APPENDIXES

BOROUGH OF TNEAFLY
PLANNING BOARD
NOTICE

NOTICE is hereby given in compliance with N.J.S.A. 40:55D-13, that the Tenafly Planning Board will hold a Public Hearing on Wednesday, December 12, 2007 at 8:30 PM in the Council Chambers for the purpose of adopting the proposed Stormwater Management Plan as an element to the Borough of Tenafly's Master Plan. Formal action may be taken.

The Council Chambers are located in the Municipal Center at 100 Riveredge Road.

A copy of the proposed Stormwater Management Plan is available for review at the Municipal Center during regular business hours (8:30 AM – 4:30 PM) at the Office of the Planning Board. Anyone wishing to comment upon the proposed Stormwater Management Plan (dated January 2005, revised May, 2007, prepared by Schwanewede/Hals Engineering) may do so at the time of the Public Hearing.

Dee Lorberbaum
Municipal Land Use Officer

Dated: November 19, 2007

Distribution List:
Press Journal (for publication Thursday, November 29, 2007)
The Record (for publication Sunday, November 25, 2007)
The Suburbanite (for information only)
The Northern Valley News (for information only)
Public Bulletin Board
Planning Board Members
Planning Board Attorney
Mayor and Council
Borough Administrator
Borough Clerk
Borough Attorney
Borough Engineer
Borough Planner
Tenafly Environmental Commission Chairman
Board of Adjustment Chairman

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BOROUGH OF TENAFLY
BERGEN COUNTY, NEW JERSEY

Municipal Stormwater Management Plan

January 2005
Revised November 2005
Revised April 2006
Revised May 2007

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Introduction

This Municipal Stormwater Management Plan (MSWMP) documents the strategy for the Borough of Tenafly to address stormwater-related impacts. The creation of this plan is required by N.J.A.C.7:14A-25 Municipal Stormwater Regulations. This plan contains all of the required elements described in N.J.A.C. 7:8 Stormwater Management Rules. The plan addresses groundwater recharge, stormwater quantity, and stormwater quality impacts by incorporating stormwater design and performance standards for new major developments, defined as projects that disturb one or more acres of land. These standards are intended to minimize the adverse impact of stormwater runoff on water quality and water quantity and the loss of groundwater recharge that provides baseflow in receiving water bodies.

The plan addresses the review and update of existing ordinances, the Borough's Master Plan, and other planning documents to allow for project designs that include low impact development techniques. The final component of this plan is a mitigation strategy when a variance or exemption of the design and performance standards is sought. As part of the mitigation section of the stormwater plan, specific stormwater management measures are identified to lessen the impact of existing development.

Goals

The goals of this MSWMP are to:

- Reduce flood damage, including damage to life and property

  Achieved by: Strict adherence to the Borough Stormwater Control Ordinance and the requirements of N.J.A.C. 7:8 for new development. The Borough will also require all developers seeking relief from the Stormwater Control ordinance to submit mitigation plans for known problem areas within the Borough.

- Minimize, to the extent practical, any increase in stormwater runoff from any new development

  Achieved by: Strict adherence to the Borough Stormwater Control Ordinance and the requirements of N.J.A.C. 7:8 for new development. The Borough will inspect the construction and function of all stormwater facilities, and require operation and maintenance plans for all private on-site or off-site stormwater facilities as directed.

- Reduce soil erosion from any development or construction project

  Achieved by: Strict adherence to the New Jersey Standards for Soil Erosion and Sediment Control. All applications for development require approval or an exemption from the Bergen County Soil Conservation District. Borough officials inspect sites during all phases of construction for adherence to soil control standards.

- Assure the adequacy of existing and proposed culverts and bridges, and other in-stream structures

  Achieved by: Ongoing inspection of all bridges, culverts and headwalls within the Borough. Any proposed in-stream headwalls or culverts will require approval from both the Borough and The New Jersey Department of Environmental Protection for stream encroachment.

- Maintain groundwater recharge

  Achieved by: Strict adherence to the Borough Stormwater Control Ordinance and the requirements of N.J.A.C. 7:8-6 for groundwater recharge in new development. The Borough will also require all developers seeking relief from the Stormwater Control Ordinance to submit mitigation plans for groundwater recharge within the Borough.

- Prevent, to the greatest extent feasible, an increase in nonpoint pollution

  Achieved by: Strict adherence to the Borough Stormwater Control Ordinance and the requirements of N.J.A.C. 7:8 for new development. For existing homes and commercial facilities, the Borough will increase public awareness of the causes of non-point pollution via the Borough newsletter.

- Maintain the integrity of stream channels for their biological functions, as well as for drainage

  Achieved by: Requiring all new developments to obtain approval from The New Jersey Department of Environmental Protection for stream encroachment and freshwater wetlands where applicable. The Borough Public Works Department will continue the current practice of maintaining stream banks to control overgrowth.

- Minimize pollutants in stormwater runoff from new and existing developments 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

  Achieved by: For existing homes and other commercial facilities, the Borough will increase public awareness of the causes of non-point pollution via the Borough newsletter.

- Protect public safety through the proper design and operation of stormwater basins

  Achieved by: Strict adherence to the Borough Stormwater Control Ordinance and the requirements of N.J.A.C. 7:8 for new development. The Borough will also require all developers seeking relief from the Stormwater Control ordinance to submit mitigation plans for upgrading older existing Stormwater detention basins within the Borough.

further achieve these goals, this plan outlines specific stormwater design and performance standards for new development. Preventative and corrective maintenance strategies are included in the plan to ensure

long-term effectiveness of stormwater management facilities. The plan also outlines safety standards for stormwater infrastructure to be implemented to protect public safety.

To control stormwater from new development and redevelopment projects throughout the Borough of Tenafly (including projects we operate) we will do the following:
The Borough will be ensuring that all new residential development and redevelopment projects that are subject to the Residential Site Improvement Standards for stormwater management (including the NJDEP Stormwater Management rules, N.J.A.C. 7:8, referenced in those standards) are in compliance with those standards. Our planning and zoning boards ensure such compliance before issuing preliminary or final subdivision or site plan approvals under the Municipal Land Use Law.
Since the EDPA, the Borough of Tenafly has not constructed any new development or redevelopment projects on Borough property. If we decide to construct such a project before our municipal stormwater control ordinance takes effect, we will ensure adequate long-term operation and maintenance of BMPs for that project by requiring a project maintenance plan similar to the maintenance plan described in our draft of that ordinance, and by requiring and funding the implementation of that plan. The Borough will also require any storm drain inlets that we install to comply with the design standard in Attachment C of our permit. Once that ordinance takes effect, we will ensure such operation and maintenance for any new development or redevelopment projects on our property by complying with the maintenance requirements in that ordinance. In addition, any storm drain inlets we install for such projects will comply with that ordinance's standard for such inlets. The Borough of Tenafly will also enforce, through the municipal stormwater control ordinance, compliance with design standard in Attachment C of our permit to control passage of solid and floatable materials through storm drain inlets. The Borough of Tenafly expects that for most projects, such compliance will be achieved either by conveying flows through a trash rack as described in the "Alternate Device Exemptions," or (for flows not conveyed through such a trash rack), by installation of the NJDOT bicycle safe grate and (if needed) a curb opening with a clear space no bigger than two inches across the smallest dimension.

All Borough projects since April 1, 2004 involving existing inlets have been designed and constructed to meet the requirements of retrofitting. Inlets were constructed with curb openings with a clear space no bigger than two inches across the smallest dimension, and bicycle safe grates.

Stormwater Discussion

Land development can dramatically alter the hydrologic cycle (See Figure A-1) of a site and, ultimately, an entire watershed. Prior to development, native vegetation can either directly intercept precipitation or draw that portion that has infiltrated into the ground and return it to the atmosphere through evapotranspiration. Development can remove this beneficial vegetation and replace it with lawn or impervious cover, reducing the site's evapotranspiration and infiltration rates. Clearing and grading a site can remove depressions that store rainfall. Construction activities may also compact the soil and diminish its infiltration ability, resulting in increased volumes and rates of stormwater runoff from the site. Impervious areas that are connected to each other through gutters, channels, and storm sewers can transport runoff more quickly than natural areas. This shortening of the transport or travel time quickens the rainfall-runoff response of the drainage area, causing flow in downstream waterways to peak faster and higher than natural conditions. These increases can create new and aggravate existing downstream flooding and erosion problems and increase the quantity of sediment in the channel. Filtration of runoff and removal of pollutants by surface and channel vegetation is eliminated by storm sewers that discharge runoff directly into a stream. Increases in impervious area can also

decrease opportunities for infiltration, which, in turn, reduces stream base flow and groundwater recharge. Reduced base flows and increased peak flows produce greater fluctuations between normal and storm flow rates, which can increase channel erosion. Reduced base flows can also negatively impact the hydrology of adjacent wetlands and the health of biological communities that depend on base flows. Finally, erosion and sedimentation can destroy habitat from which some species cannot adapt.

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

In addition to increased pollutant loading, land development can adversely affect water quality and stream biota in more subtle ways. For example, stormwater falling on impervious surfaces or stored in detention or retention basins can become heated and raise the temperature of the downstream waterway, adversely affecting cold water fish species such as trout. Development can remove trees along stream banks that normally provide shading, stabilization, and leaf litter that falls into streams and becomes food for the aquatic community.

Background

Tenafly Borough is primarily a single-family community that occupies 4.61 square miles in northeastern Bergen County, New Jersey. The Borough lies along the Hudson River, approximately four (4) miles north of the George Washington Bridge, and approximately five (5) miles east of Hackensack, the County seat. Main road access is provided by U.S. Highway 9W which runs north-south along the eastern border of the Borough, Knickerbocker Road (County Route 505), which runs north-south along the western border of the Borough, and Engle Street (County Route 501), which runs north-south through the business district in the center of the Borough. East-West access is provided by Riveredge Road (County Route 70) and Clinton Avenue (County Route 72), which together run the length of the Borough. Tenafly is a nearly fully developed municipality. The western portion of the Borough is developed primarily for single-family housing. In the center of the Borough lies the business district, along with a commuter railroad line and train station. Approximately 20% of the Borough's land area is occupied by the Lost Brook Preserve along the eastern end of the Borough, which is dedicated as open space and parkland. No significant acreage exists with the Borough that is not dedicated for open space, parkland, Board of Education use, or religious use.

