

CALL TO ORDER AT 8:00 PM

PRESENT AT ROLL CALL:

Mayor	James Barsa
Councilman	Thomas Brizzolara
Councilman	Michael Knigin
Council President	Barry Scott
Councilman	Anthony Guercio
Councilwoman	Dolores Senatore
Councilman	Edward Condoleo (8:10 PM)

ALSO PRESENT:

Borough Attorney	Andrew Fede
Borough Engineer	Chris Taverna

After roll call, Mayor Barsa asked for a motion to open the meeting to the public. A motion to open the meeting to the public was made by Mr. Scott, seconded by Ms. Senatore and declared carried upon the affirmative vote of all Council Members present.

No one wishing to be heard, a motion to close the meeting to the public was made by Mr. Brizzolara and seconded by Ms. Senatore. All Council Members present voted in favor of the motion.

At 8:05 PM, Mayor Barsa asked for a motion to approve Resolution 07:44, Authorizing the Council to go into Closed Session to discuss the following personnel issues:

1. Contract proposal for elevator inspector
2. Discussion of grievance filed 12-18-06

There was debate as to whether the Council should proceed in Closed Session at this time or at the conclusion of the meeting. Motion to adopt Resolution 07:44 at this time was made by Mr. Scott and seconded by Mr. Knigin. On roll call vote:

Ayes:	Knigin, Scott and Senatore
Nays:	Brizzolara and Guercio
Absent:	Condoleo

There being three (3) ayes and two (2) nays, the motion carried.

At 8:30 PM, Mayor Barsa resumed the Work Session and asked for a motion to approve the following resolutions:

- 07:42 Approving bills and vouchers in the amount of \$2,757,292.19
- 07:43 Authorizing Neglia Engineering to make application to Bergen County Planning Board to narrow Livingston Street by 10 feet

Mr. Brizzolara asked that 07:43 be removed for discussion.

A motion to approve Resolution 07:42 was made by Mr. Scott, seconded by Ms. Senatore and declared carried upon the affirmative vote of all Council Members present.

Mr. Brizzolara questioned the safety aspects of narrowing Livingston Street. The Borough Engineer advised that there would be enough room on both sides to turn. Chief Krapels stated that Livingston Street is too wide for pedestrian walkways and voiced his belief that narrowing the road would reduce speeding. He also voiced his opinion that the present turn lanes are extremely dangerous.

A motion to approve Resolution 07:43 was made by Mr. Scott and seconded by Ms. Senatore. All Council Members present voted in favor of the motion.

Items for Discussion:

Encroachment into Haring Cemetery

Judith and Ed Lamp of the Historic Preservation Committee addressed the Council regarding the construction of a decorative pond by the homeowner of Block 123 Lot 2 and distributed pictures (Attachment A) showing the encroachment into the cemetery.

Mr. Scott explained that the Construction Official is aware of the situation and sent a letter to the homeowner yesterday directing that the pond structure be removed within seven (7) days.

Mrs. Lamp voiced her opinion that the Borough needs to take ownership of the cemetery so that it can be protected properly. Mr. Scott concurred and recommended once this happens, it should be fenced in.

The Borough Attorney reminded that Neglia Engineering conducted the survey, and after two title searches, no ownership could be found. Mr. Fede advised that there is a procedure for taking possession of an abandoned cemetery and costs should not be more than \$3,500.00. After further discussion, a motion was made by Mr. Knigin and seconded by Mr. Scott that the Borough Attorney be authorized to proceed with the acquisition of the Haring Cemetery at costs not to exceed \$3,500.00.

A resolution will be placed on the February 6, 2007 Public Meeting agenda.

Mr. Guercio asked that the offending homeowner be given until April 1 to remove the pond due to the frozen ground conditions. No objections were voiced and the Construction Official will be asked to send an amended letter to the homeowner.

Mr. Scott recommended that the Historic Preservation Committee provide suggestions as to the type of fencing to be installed with estimated costs.

Stream Corridor Protection

Christine Hageman, Chair of the Environmental Commission, explained that the Commission, Borough Attorney and Meadowlands Conservation Trust have been attempting to clarify stream designations for upstream tributaries to C-1 Classified streams by the Department of Environmental Protection. Along this line, there have been amendments proposed for Chapter 199, "Stormwater Control" using the Borough of Tenafly's ordinance as a model. (Attachment B).

Mr. Scott explained that the Building Department is in the process of obtaining a GPS system that is capable of mapping out every stream in the Borough. The Borough Engineer is in the process of reviewing the sample ordinances and has been asked to provide his comments. Mayor Barsa asked that all Council Members review the material for further discussion at the Tuesday, February 13, 2007 Work Session.

Ordinances for discussion:

1. Police Organization Chart – allowing for additional sergeants - Mayor Barsa explained that the Police Department presently has one Lieutenant and one Sergeant on staff. The Chief of Police is asking that the organizational chart be amended to incorporate three Sergeants so that there would be a Sergeant on each shift. At the present time, the most senior patrolman on the shift takes on the responsibility of Sergeant. Following a brief discussion, it was the consensus of the Council that the proposed ordinance be introduced at the February 6, 2007 Public Meeting.

2. Traffic Ordinance Revisions – Parking on D’Ercole Court – It was the consensus of the Council that the proposed ordinance, recommended by the Chief of Police, be introduced at the February 6, 2007 Public Meeting.

3. Amendment to Chapter 172, Peddling and Soliciting to include photo identification – It was the consensus of the Council that the proposed ordinance, recommended by the Chief of Police, be introduced at the February 6, 2007 Public Meeting.

Borough Engineer Report:

Kennedy Park Pond Dredging - PetroScience, Inc. collected and tested soil samples from the pond, found them to be uncontaminated and recommended disposal of the dredged material.

Kennedy Park War Memorial – a design has been proposed and is waiting Borough approval.

Fox Hill Woods – the paper streets still need to be vacated. The Administrator/Clerk reminded that survey and legal costs have to be estimated so that funds are allocated in the 2007 Budget. Mr. Scott suggested that the Meadowlands Conservation Trust be given the easement as was done with the Central Woods and volunteered to speak with Tina Schvejda.

Broad Street Beautification Project – Bid Opening held 01-31-07 – Mr. Taverna explained what was included for the base bid as well as the alternate bids. The Administrator/Clerk reminded that the Department of Transportation grant is for \$130,000.00 and that there is \$230,000 remaining from the 2006 capital budget. It was the consensus of the Council that the base bid which includes milling, curbing and drains be awarded to the lowest bidder, 4 Clean-Up, Inc., North Bergen, New Jersey, in the amount of \$170,650.00, at the February 13, 2007 Work Session.

2004-2005 Road Improvement Program - asphalt core drilling and testing on Somerset Road as per DOT grant requirements has been completed by Key-Tech and the Final Payment Voucher will be submitted to the NJDOT.

Borough Administrator Report:

Kennedy Park Pond - Mrs. McMackin suggested that the Council consider elongating the pond using the dredged material to do so.

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Riverside Cooperative – member towns have been asked to submit a list of streets for resurfacing/repaving by March.

The Riverside Cooperative has been given funds by Bergen County to undertake a study of what services and equipment can be shared by Departments of Public Works. Mrs. McMackin would like Norwood to volunteer to house a shared piece of equipment.

At this time, a motion to open the meeting to the public was made by Mr. Scott, seconded by Ms. Senatore and declared carried upon the affirmative vote of all Council Members present.

George Hertzberg, 24 Carter Street, stated his objection to the Council going into Closed Session at the beginning of the meeting and voiced his opinion that the Council should do all they can to encourage public participation at meetings.

Mr. Hertzberg recommended that the Borough adopt a school in New Orleans and help to rebuild it. Mayor Barsa suggested Mr. Hertzberg address this with the Board of Education.

