including the zoning ordinance) is element 8 of NJAC 7:8-4.2. As described in the schedule for adoption of municipal stormwater management plan and ordinances Section NJAC 7:8-4.3, the requirements of 4.2(c)8 and 9 are not operative until February 2, 2006. The completed element of NJAC 7:8-4.2(c)8 will be provided on or before February 10, 2006.

10.0 Land Use/Build-Out Analysis

The Land Use/Build-Out Analysis is element 9 of NJAC 7:8-4.2. As described in the schedule for adoption of municipal stormwater management plan and ordinances Section NJAC 7:8-4.3, the requirements of 4.2 (c) 8 and 9 are not operative until February 2, 2006. The completed element of NJAC 7:8-4.2 (c) 9 will be provided on or before February 2, 2006.

11.0 Mitigation Plans

11.1 General

This mitigation plan is provided for proposed development projects greater than one acre in size on previously developed land that need exemptions from the stormwater management design and performance standards. Exemptions are provided to ensure that redevelopment of existing sites will continue within Cherry Hill where the current stormwater standards cannot be imposed. Exemptions are not to be granted for new development projects build on previously undeveloped land or open space. Mitigation projects can fall into the following Options:

<u>Option 1:</u> Exemptions are to be granted only upon the condition that the applicant provides a mitigation project of equal or additional stormwater design benefit value within the same subwatershed as delineated by the HUC 14 number. For example, if the applicant cannot reduce the peak rate of runoff from the 2, 10 and 100 year storm event to meet the 50%, 75% and 80% requirement on the site, the mitigation project might be retrofitting an existing basin within the same watershed with an outlet control device to reduce the peak rates of runoff by the same cfs reductions. The applicant would be required to analyze the existing drainage shed to the basin, and determine the outflow device that would meet the peak rate of flow requirements. The developer must ensure long term maintenance of the project, including maintenance requirements under Chapters 8 and 9 of the NJDEP Stormwater BMP Manual.

Under Option 1, the applicant may select a specific mitigation project listed in this plan or work with the Cherry Hill Engineering Department to determine a suitable mitigation project in the same drainage area (HUC 14) from the general types of mitigation projects listed in this plan. The review of stormwater management design for the site and stormwater criteria provided by the mitigation project will be reviewed and approved by the Planning or Zoning Board Engineer, whichever is applicable, under the review process.

<u>Option 2:</u> If a suitable site cannot be located or determined with the same drainage area (HUC 14) as the proposed development, as set forth in Option 1, the mitigation project may provide mitigation that does not have the equivalent stormwater design benefit value, but addresses the same issue (ie. Water quality, water quantity or recharge). For example, if the applicant cannot meet the 80% reduction of the Total Suspended Solids requirement at the site, the mitigation project might be a site creating a vegetated buffer at a lake edge to reduce fecal impairment, improving water quality.

In the case of Option 2, the applicant will be required to determine the cost of meeting the design requirement on the development site and provide a stormwater design of equal or greater value at the mitigation site. The cost estimates for the stormwater development and mitigation will be reviewed and approved by the Planning or Zoning Board Engineer, whichever is applicable, under the review process.

<u>Option 3:</u> The Planning or Zoning Board may allow the developer to provide funding for a specific project that has been identified in the Stormwater Management Plan if the value of meeting the on-site stormwater design is so low that it will not fund an entire project. The value of the funding must be equal or greater to the cost to implement the stormwater management design on site. The cost estimates for the stormwater development and mitigation will be reviewed and approved by the Planning or Zoning Board Engineer, whichever is applicable, under the review process.

Option 3 should be used only on small redevelopment projects where all other options have been exhausted. The collection of funds should be used as a last resort.

11.2 Specific Mitigation Projects by HUC

- 1. HUC 02040202100050, Columbia Lake, off Church Road
 - a. Shore line restoration (Coir log, straw wattles)
 - b. Lower lake and remove vegetation
 - c. Lower lake and de-silt
 - d. Landscape lake edge to reduce wildlife population



P3. Example of Coir Log Lining Pond Edge

- 2. HUC 02040202110020, Willits Pond, off Robin Lake Drive
 - a. Shore line restoration (Coir log, straw wattles)
 - b. Lower lake and remove vegetation
 - c. Lower lake and de-silt
 - d. Landscape lake edge to reduce wildlife population
- 3. HUC 02040202100040, Joe's Lake (aka Lake View Lake), between Greentree Way and Lakeview Drive
 - a. Shore line restoration (Coir log, straw wattles)
 - b. Lower lake and remove vegetation
 - c. Lower lake and de-silt
 - d. Landscape lake edge to reduce wildlife population
- 4. HUC 02040202110020, Embankment Repair behind Saint Andrews
 - a. Gabion Replacement
 - b. Additional Stream Embankment stabilization measures



