TOWNSHIP OF
CHATHAM
MORRIS COUNTY, NEW JERSEY

MUNICIPAL STORMWATER MANAGEMENT PLAN

June 2005
Revised December 2022

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Appendices:

1.0 INTRODUCTION

This document has been prepared in accordance with the New Jersey Department of Environmental Protection (herein referred to as NJDEP) *Tier A Municipal Stormwater Guidance Document* dated October, 2018, and the *New Jersey Stormwater Best Management Practices (BMP) Manual*, dated April 2004 revised September 2014, February 2016, September 2016, November 2016, September 2017, & March 2020 in order to document Chatham Township's strategy to address and reduce stormwater runoff and related non-point source pollution impacts. It is important to note that this plan will require several updates. Chatham Township must reexamine the Stormwater Management Plan at each reexamination of the Township's Master Plan in accordance with N.J.S.A 40:55-D89.

1.1 How Does Stormwater Runoff Affect Us?

Figure 1

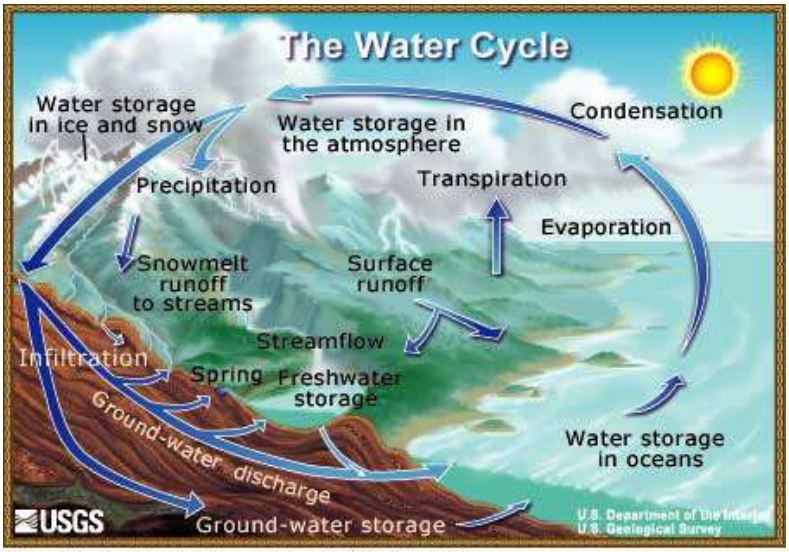


Illustration by John M. Evans, Colorado District, USGS

Stormwater runoff is one of the largest detrimental impacts to our nation's water resources and is a major component of non-point source pollution. It is estimated that up to 60 percent of existing water pollution problems are attributable to non-point source pollution. Non-point source pollution, and particularly, stormwater runoff is difficult to identify, control, and treat. In natural environments, those undisturbed by anthropogenic activities, native vegetation either directly intercepts precipitation or draws from runoff that has infiltrated into the ground and returns it to the atmosphere through the process of evapotranspiration. A portion of precipitation runs off the land's surface replenishing the surface waters. Further, a portion of the rainfall that lands on the ground's surface infiltrates through the soil to the groundwater table and provides natural recharge of the groundwater and either replenishes aquifers or provides baseflow to rivers and streams. This process, known as the hydrologic cycle (or water cycle), functions in equilibrium, but is extremely susceptible to impacts resulting from changes to the cycle's processes. The hydrologic cycle is illustrated on Figure 1.

It has been shown that development can dramatically impact the hydrology of a watershed if stormwater runoff related impacts are not considered carefully. Development typically alters natural vegetation through replacement of forests and fields with lawns, impervious cover, and motor vehicle surfaces, thereby reducing the

watershed's evaporation, transpiration and infiltration rates. Construction activities compact the soil and diminish its infiltration ability, resulting in increased volumes and rates of stormwater runoff from the site. In the past, development typically involved the construction of impervious areas connected to each other through gutters, channels, and storm sewers. These structures can transport runoff more quickly than natural surfaces and cause erosion, water quality and flooding problems in areas downstream of development. Many times, the general public does not know or understand that there are alternatives to the traditional way of managing *improved* properties. For example, homeowners can have a green lawn without excessive doses of fertilizers and pesticides; pet owners should collect and properly dispose of pet waste and not leave it at the curb. Typically, people are unaware that storm drains often discharge directly to waterbodies. When people allow motor oil, trash, and their pet's waste to enter the storm sewer in their street, they don't realize that it may end up in the many Lakes in Chatham, the Rockaway River or its tributaries, or their public drinking water supply. Individually these acts may seem insignificant, but the cumulative impacts of these activities contribute to stormwater runoff non-point source pollution, and thus reduce water quality.

1.2 Municipal Separate Stormwater Systems (MS4) Program

In response to the United States Environmental Protection Agency (USEPA) National Pollutant Discharge Elimination System (NPDES) Phase II regulations adopted in December 1999, the State of New Jersey developed the Municipal Stormwater Regulation Program. This program addresses pollutants entering our waters from storm drainage systems operated by local, county, state, interstate, and federal government agencies. These systems are referred to as "municipal separate storm sewer systems" or MS4s and are regulated under the New Jersey Pollutant Discharge Elimination System (NJPDES) Rules (N.J.A.C. 7:14A). The NJDEP created four (4) NJPDES Stormwater General Permits for the various Municipal Separate Storm Sewer System (MS4s). These general permits include the Tier A Municipal Stormwater General Permit, Tier B Municipal Stormwater General Permit, Public Complex Stormwater General Permit, and the Highway Agency Stormwater General Permit.

For each General Permit, NJDEP has mandated Statewide Basic Requirements (herein referred to as SBRs), which include minimum standards, measurable goals, and implementation schedules. The minimum standards are one or more actions that must be taken to comply with the requirement of the permit. The measurable goals are the mechanism for reporting to the NJDEP the progress that the Municipality has made to implement the requirements of the permit and are accomplished primarily through the submittal of an Annual Report and Certification. The implementation schedule sets the deadlines for permit compliance.

All municipalities within the State of New Jersey have been classified as either Tier A or Tier B communities depending on population density as determined in the 2000 United States Census. Chatham Township is regulated under the NJPDES Stormwater Tier A General Permit, NJPDES No. NJ0141852, with the unique NJPDES permit number of NJG0153630 assigned to the Township of Chatham. Tier A Municipalities are generally

located within the more densely settled regions of the State or along or near the Atlantic Ocean.
As part of the permit, several SBRs were mandated and implemented. To satisfy the permit requirements, each Tier A municipality is required to develop, implement, and enforce a Stormwater Program. In addition, Tier A municipalities are required to prepare and implement a Stormwater Pollution Prevention Plan (SPPP) that describes the stormwater program and serves as the mechanism for the implementation of the SBRs.

The following SBRs apply to all Tier A municipalities, including Chatham Township.

1. **Minimum Standards for Public Involvement and Participation Including Public Notice** – Municipalities must comply with State and local public notice requirements when providing for public participation in the development and implementation of their stormwater program. Municipalities must make elements of the MS4 program available to the public upon request and post copies of the SPPP, MSWMP & related ordinances on the municipal website. The Municipality shall maintain records necessary to demonstrate compliance with the public participation requirements and the existing permittee shall meet the minimum standards of this permit, and the measurable goals.

2. **Minimum Standards for Local Public Education** – Each municipality shall develop a local public education program that focuses on educational and pollution prevention activities about the impacts of stormwater discharges on surface water and groundwater and to involve the public in reducing pollutants in stormwater and mitigating flow. The activities must total 12 points and include activities from at least three of the five categories set forth in Attachment B of the Tier A permit

    a. The municipality shall label all storm drain inlets for those drains that do not have permanent wording cast into the structure of the inlet. These labels shall be maintained.

    b. The municipality shall advertise public involvement programs pertaining to education and outreach activities on the municipality's website, through a mailing, a newspaper advertisement, or similar.

3. **Minimum Standards for Construction Site Stormwater Runoff** – Construction site stormwater runoff activities are authorized under separate NJPDES permit. These are not required to be referenced in the SPPP.

4. **Post Construction Stormwater Management in New Development and Redevelopment** – Municipalities shall develop, implement, and enforce a program to address stormwater runoff from new development and redevelopment projects that discharge into the municipality's small MS4.

In its post construction program, the municipality shall complete the following:

a. Adopt and reexamine a municipal stormwater management plan (or adopt amendments to an existing municipal stormwater management plan) in accordance with N.J.A.C. 7:8-4.

b. Adopt and implement a municipal stormwater control ordinance or ordinances in accordance with N.J.A.C. 7:8-4. The ordinance(s) will control stormwater from non-residential development and redevelopment projects.

c. Ensure that any residential development and redevelopment projects that are subject to the Residential Site Improvement Standards (RSIS) for stormwater management (N.J.A.C. 5:21-7) comply with those standards (including any exception, waiver, or special area standard that was approved under N.J.A.C. 5:21-3).

d. Where necessary to implement the municipal stormwater management plan, the municipal stormwater control ordinance(s) will also:

    i. Control aspects of residential development and redevelopment projects that are not pre-empted by the RSIS; and

    ii. Set forth special area standards approved by the Site Improvement Advisory Board for residential development or redevelopment projects under N.J.A.C. 5:21-3.5.

e. Ensure adequate long-term operation and maintenance (O&M) of Best Management Practice (BMPs).

f. Enforce, through stormwater control ordinance(s) or a separate ordinance, compliance with standards set forth in Attachment C of the permit to control passage of solid and floatable materials through storm drain inlets.

g. Require compliance with the applicable design and performance standards established under N.J.A.C. 7:8 for major development, unless:

    i. Those standards do not apply because of a variance or exemption granted under N.J.A.C. 7:8; or

    ii. Alternative standards are applicable under an area-wide or Statewide Water Quality Management Plan adopted in accordance with N.J.A.C. 7:15.

