AN ORDINANCE OF THE TOWNSHIP OF WOOLWICH, COUNTY OF GLOUCESTER AND STATE OF NEW JERSEY DELETING ARTICLE II OF CHAPTER 157 OF THE CODE OF THE TOWNSHIP OF WOOLWICH ENTITLED "STORMWATER CONTROL" AND REPLACING WITH THE FOLLOWING

ORDINANCE 2021-01

Article II

Stormwater Control

§ 157-4 **Scope and purpose.**

A. Purpose.

(1) It is hereby determined that:

(a) Land development projects and associated disturbance of vegetation and soil and changes in land cover, including increases in impervious cover, alter the hydrologic response of local watersheds and increase stormwater runoff rates and volumes. If inadequately or improperly managed, this stormwater runoff can deplete groundwater resources and increase flooding, stream channel erosion, and sediment transport and deposition.

(b) This stormwater runoff contributes to increased quantities of waterborne pollutants.

(c) Increases of stormwater runoff, soil erosion and nonpoint-source pollutants have occurred in the past as a result of land development, and contribute to the degradation of the water resources of Woolwich and downstream municipalities.

(d) Woolwich Township's natural resources are to be protected in accordance with New Jersey's Stormwater Management Rules at N.J.A.C. 7:8-1.1 et seq., and New Jersey's surface water quality antidegradation policies contained in the New Jersey Surface Water Quality Standards at N.J.A.C. 7:9B-1.1 et seq. Permitted uses shall maintain the ecological character and quality of Woolwich Township, including good water quality and natural rates and volumes of flow.

(e) Increased stormwater rates and volumes and the sediments and pollutants associated with stormwater runoff from future development projects within Woolwich Township have the potential to adversely affect Woolwich Township's streams and water resources and the streams and water resources of downstream municipalities.

(f) Stormwater runoff, soil erosion and nonpoint-source pollution can be controlled and minimized through the regulation of stormwater runoff from development sites.

(g) Flood control, groundwater recharge, and pollutant reduction shall be achieved 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.

(h) It is in the public interest to regulate the discharge of stormwater runoff from "major development" projects, as defined in Section § **157-12** of this article, conducted within Woolwich Township, as provided in this article, in order to control and minimize increases in stormwater runoff rates and volumes, to maintain groundwater recharge, and to control and minimize soil erosion, stream channel erosion and nonpoint-source pollution associated with stormwater runoff.

(2) Therefore, it is the purpose of this article to establish minimum stormwater management requirements and controls for major development consistent with the statewide stormwater requirements at N.J.A.C. 7:8 and the provisions of the adopted Master Plan and land use ordinances of Woolwich Township.

B. Goals and techniques.

(1) Through this article, Woolwich Township has established the following goals for stormwater control:

(a) To reduce flood damage, including damage to life and property;

(b) To minimize any increase in stormwater runoff from new development;

(c) To reduce soil erosion from any development or construction project;

(d) To assure the adequacy of existing and proposed culverts and bridges, and other instream structures;

(e) To maintain groundwater recharge;

(f) To minimize any increase in nonpoint pollution;

(g) To maintain the integrity of stream channels for their biological functions, as well as for drainage;

(h) To restore, protect, maintain and enhance the quality of the streams and water resources and the ecological character and quality of Woolwich Township;

(i) To minimize pollutants in stormwater runoff from new and existing development in order to restore, protect, enhance and maintain the chemical, physical and biological integrity of the surface and ground waters of Woolwich Township, to protect public health and to enhance the domestic, municipal, recreational, industrial and other uses of water; and

(j) To protect public safety through the proper design and operation of stormwater management basins.

(2) In order to achieve the goals for stormwater control set forth in this article, Woolwich Township has identified the following management techniques:

(a) Implementation of multiple stormwater management best management practices (BMPs) may be necessary to achieve the performance standards for stormwater runoff quantity and rate, groundwater recharge, erosion control, and stormwater runoff quality established through this article.

(b) Compliance with the stormwater runoff quantity and rate, groundwater recharge, erosion control, and stormwater runoff quality standards established through N.J.A.C. 7:8-1.1 et seq., and this article, shall be accomplished to the maximum extent practicable through the use of Green Infrastructure BMPs, before relying on BMPs.

(c) Nonstructural BMPs shall include both environmentally sensitive site design and source controls that prevent pollutants from being placed on the site or from being exposed to stormwater.

(d) Source control plans shall be developed based upon physical site conditions and the origin, nature and the anticipated quantity or amount of potential pollutants.

(e) BMPs, where necessary, shall be integrated with proper maintenance plans.