P4. Example of Stream Embankment stabilization needed behind St. Andrew's Church

11.3 General Types of Mitigation Projects

All mitigation projects are to be under the review and approval of the Cherry Hill Township Engineering Department. The general type of mitigation projects within Cherry Hill Township are:

1. Stormwater Basin Retrofit

Provide water quality and recharge measures at existing stormwater basins within the same HUC 14 under the guidance of the Cherry Hill Township Engineering Department. The retrofit of existing basins may be accomplished through a variety and/or combination of options to meet the mitigation costs required. Retrofitting of basins should start with stormwater basins that are isolated from public view and not utilized for recreational activities. As the implementation of the Stormwater Pollution Prevention Plan and the educational outreach activities increase the general public's understanding of stormwater management and the fact that basins may hold water after a rainfall event in order to provide water quality, existing basins within the public view may be considered for retrofit. Review of each existing basin condition and surrounding condition should be reviewed with the Township before selecting one or more of the following options:

- a. Outlet Structure Modifications
- b. Re-grading and Planting
- c. Elimination of Low Flow Channels
- d. Installation of in-line or end-of-pipe BMP as approved by the NJDEP to treat stormwater before it enters into an existing stormwater management basin. Acceptable devices can be found at njstormwater.org.



P5. Example of Basin in Need of Maintenance

2. <u>Stream and Stream Bank Stabilization</u>

Mitigation projects other than those listed meeting the following criteria may be presented for review and approval by the Cherry Hill Township Engineering Department. Stabilization projects will be reviewed for the following benefits:

- a. Stabilization of eroded stream banks where public or provide property or structures are threatened
- b. Reduced sediment deposition in lakes, ponds, and other low velocity areas
- c. Improved water quality



P6. Example of Stream Embankment conditions along Cooper River causing Sediment Load



P7. Loss of Trees increasing Stream Water Temperature- Cooper River near Kings Highway

3. Stormwater Outfall Restoration

Mitigation of Existing Stormwater Outfalls within the same HUC 14 under the guidance of the Cherry Hill Township Engineering Department. The retrofit of existing outfalls may be accomplished through a variety and/or combination of options to meet the mitigation costs required. Review of each existing outfall condition should be reviewed with the Township before selecting one or more of the following options:

- a. Replacement of failed outfall structure with outfall protection
- b. Replacement with installation of drop manhole to set outfall structure at invert of stream channel with outlet protection
- c. Installation of in-line or end-of-pipe BMP as approved by the NJDEP to treat stormwater before the outfall point. Acceptable devices can be found at njstormwater.org.
- d. Disconnect outfall from receiving waterway to eliminate erosion condition. Permitted only with detailed hydrologic analysis of the receiving area



P8. Outfall Needing Repair

Lake and Pond Management

Provide a comprehensive management plan and maintenance schedule for publicly held lakes or ponds within Cherry Hill Township.

4. Type B Inlet Retrofit

Retrofit existing Type "B" inlets with inserts approved by the Cherry Hill Township Engineering Department to reduce the openings to meet NJDEP Attachment "C" of the MS4 Permit requirements. The inserts improve water quality by reducing floatables and materials that reach the bottom of the inlet to decay and that ultimately reach the stream. The priority of inlets to be retrofit within Township right-of-ways shall be determined by the Cherry Hill Township Engineering department and shall be based on streets most recently repaved. By including these inlets as a mitigation option, the Township of Cherry Hill will be improving water quality on public right-of-ways that will not be repaved or resurfaced for the greatest number of years.

12.0 Stormwater Pollution Prevention Plan

The attached Forms 1 through 17 to complete the Cherry Hill Stormwater Pollution Prevention Plan. The team members shown on Form 1 will be responsible to ensure that the plan is carried out in the next five years, Cherry Hill Township maintains the Stormwater Pollution Prevention Plan on file within the Township. The Annual Certification was mailed to the State of New Jersey on May 2, 2005 and will be mailed on May 2 of each year certifying that the requirements of the Tier A permit and pollution plan are being carried out.