No one else wishing to be heard, a motion to close the meeting to the public was made by Mr. Guercio and seconded by Ms. Senatore with all Council Members present voting aye.

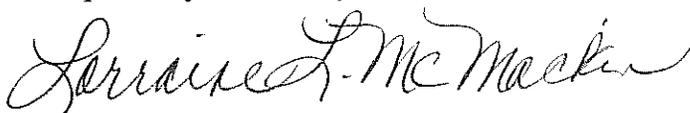
A motion to adopt Resolution 07:45 authorizing the Council to proceed in Closed Session was made by Mr. Brizzolara, seconded by Mr. Knigin and declared carried upon affirmative vote of all Council Members present.

At 9:50 PM, Mayor Barsa declared a five-minute recess before proceeding in Closed Session.

Mayor Barsa resumed the Public Meeting at 11:30 PM advising that the personnel matters addressed in Closed Session will be further discussed at the February 13, 2007 Work Session in Closed Session.

A motion to adjourn at 11:30 PM was made by Mr. Guercio and seconded by Mr. Brizzolara with all Council Members present voting aye.

Respectfully submitted,



Lorraine L. McMackin, RMC, CMC
Administrator/Clerk



ATTACHMENT 'A'

INTERBOROUGH MEMORANDUM

TO: BOROUGH OF NORWOOD MAYOR AND COUNCIL
FROM: CHRISTINE HAGEMAN, CHAIR, ENVIRONMENTAL COMMISSION
SUBJECT: STREAM CORRIDOR DESIGNATION AND PROTECTION
DATE: JANUARY 30, 2007
CC: ANDREW FEDE

FOR YOUR INFORMATION AND CONSIDERATION

Efforts by the Environmental Commission, the Borough Attorney and Tina Schvejda of Meadowlands Conservation Trust, to clarify stream designations for upstream tributaries to C-1 classified streams, (those that do not appear on either the USGS maps or County Soil Survey maps), have at last been answered. Although the regulations state that these unmapped streams will be designated on a case-by-case basis (N.J.A.C. 7:9B-1.15(b).5.vi.), there does not seem to be a system in place to initiate such a designation. The Department of Environmental Protection (Debra Hammond, Bureau of Water Standards and Assessment) has confirmed that these streams remain unregulated outside of normal Stream Encroachment and Flood Hazard Area Regulations. The DEP recognizes that there are problems with the way the C-1 regulations are written, but at the moment, there is no proposed solution. The DEP suggests that municipalities that want to include additional streams in the Special Water Resource Protection Area (SWRPA) regulations, established for C-1 streams under the Stormwater Management Rule, formulate municipal regulations to achieve that purpose.

Due to the potential for lot consolidation during redevelopment of the Borough, which could produce large subdivisions and other more intensive uses adjacent to Borough streams, the Commission therefore recommends that the Borough adopt a municipal ordinance to establish the 300 foot buffer protections afforded by the SWRPA requirements of the Stormwater Management Rule, for all Borough streams in the Oradell Reservoir drainage area. A municipal control would alleviate the Borough Engineer's concerns regarding permit requirements for dredging and maintenance of Borough streams, while still offering the protections provided to mapped C-1 streams. In order to offer greater protection to the Borough's natural resources, the Environmental Commission had previously recommended a Stream Corridor

Ordinance in our 2004 Annual Report, along with Environmental Constraint and local Floodplain/Wetlands ordinances (these ordinances are all recommended in the Borough Master Plan). All three of these goals could largely be achieved under one ordinance offering a larger buffer to all Borough streams draining to the Oradell Reservoir. The following ordinances and/or amendments are offered for your consideration in order of preference by the Commission:

1. **Stormwater Management Ordinance Amendment**-Due to more serious problems regarding contamination of their streams, the Borough of Tenafly has already closed the mentioned regulatory loophole, by altering their version of the Stormwater Management Ordinance to include "Tenafly Streams", as shown on a figure in their Municipal Stormwater Management Plan. We recommend that our Stormwater Management Ordinance and Stormwater Management Plan be similarly amended (see attached suggestion). In this way, the Borough can establish the required buffer zones without waiting for NJDEP review, and the Planning Board will immediately be able to determine the impact of any major development (as classified in the Stormwater Management regulations), along a stream corridor in the Oradell Reservoir watershed. The Commission recommends that the Flood Insurance Rate Maps be used to either create a comprehensive map of Borough streams or be incorporated by reference. These are the maps used by the Commission for the Environmental Resource Inventory.
2. **Stream Corridor Protection Ordinance**-Alternatively, the Borough could adopt a Stream Corridor Protection Ordinance, which is a recommended part of a Municipal Stormwater Management Plan. This ordinance would achieve the stormwater management goal of maintaining the integrity of stream channels for their biological functions and drainage. (NJAC 7:8-2.2). This ordinance is recommended in the Conservation Plan Element of the Borough Master Plan, specifically referencing Norwood Brook (Ludlow's Ditch) and Tappan Run (feeds Dorotockey's Run). These streams are now protected by the C-1 stream classification. The Borough has many feeder streams to these two surface waters, which would also benefit from this ordinance's protection. Attached are 2 approaches to this ordinance: the 1st is from Holmdel (from the Association of New Jersey Environmental Commissions database) and the other is the DEP model ordinance for stream buffers, which would require some changes to the definitions to achieve the intended purpose.

Proposed Amendments Highlighted Chapter 199: STORMWATER CONTROL

[HISTORY: Adopted by the Mayor and Council of the Borough of Norwood 3-28-2006 by Ord. No. 06:04. Amendments noted where applicable.]

GENERAL REFERENCES

Flood damage prevention — See Ch. 131.
Sewers — See Ch. 189.
Soil removal — See Ch. 197.
Solid waste — See Ch. 198.
Stormwater management — See Ch. 200.
Streets and sidewalks — See Ch. 202.
Land use procedures — See Ch. 230.
Site plan review — See Ch. 231.
Subdivision of land — See Ch. 232.
Zoning — See Ch. 233.

§ 199-1. Scope and purpose.

- A. Policy statement. Flood control, groundwater recharge, and pollutant reduction through nonstructural or low-impact techniques shall be explored before relying on structural BMPs. Structural BMPs should be integrated with nonstructural stormwater management strategies and proper maintenance plans. Nonstructural strategies include both environmentally sensitive site design and source controls that prevent pollutants from being placed on the site or from being exposed to stormwater. Source control plans should be developed based upon physical site conditions and the origin, nature, and the anticipated quantity or amount of potential pollutants. Multiple stormwater management BMPs may be necessary to achieve the established performance standards for water quality, quantity and groundwater recharge.
- B. Purpose. It is the purpose of this chapter to establish minimum stormwater management requirements and controls for major developments, as defined in § 199-2.
- C. Applicability.
- (1) This chapter shall be applicable to all site plans and subdivisions for the following major developments that require preliminary or final site plan or subdivision review:
 - (a) Nonresidential major developments; and
 - (b) Aspects of residential major developments that are not preempted by the Residential Site Improvement Standards at N.J.A.C. 5:21.
 - (2) This chapter shall also be applicable to all major developments undertaken by the Borough of Norwood
- D. Compatibility with other permit and ordinance requirements. Development approvals issued for subdivisions and site plans pursuant to this chapter are to be considered an integral part of development approvals under the subdivision and site plan review process and does 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 chapter shall be held to be the minimum requirements for the promotion of the public health, safety, and general welfare. This chapter 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 chapter 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.

§ 199-2. Definitions.

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

COMPACTION — The increase in soil bulk density.

CORE — A pedestrian-oriented area of commercial and civic uses serving the surrounding municipality, generally including housing and access to public transportation.

COUNTY REVIEW AGENCY — An agency designate by the County Board of Chosen Freeholders to review municipal stormwater management plans and implementing ordinance(s). The county review agency may either be:

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

DEPARTMENT — The New Jersey Department of Environmental Protection.

