

STORMWATER MANAGEMENT PLAN

**CITY OF PATERSON,
PASSAIC COUNTY, NEW JERSEY**

May 2005

To Be Adopted by July 2005

Adopted pursuant to N.J.A.C. 7:8-4.
Stormwater Management
Municipal Stormwater Management Planning

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1.0 Introduction

This document has been prepared in accordance with the New Jersey Department of Environmental Protection (NJDEP) Tier A Stormwater Guidance Document dated April 2004 in order to establish the City of Paterson's strategy to address stormwater-runoff impacts. It is important to note that this plan will require an update to include a required modification to incorporate the adopted municipal stormwater control ordinances in early 2006.

1.1 How Does Stormwater Runoff Affect Us?

Stormwater runoff is part of the largest remaining major source of pollutants in our nation's waters and the quality of surface and ground water is directly related to the health of the environment. It is estimated that up to 60 percent of existing water pollution problems are attributable to nonpoint source pollution. Nonpoint source pollution, and particularly, stormwater runoff is difficult to identify, control, and treat. In natural environments, those undisturbed by development, native vegetation either directly intercepts precipitation or draws from runoff that has infiltrated into the ground and returns it to the atmosphere through the process of evapotranspiration. A portion of precipitation runs off the land's surface to recharge surface water. Further, a portion of the rainfall that lands on the ground's surface infiltrates through the soil to the groundwater table and provides natural recharge of the groundwater. This process, known as the hydrologic cycle, functions in equilibrium, but is extremely susceptible to impacts resulting from changes to the cycle's processes.

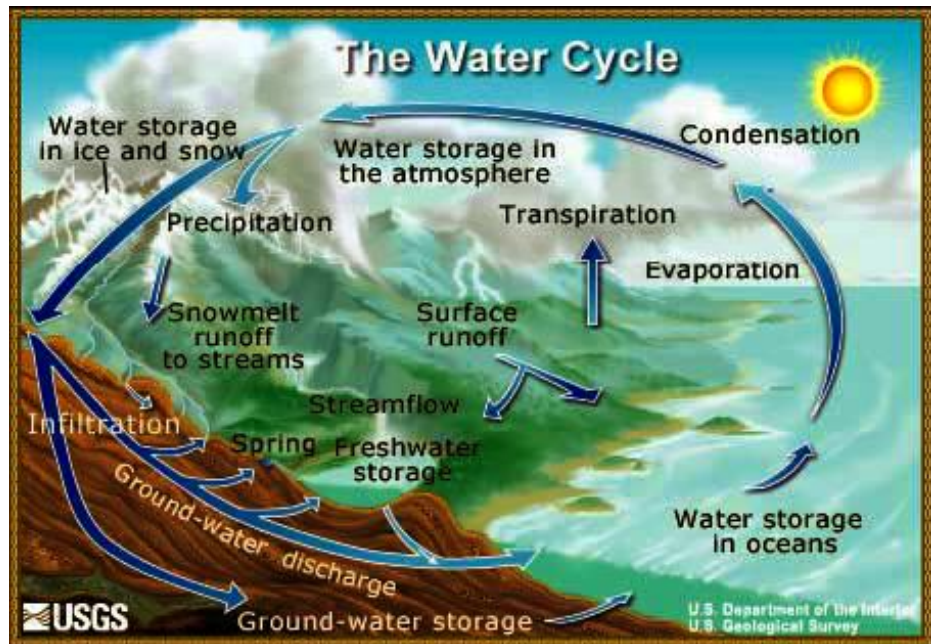


Illustration by John M. Evans, Colorado District, USGS

It has been shown that land development can dramatically impact the hydrology of a watershed if stormwater-runoff related impacts are not considered carefully. Development typically alters natural vegetation through the placement of lawns and impervious cover, thereby reducing the watershed's evaporation, transpiration and infiltration rates. Construction activities can compact the soil and reduce its infiltration ability, resulting in increased volumes and rates of stormwater runoff from a site. In the past, development typically involved the construction of impervious areas connected to each other through gutters, channels, and storm sewers. These structures can transport runoff more quickly than natural areas and cause erosion and water quality problems, as well as flooding in areas downstream of development.

Often people do not know or understand that there are alternatives to the traditional way of managing their property. For example, homeowners can have a green lawn without massive doses of fertilizers and pesticides; pet owners should deposit pet waste in the trash or in the toilet and not leave it at the curb. Typically, people are unaware that storm drains often discharge directly into water bodies. When people allow motor oil, trash, and their pet's waste to enter the storm sewer in their street, they don't realize that it may end up in the lake down the street or in their public drinking water supply. Individually these acts may seem insignificant, but their cumulative impact contributes to stormwater/nonpoint source pollution and reduces water quality.

1.2 Municipal Separate Storm Sewer Systems (MS4) Program

In response to the United States Environmental Protection Agency (USEPA) National Pollutant Discharge Elimination System (NPDES) Phase II regulations adopted 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 released four (4) NJPDES Stormwater General Permits for the various MS4s. These include:

1. Tier A Municipal Stormwater General Permit;
2. Tier B Municipal Stormwater General Permit;
3. Public Complex Stormwater General Permit;
4. Highway Agency Stormwater General Permit.

For each General Permit, NJDEP has mandated Statewide Basic Requirements (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 requirements of the permit. The measurable goals are the mechanism for reporting to NJDEP the progress that the City has made; those are accomplished primarily through the submittal of an Annual Report and Certification (see Appendix C). 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 City of Paterson had been designated as a Tier A community. As such, the City is regulated under the NJPDES Stormwater Tier A General Permit, NJPDES No. NJ0141852. 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). The following minimum standards apply to all Tier A municipalities, including the City of Paterson:

A. Minimum Standard

1. 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. 7:8-2.

2. 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.
3. 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).
4. 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.
5. Ensure adequate long-term operation and maintenance of BMPs.
6. 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.
7. 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 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

1. 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.
2. 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 exiting 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.
 3. 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.
 4. Tier A Municipalities shall enforce stormwater control ordinance(s) when approved in accordance with N.J.A.C. 7:8-4.
 5. 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 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.

1.3 Stormwater Management Regulations

On February 2, 2004 the State of New Jersey adopted the new Stormwater Management Rules (N.J.A.C. 7:8). The revisions to the State's Stormwater Management Rules serve as the first major update to the regulations since their inception in 1983 and detail fundamental changes in the management of stormwater runoff in New Jersey. These rules updated several other regulations including the Residential Site Improvement Standards (N.J.A.C. 5:21), the Freshwater Wetland Protection Act (N.J.A.C. 7:7A), the Flood Hazard Area Control Act (N.J.A.C. 7:13), the Watershed Management Rules (N.J.A.C. 7:15), and the New Jersey Dam Safety Standards (N.J.A.C. 7:20).

The new Stormwater Management Rules provide a framework and incentives for managing runoff and resolving nonpoint source impairment on a drainage area basis for new development, redevelopment and

existing developed areas. Additionally, the rules establish a hierarchy for implementation of stormwater management measures with initial reliance on low impact site design techniques to maintain natural vegetation and drainage before incorporating structural Best Management Practices (herein referred to as BMPs). These new rules also establish runoff control performance standards for groundwater recharge, water quality, and water quantity, establish special area protection measures for pristine and exceptional value waters; provide regulatory consistency among local and State regulatory agencies; and provide safety standards for stormwater management basins.

As of February 2, 2004, the design requirements identified in the Stormwater Management Rules, including groundwater recharge, water quality, and water quantity, must be met for all projects regulated under RSIS. The Stormwater Rules (N.J.A.C. 7:8-4) require that all municipalities within the State of New Jersey adopt a municipal stormwater management plan. The Tier A General Permit mandates that this plan be completed no later than 12 months from the effective date of permit authorization, which is July 1, 2005. Additionally, N.J.A.C. 7:8-4 mandates that stormwater control ordinances be adopted and implemented for all municipalities in the State no later than 12 months from the date of adoption of the Stormwater Management Plan. Draft ordinances are included in Appendix D.

2.0 Stormwater Management Plan Goals

Several minimum goals for Tier A municipal stormwater management plans were identified in the NJDEP Guidance document and include:

- 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 source 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 in order 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;
- Protect public safety through the proper design and operation of stormwater management basins.

How the above goals are met, are detailed in Section 9.0 of this document titled “Plan Consistency and Recommended Stormwater Control Ordinances.”

3.0 Municipal Background

3.1 General

The City of Paterson is an older urban community located in southern Passaic County. The City has a land area of approximately 5,290 acres of which approximately 4,760 acres are serviced by

the combined sewer system. The portions of City serviced by a separate storm sewer system are spread throughout the City but are concentrated to a certain extent to the industrial areas in the north. The City had a 2000 population of 149,222 persons of which approximately 132,390 persons are serviced by the combined sewer system. The majority of the housing units were constructed prior to 1940.

Maps showing major streets within the City as well as major appurtenances of the Storm Sewer System within the City are attached.

3.2 Land Use

The portion of the City of Paterson serviced by the storm sewer system is primarily residential and industrial. Approximately nineteen (19) percent of the land area is used for industrial purposes, eight (8) percent commercial, eight (8) percent is open space, and the remaining sixty-five (65) percent residential. The largest industrial areas are located along the Passaic River and Route 80 in the northern and southern regions of the City while commercial areas generally follow an east-west pattern with the central business district located in the west central section of the City.

3.3 Topography

The ground surface characteristics within the City of Paterson vary considerably with elevations raging from approximately 40 feet above sea level at the southeastern corner of the City to over 200 feet above sea level along the western boundary. Ground elevations are highest in the western section of the City which lies within the fringe of the Second Watchung Mountain. Other areas with higher elevations are found in the north and eastern sections of the City. In general, most of the City has a mild slope of less than five percent; however, several areas have ground slopes of ten percent or more. Elevations along the Passaic River are generally low relative to flood stage and are therefore susceptible to flooding.

4.0 Design and Performance Standards

The design and performance standards for stormwater management measures for the City of Paterson include those presented in N.J.A.C. 7:8-5 and will be required for all major development projects as defined in Section 9.0 – Applicable Definitions of this plan.

4.1 Design Standards

Stormwater management measures for major development shall be designed to meet the following standards, as required under N.J.A.C. 7:8-5:

- Erosion control – all proposed land disturbance must follow the Standards for Soil Erosion and Sediment Control in New Jersey (projects with 5,000 sf or more of disturbance must apply to the Hunterdon County Soil Conservation District for a letter of adequacy);
- Groundwater recharge – all major development projects that are considered new construction must maintain 100% of the pre-developed groundwater recharge under post-developed conditions or demonstrate that the increase of runoff from pre- to post- for the 2-year, 24-hour Natural Resources Conservation Service (NRCS) Type III storm (consistent with the most recent Technical Paper 40 release or replacement) is infiltrated. It is important to note that the City has a unique challenge in complying with the groundwater recharge requirements; the small lot sizes and density of development throughout the City mandates the need to have distance requirements between groundwater recharge facilities like dry wells and residential wells, septic systems, and building structures. Non-structural groundwater recharge measures will be a focus where possible;
- Stormwater runoff quantity – all major development projects must demonstrate compliance with one of the following: peak runoff flow rate mitigation, runoff volume mitigation, or hydrograph mitigation; and
- Stormwater runoff quality standards – all major development projects must demonstrate a minimum 80% Total Suspended Solids (TSS) removal rate.

4.1.1 Exemption/Waiver Criteria from Design Standards

It is important to note that there are several types of major development projects that are exempt from some or all of the requirements identified above or for which a waiver from strict compliance with the above requirements can be obtained. These include the below identified project types.

Redevelopment projects are exempt from the groundwater recharge standards provided that the redevelopment involves disturbance only of previously disturbed areas. However, since soils in the lowland areas of the City have high infiltration rates, if appropriate, redevelopment should consider recharge as an option. Additionally, a 50% TSS removal rate is required for proposed redevelopment projects involving only existing areas of impervious cover. Groundwater recharge requirements do not apply to projects subject to stormwater from areas of high pollutant loading and industrial stormwater exposed to “source material.”

Additionally, the following linear development projects are exempt from the groundwater recharge, stormwater runoff quantity, and stormwater runoff quality requirements:

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.

It must be emphasized that utility work, although not subject to certain regulations, must be sensitive to negative impacts on natural resources and water quality.

A waiver from strict compliance from the groundwater recharge, stormwater runoff quantity, and stormwater runoff quality requirements 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 all of 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 above requirements to the maximum extent practicable;
3. The applicant demonstrates that, in order to meet the requirements above, existing structures currently in use, such as homes and buildings would need to be condemned; and
4. The applicant demonstrates that he/she does not own or have rights to areas that would provide opportunities to mitigate for the requirements above that are not achievable on-site.

Additionally, it is important to note that applicants, that cannot meet one or more of the design requirements identified above, can complete a project identified under Section 6.0 – Mitigation Plan as identified in this plan with prior approval from the City.

4.1.2 Groundwater Recharge

The minimum design and performance standards for groundwater recharge, as previously identified above, require that the applicant either 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 demonstrate through hydrologic and hydraulic analysis that the increase of stormwater runoff volume from pre-construction to post-construction for the two-year storm is infiltrated. As discussed above, groundwater recharge is prohibited from sites with high pollutant loading or industrial stormwater exposed to “source material.” As there are known contaminated sites within the City, groundwater recharge is prohibited for these properties and all future identified contaminated properties in accordance with N.J.A.C. 7:8-5.4(a) 2iii. Adjacent properties also must consider the proximity of contaminated material. The Stormwater Committee will consider buffer requirements when formulating the ordinances for 2006.

All groundwater recharge analyses must be conducted using the New Jersey Groundwater Recharge Spreadsheet available through the New Jersey Stormwater Best Management Practices Manual (herein referred to as the BMP Manual, online at www.njstormwater.org). The professional engineer (or qualified hydrogeologist or geologist) shall assess the impacts on the groundwater table and design the site so as to avoid adverse hydrogeologic impacts. There are several potential adverse hydrogeologic impacts, including, but 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 down gradient of the groundwater recharge area.

For all structural and nonstructural infiltration measures, it is necessary to determine soil characteristics, the permeability (hydraulic conductivity) of the underlying soils and bedrock (where bedrock is shallow), and depth to groundwater on a subject property prior to designing infiltration measures. The applicant’s professional must demonstrate the hydraulic viability of any proposed structural groundwater recharge measure through hydraulic testing. In order to meet the requirements for groundwater recharge, the applicant is strongly encouraged to design nonstructural stormwater BMPs identified in Section 5.1 of this

plan wherever feasible. Should nonstructural measures not satisfy the full groundwater recharge requirements, alternatively or in combination with the nonstructural measures, the applicant can utilize the structural techniques described in Section 5.2 of this plan.

4.1.3 Stormwater Runoff Quantity

For all three options identified below, the applicant must establish Point(s) of Analysis (POAs) based on natural watershed divisions on the subject site in accordance with Section 5 of the BMP Manual. These POAs must then be analyzed under pre- and post-construction conditions as discussed below. In order to control stormwater runoff quantity impacts, the design engineer shall complete one of the following:

1. Hydrograph Mitigation - demonstrate through hydrologic and hydraulic analysis that for stormwater leaving the site, post-construction runoff hydrographs for the 2, 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. Runoff Volume Mitigation - 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 2, 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. Peak Runoff Flow Rate Mitigation - 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 under all phases of the project.

Please note that any application for a new agricultural development that meets the definition of major development shall be submitted to the H.E.P. Soil Conservation District for review and approval in accordance with the requirements of this section and the *Standards for Soil Erosion and Sediment Control in New Jersey* for stormwater runoff quantity and erosion control.

Stormwater runoff shall be calculated in accordance with the following:

1. The United States NJDEP of Agriculture (USDA) NRCS methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph, as described in Section 4 of the National Engineering Handbook (NEH-4), dated July 2002, last updated September 8, 2004, and incorporated herein by reference as amended and supplemented (refer to the National Weather Service: <http://hdsc.nws.noaa.gov/hdsc/pfds/> for the rainfall frequency data). This methodology is additionally described in Technical Release 55 - Urban Hydrology for Small Watersheds (TR-55), dated June 1986, incorporated herein by reference as amended and supplemented; or
2. The Rational Method for peak flow and the Modified Rational Method (highly discouraged) for hydrograph computations. The rational and modified rational methods are

described in “Appendix A-9 Modified Rational Method” in the Standards for Soil Erosion and Sediment Control in New Jersey. Refer to the National Weather Service: <http://hdsc.nws.noaa.gov/hdsc/pfds/> for the IDF curves

For the purpose of calculating runoff coefficients, there is a presumption that the pre-construction condition of a site is a wooded land use with good hydrologic condition. Alternatively, 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 (5) years without interruption prior to the time of application. If more than one land cover has 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.)

When 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. Additionally, when 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 (TR-55), Urban Hydrology for Small Watersheds or other methods described in the BMP Manual may be employed. If the invert of the outlet structure of a stormwater management measure is below the Flood Hazard Design Flood elevation of the Delaware River or its associated tributaries, the design engineer shall take into account the effects of tailwater in the design of structural stormwater management measures.

As compaction during construction activities influences the infiltration rate of the soils, the design engineer must account for not only the proposed change in land use, but also the alterations effect on the post-development surface runoff. Although tests were conducted in the New Jersey coastal plain, changes in the Hydrologic Soil Group are expected from compaction due to construction and site modification. The engineer must fully explain in his/her design report how TR-55 parameters were developed.

Runoff quantity can be controlled using both nonstructural (Section 5.1) and structural BMPs (Section 5.2) as discussed in this plan. For design guidance on the various BMPs to satisfy the requirements of 4.1.4 above, the applicant’s professionals should refer to the BMP Manual.

4.1.4 Stormwater Runoff Quality

Per the State of New Jersey regulations, stormwater management measures shall only be required for water quality control if an additional one-quarter acre of impervious surface is being proposed on a major development project. Stormwater management measures shall be designed to reduce the post-construction load of Total Suspended Solids in stormwater runoff generated from the water quality design storm by 80 percent of the anticipated load from the developed site, expressed as an annual average. 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. The calculation of the volume of runoff may take into account the implementation of non-structural and structural stormwater management measures. 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 Pollutant Discharge Elimination System (NJPDES) rules, N.J.A.C. 7:14A, or in a discharge specifically exempt under a NJPDES permit from this requirement.

For purposes of TSS reduction calculations, removal rates for BMPs must be designed in accordance with the New Jersey Stormwater Best Management Practices Manual. Alternative removal rates and calculation methods may be considered if the design engineer provides documentation demonstrating the capability of the alternative rates and methods to the City Engineer. A copy of any City approved alternative rate or method of calculating the removal rate shall be provided to NJDEP as required under N.J.A.C. 7:8-5.5.

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

$R = A + B - (A \times B) / 100$ 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

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 sub-areas converge onsite. Stormwater management measures shall also be designed to reduce, to the maximum extent feasible, the post-construction stormwater runoff nutrient load from the developed site generated during the water quality design storm. In achieving a 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 identified above.

4.2 *Performance Standards*

In order to ensure proper operation of all structural and nonstructural stormwater management measures, the City shall require that all projects considered major development incorporate maintenance plans for proposed stormwater management measures. These plans are essential to the long-term functionality of structural best management practices. All nonstructural BMPs must also be properly maintained to ensure long-term functionality. All maintenance plans 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). 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. Specific maintenance guidelines for structural stormwater management measures are available in the NJDEP BMP Manual.

If a person other than the developer (for example, a public agency or homeowners' association) is responsible 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 that

person or entity. In no instance shall the responsibility for maintenance be assigned or transferred to the owner of an individual property in a residential development or project, unless the owner owns the entire residential development or project. If the person responsible for maintenance identified above is not a public agency, the maintenance plan and any future revisions shall be recorded upon the deed of record for each property on which the maintenance described in the maintenance plan must be undertaken.

The person or entity responsible for maintenance (herein referred to as the responsible party) 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. Additionally, the responsible party shall evaluate the effectiveness of the maintenance plan at least once per year and adjust the plan and the deed as needed. All maintenance records and the maintenance plan shall be retained by the responsible party and made available, upon request by any public entity with administrative, health, environmental or safety authority over the site. Nothing in this section shall preclude the City of Paterson from requiring the posting of a performance or maintenance guarantee in accordance with N.J.S.A. 40:55D-53. Remedies for noncompliance will be advanced during the ordinance phase of the work.

During construction for all major development projects, City inspectors may be onsite to observe the construction of the project to ensure that the stormwater management measures are constructed and function as designed. After construction, the City will regularly follow up with the person responsible for maintenance of the stormwater management structures associated with all major development projects.

As previously indicated, each year the City is responsible to submit an Annual Certification Form to NJDEP for their approval. This form requires that the City certify that all stormwater management facilities are being properly operated and maintained. To ensure this, Paterson will insist that all responsible parties submit annual statements documenting the operation and maintenance of their facilities. A letter shall be sent certified mail every April to the City of Paterson detailing what maintenance had been performed during the year. This will assist the City in completing the Annual Certification Form as well as provide documentation of all operations and maintenance not conducted by City personnel on stormwater management facilities. Should the responsible parties not submit annual statements, the City may assume responsibility for assessing the condition of the stormwater facilities and penalties may be assigned for noncompliance.

5.0 Stormwater Runoff Best Management Practices (BMPs)

It should be noted that although attempts to mimic pre-existing natural conditions may be adequate to satisfy the State stormwater rules, alteration of land always modifies hydrology.

5.1 *Nonstructural BMPs/ Low Impact Development (LID)*

With the increasing emphasis on nonpoint source pollution and concerns over the environmental impacts of land development, it has become necessary to develop effective alternatives to the centralized conveyance and treatment strategy that has been the basis for much of the historical stormwater management systems and programs in the State. New strategies must be developed to minimize and even prevent adverse stormwater runoff impacts from occurring and then to provide necessary treatment closer to the origin of those impacts. Such strategies, known collectively as Low Impact Development or LID, seek to reduce

and/or prevent adverse runoff impacts through sound site planning and both nonstructural and structural techniques that preserve or closely mimic the site's natural or pre-developed hydrologic response to precipitation. Rather than responding to the rainfall-runoff process like centralized structural facilities, low impact development techniques interact with the process, controlling stormwater runoff and pollutants closer to the source and providing site design measures that can significantly reduce the overall impact of land development on stormwater runoff.