Tier A Municipal Stormwater Regulation Program Stormwater Pollution Prevention Team Members Number of team members may vary.	Completed by: <u>Steve Musilli</u> Title: <u>Director of Engineering / DPW</u> Date: <u>4/1/05</u> Municipality: <u>Cherry Hill Township</u> County: <u>Camden</u> NJPDES #: NJG <u>0152374</u> PI ID #: <u>171635</u>				
Stormwater Program Coordinator: <u>Steve Musin</u> Title: <u>Director of Engineering</u> Office Phone #: <u>856-424-3203</u> Emergency Phone #: <u>856-665-1200</u>	Stormwater Program Coordinator: <u>Steve Musilli</u> Title: <u>Director of Engineering</u> Office Phone #: <u>856-424-3203</u> Emergency Phone #: <u>856-665-1200</u>				
Public Notice Coordinator: <u>Nancy Saffos</u> Title: <u>Township Clerk</u> Office Phone #: <u>856-488-7892</u> Emergency Phone #: <u>856-665-1200</u>					
Post-Construction Stormwater Management Coordinator: <u>Kevin Becica, PE, PP</u> Title: <u>Stormwater Specialist, Environmental</u> Office Phone #: <u>856-235-7170</u> Emergency Phone #:					
Local Public Education Coordinator: <u>Earl Seneres</u> Title: <u>Staff Liason, Environmental Committee</u> Office Phone #: <u>856-424-3203</u> Emergency Phone #: <u>856-665-1200</u>					
Ordinance Coordinator: <u>Lisa Kmiec, Esquire</u> Title: <u>Township Attorney</u> Office Phone #: <u>856-488-7842</u> Emergency Phone #: <u>856-665-1200</u>					
Public Works Coordinator: <u>Steve Musilli</u> Title: <u>Director of Engineering / DPW</u> Office Phone #: <u>856-424-4422</u> Emergency Phone #: <u>856-665-1200</u>					
Employee Training Coordinator: <u>Environmental Resolutions, Kevin Becica</u> Title: <u>Stormwater Specialist</u> Office Phone #: <u>856-235-7170</u> Emergency Phone #: <u>856-428-5400</u>					
Other: Title: Office Phone #: Emergency Phone #:					

SPPP Form 2 - Public Notice

Municipality: Cherry Hill Township

County: Camden

Aunicipality NJPDES # : NJG0152374 PI ID #:171635

nformation Team Member/Title:<u>Nancy Saffos, Township Clerk</u>

Effective Date of Permit Authorization (EDPA):4/1/04

Date of Completion: 2/16/05

Date of most recent update: 3/28/05

Briefly outline the principal ways in which you comply with applicable State and local public notice requirements when providing for public participation in the development and implementation of your stormwater program.

For meetings where public notice is required under the Open Public Meetings Act ("Sunshine Law", NJAC 10:4-6 et seq.), Cherry Hill Township provides public notice in compliance with that regulation. Notice is provided in one of the two official township newspapers, the Courier Post and the Philadelphia Inquirer. In addition public meeting information is accessible to the public through the Cherry Hill Township website at www.cherryhill-.nj.com.

For the adoption of the Municipal Stormwater Management Plan and other municipal actions, Cherry Hill Township complies with the public notice requirements of Municipal Law land use (NJSA 40:55-1 et seq)

For the adoption of stormwater management ordinances and where ordinances must be read and adopted, Cherry Hill Township complies with the requirements of NJSA 40:49-1 et seq.

SPPP Form 3 – New Development and **Redevelopment Program**

Municipality: <u>Cherry Hill Township</u>

County: Camden

Aunicipality NJPDES # : NJG0152374 PI ID #:171635

nformation Team Member/Title: Kevin Becica, Environmental Resolutions

Effective Date of Permit Authorization (EDPA): 4/1/04

Date of Completion: 2/15/05

Date of most recent update: 3/28/05

Describe in general terms your post-construction stormwater management in new development and redevelopment program (post-construction program), and how it complies with the Tier A Permit minimum standard. This description must address compliance with the Residential Site Improvement Standards for stormwater management; ensuring adequate long-term operation and maintenance of BMPs (including BMPs on property that you own or operate); design of storm drain inlets (including inlets that you install); and preparation, adoption, approval, and implementation of a municipal stormwater management plan and municipal stormwater control ordinance(s). Attach additional pages as necessary. Some additional specific information (mainly about that plan and ordinance(s)) will be provided in your annual reports.

To control stormwater from new development and redevelopment projects throughout Cherry Hill Township (including projects we operate) we will implement the following:

We are currently ensuring that all new residential development and redevelopment projects that are subject to the Residential Standards for stormwater management (including the NJDEP Stormwater Management rules, N.J.A.C. 7:8, referenced in those standards) are in compliance with those standards. Our planning and zoning boards ensure such compliance before issuing preliminary or final subdivision or site plan approvals under the Municipal Land Use Law.