Public water is supplied by United Water, a water utility company, to all residents of the Borough. There are no public wellheads located within the Borough. Sanitary sewers are available to the entire Borough. Sewage flows are directed to the Bergen County Utility Authority.

The population of the Borough is 13,806 as of the 2000 census. The resultant change from the census of 1990, which was 13,326 persons, was an increase of approximately 3%. This reversed the downward population trend from 1970 to 1990, which saw a 10.1% drop in population. The Borough has yet to return to the 1970 population. It should be noted that during the time period from 1970 to 1990, dwelling units increased steadily even as the population dropped. The total number of dwelling units remained essentially unchanged from 1990 to 2000.

Year	Population	Dwelling Units
1970	14,827	4,619
1980	13,552	4,753
1990	13,326	4,898
2000	13,806	4,897

The recent population history of Tenafly is provided by the data in Table 1.

Tenafly is an older established community where land use is stable. There are very few properties where large-scale development can take place. Therefore, there is a slight expectation of any large increase in stormwater runoff volumes and pollutant loads to the Borough's waterways.

The major waterways are as follows:

Hudson River – Forms the eastern border of the Borough. Tenafly's jurisdiction extends halfway across the river. The Hudson River is tidally influenced.

Tenakill Brook – Located in the western portion of the Borough. Traverses from the south near the corporate limits with Englewood northerly to the corporate limits of Cresskill.

Overpeck Creek Tributaries – Two main tributaries are located near the southeast corner of the Borough, and form the headwaters of the Overpeck Creek. Both tributaries traverse from the north and flow southwesterly into the City of Englewood.

Green Brook Pond Tributaries – Located in the northeastern portion of the Borough in the Lost Brook Preserve. The tributaries flow northerly into Green Brook Pond, and from the pond continue into the Borough of Alpine and out to the Hudson River.

Flood Hazard Areas for the listed waterways are delineated on Federal Emergency Management Agency FIRM maps. All waterways within the Borough lie within NJ State Watershed Area Number 5. Watershed areas within the state are additionally broken down into smaller sub-watersheds designated as HUC-14s. The HUC-14 watersheds are used to perform build-out analyses for municipalities with greater than one square mile of developable or agricultural land remaining. Tenafly Borough has less than one square mile of remaining developable land, therefore there is no HUC-14 delineation or build-out analysis included in this report.

The Tenakill Brook is classified as a Category One waterway by the New Jersey Department of Environmental Protection. A Category One designation provides additional protection to water bodies that help prevent water quality degradation and discourage development where it would impair or destroy natural resources and environmental quality.

Special Water Resource Protection Areas shall be established along all waterways within the Borough of Tenafly designated as Category One waters, as well as those perennial or intermittent streams that drain into or upstream of the Category One waterways as shown on USGS Quadrangle Maps or County Soil Surveys within the associated HUC-14 drainage, or as designated as Tenafly Streams on Figure A-2, Tenafly Streams, included in this report. 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 protected by requiring an applicant to establish a 300-foot special water resource protection area, which 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 vegetation or vegetation allowed to follow natural succession if provided. Encroachment within the designated special water resource protection areas shall only be allowed where previous development or disturbance has occurred, and where the applicant demonstrates that the full 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 shall be subject to review and approval by the Tenafly Planning Board or Zoning Board of Adjustment and the N.J.D.E.P..

In addition, the New Jersey Department of Environmental Protection (NJDEP) has established an Ambient Biomonitoring Network (AMNET) to document the health of the state's waterways. There are over 800 AMNET sites throughout the state of New Jersey. These sites are sampled for benthic macroinvertebrates by NJDEP on a five-year cycle. Streams are classified as non-impaired, moderately impaired, or severely impaired based on the AMNET data. The data is used to generate a New Jersey Impairment Score (NJIS), which is based on a number of biometrics related to benthic macroinvertebrate community dynamics. For any waterways determined by AMNET criteria to be impaired, the NJDEP is required to develop a Total Maximum Daily Load (TMDL) for the detected pollutants within each waterway.

A TMDL is the amount of a pollutant that can be accepted by a water body without causing an exceedance of water quality standards or interfering with the ability to use a water body for one or more of its designated uses. The allowable load is allocated to the various sources of the pollutant, such as stormwater and wastewater discharges, which require an NJPDES permit to discharge, and nonpoint source, which includes stormwater runoff from agricultural areas and residential areas, along with a margin of safety. Provisions may also be made for future sources in the form of reserve capacity. An implementation plan is developed to identify how the various sources will be reduced to the designated allocations. Implementation strategies may include improved stormwater treatment plants, adoption of ordinances, reforestation of stream corridors, retrofitting stormwater systems, and other BMPs.

The New Jersey Integrated Water Quality Monitoring and Assessment Report 305(b) and 303(d) (Integrated List) is required by the federal Clean Water Act to be prepared biennially and is a valuable source of water quality information. This combined report presents the extent to which New Jersey waters are attaining water quality standards, and identifies waters that are impaired. Sublist 5 of the Integrated List constitutes the list of waters impaired or threatened by pollutants, for which one or more TMDLs are needed.

Based on the New Jersey 2006 Integrated Water Quality Monitoring and Assessment report, TMDLs have not yet been established for the major waterways within the Borough. Appendix D of the Report, entitled "New Jersey's 2006 Two Year TMDL Schedule", indicates that TMDLs are to be established for the Overpeck Creek during 2006-2008.

The Hudson River along the eastern border of the Borough is not part of the AMNET network, but has been listed by the EPA as impaired for PCB and Dioxin contamination in fish. The Tenakill Brook AMNET monitoring station, AN0209, indicates that the brook is severely impaired. In addition to the AMNET data, the NJDEP and other regulatory agencies collect water quality chemical data on the streams in the state. These data show that the instream total arsenic concentrations of the Tenakill Brook exceed the state's criteria. None of the other waterways in the Borough appear on AMNET Sublist 5.

All waterways within the Borough are subject to flooding and bank erosion. Figure A-2 illustrates the waterways in the Borough. Figure A-3 depicts the Borough boundary on aerial photos. Figure A-8 depicts the Borough boundary on USGS quadrangle maps.

Design and Performance Standards

The Borough will adopt the design and performance standards for stormwater management measures by Ordinance as presented in N.J.A.C. 7:8-5 to minimize the adverse impact of stormwater runoff on water quality and water quantity and loss of groundwater recharge in receiving water bodies. The design and performance standards include the language for maintenance of stormwater management measures consistent with the stormwater management rules at N.J.A.C. 7:8-5.8 Maintenance Requirements, and language for safety standards consistent with N.J.A.C. 7:8-6 Safety Standards for Stormwater Management Basins. The ordinances will be submitted to the county for review and approval within 12 months of the effective date of the Municipal Stormwater Management Plan.

Enforcement of the design and performance standards will be achieved by the current Borough practice of bonding and receiving performance guarantees for all site improvements on both residential and commercial developments. During construction, all projects are overseen by Borough inspectors to assure compliance to approved plans, and to ensure that the stormwater management measures are constructed and function as designed. No Certificates of Occupancy are issued and no bonding or performance guarantees are released until a satisfactory final inspection has been made by the Borough. Additionally, for those projects where property owners are responsible for the future upkeep of any on-site storm drainage facilities, an operation and maintenance plan must be submitted and approved by the Borough as part of the final inspection process.

Plan Consistency

The Borough is not within a Regional Stormwater Management Planning Area, therefore this plan does not need to be consistent with any regional stormwater management plans (RSWMPs). If any RSWMPs are developed in the future, this Municipal Stormwater Management Plan will be updated to be consistent.

The Municipal Stormwater Management Plan is consistent with the Residential Site Improvement Standards (RSIS) at N.J.A.C. 5:21. The municipality will utilize the most current updates of the RSIS in the stormwater management review of residential areas. This Municipal Stormwater Management Plan will be updated to be consistent with any future updates to the RSIS.

The Borough's Stormwater Management Ordinance will require all new development and redevelopment plans to comply with New Jersey's Soil Erosion and Sediment Control Standards. The Bergen County Soil Conservation District (BCSCD) reviews all development applications with a projected soil disturbance in

excess of 5000 square feet. This includes new residential construction and the complete tear-down and reconstruction of existing residential homes. The BCSCD review ensures that the details for the New Jersey Standards are included on all plans. During construction, Borough inspectors will observe on-site soil erosion and sediment control measures and report any inconsistencies to the Bergen County Soil Conservation District.

Once approved, this ordinance, which will be administered by our planning and zoning boards and code enforcement officer, will control stormwater from non-residential development and redevelopment projects. Where it is necessary to implement the municipal stormwater management plan, the approved ordinance will also control aspects of residential development and redevelopment projects that are not subject to the Residential Site Improvement Standards.

For any BMP that is installed in order to comply with the requirements of our post-construction program, the Borough of Tenafly will ensure adequate long-term operation as well as preventative and corrective maintenance (including replacement) of BMPs. For BMPs on private property that we do not own or operate, the Borough of Tenafly intends to do this by adopting and enforcing a provision in the municipal stormwater control ordinance that requires the private entity to perform the operation and maintenance, with penalties if the private entity does not comply. If, for example, the private entity does not perform the required maintenance, the Borough can perform the maintenance and charge the private entity.

Nonstructural Stormwater Management Strategies

The Borough reviewed the master plan and ordinances in 2006 and provided a list of the sections in the Borough land use and zoning ordinances that were to be modified to incorporate nonstructural stormwater management strategies. These are the ordinances identified for revision. Once the ordinance texts are completed, they will be submitted to the county review agency for review and approval within 12 months of the effective date of the Municipal Stormwater Management Plan. A copy will be sent to the Department of Environmental Protection at the time of submission.