Any land area used as a non-structural stormwater management measure to meet the above identified design standards shall be dedicated to the City of Paterson, Passaic County, or the State, subjected to a conservation restriction filed with the County Clerk's office, or subject to NJDEP approved or equivalent restriction that ensures that measure or an equivalent stormwater management measure approved by the reviewing agency is maintained in perpetuity. Additionally, in general, all proposed stormwater management measures must avoid creating concentrated stormwater runoff flows on habitat for threatened and endangered species as documented in the NJDEP's Landscape Project or Natural Heritage Database (see Section 3.1.4 above).

To the maximum extent practicable, the design standards identified in Section 4.1 above shall be met by incorporating nonstructural stormwater management strategies into the design. The person(s) submitting an application for review shall identify the nonstructural strategies incorporated into the design of the project and shall complete a Low Impact Development Checklist as provided in the BMP Manual (a sample is included in Appendix D of this report) to be included in the application to the City for review. In accordance with the Stormwater Management Rules, nonstructural stormwater management strategies incorporated into site design shall:

1. Protect areas that provide water quality benefits and areas particularly susceptible to erosion and sediment loss;
2. Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces;
3. Maximize the protection of natural drainage features and vegetation;
4. Minimize the decrease in the "time of concentration" from pre-construction to post-construction.
5. Minimize land disturbance including clearing and grading;
6. Minimize soil compaction;
7. Provide low-maintenance landscaping that encourages precipitation retention and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticides;
8. Provide vegetated open-channel conveyance systems discharging into and through stable vegetated areas; and
9. 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. These source controls include, but are not limited to:
 - i. Site design features that help to prevent accumulation of trash and debris in drainage systems;
 - ii. Site design features that help to prevent and/or contain spills or other harmful accumulations of pollutants at industrial or commercial developments; and

- iii. When establishing vegetation after land disturbance, applying fertilizer in accordance with the requirements established under the Standards for Soil Erosion and Sediment Control in New Jersey.

While the nonstructural stormwater management strategies listed above represents a wide range of both objectives and practices, Strategies 1 through 8 can be directly addressed through the use of specific nonstructural LID-BMPs that can be grouped into four general categories:

- Vegetation and Landscaping;
- Minimizing Site Disturbance;
- Impervious Area Management; and
- Time of Concentration Modifications.

Information on the specific nonstructural LID-BMPs recommended for each of these is presented below. Prior to utilizing any of the specific nonstructural LID-BMPs described below, applicants are urged to review the land development regulations of the municipality and/or agency from which they are seeking development approval. Engineers and site designers should recognize the importance of accurately computing existing or pre-developed runoff at a land development site. While this is an important computation at all development sites, it is particular important at those sites where nonstructural LID-BMPs will be utilized. This is because, to a large degree, these nonstructural measures will utilize and/or mimic the pre-developed site's rainfall-runoff response. As such, accurate computation of pre-developed hydrologic conditions is vital to successful LID-BMP use. It is recommended that engineers and site designers consult with regulatory entities, such as the State, municipality, or local soil conservation district, regarding pre-developed hydrologic conditions. A pre-design meeting with the City Engineer or attendance at the Planning Board in concept stage may help to refine concepts before final design.

5.1.1 Vegetation and Landscaping Techniques

There are three (3) key types of vegetation and landscaping nonstructural measures that should be considered in land development proposed within the City.

- **Best Management Practice #1:** Preservation of existing natural vegetated areas

Description/Implementation: This should be considered throughout the design of a land development, despite the fact that Paterson is mostly built-out. As indicated in Section 3.1.4 – Paterson's Environmental Resources above, there are several areas with significant hydrologic functions including forested areas, riparian corridors, and threatened and endangered species habitat that have been identified within the City limits. Close attention should be placed on the preservation of natural vegetation in these areas in particular.

As woodlands in the floodplain provide the food, cover, water, and space that wildlife requires and are considered to be one of the most productive wildlife areas known, likely owing to their complex vegetative structure and multiple habitat features. These ecosystems become even more important when connected to larger upland woods.

Maintenance Responsibilities: The maintenance responsibilities for this technique are minimal in that the area must be placed in an easement or deed restricted to ensure that the natural vegetation is not removed.

- **Best Management Practice #2: Native ground cover**

Description/Implementation: As indicated in Section 1.0 above, areas covered with turf grass typically generate more runoff pollution than other types of vegetation. This is especially true when comparing grass areas with naturally wooded areas or forests. Therefore, the amount of lawns and other grass areas at land development sites should be minimized. Instead, alternative vegetation, particularly native plants, should be used to revegetate disturbed site areas. Native ground cover can create infiltration characteristics similar to those of natural areas. Naturally wooded areas or forests should also be restored or reestablished at land development sites where opportunity exists.

Maintenance Responsibilities: The use of native plants decreases maintenance in the form of reduced mowing frequency and reduced use of fertilizers, when compared to turf grass.

- **Best Management Practice #3: Vegetative Buffer**

Description/Implementation: Native ground cover can provide a vegetated buffer to help filter stormwater runoff and provide locations for runoff from impervious areas to infiltrate. Water flowing as sheet flow across the vegetated area is slowed and filtered prior to infiltrating into the soil. Dense vegetative cover, long flow path lengths, and low surface slopes provide the most effective vegetated filters. Vegetative buffers can be created by preserving existing vegetated areas over which runoff will flow or by planting new vegetation. If located immediately downstream of impervious surfaces such as roadways and parking lots, they can achieve pollutant removal, groundwater recharge, and runoff volume reduction. Vegetated buffers adjacent to streams, creeks, and other waterways and water bodies can also help mitigate thermal runoff impacts, maintain stream base flow, provide wildlife habitat, and increase site aesthetics. When upland woods are retained in their natural state, they break the force of falling rain. This prevents the soil from washing away and being carried into streams, wetlands, and potable water supply reservoirs. Wooded hillsides are especially critical in this regard. Removal of ground cover and topsoil during and after construction on steep slopes accelerates runoff and resulting erosion, impacting waters below.

Maintenance Responsibilities: Vegetative buffers require very little maintenance and it is best to only enter the area to remove non-natural debris from flood events. Invasive species control, only immediately after enhancement of the buffer by planting, will help native plant species establish. The buffer must be placed in an easement or deed restricted to ensure that the buffer is not removed.

5.1.2 Minimizing Site Disturbance

- **Best Management Practice #4: Minimizing land disturbance**

Description/Implementation: Minimizing land disturbance at a development site is a nonstructural LID-BMP that can be used during all phases of a land development project. Additionally,

minimizing land disturbance can help reduce post-development site runoff volumes and pollutant loads and maintain existing groundwater recharge rates and other hydrologic characteristics by preserving existing site areas. Minimum disturbance begins during the project's planning and design phases by fitting the development into the terrain, as opposed to changing the terrain to fit the development. Roadway and building patterns that match the existing land forms and limit the amount of required clearing and grading should be chosen.

Maintenance Requirements: The applicant will ensure compliance by including these requirements in soil erosion and sediment control plans, construction plans, and contract documents.

5.1.3 Impervious Area Management

Reductions in impervious area translate into more surface storage, infiltration and groundwater recharge, less stormwater runoff, and reduced storm sewer construction, maintenance, and repair costs. It is important to note that all reductions in the amount and dimensions of impervious surfaces at a land development site must also recognize safety and the level of use of the impervious surfaces. There are three (3) impervious area management techniques that may be considered for major development projects proposed within the City.

- **Best Management Practice #5:** Minimizing parking area and driveways

Description/Implementation: Parking area and driveway requirements are mandated by the City Land Development Ordinances and, in the case of residential areas, the RSIS. The RSIS provides flexibility in selecting parking and driveway size, provided that supporting local data is available. A mix of residential and nonresidential uses at a development site can share parking areas, thereby reducing the total parking area and impervious cover. The RSIS also allows a reduction in the standard 18-foot parking space length provided that room is provided for overhang by the vehicle. The overhang area can then be vegetated to further reduce (and possibly help disconnect) impervious surfaces. Non-residential uses can follow suit in the City as well. At all development sites, consideration should be given to constructing some or all driveways and parking areas from pervious paving material. This is particularly true for overflow parking areas as well as driveways (and other access roadways) that are used relatively infrequently by maintenance and emergency vehicles. Parking can also be located underground or beneath buildings, which can help reduce the site's overall impervious coverage.

Maintenance Requirements: Should pervious paving materials be utilized as part of this BMP there is some maintenance required to ensure the long-term operation of the BMPs that serve this technique. Refer to Best Management Practice #16 for more details.

- **Best Management Practice #6:** Unconnected impervious areas

Description/Implementation: This technique includes impervious surfaces that are not directly connected to a site's drainage system. Instead, runoff from an unconnected impervious area is allowed to sheet flow from the impervious area across a downstream pervious surface, where it has the opportunity to re-infiltrate into the soil, thereby reducing the total runoff volume. In most circumstances, impervious areas can be considered unconnected under the following conditions:

1. All runoff from the unconnected impervious area must be sheet flow.
2. Upon entering the downstream pervious area, all runoff must remain as sheet flow.
3. Flow from the impervious surface must enter the downstream pervious area as sheet flow or, in the case of roofs, from downspouts equipped with elongated splash pads, level spreaders, or dispersion trenches that reduce flow velocity and induce sheet flow in the downstream pervious area.
4. All discharges onto the downstream pervious surfaces must be stable and non-erosive.
5. The shape, slope, and vegetated cover in the downstream pervious area must be sufficient to maintain sheet flow throughout its length. Maximum slope of the downstream pervious area is 8 percent.
6. The maximum roof area that can be drained by a single downspout is 600 square feet.

Maintenance Requirements: There is minimal maintenance required with this BMP, however, some repair may be necessary of eroded surfaces.

- **Best Management Practice #7: Vegetated Roofs**

Not recommended

Description/Implementation: Vegetated roofs, also known as green roofs, are an innovative way to reduce impervious surfaces at development sites. A vegetated or green roof consists of a lightweight vegetated planting bed that is installed on a new or existing roof. Vegetated roofs can be implemented using specialized commercial products. It is important to note that the structural integrity of the roof must be taken into consideration when designing a green roof. The City Building Code Officials must be consulted prior to use of this technique.

Maintenance Requirements: Except for periodic limited or as needed fertilization and watering, a meadow-like planting of perennial plants can require minimal maintenance.

5.1.4 Time of Concentration (Tc) Modifications

Changes in peak flow result from changes in the Time of Concentration (Tc) from drainage areas, with longer times yielding smaller peak runoff rates and shorter times causing greater ones. Site factors that affect a drainage area's time of concentration include precipitation, flow length, flow regime, surface roughness, channel shape, and slope. Typically, land development modifies most of these factors in ways that cause the time of concentration of a drainage area to be shorter (and, therefore the peak runoff rates to be greater) after development than prior to development. However, during site design, it may be possible to minimize this decrease in time of concentration by controlling the various site factors that affect it. Considerations for three (3) factors are presented below.

- **Best Management Practice #8: Surface roughness changes**

Description/Implementation: Based upon hydraulic theory, surface roughness coefficients used in sheet flow computations are based on the land cover of a drainage area, with areas of dense vegetation having generally higher coefficients (and longer times of concentration) than smoother surfaces such as paved or grassed areas. Site designers should preserve existing native vegetation or

use native plants with varied topography to restore disturbed areas as discussed above in order to increase surface roughness and time of concentration, and consequently reduce the peak flows from a drainage area.

Maintenance Requirements: Not applicable.

- **Best Management Practice #9:** Slope reduction

Description/Implementation: Ground slope is an important factor in determining a drainage area's time of concentration and peak discharge. Reducing slopes in graded areas can help minimize Tc reductions and peak flow increases. In addition, terraces and reduced slope channels with grade breaks can be constructed on a sloping area to provide additional travel time. Terraces can also be used to redirect runoff to flow along rather than across the slope, decreasing the slope and increasing the flow length and, subsequently, the time of concentration. Care should also be taken to ensure that the grading of vegetated areas is sufficient to allow for positive drainage as required by local or state regulations, particularly adjacent to buildings and other structures.

Maintenance Requirements: Not applicable.

- **Best Management Practice #10:** Vegetated conveyance

Description/Implementation: The use of vegetated conveyance measures such as channels and swales can increase the surface roughness along the Tc flow path and increase the overall Tc. In addition, vegetated channels can provide opportunities for runoff treatment, runoff infiltration, and evapotranspiration. In designing vegetated conveyance measures, care should be taken to protect transitions to and from culverts from erosion caused by flow acceleration and turbulence. The vegetation must be tolerant of the hydrologic regime associated with the channel.

Maintenance Requirements: Maintenance of vegetated conveyance involves mowing at least once (1) per year to inhibit woody vegetation growth and removal of any debris at least once (1) per year and after any storm event larger than 1 inch of rainfall.

At the time this plan was prepared, no actual quantitative values had been assigned to nonstructural BMPs by NJDEP. NJDEP is currently in the process of establishing a point system for the use of these techniques and projects designed will then be required to have a minimum number of points before approval will be granted.

5.2 *Structural BMPs*

As mentioned previously, wherever possible, all major development projects proposed in the City should utilize nonstructural stormwater management measures to meet the requirements of the Stormwater Management Rules. When structural measures are required, the following standards apply:

1. Structural stormwater management measures shall be designed to take into account the existing site conditions, including environmentally critical areas; wetlands; flood-prone areas; slopes; depth to seasonal high water table; soil type, permeability and texture; and drainage area and drainage patterns.

2. Structural stormwater management measures shall be designed to minimize maintenance, facilitate maintenance and repairs, and ensure proper functioning.
3. Structural stormwater management measures shall be designed, constructed, and installed to be strong, durable, and corrosion resistant.
4. Stormwater management basins shall be designed to meet the minimum safety standards for stormwater management basins at N.J.A.C. 7:8-6 and as identified below.
5. Stormwater management measure guidelines are available in the BMP Manual and as described below. 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, ground water recharge and water quality design and performance standards established by this subsection
6. For all future proposed structural stormwater management measures, the City Engineer and director of public works must evaluate the ability to clean out the selected structural BMP(s); the expense of replacement equipment, safety, and training for the BMP(s); and the ease of access to maintain the structure(s).

There are ten (10) types of structural BMPs identified in the BMP Manual; however, this plan details the recommended structural BMPs for use specifically in Paterson. These include the following:

- **Best Management Practice #11: Bioretention system**

Description/Implementation: A bioretention system consists of a soil bed planted with native vegetation located above an underdrained sand layer. It can be configured as either a bioretention basin or a bioretention swale. Stormwater runoff entering the bioretention system is filtered first through the vegetation and then the sand/soil mixture before being conveyed downstream by the underdrain system. Runoff storage depths above the planting bed surface are typically shallow. The adopted TSS removal rate for bioretention systems is 90 percent. Bioretention systems can be used to filter runoff from both residential and nonresidential developments. Bioretention systems are most effective if they receive runoff as close to its source as possible. They can vary in size and can receive and treat runoff from a variety of drainage areas within a land development site. They can be installed in lawns, median strips, parking lot islands, unused lot areas, and certain easements. The elevation of the Seasonal High Water Table (SHWT) is critical to ensure proper functioning of the bioretention basin, and must be evaluated to ensure that the SHWT is at least 1 foot below the bottom of the bioretention basin's underdrain system during non-drought conditions. For areas with Septic systems, an isolation distance or impermeable bottom layer may be required to be installed to ensure no stormwater runoff interferes with nearby systems.

Maintenance Requirements: Effective bioretention system performance requires regular and effective maintenance. All bioretention system components expected to receive and/or trap debris and sediment must be inspected for clogging and excessive debris and sediment accumulation after every storm exceeding 1 inch of rainfall and at least four (4) times annually. Sediment removal should take place when the basin is thoroughly dry. Vegetation should be trimmed and grass should be mowed at least once a month during the growing season. Vegetated areas should be inspected for a decrease in vegetative cover as well as invasive species. Corrective action must be taken within one (1) month to ensure proper operation of the bioretention system. All structural components must be thoroughly inspected for cracking, subsidence, spalling, erosion, and deterioration at least once per year and should be reviewed after every storm exceeding 1 inch of

rainfall. The maintenance plan for a bioretention system must indicate the approximate time it would normally take to drain the maximum design storm runoff volume below the ground surface in the bioretention system. If significant increases or decreases in the normal drain time are observed or if the 72 hour maximum is exceeded, the system's planting soil bed, underdrain system, and both groundwater and tailwater levels must be evaluated and appropriate measures taken to comply with the maximum drain time requirements and maintain the proper functioning of the system. Additionally, the planting soil bed at the bottom of the swale should be inspected after every storm exceeding 1 inch of rainfall.

- **Best Management Practice #12: Constructed stormwater wetland**

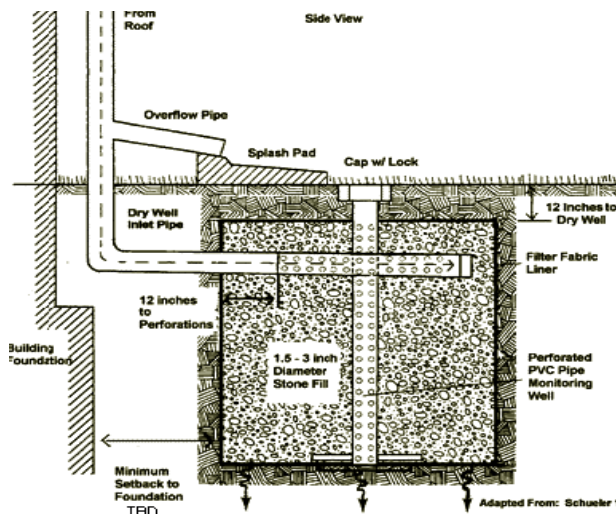
Description/Implementation: Constructed stormwater wetlands are designed to maximize the removal of pollutants from stormwater runoff through settling and both uptake and filtering by vegetation. Constructed stormwater wetlands temporarily store runoff in relatively shallow pools that support conditions suitable for the growth of wetland plants. The adopted TSS removal rate for constructed stormwater wetlands is 90 percent. Constructed stormwater wetlands are used to remove a wide range of stormwater pollutants from land development sites as well as provide wildlife habitat and aesthetic features. The minimum drainage area to a constructed stormwater wetland is 10 acres to 25 acres, depending on the type of wetland. Constructed stormwater wetlands should not be located within natural wetland areas, since they will typically not have the same full range of ecological functions. It is important to note that a constructed stormwater wetland must be able to maintain its permanent pool level.

Maintenance Requirements: Effective constructed stormwater wetland performance requires regular and effective maintenance. All constructed stormwater wetland components expected to receive and/or trap debris and sediment must be inspected for clogging and excessive debris and sediment accumulation after every storm exceeding 1 inch of rainfall and at least four (4) times annually. Mowing and/or trimming of vegetation must be performed at least once a month during the growing season. The vegetative cover should be maintained at 85 percent. If vegetation has greater than 50 percent damage, the area should be reestablished in accordance with the original specifications after a professional assessment of the vegetation loss has been conducted. The assessment may include modifications to the original specifications to alleviate the vegetation loss as appropriate. All structural components must be thoroughly inspected for cracking, subsidence, spalling, erosion, and deterioration at least once per year and should be visually observed at all inspections of the constructed wetland system. The maintenance plan for the constructed wetland must indicate the approximate time it would normally take to drain the maximum design storm runoff and return the various wetland pools to their normal standing water levels. If significant increases or decreases in the normal drain time are observed, the wetland's outlet structure, forebay, and groundwater and tailwater levels must be evaluated and appropriate measures taken to comply with the maximum drain time requirements and maintain the proper functioning of the wetland.

- **Best Management Practice #13: Dry well**

Description/Implementation: A dry well is a subsurface storage facility that receives and temporarily stores stormwater runoff from roofs of structures. Discharge of this stored runoff from a dry well occurs through infiltration into the surrounding soils. A dry well may be either a structural chamber and/or an excavated pit filled with aggregate. Due to the relatively low level of

expected pollutants in roof runoff, a dry well cannot be used to directly comply with the suspended solids and nutrient removal requirements contained in the NJDEP Stormwater Management Rules at N.J.A.C. 7:8. However, due to its storage capacity, a dry well may be used to reduce the total stormwater quality design storm runoff volume that a roof would ordinarily discharge to downstream stormwater management facilities. Dry wells can also be used to meet the groundwater recharge requirements of the NJDEP Stormwater Management Rules. The use of dry wells is applicable only where their subgrade soils have the required permeability rates and groundwater is not shallow. Like other BMPs that rely on infiltration, dry wells are not appropriate for areas where high pollutant or sediment loading is anticipated due to the potential for groundwater contamination. As noted above, this structure cannot be utilized for sites with known contamination. Dry wells are not assigned any TSS removal rate and pre-treatment is required for any stormwater runoff including rooftop stormwater runoff directed to these units since leaf matter and roofing material will lead to clogging of the system.



Maintenance Requirements: Effective dry well performance requires regular and effective maintenance. A dry well should be inspected after every storm exceeding 1 inch of rainfall and at least four (4) times annually. The maintenance plan must indicate the approximate time it would normally take to drain the maximum design storm runoff volume from the dry well. If significant increases in the normal drain time are observed or if it exceeds the 72-hour maximum, appropriate measures must be taken to comply with the drain time requirements and maintain the proper functioning of the dry well.

- **Best Management Practice #14: Extended Detention Basin**

Description/Implementation: An extended detention basin is a facility constructed through filling to create a berm and/or excavation to form a hole that provides temporary storage of stormwater runoff. It has an outlet structure that detains and attenuates runoff inflows and somewhat promotes the settlement of pollutants. An extended detention basin is normally designed as a multistage facility that provides runoff storage and attenuation for both stormwater quality and quantity management. **The adopted TSS removal rate for extended detention basins is 40 to 60 percent, depending on the duration of detention time provided in the basin, which does not meet the requirements of the Stormwater Management Rules exclusively.** Extended detention basins can be used in part to address both the stormwater runoff quantity and quality impacts of land development. Extended detention basins are designed for complete evacuation of runoff and normally remain dry between storm events. Extended detention basins may be used at sites where significant increases in runoff are expected from site development. In addition, standard detention basins may be retrofitted or converted to extended detention by increasing the time over which the basin releases the stormwater quality design storm runoff volume, provided that erosion and flood control volumes and outflow rates are not adversely altered. It must be stressed that extended

detention basins have a limited effectiveness in removing both particulate and soluble pollutants may limit their use for water quality treatment.