Since the EDPA, Cherry Hill Township has constructed one municipal project, the municipal parking lot improvement project, with Type "J" inlets. All future projects will have storm drain inlets in conformance with Attachment C of the permit. If we decide to construct a project that includes stormwater management facilities before our municipal stormwater control ordinance takes effect , we will ensure adequate long-term operation and maintenance of BMPs for that project by requiring and funding the implementation of BMP's for that project. Once the ordinance takes effect, we will ensure such operation and maintenance for any new development or redevelopment projects on our property by complying with the maintenance requirements in that ordinance.

Our planning board and municipal attorney will review the Cherry Hill Township Municipal Stormwater Management Plan for conformance to the sample in the BMP manual. We will submit the plan to the Camden County planning agency staff to discuss conformance to the County plan. We will also submit the plan to the DRBC for conformance to the Delaware River Basin Commission plan.

SPPP Form 4- Local Public Education Program

Municipality: Cherry Hill Township County Camden

Aunicipality nformation NJPDES # :0152374PI ID #: 171635

Team Member/Title: Earle Seneres, CH Environmental Advisory Committee

Effective Date of Permit Authorization (EDPA): 4/1/04

Date of Completion: 2/15/05 Date of most recent update: 3/28/05

Local Public Education Program

Describe your Local Public Education Program. Be specific on how you will distribute your educational information, and how you will conduct your annual event. Attach additional pages with the date(s) of your annual mailing and the date and location of your annual event.

For our annual distribution, we will mail the DEP information to our residents and businesses through the Cherry Hill Happenings. The Cherry Hill Happenings is compiled by the Mayors office and distributed quarterly throughout the year to every household and business in the municipality. Additional copies are available at the Mayors office, public works department, the library and at our municipal building.

Our annual Spring Family Festival is held each year at Croft Farm, usually the first Sunday in May. The local public education will be coordinated by Earle Seneres, the staff liason to the Cherry Hill Environmental Advisory Committee. A brochure of the DEP stormwater material and other educational materials will be made available to the public at the Spring Family Festival festival.

The Cherry Hill Township Environmental Advisory Committee will be invited to participate in interacting with the local public education process and reaching out to the schools, scouts and other environmental groups to educate the public and increase awareness in water quality issues.

olutions to Stormwater Pollution

Easy Things You Can Do Every Day To Protect Our Water

A Guide to Healthy Habits for Cleaner Water

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

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

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

As part of New Jersey's initiative to keep our water clean and plentiful and to meet federal requirements, many municipalities and other public agencies including colleges and military bases

must adopt ordinances or other rules prohibiting various activities that contribute to stormwater pollution. Breaking these rules can result in fines or other penalties.



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

Limit your use of fertilizers and pesticides

 Do a soil test to see if you need a fertilizer.

 Do not apply fertilizers if heavy rain is predicted.

 Look into alternatives for pesticides.

 Maintain a small lawn and keep the rest of your property or yard in a natural state with trees and other native vegetation that requires little or no fertilizer.

 If you use fertilizers and pesticides, follow the instructions on the label on how to correctly apply it.



Make sure you properly store or discard any unused portions.

Properly use and dispose of hazardous products

 Hazardous products include some household or commercial cleaning products, lawn and garden care products, motor oil, antifreeze, and paints.

 Do not pour any hazardous products down a storm drain because storm drains are usually connected to local waterbodies and the water is not treated. If you have hazardous products in your home or workplace, make sure you store or dispose of them properly. Read the label for guidance.

 Use natural or less toxic alternatives when possible.

Recycle used motor oil.

Contact your municipality, county or facility management office for the locations of hazardous-waste disposal facilities.



Keep pollution out of storm drains

 Municipalities and many other public agencies are required to mark certain storm drain inlets with messages reminding people that storm drains are connected to local waterbodies.

 Do not let sewage or other wastes flow into a stormwater system.

Clean up after your pet

 Many municipalities and public agencies must enact and enforce local pet-waste rules.

 An example is requiring pet owners or their keepers to pick up and properly dispose of pet waste dropped on public or other people's property.

 Make sure you know your town's or agency's requirements and comply with them. It's the law. And remember to:

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

Don't feed wildlife

 Do not feed wildlife, such as ducks and geese, in public areas.

 Many municipalities and other public agencies must enact and enforce a rule that prohibits wildlife feeding in these areas.



Don't litter

Place litter in trash receptacles.

 Recycle. Recycle. Recycle.