Ordinance No. 97-29 of the Borough Code, entitled Land Development Ordinance of the Borough of Tenafly, was reviewed with regard to incorporating nonstructural stormwater management strategies. Several changes will be made to Article VII, entitled Subdivision and Site Plan Review, to incorporate these strategies, as follows:

> **Section 722-C**: **Streets General Standards** describes the requirements for streets in the Borough. This section will be amended to encourage developers to limit on-street parking to allow for narrower paved widths. Language will be added to this section to reduce the minimum radius of cul-de-sac designs. Cul-de-sacs with landscaped islands will have a minimum paved radius of 40 feet to accommodate larger equipment and emergency vehicles.
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> **Section 722-F**: **Shade Trees** describes the requirements for shade trees to be planted along the front yards of lots on the street line. In addition to Section 722-F, the Borough has a 'Tree Removal and Protection" ordinance that restricts and otherwise controls the removal of mature trees throughout the Borough. This ordinance recognizes that the preservation of mature trees and forested areas is a key strategy in the management of environmental resources, particularly watershed management, air quality, and ambient heating and cooling. The ordinance sets out a clearing area that extends 15 feet

beyond any proposed building footprint where clearing of trees cannot occur. This complies with minimizing land disturbance, which is a nonstructural stormwater management strategy. These sections will be amended to require the identification of forested areas, and that a minimum of 20% of forested areas be protected from disturbance.

Section 722-I: **Water Mains, Drainage Structures, Culverts, Storm Sewers and Sanitary Sewers** states that all such structures be properly connected. This section will be amended to include all the requirements outlined in N.J.A.C. 7:8-5 presented earlier in this document. This section will be further amended to encourage the use of natural vegetated swales in lieu of inlets and pipes.

Section 722-K: **Public Use and Service Areas** describes the use of suitable easements for drainage ways that run through subdivisions or development sites, and that natural features, such as trees, brooks, hilltops and views be preserved whenever possible in any development. This section will be amended to encourage the use of natural vegetated swales in lieu of inlets and pipes.

Section 722-L: **Buffer Plantings** are required on every residential property as directed by the Board on any portion of the perimeter of subdivisions or site plans where an adverse impact is likely on existing adjoining properties. The landscape requirements for buffer areas currently do not recommend the use of native vegetation. Language will be added to encourage their use. Additionally, language will be included to allow buffer areas to be used for stormwater management by disconnecting impervious surfaces and treating runoff from these impervious surfaces.

Section 723-B: **Requirements for Off-Street Parking** provides guidance on the size and location of off-street parking spaces. Additionally, with the provisions of the Borough Zoning Ordinance, guidance is provided for the minimum number of parking spaces required. The number of spaces required is based on occupancy, dwelling units, or gross floor area. This section will be amended to allow a developer to demonstrate that fewer spaces would be required, provided area is set aside for additional spaces if necessary. This section will also be amended to allow smaller parking stalls, shared parking, and pervious pavement in areas to be used for overflow parking.

Section 723-B(2): Details the use bituminous concrete pavement for parking, and states that parking areas shall be adequate in size and location to direct runoff away from neighboring properties and toward approved drainage systems. This section will be amended to allow for the use of pervious paving materials to minimize stormwater runoff and promote groundwater recharge.

Section 723-B(9): Details the requirements for curbs, which shall be provided around all parking areas. This section will be amended to allow for flush curbs with curb stops, or curbing with curb cuts to encourage developers to allow for the discharge of impervious areas into landscaped areas for stormwater management. Also, language will be added to allow for the use of natural vegetated swales for the water quality design storm, with overflow for larger storm events into storm sewers.

Section 723-E: **Site Plans for Planned Developments** details the specific requirements for planned developments such as townhouse or apartment complexes.

Section 723-E(6): requires that all off-street parking and internal roadways be paved and bounded by permanent curbing. This section will be amended to allow for curb cuts or flush curbs with curb stops to allow vegetated swales to be used for stormwater conveyance and to allow the disconnection

of impervious areas. This section will be further amended to allow for the use of pervious paving materials to minimize stormwater runoff and promote groundwater recharge.

Section 723 E(8): requires all common open space areas be attractively landscaped with grass lawns, trees and shrubs. The landscape requirements currently do not recommend the use of native vegetation. Language will be added to encourage their use.

Section 723 E(12): requires that parking areas and access drives be paved and curbed and provided with an adequate system of storm drainage. This section will be amended to allow for the use of pervious paving materials to minimize stormwater runoff and promote groundwater recharge, and encourage the use of natural vegetated swales in lieu of inlets and pipes.

Section 723 E(15): Describes the sidewalk requirements within Planned Developments. This section will be amended to require developers to design sidewalks to discharge stormwater to neighboring lawns where feasible to disconnect these impervious surfaces, or use permeable paving materials where appropriate.

Section 723 E(16): Describes the landscaping requirements for planned developments. The landscape requirements currently do not recommend the use of native vegetation. Language will be added to encourage their use.

Section 724-J: Soil Erosion and Sediment Control addresses soil erosion and sediment control by requiring developers to comply with the Bergen County Soil Conservation District's requirements. This section will be amended to outline some general design principles, including: whenever possible, retain and protect natural vegetation; minimize and retain water runoff to facilitate groundwater recharge; and, install diversions, sediment basins, and similar required structures prior to any on-site grading or disturbance.

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

The Borough of Tenafly will also enforce, through the municipal stormwater control ordinance, compliance with design standard in Attachment C of our permit to control passage of solid and floatable materials through storm drain inlets. The Borough of Tenafly expects that for most projects, such compliance will be achieved either by conveying flows through a trash rack as described in the "Alternate Device Exemptions," or (for flows not conveyed through such a trash rack), by installation of the NJDOT bicycle safe grate and (if needed) a curb opening with a clear space no bigger than two inches across the smallest dimension.

Several changes will be considered to Ordinance 97-29, Article VIII entitled "Zoning Regulations". The Borough has seven (7) residential districts, and seven (7) additional districts which include business districts, a commercial district, and an industrial district. Additionally, areas are zoned for open space and commercial antennas/composting. Each district has restrictions on total lot coverage.

The Borough Code will be amended to remind developers that satisfying the percent impervious requirements does not relieve them of responsibility for complying with the standards for Stormwater Management contained in Ordinance 97-29, Article X, Stormwater Management. The Borough is evaluating a maximum allowable impervious cover for each zone to determine whether a reduction in total lot coverage

is appropriate. The Borough is also evaluating a maximum percent of disturbance for each zone. Also, if a developer is given a variance to exceed the maximum allowable percent imperviousness, the developer must mitigate the impact of the additional impervious surfaces. This mitigation effort must address water quality, flooding and groundwater recharge. A detailed description of how to develop a mitigation plan is included in this Municipal Stormwater Management Plan.

Mitigation Plans

This mitigation plan is provided for a proposed development that is granted a variance or exemption from the stormwater management design and performance standards. Presented is a hierarchy of options.

Mitigation Project Criteria

1. The mitigation project must be implemented in the same drainage area as the proposed development. The project must provide additional groundwater recharge benefits, or protection from stormwater runoff quality and quantity from previously developed property that does not currently meet the design and performance standards outlined in the Municipal Stormwater Management Plan. The developer must ensure the long-term maintenance of the project, including the maintenance requirements under Chapters 8 and 9 of the NJDEP Stormwater Best Management Practices (BMP) Manual.

   The applicant can select one of the following projects listed to compensate for the deficit from the performance standards resulting from the proposed project. More detailed information on the projects can be obtained from the Borough Engineer. Listed below are the types of projects that can be used to address the mitigation requirement.

   A. Groundwater Recharge

      - Retrofit existing detention basins to provide additional cubic feet of average annual groundwater recharge.

      - Replace existing deteriorated overflow impervious parking lots with permeable paving to provide additional cubic feet of average annual groundwater recharge.

   B. Water Quality

      - Retrofit existing stormwater management facilities to provide the removal of 80 percent of total suspended solids (TSS) from parking lot.

   C. Water Quantity

      - Install stormwater management measures in open spaces in various developments to reduce the peak flow from the upstream development on the receiving stream for the 2, 10 and 100-year storms.

2. If a suitable site cannot be located in the same drainage area as the proposed development, as discussed in Option 1, the mitigation project may provide mitigation that is not equivalent to the impacts for which the variance or exemption is sought, but that addresses the same issue. For example, if a variance is given because the 80 percent Total Suspended Solids (TSS) requirement is not met, the selected project may address water quality impacts due to a fecal impairment. Listed below are specific projects that can be used to address the mitigation option.