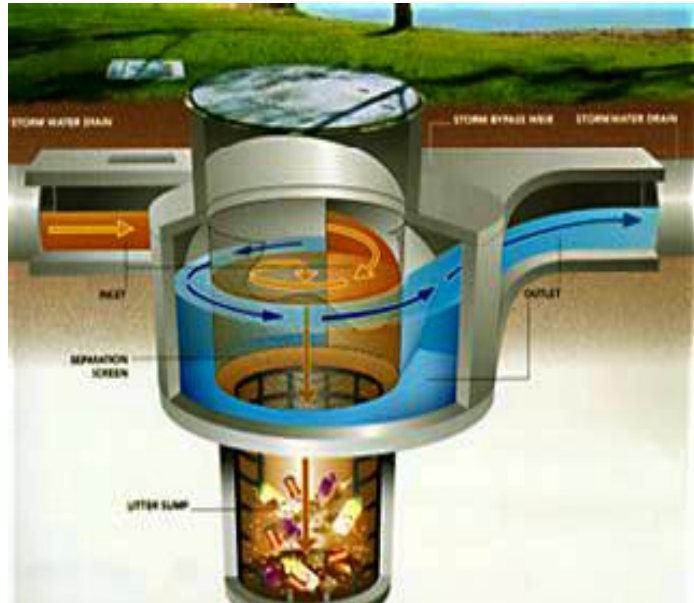
Maintenance Requirements: Extended detention basin performance requires regular and effective maintenance. All extended detention basin components expected to receive and/or trap debris and sediment must be inspected for clogging and excessive debris and sediment accumulation after every storm exceeding 1 inch of rainfall and at least four (4) times annually. Sediment removal should take place when the basin is thoroughly dry. Grass (although other vegetation is preferred) should be mowed at least once a month during the growing season. The vegetative cover should be maintained at 85 percent and corrective action must be taken should the vegetation become more than 50 percent damaged. All structural components must be thoroughly inspected for cracking, subsidence, spalling, erosion, and deterioration at least once (1) per year and should be visually observed at each inspection of the extended detention basin. The maintenance plan must indicate the approximate time it would normally take to completely drain the maximum design storm runoff volume from the basin. If significant increases or decreases in the normal drain time are observed, the basin's outlet structure, underdrain system, and both groundwater and tailwater levels must be evaluated and appropriate measures taken to comply with the maximum drain time requirements and maintain the proper functioning of the basin.

Safety Requirements: All new stormwater management basins within the City must, at a minimum, include trash racks, overflow grates, and escape provisions at 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. Stormwater management basins shall include escape provisions as follows:

1. If a stormwater management basin has an outlet structure, escape provisions shall be incorporated in or on the structure. Escape provisions include the installation of permanent ladders, steps, rungs, or other features that provide easily accessible means of egress from stormwater management basins. With the prior approval of the reviewing agency pursuant to N.J.A.C. 7:8-6.3(a), a freestanding outlet structure may be exempted from this requirement.
2. 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. 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 N.J.A.C. 7:8-6 Appendix A for an illustration of safety ledges in a stormwater management basin.
3. In new stormwater management basins, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than three horizontal to one vertical.

- **Best Management Practice #15: Manufactured Treatment Device**

Description/Implementation: A manufactured treatment device is a pre-fabricated stormwater treatment structure utilizing settling, filtration, absorptive/adsorptive materials, vortex separation, vegetative components, and/or other appropriate technology to remove pollutants from stormwater runoff. Manufactured treatment devices may be used to meet the requirements of the Stormwater Management Rules, provided the pollutant removal rates are verified by the New Jersey Corporation for Advanced Technology (NJCAT) and certified by NJDEP. Other manufactured treatment devices not certified under the NJCAT program may be utilized if they are approved by NJDEP prior to their use. Other pollutants, such as nutrients, metals, hydrocarbons, and bacteria can be included in the verification/certification process if the data supports their removal efficiencies. Manufactured treatment devices are intended to capture sediments, metals, hydrocarbons, floatables, or other pollutants in stormwater runoff before being conveyed to a storm sewer system, additional stormwater quality treatment measure, or waterbody. A manufactured treatment device is adequate for small drainage areas that contain a predominance of impervious cover that is likely to contribute high hydrocarbon and sediment loadings, such as small parking lots and gas stations. For larger sites, multiple devices may be necessary. Devices are normally used for pretreatment of runoff before discharging to other, more effective stormwater quality treatment facilities. The City Engineer and Director of Public Works must be consulted about each manufactured treatment device proposed and consideration should be given to maintenance, training, and future costs to the City before approval. It is strongly recommended that the applicant for new development/redevelopment have a meeting with the above or concept plan presentation to the Planning Board prior to initiating design of any manufactured treatment device.



Maintenance Requirements: The maintenance of manufactured treatment devices depends on the manufacturer's guidance. All manufacturer maintenance requirements must be followed to ensure proper operation of these BMPs.

- **Best Management Practice #16: Pervious paving**

Description/Implementation: Pervious paving materials can be used at some site locations in the City to replace standard impervious pavement in parking lots and driveways in the City. For all sites where pervious paving is proposed, care should be taken in assessing soil conditions, high groundwater conditions, and potential sources of contamination. Further, it is recommended that some form of pre-treatment (i.e. filter strips) be utilized to minimize the chance of clogging the pervious paving. All design criteria identified in the BMP Manual should be followed if this technique is selected. Also, the use of pervious paving materials shall be discussed with City officials and the H.E.P. Soil Conservation District prior to use on a project site. Careful consideration must be given to freezing weather and to drainage and flooding if clogging occurs.



Maintenance Requirements: Effective pervious paving system performance requires regular and effective maintenance. The surface course of all pervious paving systems must be inspected at least once a year for cracking, subsidence, spalling, deterioration, erosion, and the growth of unwanted vegetation. Care must be taken when removing snow from the pervious paving surface courses and pervious paving surface courses can be damaged by snowplows or loader buckets that are set too low to the ground. This is particularly true for permeable paver systems where differential settlement of pavers has occurred. Sand, grit, or cinders should not be used on pervious paving surface courses for snow or ice control. If mud or sediment is tracked onto the surface course of a pervious paving system, it must be removed as soon as possible. Removal should take place when the surface course is thoroughly dry. The surface course of a porous paving system must be vacuum swept at least four (4) times a year. A high pressure hosing should follow this. All dislodged sediment and other particulate matter must be removed and properly disposed. Maintenance of permeable pavers should be consistent with the manufacturer's recommendations. Grass should be mowed at least once a month during the growing season. Vegetated areas should be inspected at least annually. The vegetative cover should be maintained at 85 percent. The maintenance plan must indicate the approximate time it would normally take to drain the maximum design storm runoff volume below the pervious paving system's surface course. If significant increases or decreases in the normal drain time are observed, the various system components and groundwater levels must be evaluated and appropriate measures taken to comply with the maximum drain time requirements and maintain the proper functioning of the system. It shall be the applicant's obligation to insure that all pervious paving designs are carefully and thoroughly developed, installed and maintenance is assured.

- **Best Management Practice #17: Sand filter**

Description/Implementation: A sand filter consists of a forebay and underdrained sand bed. It can be configured as either a surface or subsurface facility. Runoff entering the sand filter is conveyed first through the forebay, which removes trash, debris, and coarse sediment, and then through the sand bed to an outlet pipe. Sand filters use solids settling, filtering, and adsorption processes to reduce pollutant concentrations in stormwater. **The adopted TSS removal rate for sand filters is 80 percent.** Sand filters are normally used in highly impervious areas with relatively

high TSS, heavy metal, and hydrocarbon loadings such as roads, driveways, drive-up lanes, parking lots, and urban areas. However, due to their relatively high sediment removal capabilities, sand filters are not generally recommended in pervious drainage areas where high coarse sediment loads and organic material such as leaves can quickly clog the sand bed. Where such loadings cannot be avoided, effective pretreatment is absolutely required. Since sand filters can be located underground, they can also be used in areas with limited surface space.

Maintenance Requirements: Effective sand filter performance requires regular and effective maintenance. All sand filter components expected to receive and/or trap debris and sediment must be inspected for clogging and excessive debris and sediment accumulation after every storm exceeding 1 inch of rainfall and at least four (4) times annually. Such components may include inlets and diversion structures, forebays, sand beds, and overflows. Sediment removal should take place when all runoff has drained from the sand bed and the sand is reasonably dry. In addition, runoff should be properly drained or pumped from forebays with permanent pools before removing sediment. In surface sand filters with turf grass bottom surfaces, mowing and/or trimming of vegetation must be performed on a regular schedule based on specific site conditions. Grass should be mowed at least once a month during the growing season. Vegetated areas must also be inspected at least annually. The filter bottom must be inspected for unwanted underbrush and tree growth at least once a year. Inspections of vegetation health, density, and diversity should be performed during both the growing and non-growing season. All structural components must be thoroughly inspected for cracking, subsidence, spalling, erosion, and deterioration at least once per year. A visual observation of all structural components should be part of every inspection of the sand filter. The maintenance plan must indicate the approximate time it would normally take to drain the maximum design storm runoff volume below the top of the filter's sand bed. If significant increases or decreases in the normal drain time are observed, the filter's sand bed, underdrain system, and tailwater levels must be evaluated and appropriate measures taken to comply with the maximum drain time requirements and maintain the proper functioning of the filter. The infiltration rate of the sand bed should be retested at least once per year.

- **Best Management Practice #18: Vegetative filter**

Description/Implementation: Similar to BMP #3 described above, a structural vegetative filter strip can be employed using native ground cover or other vegetation to provide pollutant removal from stormwater runoff. A vegetative filter is an area designed to remove suspended solids and other pollutants from stormwater runoff flowing through a length of vegetation called a vegetated filter strip. The vegetation in a filter strip can range from turf (not recommended) and native grasses to herbaceous and woody vegetation, all of which can either be planted or indigenous. It is important to note that all runoff to a vegetated filter strip must both enter and flow through the strip as sheet flow. Failure to do so can severely reduce and even eliminate the filter strip's pollutant removal capabilities. The total suspended solid (TSS) removal rate for vegetative filters will depend upon the vegetated cover in the filter strip. Vegetated filter strips can be effective in reducing sediment and other solids and particulates, as well as associated pollutants such as hydrocarbons, heavy metals, and nutrients. The pollutant removal mechanisms include sedimentation, filtration, adsorption, infiltration, biological uptake, and microbacterial activity. Vegetated filter strips with planted or indigenous woods may also create shade along water bodies that lower aquatic temperatures, provide a source of detritus and large woody debris for fish and other aquatic organisms, and provide habitat and corridors for wildlife. Depending upon their TSS removal rate,

vegetated filter strips can be used separately or in conjunction with other stormwater quality practices to achieve an overall pollutant removal goal.

Maintenance Requirements: Effective vegetated filter strip performance requires regular and effective maintenance. All vegetated filter strip components expected to receive and/or trap debris and sediment must be inspected for clogging and excessive debris and sediment accumulation after every storm exceeding 1 inch of rainfall and at least four (4) times annually. Such components may include vegetated areas and stone cutoffs and, in particular, the upstream edge of the filter strip where coarse sediment and/or debris accumulation could cause inflow to concentrate. Sediment removal should take place when the filter strip is thoroughly dry. Grass should be mowed at least once a month during the growing season. Vegetated areas must be thoroughly inspected at least once per year. Visual observations should be noted at the time of each inspection of the filter. The vegetative cover should be maintained at 85 percent. All areas of the filter strip should be inspected for excess ponding after significant storm events. The maintenance plan must indicate the approximate time it would normally take for the filter strip to drain the maximum design storm runoff volume and begin to dry. If significant increases or decreases in the normal drain time are observed or if the 72 hour maximum is exceeded, the filter strip's planting soil bed, vegetation, and groundwater levels must be evaluated and appropriate measures taken to comply with the maximum drain time requirements and maintain the proper functioning of the filter strip.

- **Best Management Practice #19: Rain Barrel**

Description/Implementation: A rain barrel is a rainwater harvesting system that is connected to a down spout tube from a house or building and is a simple retrofit that a homeowner can perform. Rain barrels collect, store and divert rooftop runoff during a rain shower for use during dryer weather. Saving rainwater to use during the dry months using rain barrels is an ancient practice that is again becoming popular. With the rising price of municipal water and drought restrictions facing much of the country during the summer months, more and more homeowners are turning to rainwater. The City is dominated by small lots, a rain barrel is a perfect reservoir for watering landscapes and ornamental and vegetable gardens. Harvesting systems vary from the simple use of barrels and gravitation to high tech systems using cisterns, pumps, and flow controls. For new development applications, rain barrels although encouraged, will not get credit for rainwater storage.

Maintenance Requirements: All systems should use covered barrels or cisterns that keep the water from accumulating leaves (and going septic) and keep the standing water from encouraging mosquito breeding. Some rain barrels need to be emptied and moved indoor during the winter due to freezing damage.

6.0 Mitigation Plans

A municipal mitigation plan, adopted by City ordinance, will be available to an applicant for a proposed development and implemented only when a variance or exemption from the stormwater management design and performance standards is necessary. The mitigation project must provide additional groundwater recharge benefits, or protection from stormwater runoff quality and quantity from previously developed properties that do not currently meet the design and performance standards outlined in the Municipal

Stormwater Management Plan. The developer must ensure the long-term maintenance requirements are met for both the application and the mitigation.

The City will allow a developer to provide funding or partial funding for an environmental enhancement project that has been identified in the Plan. The funding must be equal to or greater than the cost to implement the mitigation outlined above, including costs associated with purchasing the property or easement for mitigation, and the cost associated with the long-term maintenance requirements of the mitigation measure. The mitigation project must be proposed by the applicant after reviewing the options provided in the Mitigation Plan.

Since groundwater recharge in the City will be severely limited due to the urban nature of the area. It is apparent that mitigation options must be considered for all major development projects to compensate for non-compliance with the groundwater recharge component of the Stormwater Management Rules, N.J.A.C. 7:8. There may also be unforeseen conditions not anticipated by the Stormwater Committee that may require reasonable relief to the applicant (i.e. redevelopment).

7.0 Stream Corridor Protection Plans

As the City has no category one waters within its municipal boundary, a Stream Corridor Protection Plan is not required.

8.0 Land Use/Build Out Analysis

The City meets the exemption criteria from the requirement for a land use/build out analysis under the NJPDES General Permit.

9.0 Plan Consistency and Recommended Stormwater Control Ordinances

As stated in Section 2.0 above, the following goals were identified and were met as summarized below:

- **GOAL: Reduce flood damage, including damage to life and property** – By requiring that all major development projects address stormwater quantity in accordance with the new Stormwater Management Rules and the requirements identified in Sections 4 and 5 above, the City should be able to reduce increased flood damage to a great extent.
- **GOAL: Minimize, to the extent practical, any increase in stormwater runoff from any new development** – By mandating the use of various nonstructural stormwater management techniques as discussed in Section 5.1 above, the City shall minimize the increase in stormwater runoff from new development. Additionally, requiring projects to meet the stormwater runoff quantity control requirements of the new rules further decreases the potential for stormwater runoff concerns from new development projects in the City.

- **GOAL: Reduce soil erosion from any development or construction project** – The City’s Stormwater Management Plan identifies that the Standards for Soil Erosion and Sediment Control in New Jersey be followed for all major development projects. Further, the City will mandate mitigation measures for projects that cannot strictly comply with the Stormwater Rules or the City’s ordinances for stormwater thus retrofits to existing stormwater management features can be employed to reduce erosion from existing development and redevelopment projects.
- **GOAL: Assure the adequacy of existing and proposed culverts and bridges, and other in-stream structures** – The City will identify locations where storm sewers are inadequate. Stream bank instability areas will also be identified. These locations will likely be good candidates for the Mitigation Plan.
- **GOAL: Maintain groundwater recharge** – By mandating that all major development projects complete Groundwater Recharge Spreadsheet analyses, it will be possible for the City to identify the pre-developed and post-developed groundwater recharge conditions. Through the use of BMPs for infiltration, the existing groundwater recharge conditions will be maintained post-development. The City will mandate mitigation measures to compensate for any shortfall due to thorough documented on-site limitations to recharge.
- **GOAL: Prevent, to the greatest extent feasible, an increase in nonpoint pollution** – By strongly encouraging the use of LID and preservation, the City is working to minimize nonpoint pollution. Additionally, since the City is mandating that all major development projects meet a 80% Total Suspended Solids removal rate, nonpoint pollution is mitigated to an even greater extent. Further, the City will mandate mitigation measures for projects that cannot strictly comply with the Stormwater Rules or the City’s ordinances for stormwater. Retrofits to existing stormwater management features can be employed to reduce nonpoint pollution from existing development and redevelopment projects.

Through enforcement of existing City regulations on pet waste, wildlife feeding and litter, additional benefits will be realized along the Passaic River including nutrient control, pathogen control, bank erosion control, and debris control. The City’s street sweeping program is already reduces nonpoint source pollution.

- **GOAL: Maintain the integrity of stream channels for their biological functions, as well as for drainage** – The biological function of all the Passaic River’s tributaries within the City boundaries will be maintained and enhanced.
- **GOAL: Minimize pollutants in stormwater runoff from new and existing development in order 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** - By mandating that all major development projects meet an 80% Total Suspended Solids removal rate, nonpoint pollution is mitigated to a greater extent. Further, the City will mandate mitigation measures for projects that cannot strictly comply with the Stormwater Rules or the City’s ordinances for stormwater. Retrofits to existing stormwater management features can be employed to reduce nonpoint pollution from existing development and redevelopment projects.

As a Tier A Municipality, the City is required to develop and implement a Local Public Education Program to educate residents and businesses about the impact of their activities on stormwater quality and on the steps they can take to lessen these impacts. The City's Education Program will be conducted to satisfy at least the minimum standards and will include all of the SBA and/or BMP topics required.

The City has decided to mail the educational brochure (provided by the New Jersey Department of Environmental Protection) to residents and businesses. These are mailed annually. In addition, this brochure and other educational materials will be made available year-round at appropriate municipal buildings and other public facilities. The City believes that tailoring the mailing in the future to emphasize the unique features of the City will help the residents understand the good stewardship role they can play.

The City will fulfill the "Annual Event" requirement at the Great Falls Festival. Volunteers will distribute educational materials as well as other appropriate items such as magnets, bookmarks, pencils, buttons, etc. to increase public awareness about stormwater quality. In addition, volunteers will answer questions and promote best management practices including proper waste and pet-waste disposal, proper fertilizer/pesticide application techniques, and composting and yard waste recycling. Volunteers will also encourage community participation in local events.

The Storm Drain Inlet Labeling Project will include the distribution of materials describing the hazards of dumping materials into storm drains and the labeling of all storm drains along municipal streets with sidewalks and all storm drains within plazas, parking areas, and maintenance yards operated by the municipality. The program will also develop a long-term maintenance plan for the labels.

Through these and other outreach efforts to residents, the City will fulfill not only its Local Public Education requirements, but will also improve public awareness, promote better stormwater management practices, and encourage community involvement and environmental stewardship.

- **GOAL: Protect public safety through the proper design and operation of stormwater management basins** – Public safety will be protected as the City is mandating all new stormwater management basins be designed in accordance with the public safety requirements of the Stormwater Management Rules.

Please note this part of the plan will be updated upon complete review for consistency with the City's Master Plan and Land Development Ordinance.

Preliminarily, it appears that the Land Development Ordinance and City Code should be updated to include the stormwater control ordinances.

10.0 Applicable Definitions

"Best Management Practice(s)" (or BMP) The use of both nonstructural and structural stormwater management measures including effective low impact development.

“City of Paterson” also as municipality, City of Paterson in this document.

“Development” includes 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.

“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 NJDEP 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.

“Impervious surface” means a surface that has been covered with a layer of material so that it is highly resistant to infiltration by water. Impervious surfaces include areas such as paved parking lots and concrete sidewalks.

“Low Impact Development” Low Impact Development or LID, seek to reduce and/or prevent adverse runoff impacts through sound site planning and both nonstructural and structural techniques that preserve or closely mimic the site’s natural or pre-developed hydrologic response to precipitation. Rather than responding to the rainfall-runoff process like centralized structural facilities, low impact development techniques interact with the process, controlling stormwater runoff and pollutants closer to the source and providing site design measures that can significantly reduce the overall impact of land development on stormwater runoff. As such, low impact development promotes the concept of designing with nature.

“Major development projects” include those projects that disturb one (1) or more acres of land or increase impervious surfaces by 0.25 acres or more. Disturbance includes the placement of impervious surface or exposure and/or movement of soil or bedrock or clearing, cutting, or removing of vegetation. Projects undertaken by any government agency which otherwise meet the definition of “major development” but which do not require approval under the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., are also considered “major development.”

“Nonpoint source pollution” refers to all sources that cannot be identified as a point discharge. These include stormwater surface runoff and agricultural runoff, among others.

“Redevelopment” refers to alterations that change the “footprint” of a site or building in such a way that results in the disturbance of one acre or more of land. The term is not intended to include such activities as exterior remodeling, which would not be expected to cause adverse stormwater quality impacts and offer no new opportunity for stormwater controls. The NJDEP does not consider pavement resurfacing projects that do not disturb the underlying or surrounding soil, remove surrounding vegetation, or increase the area of impervious surface to be “redevelopment projects.”

“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.

"Time of Concentration" is defined as the time it takes for runoff to travel from the hydraulically most distant point of the drainage area to the point of interest within a watershed.

"Total Suspended Solids" refers to particles that are suspended in water. Suspended solids in water reduce light penetration in the water column, can clog the gills of fish and invertebrates, and are often associated with toxic contaminants because organics and metals tend to bind to particles. Differentiated from total dissolved solids (TDS) by a standardized filtration process, the dissolved portion passing through the filter.

"Water Quality Design Storm" refers to the rainfall event used to analyze and design structural and nonstructural stormwater quality measures (known as Best Management Practices or BMPs). As described in the Stormwater Management Rules, the NJDEP stormwater quality design storm has a total rainfall depth of 1.25 inches and a total duration of two hours. During its duration, the rain falls in a nonlinear pattern. This rainfall pattern or distribution is based on Trenton, New Jersey rainfall data collected between 1913 and 1975 and contains intermediate rainfall intensities that have the same probability or recurrence interval as the storm's total rainfall and duration. As such, for times of concentration up to two hours, the stormwater quality design storm can be used to compute runoff volumes, peak rates, and hydrographs of equal probability. This ensures that all stormwater quality BMPs, whether they are based on total runoff volume or peak runoff rate, will provide the same level of stormwater pollution control.

APPENDICES

Appendix A: NJPDES Tier A Stormwater General Permit



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

06/07/2004

RECEIVED
JUN 10 2004

Frederick Margron
PATERSON CITY
155 MARKET ST
Paterson, NJ 07505

Re: R9 -Tier A Municipal Stormwater General Permit
NJPDES: NJG0155608 / PI ID #: 207691
PATERSON CITY
Passaic

Dear Frederick Margron:

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, 07/01/2004, 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 NJG0155608 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.