 Participate in community cleanups.

Contact information

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

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

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



 Use leaves and grass clippings as a resource for compost.

 Use a mulching mower that recycles grass clippings into the lawn.



Dispose of yard waste properly

out of storm drains.

Keep leaves and grass

If your municipality or

agency has yard waste

collection rules, follow

them.



What You Can Do To Help Protect Our Water

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

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

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

What you can do

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

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

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

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

For more information, please contact the following:

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



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

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



SPPP Form 5 – Storm Drain Inlet Labeling

Municipality: Cherry Hill County Camden

Municipality Information NJPDES # :0152374PI ID #: 171635

Team Member/Title: Steve Musilli, Director of Engineering / DPW

Effective Date of Permit Authorization (EDPA):4/1/04

Date of Completion: 1/26/05 Date of most recent update: 3/28/05

Storm Drain Inlet Labeling

Describe your storm drain inlet labeling program, including your labeling schedule, the details of your long-term maintenance plan, and plans on coordinating with watershed groups or other volunteer organizations.

Our public works department will be performing the storm drain inlet labeling program. We will 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 Township of Cherry Hill.

Labeling will be completed utilizing curb markers that will read "Don't Pollute - Flows To Waterways" with a picture of a fish ordered from Das Manufacturing, Inc. that will be applied using adhesive. In addition, volunteer organizations will be able to use curb markers to label inlets and meet the requirements.

The attached map divides Cherry Hill Township into two sectors. Sector A is the area west of Route 70. Sector A represents 50% of the municipality and inlet labeling will be completed in Sector A by April 1, 2007 in conformance with the permit requirements. Sector B is the area east of Route 70. Inlet labeling will be completed in Sector B by April 1, 2009. A Storm Drain Map (Scale 1"=1,600') is attached.

During our annual catch basin cleaning program, the label condition will be checked to ensure that they are still visible, and if they are not, the labels will be replaced accordingly.

SPPP Form 6 – MS4 Outfall Pipe Mapping

Municipality: Cherry Hill County Camden

NJPDES # :0152374PI ID #: 171635

Team Member/Title: Steve Musilli, Director of Engineering / DPW

Municipality Information Effective Date of Permit Authorization (EDPA):4/1/04

Date of Completion: 1/18/05 Date of most recent update: 3/28/05

Explain how you will prepare your map (include its type and scale, and the schedule for the mapping process). Who will prepare your map (e.g., municipal employees, a consultant, etc.)?

The Cherry Hill Township Department of Engineering will use the information from Camden County Soil Conservation for outfalls along the Cooper River. The outfall piping has been completed by the cased utilizing GPS mapping techniques. The township will continue to use a GPS Unit to map out the location of the end of all mapping outfall pipes operated by Cherry Hill Township. They will identify, GPS, map and investigate (see Illicit Connection Elimination Program and Outfall Pipe Stream Remediation Program) each outfall pipe that is located using the DVRPC protocol developed in conjuction with ESRI. A Trimble XT unit or equivalent will be used to locate each outfall and storm drain.

Cherry Hill Township has been divided into two sectors. The sectors have been mapped by Envioronmental Resolutions on the Storm Drain and Outfall map. The map is attached.

Sector 1 is west of NJ Route 70, represents 50% of the municipality and outfalls will be mapped by April 1, 2007. Sector 2 is east of Route 70, represents the remaining 50% of the municipality and outfalls will be mapped by April 1, 2009.

SPPP Form 7 – Illicit Connection Elimination Program

Municipality: Cherry Hill County Camden

offormation NJPDES # :0152374PI ID #: 171635

Municipality

Team Member/Title: Steve Musilli, Director of Engineering / DPW

Effective Date of Permit Authorization (EDPA): 4/1/04

Date of Completion: 2/16/05 Date of most recent update: 3/28/05

Describe your Illicit Connection Elimination Program, and explain how you plan on responding to complaints and/or reports of illicit connections (e.g., hotlines, etc.). Attach additional pages as necessary.

The initial physical inspection of all of our outfall pipes will be completed during the mapping process. The initial inspection information will be collected with the Trimble unit (or equivalent) will be transferred to the DEP Illicit Connection Inspection Report Form, and each of these forms will be kept with our SPP records. Outfall pipes that are found to have a dry weather flow or evidence of an intermittent non-stormwater flow will be rechecked again to locate the illicit connection. If we are able to locate the illicit connection (and the connection is within Cherry Hill Township) we will cite the responsible party for being in violation of our Illicit Connection Ordinance, and we will have the connection eliminated immediately. If, after the appropriate amount of investigation, we are unable to locate the source of the illicit connection, we will submit the Closeout Investigation Form with our Annual Inspection and Recertification. If an illicit connection is found to originate from another public entity, Cherry Hill Township will report the illicit connection to the applicable agency.