5. Minimum Standards for Pollution Prevention/Good Housekeeping for Municipal Operator

a. Each municipality shall adopt and enforce the following community wide ordinances to address improper disposal of waste
    i. Pet Waste – Requires pet owners or their keepers to immediately and properly dispose of their pet's solid waste deposited on their property or any other property, public or private, not owned or possessed by that person.
    ii. Wildlife Feeding – Prohibits the feeding in any public park or on any other property owned or operated by the municipality of any wildlife (excluding confined wildlife in zoos, parks, or rehabilitation centers or unconfined wildlife at educational centers).
    iii. Litter – Adopt and enforce a litter ordinance or enforce the existing State litter statute (N.J.S.A. 13:1E-99.3).
    iv. Improper Disposal of Waste – Prohibits the improper spilling, dumping, or disposal of materials other than stormwater into the small MS4.
    v. Containerized Yard Waste Ordinance / Collection Program – Prohibits placing non-containerized yard wastes in the street and/or the municipality shall develop a yard waste collection and disposal program.
    vi. Private Storm Drain Inlet Retrofitting Ordinance

b. Each municipality shall develop and continue to implement the following community wide pollution prevention/good housekeeping measures to control solids and floatables:

    i. Street Sweeping – Municipalities shall sweep all municipally owned curbed streets with storm drains that have a posted speed limit of 35 miles per hour (mph) or less in predominantly commercial areas at a minimum of once each month and that are not entrance or exist ramps.

    ii. Catch Basin & Storm Drain Inlet Inspection – Municipalities are required to inspect and clean storm drain inlets once every five years, or more frequently.

    iii. Storm Drain Inlet Retrofit - Municipalities are required to retrofit any existing municipal owned storm drain inlet in direct contact with any repaving, repairing, or resurfacing or in direct contact with any reconstruction or alterations of facilities.

c. Maintenance Yard Operations (Including Maintenance Activities at Ancillary Operations) – Tier A Municipalities are required to implement the best management practices described in Attachment E of the Tier A permit for municipal maintenance yards and ancillary operations which include the following:

   i. Fueling Operations
   ii. Discharging of Stormwater from Secondary Containment
   iii. Vehicle Maintenance
   iv. On-Site Equipment and Vehicle Washing and Wash Wastewater Containment
   v. Salt and de-icing Material Storage
   vi. Aggregate Material and Construction Debris Storage
   vii. Street Sweepings, Catch basin clean out, and other material storage
   viii. Yard Trimmings and Wood waste Management Sites
   ix. Containment of vehicle wash water
   x. Roadside Vegetation Management

d. Employee Training – Each Tier A municipality shall develop and conduct an annual employee training program. All employees shall receive training on these stormwater topics within three months of commencement of duties and every two years thereafter. Records should be kept and certified annually. The program must include at minimum the following topics:
   i. Yard Waste Collection Program
   ii. Monthly Sweepings of Certain Streets in Predominantly Commercial Areas
   iii. Illicit Connection Elimination and Outfall Pipe Mapping
   iv. Outfall Pipe Stream Scouring Remediation
   v. Maintenance Yard operations
   vi. Waste Disposal Education
   vii. Municipal Ordinances
   viii. Stormwater Facility Maintenance
   ix. Construction Activity/Post-Construction Stormwater Management in New Development and Redevelopment
   x. Tier A Municipalities SPPP
   xi. Other stormwater related topics

e. Stormwater Management Design Review Training - Each Tier A municipality shall ensure that all design engineers, municipal engineers, and other individuals that review the stormwater management design for development and redevelopment projects complete the Department approved Stormwater Management Design Review Course once every five years.

f. Municipal Board & Governing Body Member Related Training - Each Tier A municipality shall ensure that all municipal board and governing body members that review and approve applications for development and redevelopment projects complete the required online training available on the NJDEP website within six months of commencing duties.

6. Minimum Standards for MS4 Outfall Pipe Mapping and Illicit Discharge and Scouring Detection and Control – Each Tier A Municipality must complete the following requirements:

a. Develop a map showing the end of all MS4 outfall pipes that are operated by the Municipality, and discharge within the municipality's jurisdiction to a surface water body. The map shall show the location and name of all surface water bodies receiving discharges and each pipe shall be assigned an alphanumeric identifier. A copy of the map shall be provided to the NJDEP annually if revisions have been made. Electronic submission is required by December 21, 2020.

b. Develop and implement a program to detect, investigate, and control any localized stream scouring from stormwater outfall pipes. The program, at minimum, must include an initial inspection of all outfall pipes once every five years, and all new pipes. When scour is detected, they should be further investigated, prioritized, scheduled, and remediated.

c. Each municipality shall adopt and implement a program to detect and eliminate illicit connections into the MS4. The program, at minimum, must include an initial inspection of all outfall pipes, and further investigate any found to have dry weather flow in accordance with Permit A requirements. After the completion of the initial inspection of all outfall pipes, Tier A municipalities shall maintain an ongoing program to detect and eliminate illicit connections.

7. Minimum Standards for Stormwater Facility Maintenance –Develop and implement a stormwater facility maintenance program for cleaning and maintaining all stormwater facilities in accordance with permit requirements.

a. Maintenance must be performed pursuant to any maintenance plans or more frequently as needed

b. A maintenance log shall be maintained to demonstrate compliance

c. Must certify annually that municipal owned or operated stormwater facilities are property functioning.

d. Develop and implement a program to ensure adequate long-term cleaning, operation, and maintenance of stormwater facilities not owned or operated by the Tier A Municipality not subject to the conditions of another NJPDES stormwater permit and constructed after February 7, 1984.

8. Minimum Standards for Total Maximum Daily Load (TMDL) Information – Each Tier A Municipality must incorporate the TMDL information into the SPPP and annually review approved or adopted TMDL reports. These reports should also be used to prioritize stormwater facility maintenance including schedules for repairs required.

1.3 Stormwater Management Regulations

On February 2, 2004 the State of New Jersey adopted the revised Stormwater Management Rules (N.J.A.C. 7:8). The revisions to the State's Stormwater Management Rules serve as the first major update to the rules since their inception in 1983 and detail fundamental changes in the management of stormwater runoff in New Jersey. Through the revision of these rules other regulations were modified, including the Residential Site Improvement Standards (RSIS) (N.J.A.C. 5:21), the Freshwater Wetlands Protection Act (N.J.A.C. 7:7A), the Flood Hazard Area Control Act (N.J.A.C. 7:13), the Watershed Management Rules (N.J.A.C. 7:15), and the New Jersey Dam Safety Standards (N.J.A.C. 7:20). The Stormwater Management Rules were most recently amended on March 2, 2020.

The Stormwater Management Rules provide a framework and incentives for managing runoff and resolving non-point source impairment on a drainage area basis for new development, redevelopment and existing developed areas. Additionally, they establish a hierarchy for implementation of BMP stormwater management measures with initial reliance on low impact development (LID) site design techniques to maintain natural vegetation and drainage patterns before incorporating structural measures. These rules also establish runoff control performance standards for groundwater recharge, water quality, and water quantity, establish special protection area measures for pristine and exceptional value waters; provide regulatory consistency among local and State regulatory agencies; and provide safety standards for stormwater management basins.

As of February 2, 2004, the design requirements identified in the Stormwater Management Rules including groundwater recharge, water quality and water quantity must be met for all projects regulated under RSIS. The Stormwater Rules (N.J.A.C. 7:8-

4) require that all municipalities within the State of New Jersey adopt a municipal Stormwater Management Plan.

The Department adopted amendments to the Stormwater Management rules , N.J.A.C. 7:8, on March 2, 2020, to replace the current requirement that major developments incorporate nonstructural stormwater management strategies to the "maximum extent practicable" to meet groundwater recharge standards, stormwater runoff quantity standards, and stormwater runoff quality standards, with a requirement that green infrastructure (GI) be utilized to meet these same standards. The adopted amendments clarify and modify the definition of major development, which defines the scope of projects to which these rules apply. The Department adopted changes to apply the total suspended solids (TSS) removal requirement to the runoff from motor vehicle surfaces and to eliminate the TSS removal requirement as it applies to runoff from other impervious surfaces not traveled by automobiles, such as rooftops and sidewalks. The Department also adopted several changes that will improve water quality and stormwater management improvements in communities with combined sewer systems.

2.0 STORMWATER MANAGEMENT PLAN GOALS

Minimum goals for the municipal stormwater management plans for Tier A communities in the NJDEP Guidance Document are listed as follows:

- Reduce flood damage, including damage to life and property;
- Minimize, to the extent practical, any increase in stormwater runoff from any new development;
- Reduce soil erosion from any development or construction project;
- Assure the adequacy of existing and proposed culverts and bridges, and other in-stream structures;
- Maintain groundwater recharge;
- Prevent, to the greatest extent feasible, an increase in non-point pollution;
- Maintain the integrity of stream channels for their biological functions, as well as for drainage;
- Minimize pollutants in stormwater runoff from new and existing development in order to restore, enhance and maintain the chemical, physical, and biological integrity of the waters of the State, to protect public health, to safeguard fish and aquatic life and scenic and ecological values, and to enhance the domestic, municipal, recreational, industrial and other uses of water;
- Protect public safety through the proper design and operation of stormwater management basins.

In addition to the minimum goals required by NJPDES General Permit, in accordance with the Chatham Township Master Plan, the following goals are set forth in this Stormwater Management Plan:

- Establish a balance of residential and nonresidential uses so as to provide a full range of services as well as residential opportunities to the residents of Chatham Township.
- Provide safe and convenient access to all areas of the Township.
- Provide adequate sewerage and water services throughout the Township so as to protect the public health and surface and groundwater quality.
- Provide a range of year-round recreation activities for residents of the Township.

- Protect environmentally sensitive lands from the impacts of development.

- Ensure that new development within the community be designed with the environmental resources of the Township in mind.

To achieve the above goals, this plan outlines specific stormwater design and performance standards for new development. Additionally, the plan proposes stormwater management controls to address impacts from existing development. Preventative and corrective maintenance strategies are included in the plan to ensure long-term effectiveness of stormwater management facilities. The plan also outlines specific design standards for stormwater infrastructure to protect public safety.

3.0 BACKGROUND

3.1 Municipal Background

Chatham Township encompasses an area of 9.35 square miles, of which 0.27 square miles are water, within Morris County. Chatham Township is located about 25 miles (40 km) west of New York City on the eastern edge of Morris County. Chatham Township's neighboring municipalities to the south are Summit, New Providence, and Berkeley Heights in Union County. Long Hill Township and Harding Township to the west, Madison to the north, and Chatham Borough to the east all of which lie within Morris County.

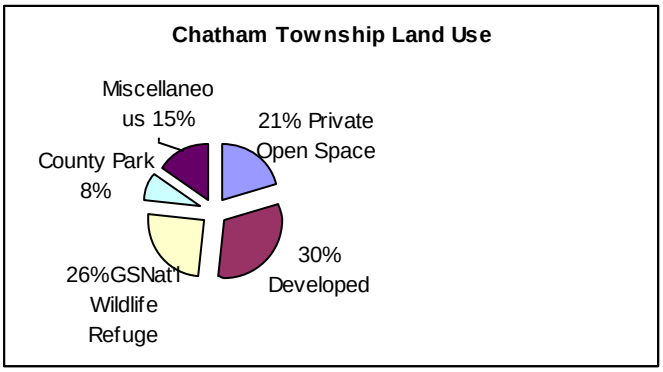
Chatham Township experienced a large increase in growth between 1950 and 1970, increasing from 2,825 residents in 1950 to a population of 8,093 in 1970. Census information is presented in Table 3.1. In recent years, the population of Chatham Township has slowed, growing to 10,452 residents in 2010. The Township estimates its maximum population will be reached at 15,000 persons or fewer.

Table 3.1
Chatham Township Census Data

2020	10,983
2010	10,452
2000	10,086
1990	9,361
1980	8,883
1970	8,093
1960	5,931
1950	2,825
1940	2,026
1930	1,115
1920	735
1910	812
1900	620

Source: U.S. Census

There are approximately 3,900 households in Chatham, the majority of which are single family homes. The chart below taken from the Natural Resources Inventory depicts the land use as of 1997. At that time approximately 30% of that area was developed, 26% was the Great Swamp National Wildlife Refuge, 8% was county park land, and about 15% was taken up by streets, school lands, municipal property and religious property. The remaining 21% at that time was privately owned open space in three principal locations: portions of the Loantaka Brook watershed outside the sewer service area, lands adjacent to the Great Swamp, and steep slopes and floodplains in the Passaic River watershed.



This open space provides distinctive natural, cultural, and historic resources, accommodates recreational activities, and supports surface and groundwater resources. And yet, this is the space that is shrinking as development occurs.