If 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,

A handwritten signature in dark ink, appearing to read "Barry Chalofsky". The signature is fluid and cursive, with a long horizontal stroke at the end.

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

C: (w/AUTHORIZATION Form): NJDEP Water Compliance and Enforcement Region Office

Summary of Technical Corrections and Changes to Advance Copy of Final Tier A Municipal Stormwater General Permit

Part I, Section A.2.c: Inserted "*After the Effective Date of Permit Authorization (EDPA)*," before "the permit authorizes the following new and existing non-stormwater discharges ..."

Part I, Section E.2.a.i: Changed "authorized representative of the Tier A Municipality" to "*Municipal Stormwater Program Coordinator*."

Part I, Section F.4.b.i: Changed "all storm drains within plazas ..." to "all storm *drain inlets* within plazas ..."

Part I, Section F.6.a.i: Rearranged and revised the last three sentences to read as follows: "*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.*"

Part I, Section F.7.b.i: Changed "refer to 'Conditions Where Standard Does Not Apply' in Attachment C" to "refer to '*Exemptions*' in Attachment C."

Part I, Section J.2.a: Inserted "*the New Jersey Register of Historic Places Rules (N.J.A.C. 7:4)*," before "and all other Department rules."

Attachment B, Procedures for Detecting, Investigating, and Eliminating Illicit Connections, Detection: In the first sentence, changed "a municipal separate storm sewer system" to "*the Tier A Municipality's small MS4*," and changed "the NJPDES permit for discharges from that system" to "*this Tier A Municipal Stormwater General Permit*."

Attachment B, Procedures for Detecting, Investigating, and Eliminating Illicit Connections, Investigation: In the last paragraph, changed "Illicit Connection Report form" to "Illicit Connection *Inspection* Report form," and changed "three (3) separate investigations where made" to "three (3) separate investigations *were* made."

Attachment C, Design Standard - Storm Drain Inlets, Exemptions: Added the following exemption:

"*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, Section A.2.c: Changed to read: "*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.*"

	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
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AUTHORIZATION TO DISCHARGE
R9 -Tier A Municipal Stormwater General Permit

Facility Name:

PI ID #: 207691

PATERSON CITY

Facility Address:

NJPDES #: NJG0155608

155 MARKET ST
PATERSON CITY, NJ 07505-1311

Type of Activity: Stormwater Discharge General Permit Authorization New

Owner:

PATERSON CITY
155 MARKET ST
PATERSON, NJ 07505

Operating Entity:

PATERSON CITY
155 MARKET ST
PATERSON, NJ 07505

Issuance Date:

06/07/2004

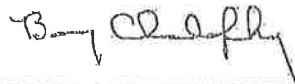
Effective Date:

07/01/2004

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: 06/07/2004

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 inquiries 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, SPWP 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 15th through April 30th. All salt and de-icing materials must be removed from the site prior to May 1st and may not be stored outside again until October 15th.
 - iii. The implementing of a regular inspection, sweeping and housekeeping program to ensure that the material is maintained and stored in a proper manner.

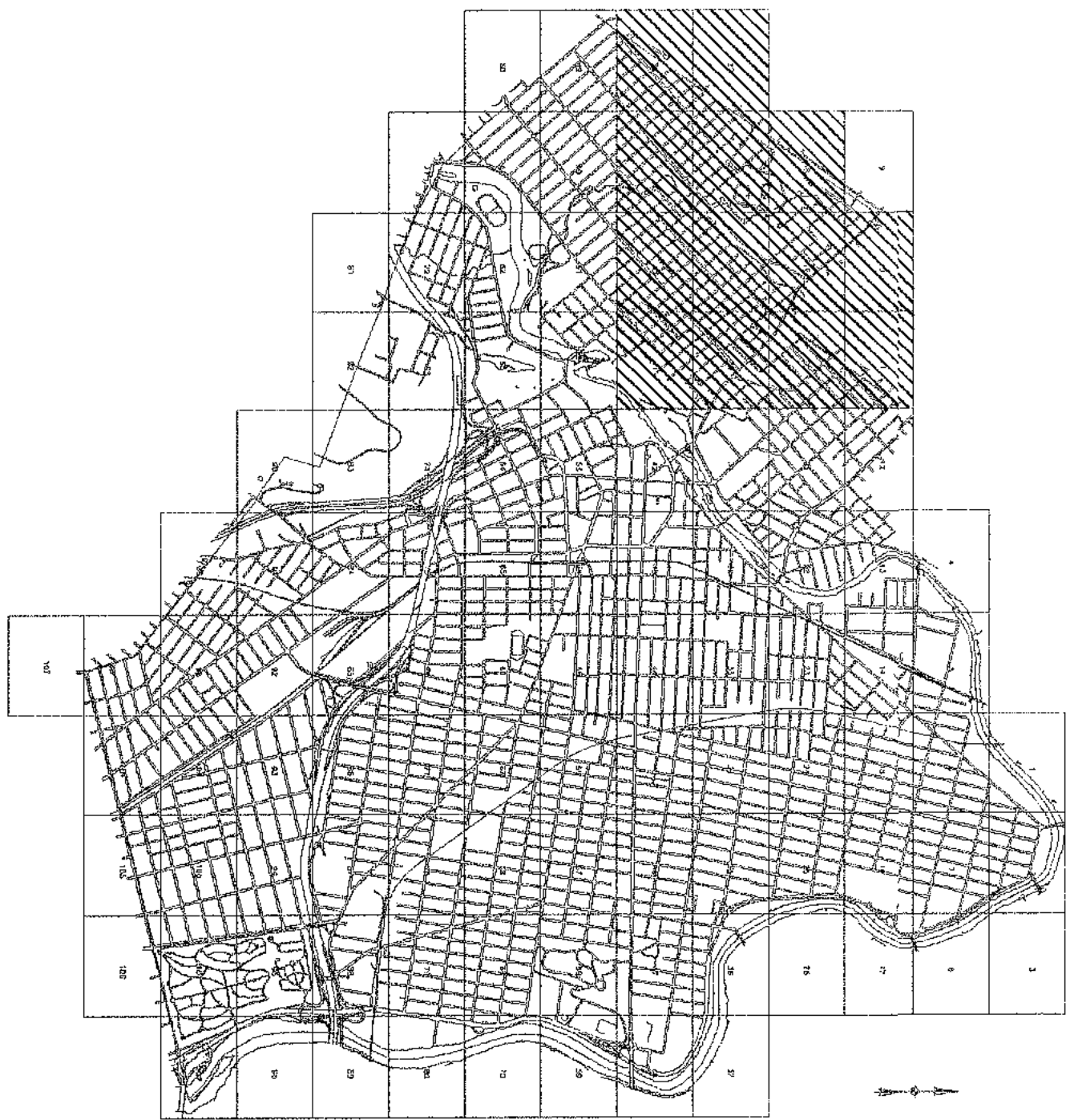
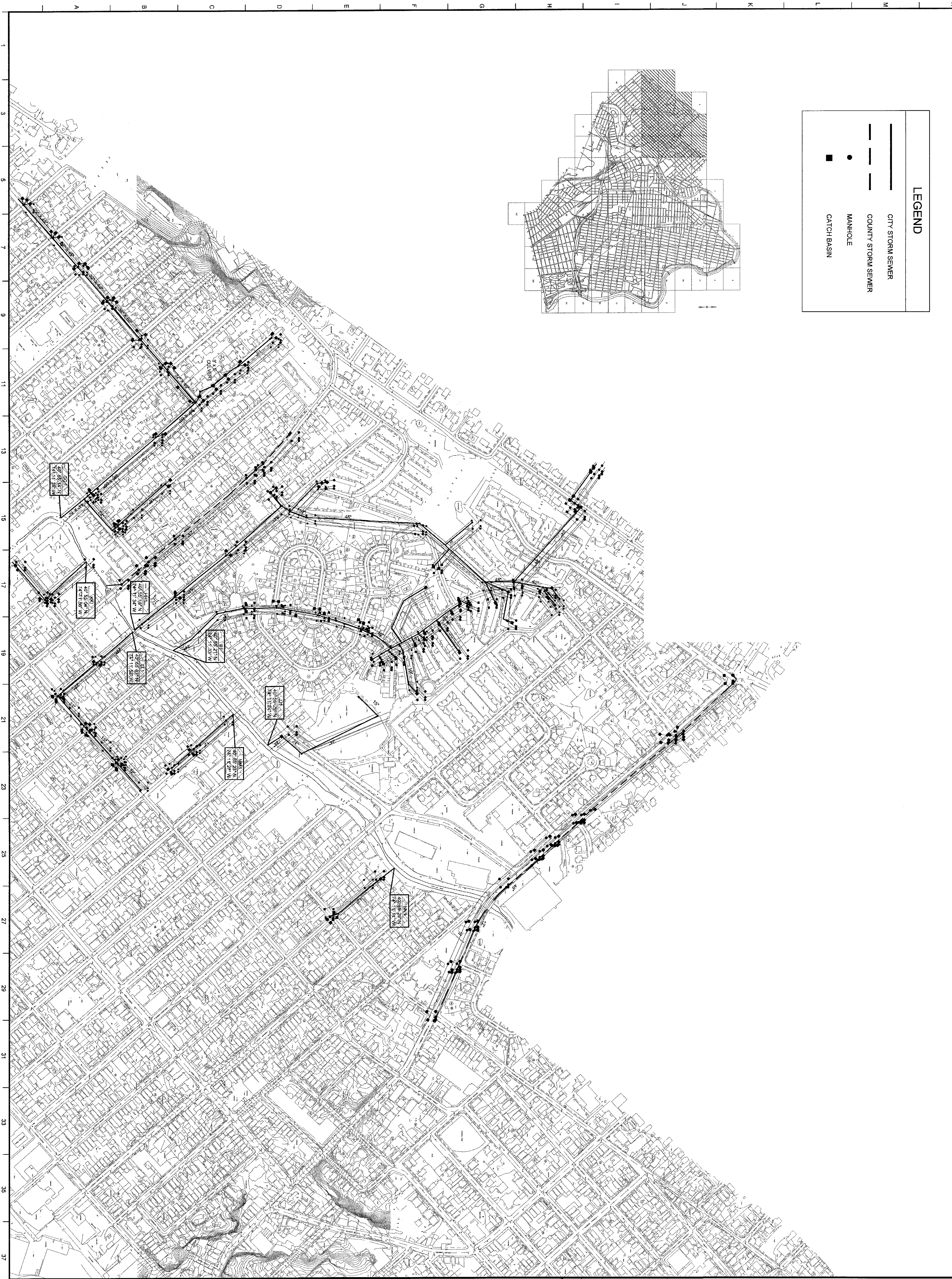
6. Inspections

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.

Appendix B: Municipal Background Mapping



LEGEND	
	CITY STORM SEWER
	COUNTY STORM SEWER
	MANHOLE
	CATCH BASIN

FREDERICK J. MARGRON P.E., REM, CEA.
N.J. PROFESSIONAL ENGINEER LICENSE No. 38513
CITY ENGINEER

CITY OF PATERSON, NEW JERSEY
Department of Public Works
Division of Engineering
111 Broadway
Paterson, NJ 07505
PH: (973) 321-1320
Manny Ojeda, Director

REV.	DATE	DESCRIPTION
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drawn by	AS	checked by	FM
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project name

STORM WATER MANAGEMENT
CITY OF PATERSON, PASSAIC COUNTY, NEW JERSEY
STORM SEWER MAPPING

project no.

314

date

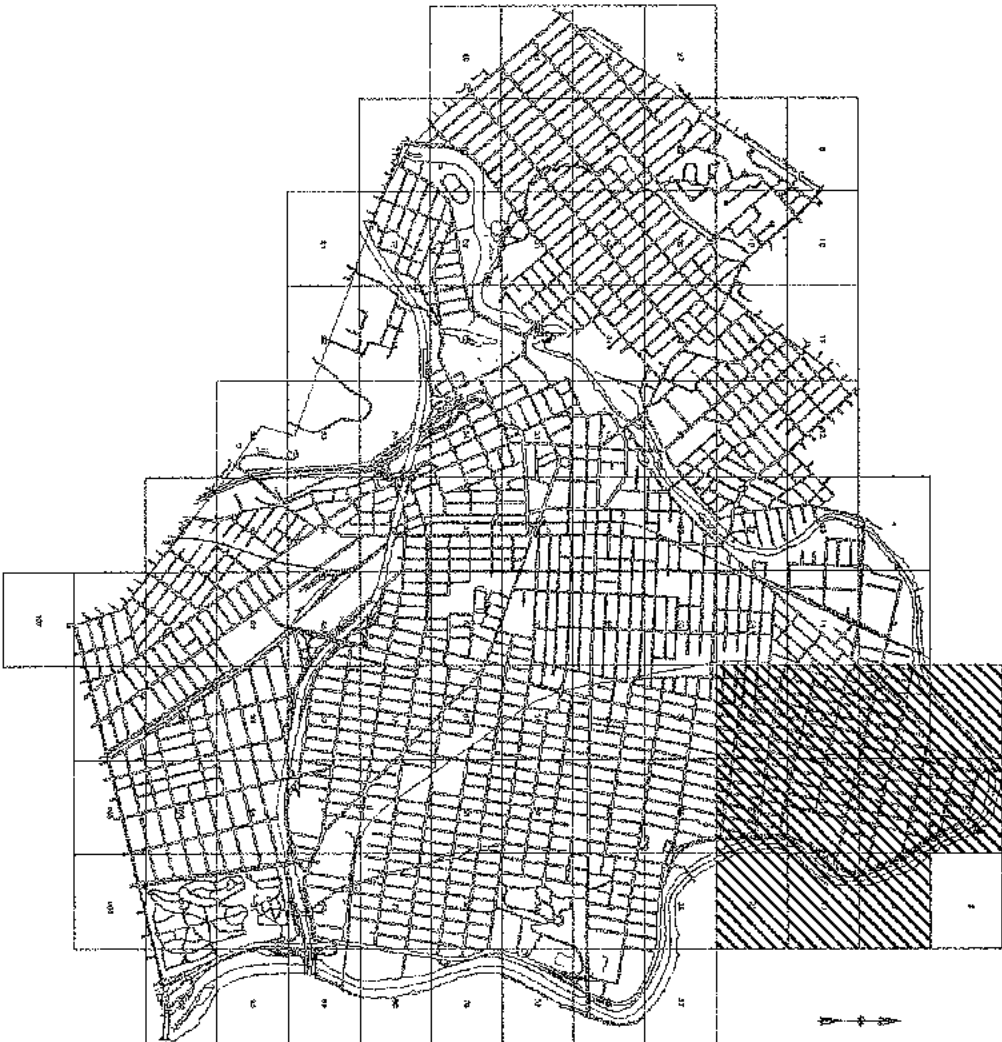
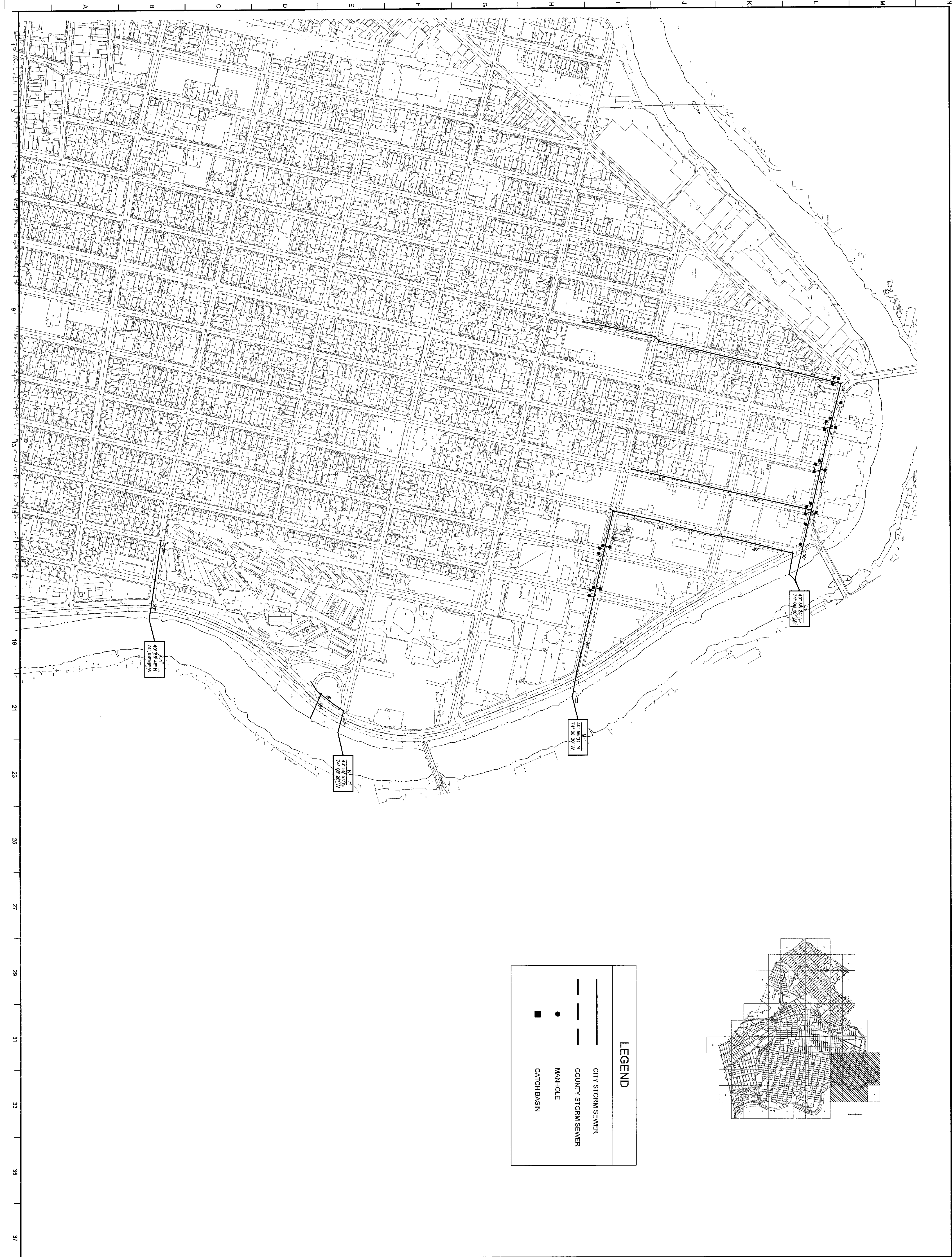
05/19/05

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1" = 200'

drawing no.

1 of 10



LEGEND	
	CITY STORM SEWER
	COUNTY STORM SEWER
	MANHOLE
	CATCH BASIN

FREDERICK J. MARGRON P.E., REM, CEA. N.J. PROFESSIONAL ENGINEER LICENSE No. 38513 CITY ENGINEER	CITY OF PATERSON, NEW JERSEY Department of Public Works Division of Engineering 111 Broadway Paterson, NJ 07505 PH: (973) 321-1320 Manny Ojeda, Director				REV. DATE		DESCRIPTION		project name			
					STORM WATER MANAGEMENT							
					CITY OF PATERSON, PASSAIC COUNTY, NEW JERSEY							
					STORM SEWER MAPPING							
drawn by		checked by		project no.		date		scale		drawing no.		
AS		FM		314		05/19/05		1" = 200'		3 of 10		



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LEGEND

CITY STORM SEWER

COUNTY STORM SEWER

MANHOLE

CATCH BASIN

REV

DATE

DESCRIPTION

drawn by

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project no.

314

date

05/19/05

scale

1" = 200'

drawing no.

6 of 10

CITY OF PATERSON, NEW JERSEY

Department of Public Works

Division of Engineering

111 Broadway

Paterson, NJ 07505

PH: (973) 321-1320

Manny Ojeda, Director

FREDERICK J. MARGRON

P.E., REM, CEA.