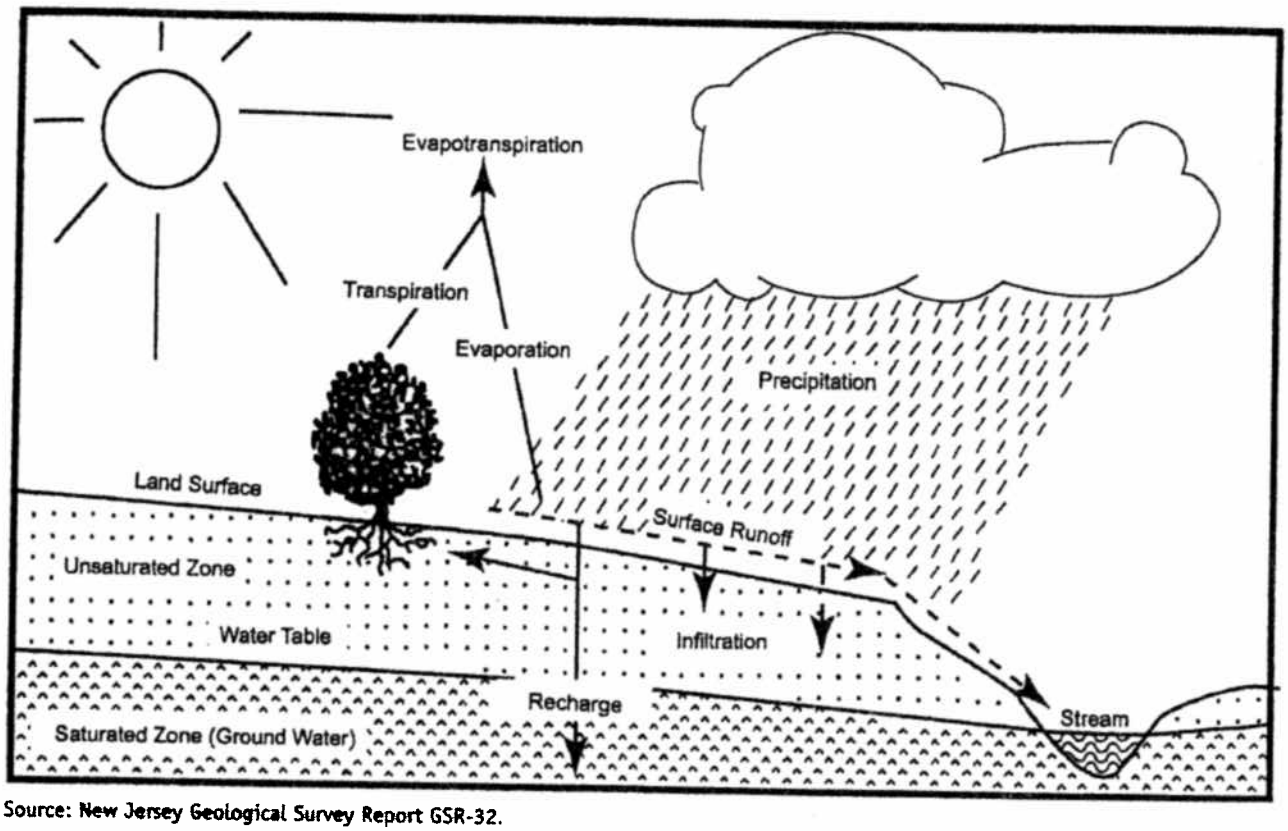
Water Quality

- Re-establish a vegetative buffer (minimum 50 foot wide) along the shoreline at selected ponds within the Borough as a goose control measure and to filter stormwater runoff from the high goose traffic areas.

- Provide goose management measures, including public education at the Municipal Building.

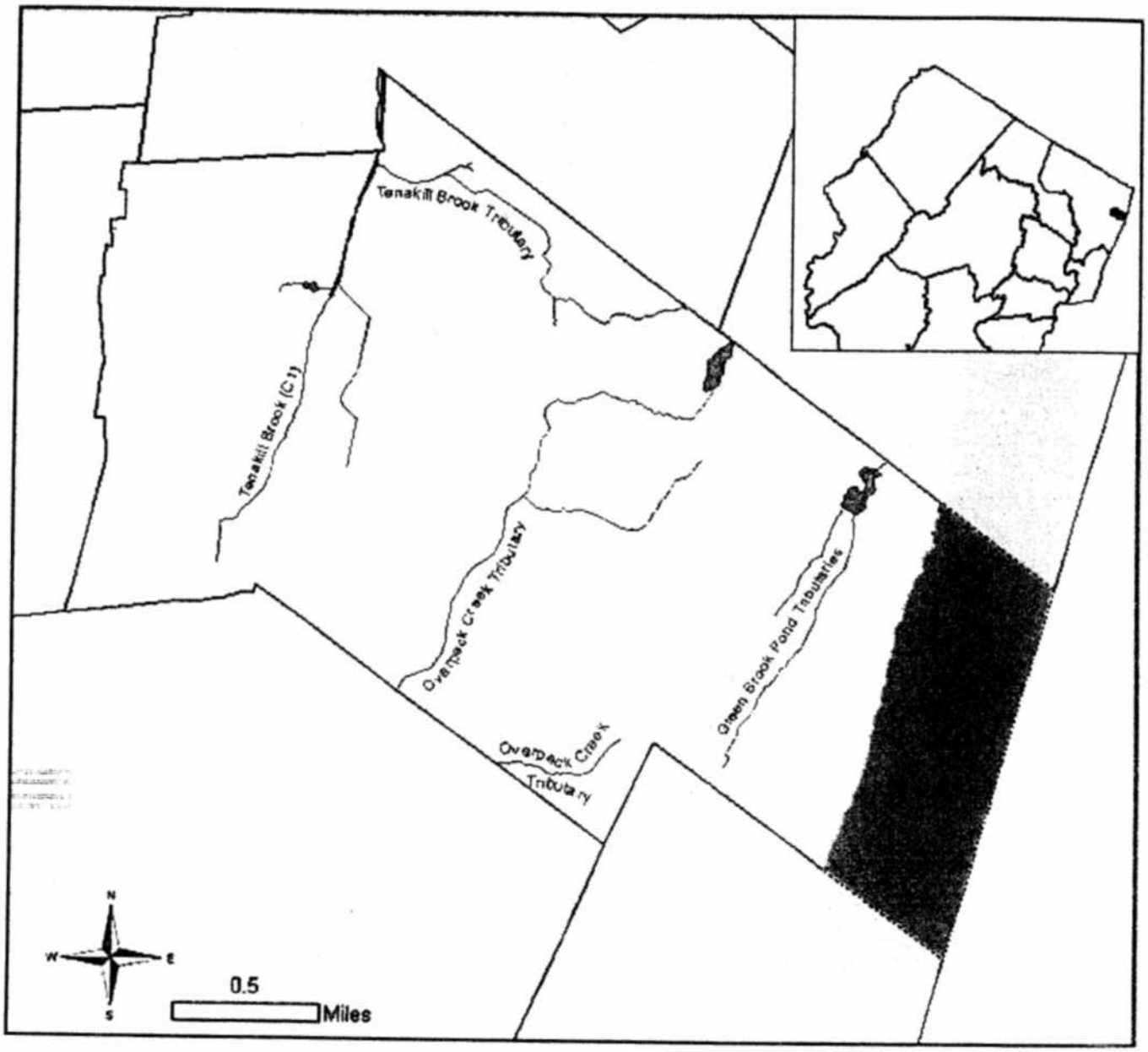
The municipality may allow a developer to provide funding or partial funding to the municipality for an environmental enhancement project that has been identified in a Municipal Stormwater Management Plan, or towards the development of a Regional Stormwater Plan. The funding must be equal to or greater 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.

Figure A-1 Groundwater Recharge in the Hydrologic Cycle



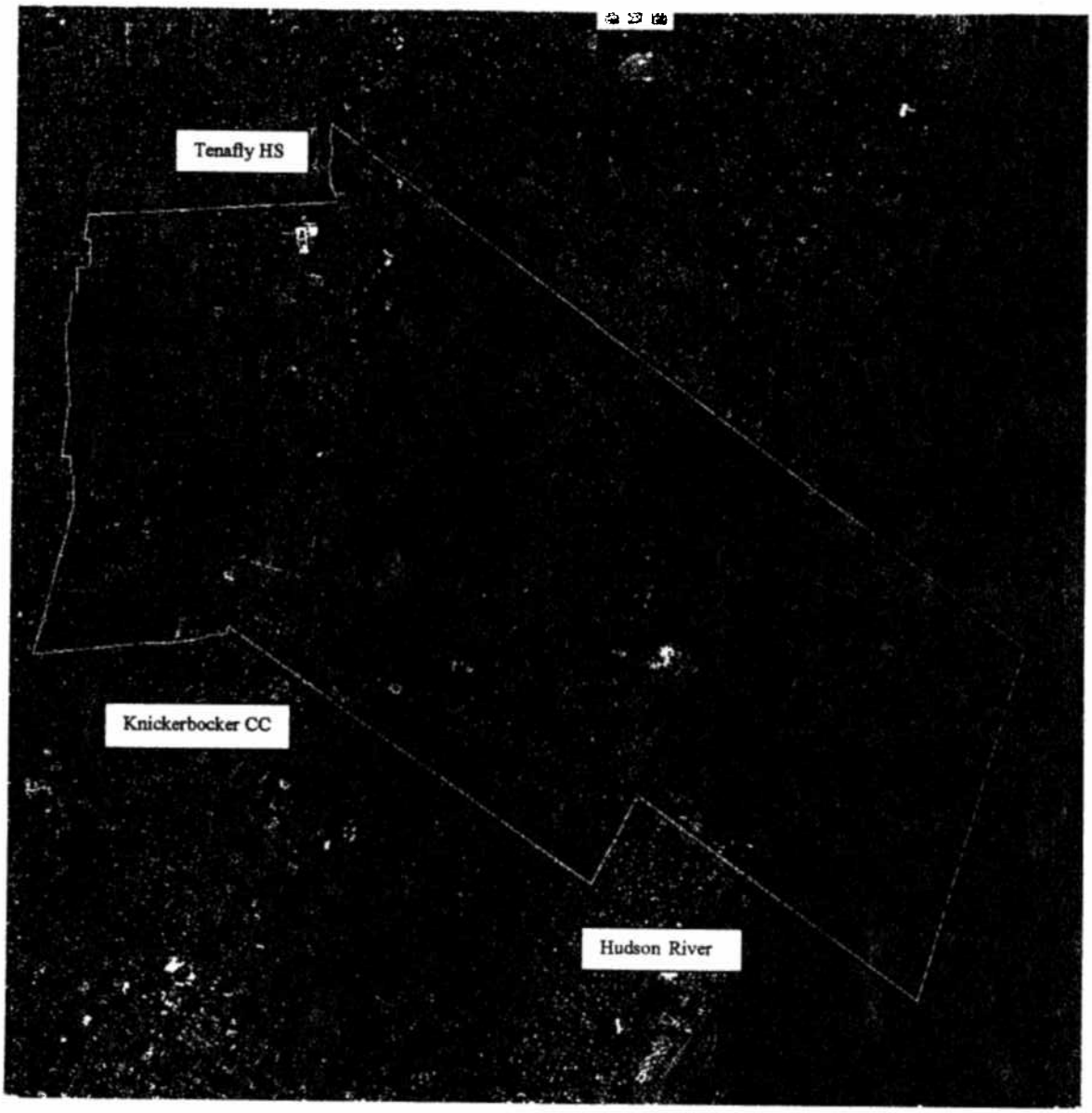
Source: New Jersey Geological Survey Report GSR-32.