DESIGNATE CENTER — A State Development and Redevelopment Plan Center as designated by the State Planning Commission, such as urban, regional, town, village, or hamlet.

DESIGN ENGINEER — A person professionally qualified and duly licensed in New Jersey to perform engineering services that may include, but not necessarily be limited to, development of project requirements, creation and development of project design and preparation of drawings and specifications.

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

DRAINAGE AREA — A geographic area within which stormwater, sediments, or dissolved materials drain to a particular receiving water body or to a particular point along a receiving water body.

ENVIRONMENTALLY CRITICAL AREAS — An area or feature which is of significant environmental value, including but not limited to: stream corridors; natural heritage priority sites; habitat of endangered or threatened species; large areas of contiguous open space or upland forest; steep slopes; and wellhead protection and groundwater recharge areas. Habitats of endangered or threatened species are identified using the Department's Landscape Project as approved by the Department's Endangered and Nongame Species Program.

EMPOWERMENT NEIGHBORHOOD — A neighborhood designated by the Urban Coordinating Council "in consultation and conjunction with" the New Jersey Redevelopment Authority pursuant to N.J.S.A. 55:19-69.

EROSION — The detachment and movement of soil or rock fragments by water, wind, ice or gravity.

IMPERVIOUS SURFACE — A surface that has been covered with a layer of material so that it is highly resistant to infiltration by water.

INFILTRATION — The process by which water seeps into the soil from precipitation.

MAJOR DEVELOPMENT — Any development that provides for ultimately disturbing one or more acres of land, or increasing impervious surface by one-quarter of an 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.

MUNICIPALITY — Any city, borough, town, township or village.

NODE — An area designated by the State Planning Commission concentrating facilities and activities which are not organized in a compact form.

NUTRIENT — A chemical element or compound, such as nitrogen or phosphorus, which is essential to and promotes the development of organisms.

PERSON — Any individual, corporation, company, partnership, firm, association, the Borough of Norwood, or political subdivision of this state subject to municipal jurisdiction pursuant to the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq.

POLLUTANT — 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, groundwaters or surface waters of the state, or to a domestic treatment works. "Pollutant" includes both hazardous and nonhazardous pollutants.

RECHARGE — The amount of water from precipitation that infiltrates into the ground and is not evapotranspired.

SEDIMENT — 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 — That lot or lots upon which a major development is to occur or has occurred.

SOIL — All unconsolidated mineral and organic material of any origin.

STATE DEVELOPMENT AND REDEVELOPMENT PLAN METROPOLITAN PLANNING AREA (PA1) — 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 — 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 — Water resulting from precipitation (including rain and snow) that runs off the land's surface, is transmitted to the subsurface, or is captured by separate storm sewers or other sewage or drainage facilities, or conveyed by snow removal equipment.

STORMWATER RUNOFF — Water flow on the surface of the ground or in storm sewers, resulting from precipitation.

STORMWATER MANAGEMENT BASIN — 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 — Any structural or nonstructural strategy, practice, technology, process, program, or other method intended to control or reduce stormwater or to eliminate illicit or illegal nonstormwater discharges into stormwater conveyances.

TIDAL FLOOD HAZARD AREA — 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 — A neighborhood given priority access to state resources through the New Jersey Redevelopment Authority.

URBAN ENTERPRISE ZONES — A zone designated by the New Jersey Enterprise Zone Authority pursuant to the New Jersey Enterprise Urban Zones Act, N.J.S.A. 52:27H-60 et seq.

URBAN REDEVELOPMENT AREA — Previously developed portions of areas:

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

WATERS OF THE STATE — 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 — An area that is inundated or saturated by surface water or groundwater 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.

§ 199-3. General standards.

- A. Design and performance standards for stormwater management measures.
 - (1) Stormwater management measures for major development shall be developed to meet the erosion control, groundwater recharge, stormwater runoff quantity, and stormwater runoff quality standards in § 199-4. To the maximum extent practicable, these standards shall be met by incorporating nonstructural stormwater management strategies into the design. If these strategies alone are not sufficient to meet these standards, structural stormwater management measures necessary to meet these standards shall be incorporated into the design.
 - (2) The standards in this chapter 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.

§ 199-4. Stormwater management requirements for major development.

- A. The development shall incorporate a maintenance plan for the stormwater management measures incorporated into the design of a major development in accordance with § 199-10.
- B. Stormwater management measures shall avoid adverse impacts of concentrated flow on habitat for threatened and endangered species as documented in the Department Landscape Project or Natural Heritage Database established under N.J.S.A. 13:1B-15.147 through 15.150, particularly *Helonias bullata* (swamp pink) and/or *Clemmys muhlenbergi* (bog turtle).
- C. The following linear development projects are exempt from the groundwater recharge, stormwater runoff quantity, and stormwater runoff quality requirements of § 199-4F and G:
 - (1) The construction of an underground utility line, provided that the disturbed areas are revegetated upon completion;
 - (2) The construction of an aboveground utility line, provided that the existing conditions are maintained to the maximum extent practicable; and
 - (3) The construction of a public pedestrian access, such as a sidewalk or trail with a maximum width of (14 feet); provided that the access is made of permeable material.
- D. A waiver from strict compliance from the groundwater recharge, stormwater runoff quantity, and stormwater runoff quality requirements of § 199-4F and 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 § 199-4F and G to the maximum extent practicable;
 - (3) The applicant demonstrates that in order to meet the requirements of § 199-4F and 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 Subsection D(3) above within the upstream drainage area of the receiving stream that would provide additional opportunities to mitigate the requirements of § 199-4F and G that were not achievable on site.
- E. Nonstructural stormwater management strategies.
 - (1) To the maximum extent practicable, the standards in § 199-4F and G shall be met by incorporating nonstructural stormwater management strategies set forth at § 199-4E into the design. The applicant shall identify the nonstructural measures incorporated into the design of the project. If the applicant contends that is not feasible for engineering, environmental, or safety reasons to incorporate any nonstructural stormwater management measures identified in Subsection E(2) below into the design of a particular project, the applicant shall identify the strategy considered and provide a basis for the contention.
 - (2) Nonstructural stormwater management strategies incorporated into site design shall:
 - (a) Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss;

- (b) Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces;
 - (c) Maximize the protection of natural drainage features and vegetation;
 - (d) Minimize the decrease in the time of concentration from preconstruction to post construction. "Time of concentration" is defined as the time it takes for runoff to travel from the hydraulically most distant point on the watershed to the point of interest within a watershed;
 - (e) Minimize land disturbance including clearing and grading;
 - (f) Minimize soil compaction;
 - (g) Provide low-maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticides;
 - (h) Provide vegetated open-channel conveyance systems discharging into and through stable vegetated areas;
 - (i) Provide other source controls to prevent or minimize the use or exposure of pollutants at the site, in order to prevent or minimize the release of those pollutants into stormwater runoff. Such source controls include, but are not limited to:
 - [1] Site design features that help to prevent accumulation of trash and debris in drainage systems, including features that satisfy § 199-4E(3) below;
 - [2] Site design features that help to prevent discharge of trash and debris from drainage systems;
 - [3] Site design features that help to prevent and/or contain spills or other harmful accumulations of pollutants at industrial or commercial developments; and
 - [4] When establishing vegetation after land disturbance, applying fertilizer in accordance with the requirements established under the Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq., and implementing rules.
- (3) Site design features identified under § 199-4E(2)(i)[2] above shall comply with the following standard to control passage of solid and floatable materials through storm drain inlets. For purposes of this paragraph, "solid and floatable materials" means sediment, debris, trash, and other floating, suspended, or settleable solids. For exemptions to this standard see § 199-4E(3)(c) below.
- (a) Design engineers shall use either of the following grates whenever they use a grate in pavement or another ground surface to collect stormwater from that surface into a storm drain or surface water body under that grate:
 - [1] The New Jersey Department of Transportation (NJDOT) bicycle safe grate, which is described in Chapter 2.4 of the NJDOT Bicycle Compatible Roadways and Bikeways Planning and Design Guidelines (April 1996); or
 - [2] A different grate, if each individual clear space in that grate has an area of no more than seven square inches or is no greater than 0.5 inches across the smallest dimension.