3.2 Environmental Resources Summary

Chatham contains a multitude of natural resources which together help define the essential character of the Township. Anchoring the eastern terminus of the Great Swamp, Chatham's landscape is a contrast to that of its more developed neighbors. Besides being an aesthetic asset, the Great Swamp is a major regional ecological preserve that absorbs and filters the effects of man's activities. This rich wildlife habitat is the natural heart of the Township,

The Township is characterized by rolling terrain and expansive lowlands, with higher elevations along the Third Watchung ridge to south. Chatham's topography is dominated by Long Hill, one of three parallel ridgelines of the Watchung Mountain, which divides the lowlands of the Great Swamp to the north, and the Passaic River along the Township's southern boundary. Significant relief is observed across the Township, with elevations ranging from 460' above sea level at Mt. Vernon, to the lower elevations of the Passaic River floodplain (El. 200) and the Great Swamp (El. 240). Hickory Tree to the north rises above the swamp to El. 290.

Protection of groundwater resources requires the protection of aquifer recharge areas, where permeable soils and natural drainage patterns permit the infiltration of surface runoff into the underlying geologic structure. An area of exceptional recharge potential has been identified along Chatham's border with Madison, generally north and slightly south of Southern Boulevard. Protection of aquifer recharge areas requires limitations on impervious coverage, to limit the negative effects of contaminated stormwater and to assure that recharge areas remain open to infiltration. Figure 3 illustrates the recharge areas, and Figure 4 illustrates wellhead protection areas.

Loantaka Brook, which drains the northern portion of the Township and Black Brook, which drains from the terminal moraine pass through the Great Swamp and then discharges into the Passaic River. Along their course, they traverse diverse areas and encounter pollution sources that affect water quality.

Loantaka Brook receives treated sewage effluent and non-point runoff before it flows through the Loantaka Brook Reservation, one of the most heavily used Morris County parks, into the Great Swamp National Wildlife Refuge. Loantaka Brook is the most degraded stream in the watershed, meeting none of the standards set by the Great Swamp Ten Towns Committee in June 2002 as a result of non-point source pollution and an excessive volume of water in the stream channel.

Black Brook has numerous tributaries, two of which arise near the heavily developed Hickory Square shopping center, and carry significant volumes of non-point runoff from parking lots, roads and buildings. Other tributaries drain a municipal playground and ball fields, traverse the Fairmount Country Club and accept treated effluent from the Tanglewood Lane Wastewater Treatment Plant.

The effects of stormwater runoff from developed areas and chemical fertilizers used on lawns make the Black Brook second only to Loantaka in degraded water quality, failing to meet Ten Towns Committee 2002 water quality standards under both baseflow and storm conditions.

Studies also show Black Brook having one of the lowest macroinvertebrate species counts of the watershed's five feeder streams, reflecting the negative impacts of pollution. Wetlands are a central landscape element in Chatham, with the largest contiguous massing of wetlands found within the Great Swamp, extending northward from Meyersville Road/Fairmount Road to Green Village Road. Wetlands are also found along the floodplains of the Loantaka Brook and the Passaic River. Wetlands within Chatham play an important role in filtering contaminants as well as retaining precipitation and slowly feeding it to headwater streams.

4.0 DESIGN AND PERFORMANCE STANDARDS

To prevent or minimize water quality impacts, the Township has developed, implemented, and enforces a program to address stormwater runoff from new development and redevelopment projects (including projects operated by the municipality itself) that disturb one acre or more, including projects less than 1,500 square feet that are part of a larger common plan of development or sale, that discharge into the municipality's MS4.

The Township has adopted the design and performance standards for stormwater management measures as presented in N.J.A.C. 7:8-5 to minimize the adverse impact of stormwater runoff on water quality and water quantity and loss of groundwater recharge in receiving water bodies. The design and performance standards include the language for maintenance of stormwater management measures consistent with the stormwater management rules at N.J.A.C. 7:8-5.8 Maintenance Requirements, and language for safety standards consistent with N.J.A.C. 7:8-6 Safety Standards for Stormwater Management Basins.

A copy of the Township's Stormwater Control Code is included in Appendix A of this report.

The Township will continue to enforce the stormwater control ordinance. The Township will ensure adequate long-term operation and maintenance of BMPs on property not owned or operated by the municipality; and the Township will enforce, through the stormwater control ordinances, controlling the passage of solid floatable materials through storm drain inlets for storm drain inlets not installed by the Tier A Municipality.

During construction, Township inspectors will continue to observe the construction of the project to ensure that the stormwater management measures are constructed and function as designed.

The Township will comply with the applicable and meet several different but related requirements. These requirements are concerned with:

- The Department's Stormwater Management rules (N.J.A.C. 7:8), which are implemented in part through the Residential Site Improvement Standards: govern the contents of municipal stormwater management plans and stormwater control ordinances, and establish stormwater management design and performance standards for new development and redevelopment.

- The Residential Site Improvement Standards (RSIS) for stormwater management established by the New Jersey Department of Community Affairs (NJDCA) at N.J.A.C. 5:21.

- Municipal stormwater management plans and stormwater control ordinances adopted under the Stormwater Management Act (N.J.S.A. 40:55D-93 to 99), which is a portion of the Municipal Land Use Law (N.J.S.A. 40:55D-1 et seq.)

- Long-term operation and maintenance of BMPS.

- Storm drain inlets.

The Township's post-construction program will comply with the applicable design and performance standards for major development established in N.J.A.C 7:8, unless those standards do not apply because of a variance or exemption granted under N.J.A.C. 7:8, or unless alternative standards under a Water Quality Management (WQM) Plan (adopted in accordance with the Department's Water Quality management Planning rules at N.J.A.C. 7:15) are applicable. The Township will require such compliance through the RSIS, and through municipal stormwater management plans and stormwater control ordinances.

The requirements in N.J.A.C. 7:8-5.2 AND 5.3 to incorporate the following nonstructural stormwater management strategies into the design.

- Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss;

- Minimize impervious and motor vehicle surfaces and break up or disconnect the flow of runoff over impervious and motor vehicle surfaces;

- Maximize the protection of natural drainage features and vegetation;

- Minimize the decrease in the "time of concentration" from pre-construction to post-construction. "Time of Concentration" is defined as the time it takes for runoff to travel from the hydraulically most distant point of the drainage area to the point of interest within a watershed;

- Minimize land disturbance including clearing and grading;

- Minimize soil compaction;

- Provide low-maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers and pesticides;

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

- 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 (see N.J.A.C. 7:8-5.3(a)9 and the New Jersey Stormwater Best Management Practices Manual for examples).

March 2020 Amendments to the Stormwater Management Rules, N.J.A.C. 7:8, propose the use of green infrastructure to replace the current requirement to incorporate nonstructural stormwater management strategies to the "maximum extent possible". The selection of green infrastructure BMPs to incorporate into a project should be selected based on a review of the site characteristics and needs. The following green infrastructure structural Best Management Practices should be considered for each project in accordance with N.J.A.C. 7:8-9.

- Bioretention systems;
- Constructed stormwater wetlands;
- Dry wells;
- Extended detention basins;
- Infiltration basins;
- Pervious paving systems;
- Rooftop vegetated cover;
- Sand filters;
- Vegetative filters; and
- Wet ponds.

The standard in N.J.A.C. 7:8-5.5 to encourage and control infiltration and groundwater recharge, including requirements that the design engineer (except in certain specified circumstances) either:

- Demonstrate through hydrologic and hydraulic analysis for stormwater leaving the site, post-construction runoff hydrographs for the two-, 10- and 100-year storm events do not exceed the pre-construction runoff hydrographs for the same storm events; **or**

- Demonstrate through hydrologic and hydraulic analysis that the increase of stormwater runoff volume from pre-construction to post-construction for the two-year storm is infiltrated.

- The "Stormwater runoff quality standards" in N.J.A.C. 7:8-4, including:

    - □ The requirement that stormwater management measures be designed to reduce the post-construction load of total suspended solids (TSS) in stormwater runoff generated from the water quality design storm by 80 percent of the anticipated load from the developed site, expressed as an annual average. Table 4-1 in N.J.A.C. 7:8-4 presents the presumed TSS removal rates for certain BMPs designed in accordance with the New Jersey Stormwater Best Management Practices Manual.

    - □ The requirement that stormwater management measures be designed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticipated load from the developed site in stormwater runoff generated from the water quality design storm.

- The requirement that the applicant preserve and maintain 300-foot "special water resource protection areas" along all waters designated "Category One" in the Department's Surface Water Quality Standards at N.J.A.C. 7:9B, and along perennial or intermittent streams that drain into or upstream of the Category One waters as shown on the U.S. Geological Survey (USGS) Quadrangle Maps or in the County Soil Surveys, within the associated hydrologic unit code 14 (HUC14) drainage. The Township currently does not have a Category One waters within the municipal boundary.

- The maintenance requirements in N.J.A.C. 7:8-5.8

The requirements for "compliance with the applicable design and performance standards established under N.J.A.C. 7:8" pertains to all applicable design and performance standards established under the Stormwater Management rules, not just to the "Stormwater Management Quantity and Quality Standards" in N.J.A.C. 7:8-5. Problems such as human-induced base-flow reduction (due to reduced recharge) and exacerbation of flooding and erosion also present water quality problems because they alter the chemical, physical, or biological integrity of the waters of the State, or otherwise contribute to water pollution.

5.0 PLAN CONSISTENCY

The Township is not currently within a Regional Stormwater Management Planning Area. However, a TMDL study has been undertaken. This plan does not need to be consistent with any regional stormwater management plans (RSWMPs) nor any TMDLs at this time. If any RSWMPs or TMDLs are developed in the future, this Municipal Stormwater Management Plan will be updated to be consistent.

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

The Township's Stormwater Management Ordinance will require all new development and redevelopment plans to comply with New Jersey's Soil Erosion and Sediment Control Standards. During construction, Township inspectors will observe on-site soil erosion and sediment control measures and report any inconsistencies to the local Soil Conservation District.

6.0 NONSTRUCTURAL STORMWATER MANAGEMENT STRATEGIES

The Township has reviewed the Master Plan, Official Map and Ordinances to incorporate nonstructural stormwater management strategies. The Township has revised all ordinances which relate to land development and incorporate NJDEP's nonstructural stormwater management strategies.

Also, if a developer is given a variance to exceed the maximum allowable percent imperviousness, the developer must mitigate the impact of the additional impervious and motor vehicle surfaces. This mitigation effort must address water quality, flooding, and groundwater recharge.

It is noted that although attempts to mimic pre-existing natural conditions may be adequate to satisfy the State stormwater rules, alteration of land always modifies hydrology. Therefore, some measure (or BMP) will be required for every project qualifying as a major development. The New Jersey Stormwater Best Management Practices Manual ("BMP Manual") April 2004 Revised September 2014, February 2016, September 2016, November 2016, September 2017,November 2018, & March 2020 should be utilized for the development of all stormwater BMPs. A copy of the most current BMP manual can be found at: https://www.njstormwater.org/bmp_manual2.htm

7.0 LAND USE/BUILD-OUT ANALYSIS

There are four steps to preparing a build-out analysis that satisfies the requirements for a municipal stormwater management plan:

1. Determine the total land area within each of the HUC14s of the municipality.

2. Determine the area of constrained lands within each HUC14 of the municipality.

3. Determine the land available for development by simply subtracting the constrained lands from the total land area for each HUC14. In essence, the land available within each HUC14. Existing residential, commercial, and industrial areas are also eligible for redevelopment and should be considered as land available for development.

