waterway where the bank is undefined. All encroachments proposed under this subparagraph shall be subject to review and approval by the Department.

(2) 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.

(3) If stormwater discharged outside of and flowing through the special water resource protection area cannot comply with the Standard for Off-Site Stability in the "Standards for Soil Erosion and Sediment Control in New Jersey," established under 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:

(a) Stabilization measures shall not be placed within 150 feet of the Category One waterway;

(b) Stormwater associated with discharges allowed by this section shall achieve a 95 percent TSS post-construction removal rate;

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

(d) 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;

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

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

(4) A stream corridor protection plan may be developed by a regional stormwater management planning committee as an element of a regional stormwater management plan, or by a municipality through an adopted municipal stormwater management plan. If a stream corridor protection plan for a waterway subject to Section D.7.h 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.
stream corridor protection plan for a waterway subject to 7.h shall maintain or enhance the current functional value and overall condition of the special water resource protection area as defined in 7.h(1)(a) above. In no case shall a stream corridor protection plan allow the reduction of the Special Water Resource Protection Area to less than 150 feet as measured perpendicular to the waterway subject to this subsection.

(5) Paragraph 7.h 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.

E. CALCULATION OF STORMWATER RUNOFF AND GROUNDWATER RECHARGE.

1. Stormwater runoff shall be calculated in accordance with the following:

   a. The design engineer shall calculate runoff using one of the following methods:

      (1) 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. For the purpose of calculating runoff coefficients and groundwater recharge, there is a presumption that the pre-construction condition of a site or portion thereof is a wooded land use with good hydrologic condition. The term “runoff coefficient” applies to both the NRCS methodology at Section E.1.a(1) and the Rational and Modified Rational Methods at Section E.1.a(2). 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).

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

d. In computing stormwater runoff from all design storms, the
design engineer shall consider the relative stormwater runoff rates and/or
volumes of pervious and impervious surfaces separately to accurately compute
the rates and volume of stormwater runoff from the site. To calculate runoff
from unconnected impervious cover, urban impervious area modifications as
described in the NRCS Technical Release 55 – Urban Hydrology for Small
Watersheds and other methods may be employed.

c. 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.

2. Groundwater recharge may be calculated in accordance with the
following:

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.

F. STANDARDS FOR STRUCTURAL STORMWATER MANAGEMENT
MEASURES.

1. Standards for structural stormwater management measures are as
follows:

a. 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).

b. Structural stormwater management measures shall be
designed to minimize maintenance, facilitate maintenance and repairs, and
ensure proper functioning. Trash racks shall be installed at the intake to the
outlet structure as appropriate, and shall have parallel bars with one-inch (1")
spacing between the bars to the elevation of the water quality design storm. For
elevations higher than the water quality design storm, the parallel bars at the
outlet structure shall be spaced no greater than one-third (1/3) the width of
the diameter of the orifice or one-third (1/3) the width of the weir, with a
minimum spacing between bars of one-inch and a maximum spacing between
bars of six inches. In addition, the design of trash racks must comply with the
requirements of Section H.4.

c. 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.

d. At the intake to the outlet from the stormwater management basin, the orifice size shall be a minimum of two and one-half inches in diameter.

e. Stormwater management basins shall be designed to meet the minimum safety standards for stormwater management basins at Section H.

2. Stormwater management measure guidelines are available in the New Jersey Stormwater Best Management Practices Manual. Other stormwater management measures may be utilized provided the design engineer demonstrates that the proposed measure and its design will accomplish the required water quantity, groundwater recharge and water quality design and performance standards established by Section 4 of this ordinance.

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

G. SOURCES FOR TECHNICAL GUIDANCE.

1. Technical guidance for stormwater management measures can be found in the documents listed at a and b 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.

a. Guidelines for stormwater management measures are contained in the New Jersey Stormwater Best Management Practices Manual, as amended. Information is provided on stormwater management measures such as: bioretention systems, constructed stormwater wetlands, dry wells, extended detention basins, infiltration structures, manufactured treatment devices, pervious paving, sand filters, vegetative filter strips, and wet ponds.