Cherry Hill Township uses the police department for reporting spills and illegal dumping. The police department will also be used for reporting illicit connections. The water pollution division of DPW is contacted for investigation and follow up inspections. Bill Cassidy & George Coffee are responsible for the water pollution division. A Public Works Dept. work order form is attached. A job code within the DPW work order software is utilized to document illicit connections.

In addition, all storm drainage lines are televised to identify any areas of disrepair prior to pavement milling and paving projects on township roa

SPPP Form 8 – Illicit Connection Records					
Municipality: Cherry Hill Township County Camden					
cipality	NJPDES # :0152374PI ID #: 171635				
	Team Member/Title: Steve Musilli, Director of Engineer / DPW				
Auni	Effective Date of Permit Authorization (EDPA): 4/1/04				
2-	Date of Completion: 2/15/05 Date of most recent update: 3/28/05				
Prior	to May 2, 2006				
Note: Total	Attach a copy of each illicit connection report form for outfalls found to have a dry weather flow. number of inspections performed this year?				
Numb	per of outfalls found to have a dry weather flow?				
Numb	per of outfalls found to have an illicit connection?				
How	many illicit connections were eliminated?				
Of the	e illicit connections found, how many remain?				
May	2, 2006 – May 1, 2007				
<u>Note:</u> Total	Attach a copy of each illicit connection report form for outfalls found to have a dry weather flow. number of inspections performed this year?				
Numb	er of outfalls found to have a dry weather flow?				
Numb	er of outfalls found to have an illicit connection?				
How	many illicit connections were eliminated?				
Of the illicit connections found, how many remain?					
May	2, 2007 – May 1, 2008				
Note: Attach a copy of each illicit connection report form for outfalls found to have a dry weather flow.					
Numb	number of inspections performed this year?				
Number of outfalls found to have a dry weather flow?					
How many illipit connections wass aliminated?					
Of the illigit connections found, how mony remain?					
May	2, 2008 – May 1, 2009				
Total number of inspections performed this year?					
Number of outfalls found to have a dry weather flow?					
Number of outfalls found to have an illicit connection?					
How many illicit connections were eliminated?					
Of the illicit connections found, how many remain?					

SPPP Form 9 – Yard Waste Ordinance/Collection Program

Municipality: Cherry Hill County Camden

NJPDES # :0152374PI ID #: 171635

Aunicipality

nformation Team Member/Title: Steve Musilli, Director of Engineering / DPW

Effective Date of Permit Authorization (EDPA): 4/1/04

Date of Completion: 2/15/05 Date of most recent update: 3/28/05

Please describe your yard waste collection program. Be sure to include the collection schedule and how you will notify the residents and businesses of this schedule. Attach additional pages as necessary.

Cherry Hill Township will be adopting ordinance 2 of the sample yard waste ordinances requiring leaf collection within one week and bagged within ten feet of an inlet. Cherry Hill Township uses leaf pick-up signs to notify the residents of leaf collection dates. In addition, the leaf collection dates are clearly displayed on the homepage of the municipal website by neighborhood and in the Cherry Hill Happenings.

Cherry Hill Township uses the public works employees to perform leaf collection by neighborhood. By concentrating the entire public works department in each neighborhood, leaf collection was performed within the one week time frame and each neighborhood is collected twice. Approximately fifty trucks are used to perform this function.

A map of the Township divided into four sections is used for annual leaf pickup. The leaf collection map is highlighted at the end of each shift as each roadway leaf pickup is completed and the roadway is swept ...

SPPP Form 10 - Ordinances

Municipality: Cherry Hill County Camden

nformation NJPDES # :0152374PI ID #: 171635

Municipality Team Member/Title: Lisa Kmiec, Esquire, Township Attorney

Effective Date of Permit Authorization (EDPA): 4/1/04

Date of Completion: 2/15/05 Date of most recent update: 3/28/05

For each ordinance, give the date of adoption. If not adopted, explain the development status:

Pet Waste

Are information sheets regarding pet waste distributed with pet licenses? Y () N ()

Litter

Improper Waste Disposal

Wildlife Feeding____

Yard Waste

Illicit Connections

How will these ordinances be enforced?

Our code enforcement officers and local police officers will enforce these ordinances. If someone is found to be in violation of an ordinance, they will be issued a written warning for first time offenses, and penalties will be issued for subsequent offenses.