4. For each HUC14, complete a build-out analysis by using the municipal zoning map and applicable ordinances to determine the acreage of new development. Once the build-out acreage of each land use is determined for each HUC14, nonpoint source loadings can be determined for the build-out scenario. Shown below are examples of build-out analyses for two HUC14s located in the municipality.

A detailed land use/build out analysis for the Township was conducted by the Morris County Department of Planning and Development in January 2014. The entire report can be found in Appendix B of this report.

8.0 MITIGATION PLAN

This mitigation plan is provided for a proposed development that is granted a variance or exemption from the stormwater management design and performance standards. The mitigation project must be implemented in the same drainage area as the proposed development. The project must provide additional groundwater recharge benefits or protection from stormwater runoff quality and quantity from previously developed property that does not currently meet the design and performance standards outlined in the Municipal Stormwater Management Plan. The developer must ensure the long-term maintenance of the project including the maintenance requirements under Chapters 8 and 9 of the NJDEP Stormwater BMP Manual.

If a suitable site cannot be located in the same drainage area as the proposed development as discussed above, the mitigation project may provide mitigation that is not equivalent to the impacts for which the variance or exemption is sought, but that addresses the same issue. For example, if a variance is given because the 80 percent TSS requirement is not met, the selected project may address water quality impacts.

The Township may allow a developer to provide funding or partial funding to the municipality for an environmental enhancement project that has been identified in an addendum to this Municipal Stormwater Management Plan or towards the development of a Regional Stormwater Management Plan. The funding must be equal to or greater than the cost to implement the mitigation outlined above, including costs associated with purchasing the property or easement for mitigation and the cost associated with the long-term maintenance requirements of the mitigation measure. In those cases where an applicant has demonstrated the inability or impracticality of strict compliance with the stormwater management requirements set forth in this plan, and in N.J.A.C. 7:8-5, a waiver from strict compliance may be granted by Chatham Township. In such cases, the applicant must submit a mitigation plan detailing how the project's failure to strictly comply will be compensated.

A mitigation plan must identify measures required to offset any potential impact(s) created by the granting of the waiver. For example, because of natural site constraints, a proposed development might be unable to fully meet the groundwater recharge criteria, with the projected impact being an annual net loss of 50,000 cubic feet of groundwater recharge volume. In this case, a mitigation plan might require recovery of the lost recharge volume by capturing existing runoff from an impervious area on a site within the same drainage basin. Applicants may identify potential properties suitable for the mitigation project, secure the easements necessary to implement the projects and ensure long-term maintenance requirements are met.

Strategies that may be used to mitigate a development project and its impacts include, in the order of their preference, the following:

1. **Equivalent, or "in-kind"** mitigation (as per the requirements of N.J.A.C. 7:8-4.2c(11)) is the most preferred method where a mitigation project is identified

within the same drainage area, or HUC-14, within which the subject project is proposed, so that it provides benefits and protection similar to those that would have been achieved if the stormwater and recharge performance standards had been satisfactorily completed. In-kind mitigation must also directly compensate for the projected impact for the performance standard(s) for which the waiver was granted.

If there are no "in-kind" mitigation options available within the same HUC-14 drainage area, the Township may consider implementation of a similar compensating measure to mitigate the same impact(s) of the proposed project, but within a different watershed.

2. **Non-equivalent, or alternative** mitigation options may be considered by the Township if equivalent or "in-kind" mitigation measures for the projected environmental impact(s) is not feasible. In this case, the Township may consider implementation of an alternative compensating measure at a designated municipal site or as part of an adopted regional stormwater management plan.

3. **Funding, or "in-lieu"** mitigation is the least preferred option. In this case, an applicant may provide contributions in the form of funding to the Township for future or alternative stormwater management projects. In this case, the funding must be equal to or greater than the cost to implement the mitigation outlined above, including costs associated with purchasing the property or easement for mitigation, and the costs associated with the long-term maintenance requirements of the mitigation measure.

Chatham Township Mitigation Plan:

If the applicant for a proposed development demonstrates to the satisfaction of the reviewing Board that on-site compliance with the stormwater performance standards as outlined in this MSWMP is not practical, the Board will entertain a request for a waiver or exemption from said standards. In order to obtain the waiver or exemption from strict compliance with the groundwater recharge, stormwater quantity and/or stormwater quality requirements as outlined in this Municipal Stormwater Management Plan and ordinances, the applicant must provide mitigation in accordance with the following:

1. A mitigation project must be implemented in the same drainage area as the proposed development. The project must provide additional groundwater recharge benefits, or protection from stormwater runoff quality and quantity from previously developed property that does not currently meet the design and performance standards outlined in the Municipal Stormwater Management Plan.

• The applicant can select a project listed in the Municipal Stormwater Management Plan to compensate for the deficit from the performance standards resulting from the proposed project. The MSWMP will be amended from time to

time to include these projects as they are identified by the various entities and programs performing land use and watershed studies including Chatham Township. The applicant, in configuring a mitigation proposal should utilize water resources information included in the Natural Resources Inventory and Conservation Elements of the municipal master plan.

• The applicant must demonstrate the ability to obtain the necessary agreements to create a project to compensate for the deficit from the performance standards resulting from the proposed project.

• The applicant must ensure the long-term maintenance of the project including the maintenance requirements under the relevant chapters of the most current version of the NJ Stormwater BMP Manual.

2. If a suitable mitigation site cannot be located in the same drainage area as the proposed development, as discussed under Option 1, the municipality may allow the applicant to provide funding to the municipality for an environmental enhancement project that has been identified in this Municipal Stormwater Management Plan as amended. The funding must be equal to or greater than the cost to implement the mitigation outlined above, including the costs associated with purchasing the property or easement for mitigation and the costs associated with the long-term maintenance requirements of the mitigation measure.

Adequate documentation must be provided by applicants for evaluation of proposals for mitigation projects. Information must include, but not be limited to the following:

1. Detailed technical justification for the waiver request, including relevant site specific soils, hydrologic, hydrogelogic, topographic and other environmental data based on in-situ testing. The information must be presented in a technical report format suitable for review by reviewing Board members and Board professionals.

2. Description of opportunities for acquisition of or deed restriction of nearby (within same drainage area) private land, preferably adjacent to State Open Waters that would be dedicated for preservation or reforestation to offset shortfall in recharge. The report must also include documentation that the waiver, if granted, will not result in near-field soil erosion or sedimentation, or negative impacts on wetlands or other critical areas.

3. Evaluation of options for retrofit of public or private property nearby (within same drainage area) with equivalent water resource value to "avoided" project.

4. Documentation that the mitigation project is sized based at a minimum on the monetary value of avoided project assuming average constraints.

5. Determination of the water resources value of the proposed mitigation project to ongoing regional or other stormwater planning must be provided.

APPENDIX A

ORDINANCE 2020-21

AN ORDINANCE OF THE TOWNSHIP OF CHATHAM, COUNTY OF MORRIS, STATE OF NEW JERSEY, REGARDING STORMWATER CONTROL

BE IT ORDAINED by the Township Committee of the Township of Chatham that the following sections are repealed and replaced as follows:

§ 30-64.3 Stormwater Control

Section I. Scope and Purpose

A. Policy Statement. Flood control, groundwater recharge, and pollutant reduction through the use of stormwater management measures, including green infrastructure Best Management Practices (GI BMPs) and nonstructural stormwater management strategies. GI BMPs and low impact development (LID) should be utilized to meet the goal of maintaining natural hydrology to reduce stormwater runoff volume, reduce erosion, encourage infiltration and groundwater recharge, and reduce pollution. GI BMPs and LID 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 subsection to establish minimum stormwater management requirements and controls for "major development," as defined in Subsection b.

C. Applicability.

(1) This subsection 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 subsection shall also be applicable to all major developments undertaken in the Township of Chatham.

D. Compatibility with other permit and Ordinance Requirements.

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

Section II. Definitions

Unless specifically defined below, words or phrases used in this article shall be interpreted so as to give them the meaning they have in common usage and to give this article its most reasonable application.

CAFRA CENTERS, CORES, OR NODES - Shall mean those areas with boundaries incorporated by reference or revised by the Department in accordance with N.J.A.C. 7:7-13.16.

CAFRA PLANNING MAP – Shall mean the map used by the Department to identify the location of Coastal Planning Areas, CAFRA centers, CAFRA cores, and CAFRA nodes. The CAFRA Planning Map is available on the Department's Geographic Information System (GIS).

COMMUNITY BASIN – Shall mean an infiltration system, sand filter designed to infiltrate, standard constructed wetland, or wet pond, established in accordance with N.J.A.C. 7:8-4.2(c)14, that is designed and constructed in accordance with the New Jersey Stormwater Best Management Practices Manual, or an alternate design, approved in accordance with N.J.A.C. 7:8-5.2(g), for an infiltration system, sand filter designed to infiltrate, standard constructed wetland, or wet pond and that complies with the requirements of this chapter.

COMPACTION — Shall mean the increase in soil bulk density.

CONTRIBUTARY DRAINAGE AREA – Shall mean the area from which stormwater runoff drains to a stormwater management measure, not including the area of the stormwater management measure itself.

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

COUNTY REVIEW AGENCY — Shall mean an agency designated by the County Board of Chosen Freeholders to review municipal stormwater management plans and implementing ordinance(s).

The County review agency may either be:

A. 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 — Shall mean the New Jersey Department of Environmental Protection.

DESIGN ENGINEER — Shall mean 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.

DESIGNATED CENTER — Shall mean a State Development and Redevelopment Plan Center as designated by the State Planning Commission such as urban, regional, town, village, or hamlet.

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

DISTURBANCE - Shall mean the placement or reconstruction of impervious surface or motor vehicle surface, or exposure and/or movement of soil or bedrock or clearing, cutting, or removing of vegetation. Milling and repaving is not considered disturbance for the purposes of this definition.

DRAINAGE AREA — Shall mean a geographic area within which stormwater, sediments, or dissolved materials drain to a particular receiving waterbody or to a particular point along a receiving waterbody.

ENVIRONMENTALLY CONSTRAINED AREA - Shall mean the following areas where the physical alteration of the land is in some way restricted, either through regulation, easement, deed restriction or ownership such as: wetlands, floodplains, threatened and endangered species sites or designated habitats, and parks and preserves. 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.

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

EMPOWERMENT NEIGHBORHOOD – Shall mean neighborhoods 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 — Shall mean the detachment and movement of soil or rock fragments by water, wind, ice or gravity.

GREEN INFRASTRUCTURE – Shall mean a stormwater management measure that manages stormwater close to its source by:

1. Treating stormwater runoff through infiltration into subsoil;
2. Treating stormwater runoff through filtration by vegetation or soil; or
3. Storing stormwater runoff for reuse.

HUC 14 or HYDROLOGIC UNIT CODE 14 – Shall mean an area within which water drains to a particular receiving surface water body, also known as a subwatershed, which is identified by a 14-digit hydrologic unit boundary designation, delineated within New Jersey by the United States Geological Survey.