2. Additional technical guidance for stormwater management measures can be obtained from the following:

a. The "Standards for Soil Erosion and Sediment Control in New Jersey" promulgated by the 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;

b. The Rutgers Cooperative Extension Service, 732-932-9306; and
c. 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.

H. SAFETY STANDARDS FOR STORMWATER MANAGEMENT BASINS.

1. 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.


a. 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:

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

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

(3) 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.

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

b. 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:

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

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

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

c. For purposes of this paragraph c, 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:
(1) If a stormwater management basin has an outlet structure, escape provisions shall be incorporated in or on the structure. With the prior approval of the reviewing agency identified in Section H.3 a free-standing outlet structure may be exempted from this requirement.

(2) Safety ledges shall be constructed on the slopes of all new stormwater management basins having a permanent pool of water deeper than two and one-half feet. Such safety ledges shall be comprised of two steps. Each step shall be four to six feet in width. One step shall be located approximately two and one-half feet below the permanent water surface, and the second step shall be located one to one and one-half feet above the permanent water surface. See Section H.4 for an illustration of safety ledges in a stormwater management basin.

(3) In new stormwater management basins, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than 3 horizontal to 1 vertical.

3. Variance or Exemption from Safety Standards

   a. 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.
4. Illustration of Safety Ledges in a New Stormwater Management Basin:

Depicted is an elevational view.

I: REQUIREMENTS FOR A SITE DEVELOPMENT STORMWATER PLAN.

1. Submission of Site Development Stormwater Plan.
   a. Whenever an applicant seeks municipal approval of a development subject to this ordinance, the applicant shall submit all of the required components of the Checklist for the Site Development Stormwater Plan at Section I.3 below as part of the submission of the applicant's application for subdivision or site plan approval.
   b. The applicant shall demonstrate that the project meets the standards set forth in this ordinance.
   c. The applicant shall submit 19 copies of the materials listed in the checklist for site development stormwater plans in accordance with Section I.3 of this ordinance.

2. Site Development Stormwater Plan Approval. The applicant's Site Development project shall be reviewed as a part of the subdivision or site plan review process by the municipal board or official from which municipal approval is sought. That municipal board or official shall consult the engineer retained by the Planning and/or Zoning Board (as appropriate) to determine if all of the checklist requirements have been satisfied and to determine if the project meets the standards set forth in this ordinance.
3. Checklist Requirements. The following information shall be required:

   a. Topographic Base Map. The reviewing engineer may require upstream tributary drainage system information as necessary. It is recommended that the topographic base map of the site be submitted which extends a minimum of 200 feet beyond the limits of the proposed development, at a scale of 1" = 200' or greater, showing 2-foot contour intervals. The map as appropriate may indicate the following: existing surface water drainage, shorelines, steep slopes, soils, erodible soils, perennial or intermittent streams that drain into or upstream of the Category One waters, wetlands and flood plains along with their appropriate buffer strips, marshlands and other wetlands, pervious or vegetative surfaces, existing man-made structures, roads, bearing and distances of property lines, and significant natural and manmade features not otherwise shown.

   b. 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.

   c. Project Description and Site Plan(s). A map (or maps) at the scale of the topographical base map indicating the location of existing and proposed buildings, roads, parking areas, utilities, structural facilities for stormwater management and sediment control, and other permanent structures. The map(s) shall also clearly show areas where alterations occur in the natural terrain and cover, including lawns and other landscaping, and seasonal high ground water elevations. A written description of the site plan and justification of proposed changes in natural conditions may also be provided.

   d. Land Use Planning and Source Control Plan. This plan shall provide a demonstration of how the goals and standards of Sections C through F 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.

   e. Stormwater Management Facilities Map. The following information, illustrated on a map of the same scale as the topographic base map, shall be included:

      (1) 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.

      (2) 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.
f. Calculations.

(1) Comprehensive hydrologic and hydraulic design calculations for the pre-development and post-development conditions for the design storms specified in Section D of this ordinance.