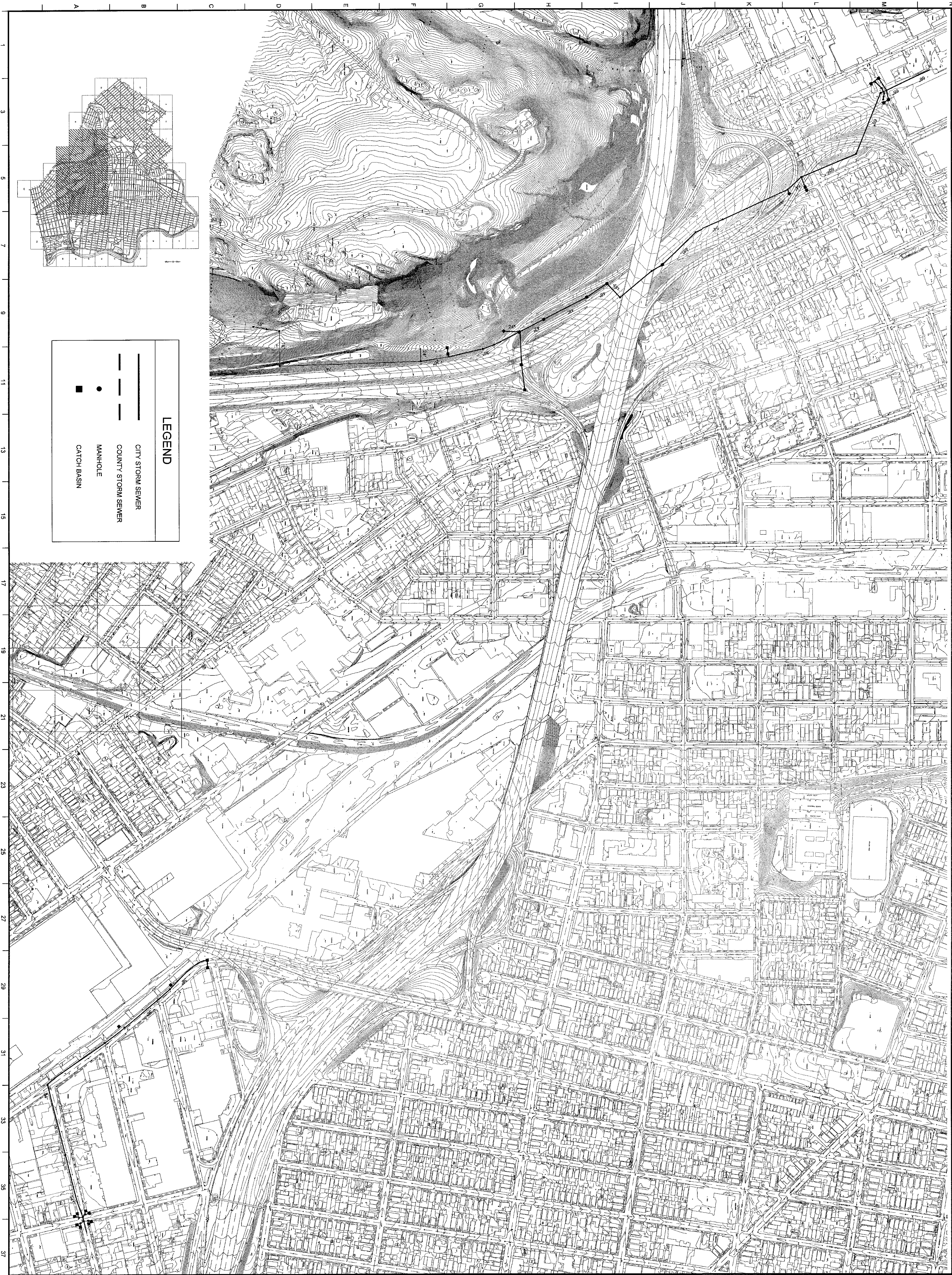
N.J. PROFESSIONAL ENGINEER LICENSE No. 38513

CITY ENGINEER

STORM WATER MANAGEMENT

CITY OF PATERSON, PASSAIC COUNTY, NEW JERSEY

STORM SEWER MAPPING



FREDERICK J. MARGRON P.E., REM, CEA.
N.J. PROFESSIONAL ENGINEER LICENSE No. 38513
CITY ENGINEER

CITY OF PATERSON, NEW JERSEY
Department of Public Works
Division of Engineering
111 Broadway
Paterson, NJ 07505
PH: (973) 321-1320
Manny Ojeda, Director

REV	DATE	DESCRIPTION
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project name

STORM WATER MANAGEMENT
CITY OF PATERSON, PASSAIC COUNTY, NEW JERSEY

STORM SEWER MAPPING

drawn by
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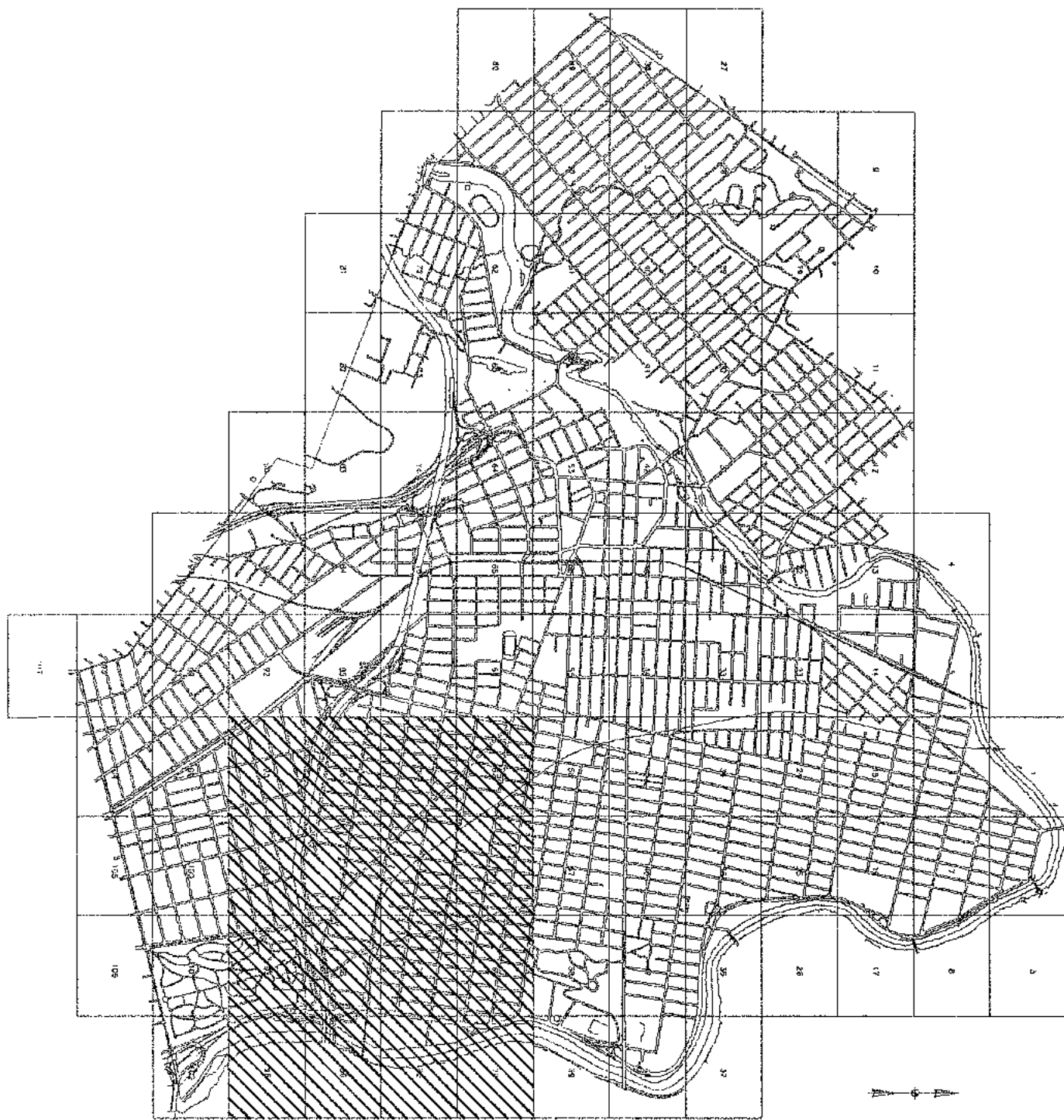
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date
05/19/05

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drawing no.
7 of 10



LEGEND	
	CITY STORM SEWER
	COUNTY STORM SEWER
	MANHOLE
	CATCH BASIN

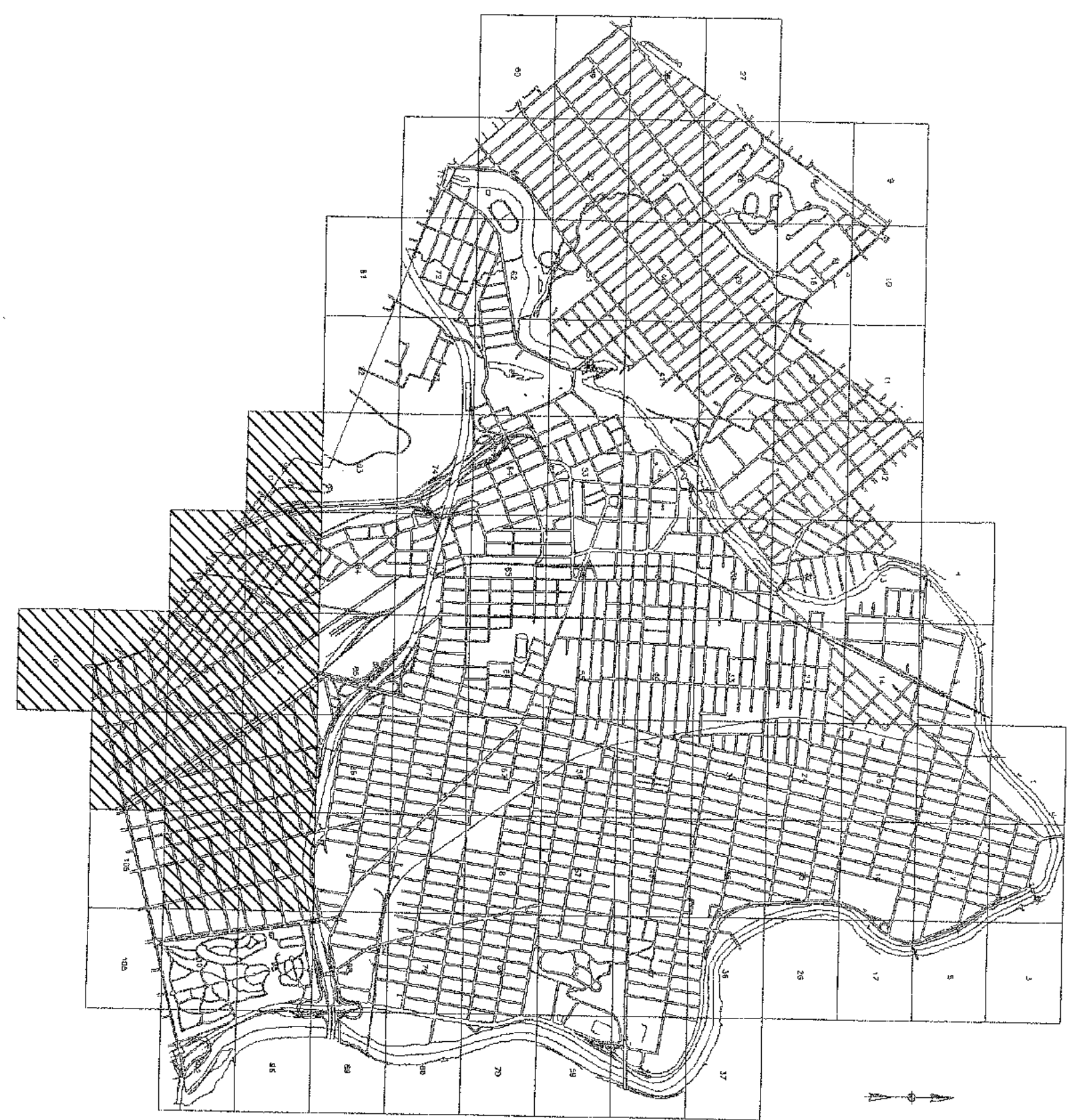
FREDERICK J. MARGRON P.E., REM, CEA.
N.J. PROFESSIONAL ENGINEER LICENSE No. 38513
CITY ENGINEER

CITY OF PATERSON, NEW JERSEY
Department of Public Works
Division of Engineering
111 Broadway
Paterson, NJ 07505
PH: (973) 321-1320
Manny Ojeda, Director

REV	DATE	DESCRIPTION

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project name
STORM WATER MANAGEMENT
CITY OF PATERSON, PASSAIC COUNTY, NEW JERSEY
STORM SEWER MAPPING



LEGEND	
	CITY STORM SEWER
	COUNTY STORM SEWER
	MANHOLE
	CATCH BASIN



FREDERICK J. MARGRON P.E., REM. CEA.
N.J. PROFESSIONAL ENGINEER LICENSE No. 38513
CITY ENGINEER

CITY OF PATERSON, NEW JERSEY
Department of Public Works
Division of Engineering
111 Broadway
Paterson, NJ 07505
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Manny Ojeda, Director

REV	DATE	DESCRIPTION
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project name

STORM WATER MANAGEMENT
CITY OF PATERSON, PASSAIC COUNTY, NEW JERSEY

STORM SEWER MAPPING

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project no.

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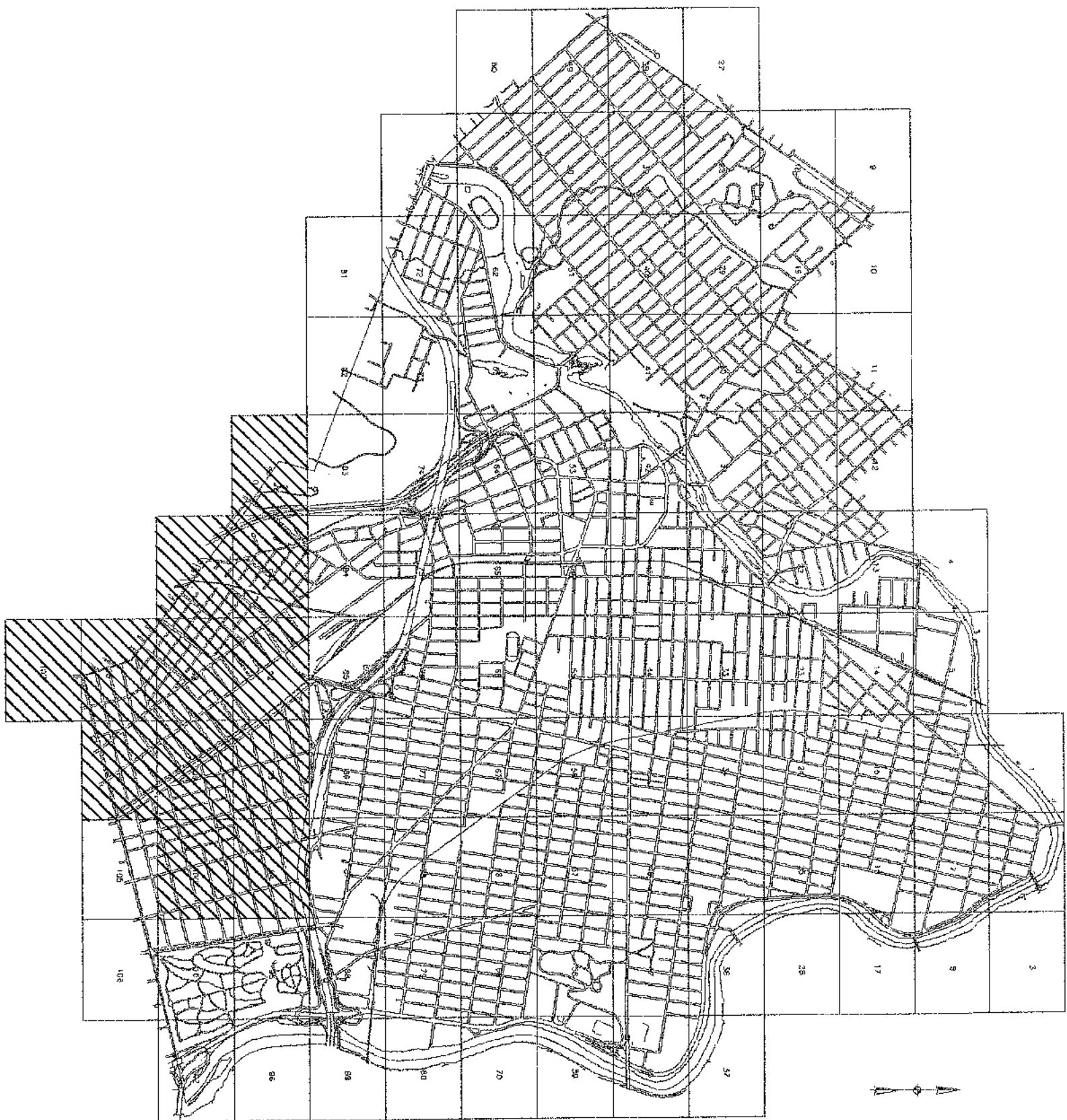
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9 of 10



LEGEND	
	CITY STORM SEWER
	COUNTY STORM SEWER
	MANHOLE
	CATCH BASIN

FREDERICK J. MARGRON P.E., REM, CEA.
N.J. PROFESSIONAL ENGINEER LICENSE No. 38513
CITY ENGINEER

CITY OF PATERSON, NEW JERSEY
Department of Public Works
Division of Engineering
111 Broadway
Paterson, NJ 07505
PH: (973) 321-1320
Manny Ojeda, Director

REV. DATE DESCRIPTION		project name			
		STORM WATER MANAGEMENT			
		CITY OF PATERSON, PASSAIC COUNTY, NEW JERSEY			
		STORM SEWER MAPPING			
drawn by	AS	checked by	FM	project no.	314
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			STORM SEWER MAPPING																				
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Appendix C: Annual Report and Certification and Tier A Matrix

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Bureau of Nonpoint Pollution Control



**Stormwater Pollution Prevention Plan (SPPP) Certification
Basic Industrial Stormwater General Permit No. NJ0088315**



Attachment "C" SPPP Preparation Certification

P.I. ID

NJPDES PERMIT #

FACILITY NAME

THIS CERTIFICATION FORM IS TO BE SUBMITTED AFTER YOU HAVE PREPARED YOUR FACILITY'S SPPP. FOR EXISTING FACILITIES, THE SPPP MUST BE PREPARED WITHIN 6 MONTHS OF THE GENERAL PERMIT AUTHORIZATION. THIS ATTACHMENT "C" CERTIFIES THAT THE SPPP HAS BEEN PREPARED IN ACCORDANCE WITH THE GENERAL PERMIT CONDITIONS.

"I certify under penalty of law that I have signed a stormwater pollution prevention plan (SPPP), and that if this plan is fully implemented, there will be no exposure, during and after storm events, of industrial materials, machinery, waste products or other source materials located at the facility, to stormwater that is discharged to surface waters and/or ground water and regulated under NJPDES Permit No. NJ0088315 (except for unintentional and temporary exposure because of an event beyond the reasonable control of the permittee). I further certify that if any part of this stormwater pollution prevention plan requires the consent of the owner(s) of or another operating entity for the facility, that consent has been obtained."

"I further certify that this Stormwater Pollution Prevention Plan Preparation Certification, all attached documents, and stormwater pollution prevention plan were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate this information. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering this information, the information in this Stormwater Pollution Prevention Plan Preparation Certification, all attached documents, and stormwater pollution prevention plan is, to the best of my knowledge and belief, true, accurate and complete."

"I certify that the stormwater pollution prevention plan referred to in this Stormwater Pollution Prevention Plan Preparation Certification has been signed and is being retained at the facility in accordance with Part I.C.1 of NJPDES Permit No. NJ0088315, and that the permittee intends that this stormwater pollution prevention plan will be fully implemented at the facility in accordance with the terms and conditions of that permit. I am aware that pursuant to the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., there are significant civil and criminal penalties for making a false statement, representation, or certification in any application, record, or other document filed or required to be maintained under that Act, including fines and/or imprisonment."

Any changes to the facility data previously submitted require an Administrative Update Form to be submitted along with this Certification. This will facilitate file maintenance. Please contact the Bureau at (609) 633-7021 for copies of this form. Do not send the actual SPPP with this submission. The plan and a copy of this Certification are to remain on-site available for inspection.

WHO MUST SIGN?

FOR A CORPORATION: a "responsible corporate officer" or duly authorized representative. A "responsible corporate officer" is (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

FOR A PARTNERSHIP OR SOLE PROPRIETORSHIP: a general partner or the proprietor, respectively, or duly authorized representative.

FOR A MUNICIPALITY, STATE, FEDERAL OR OTHER PUBLIC AGENCY: either a principal executive officer or ranking elected official, or duly authorized representative.

A "responsible corporate officer", general partner, proprietor, principal executive officer of a public agency, or ranking elected official may assign his or her signatory authority for this Certification to a duly authorized representative, which is a named person or generic position (e.g., plant manager, superintendent, plant engineer, operations manager, etc.) having overall responsibility for facility operation or the permittee's environmental matters, by submitting a letter to the Bureau of Nonpoint Pollution Control stating said authority and naming the person or position.

Whenever there are two or more permittees for the facility, all of those permittees shall jointly submit this Certification, unless permittees received authorization on different dates and this Certification is therefore due from them at different dates.

Facility Name:

Print, if applicable, name of corporation, partnership, or public agency submitting this certification

P.I. ID

NJPDES#

Signature

Date

Print Name

If you have any questions regarding this Attachment "C" or any other stormwater related questions, please call a member of the Bureau of Nonpoint Pollution Control staff.

TEL: (609) 633-7021. FAX: (609) 984-2147. Attachment "C" shall be submitted to:

New Jersey Department of Environmental Protection

Bureau of Nonpoint Pollution Control

PO Box 029

Trenton, N.J. 08625-0029

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Bureau of Nonpoint Pollution Control

Stormwater Pollution Prevention Plan (SPPP) Implementation and Inspection Certification

Basic Industrial Stormwater General Permit

NJPDES GENERAL PERMIT NO. NJ0088315

Attachment "D" – Annual Recertification



P.I. ID

NJPDES PERMIT #

FACILITY NAME

RECERT. DUE DATE

SUBMIT THIS RECERTIFICATION OF FACILITY COMPLIANCE ANNUALLY IN THE ASSIGNED CALENDAR QUARTER

"I certify under penalty of law that this Stormwater Pollution Prevention Plan Implementation and Inspection Certification and all attached documents were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate this information. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering this information, the information in this Stormwater Pollution Prevention Plan Implementation and Inspection Certification and all attached documents is, to the best of my knowledge and belief, true, accurate and complete."

"I certify that the facility has been inspected to identify areas contributing to the stormwater discharge authorized under NJPDES permit No. NJ0088315 and to evaluate whether the stormwater pollution prevention plan (SPPP) prepared under that permit complies with Part I.C.1 of that permit and is being properly implemented."

"I certify that the stormwater pollution prevention plan referred to in this Stormwater Pollution Prevention Plan Implementation and Inspection Certification (or Recertification) has been and will continue to be fully implemented at this facility in accordance with the terms and conditions of Part I.C. of NJPDES Permit No. NJ0088315. I specifically certify that there is no exposure, during and after storm events, of industrial materials, machinery, waste products or other source materials located at the facility, to stormwater that is discharged through storm sewers to surface or ground waters or mixed with stormwater and discharged to ground water (except for any incidents of non-compliance identified in the attached report). I also specifically certify that this facility does not generate and discharge any unpermitted domestic sewage, non-contact cooling water, or process waste water described in Part I.C.8.a of this permit."

"I also certify that this facility is not in violation of any conditions of NJPDES Permit No. NJ0088315, including requirements in Part I.C of that permit for preparation and implementation of a stormwater pollution prevention plan, except for any incidents of noncompliance (which are noted in the attached report). For any incidents of noncompliance identified in the annual inspection (or made known to me during the course of the past year), I have attached a report identifying these incidents, and identifying steps taken or being taken to remedy the noncompliance and to prevent such incidents from recurring. If the attached report identifies any incidents of noncompliance, I certify that any remedial or preventative steps identified therein were or will be taken in compliance with the schedule set forth in the attachment to this certification. I am aware that pursuant to the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., there are significant civil and criminal penalties for making a false statement, representation, or certification in any application, record, or other document filed or required to be maintained under that Act, including fines and/or imprisonment."

Any changes to the facility's previously submitted data prior to Annual Billing require the submission of an Administrative Update Form. Late changes can also be reported on the update form provided in the Annual Billing package. The Bureau can be reached at (609) 633-7021 for questions, information and forms. **DO NOT SUBMIT THE ACTUAL SPPP WITH THIS SUBMISSION.** The Plan and a copy of this Certification are to remain **ON SITE** available for inspection.

WHO MUST SIGN?