Figure A-2 Tenafly Streams



Borough of Tenafly
Municipal Stormwater Management Report
January 2005
Prepared By: Schwanewede / Hals Engineering

Figure A-3 Tenafly Aerial Photo 2002



Source: NJDEP i-Map

Borough Boundary

Figure A-4 Zoning Districts Within the Borough

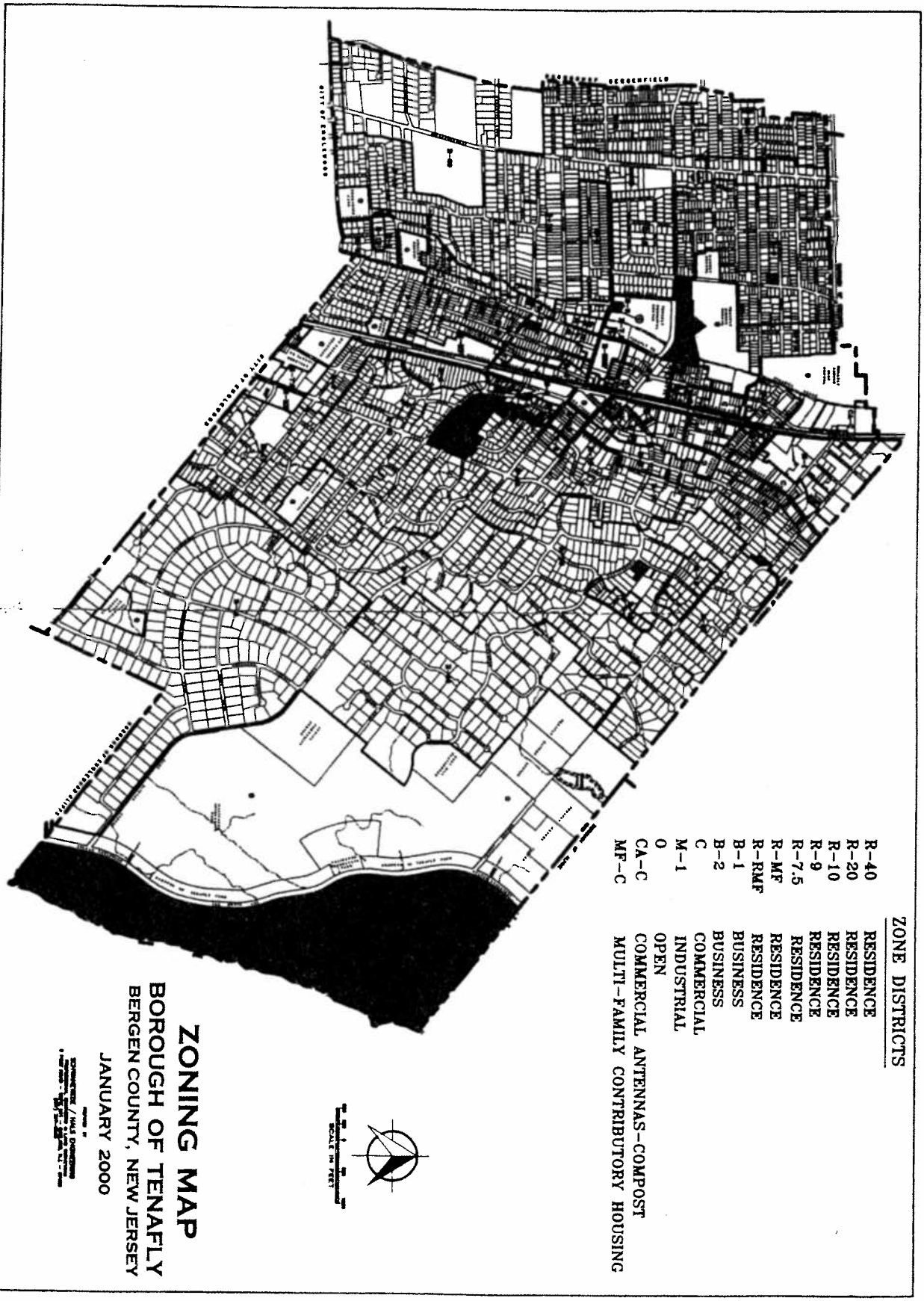
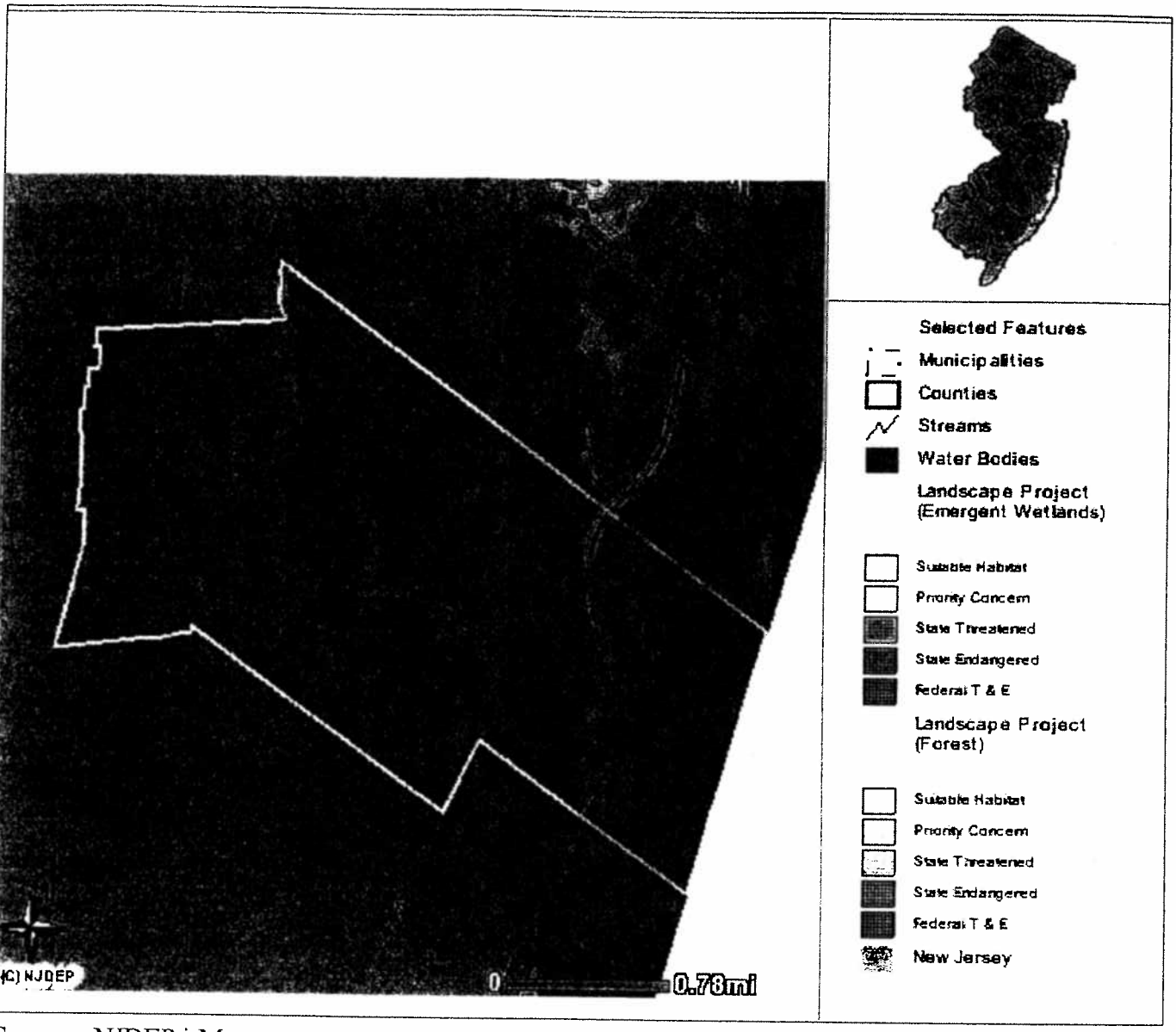
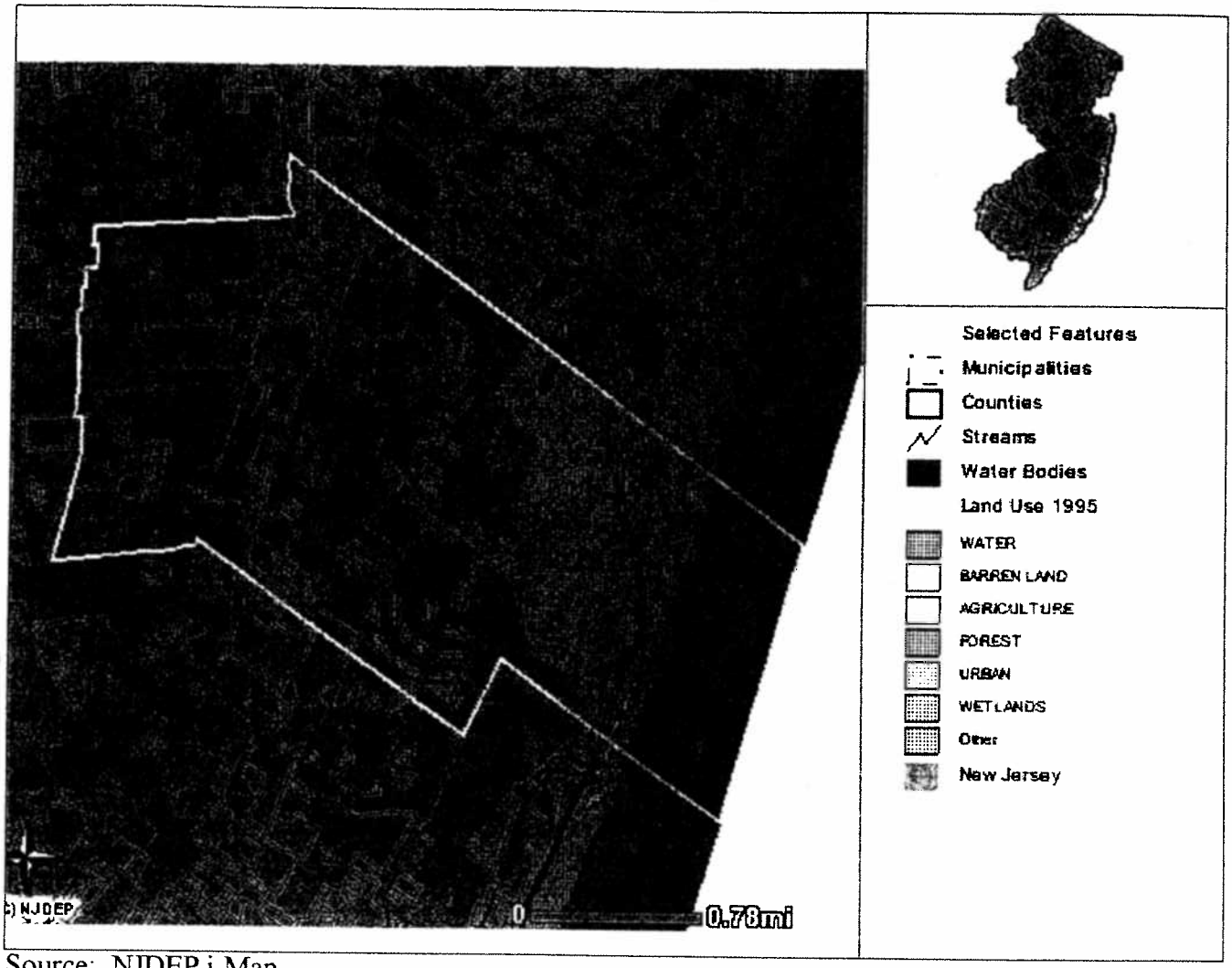