Examples of grate subject to this standard include grates in grate inlets, the grate portion (non-curb-opening portion) of combination inlets, grates on storm sewer manholes, ditch grates, trench grates, and grates of spacer bars in slotted drains. Examples of ground surfaces include

surfaces of roads (including bridge), driveways, parking areas, bikeways, plazas, sidewalks, lawns, fields, open channels, and stormwater basin floors.

- (b) Whenever design engineers use a curb-opening inlet, the clear space in that curb opening (or each individual clear space, if the curb opening has two or more clear spaces) shall have an area of no more than seven square inches, or be no greater than two inches across the smallest dimension.
 - (c) This standard does not apply:
 - [1] Where the review agency determines that this standard would cause inadequate hydraulic performance that could not practicably be overcome by using additional or larger storm drain inlets that meet these standards;
 - [2] Where flows from the water quality design storm as specified in § 199-4G(1) are conveyed through any device (e.g., end-of-pipe netting facility, manufactured treatment device, or a catch basin hood) that is designed, at a minimum, to prevent delivery of all solid and floatable materials that could not pass through one of the following:
 - [a] A rectangular space 4 5/8 inches long and 1 1/2 inches wide (this option does not apply for outfall netting facilities); or
 - [b] A bar screen having a bar spacing of 0.5 inches.
 - [3] Where flows are conveyed through a trash rack that has parallel bars with one-inch spacing between the bars, to the elevation of the water quality design storm as specified in § 199-4G(1); or
 - [4] Where the New Jersey Department of Environmental Protection determines, pursuant to the New Jersey Register of Historic Places Rules at N.J.A.C 7:4-7.2(c), that action to meet this standard is an undertaking that constitutes an encroachment or will damage or destroy the New Jersey Register listed historic property.
 - (4) Any land area used as a nonstructural stormwater management measure to meet the performance standards in § 199-4F and G shall be dedicated to a government agency, subjected to a conservation restriction filed with the appropriate county clerk's office, or subject to an approved equivalent restriction that ensures that measure or an equivalent stormwater management measure approved by the reviewing agency is maintained in perpetuity.
 - (5) Guidance for nonstructural stormwater management strategies is available in the New Jersey Stormwater Best Management Practices Manual. The BMP Manual may be obtained from the address identified in § 199-7, or found on the Department's Web site at www.njstormwater.org.
- F. Erosion control, groundwater recharge and runoff quantity standards.
- (1) This subsection contains minimum design and performance standards to control erosion, encourage and control infiltration and groundwater recharge, and control stormwater runoff quantity impacts of major developments.
 - (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 performances standards for groundwater recharge are as follows:
- [1] The design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at § 199-5, either:
 - [a] Demonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measures maintain 100% of the average annual preconstruction groundwater recharge volume for the site; or
 - [b] Demonstrate through hydrologic and hydraulic analysis that the increase of stormwater runoff volume from preconstruction to postconstruction for the two-year storm is infiltrated.
 - [2] This groundwater recharge requirement does not apply to projects within the urban redevelopment area or to projects subject to Subsection F(1)(b)[3] below.
 - [3] The following types of stormwater shall not be recharged:
 - [a] Stormwater from areas of high pollutant loading. High pollutant loading areas are areas in industrial and commercial developments where solvents and/or petroleum products are loaded/unloaded, stored, or applied; areas where pesticides are loaded/unloaded or stored; areas where hazardous materials are expected to be present in greater than "reportable quantities" as defined by the United States Environmental Protection Agency (EPA) at 40 CFR 302.4; areas where recharge would be inconsistent with Department-approved remedial action work plan or landfill closure plan and areas with high risks for spills or 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 sewerage disposal systems and other subsurface structures in the vicinity or downgradient of the groundwater recharge area.
- (c) In order to control stormwater runoff quantity impacts, the design engineer shall, using the assumptions and factors for stormwater runoff calculations at § 199-5, complete on the following:
- [1] Demonstrate through hydrologic and hydraulic analysis that, for stormwater leaving the site, postconstruction runoff hydrographs for the two-, ten- and one-hundred-year storm events do not exceed, at any point in time, the preconstruction runoff hydrographs for the same storm events;

- [2] Demonstrate through hydrologic and hydraulic analysis that there is no increase, as compared to the preconstruction condition, in the peak runoff rates of stormwater leaving the site for the ten- and one-hundred-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 or existing land uses and projected land uses assuming full development under existing zoning and land use ordinance in the drainage area;
 - [3] Design stormwater management measures so that the postconstruction peak runoff rates for the two-, ten- and one-hundred-year storm events are 50, 75 and 80%, respectively, of the preconstruction peak runoff rates. The percentages apply only to the postconstruction 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 postconstruction stormwater runoff into tidal flood hazard areas if the increased volume of stormwater runoff will not increase flood damages below the point of discharge; or
 - [4] In tidal flood hazard areas, stormwater runoff quantity analysis in accordance with Subsection F(1)(c)[1], [2] and [3] above shall only be applied if the increased volume of stormwater runoff could increase flood damages below the point of discharge.
- (2) Any application for a new agricultural development that meets the definition of major development at § 199-2 shall be submitted to the appropriate soil conservation district for review and approval in accordance with the requirements of this section and any applicable soil conservation district guidelines for stormwater runoff quantity and erosion control. For the purpose of this section, "agricultural development" means land uses normally associated with the production of food, fiber, and livestock for sale. Such uses do not include the development of land for the processing or sale of food and the manufacturing of agriculturally related products.

G. Stormwater runoff quality standards.

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

Table 1: Water Quality Design Storm Distribution

Time (minutes)	Cumulative Rainfall (inches)	Time (minutes)	Cumulative Rainfall (inches)
	0.0000	65	0.8917
5	0.0083	70	0.9917
10	0.0166	75	1.0500
15	0.0250	80	1.0840
20	0.0500	85	1.1170
25	0.0750	90	1.1500
30	0.1000	95	1.1750
35	0.1330	100	1.2000
40	0.1660	105	1.2250
45	0.2000	110	1.2334
50	0.2583	115	1.2417
55	0.3583	120	1.2500
60	0.6250		

- (2) For purpose of TSS reduction calculations, Table 2 below presents the presumed removal rates for certain BMPs designed in accordance with the New Jersey Stormwater Best Management Practices Manual. The BMP Manual may be obtained from the address identified in § 199-7, or found on the Department's Web site at www.njstormwater.org. The BMP Manual and other sources of technical guidance are listed in § 199-7. TSS reduction shall be calculated based on the removal rates for the BMPs in Table 2 below. Alternative removal rates and methods of calculating removal rates may be used if the design engineer provides documentation demonstrating the capability of these alternative rates and methods to the review agency. A copy of any approved alternative rate or method of calculating the removal rate shall be provided to the Department at the following address: Division of Watershed Management, New Jersey Department of Environmental Protection, P.O. Box 418, Trenton, New Jersey, 08625-0418.
- (3) If more than one BMP in series is necessary to achieve the required eighty-percent TSS reduction for a site, the applicant shall utilize the following formula to calculate TSS reduction:
- $$R = A + B - (AXB)/100$$
- Where:
- R = total TSS percent load removal from application of both BMPs
 - A = the TSS percent removal rate applicable to the first BMP
 - B = the TSS percent removal rate applicable to the second BMP

**Table 2
TSS Removal Rates for BMPs**

Best Management Practice	TSS Percent Removal Rates
Bioretention systems	90
Constructed stormwater wetland	90
Extended detention basin	40-60
Infiltration structure	80
Manufactured treatment device	See § 199-6C
Sand filter	80
Vegetative filter strip	60-80
Wet pond	50-90