FOR A CORPORATION: a "responsible corporate officer" or duly authorized representative. A "responsible corporate officer" is (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

FOR A PARTNERSHIP OR SOLE PROPRIETORSHIP: a general partner or the proprietor, respectively, or duly authorized representative.

FOR A MUNICIPALITY, STATE, FEDERAL OR OTHER PUBLIC AGENCY: either a principal executive officer or ranking elected official, or duly authorized representative.

A "responsible corporate officer", general partner, proprietor, principal executive officer of a public agency, or ranking elected official may assign his or her signatory authority for this Certification to a duly authorized representative, which is a named person or generic position (e.g., plant manager, superintendent, plant engineer, operations manager, etc.) having overall responsibility for facility operation or the permittee's environmental matters, by submitting a letter to the Bureau of Nonpoint Pollution Control stating said authority and naming the person or position.

If the facility has or will have two or more permittees under this permit, and if the permittee or applicant submitting this Certification is responsible for implementing only some portions of the SPPP in accordance with parts III.A.1.c and III.A.1.d, then this Certification shall apply only to those portions of the SPPP.

Facility Name:

Print, if applicable, name of corporation, partnership, or public agency submitting this certification

P.I. ID

NJPDES#

Recert. Due Date

Signature

Date

Print Name

If you have any questions regarding this Attachment "D" or any other stormwater related questions, please call a member of the Bureau of Nonpoint Pollution Control staff.

TEL: (609) 633-7021. FAX: (609) 984-2147. Attachment "D" shall be submitted to:

New Jersey Department of Environmental Protection

Bureau of Nonpoint Pollution Control

PO Box 629

Trenton, N.J. 08625-0029

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Bureau of Nonpoint Pollution Control

Stormwater Pollution Prevention Plan (SPPP) Initial Implementation and Inspection Certification

Basic Industrial Stormwater General Permit

NJPDES GENERAL PERMIT NO. NJ0088315



Attachment "D" SPPP Initial Implementation and Inspection Certification

P.I. ID

NJPDES PERMIT #

FACILITY NAME

SUBMIT THIS FORM ONCE, AFTER SPPP IS IMPLEMENTED. FOR EXISTING FACILITIES, THE SPPP MUST BE IMPLEMENTED WITHIN 18 MONTHS OF AUTHORIZATION UNLESS THE DEPARTMENT GRANTS AN EXTENSION

"I certify under penalty of law that this Stormwater Pollution Prevention Plan Implementation and Inspection Certification and all attached documents were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate this information. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering this information, the information in this Stormwater Pollution Prevention Plan Implementation and Inspection Certification and all attached documents is, to the best of my knowledge and belief, true, accurate and complete."

"I certify that the facility has been inspected to identify areas contributing to the stormwater discharge authorized under NJPDES permit No. NJ0088315 and to evaluate whether the stormwater pollution prevention plan (SPPP) prepared under that permit complies with Part I.C.1 of that permit and is being properly implemented."

"I certify that the stormwater pollution prevention plan referred to in this Stormwater Pollution Prevention Plan Implementation and Inspection Certification (or Recertification) has been and will continue to be fully implemented at this facility in accordance with the terms and conditions of Part I.C. of NJPDES Permit No. NJ0088315. I specifically certify that there is no exposure, during and after storm events, of industrial materials, machinery, waste products or other source materials located at the facility, to stormwater that is discharged through storm sewers to surface or ground waters or mixed with stormwater and discharged to ground water (except for any incidents of non-compliance identified in the attached report). I also specifically certify that this facility does not generate and discharge any unpermitted domestic sewage, non-contact cooling water, or process waste water described in Part I.C.8.a of this permit."

"I also certify that this facility is not in violation of any conditions of NJPDES Permit No. NJ0088315, including requirements in Part I.C of that permit for preparation and implementation of a stormwater pollution prevention plan, except for any incidents of noncompliance (which are noted in the attached report). For any incidents of noncompliance identified in the annual inspection (or made known to me during the course of the past year), I have attached a report identifying these incidents, and identifying steps taken or being taken to remedy the noncompliance and to prevent such incidents from recurring. If the attached report identifies any incidents of noncompliance, I certify that any remedial or preventative steps identified therein were or will be taken in compliance with the schedule set forth in the attachment to this certification. I am aware that pursuant to the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., there are significant civil and criminal penalties for making a false statement, representation, or certification in any application, record, or other document filed or required to be maintained under that Act, including fines and/or imprisonment."

Any changes to the facility's previously submitted data prior to Annual Billing require the submission of an Administrative Update Form. Late changes can also be reported on the update form provided in the Annual Billing package. The Bureau can be reached at (609) 633-7021 for questions, information and forms. **DO NOT SUBMIT THE ACTUAL SPPP WITH THIS SUBMISSION.** The Plan and a copy of this Certification are to remain ON SITE available for inspection.

WHO MUST SIGN?

FOR A CORPORATION: a "responsible corporate officer" or duly authorized representative.

A "responsible corporate officer" is (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

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FOR A MUNICIPALITY, STATE, FEDERAL OR OTHER PUBLIC AGENCY: either a principal executive officer or ranking elected official, or duly authorized representative.

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If the facility has or will have two or more permittees under this permit, and if the permittee or applicant submitting this Certification is responsible for implementing only some portions of the SPPP in accordance with parts III.A.1.c and III.A.1.d, then this Certification shall apply only to those portions of the SPPP.

Facility Name

Print, if applicable, name of corporation, partnership, or public agency submitting this certification

P.I. ID

NJPDES#

Signature

Date

Print Name

If you have any questions regarding this Attachment "D" or any other storm water related questions, please call a member of the Bureau of Nonpoint Pollution Control staff.

TEL: (609) 633-7021. FAX: (609) 984-2147. Attachment "D" shall be submitted to:

New Jersey Department of Environmental Protection

Bureau of Nonpoint Pollution Control

PO Box 629

Trenton, N.J. 08625-0029

Task #	Description	Status of Compliance with Minimum Standard	Status of Achievement of the Measurable Goal	Status/Date of Implementation
1	Develop, implement and enforce a "Stormwater Program"			
2	Public Notice			
	Comply with public notice requirements and provide for public participation in the program.	The City has complied with applicable State and local Public Notice Requirements with regard to public participation.	The City herein certifies that all applicable requirements have been and will be followed.	Scheduled implementation: 7/1/2005
3	Post Construction Municipal Stormwater Management Plan for new development and redevelopments.			Scheduled implementation: 7/1/2005
	Comply with RSIS and confirm O&M of City stormwater sites	The City complies with RSIS standards and correctly operates its stormwater system.		Scheduled implementation: 7/1/2005
	Adopt a Post Construction Municipal Stormwater Management Plan	The City has drafted the required plan and ordinance and it is before the Municipal Council for approval.	The City shall submit the SMP to Passaic County for their review prior to July 1, 2005.	Scheduled implementation: 7/1/2005
	Comply with Attachment C standards.	The City has drafted the required plan and ordinance and it is before the Municipal Council for approval.	The City shall submit the SMP to Passaic County for their review prior to July 1, 2005.	Scheduled implementation: 7/1/2005
	Adopt a Stormwater Control Ordinance and submit to the plan and ordinance to the county for approval.	The City has drafted the required plan and ordinance and it is before the Municipal Council for approval.	The City shall submit the SMP to Passaic County for their review prior to July 1, 2005.	Scheduled implementation: 7/1/2005
4	Public Education			
	Implement public education on Stormwater/Nonpoint Source Issues (Direct Mailing) (Public Events)	The City has drafted the required plan and it is in final review prior to approval.	The City shall implement the Public Education Program prior to July 1, 2005.	Scheduled implementation: 7/1/2005
	Develop a Storm Drain Labeling Program	The City has drafted the required plan and it is in final review prior to approval.	The City shall implement the Storm Drain Labeling Program prior to July 1, 2005.	Scheduled implementation: 7/1/2005
	Label 50% of inlets	The City has drafted the required plan and it is in final review prior to approval.	The City shall implement the Storm Drain Labeling Program prior to July 1, 2005.	Scheduled Completion: 7/1/2007
	Label balance of all inlets	The City has drafted the required plan and it is in final review prior to approval.	The City shall implement the Storm Drain Labeling Program prior to July 1, 2005.	Scheduled Completion: 7/1/2009

	Description	Status of Compliance with Minimum Standard	Status of Achievement of the Measurable Goal	Status/Date of Implementation
5	Improper Waste Disposal Adopt and implement a pet waste ordinances. Adopt and implement a litter ordinances. Adopt and implement an improper disposal of waste ordinances. Adopt and implement a wildlife feeding ordinances. Adopt and implement a yard waste ordinances or a yard waste collection program.	The City has drafted the required plan and ordinance and it is before the Municipal Council for approval. The City has drafted the required plan and ordinance and it is before the Municipal Council for approval. The City has drafted the required plan and ordinance and it is before the Municipal Council for approval. The City has drafted the required plan and ordinance and it is before the Municipal Council for approval. The City has drafted the required plan and ordinance and it is before the Municipal Council for approval.	The City shall adopt the required ordinance prior to January 1, 2006. The City shall adopt the required ordinance prior to January 1, 2006. The City shall adopt the required ordinance prior to January 1, 2006. The City shall adopt the required ordinance prior to January 1, 2006. The City shall adopt the required ordinance prior to January 1, 2006.	Scheduled implementation: 1/1/2006 Scheduled implementation: 1/1/2006 Scheduled implementation: 1/1/2006 Scheduled implementation: 1/1/2006 Scheduled implementation: 1/1/2006
6	Illicit Connection Elimination and MS4 Outfall Pipe Mapping Develop a map of all municipal stormwater outfall pipes. Map 50% of outfalls Map balance of all outfalls Adopt and implement an Illicit Connection ordinances. Adopt and implement an Illicit Connection Elimination Program Conduct initial inspection of all outfalls	The City has authorized the required mapping and work will commence prior to July 1, 2005. The City has authorized the required mapping and work will commence prior to July 1, 2005. The City has authorized the required mapping and work will commence prior to July 1, 2005. The City has drafted the required plan and ordinance and it is before the Municipal Council for approval. The City has drafted the required plan and ordinance and it is before the Municipal Council for approval. The City has drafted the required plan and ordinance and it is before the Municipal Council for approval.	The City shall implement the Stormwater Mapping Program prior to July 1, 2005. The City shall adopt the required ordinance prior to January 1, 2006. The City shall adopt the required ordinance prior to January 1, 2006. The City shall conduct initial inspections of all outfalls prior to July 1, 2009.	Scheduled implementation: 7/1/2005 Scheduled Completion: 7/1/2007 Scheduled Completion: 7/1/2009 Scheduled Completion: 1/1/2006 Scheduled Completion: 1/1/2006 Scheduled Completion: 7/1/2009

Task#	Description	Status of Compliance with Minimum Standard	Status of Achievement of the Measurable Goal	Status/Date of Implementation
7	Solids and Floatable Controls			
	Develop and implement a street sweeping program that meets the minimum standards.	The City has drafted the required plan.	The City shall implement the Street Sweeping Program prior to July 1, 2005.	Scheduled implementation: 7/1/2005
	Develop and implement a program that meets the minimum standards for storm inlets.	The City has drafted the required plan.	The City shall implement the Stormwater Inlet Standards Program prior to July 1, 2005.	Scheduled implementation: 7/1/2005
	Develop and implement a road erosion control maintenance program that meets the minimum standards	The City has drafted the required plan.	The City shall implement a Road Erosion Control Program prior to January 1, 2006.	Scheduled implementation: 1/1/2006
	Develop and implement an outfall pipe stream scouring remediation program that meets the minimum standards	The City has drafted the required plan.	The City shall implement an Outfall Stream Scouring Program prior to January 1, 2006.	Scheduled implementation: 1/1/2006
8	Maintenance Yard Operations			
	Develop and implement a de-icing materials control program	The City has drafted the required plan.		
	Implement a tarping program for de-icing materials	The City has drafted the required plan.	The City shall implement the Tarping Program prior to July 1, 2005.	Scheduled implementation: 7/1/2005
	Store all de-icing materials in a permanent structure	The City has drafted the required construction plan.	The City shall construct the permanent structure prior to July 1, 2007.	Scheduled implementation: 1/1/2007
	Develop and implement a standard for fueling operations	The City has drafted the required plan.	The City shall implement the Fueling Operations Program Prior to July 1, 2005.	Scheduled implementation: 7/1/2005
	Develop and implement SOP's for vehicle maintenance operations	The City has drafted the required plan.	The City shall implement the Vehicle Maintenance SP Program prior to July 1, 2005.	Scheduled implementation: 7/1/2005
	Develop and implement SOP's for good housekeeping	The City has drafted the required plan.	The City shall implement the Housekeeping SOP Program prior to July 1, 2005.	Scheduled implementation: 7/1/2005
9	Employee Training			
	Develop and implement a training program for employees	The City has drafted the required plan.	The City shall implement the Housekeeping SOP Program prior to July 1, 2005.	Scheduled implementation: 7/1/2005

Task #	Description Deadlines and Certifications	Status of Compliance with Minimum Standard	Status of Achievement of the Measurable Goal	Status/Date of Implementation
10	Prepare and Implement a Stormwater Pollution Prevention Plan (SPPP) in conformance with Attachment A Submit Annual Report and Certification to NJDEP	The City has drafted the required plan. The City has completed the required report.	The City shall implement the SPPP Plan prior to July 1, 2005. The City shall Submit its first Annual Report to the NJDEP prior to July 1, 2005.	Scheduled implementation: 7/1/2005 First Report Submitted May 31, 2005
11	Other Items Prepare and maintain all records and the SPPP in conformance with NJDEP regulations.			
	Anticipate a compliance inspection from NJDEP Northern Bureau of Regional Enforcement subsequent to July 1, 2005			

Appendix D: Low Impact Development Checklist, Ordinances

New Jersey Stormwater Best Management Practices Manual

February 2004

A P P E N D I X A

Low Impact Development Checklist

A checklist for identifying nonstructural stormwater management strategies incorporated into proposed land development

According to the NJDEP Stormwater Management Rules at N.J.A.C. 7:8, the groundwater recharge, stormwater quality, and stormwater quantity standards established by the Rules for major land development projects must be met by incorporating nine specific nonstructural stormwater management strategies into the project's design to the maximum extent practicable.

To accomplish this, the Rules require an applicant seeking land development approval from a regulatory board or agency to identify those nonstructural strategies that have been incorporated into the project's design. In addition, if an applicant contends that it is not feasible to incorporate any of the specific strategies into the project's design, particularly for engineering, environmental, or safety reasons, the Rules further require that the applicant provide a basis for that contention.

This checklist has been prepared to assist applicants, site designers, and regulatory boards and agencies in ensuring that the nonstructural stormwater management requirements of the Rules are met. It provides an applicant with a means to identify both the nonstructural strategies incorporated into the development's design and the specific low impact development BMPs (LID-BMPs) that have been used to do so. It can also help an applicant explain the engineering, environmental, and/or safety reasons that a specific nonstructural strategy could not be incorporated into the development's design.

The checklist can also assist municipalities and other land development review agencies in the development of specific requirements for both nonstructural strategies and LID-BMPs in zoning and/or land use ordinances and regulations. As such, where requirements consistent with the Rules have been adopted, they may supersede this checklist.

Finally, the checklist can be used during a pre-design meeting between an applicant and pertinent review personnel to discuss local nonstructural strategies and LID-BMPs requirements in order to optimize the development's nonstructural stormwater management design.

Since this checklist is intended to promote the use of nonstructural stormwater management strategies and provide guidance in their incorporation in land development projects, municipalities are permitted to revise it as necessary to meet the goals and objectives of their specific stormwater management program and plan within the limits of N.J.A.C. 7:8.

Low Impact Development Checklist

A checklist for identifying nonstructural stormwater management strategies incorporated into proposed land development

Municipality: _____

County: _____ Date: _____

Review board or agency: _____

Proposed land development name: _____

Lot(s): _____ Block(s): _____

Project or application number: _____

Applicant's name: _____

Applicant's address: _____

Telephone: _____ Fax: _____

Email address: _____

Designer's name: _____

Designer's address: _____

Telephone: _____ Fax: _____

Email address: _____

Part 1: Description of Nonstructural Approach to Site Design

In narrative form, provide an overall description of the nonstructural stormwater management approach and strategies incorporated into the proposed site's design. Attach additional pages as necessary. Details of each nonstructural strategy are provided in Part 3 below.

Part 2: Review of Local Stormwater Management Regulations

Title and date of stormwater management regulations used in development design:

Do regulations include nonstructural requirements? Yes: _____ No: _____

If yes, briefly describe: _____

List LID-BMPs prohibited by local regulations: _____

Pre-design meeting held? Yes: _____ Date: _____ No: _____

Meeting held with: _____

Pre-design site walk held? Yes: _____ Date: _____ No: _____

Site walk held with: _____

Other agencies with stormwater review jurisdiction:

Name: _____

Required approval: _____

Name: _____

Required approval: _____

Name: _____

Required approval: _____

Part 3: Nonstructural Strategies and LID-BMPs in Design

3.1 Vegetation and Landscaping

Effective management of both existing and proposed site vegetation can reduce a development's adverse impacts on groundwater recharges and runoff quality and quantity. This section of the checklist helps identify the vegetation and landscaping strategies and nonstructural LID-BMPs that have been incorporated into the proposed development's design to help maintain existing recharge rates and/or minimize or prevent increases in runoff quantity and pollutant loading.

A. Has an inventory of existing site vegetation been performed? Yes: _____ No: _____

If yes, was this inventory a factor in the site's layout and design? Yes: _____ No: _____

B. Does the site design utilize any of the following nonstructural LID-BMPs?

Preservation of natural areas? Yes: _____ No: _____ If yes, specify % of site: _____

Native ground cover? Yes: _____ No: _____ If yes, specify % of site: _____

Vegetated buffers? Yes: _____ No: _____ If yes, specify % of site: _____

C. Do the land development regulations require these nonstructural LID-BMPs?

Preservation of natural areas? Yes: _____ No: _____ If yes, specify % of site: _____

Native ground cover? Yes: _____ No: _____ If yes, specify % of site: _____

Vegetated buffers? Yes: _____ No: _____ If yes, specify % of site: _____

D. If vegetated filter strips or buffers are utilized, specify their functions:

Reduce runoff volume increases through lower runoff coefficient: Yes: _____ No: _____

Reduce runoff pollutant loads through runoff treatment: Yes: _____ No: _____

Maintain groundwater recharge by preserving natural areas: Yes: _____ No: _____

3.2 Minimize Land Disturbance

Minimizing land disturbance is a nonstructural LID-BMP that can be applied during both the development's construction and post-construction phases. This section of the checklist helps identify those land disturbance strategies and nonstructural LID-BMPs that have been incorporated into the proposed development's design to minimize land disturbance and the resultant change in the site's hydrologic character.

A. Have inventories of existing site soils and slopes been performed? Yes: _____ No: _____

If yes, were these inventories factors in the site's layout and design? Yes: _____ No: _____

B. Does the development's design utilize any of the following nonstructural LID-BMPs?

Restrict permanent site disturbance by land owners? Yes: _____ No: _____

If yes, how: _____

Restrict temporary site disturbance during construction? Yes: _____ No: _____

If yes, how: _____

Consider soils and slopes in selecting disturbance limits? Yes: _____ No: _____

If yes, how: _____

C. Specify percentage of site to be cleared: _____ Regraded: _____

D. Specify percentage of cleared areas done so for buildings: _____

For driveways and parking: _____ For roadways: _____

E. What design criteria and/or site changes would be required to reduce the percentages in C and D above?

F. Specify site's hydrologic soil group (HSG) percentages:

HSG A: _____ HSG B: _____ HSG C: _____ HSG D: _____

G. Specify percentage of each HSG that will be permanently disturbed:

HSG A: _____ HSG B: _____ HSG C: _____ HSG D: _____

H. Locating site disturbance within areas with less permeable soils (HSG C and D) and minimizing disturbance within areas with greater permeable soils (HSG A and B) can help maintain groundwater recharge rates and reduce runoff volume increases. In light of the HSG percentages in F and G above, what other practical measures if any can be taken to achieve this?

I. Does the site include Karst topography? Yes: _____ No: _____

If yes, discuss measures taken to limit Karst impacts:

3.3 Impervious Area Management

New impervious surfaces at a development site can have the greatest adverse effect on groundwater recharge and stormwater quality and quantity. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into a proposed development's design to comprehensively manage the extent and impacts of new impervious surfaces.

A. Specify impervious cover at site: Existing: _____ Proposed: _____

B. Specify maximum site impervious coverage allowed by regulations: _____

C. Compare proposed street cartway widths with those required by regulations:

Type of Street	Proposed Cartway Width (feet)	Required Cartway Width (feet)
Residential access – low intensity		
Residential access – medium intensity		
Residential access – high intensity with parking		
Residential access – high intensity without parking		
Neighborhood		
Minor collector – low intensity without parking		
Minor collector – with one parking lane		
Minor collector – with two parking lanes		
Minor collector – without parking		
Major collector		

D. Compare proposed parking space dimensions with those required by regulations:

Proposed: _____ Regulations: _____

E. Compare proposed number of parking spaces with those required by regulations:

Proposed: _____ Regulations: _____

F. Specify percentage of total site impervious cover created by buildings:

By driveways and parking: _____ By roadways: _____

G. What design criteria and/or site changes would be required to reduce the percentages in F above?

H. Specify percentage of total impervious area that will be unconnected:

Total site: _____ Buildings: _____ Driveways and parking: _____ Roads: _____

I. Specify percentage of total impervious area that will be porous:

Total site: _____ Buildings: _____ Driveways and parking: _____ Roads: _____

J. Specify percentage of total building roof area that will be vegetated: _____

K. Specify percentage of total parking area located beneath buildings: _____

L. Specify percentage of total parking located within multi-level parking deck: _____

3.4 Time of Concentration Modifications

Decreasing a site's time of concentration (Tc) can lead directly to increased site runoff rates which, in turn, can create new and/or aggravate existing erosion and flooding problems downstream. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into the proposed development's design to effectively minimize such Tc decreases.

When reviewing Tc modification strategies, it is important to remember that a drainage area's Tc should reflect the general conditions throughout the area. As a result, Tc modifications must generally be applied throughout a drainage area, not just along a specific Tc route.

A. Specify percentage of site's total stormwater conveyance system length that will be:

Storm sewer: _____ Vegetated swale: _____ Natural channel: _____

Stormwater management facility: _____ Other: _____

Note: the total length of the stormwater conveyance system should be measured from the site's downstream property line to the downstream limit of sheet flow at the system's headwaters.