(2) When the proposed stormwater management control measures (e.g., infiltration basins) depends on the hydrologic properties of soils, then a soils report shall be submitted. The soils report shall be based on onsite boring logs or soil pit profiles. The number and location of required soil borings or soil pits shall be determined based on what is needed to determine the suitability and distribution of soils present at the location of the control measure.

g. Maintenance and Repair Plan. The design and planning of the stormwater management facility shall meet the maintenance requirements of Part J.

h. Waiver from Submission Requirements. The municipal official or board reviewing an application under this ordinance may, in consultation with the municipal engineer, waive submission of any of the requirements in Sections I.3.a through I.3.f of this ordinance when it can be demonstrated that the information requested is impossible to obtain or it would create a hardship on the applicant to obtain and its absence will not materially affect the review process.

J. MAINTENANCE AND REPAIR.

1. Applicability

   a. Projects subject to review as in Section A.3 of this ordinance shall comply with the requirements of Sections J.2 and J.3.

2. General Maintenance

   a. The design engineer shall prepare a maintenance plan for the stormwater management measures incorporated into the design of a major development.

   b. 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.

   c. 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.

d. If the person responsible for maintenance identified under Section J.2.b above is not a public agency, the maintenance plan and any future revisions based on Section J.2.g below shall be recorded upon the deed of record for each property on which the maintenance described in the maintenance plan must be undertaken.

e. 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.

f. The person responsible for maintenance identified under Section J.2.b 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.

g. The person responsible for maintenance identified under Section J.2.b above shall evaluate the effectiveness of the maintenance plan at least once per year and adjust the plan and the deed as needed.

h. The person responsible for maintenance identified under Section J.2.b above shall retain and make available, upon request by any public entity with administrative, health, environmental, or safety authority over the site, the maintenance plan and the documentation required by Sections J.2.f and J.2.g above.

i. The requirements of Sections J.2.c and J.2.d do not apply to stormwater management facilities that are dedicated to and accepted by the municipality or another governmental agency.

j. In the event that the stormwater management facility becomes a danger to public safety or public health, or if it is in need of maintenance or repair, the municipality shall so notify the responsible person in writing. Upon receipt of that notice, the responsible person shall have fourteen (14) days to effect maintenance and repair of the facility in a manner that is approved by the municipal engineer or his designee. The municipality, in its discretion, may extend the time allowed for effecting maintenance and repair for good cause. If the responsible person fails or refuses to perform such maintenance and repair, the municipality or County may immediately proceed to do so and shall bill the cost thereof to the responsible person.

3. 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.

K. PENALTIES. Any person who erects, constructs, alters, repairs, converts, maintains, or uses any building, structure or land in violation of this ordinance shall be subject to the penalties set forth in Section 13-7.1 of this Land Development Ordinance.
Section 2:

Chapter 13 is hereby further amended with the repeal of paragraph (10.7) in Section 13-5.7D(10) entitled “Parking Decks in The L-1 Research Laboratory Zone,” which reads as follows:

(10.7) All levels, except for the uppermost parking level, shall contain a fire suppression sprinkler system. The uppermost level shall contain such fire suppression methods as deemed necessary by the Borough Fire Department.

Section 3:

All other provisions of “Chapter 13, 2000 Borough of Morris Plains Land Development Ordinance” shall be unaffected and are hereby continued.

Section 4:

All Ordinances and parts of Ordinances inconsistent herewith are hereby repealed to the extent of such inconsistency.

Section 5:

If any section, subsection, sentence, clause or phrase of this Ordinance is, for any reason, held to be invalid by a Court of competent jurisdiction to be invalid, such a decision shall not affect the validity of the remaining portions of this Ordinance.

Section 6:

The Borough Clerk is hereby directed to give notice at least ten days prior to hearing on the adoption of this Ordinance to the County Planning Board and to all other persons entitled to notice pursuant to N.J.S.A. 40:55D-15 and N.J.S.A. 40:55D-63 (if required). Upon the adoption of this Ordinance after public hearing thereon, the Borough Clerk is further directed to publish notice of the passage thereof and to file a copy of the Ordinance as finally adopted with
the Morris County Planning Board as required by N.J.S.A. 40:55D-16. The Clerk shall also forthwith transmit a copy of this Ordinance after final passage to the Borough Tax Assessor as required by N.J.S.A. 40:49-2.1.

Section 7:

This Ordinance shall take effect immediately after final passage and publication and upon approval by the County Review Agency, or sixty (60) days from the receipt of the ordinance by the County Review Agency if the County Review Agency should fail to act.