The ordinances are currently under review by the Township attorney for comparison to the existing ordinances and will be heard and adopted by the Township shortly.

SPPP Form 11 – Storm Drain Inlet Retrofitting							
	Municipality: Cherry Hill Township County Camden						
inty inty	NJPDES # :0152374PI ID #: 171635						
icipa	Team Member/Title: Steve Musilli, Director of Engineering / DPW						
Mun	Effective Date of Permit Author	rization (EDF	PA): <u>4/1/0</u>	14			
_	Date of Completion: 2/15/05 Date	e of most re	cent up	date: <u>3/28/04</u>			
What Campe	t type of storm drain inlet design I Inlet Type "J" and retrofit Type "N" or I	will general	ly be us	ed for retrofitt	ing?		
Repa or alt	Repaying, repairing, reconstruction or alteration project name Projected start date Start date Date of completion # of storm drains w/ drain hydraulic exemptions						
Cherry	Hill Township Municipal Parking Lot		7/04	9/04	7	0	
Are you claiming any alternative device exemptions or historic place exemptions for any of the above projects? Please explain:							

Cherry Hill Township does not operate any alternative devices within the municipality. At this time the township do not plan on installing any such devices for repairing, repairing, reconstruction or alteration projects. We also do not anticipate claiming any historic place exemptions.

SPPP Form 12 – Street Sweeping and Road Erosion Control Maintenance

Municipality: Cherry Hill Township County: Camden

Municipality nformation NJPDES # :0152374PI ID #: 171635

Team Member/Title: Steve Musilli, Director of Engineering / DPW

Effective Date of Permit Authorization (EDPA):4/1/04

Date of Completion: 2/15/05 Date of most recent update: 3/28/04

Street Sweeping

Please describe the street sweeping schedule that you will maintain.

(NOTE: Attach a street sweeping log containing the following information: date and area swept, # of miles swept and the total amount of materials collected.)

Cherry Hill Township has evaluated all of its streets to determine which areas will need to be swept monthly. These areas have been grouped together into four separate groups, and each group will be assigned a different week each month. Cherry Hill Township intends on maintaining its existing street sweeping program for all other streets (that are not dependent upon temperature, equipment is winterized)

Road Erosion Control Maintenance

Describe your Road Erosion Control Maintenance Program, including inspection schedules. A list of all sites of roadside erosion and the repair technique(s) you will be using for each site should be attached to this form.

(NOTE: Attach a road erosion control maintenance log containing the following information: location, repairs, date) Cherry Hill Township will use the Public Works Department to monitor all our roads and streets for erosion problems during normal patrols. All identified road erosion problems will be reported to Frank Bryson, Divison Head, Highway Dept. Identified areas of ersoion will be discussed and repairs prioritized. All maintenance personnel will then be assigned in accordance with the Standards for Soil Erosion and Sediment Control in New Jersey. All maintenance personnel will maintain an inspection log, and Public Works will maintain a list of all repairs and the dates completed. The status of the Road Erosion Control Maintenance Program will be included in the Annual Report and Recertification.

SPPP Form 13 – Stormwater Facility Maintenance

Municipality: Cherry Hill Township County: Camden

Municipality nformation NJPDES # :0152374PI ID #: 171635

Team Member/Title: Bill Cassidy, Division Head, Water Polution

Effective Date of Permit Authorization (EDPA):4/1/04

Date of Completion: 1/18/05 Date of most recent update: 3/28/04

Please describe your annual catch basin cleaning program and schedule. Attach a map/diagram or additional pages as necessary.

Cherry Hill Township implements an annual catch basin cleaning program to maintain catch basin function and efficiency. Catch basin cleaning is done by a jet-vac truck, and this cleaning is performed annually, following the final leaf collection of the year and implemented throughout the year. At the time of cleaning, the catch basins will also be inspected for proper function. Maintenance will be scheduled for those catch basins that are in disrepair. A log book containing cleaning dates, by neighborhood, is kept by the Sewer Department. A street map of the Township, with cleaning areas, by Township section, is attached.

Please describe your stormwater facility maintenance program for cleaning and maintenance of all stormwater facilities operated by the municipality. Attach additional pages as necessary.

(NOTE: Attach a maintenance log containing information on any repairs/maintenance performed on stormwater facilities to ensure their proper function and operation.)