Figure A-5 Tenafly Emergent and Forested Wetlands



Source: NJDEP i-Map

Figure A-6 Tenafly Existing Land Use

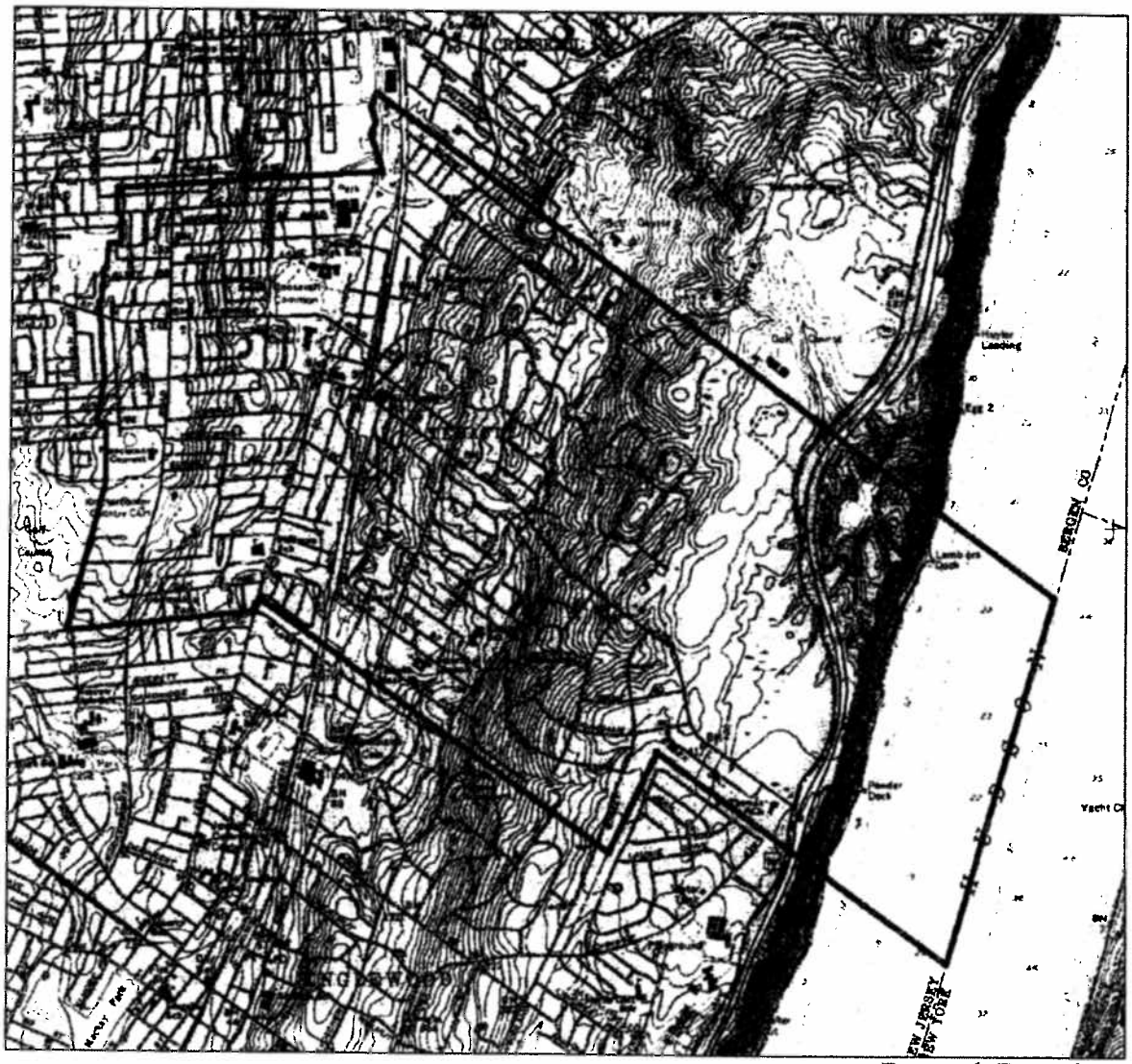


Source: NJDEP i-Map

Figure A-7 Tenafly Groundwater Recharge

Source: NJDEP i-Map

Figure A-8: Tenafly on USGS Quadrangle Map



Source: US Geological Survey
Yonkers, NY-NJ (1979) Quadrangle

POPULATION: HISTORICAL POPULATION TRENDS IN BERGEN COUNTY (1900 - 2000)

	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000
Alpine	268	377	350	521	626	644	921	1,344	1,549	1,716	2,183
[redacted]											
Closter	1,057	1,483	1,840	2,502	2,603	3,376	7,767	8,604	8,164	8,094	8,383
[redacted]											
Demarest	393	560	654	1,013	1,165	1,786	4,231	5,133	4,963	4,800	4,845
[redacted]											
Englewood	6,253	9,924	11,627	17,805	18,966	23,145	26,057	24,985	23,701	24,850	26,203
[redacted]											
Harrington Park	269	377	627	1,251	1,389	1,634	3,581	4,841	4,532	4,623	4,740
[redacted]											
Northvale	387	544	769	1,144	1,159	1,455	2,892	5,177	5,046	4,563	4,460
[redacted]											
Old Tappan	269	305	404	600	609	828	2,330	3,917	4,168	4,254	5,482
[redacted]											
Tenafly	1,746	2,756	3,585	5,669	7,413	9,651	14,264	14,827	13,552	13,326	13,806
[redacted]											
Emerson	456	767	973	1,394	1,487	1,744	6,849	8,428	7,793	6,930	7,197
[redacted]											
Montvale	416	522	779	1,243	1,342	1,856	3,699	7,327	7,318	6,946	7,034
[redacted]											
River Vale	266	450	583	871	1,112	1,699	5,616	8,883	9,489	9,410	9,449
[redacted]											
Westwood	828	1,870	2,597	4,861	5,388	6,766	9,046	11,105	10,714	10,446	10,999
[redacted]											
Pascack Valley Total	**4,369**	**7,225**	**10,250**	**19,118**	**21,516**	**26,872**	**54,951**	**75,108**	**71,803**	**68,335**	**70,056**
[redacted]											
Franklin Lakes	375	445	383	893	1,203	2,021	3,316	7,550	8,769	9,873	10,422
[redacted]											
Ho-Ho-Kus	316	488	586	925	1,626	2,254	3,988	4,348	4,129	3,935	4,060
[redacted]											
Midland Park	1,348	2,001	2,243	3,638	4,525	5,164	7,543	8,159	7,381	7,047	6,947
[redacted]											
Ramsey	1,074	1,667	2,090	3,258	3,566	4,670	9,527	12,571	12,899	13,228	14,351
[redacted]											
Saddle River	415	483	506	657	816	1,003	1,776	2,437	2,763	2,950	3,201
[redacted]											
Waldwick	1,207	970	1,296	1,728	2,475	3,963	10,495	12,313	10,802	9,757	9,622
[redacted]											
Northwest Bergen Total	**12,037**	**17,693**	**22,147**	**37,005**	**45,591**	**59,103**	**110,621**	**143,384**	**138,377**	**140,197**	**152,561**
COUNTY TOTAL	**78,441**	**138,002**	**210,643**	**364,977**	**409,646**	**539,139**	**780,255**	**897,148**	**845,385**	**825,380**	**884,118**

Source: US Bureau of the Census. Tabulated by the Bergen County Department of Planning & Economic Development, 2001

PUBLIC NOTICE

Borough of Tenafly

ORDINANCE NO. 06-25

AN ORDINANCE TO ESTABLISH STORMWATER MANAGEMENT CONTROL REGULATIONS FOR THE BOROUGH OF TENAFLY

BE IT ORDAINED by the Mayor and Council of the Borough of Tenafly, County of Bergen, State of New Jersey, as follows:

Section 1: 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 measures and proper maintenance plans. Nonstructural measures include both environmentally sensitive site design and source controls that prevent pollutants from being placed on the site. Source control plans should be developed based upon physical site conditions and the origin, nature, and the anticipated loading 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.

C. Applicability

This ordinance shall be applicable to any site plan or subdivision that requires preliminary or final site plan review. No variances, waivers or special exceptions shall be granted without the express approval of the Department of Environmental Protection.

D. Compatibility with other permit and ordinance requirements.

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

Section 2: 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 this section. To the maximum extent feasible, 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. Such alternative standards shall provide at least as much protection from stormwater—related loss of groundwater recharge, stormwater quantity and water quality impacts of major development projects as would be provided under the standards in this subchapter.