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

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

LEAD PLANNING AGENCY – Shall mean one or more public entities having stormwater management planning authority designated by the regional stormwater management planning committee pursuant to N.J.A.C. 7:8-3.2, that serves as the primary representative of the committee.

MAJOR DEVELOPMENT – Shall mean an individual "development," as well as multiple developments that individually or collectively result in:

1. The disturbance of one or more acres of land since February 2, 2004;

2. The creation of one-quarter acre or more of "regulated impervious surface" since February 2, 2004;

3. The creation of one-quarter acre or more of "regulated motor vehicle surface" since March 2, 2021 {or the effective date of this ordinance, whichever is earlier}; or

4. A combination of 2 and 3 above that totals an area of one-quarter acre or more.The same surface shall not be counted twice when determining if the combination area equals one-quarter acre or more.

5. Major development includes all developments that are part of a common plan of development or sale (for example, phased residential development) that collectively or individually meet any one or more of paragraphs 1, 2, 3, or 4 above. Projects undertaken by any government agency that otherwise meet the definition of "major development" but which do not require approval under the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., are also considered "major development."

MOTOR VEHICLE -Shall mean means land vehicles propelled other than by muscular power, such as automobiles, motorcycles, autocycles, and low speed vehicles. For the purposes of this definition, motor vehicle does not include farm equipment, snowmobiles, all-terrain vehicles, motorized wheelchairs, go-carts, gas buggies, golf carts, ski-slope grooming machines, or vehicles that run only on rails or tracks.

MOTOR VEHICLE SURFACE – Shall mean any pervious or impervious surface that is intended to be used by "motor vehicles" and/or aircraft, and is directly exposed to precipitation including, but not limited to, driveways, parking areas, parking garages, roads, racetracks, and runways.

MUNICIPALITY — Shall mean any city, borough, town, township, or village.

"NEW JERSEY STORMWATER BEST MANAGEMENT PRACTICES (BMP) MANUAL" or "BMP MANUAL" – Shall mean the manual maintained by the Department providing, in part, design specifications, removal rates, calculation methods, and soil testing procedures approved by the Department as being capable of contributing to the achievement of the stormwater management standards specified in this chapter. The BMP Manual is periodically amended by the Department as necessary to provide design specifications on additional best management practices and new information on already included practices reflecting the best available current information regarding the particular practice and the Department's determination as to the ability of that best management practice to contribute to compliance with the standards contained in this chapter. Alternative stormwater management measures, removal rates, or calculation methods may be utilized, subject to any limitations specified in this chapter, provided the design engineer demonstrates to the municipality, in accordance with Section IV.F. of this ordinance and N.J.A.C. 7:8-5.2(g), that the proposed measure and its design will contribute to achievement of the design and performance standards established by this chapter.

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

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

PERSON — Shall mean any individual, corporation, company, partnership, firm, association, the Township of Chatham, 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 — Shall mean 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 — Shall mean the amount of water from precipitation that infiltrates into the ground and is not evapotranspired.

REGULATED IMPERVIOUS SURFACE – Shall mean any of the following, alone or in combination:

1. A net increase of impervious surface;

2. The total area of impervious surface collected by a new stormwater conveyance system (for the purpose of this definition, a "new stormwater conveyance system" is a stormwater conveyance system that is constructed where one did not exist immediately prior to its construction or an existing system for which a new discharge location is created);

3. The total area of impervious surface proposed to be newly collected by an existing stormwater conveyance system; and/or the total area of impervious surface collected by an existing stormwater conveyance system where the capacity of that conveyance system is increased.

REGULATED MOTOR VEHICLE SURFACE – Shall mean any of the following, alone or in combination:

1. The total area of motor vehicle surface that is currently receiving water;

2. A net increase in motor vehicle surface; and/or quality treatment either by vegetation or soil, by an existing stormwater management measure, or by treatment at a wastewater treatment plant, where the water quality treatment will be modified or removed.

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

SOIL — Shall mean all unconsolidated mineral and organic material of any origin.

STATE DEVELOPMENT AND REDEVELOPMENT PLAN METROPOLITAN PLANNING AREA (PA1) – Shall mean 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 — Shall mean 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 — Shall mean 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 MANAGEMENT BMP — Shall mean 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 — Shall mean any structural or nonstructural strategy, practice, technology, process, program, or other method intended to control or reduce stormwater runoff and associated pollutants, or to induce or control the infiltration of groundwater recharge of stormwater or to eliminate illicit or illegal non-stormwater discharges into stormwater conveyances.

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

STORMWATER MANAGEMENT PLANNING AGENCY – Shall mean a public body authorized by legislation to prepare stormwater management plans.

STORMWATER MANAGEMENT PLANNING AREA – Shall mean the geographic area for which a stormwater management planning agency is authorized to prepare stormwater management plans, or a specific portion of that area identified in a stormwater management plan prepared by that agency.

TIDAL FLOOD HAZARD AREA – Shall mean a flood hazard area in which the flood elevation resulting from the two-, 10-, or 100-year storm, as applicable, is governed by tidal flooding from the Atlantic Ocean. Flooding in a tidal flood hazard area may be contributed to, or influenced by, stormwater runoff from inland areas, but the depth of flooding generated by the tidal rise and fall of the Atlantic Ocean is greater than flooding from any fluvial sources. In some situations, depending upon the extent of the storm surge from a particular storm event, a flood hazard area may be tidal in the 100-year storm, but fluvial in more frequent storm events.

URBAN COORDINATING COUNCIL EMPOWERMENT NEIGHBORHOOD – Shall mean a neighborhood given priority access to State resources through the New Jersey Redevelopment Authority.

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

URBAN REDEVELOPMENT AREA - Shall be defined as previously developed portions of areas:

1. Delineated on the State Plan Policy Map (SPPM) as the Metropolitan Planning Area (PA1), Designated Centers, Cores or Nodes;
2. Designated as CAFRA Centers, Cores or Nodes;
3. Designated as Urban Enterprise Zones; and
4. Designated as Urban Coordinating Council Empowerment Neighborhoods.

WATER CONTROL STRUCTURE – Shall mean a structure within, or adjacent to, a water, which intentionally or coincidentally alters the hydraulic capacity, the flood elevation resulting from the two-, 10-, or 100-year storm, flood hazard area limit, and/or floodway limit of the water. Examples of a water control structure may include a bridge, culvert, dam, embankment, ford (if above grade), retaining wall, and weir.

WATERS OF THE STATE — Shall mean the ocean and its estuaries, all springs, streams, wetlands, and bodies of surface or groundwater, whether natural or artificial, within the boundaries of the State of New Jersey or subject to its jurisdiction.

WETLANDS OR WETLAND —Shall mean 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.

SECTION III. Design and performance standards for stormwater management measures.

A. Stormwater management measures for major development shall be designed to provide erosion control, groundwater recharge, stormwater runoff quantity control, and stormwater runoff quality treatment as follows:

   1. The minimum standards for erosion control are those established under the Soil and Sediment Control Act, N.J.S.A. 4:24-39 et seq., and implementing rules at N.J.A.C. 2:90.

   2. The minimum standards for groundwater recharge, stormwater quality, and stormwater runoff quantity shall be met by incorporating green infrastructure.

B. The standards in this subsection 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.

Note: Alternative standards shall provide at least as much protection from stormwater-related loss of groundwater recharge, stormwater quantity and water quality impacts of major development projects as would be provided under the standards in N.J.A.C. 7:8.

SECTION IV. Stormwater Management Requirements for Major Development

A. The development shall incorporate a maintenance plan for the stormwater management measures incorporated into the design of a major development in accordance with Section X.

B. Stormwater management measures shall avoid adverse impacts of concentrated flow on habitat for threatened and endangered species as documented in the Department's 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 muhlnebergi
(bog turtle).

C. The following linear development projects are exempt from the groundwater recharge, stormwater runoff quantity, and stormwater runoff quality requirements of Sections IV. P, Q & R:

(1) The construction of an underground utility line provided that the disturbed areas are revegetated upon completion;
(2) The construction of an aboveground utility line provided that the existing conditions are maintained to the maximum extent practicable; and
(3) The construction of a public pedestrian access, such as a sidewalk or trail with a maximum width of 14 feet, provided that the access is made of permeable material.

D. A waiver from strict compliance from the groundwater recharge, stormwater runoff quantity, and stormwater runoff quality requirements of Sections IV. P, Q & R may be obtained for the enlargement of an existing public roadway or railroad; or the construction or enlargement of a public pedestrian access, provided that the following conditions are met:

(1) The applicant demonstrates that there is a public need for the project that cannot be accomplished by any other means;

(2) The applicant demonstrates through an alternatives analysis, that through the use of nonstructural and structural stormwater management strategies and measures, the option selected complies with the requirements of Sections IV. P, Q & R to the maximum extent practicable;

(3) The applicant demonstrates that, in order to meet the requirements of Sections IV. P, Q & R, 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 Section IV.D.3 above within the upstream drainage area of the receiving stream, that would provide additional opportunities to mitigate the requirements of Sections IV. P, Q & R that were not achievable onsite.

E. Tables 1 through 3 below summarize the ability of stormwater best management practices identified and described in the New Jersey Stormwater Best Management Practices

Manual to satisfy the green infrastructure, groundwater recharge, stormwater runoff quality and stormwater runoff quantity standards specified in Section IV. O, P, Q and R. When designed in accordance with the most current version of the New Jersey Stormwater Best Management Practices Manual, the stormwater management measures found at N.J.A.C. 7:8-5.2 (f) Tables 5-1, 5-2 and 5-3 and listed below in Tables 1, 2 and 3 are presumed to be capable of providing stormwater controls for the design and performance standards as outlined in the tables below. Upon amendments of the New Jersey Stormwater Best Management Practices to reflect additions or deletions of BMPs meeting these standards, or changes in the presumed performance of BMPs designed in accordance with the New Jersey Stormwater BMP Manual, the Department shall publish in the New Jersey Registers a notice of administrative change revising the applicable table. The most current version of the BMP Manual can be found on the Department's website at: https://njstormwater.org/bmp_manual2.htm.

F. Where the BMP tables in the NJ Stormwater Management Rule are different due to updates or amendments with the tables in this ordinance the BMP Tables in the Stormwater Management rule at N.J.A.C. 7:8-5.2(f) shall take precedence.

G. An alternative stormwater management measure, alternative removal rate, and/or alternative method to calculate the removal rate may be used if the design engineer demonstrates the capability of the proposed alternative stormwater management measure and/or the validity of the alternative rate or method to the municipality. A copy of any approved alternative stormwater management measure, alternative removal rate, and/or alternative method to calculate the removal rate shall be provided to the Department in accordance with Section IV.B. Alternative stormwater management measures may be used to satisfy the requirements at Section IV.O only if the measures meet the definition of green infrastructure at Section II. Alternative stormwater management measures that function in a similar manner to a BMP listed at Section O.2 are subject to the contributory drainage area limitation specified at Section O.2 for that similarly functioning BMP. Alternative stormwater management measures approved in accordance with this subsection that do not function in a similar manner to any BMP listed at Section O.2 shall have a contributory drainage area less than or equal to 2.5 acres, except for alternative stormwater management measures that function similarly to cisterns, grass swales, green roofs, standard constructed wetlands, vegetative filter strips, and wet ponds, which are not subject to a contributory drainage area limitation. Alternative measures that function similarly to standard constructed wetlands or wet ponds shall not be used for compliance with the stormwater runoff quality standard unless a variance in accordance with N.J.A.C. 7:8-4.6 or a waiver from strict compliance in accordance with Section IV.D is granted from Section IV.O.