- (4) If there is more than one on-site drainage area, the eighty-percent TSS removal rate shall apply to each drainage area, unless the runoff from the subareas converge on site, in which case the removal rate can be demonstrated through a calculation using a weighted average.
- (5) Stormwater management measures shall also be designed to reduce, to the maximum extent feasible, the postconstruction nutrient load of the anticipated load from the developed site in stormwater runoff generated from the water quality design storm. In achieving reduction of nutrients to the maximum extent feasible, the design of this site shall include nonstructural strategies and structural measures that optimize nutrient removal while still achieving the performance standards in § 199-4F and 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 § 199-7.
- (7) In accordance with the definition of FW1 at N.J.A.C. 7:9B-1.4, stormwater management measure shall be designed to prevent any increase in stormwater runoff to waters classified as FW1.
- (8) Special water resource protection areas shall be established along all waters designated Category One at N.J.A.C. 7:9B, and perennial or intermittent streams that drain into or upstream of the Category One waters as shown on the USGS Quadrangle Maps or in the County Soil Surveys, within the associated HUC14 drainage area, or as designated as the Norwood Streams as shown on Figure _____ of the Borough of Norwood 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 follow:
 - (a) The applicant shall preserve and maintain a special water resource protection area in accordance with one of the following:
 - [1] A three-hundred-foot special water resource protection area shall be provided on each side of the waterway, measured perpendicular to the waterway from the top of the bank outwards or from the center line of the waterway where the bank is not defined, consisting of existing vegetation or vegetation allowed to follow natural succession.

- [2] Encroachment within the designated special water resource protection area under Subsection G(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 top-of-bank of the waterway or center line of the waterway where the bank is undefined, of the Category One waterway or the designated Norwood Streams as shown on Figure ___ of the Borough of Norwood Municipal Stormwater Management Plan. All encroachments proposed under this subparagraph shall be subject to review and approval by the Borough of Norwood 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 ninety-five-percent TSS postconstruction removal rate;
- [3] Temperature shall be addressed to ensure no impact on the receiving waterway;
- [4] The encroachment shall only be allowed where the applicant demonstrates that the functional value and overall condition of the special water resource protection area will be maintained to the maximum extent practicable;
- [5] A conceptual project design meeting shall be held with the appropriate Department staff and soil conservation district staff to identify necessary stabilization measures; and
- [6] All encroachments proposed under this section shall be subject to review and approval by the Department.
- (d) A stream corridor protection plan may be developed by a regional stormwater management planning committee as an element of a regional stormwater management plan or by a municipality through an adopted municipal stormwater management plan. If a stream corridor protection plan for a waterway subject to § 199-4G(8) has been approved by the Department of Environmental Protection, then the provisions of the plan shall be the applicable special water resource protection area requirements for that waterway. A stream corridor protection plan for a waterway subject to Subsection G(8) shall maintain or enhance the current

functional value and overall condition of the special water resource protection area as defined in Subsection G(8)(a)[1] above. In no case shall a stream corridor protection plan allow the reduction of the special water resource protection area to less than 150 feet as measure perpendicular to the waterway subject to this subsection.

- (e) Subsection G(8) does not apply to the construction of one individual single-family dwelling that is not part of a larger development on a lot receiving preliminary or final subdivision approval on or before February 2, 2004, provided that the construction begins on or before February 2, 2009.

§ 199-5. Calculation of stormwater runoff and groundwater recharge.

A. Stormwater runoff shall be calculated in accordance with the following.

- (1) The design engineer shall calculate runoff using one of the following methods:
 - (a) The USDA Natural Resources Conservation Service (NRCS) methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph, as described in the NRCS National Engineering Handbook Section 4 - Hydrology and Technical Release 55 - Urban Hydrology for Small Watersheds; or
 - (b) The Rational Method for peak flow and the Modified Rational Method for hydrograph computations.
- (2) For the purpose of calculating runoff coefficients and groundwater recharge, there is a presumption that the preconstruction condition of a site or portion thereof is a wooded land use with good hydrologic condition. The term "runoff coefficient" applies to both the NRCS methodology at § 199-5A(1)(a) and the Rational and Modified Rational Methods at § 199-5A(1)(b). A runoff coefficient or a groundwater recharge land cover for an existing condition may be used on all or a portion of the site if the design engineer verifies that the hydrologic condition has existed on the site or portion of the site for at least five years without interruption prior to the time of application. If more than one land cover have existed on the site during the five years immediately prior to the time of application, the land cover with the lowest runoff potential shall be used for the computations. In addition, there is the presumption that the site is in good hydrologic condition (if the land use type is pasture, lawn, or park), with good cover (if the land use type is woods), or with good hydrologic condition and conservation treatment (if the land use type is cultivation).
- (3) In computing preconstruction 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 preconstruction stormwater runoff rates and volumes.
- (4) In computing stormwater runoff from all design storms, the design engineer shall consider the relative stormwater runoff rates and/or volumes of previous and impervious surfaces separately to accurately compute the rates and volume of stormwater runoff from the site. To calculate runoff from unconnected impervious cover, urban impervious area modifications as described in the NRCS Technical Release 55 - Urban Hydrology for Small Watersheds and other methods may be employed.
- (5) If the invert of the outlet structure of a stormwater management measure is below the flood hazard design flood elevation as defined at N.J.A.C. 7:13, the design engineer shall take into account the effects of tailwater in the design of structural stormwater management measures.

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

§ 199-6. Standards for structural stormwater management measures.

- A. Standards for structural stormwater management measures are as follows:
- (1) Structural stormwater management measures shall be designed to take into account the existing site conditions, including, for example, environmentally critical areas; wetlands; flood-prone areas; slopes; depth to seasonal high water table; soil type, permeability and texture; drainage area and drainage patterns; and the presence of solution-prone carbonate rocks (limestone).
 - (2) Structural stormwater management measures shall be designed to minimize maintenance, facilitate maintenance and repairs, and ensure proper functioning. Trash racks shall be installed at the intake to the outlet structure as appropriate, and shall have parallel bars with one-inch 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 1/3 the width of the diameter of the orifice or 1/3 the width of the weir, with a minimum spacing between bars of one inch and a maximum spacing between bars of six inches. In addition, the design of trash racks must comply with the requirements of § 199-8D.
 - (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 2 1/2 inches in diameter.
 - (5) Stormwater management basins shall be designed to meet the minimum safety standards for stormwater management basins at § 199-8.
- B. Stormwater management measure guidelines are available in the New Jersey Stormwater Best Management Practices Manual. Other stormwater management measures may be utilized, provided the design engineer demonstrates that the proposed measure and its design will accomplish the required water quantity, groundwater recharge and water quality design and performance standards established by § 199-4 of this chapter.
- C. Manufactured treatment devices may be used to meet the requirements of § 199-4 of this chapter, provided the pollutant removal rates are verified by the New Jersey Corporation for Advanced Technology and certified by the Department.

§ 199-7. Sources for technical guidance.

- A. Technical guidance for stormwater management measures can be found in the documents listed at Subsection A(1) and (2) below, which are available from Maps and Publications, New Jersey Department of Environmental Protection, 428 East State Street, P.O. Box 420,

Trenton, New Jersey, 08625; telephone (609) 777-1038.

- (1) Guidelines for stormwater management measures are contained in the New Jersey Stormwater Best Management Practices Manual, as amended. Information is provided on stormwater management measures such as: bioretention systems, constructed stormwater wetlands, dry wells, extended detention basins, infiltration structures, manufactured treatment devices, previous 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 Services, (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.

§ 199-8. Safety standards for stormwater management basins.