3. For site improvements regulated under the Residential Site Improvement Standards (RSIS) at N.J.A.C. *5:21*, the RSIS shall apply in addition to this Section except to the extent the RSIS are superseded by this Section or alternative standards applicable under a regional stormwater management plan or Water Quality Management Plan adopted in accordance with Department rules.

Section 3. Stormwater Management Requirements For Major Development

A. The development shall incorporate a maintenance plan and designate a responsible party for the stormwater management measures incorporated into the design of a major development.

B. Stormwater management measures shall avoid adverse impacts of concentrated flow on habitat for threatened and endangered species as documented in the Natural Heritage Database established under N.J.S.A. 13:1B-15.147 through 15.150, particularly Helonias bullata (swamp pink) and/or Clemmys muhlnebergi (bog turtle).

C. The following linear development projects are exempt from the groundwater recharge, stormwater runoff quantity, and stormwater runoff quality requirements at Sections 3.F and 3.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.

3. The construction of a public pedestrian access, such as a sidewalk or trail with a maximum width of 10 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 at Sections 3.F and 3.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 3.F and 3.G to the maximum extent practicable;

3. The applicant demonstrates that, in order to meet the requirements at Sections 3.F and 3.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 3.D above within the upstream drainage area of the receiving stream, that would provide additional opportunities to mitigate for requirements of Sections 3.F and 3.G that were not achievable on-site.

E. Nonstructural stormwater management measures

1. 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 2.E below into the design of a particular project, the applicant shall identify the measures considered and provide a basis for the contention.

2. Nonstructural stormwater management measures 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 pre-construction "time of concentration." "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 native plant landscaping that maximizes retention of existing native vegetation and planting of native vegetation and minimizes the use of lawns and need for fertilizers and pesticides;

h. Provide vegetated open-channel conveyance systems discharging into and through stable vegetated areas;

i. Provide other preventative 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:

(1) Site design features that help to prevent accumulation of trash and debris in drainage systems;

(2) Site design features that help to prevent discharge of trash and debris from drainage systems;

(3) Site design features that help to prevent and/or contain spills or other harmful accumulations of pollutants at industrial or commercial developments; and

(4) When establishing vegetation after land disturbance, applying fertilizer in accordance with the requirements established under the Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq., and implementing rules.

3. Any land area used as a non-structural stormwater management measure to meet the performance standards in Sections 3.F and 3.G shall be dedicated through deed to a government agency, subjected to a conservation deed restriction filed with the appropriate County Clerk's office, or subject to an approved equivalent restriction that ensures the maintenance of that measure in perpetuity.

4. Guidance for nonstructural stormwater management measures is available in the New Jersey Stormwater Best Management Practices Manual. The manual is available on the Department's web page at http://www.nistormwater.org or www.ninonpointsource.org.

F. Erosion control, groundwater recharge and runoff quantity standards

1. This section 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) Except if (2) or (3) apply, the design engineer shall, using the assumptions and factors for stormwater runoff calculations at Section 4, either:

(a) Demonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measures maintain 100% 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 that qualify as "urban redevelopment".

(3) The following types of stormwater shall not be recharged;

(a) Stormwater from areas of high pollutant loading. High pollutant loading areas are areas in industrial and commercial developments where solvents and/or petroleum products are loaded/unloaded, stored, or applied, areas where pesticides are loaded/unloaded or stored; areas where hazardous materials are expected to be present in greater than 'reportable quantities' as defined by the United States Environmental Protection Agency (EPA) at 40 CFR 302.4; areas where recharge would be inconsistent with Department approved remedial action work plan or landfill closure plan and areas with high risks for spills of toxic materials, such as gas stations and vehicle maintenance facilities; and

(b) Industrial stormwater exposed to "source material". "Source material" means any material(s) or machinery, located at an industrial facility, that is directly or indirectly related to process, manufacturing or other industrial activities, which could be a source of pollutants in any industrial stormwater discharge to groundwater. Source materials include, but are not limited to, raw materials; intermediate products; final products; waste materials; by-products; industrial machinery and fuels, and lubricants, solvents, and detergents that are related to process, manufacturing, or other industrial activities that are exposed to stormwater.

(4) The design engineer shall assess the hydraulic impact on the groundwater table and design the site so as to avoid adverse hydraulic impacts. Potential adverse hydraulic impacts include, but are not limited to, exacerbating a naturally or seasonally high water table so as to cause surficial ponding, flooding of basements, or interference with the proper operation of subsurface sewage disposal systems and other subsurface structures in the vicinity or downgradient of the groundwater recharge area.

c. In order to control stormwater runoff quantity impacts, the design engineer shall, use the assumptions and factors for stormwater runoff calculations at Section 4, complete one of the following:

(1) 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) 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; or

(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;

2. Any application for a new agricultural development that meets the definition of major development at Section 12 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.

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 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	5	0.8917
5	0.0083	/0	0.9917
10	0.0166	/5	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
~0	0.1660	105	1.2250
~5	0.2000	110	1.2334
50	0.2583	115	1.2417
55	0.3583	120	1.2500
30	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, which may be obtained from the address identified in Section 6. TSS reduction shall be calculated based on the removal rates for the BMPs in Table 2 below. Alternative removal rates and methods of calculating removal rates may be used if the design engineer provides documentation demonstrating the capability of these alternative rates and methods to the review agency. A copy of any approved alternative rate or method of calculating the removal rate shall be provided to the Department at the following address: Division of Watershed Management, New Jersey Department of Environmental Protection, P0 Box 418 Trenton, New Jersey, 08625-0418.

3. If more than one BMP in series is necessary to achieve the required 80% 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 load removal from application of both BMPs, and
A = the TSS removal rate applicable to the first BMP
B = the TSS removal rate applicable to the second BI\4P

Table 2: TSS Removal Rates for BMPs

Best Management Practice	TSS %Removal Rate
Bioretention Systems	90
Constructed Stormwater Wetland	90
Forested Buffers	70
Extended Detention Basin	40-60
Infiltration Structure	80
Manufactured Treatment Device	See N.J.A.C. *7:8-5.7(c)*
Sand Filter	80
Vegetative Filter Strip	50
Wet Pond	*50-90*

4. If there is more than one onsite drainage area, the 80% 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 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 3.F and 3.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 6.

7. In accordance with the definition of FW1 at N.J.A.C. 7:9B-1.4, stormwater management measures shall be designed to prevent any direct discharge of stormwater to waters classified as FW1.

8. Special water resource protection areas shall be established along all waters designated Category One at N.J.A.C. 7:9B and perennial or intermittent streams that drain into or upstream of the Category One waters as shown on the USGS Quadrangle Maps or in the County Soil Surveys, within the associated HUC 14 drainage or as designated as the Tenafly Streams as shown on Figure A-2 of the Borough of Tenafly Municipal Stormwater Management Plan. 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, measured perpendicular to the waterway from the top of bank outwards or from the centerline of the waterway where the bank is not defined, consisting of existing vegetation or vegetation allowed to follow natural succession is provided.

   (2) Encroachment within the designated special water resource protection area under subsection 8. a.(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 Category One waterway or the designated Tenafly Streams as shown on Figure A-2 of the Borough of Tenafly Municipal Stormwater Management Plan. All encroachments proposed under this subparagraph shall be subject to review and approval by the Borough of Tenafly Planning Board or Zoning Board of Adjustment and 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% TSS post construction removal rate;

(3) Temperature shall be addressed to ensure no impact on receiving waterway;

(4) The encroachment shall only be allowed where the applicant demonstrates that the functional value and overall condition of the special water resource protection area will be maintained to the maximum extent practicable;

(5) A conceptual project design meeting shall be held with the appropriate Department staff and Soil Conservation District staff to identify necessary stabilization measures; and

(6) All encroachments proposed under this section shall be subject to review and approval by the Department.

d. This subsection does not apply to the construction of one individual single family dwelling that is not part of a larger development on a lot receiving preliminary or final subdivision approval on or before **September 12, 2006**, provided that the construction begins on or before **September 12, 2011**.

Section 4: Calculation of stormwater runoff

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, there is a presumption that the preconstruction condition of a site or portion thereof is a wooded land use with good hydrologic condition. A runoff coefficient 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 calculation. 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 condition and conservation treatment (if the land use type is cultivation.)

3. In computing pre-construction stormwater runoff, the design engineer shall account for all significant land features and structures, such as ponds, wetlands, depressions, hedgerows, or culverts, that may reduce pre-construction stormwater runoff rates and volumes.

4. In computing stormwater runoff from a design storm, 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 the water quality storm, urban impervious area modifications as described in the NRCS Technical Release-55, Urban Hydrology for Small Watersheds 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.

Section 5: 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, 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. In addition, the design of trash racks must comply with the requirements of Section 7.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 7.

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

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

Section 6: 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, 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, forested buffers, 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 7: 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 subchapter applies to any new stormwater management basin.

B. The provisions of this section are not intended to preempt municipal or county safety requirements for new or existing stormwater management basins. Municipal and county stormwater management plans and ordinances may, pursuant to their authority, require existing stormwater management basins to be retrofitted to meet one or more of the safety standards in Section 7.D. 1 for trash racks, overflow grates, and escape provisions at outlet structures.

C. Operative date and compliance schedule

1. For purposes of this subchapter, a stormwater management basin is "existing" if construction of such basin commenced prior to (one year from the effective date of this ordinance), or if such basin was identified in a subdivision or site plan application that received final approval pursuant to the Municipal Land Use Law (N.J.S.A. 40:55D-1 et seq.) as of (one year from the effective date of this ordinance). Any other stormwater management basin is a "new" basin.

2. As of (one year from the effective date of this ordinance), the construction, installation, or operation of any new stormwater management basin that does not conform to the requirements of this subchapter is prohibited.

3. If an existing stormwater management basin does not conform to a municipal or county stormwater control ordinance adopted pursuant to N.J.A.C. 7:8-6.1(c), the person responsible for the stormwater management basin under such ordinance shall, within the time period specified in the ordinance, modify the basin to comply with the ordinance.