B. What design criteria and/or site changes would be required to reduce the storm sewer percentages and increase the vegetated swale and natural channel percentages in A above?

C. In conveyance system subareas that have overland or sheet flow over impervious surfaces or turf grass, what practical and effective site changes can be made to:

Decrease overland flow slope: _____

Increase overland flow roughness: _____

3.5 Preventative Source Controls

The most effective way to address water quality concerns is by pollution prevention. This section of the checklist helps identify those nonstructural strategies and LID-BMPs that have been incorporated into the proposed development's design to reduce the exposure of pollutants to prevent their release into the stormwater runoff.

A. Trash Receptacles

Specify the number of trash receptacles provided: _____

Specify the spacing between the trash receptacles: _____

Compare trash receptacles proposed with those required by regulations:

Proposed: _____ Regulations: _____

B. Pet Waste Stations

Specify the number of pet waste stations provided: _____

Specify the spacing between the pet waste stations: _____

Compare pet waste stations proposed with those required by regulations:

Proposed: _____ Regulations: _____

C. Inlets, Trash Racks, and Other Devices that Prevent Discharge of Large Trash and Debris

Specify percentage of total inlets that comply with the NJPDES storm drain inlet criteria: _____

D. Maintenance

Specify the frequency of the following maintenance activities:

Street sweeping: Proposed: _____ Regulations: _____

Litter collection: Proposed: _____ Regulations: _____

Identify other stormwater management measures on the site that prevent discharge of large trash and debris:

E. Prevention and Containment of Spills

Identify locations where pollutants are located on the site, and the features that prevent these pollutants from being exposed to stormwater runoff:

Pollutant: _____ Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: _____ Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: _____ Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: _____ Location: _____

Feature utilized to prevent pollutant exposure, harmful accumulation, or contain spills:

Pollutant: _____ Location: _____

Part 4: Compliance with Nonstructural Requirements of NJDEP Stormwater Management Rules

1. Based upon the checklist responses above, indicate which nonstructural strategies have been incorporated into the proposed development's design in accordance with N.J.A.C. 7:8-5.3(b):

No.	Nonstructural Strategy	Yes	No
1.	Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss.		
2.	Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces.		
3.	Maximize the protection of natural drainage features and vegetation.		
4.	Minimize the decrease in the pre-construction time of concentration.		
5.	Minimize land disturbance including clearing and grading.		
6.	Minimize soil compaction.		
7.	Provide low maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers, and pesticides.		
8.	Provide vegetated open-channel conveyance systems discharge into and through stable vegetated areas.		
9.	Provide preventative source controls.		

2. For those strategies that have not been incorporated into the proposed development's design, provide engineering, environmental, and/or safety reasons. Attached additional pages as necessary.

Ordinance of the City of Paterson, N.J.

No. 1st Reading No. ... 05-073

Date NOVEMBER 9, 2005

No. 1 Public Hearing
(2nd Rdg. & Final Passage)

Date to Mayor

Date Returned

Date Submitted to
Council

Division

TITLE:

ORDINANCE ENACTING CHAPTER 151 CONTAINERIZED YARD WASTE

Factual Contents Certified to By

Marshall
Title

5/11/05
Date

Approved As To Form and Legality
on Basis of Facts Set Forth

John
CORPORATION COUNSEL

Date

COUNCILPERSON VERA AMES-GARNES Introduced the Following Ordinance:

§151-1. Purpose:

An ordinance to establish requirements for the proper handling of yard waste in the City of Paterson, so as to protect public health, safety and welfare, and to prescribe penalties for the failure to comply.

§151-2. Definitions:

For the purpose of this ordinance, the following terms, phrases, words and their derivations shall have the meanings stated herein unless their use in the text of this Chapter clearly demonstrates a different meaning. When not inconsistent with the context, words used in the present tense include the future, words used in the plural number include the singular number, and words used in the singular number include the plural number. The word "shall" is always mandatory and not merely directory.

- a. Containerized – means the placement of yard waste in a trash can, bucket, bag or other vessel, such as to prevent the yard waste from spilling or blowing out into the street and coming into contact with stormwater.
- b. Person – any individual, corporation, company, partnership, firm, association, or political subdivision of this State subject to municipal jurisdiction.
- c. Street – means any street, avenue, boulevard, road, parkway, viaduct, drive, or other way, which is an existing State, county, or municipal roadway, and includes the land between the street lines, whether improved or unimproved, and may comprise pavement, shoulders, gutters, curbs, sidewalks, parking areas, and other areas within the street lines.
- d. Yard Waste – means leaves and grass clippings.

§151-3. Prohibited Conduct:

Except as set forth in Chapter 150, the owner or occupant of any property, or any employee or contractor of such owner or occupant engaged to provide lawn care or landscaping services, shall not sweep, rake, blow or otherwise place yard waste, unless the yard waste is containerized, in the street. If yard waste that is not containerized is placed in the street, the party responsible for placement of yard waste must remove the yard waste from the street or said party shall be deemed in violation of this ordinance.

§151-4. Enforcement:

The provisions of this ordinance shall be enforced by the Department of Public Works.

§151-5. Violations and Penalties:

Any person(s) who continues to be in violation of the provisions of this ordinance, after being duly notified, shall be subject to a fine not to exceed \$1,250.00.

**ORDINANCE ENACTING CHAPTER 151
CONTAINERIZED YARD WASTE**

PAGE 2 of 2

§151-6. Severability:

Each section, subsection, sentence, clause and phrase of this Ordinance is declared to be an independent section, subsection, sentence, clause and phrase, and the finding or holding of any such portion of this Ordinance to be unconstitutional, void, or ineffective for any cause, or reason, shall not affect any other portion of this Ordinance.

§151-7. Effective date:

This Ordinance shall be in full force and effect from and after its adoption and any publication as may be required by law.

F:\documents\Ordinances\Ordinance-Improper Disposal of Waste-SEC-04-05-05-SEC-bpcdoc.doc

SECONDED BY COUNCILPERSON . ASLON . GOOW, . SR.

Do Not Use Space Below This Line

RECORD OF COUNCIL VOTE ON FINAL PASSAGE	AYE	NAY	ABSTAIN	ABSENT
1. AMES-GARNES, VERADENE	X			
2. DAVIS, ANTHONY	X			
3. DIXON, JESSIE M.	X			
4. GOOW, ASLON	X			
5. MCKOY, WILLIAM C.	X			
6. MORRIS, KENNETH	X			
7. ROONEY, THOMAS C.	X			
8. ROSADO, JERRY LUIS	X			
9. TORRES, JUAN	X			

Adopted on first reading at a meeting of the Council of the City of Paterson, N.J., on Adopted on
second and final reading after hearing on NOVEMBER . 9 . . 2005 .

Approved _____ Reconsidered _____ Over
Rejected By _____ By Council _____ Ride _____
JOSE "JOEY" TORRES, Mayor Date _____ Vote _____
KENNETH M. MORRIS, JR., Council President JANE E. WILLIAMS-WARREN, _____ City Clerk
This Ordinance when adopted must remain in the custody of the City Clerk. Certified copies are available.
Form 6 USE REVERSE SIDE FOR POSTPONEMENT AND RECONSIDERATION DATA

Ordinance of the City of Paterson, N.J.

No. 1st Reading No. ... 05-074

No. 2 Public Hearing
(2nd Rdg. & Final Passage)

Division

TITLE: **AN ORDINANCE AMENDING SECTION
121-41 AND ENACTING CHAPTER 122
PROHIBITING WILDLIFE FEEDING**

Date NOVEMBER 9, 2005

Date to Mayor

Date Returned

Date Submitted to
Council

Factual Contents Certified to By

Marshall
Title

5/11/05
Date

Approved As To Form and Legality
on Basis of Facts Set Forth

[Signature]
CORPORATION COUNSEL

Date

COUNCILPERSON VERA AMES-GARNES Moved the Following Ordinance:

§121-41. Feeding of birds restricted and exceptions

The littering of [public or] private grounds for the purpose of feeding free and wild birds or the placing or causing to be placed or any food designed or intended for the purpose of feeding such birds in such a manner and in such quantity so as to create a hazard of rodent infestation so as to create any health hazard by so doing shall be prohibited.

Nothing contained herein shall be construed to prevent or prohibit the keeping of domestic pigeons in a place provided for their shelter or to prevent or prohibit the feeding of some birds or other varieties of birds not constituting a health hazards.

§122 PROHIBITION AGAINST WILDLIFE FEEDING

§122-1. SECTION I. Purpose:

An ordinance to prohibit the feeding of unconfined wildlife in any public park or on any other property owned or operated by the City of Paterson, so as to protect public health, safety and welfare, and to prescribe penalties for the failure to comply.

§122-2. SECTION II. Definitions:

For the purpose of this ordinance, the following terms, phrases, words and their derivations shall have the meanings stated herein unless their use in the text of this Chapter clearly demonstrates a different meaning. When not inconsistent with the context, words used in the present tense include the future, words used in the plural number include the singular number, and words used in the singular number include the plural number. The word "shall" is always mandatory and not merely directory.

- a. Feed – to give, place, expose, deposit or scatter any edible material with the intention of feeding, attracting or enticing wildlife. Feeding does not include baiting in the legal taking of fish and/or game.
- b. Person – any individual, corporation, company, partnership, firm, association, or political subdivision of this State subject to municipal jurisdiction.
- c. Wildlife – all animals that are neither human nor domesticated.

§122-3. SECTION III. Prohibited Conduct:

No person shall feed, in any public park or on any other property owned or operated by the City of Paterson, any wildlife, excluding confined wildlife (for example, wildlife confined in zoos, parks or rehabilitation centers, or unconfined wildlife at environmental education centers.)

§122-4. SECTION IV. Enforcement:

- a) This ordinance shall be enforced by the Police Department and/or other Municipal Officials of the City of Paterson.

AN ORDINANCE AMENDING SECTION
121-41 AND ENACTING CHAPTER 122
PROHIBITING WILDLIFE FEEDING

PAGE 2 of 2

- b) Any person found to be in violation of this ordinance shall be ordered to cease the feeding immediately.

§122-5. SECTION VI. Violations and Penalty:

Any person(s) who is found to be in violation of the provisions of this ordinance shall be subject to a fine not to exceed \$1,250.00.

§122-6. SECTION VII. Severability:

Each section, subsection, sentence, clause and phrase of this Ordinance is declared to be an independent section, subsection, sentence, clause and phrase, and the finding or holding of any such portion of this Ordinance to be unconstitutional, void, or ineffective for any cause, or reason, shall not affect any other portion of this Ordinance.

SECTION VIII. Effective date:

This Ordinance shall be in full force and effect from and after its adoption and any publication as may be required by law.

STATEMENT OF PURPOSE

These ordinance changes prohibit the feeding of wildlife.

F:\documents\Ordinance-Yard Waste Collection Program-SEC-04-04-05-SEC-bpcdoc.doc

SECONDED BY COUNCILPERSON ASLON. GOOW, . . SB.

Do Not Use Space Below This Line

RECORD OF COUNCIL VOTE ON FINAL PASSAGE	AYE	NAY	ABSTAIN	ABSENT
1. AMES-GARNES, VERADENE	X			
2. DAVIS, ANTHONY				
3. DIXON, JESSIE M.	X			
4. GOOW, ASLON	X			
5. McKOY, WILLIAM C.	X			
6. MORRIS, KENNETH	X			
7. ROONEY, THOMAS C.	X			
8. ROSADO, JERRY LUIS	X			
9. TORRES, JUAN	X			

Adopted on first reading at a meeting of the Council of the City of Paterson, N.J., on Adopted on

second and final reading after hearing on NOVEMBER . 9 . . . 2005

Approved
Rejected By JOSE "JOEY" TORRES, Mayor Reconsidered
By Council JANE E. WILLIAMS-WARREN, City Clerk
Date NOVEMBER 9, 2005
Over
Ride
Vote ☐ Aye ☐ Nay
KENNETH M. MORRIS, JR. Council President
This Ordinance when adopted must remain in the custody of the City Clerk. Certified copies are available.
Form 6 USE REVERSE SIDE FOR POSTPONEMENT AND RECONSIDERATION DATA

Ordinance of the City of Paterson, N.J.

No. 1st Reading No. 05-075

Date NOVEMBER 9, 2005

No. 3 Public Hearing
(2nd Rdg. & Final Passage)

Date to Mayor

Date Returned

Date Submitted to

Council

Division

TITLE: **ORDINANCE ENACTING CHAPTER 153
IMPROPER DISPOSAL OF WASTE**

Factual Contents Certified to By

Manuel G.
Title

5/11/05
Date

Approved As To Form and Legality
on Basis of Facts Set Forth

Manuel G.
CORPORATION COUNSEL

Date

COUNCILPERSON ASLON GOOW, SR. Introduced the Following Ordinance:

§153-1. Purpose:

An ordinance to prohibit the spilling, dumping, or disposal of materials other than stormwater to the municipal separate storm sewer system (MSA) operated by the City of Paterson, so as to protect public health, safety and welfare, and to prescribe penalties for the failure to comply.

§153-2. Definitions:

For the purpose of this ordinance, the following terms, phrases, words and their derivations shall have the meanings stated herein unless their use in the text of this Chapter clearly demonstrates a different meaning. When not inconsistent with the context, words used in the present tense include the future, words used in the plural number include the singular number, and words used in the singular number include the plural number. The word "shall" is always mandatory and not merely directory.

- a. Municipal separate storm sewer system (MS4) – a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) that is owned or operated by the City of Paterson or other public body, and is designated and used for collecting and conveying stormwater. MS4s do not include combined sewer systems, which are sewer systems that are designed to carry sanitary sewage at all times and to collect and transport stormwater from streets and other sources.
- b. Person – any individual, corporation, company, partnership, firm, association, or political subdivision of this State subject to municipal jurisdiction.
- c. Stormwater – 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.

§153-3. Prohibited Conduct:

The spilling, dumping, or disposal of materials other than stormwater to the municipal separate storm sewer system operated by the City of Paterson is prohibited. The spilling, dumping, or disposal of materials other than stormwater in such a manner as to cause the discharge of pollutants to the municipal separate storm sewer system is also prohibited.

§153-4. Exceptions to Prohibited:

- a. Water line flushing and discharges from potable water sources.
- b. Uncontaminated ground water (e.g., infiltration, crawl space or basement sump pumps, foundation or footing drains, rising ground waters).
- c. Air conditioning condensate (excluding contact and non-contact cooling water).
- d. Irrigation water (including landscape and lawn watering runoff).
- e. Flows from springs, riparian habitats and wetlands, water reservoir discharges and diverted stream flows.

ORDINANCE ENACTING CHAPTER 153
IMPROPER DISPOSAL OF WASTE

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- f. Residential car washing water, and residential swimming pool discharges.
- g. Sidewalk, driveway and street wash water.
- h. Flows from fire fighting activities.
- i. Flows from rinsing of the following equipment with clean water:
 - Equipment used in the application of salt and de-icing materials immediately following salt and de-icing mater 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.
 - Rising of equipment, as noted in the above situation is limited to exterior, undercarriage, and exposed parts and does not apply to engines or other enclosed machinery.

§153-5. Enforcement:

The ordinance shall be enforced by the Police Department, Department of Public Works and/or other Municipal Officials of the City of Paterson..

§153-6. Penalties:

Any person(s) who continues to be in violation of the provisions of this ordinance, after being duly notified, shall be subject to a fine not to exceed \$1,250.00.

§153-7. Severability:

Each section, subsection, sentence, clause and phrase of this Ordinance is declared to be an independent section, subsection, sentence, clause and phrase, and the finding or holding of any such portion of this Ordinance to be unconstitutional, void, or ineffective for any cause, or reason, shall not affect any other portion of this Ordinance.

§153-8. Effective date:

This Ordinance shall be in full force and effect from and after its adoption and any publication as may be required by law.

F:\documents\Ordinances\Ordinance-Improper Disposal of Waste-SEC-04-05-05-SEC-bpcdoc.doc

SECONDED BY COUNCILPERSON . VERA . AMES-GARNES

Do Not Use Space Below This Line

RECORD OF COUNCIL VOTE ON FINAL PASSAGE	AYE	NAY	ABSTAIN	ABSENT
1. AMES-GARNES, VERADENE	X			
2. DAVIS, ANTHONY	X			
3. DIXON, JESSIE M.	X			
4. GOOW, ASLON	X			
5. McKOY, WILLIAM C.	X			
6. MORRIS, KENNETH	X			
7. ROONEY, THOMAS C.	X			
8. ROSADO, JERRY LUIS	X			
9. TORRES, JUAN	X			

Adopted on first reading at a meeting of the Council of the City of Paterson, N.J., on Adopted on second and final reading after hearing on NOVEMBER . 9 . . 2005

Approved By JOSE "JOEY" TORRES Reconsidered By Council Over Ride Vote ☐ Aye ☐ Nay
Date
KENNETH M. MORRIS, JR. Council President JANE E. WILLIAMS-WARREN City Clerk
Form 6
This Ordinance when adopted must remain in the custody of the City Clerk. Certified copies are available.
USE REVERSE SIDE FOR POSTPONEMENT AND RECONSIDERATION DATA

Ordinance of the City of Paterson, N.J.

No. 1st Reading No. 05-076

Date ... NOVEMBER 9, 2005 ..

No. ... 4 ... Public Hearing
(2nd Rdg. & Final Passage)

Date to Mayor

Date Returned

Division

Date Submitted to

Council

TITLE:

Factual Contents Certified to By

[Signature]
Title

5/4/05
Date

ORDINANCE ENACTING CHAPTER 152 ILLICIT SEWER SYSTEM CONNECTION ORDINANCE

Approved As To Form and Legality
on Basis of Facts Set Forth

[Signature]
CORPORATION COUNSEL

Date

(DPW-Ord-Illicit Connection-05-03-05)

COUNCILPERSON . VERA AMES-GARNES Introduced the Following Ordinance:

**BE IT ORDAINED BY THE MUNICIPAL COUNCIL OF THE CITY OF
PATERSON, as follows:**

§152-1. Purpose:

An ordinance to prohibit illicit connections to the municipal separate storm sewer system(s) operated by the City of Paterson, so as to protect public health, safety and welfare, and to prescribe penalties for the failure to comply.

§152-2. Definitions:

For the purpose of this ordinance, the following terms, phrases, words and their derivations shall have the meanings stated herein unless their use in the text of this Chapter clearly demonstrates a different meaning. When not inconsistent with the context, words used in the singular number include the plural number. The word "shall" is always mandatory and not merely directory. The definitions below are the same as or based on corresponding definitions in the New Jersey Pollutant Discharge Elimination System (NJPDES) rules at N.J.A.C. 7:14A-1.2.

- a. Domestic sewage – waste and wastewater from humans or household operations.
- b. Illicit connection – 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 municipal separate storm sewer system operated by the [insert name of municipality], unless that discharge is authorized under a NJPDES permit other than the Tier A Municipal Stormwater General Permit (NJPDES Permit Number NJ0141852). Non-physical connections may include, but are not limited to, leaks flows, or overflows into the municipal separate storm sewer system.
- c. Industrial waste – non domestic waste, including, but not limited to, those pollutants regulated under Section 307(a), (b), or (c) of the Federal Clean Water Act (33 U.S. 1317(a), (b), or (c)).
- d. Municipal separate storm sewer system (MS4) – a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) that is owned or operated by the City of Paterson or other public body, and is designed and used for collecting and conveying stormwater. MS4s do not include combined sewer systems, which are sewer systems that are designed to carry sanitary sewage at all times and to collect and transport stormwater from streets and other sources.
- e. NJPDES a permit issued by the New Jersey Department of Environmental Protection to implement the New Jersey Pollutant Discharge Elimination System (NJPDES) rules at N.J.A.C. 7:14A.

**ORDINANCE ENACTING
CHAPTER 152 ILLICIT SEWER
SYSTEM CONNECTION ORDINANCE**

Page Two

- f. Non-contact cooling water – water used to reduce temperature for the purpose of cooling. Such waters do not come in direct contact with any raw material intermediate product (other than heat) or finished product. Non-contact cooling water may however contain algacides, or biocides to control fouling of equipment such as heat exchangers, and/or corrosion inhibitors.
- g. Person – any individual, corporation, company, partnership, firm, association, or political subdivision of this State subject to municipal jurisdiction.
- h. Process wastewater – any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw materials, intermediate product, finished product, byproduct, or waste product. Process wastewater includes, but is not limited to, leachate and cooling water other than non-contact cooling water.
- i. Stormwater – 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

§152-3. Prohibited Conduct:

No person shall discharge or cause to be discharged through an illicit connection to the municipal separate storm sewer system operated by the City of Paterson any domestic sewage, non-contact cooling water, process wastewater, or other industrial waste (other than stormwater).

§152-4. Enforcement.

This ordinance shall be enforced by the Police Department, Department of Public Works and other Municipal Officials of the City of Paterson.

§152-5. Penalties:

Any person(s) who is found to be in violation of the provisions of this ordinance shall be subject to a fine not to exceed \$1,250.00.

§152-6. Severability:

Each section, subsection, sentence, clause and phrase of this Ordinance is declared to be an independent section, subsection, sentence, clause and phrase, and the finding or holding of any such portion of this Ordinance to be unconstitutional, void, or ineffective for any cause or reason, shall not affect any other portion of this Ordinance.

ORDINANCE ENACTING
CHAPTER 152 ILLICIT SEWER
SYSTEM CONNECTION ORDINANCE

Page Three

§152-7. Effective date:

This Ordinance shall be in full force and effect from and after its adoption and any publication as may be required by law.

STATEMENT OF PURPOSE

This ordinance prohibits illegal connections to the City's sewer system.

F:\documents\Ordinances\Ord-Illicit Connection.-SEC-bpc-doc

SECONDED BY COUNCILPERSON . . ASLON .GOOW, . SR.

Do Not Use Space Below This Line

RECORD OF COUNCIL VOTE ON FINAL PASSAGE	AYE	NAY	ABSTAIN	ABSENT
1. AMES-GARNES, VERADENE	X			
2. DAVIS, ANTHONY	X			
3. DIXON, JESSIE M.	X			
4. GOOW, ASLON	X			
5. McKOY, WILLIAM C.	X			
6. MORRIS, KENNETH	X			
7. ROONEY, THOMAS C.	X			
8. ROSADO, JERRY LUIS	X			
9. TORRES, JUAN	X			

Adopted on first reading at a meeting of the Council of the City of Paterson, N.J., on Adopted on

second and final reading after hearing on NOVEMBER 9, 2005

Approved
Rejected By Reconsidered
By Council Over
Ride
Vote
Date
AYE NAY

JOSE "JOEY" TORRES,

KENNETH M. MORRIS, JR., Council President

JANE E. WILLIAMS-WARREN, City Clerk

Ordinance of the City of Paterson, N.J.