- A. This section sets forth requirements to protect public safety through the proper design and operation of stormwater management basins. This section applies to any new stormwater management basin.
- B. Requirements for trash racks, overflow grates and escape provisions.
- (1) A trash rack is a device designed to catch trash and debris and prevent the clogging of outlet structures. Trash racks shall be installed at the intake to the outlet from the stormwater management basin to ensure proper functioning of the basin outlets in accordance with the following:
 - (a) The trash rack shall have parallel bars, with no greater than six-inch spacing between the bars.
 - (b) The trash rack shall be designed so as not to adversely affect the hydraulic performance of the outlet pipe or structure.
 - (c) The average velocity of flow through a clean trash rack is not to exceed 2.5 feet per second under the full range of stage and discharge. Velocity is to be computed on the basis of the net area of opening through the rack.
 - (d) The trash rack shall be constructed and installed to be rigid, durable, and corrosion resistant and shall be designed to withstand a perpendicular live loading of 300 pounds per square feet.
 - (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 pounds per square feet.
- (3) For purposes of this Subsection B(3), escape provisions means the permanent installation of ladders, steps, rungs, or other features that provide easily accessible means of egress from stormwater management basins. Stormwater management basins shall include escape provisions as follows:
- (a) If a stormwater management basin has an outlet structure, escape provisions shall be incorporated in or on the structure. With the prior approval of the reviewing agency identified in § 199-8C, a freestanding 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 2 1/2 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 2 1/2 feet below the permanent water surface, and the second step shall be located one to 1 1/2 feet above the permanent water surface.
 - (c) In new stormwater management basins, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than three horizontal to one vertical.
- C. Variance or exemption from safety standards.
- (1) A variance or exemption from the safety standards for stormwater management basins may be granted only upon a written finding by the appropriate reviewing agency (municipality, county or Department) that the variance or exemption will not constitute a threat to public safety.

§ 199-9. Requirements for a site development stormwater plan.

- A. Submission of site development stormwater plan.
- (1) Whenever an applicant seeks municipal approval of a development subject to this chapter, the applicant shall submit all of the required components of the checklist for the site development stormwater plan at § 199-9C 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 chapter.
 - (3) The applicant shall submit 18 copies of the materials listed in the checklist for site development stormwater plans in accordance with § 199-9C of this chapter.
- B. Site development stormwater plan approval. The applicant's site development project shall be reviewed as a part of the subdivision or site plan review process by the municipal board or official from which municipal approval is sought. That municipal board or official shall consult the engineer retained by the Planning and/or Zoning Board (as appropriate) to determine if all of the checklist requirements have been satisfied and to determine if the project meets the standards set forth in this chapter.
- 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 one inch equals 200 feet or greater, showing two-foot contour intervals. The map, as appropriate, may indicate the following: existing surface water drainage, shorelines, steep slopes, soils, erodible soils, perennial or intermittent streams that drain into or upstream of the Category One waters, wetlands and floodplains 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 man-made 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 groundwater 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 §§ 199-3 through 199-6 are being met. The focus of this plan shall be to describe how the site is being developed to meet the objective of controlling groundwater recharge, stormwater quality and stormwater quantity problems at the source by land management and source controls whenever possible.
- (5) Stormwater management facilities map. The following information, illustrated on a map of the same scale as the topographic base map, shall be included:
 - (a) Total area to be paved or built upon, proposed surface contours, land area to be occupied by the stormwater management facilities and the type of vegetation thereon, and details of the proposed plan to control and dispose of stormwater.
 - (b) Details of all stormwater management facility designs, during and after construction, including discharge provisions, discharge capacity for each outlet at different levels of detention and emergency spillway provisions with maximum discharge capacity of each spillway.
- (6) Calculations.
 - (a) Comprehensive hydrologic and hydraulic design calculations for the predevelopment and postdevelopment conditions for the design storms specified in § 199-4 of this chapter.
 - (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 on-site borings logs or soil pits profiles. The number and location of required soil borings or soil pits shall be determined based on what is needed to determine the suitability and distribution of soils present at the location of the control measure.
- (7) Maintenance and repair plan. The design and planning of the stormwater management facility shall meet the maintenance requirements of § 199-10.

- (8) Waiver from submission requirements. The municipal official or board reviewing an application under this chapter may, in consultation with the Municipal Engineer, waive submission of any of the requirements in § 199-9C(1) through C(6) of this chapter 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.

§ 199-10. Maintenance and repair.

A. Applicability.

- (1) Projects subject to review as in § 199-1C of this chapter shall comply with the requirements of § 199-10B and C.

B. General maintenance.

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

- (9) The requirements of Subsections B(3) and B(4) do not apply to stormwater management facilities that are dedicated to and accepted by the municipality or another governmental agency.
 - (10) In the event that the stormwater management facility becomes a danger to public safety or public health, or if it is need of maintenance or repair, the municipality shall so notify the responsible person in writing. Upon receipt of that notice, the responsible person shall have 14 days to effect maintenance and repair of the facility in a manner that is approved by the Municipal Engineer or his designee. The municipality, in its discretion, may extend the time allowed for effecting maintenance and repair for good cause. If the responsible person fails or refuses to perform such maintenance and repair, the municipality or county may immediately proceed to do so and shall bill the cost thereof to the responsible person.
- C. 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.

§ 199-11. Violations and penalties.

- A. Any person who is convicted for violating any of the provision of the chapter shall be subject to one or more of the following: a fine of not more than \$2,000, imprisonment for any term not exceeding 90 days, and/or a period of community service not exceeding 90 days.
- B. A separate offense or violation shall be deemed to be committed on each day that a violation occurs or continue.

Stream Corridor Protection

Holmdel Township (1994)

Disclaimer. This ordinance is an example of an approach that has worked in one municipality. It should be modified to reflect local environmental conditions, current regulations, and state-of-the-art knowledge in the environmental field.

§30-116.7 Stream Corridors.

a The purpose of this subsection is to protect property from flooding, to reduce land development impacts on stream water quality and flows, to protect existing natural drainage features, to protect other's rights within the same watershed from adverse effects of improper stream corridor development ; and, to provide recreation and wildlife migration corridors.

b Stream corridors shall mean the stream channel and the land on either side of the stream channel which is within the one hundred (100) year floodplain, or is a sloping area of fifteen (15%) percent or greater that is contiguous to the stream channel or one hundred (100) year floodplain. Stream channels shall mean permanent or intermittent watercourses shown on U S. G. S. quadrangle maps, the Bergen County Soil Survey or such other source as the Planning Board may deem appropriate.

c Stream corridor buffers with a width of fifty (50) feet shall be required around all stream channels, one hundred (100) year floodplains, and contiguous slopes of fifteen (15%) percent or greater, except for the (Name) Brook and its tributaries, where the buffer shall have a width of one hundred fifty (150) feet around all stream channels, one hundred (100) year floodplains, and contiguous slopes of fifteen (15%) percent or greater No septic system shall be located within any stream corridor, or within one hundred (100) feet of a stream bank.

d The following information shall be supplied for any development within a stream corridor and buffer. Such information shall be in addition to information required for site plan or subdivision review.

1. Delineation of stream corridors and buffers as defined above.

2 Detailed hydrologic engineering studies indicating the effects on drainage, streams, and adjacent properties as well as the property in question, including the necessary data to determine whether the boundaries of the stream corridor and buffer would be affected if the application were granted.