H. Whenever the stormwater management design includes one or more BMPs that will infiltrate stormwater into subsoil, the design engineer shall assess the hydraulic impact on the groundwater table and design the site, so as to avoid adverse hydraulic impacts. Potential adverse hydraulic impacts include, but are not limited to, exacerbating a naturally or seasonally high water table, so as to cause surficial ponding, flooding of basements, or interference with the proper operation of subsurface sewage disposal systems or other subsurface structures within the zone of influence of the groundwater mound, or interference with the proper functioning of the stormwater management measure itself.

I. Design standards for stormwater management measures are as follows:

1. Stormwater management measures shall be designed to take into account the existing site conditions, including, but not limited to, 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. 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 one-third the width of the diameter of the orifice or one-third 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 VIII.C;

3. 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. Stormwater management BMPs shall be designed to meet the minimum safety standards for stormwater management BMPs at Section VIII; and

5. The size of the orifice at the intake to the outlet from the stormwater management BMP shall be a minimum of two and one-half inches in diameter.

J. Manufactured treatment devices may be used to meet the requirements of this subchapter, provided the pollutant removal rates are verified by the New Jersey Corporation for Advanced Technology and certified by the Department. Manufactured treatment devices that do not meet the definition of green infrastructure at Section II may be used only under the circumstances described at Section IV.O.4.

K. Any application for a new agricultural development that meets the definition of major development at Section II shall be submitted to the Soil Conservation District for review and approval in accordance with the requirements at Sections IV.O, P, Q and R and any applicable Soil Conservation District guidelines for stormwater runoff quantity and erosion control. For purposes of this subsection, "agricultural development" means land uses normally associated with the production of food, fiber, and livestock for sale. Such uses do not include the development of land for the processing or sale of food and the manufacture of agriculturally related products.

L. If there is more than one drainage area, the groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards at Section IV.P, Q and R shall be met in each drainage area, unless the runoff from the drainage areas converge onsite and no adverse environmental impact would occur as a result of compliance with any one or more of the individual standards being determined utilizing a weighted average of the results achieved for that individual standard across the affected drainage areas.

M. Any stormwater management measure authorized under the municipal stormwater management plan or ordinance shall be reflected in a deed notice recorded in the {insert Office of the County Clerk or the registrar of deeds and mortgages of the county in which the development, project, project site, or mitigation area containing the stormwater management measure is located, as appropriate, to the municipality}. A form of deed notice shall be submitted to the A form of deed notice shall be submitted to the municipality for approval prior to filing. The deed notice shall contain a description of the stormwater management measure(s) used to meet the green infrastructure, groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards at Section IV.O, P, Q and R and shall identify the location of the stormwater management measure(s) in NAD 1983 State Plane New Jersey FIPS 2900 US Feet or Latitude and Longitude in decimal degrees. The deed notice shall also reference the maintenance plan required to be recorded upon the deed pursuant to Section X.B.5. Prior to the commencement of construction, proof that the above required deed notice has been filed shall be submitted to the municipality. Proof that the required information has been recorded on the deed shall be in the form of either a copy of the complete recorded document or a receipt from the clerk or other proof of recordation provided by the recording office. However, if the initial proof provided to the municipality is not a copy of the complete recorded document, a copy of the complete recorded document shall be provided to the municipality within 180 calendar days of the authorization granted by the municipality.

N. A stormwater management measure approved under the municipal stormwater management plan or ordinance may be altered or replaced with the approval of the municipality, if the municipality determines that the proposed alteration or replacement meets the design and performance standards pursuant to Section d of this ordinance and provides the same level of stormwater management as the previously approved stormwater management measure that is being altered or replaced. If an alteration or replacement is approved, a revised deed notice shall be submitted to the municipality for approval and subsequently recorded with the {insert appropriate Office of the County Clerk or the registrar of deeds and mortgages, as applies} and shall contain a description and location of the stormwater management measure, as well as reference to the maintenance plan, in accordance with M above. Prior to the commencement of construction, proof that the above required deed notice has been filed shall be submitted to the municipality in accordance with M above.

O. Green Infrastructure Standards

1. This subsection specifies the types of green infrastructure BMPs that may be used to satisfy the groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards.

2. To satisfy the groundwater recharge and stormwater runoff quality standards at Section IV.P and Q, the design engineer shall utilize green infrastructure BMPs identified in Table 1 at Section IV.F. and/or an alternative stormwater management measure approved in accordance with Section IV.G. The following green infrastructure BMPs are subject to the following maximum contributory drainage area limitations:

3. To satisfy the stormwater runoff quantity standards at Section IV.R, the design engineer shall utilize BMPs from Table 1 or from Table 2 and/or an alternative stormwater management measure approved in accordance with Section IV.G.

4. If a variance in accordance with N.J.A.C. 7:8-4.6 or a waiver from strict compliance in accordance with Section IV.D is granted from the requirements of this subsection, then BMPs from Table 1, 2, or 3, and/or an alternative stormwater management measure approved in accordance with Section IV.G may be used to meet the groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards at Section IV.P, Q and R.

5. For separate or combined storm sewer improvement projects, such as sewer separation, undertaken by a government agency or public utility (for example, a sewerage company), the requirements of this subsection shall only apply to areas owned in fee simple by the government agency or utility, and areas within a right-of-way or easement held or controlled by the government agency or utility; the entity shall not be required to obtain additional property or property rights to fully satisfy the requirements of this subsection. Regardless of the amount of area of a separate or combined storm sewer improvement project subject to the green infrastructure requirements of this subsection, each project shall fully comply with the applicable groundwater recharge, stormwater runoff quality control, and stormwater runoff quantity standards at Section IV.P, Q and R, unless the project is granted a waiver from strict compliance in accordance with Section IV.D.

Table 1
Green Infrastructure BMPs for Groundwater Recharge, Stormwater Runoff Quality, and/or Stormwater Runoff Quantity

Best Management Practice	Stormwater Runoff Quality TSS Removal Rate (percent)	Stormwater Runoff Quantity	Groundwater Recharge	Minimum Separation from Seasonal High Water Table (feet)
Cistern	0	Yes	No	--
Dry Well[a]	0	No	Yes	2
Grass Swale	50 or less	No	No	2[e] 1[f]
Green Roof	0	Yes	No	--
Manufactured Treatment Device[a] [g]	50 or 80	No	No	Dependent upon the device
Pervious Paving System[a]	80	Yes	Yes[b] No[c]	2[b] 1[c]
Small-Scale Bioretention Basin[a]	80 or 90	Yes	Yes[b] No[c]	2[b] 1[c]
Small-Scale Infiltration Basin[a]	80	Yes	Yes	2
Small-Scale Sand Filter	80	Yes	Yes	2
Vegetative Filter Strip	60-80	No	No	--

(Notes corresponding to annotations [a] through [g] are found on Page D-15)

Table 2
Green Infrastructure BMPs for Stormwater Runoff Quantity (or for Groundwater Recharge and/or Stormwater Runoff Quality with a Waiver or Variance from N.J.A.C. 7:8-5.3)

Best Management Practice	Stormwater Runoff Quality TSS Removal Rate (percent)	Stormwater Runoff Quantity	Groundwater Recharge	Minimum Separation from Seasonal High Water Table (feet)
Bioretention System	80 or 90	Yes	Yes[b] No[c]	2[b] 1[c]
Infiltration Basin	80	Yes	Yes	2
Sand Filter[b]	80	Yes	Yes	2
Standard Constructed Wetland	90	Yes	No	N/A
Wet Pond[d]	50-90	Yes	No	N/A

(Notes corresponding to annotations [b] through [d] are found on Page D-15)

Table 3 BMPs for Groundwater Recharge, Stormwater Runoff Quality, and/or Stormwater Runoff Quantity only with a Waiver or Variance from N.J.A.C. 7:8-5.3				
Best Management Practice	**Stormwater Runoff Quality TSS Removal Rate (percent)**	**Stormwater Runoff Quantity**	**Groundwater Recharge**	**Minimum Separation from Seasonal High Water Table (feet)**
Blue Roof	0	Yes	No	N/A
Extended Detention Basin	40-60	Yes	No	1
Manufactured Treatment Device[(h)]	50 or 80	No	No	Dependent upon the device
Sand Filter[(c)]	80	Yes	No	1
Subsurface Gravel Wetland	90	No	No	1
Wet Pond	50-90	Yes	No	N/A

Notes to Tables 1, 2, and 3:

(a) subject to the applicable contributory drainage area limitation specified at Section IV.O.2;
(b) designed to infiltrate into the subsoil;
(c) designed with underdrains;
(d) designed to maintain at least a 10-foot wide area of native vegetation along at least 50 percent of the shoreline and to include a stormwater runoff retention component designed to capture stormwater runoff for beneficial reuse, such as irrigation;
(e) designed with a slope of less than two percent;
(f) designed with a slope of equal to or greater than two percent;
(g) manufactured treatment devices that meet the definition of green infrastructure at Section II;
(h) manufactured treatment devices that do not meet the definition of green infrastructure at Section II.

Best Management Practice	**Maximum Contributory Drainage Area**
Dry Well	1 acre
Manufactured Treatment Device	2.5 acres
Pervious Pavement Systems	Area of additional inflow cannot exceed three times the area occupied by the BMP
Small-scale Bioretention Systems	2.5 acres
Small-scale Infiltration Basin	2.5 acres
Small-scale Sand Filter	2.5 acres

P. Groundwater Recharge Standards

1. This subsection contains the minimum design and performance standards for groundwater recharge as follows:

2. The design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at Section V, either:

i. Demonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measures maintain 100 percent of the average annual pre-construction groundwater recharge volume for the site; or

ii. Demonstrate through hydrologic and hydraulic analysis that the increase of stormwater runoff volume from pre-construction to post-construction for the 2-year storm is infiltrated.

3. This groundwater recharge requirement does not apply to projects within the "urban redevelopment area," or to projects subject to 4 below.

4. The following types of stormwater shall not be recharged:

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

ii. 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.

Q. Stormwater Runoff Quality Standards

1. This subsection contains the minimum design and performance standards to control stormwater runoff quality impacts of major development. Stormwater runoff quality standards are applicable when the major development results in an increase of one-quarter acre or more of regulated motor vehicle surface.

2. Stormwater management measures shall be designed to reduce the postconstruction load of total suspended solids (TSS) in stormwater runoff generated from the water quality design storm as follows:

i. Eighty percent TSS removal of the anticipated load, expressed as an annual average shall be achieved for the stormwater runoff from the net increase of motor vehicle surface.

ii. If the surface is considered regulated motor vehicle surface because the water quality treatment for an area of motor vehicle surface that is currently receiving water quality treatment either by vegetation or soil, by an existing stormwater management measure, or by treatment at a wastewater treatment plant is to be modified or removed, the project shall maintain or increase the existing TSS removal of the anticipated load expressed as an annual average.