D. Requirements for trash racks, overflow grates and escape provisions

1. A trash rack is a device designed to catch trash and debris and prevent the clogging of outlet structures. Trash racks shall be installed at the intake to the outlet from the stormwater management basin to ensure proper functioning of the basin outlets in accordance with the following:

   a. The trash rack shall have parallel bars, with no greater than six inch spacing between the bars.

   b. The trash rack shall be designed so as not to adversely affect the hydraulic performance of the outlet pipe or structure.

   c. The average velocity of flow through a clean trash rack is not to exceed 2.5 feet per second under the full range of stage and discharge. Velocity is to be computed on the basis of the net area of opening through the rack.

   d. The trash rack shall be constructed and installed to be rigid, durable, and corrosion resistant, and shall be designed to withstand a perpendicular live loading of 300 lbs/ft sq.

2. An overflow grate is designed to prevent obstruction of the overflow structure. If an outlet structure has an overflow grate, such grate shall meet the following requirements:

   a. The overflow grate shall be secured to the outlet structure but removable for emergencies and maintenance.

   b. The overflow grate spacing shall be no less than two inches across the smallest dimension.

   c. The overflow grate shall be constructed and installed to be rigid, durable, and corrosion resistant, and shall be designed to withstand a perpendicular live loading of 300 lbs/ft sq.

3. For purposes of this subsection, 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 7.E., a free-standing outlet structure may be exempted from this requirement.

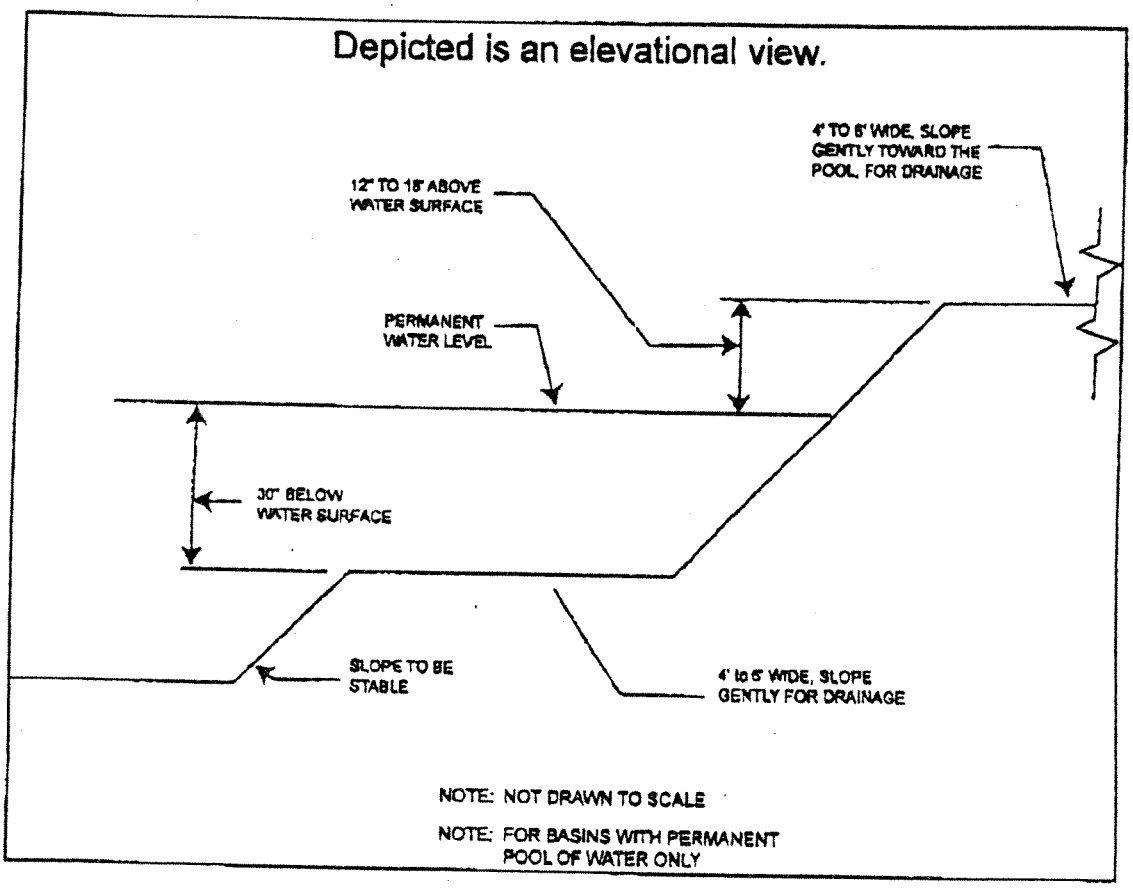
   b. Safety ledges shall be constructed on the slopes of all new stormwater management basins having a permanent pool of water deeper than two and one-half feet. Such safety ledges shall be comprised of two steps. Each step shall be four to six feet in width. One step shall be located approximately two 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 7.F 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.

E. 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 8: 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 8.C below as part of the submission of the applicant's application for subdivision or site plan approval.

2. The applicant shall demonstrate that the project meets the standards set forth in this ordinance.

3. The applicant shall submit (specify number) copies of the materials listed in the checklist for site development stormwater plans in accordance with subsection 8.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 from which municipal approval is sought. That municipal board shall consult the engineer retained by the Planning and/or Zoning Board (as appropriate) to determine if all the checklist requirements have been satisfied and to determine if the project meets the standards set forth in this ordinance.

C. Checklist Requirements

The following information shall be required:

1. Topographic Base Map

The reviewing engineer may require upstream tributary drainage system information as necessary. It is recommended that the topographic base map of the site be submitted which extends a minimum of 200 feet beyond the limits of the proposed development, at a scale of 1 "=200' or greater, showing 2-foot contour intervals. The map as appropriate may indicate the following: existing surface water drainage, shorelines, steep slopes, soils, erodible soils, perennial or intermittent streams that drain into or upstream of the Category 1 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 2-5 are being met. The focus of this plan shall be to describe how the site is being developed to meet the objective of controlling groundwater recharge, stormwater quality and stormwater quantity problems at the source by land management and source controls whenever possible.

5. Stormwater Management Facilities Map

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

a. Total area to be paved or built upon, proposed surface contours, land area to be occupied by the stormwater management facilities and the type of vegetation thereon, and details of the proposed plan to control and dispose of stormwater.

b. Details of all stormwater management facility designs, during and after construction, including discharge provisions, discharge capacity for each outlet at different levels of detention and emergency spillway provisions with maximum discharge capacity of each spillway.

6. Calculations

a. Comprehensive hydrologic and hydraulic design calculations for the pre-development and post-development conditions for the design storms specified in Section 2 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 soil types 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 9.

8. Waiver from Submission Requirements

The board reviewing an application under this ordinance may, in consultation with the municipal engineer, waive submission of any of the requirements Sections 8.C.1 through 8.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 9. Maintenance and Repair

A. 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

measures are available in the New Jersey Stormwater Best Management Practices Manual. If the maintenance plan identifies a person other than the developer (for example, a public agency or homeowners' association) as having the responsibility for maintenance, the plan shall include documentation of such person's agreement to assume this responsibility, or of the developer's obligation to dedicate a stormwater management facility to such person under an applicable ordinance or regulation.

3. Responsibility for maintenance shall not be assigned or transferred to the owner or tenant of an individual property in a residential development or project, unless such_owner or tenant owns or leases the entire residential development or project.

4. If the person responsible for maintenance identified under Section A.2 above is not a public agency, the maintenance plan and any future revisions based on Section A.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 as needed, 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 A.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 A.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 A.2 above shall retain and make available, upon request by a public entity, the maintenance plan and the documentation required by Sections A.2, A.6, and A.7 above.

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

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

10. In the event that the stormwater management facility becomes a danger to public safety or public health, or if it is in need of maintenance, 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. 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.

C. **Penalties.** Any person who erects, constructs, alters, repairs, converts, maintains, or uses any building, structure or land in violation of this section shall be subject to the following penalties: A fine not to exceed five hundred ($500.00) dollars per day for the first offense, and a fine not to exceed one thousand ($1,000.00) dollars per day for the second offense, or to imprisonment for a period not exceeding ninety (90) days, or to community service for a period of ninety (90) days for each and every day of violation.

Section 10: Effective Date

This ordinance shall take effect upon adoption and publication according to law.

Section 11: Severability

If the provisions of any article, 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 article, section, subsection, paragraph, subdivision or clause of this ordinance.

Section 12: 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.

"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 manufacture of agriculturally related products.

"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.

"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 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, for which permission is required under the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq.

"Drainage area" means a geographic area within which water, sediments, and dissolved materials drain to a particular receiving waterbody or to a particular point along a receiving waterbody.

"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 that seeps into the soil from precipitation.

"Major development" means any "development" shown in any site plan or subdivision plan that has not received preliminary or final approval by **September 12, 2006** that provides for ultimately disturbing one or more acres of land or increasing impervious surface by one-quarter acre or more. 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. 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."

"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, political subdivision of this State and any state, interstate or federal agency.

"Pollutant" means any dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, refuse, oil, grease, sewage sludge, munitions, chemical wastes, biological materials, medical wastes, radioactive substance (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.)), thermal waste, wrecked or discarded equipment, rock, sand, cellar dirt, industrial, municipal, agricultural, and construction waste or runoff or other residue discharged directly or indirectly to the land, ground waters or surface waters of the State, or to a domestic treatment works. "Pollutant" includes both hazardous and nonhazardous pollutants.

"Recharge" means the amount of water from precipitation that infiltrates into the ground and is not evapotranspired.

"Sediment" means solid material, mineral or organic, that is in suspension, is being transported, or has been moved from its site of origin by air, water or gravity as a product of erosion.

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

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

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

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

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

"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 nonstormwater 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 (PA 1), 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.

INTRODUCED: July 11, 2006

ADOPTED:

ATTEST: APPROVED:

I hereby certify that the foregoing is a true copy of an ordinance introduced by the Mayor and Council of the Borough of Tenafly, N.J. on 7/11/06

Nancy Hatten, RMC
Borough Clerk

Peter S. Rustin
Mayor

Borough Clerk