3. A plan indicating the disposition of any fill materials proposed to be deposited by the grading or regrading of land.

4. A demonstration of how suitable techniques, including erosion and soil stabilization measures, sediment traps and nutrient control by vegetation filters or other mechanisms, will be incorporated to protect the stream.

e An approved application for development on a lot which contains a stream corridor or buffer or portion of a stream corridor or buffer shall provide a conservation easement for the continued protection of the stream corridor and buffer. The conservation easement shall encompass the entire stream corridor and buffer. Conservation easements shall be perpetual, shall name the Name of Municipality as beneficiary, shall prohibit erection of any structures, shall be in conformance with Section (), and shall be confirmed by deed and by plat filed with the County Recording Officer in compliance with the Map Filing Law. The Governing Body shall notify the Environmental Commission before vacating or modifying a conservation easement established on a stream corridor. Where the lands proposed for development include a portion of the stream corridor, a condition of any major subdivision or major site plan approval shall be the revegetation of any portions of the required stream corridor buffer which were disturbed by prior land uses, such as agriculture. The vegetation plan shall utilize native tree and plant species and shall be approved by the Borough Engineer (Year of Code §(), Ord. No (); Ord. No.()).

**STREAM BUFFER CONSERVATION ZONE
MODEL ORDINANCE**

I. INTENT AND PURPOSE

In recognition of the fact that values afforded by functional stream buffers contribute to the welfare of residents, the following regulations have been enacted to provide reasonable controls governing the conservation, disturbance, restoration and management of existing stream buffers for all perennial and intermittent streams, and all lakes, ponds and reservoirs in the municipality by establishing a Stream Buffer Conservation Zone (SBCZ). The specific purposes and intent of this article are to:

A. Regulate the land use, siting, and engineering of all development in the SBCZ to be consistent with the intent and objectives of this ordinance and accepted conservation practices.

B. Prevent excessive nutrients, sediment, and organic matter, as well as biocides and other pollutants, from reaching surface waters by optimizing opportunities for filtration, deposition, absorption, adsorption, plant uptake, biodegradation, and denitrification, which occur when stormwater runoff is conveyed through vegetated buffers as stable, distributed sheet flow prior to reaching receiving waters.

C. Provide for shading of the aquatic environment so as to moderate temperatures, retain more dissolved oxygen, and support a healthy assemblage of aquatic flora and fauna.

D. Provide for natural organic matter (fallen leaves and twigs) and large woody debris (fallen trees and limbs) that provide food and habitat for small bottom dwelling organisms (insects, amphibians, crustaceans, and small fish), which are essential to maintain the food chain.

E. Increase stream bank stability and maintain natural fluvial geomorphology of the stream system, thereby reducing streambank erosion and sedimentation and protecting habitat for aquatic organisms.

F. Conserve the natural features important to land and water resources, e.g., headwater areas, groundwater recharge zones, floodway, floodplain, springs, streams, wetlands, woodlands, and prime wildlife habitats.

G. Work with state laws and other ordinances that regulate environmentally sensitive areas to minimize hazards to life, property,

and stream features and assist in the implementation of pertinent state laws concerning erosion and sediment control practices.

II. DEFINITIONS

For the purposes of this ordinance the following definitions shall apply:

"Category one waters" or "C1" means those waters designated in the tables in N.J.A.C.7:9B-1.15

"Category two waters" or "C2" means those waters not designated as Outstanding National Resource Waters or Category One at N.J.A.C. 7:9B-1.15.

"Intermittent stream" means surface water drainage channels with definite bed and banks in which there is not a permanent flow of water. Most intermittent streams are shown on Soil Conservation Service county soil surveys. These are portrayed as a dashed line on a USDA Soil Survey Map of the most recent edition, or as state open water identified in a letter of interpretation issued by the NJDEP Land Use Regulation Program, whichever is more inclusive.

"Lake, pond, or reservoir" means any impoundment, whether naturally occurring or created in whole or in part by the building of structures for the retention of surface water, excluding sedimentation control and stormwater retention/detention basins and ponds designed for treatment of wastewater.

"Perennial stream" means a stream that appears as a blue line on USGS topographic quadrangle maps and flows continuously throughout the year in most years.

III. ESTABLISHMENT OF THE STREAM BUFFER CONSERVATION ZONE

A. The SBCZ is defined as the designated area adjacent to surface water, including lakes, ponds and reservoirs, and intermittent or perennial streams. The SBCZ may or may not contain trees and other vegetation at the time of ordinance enactment. The SBCZ shall be measured from each defined edge of an intermittent or perennial stream, or lake, pond or reservoir at bank-full flow or level. The SBCZ will consist of two distinct classifications. These classifications determine the width of the SBCZ, except where steep slopes (in excess of 10 percent) are located within the designated widths, in which case the SBCZ shall be extended to include the entire distance of this sloped area. The two classes are designated as:

1. Class 1 Stream Buffer Conservation Zones are adjacent to C1 waters and extend 150 feet from the top of each bank at bank-full flow or level or from the centerline of intermittent streams.

2. Class 2 Stream Buffer Conservation Zones are adjacent to C2 waters and extend 75 feet from the top of each bank at bank-full flow or level or from the centerline of intermittent streams.

B. The SBCZ is an overlay to the existing zoning districts. The provisions of the underlying district shall remain in full force, except where the provisions of the SBCZ differ from the provisions of the underlying district, in which case the provision which is more restrictive, and less permissive, to a landowner or applicant shall apply. These provisions are intended to modify the type of land use, siting of structures, and engineering of all proposed development on parcels located within the SBCZ. These provisions apply to land disturbances resulting from or related to any activity or use requiring application for any of the following permits or approvals:

- Building permit
- Zoning variance
- Special exception
- Conditional use
- Subdivision/land development approval

IV. STREAM BUFFER CONSERVATION ZONE USES

Stream Buffer Conservation Zones shall remain in a natural condition or, if in a disturbed condition, including agricultural activities, at the time of adoption of this ordinance, may be restored to a natural condition. There shall be no clearing or cutting of trees and brush, except for removal of dead vegetation and pruning for reasons of public safety or for the replacement of invasive species with indigenous species, altering of watercourses, dumping of trash, soil, dirt, fill, vegetative or other debris, regrading or construction.

A. Open space uses that are primarily passive in character shall be permitted to extend into the SBCZ, provided near stream vegetation is preserved, including:

1. Wildlife sanctuaries, nature preserves, forest preserves, fishing areas, game farms, fish hatcheries and fishing reserves, operated for the protection and propagation of wildlife, but excluding structures.

2. Passive areas of public and private parklands including unpaved hiking, bicycle and bridle trails, provided that said trails have been stabilized with pervious materials.

B. Streambank stabilization or riparian reforestation, which conform to the guidelines of the Stream Buffer Management Plan described in Section X, or wetlands mitigation projects that have been approved by the Department of Environmental Protection, are permitted to extend into the SBCZ.

C. SBCZ crossings by recreational trails, roads, railroads, sewer and/or water lines, and public utility transmission lines, are permitted, provided that any disturbance is offset by buffer improvements in compliance with the Stream Buffer Management Plan mitigation plan, and any applicable State permits are acquired.

V. PERFORMANCE STANDARDS FOR STREAM BUFFER CONSERVATION ZONES

A. All new major and minor subdivisions and site plans shall be designed to provide sufficient areas outside of the SBCZ to accommodate primary structures, any normal accessory uses appurtenant thereto, as well as all planned lawn areas. Portions of lots within the SBCZ must be permanently restricted by deed or conservation easement held by [insert name of municipality] to prevent clearing of vegetation within the SBCZ. Any lands proposed for development which include all or a portion of a SBCZ, shall as a condition of any major subdivision or major site plan approval, provide for the vegetation or re-vegetation of any portions of the SBCZ which are not vegetated at the time of the application or which were disturbed by prior land uses, including for agricultural use. Said vegetation plan shall utilize native tree and plant species in accordance with the Stream Buffer Management Plan described in Section X.

B. Minimum required front, side, and rear setbacks required for building lots which exist as of the date of adoption of this ordinance, but have not obtained a building permit, may extend into the SBCZ, provided that a deed restriction and/or conservation easement is applied which prohibits clearing or construction in the SBCZ.

VI. NONCONFORMING STRUCTURES AND USES IN THE STREAM BUFFER CONSERVATION ZONE

Nonconforming structures and uses of land within the SBCZ are subject to the following requirements:

A. Existing nonconforming structures or uses may be continued but shall not have the existing building footprint or uses expanded or enlarged.