3. The requirement to reduce TSS does not apply to any stormwater runoff in a discharge regulated under a numeric effluent limitation for TSS imposed under the New Jersey Pollutant Discharge Elimination System (NJPDES) rules, N.J.A.C. 7:14A, or in a discharge specifically exempt under a NJPDES permit from this

requirement. Every major development, including any that discharge into a combined sewer system, shall comply with 2 above, unless the major development is itself subject to a NJPDES permit with a numeric effluent limitation for TSS or the NJPDES permit to which the major development is subject exempts the development from a numeric effluent limitation for TSS.

4. 4. 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 4, below. The calculation of the volume of runoff may take into account the implementation of stormwater management measures.

Table 4 - Water Quality Design Storm Distribution

Time (Minutes)	Cumulative Rainfall (Inches)	Time (Minutes)	Cumulative Rainfall (Inches)	Time (Minutes)	Cumulative Rainfall (Inches)
1	0.00166	41	0.1728	81	1.0906
2	0.00332	42	0.1796	82	1.0972
3	0.00498	43	0.1864	83	1.1038
4	0.00664	44	0.1932	84	1.1104
5	0.00830	45	0.2000	85	1.1170
6	0.00996	46	0.2117	86	1.1236
7	0.01162	47	0.2233	87	1.1302
8	0.01328	48	0.2350	88	1.1368
9	0.01494	49	0.2466	89	1.1434
10	0.01660	50	0.2583	90	1.1500
11	0.01828	51	0.2783	91	1.1550
12	0.01996	52	0.2983	92	1.1600
13	0.02164	53	0.3183	93	1.1650
14	0.02332	54	0.3383	94	1.1700
15	0.02500	55	0.3583	95	1.1750
16	0.03000	56	0.4116	96	1.1800
17	0.03500	57	0.4650	97	1.1850
18	0.04000	58	0.5183	98	1.1900
19	0.04500	59	0.5717	99	1.1950
20	0.05000	60	0.6250	100	1.2000
21	0.05500	61	0.6783	101	1.2050
22	0.06000	62	0.7317	102	1.2100
23	0.06500	63	0.7850	103	1.2150
24	0.07000	64	0.8384	104	1.2200
25	0.07500	65	0.8917	105	1.2250
26	0.08000	66	0.9117	106	1.2267
27	0.08500	67	0.9317	107	1.2284
28	0.09000	68	0.9517	108	1.2300
29	0.09500	69	0.9717	109	1.2317
30	0.10000	70	0.9917	110	1.2334
31	0.10660	71	1.0034	111	1.2351
32	0.11320	72	1.0150	112	1.2367
33	0.11980	73	1.0267	113	1.2384
34	0.12640	74	1.0383	114	1.2400
35	0.13300	75	1.0500	115	1.2417
36	0.13960	76	1.0568	116	1.2434
37	0.14620	77	1.0636	117	1.2450
38	0.15280	78	1.0704	118	1.2467
39	0.15940	79	1.0772	119	1.2483
40	0.16600	80	1.0840	120	1.2500

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

   $R = A + B – (A \times B) / 100,$

Where
R = total TSS Percent Load Removal from application of both BMPs, and
A = the TSS Percent Removal Rate applicable to the first BMP
B = the TSS Percent Removal Rate applicable to the second BMP.

6. Stormwater management measures shall also be designed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticipated load from the developed site in stormwater runoff generated from the water quality design storm. In achieving reduction of nutrients to the maximum extent feasible, the design of the site shall include green infrastructure BMPs that optimize nutrient removal while still achieving the performance standards in Section IV.P, Q and R.

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

8. The Flood Hazard Area Control Act Rules at N.J.A.C. 7:13-4.1(c)1 establish 300-foot riparian zones along Category One waters, as designated in the Surface Water Quality Standards at N.J.A.C. 7:9B, and certain upstream tributaries to Category One waters. A person shall not undertake a major development that is located within or discharges into a 300-foot riparian zone without prior authorization from the Department under N.J.A.C. 7:13.

9. Pursuant to the Flood Hazard Area Control Act Rules at N.J.A.C. 7:13-11.2(j)3.i, runoff from the water quality design storm that is discharged within a 300-foot riparian zone shall be treated in accordance with this subsection to reduce the post-construction load of total suspended solids by 95 percent of the anticipated load from the developed site, expressed as an annual average.

10. This stormwater runoff quality standards do not apply to the construction of one individual single-family dwelling, provided that it is not part of a larger development or subdivision that has received preliminary or final site plan approval prior to December 3, 2018, and that the motor vehicle surfaces are made of permeable material(s) such as gravel, dirt, and/or shells.

R. Stormwater Runoff Quantity Standards

1. This subsection contains the minimum design and performance standards to control stormwater runoff quantity impacts of major development.

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

   i. Demonstrate through hydrologic and hydraulic analysis that for stormwater leaving the site, post-construction runoff hydrographs for the 2-, 10-, and 100-year storm events do not exceed, at any point in time, the pre-construction runoff hydrographs for the same storm events;

   ii. Demonstrate through hydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the 2-, 10- and 100-year storm events and that the increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site. This analysis shall include the analysis of impacts of existing land uses and projected land uses assuming full development under existing zoning and land use ordinances in the drainage area;

   iii. Design stormwater management measures so that the post-construction peak runoff rates for the 2-, 10- and 100-year storm events are 50, 75 and 80 percent, respectively, of the pre-construction peak runoff rates. The percentages apply only to the post-construction stormwater runoff that is

attributable to the portion of the site on which the proposed development or project is to be constructed; or

iv. In tidal flood hazard areas, stormwater runoff quantity analysis in accordance with 2.i, ii and iii above is required unless the design engineer demonstrates through hydrologic and hydraulic analysis that the increased volume, change in timing, or increased rate of the stormwater runoff, or any combination of the three will not result in additional flood damage below the point of discharge of the major development. No analysis is required if the stormwater is discharged directly into any ocean, bay, inlet, or the reach of any watercourse between its confluence with an ocean, bay, or inlet and downstream of the first water control structure.

3. The stormwater runoff quantity standards shall be applied at the site's boundary to each abutting lot, roadway, watercourse, or receiving storm sewer system.

SECTION V. 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:

(i.) The USDA Natural Resources Conservation Service (NRCS) methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph, as described in Chapters 7, 9, 10, 15 and 16 Part 630, Hydrology National Engineering Handbook, incorporated herein by reference as amended and supplemented. This methodology is additionally described in Technical Release 55 - Urban Hydrology for Small Watersheds (TR-55), dated June 1986, incorporated herein by reference as amended and supplemented. Information regarding the methodology is available from the Natural Resources Conservation Service website at: https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044171.pdf or at United States Department of Agriculture Natural Resources Conservation Service, 220 Davison Avenue, Somerset, New Jersey 08873; or

(ii.) The Rational Method for peak flow and the Modified Rational Method for hydrograph computations. The rational and modified rational methods are described in "Appendix A-9 Modified Rational Method" in the Standards for Soil Erosion and Sediment Control in New Jersey, January 2014. This document is available from the State Soil Conservation Committee or any of the Soil Conservation Districts listed at N.J.A.C. 2:90-1.3(a)3. The location, address, and telephone number for each Soil Conservation District is available from the State Soil Conservation Committee, PO Box 330, Trenton, New Jersey 08625. The document is also available at: http://www.nj.gov/agriculture/divisions/anr/pdf/2014NJSoilErosionControlStandardsComplete.pdf.

(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 Section V.A.1.i and the Rational and Modified Rational Methods at Section V.A.1.ii 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 pre-construction 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 pervious and impervious surfaces separately to accurately compute the rates and volume of stormwater runoff from the site. To calculate runoff from unconnected impervious cover, urban impervious area modifications as described in the NRCS Technical Release 55 - Urban Hydrology for Small Watersheds and other methods may be employed.

(5.) If the invert of the outlet structure of a stormwater management measure is below the flood hazard design flood elevation as defined at N.J.A.C. 7:13, the design engineer shall take into account the effects of tail water in the design of structural stormwater management measures.

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

The New Jersey Geological Survey Report GSR-32 A Method for Evaluating Ground-Water Recharge Areas in New Jersey, incorporated herein by reference as amended and supplemented Information regarding the methodology is available from the New Jersey Stormwater Best Management Practices Manual; at the New Jersey Geological Survey website at:
https://www.nj.gov/dep/njgs/pricelst/gsreport/gsr32.pdf
or at New Jersey Geological and Water Survey, 29 Arctic Parkway, PO Box 420 Mail Code 29-01, Trenton, New Jersey 08625-0420.

SECTION VI. Sources for Technical Guidance.

A. Technical guidance for stormwater management measures can be found in the documents listed below, which are available to download from the Department's website at:
http://www.nj.gov/dep/stormwater/bmp_manual2.htm
.

(1) Guidelines for stormwater management measures are contained in the New Jersey Stormwater Best Management Practices Manual, as amended and supplemented. Information is provided on stormwater management measures such as, but not limited to, those listed in Tables 1, 2, and 3.

(2) Additional maintenance guidance is available on the Department's website at: https://www.njstormwater.org/maintenance_guidance.htm .

B. Submissions required for review by the Department should be mailed to: The Division of Water Quality, New Jersey Department of Environmental Protection, Mail Code 401-02B, PO Box 420, Trenton, New Jersey 08625-0420.

(1) The "Standards for Soil Erosion and Sediment Control in New Jersey" promulgated by the State Soil Conservation Committee and incorporated into N.J.A.C. 2:90. Copies of these standards may be obtained by contacting the State Soil Conservation Committee or any of the Soil Conservation Districts listed in N.J.A.C. 2:90-1.3(a)4. The location, address, and telephone number of each Soil Conservation District may be obtained from the State Soil Conservation Committee, P.O. Box 330, Trenton, New Jersey 08625; (609) 292-5540;

(2) The Rutgers Cooperative Extension Service, (732) 932-9306; and

(3) The Soil Conservation Districts listed in N.J.A.C. 2:90-1.3(a)4. The location, address, and telephone number of each Soil Conservation District may be obtained from the State Soil Conservation Committee, P.O. Box 330, Trenton, New Jersey, 08625, (609) 292-5540.

SECTION VII. Solids and Floatable Materials Control Standards

A. Site design features identified under Section IV.F above, or alternative designs in accordance with Section IVG above, to prevent discharge of trash and debris from drainage systems shall comply with the following standard to control passage of solid and floatable materials through storm drain inlets. For purposes of this paragraph, "solid and floatable materials" means sediment, debris, trash, and other floating, suspended, or settleable solids. For exemptions to this standard see Section VII.A.2 below.

1. Design engineers shall use one 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:

   i. 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; or

   ii. A different grate, if each individual clear space in that grate has an area of no more than seven (7.0) square inches, or is no greater than 0.5 inches across the smallest dimension. Examples of grates subject to this standard include grates in grate inlets, the grate portion (non-curb-opening portion) of combination inlets, grates on storm sewer manholes, ditch grates, trench grates, and grates of spacer bars in slotted drains. Examples of ground surfaces include surfaces of roads (including bridges), driveways, parking areas, bikeways, plazas, sidewalks, lawns, fields, open channels, and stormwater system floors used to collect stormwater from the surface into a storm drain or surface water body.

   iii. For curb-opening inlets, including curb-opening inlets in combination inlets, the clear space in that curb opening, or each individual clear space if the curb opening has two or more clear spaces, shall have an area of no more than seven (7.0) square inches, or be no greater than two (2.0) inches across the smallest dimension.