No. 1st Reading No. . 05-077

Date . NOVEMBER 9, 2005

No. 5 Public Hearing
(2nd Rdg. & Final Passage)

Date to Mayor

Date Returned

Date Submitted to

Council

Division

TITLE:

Factual Contents Certified to By

Marvin L. L...
Title

5/11/05
Date

Approved As To Form and Legality
on Basis of Facts Set Forth

ORDINANCE AMENDING §427-21 AND ESTABLISHING AND ENACTING CHAPTER 150 REGARDING YARD WASTE COLLECTION PROGRAM

CORPORATION COUNSEL

Date

COUNCILPERSON . . VERA AMES-GARNES Introduced the Following Ordinance:

§427-21. Recycling of leaves, newspapers, glass and metal containers and aluminum beverage cans; oil reclamation.

A. All owners, lessees or occupants of dwelling units, commercial and industrial establishments and public and private institutions shall dispose of solid waste and separate designated recyclable materials in accordance with this section.

(1) Leaves. Leaves may be recycled by composting on the property of the owner, lessee or occupant or by placing them [at the curbside on designated days in accordance with applicable regulations.] in accordance with the provisions of Chapter 150 and 151.

(2) Same.

(3) Same.

(4) Same.

(5) Same.

B. Same.

C. Same.

§150-1. Establishing Yard Waste:

An ordinance to establish a yard waste collection and disposal program in the City of Paterson, so as to protect public health, safety and welfare, and to prescribe penalties for the failure to comply.

§150-2. Definitions:

For the purpose of this ordinance, the following terms, phrases, words and their derivations shall have the meanings stated herein unless their use in the text of this Chapter clearly demonstrates a different meaning. When not inconsistent with the context, words used in the present tense include the future, words used in the plural number include the singular number, and words used in the singular number include the plural number. The word "shall" is always mandatory and not merely directory.

a. Containerized – means the placement of yard waste in a trash can, bucket, bag or other vessel as prescribed by the City of Paterson recycling Ordinance, such as to prevent the yard waste from spilling or blowing out into the street and coming into contact with stormwater.

b. Person – any individual, corporation, company, partnership, firm, association, or political subdivision of this State subject to municipal jurisdiction.

c. Street – means any street, avenue, boulevard, road, parking, viaduct, drive, or other way, which is an existing State, county, or municipal roadway, and includes the land between the street lines, whether improved or unimproved, and may comprise pavement, shoulders, gutters, curbs, sidewalks, parking areas, and other areas within the street lines.

d. Yard Waste – means leaves and grass clippings.

ORDINANCE AMENDING §427-21 AND
ESTABLISHING AND ENACTING CHAPTER
150 REGARDING YARD WASTE
COLLECTION PROGRAM

PAGE 2 of 2

§150-3. Yard Waste Collection:

Sweeping, raking, blowing or otherwise placing yard waste that is not containerized at the curb or along the street is only allowed during the seven (7) days prior to a scheduled and announced collection, and shall not be placed closer than 10 feet from any storm drain inlet. Placement of such yard waste at the curb or along the street at any other time or in any other manner is a violation of this ordinance. If such placement of yard waste occurs, the party responsible for placement of the yard waste must remove the yard waste from the street or said party shall be deemed in violation of this ordinance.

§150-4. Enforcement:

The provisions of this ordinance shall be enforced by Department of Public Works.

§150-5. Violations and Penalty:

Any person(s) who is found to be in violation of the provisions of this ordinance shall be subject to a fine not to exceed \$1,250.00.

§150-6. Severability:

Each section, subsection, sentence, clause and phrase of this Ordinance is declared to be an independent section, subsection, sentence, clause and phrase, and the finding or holding of any such portion of this Ordinance to be unconstitutional, void, or ineffective for any cause, or reason, shall not affect any other portion of this Ordinance.

§150-7. Effective date:

This Ordinance shall be in full force and effect from and after its adoption and any publication as may be required by law.

F:\documents\Ordinance-Yard Waste Collection Program-SEC-04-04-05-SEC-bpdoc.doc

SECONDED BY COUNCILPERSON ASLON GOOW, SR., ...

Do Not Use Space Below This Line

RECORD OF COUNCIL VOTE ON FINAL PASSAGE	AYE	NAY	ABSTAIN	ABSENT
1. AMES-GARNES, VERADENE	X			
2. DAVIS, ANTHONY	X			
3. DIXON, JESSIE M.	X			
4. GOOW, ASLON	X			
5. MCKOY, WILLIAM C.	X			
6. MORRIS, KENNETH	X			
7. ROONEY, THOMAS C.	X			
8. ROSADO, JERRY LUIS	X			
9. TORRES, JUAN	X			

Adopted on first reading at a meeting of the Council of the City of Paterson, N.J., on Adopted on
second and final reading after hearing on NOVEMBER, 9, 2005.

Approved _____ Reconsidered _____ Over
Rejected By _____ By Council _____ Ride
Date _____ Vote _____ Aye _____ Nay _____

OSE "JOEY" TORRES, Mayor
KENNETH M. MORRIS, JR. Council President
JANE E. WILLIAMS-WARREN City Clerk

Ordinance of the City of Paterson, N.J.

No. 1st Reading No. . 05-081

Date NOVEMBER 9, 2005

No. 9 Public Hearing
(2nd Rdg. & Final Passage)

Date to Mayor

Date Returned

Date Submitted to
Council

Division

TITLE: **ORDINANCE FOR STORMWATER
CONTROL**

Factual Contents Certified to By

[Signature]
Title *City Engineer*

6/20/05
Date

(pw.ord.stormwater.control.06.21.05)

Approved As To Form and Legality
on Basis of Facts Set Forth

1ST ASST. *[Signature]*
CORPORATION COUNSEL

Date

COUNCILPERSON VERA. AMES-GARNES Introduced the Following Ordinance:

BE IT ORDAINED by the City Council of the City of Paterson, in the County of Passaic,
New Jersey as follows:

Section 1: Scope and Purpose

A. Policy Statement

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

B. Purpose

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

C. Applicability

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

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 the City of Paterson.

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.

ORDINANCE FOR STORMWATER CONTROL

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Section 2: Definitions

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

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

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

"Compaction" means the increase in soil bulk density.

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

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

A county planning agency; or

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

"Department" means the New Jersey Department of Environmental Protection.

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

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

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

"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.

ORDINANCE FOR STORMWATER
CONTROL

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"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, the City of Paterson, 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.

ORDINANCE FOR STORMWATER CONTROL

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"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.

ORDINANCE FOR STORMWATER CONTROL

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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.

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 muhlenbergi* (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;

ORDINANCE FOR STORMWATER CONTROL

PAGE 6 OF 21

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;

ORDINANCE FOR STORMWATER
CONTROL

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- (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.

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(3) Where flows are conveyed through a trash rack that has parallel bars with one-inch (1") spacing between the bars, to the elevation of the water quality design storm as specified in Section 4.G.1; or

(4) Where the New Jersey Department of Environmental Protection determines, pursuant to the New Jersey Register of Historic Places Rules at N.J.A.C. 7:4-7.2(c), that action to meet this standard is an undertaking that constitutes an encroachment or will damage or destroy the New Jersey Register listed historic property.

4. Any land area used as a nonstructural stormwater management measure to meet the performance standards in Sections 4.F and 4.G shall be dedicated to a government agency, subjected to a conservation restriction filed with the appropriate County Clerk's office, or subject to an approved equivalent restriction that ensures that measure or an equivalent stormwater management measure approved by the reviewing agency is maintained in perpetuity.

5. Guidance for nonstructural stormwater management strategies is available in the New Jersey Stormwater Best Management Practices Manual. The BMP Manual may be obtained from the address identified in Section 7, or found on the Department's website at www.njstormwater.org.

F. Erosion Control, Groundwater Recharge and Runoff Quantity Standards

1. This subsection contains minimum design and performance standards to control erosion, encourage and control infiltration and groundwater recharge, and control stormwater runoff quantity impacts of major development.

a. The minimum design and performance standards for erosion control are those established under the Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq. and implementing rules.

b. The minimum design and performance standards for groundwater recharge are as follows:

(1) The design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at Section 5, either:

(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;

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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.

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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. 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.

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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

Table 2: TSS Removal Rates for BMPs	
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 FWI 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 FWI.

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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

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(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.

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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

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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

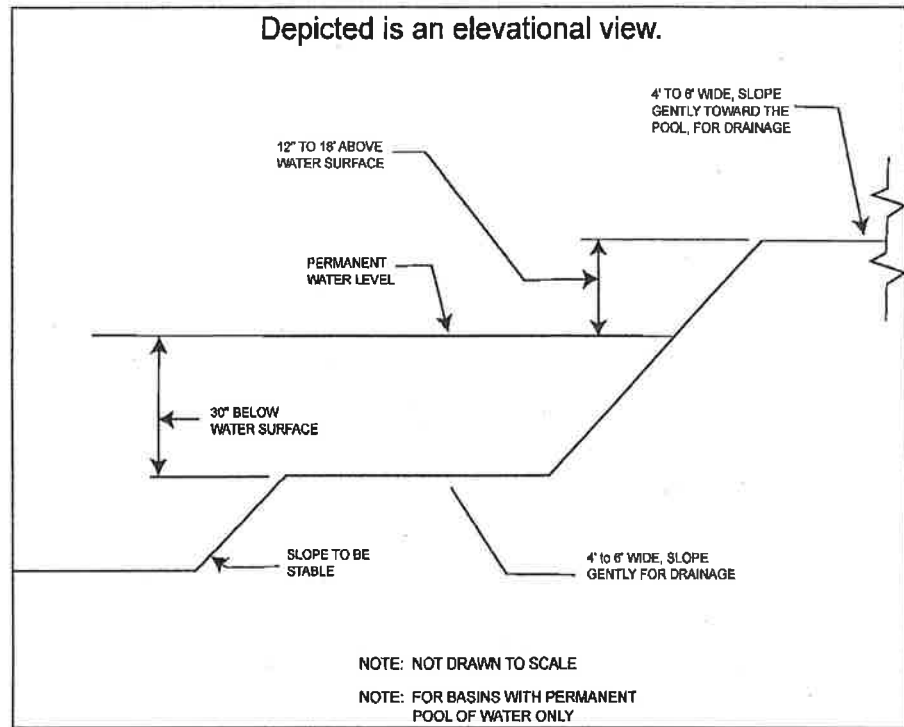
- A. This section sets forth requirements to protect public safety through the proper design and operation of stormwater management basins. This section applies to any new stormwater management basin.
- B. Requirements for Trash Racks, Overflow Grates and Escape Provisions
1. A trash rack is a device 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:

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- 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



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 three (3) 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.

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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.

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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.

**ORDINANCE FOR STORMWATER
CONTROL**

PAGE 20 OF 21

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.
 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 a fine not to exceed \$1,250.00.

ORDINANCE FOR STORMWATER
CONTROL

PAGE 21 OF 21

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.

STATEMENT OF PURPOSE

The purpose of this ordinance is to establish minimum stormwater management requirements and controls for major development in accordance with NJDEP requirements.

SECONDED BY COUNCILPERSON ..ASLON. GOOW., SR.....

Do Not Use Space Below This Line

RECORD OF COUNCIL VOTE ON FINAL PASSAGE	AYE	NAY	ABSTAIN	ABSENT
1. AMES-GARNES, VERADENE	X			
2. DAVIS, ANTHONY	X			
3. DIXON, JESSIE M.	X			
4. GOOW, ASLON	X			
5. McKOY, WILLIAM C.	X			
6. MORRIS, KENNETH	X			
7. ROONEY, THOMAS C.	X			
8. ROSADO, JERRY LUIS	X			
9. TORRES, JUAN	X			

Adopted on first reading at a meeting of the Council of the City of Paterson, N.J., on Adopted on
second and final reading after hearing on NOVEMBER .9., 2005.....

Approved
Rejected By
"JOEY" TORRES, Mayor
Reconsidered
By Council
Date
Over
Ride
Vote
Aye
Nay
KENNETH M. MORRIS, JR., Council President
JANE E. WILLIAMS-WARREN, City Clerk
This Ordinance when adopted must remain in the custody of the City Clerk. Certified copies are available.
USE REVERSE SIDE FOR POSTPONEMENT AND RECONSIDERATION DATA
Form 8

Ordinance of the City of Paterson, N.J.

No. . . 9 1st Reading No. . 05-083

No. 2 Public Hearing
(2nd Rdg. & Final Passage)

Division

TITLE: **AN ORDINANCE AMENDING SECTION
121-1 AND ENACTING CHAPTER 123
ORDINANCE REGULATING PET WASTE**

(DPW-Ord. Amending Chapter 121-1 & Enacting Chapter 123)
REVISED 11/10/05

Date . NOVEMBER . 29 2005 . . .
Date to Mayor . DECEMBER . 5 2005
Date Returned . DECEMBER . 7 2005
Date Submitted to
Council OCTOBER . 25 2005 .

Factial Contents Certified to By

[Signature]
Title

Approved As To Form and Legality
on Basis of Facts Set forth

[Signature]
CORPORATION COUNSEL

11/20/05
Date

Date

COUNCILPERSON Introduced the Following Ordinance:

§123-13. Removal of feces

The restriction against defiling or defecating outlined in §121-12 shall not apply to that portion of the street lying between curblines which shall be used to curb such dog under the following conditions:

- A. The person who so curbs such dog shall immediately remove all feces deposited by such dog by any sanitary method approved by the Health Division.
- B. The feces removed from the aforementioned designated area shall be disposed of by the person owning, harboring, keeping or in charge of such dog in accordance with the provisions of this article. [by placing the feces in a waterproof container, properly sealed and placed in a garbage container, or disposed of in any other sanitary manner approved by the Health Division.]

CHAPTER 123 ORDINANCE REGULATING PET WASTE

§123-1. SECTION I. Purpose:

An ordinance to establish requirements for the proper disposal of pet solid waste in the City of Paterson, so as to protect public health, safety and welfare, and to prescribe penalties for failure to comply.

§123-2. SECTION II. Definitions:

For the purpose of this ordinance, the following terms, phrases, words and their derivations shall have the meanings stated herein unless their use in the text of this Chapter clearly demonstrates a different meaning. When not inconsistent with the context, words used in the present tense include the future, words used in the plural number include the singular number, and words used in the singular number include the plural number. The word "shall" is always mandatory and not merely directory.

- a. Immediate – shall mean that the pet solid waste is removed at once, without delay.
- b. Owner/Keeper – any person who shall possess, maintain, house or harbor any pet or otherwise have custody of any pet, whether or not the owner of such pet.
- c. Person – any individual, corporation, company, partnership, firm, association, or political subdivision of this State subject to municipal jurisdiction.
- d. Pet – a domesticated animal (other than a disability assistance animal) kept for amusement or companionship.
- e. Pet solid waste – waste matter expelled from the bowels of the pet; excrement.
- f. Proper disposal – placement in a designated waste receptacle, or other suitable container, and discarded in a refuse container which is regularly emptied by the

AN ORDINANCE AMENDING SECTION
121-1 AND ENACTING CHAPTER 123
ORDINANCE REGULATING PET WASTE

PAGE 2 of 2

municipality or some other refuse collector; or disposal into a system designed to convey domestic sewage for proper treatment and disposal.

§123-3. SECTION III. Requirement for Disposal:

All pet owners and keepers are required 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.

§123-4. SECTION IV. Exemptions:

Any owner or keeper who requires the use of a disability assistance animal shall be exempt from the provisions of this section while such animal is being used for that purpose.

§123-5. SECTION V. Enforcement:

The provisions of this Article shall be enforced by the Police Department and The Local Board of Health of the City of Paterson.

§123-6. SECTION VI. Violations and Penalty:

Any person(s) who is found to be in violation of the provisions of this ordinance shall be subject to a fine not to exceed \$1,250.00.

§123-7. SECTION VII. Severability:

Each section, subsection, sentence, clause and phrase of this Ordinance is declared to be an independent section, subsection, sentence, clause and phrase, and the finding or holding of any such portion of this Ordinance to be unconstitutional, void, or ineffective for any cause, or reason, shall not affect any other portion of this Ordinance.

§123-8. SECTION VIII. Effective date:

This Ordinance shall be in full force and effect from and after its adoption and any publication as may be required by law.

SECONDED BY COUNCILPERSON ..JESSIE M.. DIXON.....

F:\documents\Ordinance-Pet Waste-SEC-04-04-05-SEC-r-11-05-05-bpcdoc.doc

Do Not Use Space Below This Line

RECORD OF COUNCIL VOTE ON FINAL PASSAGE	AYE	NAY	ABSTAIN	ABSENT
1. AMES-GARNES, VERADENE				X
2. DAVIS, ANTHONY	X			
3. DIXON, JESSIE M.	X			
4. GOOW, ASLON	X			
5. MCKOY, WILLIAM C.	X			
6. MORRIS, KENNETH	X			
7. ROONEY, THOMAS C.	X			
8. ROSADO, JERRY LUIS	X			
9. TORRES, JUAN	X			

Adopted on first reading at a meeting of the Council of the City of Paterson, N.J., on .. OCTOBER 25, 2005 .. Adopted on

second and final reading after hearing on .. NOVEMBER 29, 2005 ..

Approved By JOEY TORRES, Mayor Reconsidered By Council .. Date .. Over Ride Vote ☐ Aye ☐ Nay

JOSE .. KENNETH M. MORRIS, JR. Council President JANE F. WILLIAMS-WARREN City Clerk

Ordinance of the City of Paterson, N.J.

No. 3 1st Reading No. 07-020

Date .. APRIL 24, 2007

No. 2 Public Hearing
(2nd Rdg. & Final Passage)

Date to Mayor APRIL 25, 2007

Date Returned .. APRIL 26, 2007.

ENGINEERING

Date Submitted to
Council .. APRIL 3, 2007

Division

Factual Contents Certified to By

TITLE: ORDINANCE ADOPTING A MUNICIPAL
STORMWATER MANAGEMENT PLAN AND
ANY AMENDMENTS, UPDATES, AND REVISIONS
FOR THE CITY OF PATERSON TO MAINTAIN
COMPLIANCE WITH STORMWATER
MANAGEMENT RULES (N.J.A.C. 7:8)

.....
Title City Engineer
Approved As To Form and Legality
on Basis of Facts Set Forth

3/30/2007
Date

(ord.swmp.adopt.04.03.07)

157000
CORPORATION COUNSEL
Date

COUNCILPERSON .. ASLON GOOW .. SR, ... Moved the Following Ordinance:

WHEREAS, on June 7, 2004, the New Jersey Department of Environmental Protection issued the City of Paterson, a municipality, Authorization to Discharge under the New Jersey Pollutant Discharge Elimination System (NJPDES) Tier A Municipality Stormwater General Permit NJ0141852 and a Final Permit (PI ID 207691) with an effective date of permit authorization July 1, 2004; and

WHEREAS, the City of Paterson is required to adopt a Municipal Stormwater Management Plan (or adopted amendments to an existing municipal stormwater management plan) pursuant to the Stormwater Management Rules (N.J.A.C. 7:8). A Stormwater Management Plan dated May 2005 has been prepared in accordance with N.J.A.C. 7:8.

NOW, THEREFORE, BE IT ORDAINED by the Municipal Council of the City of Paterson as follows:

SECTION I. The Municipal Stormwater Management Plan dated May 2005 be adopted as final with subsequent amendments, updates, and revisions as required to maintain the City of Paterson in compliance with the Stormwater Management Rules (N.J.A.C. 7:8-4).

SECTION II. This Ordinance shall be in full force and effect from and after its adoption and any subsequent amendments, updates, and revisions as may be required by law.

SECTION III. That all ordinances or parts of ordinances inconsistent herewith be and the same are hereby repealed to the extent of such inconsistencies only.

ORDINANCE ADOPTING A MUNICIPAL
STORMWATER MANAGEMENT PLAN AND
ANY AMENDMENTS, UPDATES, AND REVISIONS
FOR THE CITY OF PATERSON TO MAINTAIN
COMPLIANCE WITH STORMWATER MANAGEMENT
RULES (N.J.A.C. 7:8)

PAGE 2 OF 2

SECTION IV. If any part of this Ordinance shall be declared to be invalid or inoperative, such part shall be deemed severable and the invalidity thereof shall not affect the remaining parts of this Ordinance.

SECTION V. This Ordinance shall take effect upon passage and publication as provided by law.

STATEMENT OF PURPOSE

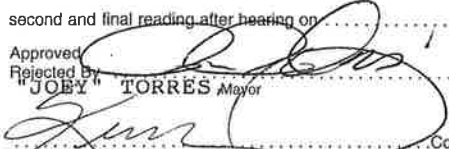
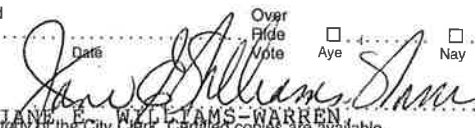
This Ordinance authorizes the adoption of a Municipal Stormwater Management Plan and any amendments, updates, and revisions for the City of Paterson to maintain compliance with Stormwater Management Rules pursuant to N.J.A.C. 7:8.

SECONDED BY COUNCILPERSON RIGO RODRIGUEZ

Do Not Use Space Below This Line

RECORD OF COUNCIL VOTE ON FINAL PASSAGE	AYE	NAY	ABSTAIN	ABSENT
1. AMES-GARNES, VERADENE				X
2. DAVIS, ANTHONY	X			
3. GOOW, ASLON	X			
4. JONES, JEFFERY	X			
5. MCKOY, WILLIAM C.				X
6. MORRIS, KENNETH	X			
7. RODRIGUEZ, RIGO	X			
8. ROONEY, THOMAS C.	X			
9. TORRES, JUAN	X			

Adopted on first reading at a meeting of the Council of the City of Paterson, N.J., on **APRIL 10, 2007** Adopted on
second and final reading after hearing on **APRIL 24, 2007**

Approved:  Reconsidered: 
Rejected By: JOSE TORRES, Mayor By Council: _____ Date: _____
Over: _____
Ride: _____
Vote: _____
Aye: ☐ 4 _____ Nay: ☐ _____
KENNETH M. MORRIS, JR., Council President JANE P. WILLIAMS-WARREN, City Clerk
This Ordinance when adopted must remain in the custody of the City Clerk. Certified copies are available.
Form 6 USE REVERSE SIDE FOR POSTPONEMENT AND RECONSIDERATION DATA