B. Discontinued nonconforming uses may be resumed any time within one year from such discontinuance but not thereafter when showing clear indications of abandonment. No change or resumption shall be permitted that is more detrimental to the SBCZ, as measured against the intent and purpose under Section I, than the existing or former nonconforming use. This one-year time frame shall not apply to agricultural uses that are following prescribed Best Management Practices for crop rotation. However, resumption of agricultural uses must be strictly confined to the extent of disturbance existing at the time of adoption of this ordinance.

VII. USES SPECIFICALLY PROHIBITED IN THE STREAM BUFFER CONSERVATION ZONE

Any use or activity not specifically authorized within Sections IV or VI shall be prohibited within the SBCZ.

VIII. ACTIVITIES PERMITTED IN STREAM BUFFER CONSERVATION ZONES IN THE CASE OF NO REASONABLE OR PRUDENT ALTERNATIVE OR EXTREME HARDSHIP

A. Hardship variances may be granted by the Zoning Board in cases of a pre-existing lot (existing at the time of adoption of this ordinance) for a one-family or two-family dwelling, when there is insufficient room outside the SBCZ for uses permitted by the underlying zoning and there is no other reasonable or prudent alternative to placement in the SBCZ, including obtaining variances from setback or other requirements that would allow conformance with the SBCZ requirements, and provided the following demonstrations are made:

1. An applicant shall be deemed to have established the existence of an extreme economic hardship, as distinguished from mere inconvenience, if the subject property is not capable of yielding a reasonable economic return if its present use is continued or if it is developed in accordance with provisions of this ordinance and that this inability to yield a reasonable economic returns results from unique circumstances peculiar to the subject property which:

- a. do not apply to or affect other property in the immediate vicinity;
- b. relate to or arise out of the characteristics of the subject property because of the particular physical surroundings, shape or topographical conditions of the property involved, rather than the personal situations of the applicant; and
- c. are not the result of any action or inaction by the applicant or the owner or his predecessors in title. The necessity of acquiring additional land to locate development outside the SBCZ shall not be considered an economic hardship unless the applicant can demonstrate that there is no adjacent land that is reasonably available.

2. An applicant shall be deemed to have established compelling public need if the applicant demonstrates, based on specific facts, that:

- a. the proposed project will serve an essential public health or safety need;
- b. the proposed use is required to serve an existing public health or safety need; or

c. there is no alternative available to meet the established public health or safety need.

3. A variance can only be granted if it shown that the activity will not be materially detrimental or injurious to other property or improvements in the area in which the subject property is located and will not endanger public safety; and the exception granted is the minimum relief necessary to relieve the hardship.

B. If the above demonstrations are made, then the following encroachments into the SBCZ may be permitted:

1. Encroachment of impervious surfaces (structures or pavement) otherwise permitted by the underlying zoning is permitted to the extent of 750 square feet total. Said encroachment is not permitted closer than 100 feet from the top of the bank at bank-full flow or level of C1 waters or closer than 50 feet from the top of the bank at bank-full flow or level of C2 waters.

2. Encroachment of lawn areas, but no closer than 100 feet from the edge of a C1 water or 50 feet from the edge of a C2 water.

C. If such an exception is granted, the applicant shall rehabilitate an environmentally degraded stream corridor within or adjacent to the same site at least equivalent in size to the SBCZ reduction permitted or, if not possible, rehabilitate or expand a SBCZ at least equivalent in size within a nearby site and, if available, within the same watershed. Rehabilitation shall include reforestation, stream bank stabilization and removal of debris, in accordance with a Stream Buffer Management Plan.

IX. BOUNDARY INTERPRETATION, APPEALS PROCEDURES, INSPECTIONS, CONFLICTS, SEVERABILITY

(Option: municipality may prepare map of municipality depicting extent of the SBCZ, which would then need to be updated to keep up with changes made by the NJDEP in water classifications.)

A. When a landowner or applicant disputes the boundaries of the Stream Buffer Conservation Zone or the defined bank-full flow or level, the landowner or applicant shall submit evidence to (insert name of appropriate municipal contact) that describes the SBCZ, presents the landowner or applicant's proposed SBCZ, and presents all justification for the proposed boundary change.

B. Within 45 days of a complete submission of Section IX A above, the Township Engineer, or appointed representative, shall evaluate all material submitted and shall make a written determination, a copy of which shall be submitted to (insert name of appropriate municipal contact) and the landowner or applicant. Failure to act within the 45-day period shall not be interpreted to be an approval of the proposed boundary change.

C. Any party aggrieved by any such determination or other decision or determination under this section may appeal to the (insert name of appropriate municipal contact) under the provisions of this ordinance. The party contesting the location of the SWCZ boundary shall have the burden of proof in case of any such appeal.

D. Inspections

1. Lands within or adjacent to an identified SBCZ will be inspected by the municipal representative when:

- a. a subdivision or land development plan is submitted.
- b. a building permit is requested.
- c. a change or resumption of nonconforming use is proposed.
- d. discontinued use for more than a year as described in Section VI. The party contesting the discontinued use shall have the burden of proof to demonstrate when use was discontinued.

2. The SBCZ may also be inspected periodically by the representatives from the Township if excessive or potentially problematic erosion is present, other problems are discovered, or at any time when the presence of an un-authorized activity or structure is brought to the attention of Township officials or when the downstream surface waters are indicating reduction in quality.

D. Conflicts

All other ordinances, parts of ordinances, or other local requirements that are inconsistent or in conflict with this ordinance are hereby repealed to the extent of any inconsistency or conflict and the provisions of this ordinance apply.

E. Severability

(Add standard severability clause)

X. STREAM BUFFER MANAGEMENT PLAN

A. Within any Stream Buffer Conservation Zone, no construction, development, use, activity, or encroachment shall be permitted unless the effects of such development are accompanied by preparation, approval, and implementation of a Stream Buffer Management Plan.

B. The landowner, applicant, or developer shall submit to (insert name of appropriate municipal contact), or its appointed representative, a Stream Buffer Management Plan prepared by an environmental professional, professional engineer or other qualified professional which fully evaluates the effects of any proposed uses on the SBCZ. The Stream Buffer Management Plan shall identify the existing conditions including:

1. Existing vegetation;
2. Field delineated streams, wetlands, and the 100-year floodplain;
3. Mapped soils;
4. Existing subdrainage areas of site;

5. Slopes in each subdrainage area segmented into sections of slopes less than or equal to ten (10) percent; eleven (11) to nineteen percent; and greater than or equal to twenty (20) percent;
6. All proposed activities; and
7. A mitigation plan that demonstrates how the loss of value afforded by the existing buffer will be compensated for.

C. The Plan shall be reviewed and must be approved by the Township Engineer, in consultation with the Environmental Commission, as part of the subdivision and land development process.

D. The Stream Buffer Management Plan should include management provisions in narrative and/or graphic form specifying:

1. The manner in which the SBCZ will be owned and by whom it will be managed and maintained.
2. The conservation and/or land management techniques and practices that will be used to conserve and protect the SBCZ, as applicable.
3. The professional and personnel resources that are expected to be necessary in order to maintain and manage the SBCZ.
4. A revegetation plan, if applicable, that includes: three (3) layers of vegetation, including herbaceous plants that serve as ground cover, understory shrubs, and trees that form an overhead canopy. Vegetation selected must be native and consistent with the soil, slope and moisture conditions of the site. The revegetation plan shall be prepared by a qualified professional such as a landscape architect or engineer, and shall be subject to the approval of the Municipal Engineer, in consultation with the Environmental Commission.

E. A Stream Buffer Management Plan is not required where the SBCZ is not being disturbed and conservation easements/deed restrictions applied to ensure there will be no future clearing or disturbance of the SBCZ.