Cherry Hill Township will implement a stormwater facility maintenance program to ensure that all stormwater facilities operated by the Township function properly. Cherry Hill Township operates the following:

- catch basins
- storm drains
- infiltration basins
- buffer strips
- swales

These stormwater facilities will be inspected annually to ensure that they are functioning properly. In high risk areas, preventative maintenance will be performed on all stormwater facilities to ensure that they do not begin to fail.

SPPP Form 14 - Outfall Pipe Stream Scouring Remediation

Municipality: Cherry Hill Township County: Camden

Municipality NJPDES # :0152374PI JD #: 171635 nformation

Team Member/Title: Bill Cassidy, Division Head, Water Pollution

Effective Date of Permit Authorization (EDPA): 4/1/04

Date of Completion: 1/18/05 Date of most recent update: 3/28/04

Describe your stormwater outfall pipe scouring detection, remediation and maintenance program to detect and control active, localized stream and stream bank scouring. Attach additional pages as necessary.

(NOTE: Attach a prioritized list of sites observed to have outfall pipe stream and stream bank scouring, date of anticipated repair, method of repair and date of completion.)

When we are performing the illicit connections portion of this program, we will be inspecting all of our outfall pipes for signs of scouring. All sites will be placed on a prioritized list and repairs shall be made in accordance with the Standards for Soil Erosion and Sediment Control in New Jersey. In addition, repairs that do not need NJDEP permits for those repairs may be completed first.

We shall follow each repair up with an annual inspection of the site to ensure that scouring has not resumed.

A list will be made of all sites with outfall pipe stream scouring, the date we plan on repairing the scouring, and the method of repair we will use. When repairs are completed, we will note the date of that repair on this form.

SPPP Form 15 – De-icing Material Storage

Municipality: Cherry Hill Township County Camden

NJPDES # :0152374PI ID #: 171635

Municipality Information Team Member/Title: Frank Bryson, Division Head, Highway Dept.

Effective Date of Permit Authorization (EDPA):4/1/04

Date of Completion: 2/16/05 Date of most recent update: 3/28/05

De-icing Material Storage

Describe how you currently store your municipality's de-icing materials, and describe your inspection schedule for the storage area. If your current storage practices do not meet the de-icing material storage SBR describe your construction schedule and your seasonal tarping interim measures. If you plan on sharing a storage structure, please include its location, as well as a complete list of all concerned public entities. If you store sand outdoors, describe how it meets the minimum standard.

Cherry Hill Township currently stores all of its de-icing salt indoors in a permanent structure, at the Public Works Facility, located on Perina Blvd. The storage building shall be inspected monthly. In addition, at the completion of loading and unloading activities, we shall inspect for spilled salt.

Sand for use in Cherry Hill Township's athletic fields, playgrounds, etc. is delivered from a private vendor as necessary. The sand is dumped in the area of application and immediately spread by grading equipment. At the completion of loading and unloading activities, we shall inspect for spilled sand, and clean-up if necessary.

SPPP Form 67 – Standard Operating Procedures

Municipality: Cherry Hill Township County Camden

Municipality Information NJPDES # :0152374PI ID #: 171635

Team Member/Title: Steve Musilli, Director of Engineering / DPW

Effective Date of Permit Authorization (EDPA):4/1/04

Date of Completion: 2/16/05 Date of most recent update: 3/28/05

BMP	Date SOP went into effect	Describe your inspection schedule
Fueling Operations (including the required practices listed in Attachment D of the permit)	1/1/05	We have compiled a list of all fueling locations within our municipal maintenance yards, which will be inspected once a month The SOP is attached to this form.
Vehicle Maintenance (including the required practices listed in Attachment D of the permit)	1/1/05	Monthly inspections will be held to ensure that the SOP (attached) is being met.
Good Housekeeping Practices (including the required practices listed in Attachment D of the permit)	1/1/05	Monthly inspections of all municipal maintenance yards and ancillary operations will be held. Standard Good Housekeeping SOP is attached
Attach inventory list required by Attachment D of the permit.		

SPPP Form 17 – Employee Training

Municipality: Cherry Hill Township County Camden

NJPDES # :0152374PI ID #: 171635

Team Member/Title: Environmental Resolutions, Kevin Becica

Municipality Information Effective Date of Permit Authorization (EDPA):4/1/04

Date of Completion: 2/16/05 Date of most recent update: 3/28/05

Describe your employee training program. For each required topic, list the employees that will receive training on that topic, and the date the training will be held. Attach additional pages as necessary.

Employee training was conducted on Monday April 25, 2005 for the Cherry Hill Township supervising staff. Traing for the public works staff will be conducted in the upcoming months.

<u>APPENDICES</u>

Maps 1~8