2. The standard in A.1. above does not apply:

   i. Where each individual clear space in the curb opening in existing curb-opening inlet does not have an area of more than nine (9.0) square inches;

   ii. Where the municipality agrees that the standards would cause inadequate hydraulic performance that could not practicably be overcome by using additional or larger storm drain inlets;

   iii. Where flows from the water quality design storm as specified in N.J.A.C. 7:8 are conveyed through any device (e.g., end of pipe netting facility, manufactured treatment device, or a catch basin hood) that is designed, at a minimum, to prevent delivery of all solid and floatable materials that could not pass through one of the following:

      a. A rectangular space four and five-eighths (4.625) inches long and one and one-half (1.5) inches wide (this option does not apply for outfall netting facilities); or

      b. A bar screen having a bar spacing of 0.5 inches.

      Note that these exemptions do not authorize any infringement of requirements in the Residential Site Improvement Standards for bicycle safe grates in new residential development (N.J.A.C. 5:21-4.18(b)2 and 7.4(b)1).

   iv. Where flows are conveyed through a trash rack that has parallel bars with one-inch (1 inch) spacing between the bars, to the elevation of the Water Quality Design Storm as specified in N.J.A.C. 7:8; or

   v. 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.

SECTION VIII. Safety Standards for Stormwater Management Basins.

A. This paragraph sets forth requirements to protect public safety through the proper design and operation of stormwater management BMPs. This section applies to any new stormwater management BMP.

B. The provisions of this section are not intended to preempt more stringent municipal or county safety requirements for new or existing stormwater management BMPs. Municipal and county stormwater management plans and ordinances may, pursuant to their authority, require existing stormwater management BMPs to be retrofitted to meet one or more of the safety standards in Section VIII.C.1, VIII.C.2, and VIII.C.3 for trash racks, overflow grates, and escape provisions at outlet structures.

C. 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 BMPs to ensure proper functioning of the BMP outlets in accordance with the following:

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

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

iii. 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.

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

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

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

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

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

(3) Stormwater management BMPs shall include escape provisions as follows:

i. If a stormwater management BMP has an outlet structure, escape provisions shall be incorporated in or on the structure. Escape provisions include the installation of permanent ladders, steps, rungs, or other features that provide easily accessible means of egress from stormwater management BMPs. With the prior approval of the municipality pursuant to H.C, a free-standing outlet structure may be exempted from this requirement;

ii. Safety ledges shall be constructed on the slopes of all new stormwater management BMPs 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. See Subsection h4 for an illustration of safety ledges in a stormwater management BMP; and.

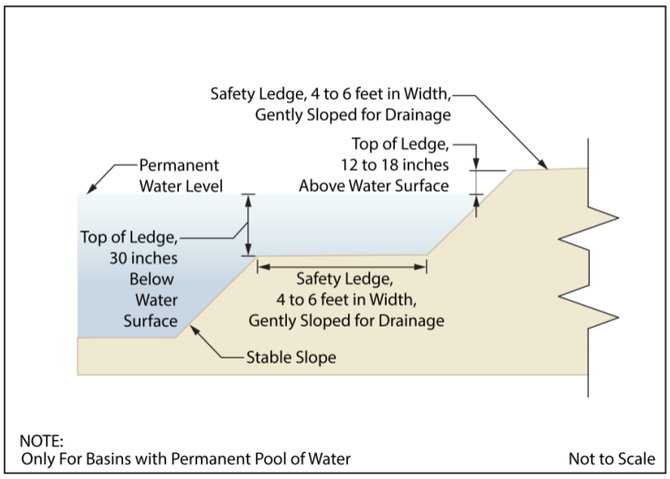
iii. In new stormwater management BMPs, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than three horizontal to one vertical.

D. Variance or Exemption from Safety Standards.

A variance or exemption from the safety standards for stormwater management BMPs 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.

E. Safety Ledge Illustration

Elevation View – Basin Safety Ledge Configuration:



SECTION IX. 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 subsection, the applicant shall submit all of the required components of the Checklist for the Site Development Stormwater Plan at Subsection i3 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 subsection.

3. The applicant shall submit 10 copies of the materials listed in the checklist for site development stormwater plans in accordance with Subsection i3 of this subsection.

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 subsection.

C. Site Development Stormwater Plan 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 flood plains along with their appropriate buffer strips, marshlands and other wetlands, pervious or vegetative surfaces, existing man-made structures, roads, bearing and distances of property lines, and significant natural and manmade features not otherwise shown.

(2) Environmental Site Analysis.

A written and graphic description of the natural and man-made features of the site and its environs. This description should include a discussion of soil conditions, slopes, wetlands, waterways and vegetation on the site. Particular attention should be given to unique, unusual, or environmentally sensitive features and to those that provide particular opportunities or constraints for development.

(3) Project Description and Site Plan(s).

A map (or maps) at the scale of the topographical base map indicating the location of existing and proposed buildings, roads, parking areas, utilities, structural facilities for stormwater management and sediment control, and other permanent structures. The map(s) shall also clearly show areas where alterations occur in the natural terrain and cover, including lawns and other landscaping, and seasonal high 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 Subsections 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.

(5) Stormwater Management Facilities Map.

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

i. 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.

ii. 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.

i. Comprehensive hydrologic and hydraulic design calculations for the predevelopment and post- development conditions for the design storms specified in Subsection d of this subsection.

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

(7) Maintenance and Repair Plan.

The design and planning of the stormwater management facility shall meet the maintenance requirements of Subsection X.

(8) Waiver from Submission Requirements. The municipal official or board reviewing an application under this subsection may, in consultation with the municipal engineer, waive submission of any of the requirements in Sections IX.C.1 through IX.C.6 of this subsection when it can be demonstrated that the information requested is impossible to obtain or it would create a hardship on the applicant to obtain and its absence will not materially affect the review process.

SECTION X. Maintenance and Repair.

A. Applicability.

Projects subject to review pursuant to Section I.C of this chapter shall comply with the requirements of Section X.B and X.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). The plan shall contain information on BMP location, design, ownership, maintenance tasks and frequencies, and other details as specified in Chapter 8 of the NJ BMP Manual, as well as the tasks specific to the type of BMP, as described in the applicable chapter containing design specifics.

(3) If the maintenance plan identifies a person other than the property owner (for example, a developer, a public agency or homeowners' association) as having the responsibility for maintenance, the plan shall include documentation of such person's or entity's agreement to assume this responsibility, or of the owner's obligation to dedicate a stormwater management facility to such person under an applicable ordinance or regulation.

(4) 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. The individual property owner may be assigned incidental tasks, such as weeding of a green infrastructure BMP, provided the individual agrees to assume these tasks; however, the individual cannot be legally responsible for all of the maintenance required.

(5) If the person responsible for maintenance identified under Section X.B.3 above is not a public agency, the maintenance plan and any future revisions based on Section X.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.

(6) 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 non-vegetated linings.

(7) The person responsible for maintenance identified under Section X.B.3 above shall perform all of the following requirements:

i. 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;

ii. evaluate the effectiveness of the maintenance plan at least once per year and adjust the plan and the deed as needed; and

iii. 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 Section X.B.6 and B.7 above.

(8) The requirements of Section X.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, subject to all applicable municipal stormwater general permit conditions, as issued by the Department.

(9) 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 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. Nonpayment of such bill may result in a lien on the property.

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.

SECTION XI. Violations and penalties. [Amended at time of adoption of Code (see Ch. 1, General Provisions, Art. III)]

Any person who erects, constructs, alters, repairs, converts, maintains, or uses any building, structure or land in violation of this part shall be subject, upon conviction, to the penalties provided in Chapter 1, Article II, General Penalty. Each violation shall constitute a separate offense.

SEXTION XII. Effective Date

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

SECTION XIII. Severability

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

Introduced: October 22, 2020

Adopted: November 12, 2020
Attest:

Gregory J. LaConte, Clerk

TOWNSHIP OF CHATHAM, COUNTY OF MORRIS, STATE OF NEW JERSEY

BY: Michael J. Kelly
Michael J. Kelly, Mayor

APPENDIX B

Parcels Contributing to Realistic Development Potential

Vacant Parcels Outside SSA Contributing to Realistic Development Potential (RDP)

MAP ID	Block	Lot	GIS Acres	Prop Code	PropLoc	Zoning	OwnName	SSA	Constrained Acres	Developbable Area	6 Units/Acre	20% set aside
1	48.21	181.01	2.139	3B	GREEN VILLAGE RD REAR	R-1	DE POORTERE, ROBERT E & MAUREEN	N	1.62	0.519	3.114	0
2	63	4	1.144	1	RIVER RD	R-2	O HANLON, CAROL & COOK, JOANNE	N	0.54	0.604	3.624	0
3	139	3.02	1.813	1	SPRING VALLEY RD	R-1	PASTERNAK, BLASE & IZA	N	1.183	0.63	3.78	0
4	48.21	181	1.374	3B	GREEN VILLAGE RD REAR	R-1	DE POORTERE, ROBERT E & MAUREEN	N	0.7	0.674	4.044	0
5	48.2	188	14.727	1	BRITTEN RD REAR	R-1	MURPHY, DONALD A & ELIZA R	N	13.847	0.88	5.28	1
6	48.21	180	1.935	3B	533 GREEN VILLAGE RD	R-1A	FERBER, VIRGINIA B	N	1.04	0.895	5.37	1
7	48.21	165.04	3.728	1	GREEN VILLAGE RD	R-3	MILLER, DANIEL S	N	2.63	1.098	6.588	1
8	139	15	3.206	1	10 LOANTAKA LN SO	R-1	PAPATHOMAS, JAMES ETAL	N	2.05	1.156	6.936	1
9	48.19	157	10.512	1	BRITTEN RD	R-1	RICE, DANIEL C & MARIE J	N	8.73	1.782	10.692	2
10	48.2	183	15.938	3B	BRITTEN RD	R-1A	RIECK,JOHN J JR & JANE-CZA FARMS	N	14.08	1.858	11.148	2
11	143	1.05	2.592	1	TREADWELL AVE	R-1	GASSER, ROBERT C & KARYN ANN	N	0.19	2.402	14.412	2
12	48.18	144	7.607	3B	425 GREEN VILLAGE RD	R-1A	HINDS, ROSE DORIS, TRUSTEE	N	2.82	4.787	28.722	5
										34.086	284.516	15

Parcels Contributing to Realistic Development Potential

Vacant Parcels in SSA Contributing to Realistic Development Potential (RDP)

Map ID	Block	Lot	Acres	Tax Class	Property Location	Owner	Constrained	Developable	# Units	Low/Mod Units @ 20% Set Aside
C	138	1	3.4	1	Shunpike Road	Fuller	0.2	3.2	19.2@ 6/ac	3
F	144	33	13.7	15D	Green Village Road	Oak Knoll School	4.6	7.7	91@ 12/ac	18
							4.8	10.9	110.2	21

RDP From SSA: 21
RDP From non-SSA: 15
Townwide RDP: 36