(f) When using BMPs, multiple stormwater management measures, including Green Infrastructure BMPs, smaller in size and distributed spatially throughout the land development site, shall be used wherever possible to achieve the performance standards for water quality, quantity and groundwater recharge established through this article before relying on a single, larger stormwater management measure to achieve these performance standards.

C. Applicability.

(1) This article 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 article shall also be applicable to all major developments undertaken by Woolwich Township.

D. Procedures. In addition to other development review procedures set forth in the Code of Woolwich Township, major developments located within Woolwich Township shall comply with the

stormwater management requirements and specifications set forth in this article. New agricultural development that meets the definition of major development in Section § **157-12** of this article shall be submitted to the appropriate soil conservation district for review and approval in accordance with the requirements of N.J.A.C. 5.4(b) 7:8.

E. Compatibility with other permit and ordinance requirements.

(1) Development approvals issued for subdivisions and site plans pursuant to this article 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 ordinance, code, rule, regulation, statute, act or other provision of law.

(2) In their interpretation and application, the provisions of this article shall be held to be the minimum requirements for the promotion of the public health, safety, and general welfare. This article is not intended to interfere with, abrogate, or annul any other ordinance, rule or regulation, stature, or other provision of law except that, where any provision of this article imposes restrictions different from those imposed by any other ordinance, rule or regulation, or other provision of law, the more restrictive or stringent provisions or higher standards shall control.

(3) In the event that a regional stormwater management plan(s) is prepared and formally adopted pursuant to N.J.A.C. 7:8-1.1 et seq. for any drainage area(s) or watershed(s) of which Woolwich Township is a part, the stormwater provisions of such a plan(s) shall be adopted by Woolwich Township within one year of the adoption of a regional stormwater management plan (RSWMP) as an amendment to an areawide water quality management plan.

§ 157-5 **Requirements for a site development stormwater plan.**

A. Submission of site development stormwater plan.

(1) Whenever an applicant seeks municipal approval of a site development that is subject to this article, the applicant shall submit all of the required components of the checklist for the site development stormwater plan at Section § **157-5C** below as part of the applicant's application for subdivision or site plan approval. Any and all existing stormwater-related checklist items are hereby superseded by this article. These required components are in addition to any other nonstormwater-related information required under any provisions of Woolwich Township's Land Use Ordinance.

(2) The applicant shall demonstrate that the site development project meets the standards set forth in this article.

(3) The applicant shall submit three copies of the materials listed in the checklist for site development stormwater plans in accordance with Section § **157-5C** of this article.

B. Site development stormwater plan approval. The applicant's site development stormwater plan shall be reviewed as a part of the subdivision or site plan review process by the municipal board or official from whom 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 article.

C. Checklist requirements. Any application for approval of a major development shall include at least the following information.

(1) Topographic Base Map. The applicant shall submit a topographic base map of the site 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 shall indicate the following: existing surface water drainage, shorelines, steep slopes, soils, highly erodible soils, perennial or intermittent streams that drain into or upstream of any Category One waters, wetlands and floodplains along with their appropriate buffer strips, marshlands and other wetlands, pervious or vegetative surfaces, existing surface and subsurface human-made structures, roads, bearing and distances of property lines, and significant natural and man-made features not otherwise shown. Woolwich Township may require upstream tributary drainage system information as necessary.

(2) Environmental site analysis. The applicant shall submit a written description along with the drawings of the natural and human-made features of the site and its environs. This description should include:

(a) A discussion of environmentally critical areas, 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 for or constraints on development; and

(b) Detailed soil and other environmental conditions on the portion of the site proposed for installation of any stormwater BMPs, including at a minimum: soils report based on on-site soil tests; locations and spot elevations in plan view of test pits and permeability tests; permeability test data and calculations; and any other required soil data (e.g., mounding analyses results) correlated with location and elevation of each test site; cross section of proposed stormwater BMP with side-by-side depiction of soil profile drawn to scale and seasonal high water table elevation identified; and any other information necessary to demonstrate the suitability of the specific proposed structural and nonstructural stormwater management measures relative to the environmental conditions on the portion(s) of the site proposed for implementation of those measures.

(3) Project description and site plan(s). The applicant shall submit 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 will 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 for proposed changes in natural conditions shall also be provided.

(4) Land use planning and source control plan.

(a) The applicant shall submit a detailed land use planning and source control plan which provides a description of how the site will be developed to meet the erosion control, groundwater recharge and stormwater runoff quantity and quality standards at Section § **157-8** through use of Green Infrastructure BMPs to the maximum extent practicable before relying on BMPs. The land use planning and source control plan shall include a detailed narrative and associated illustrative maps and/or plans that specifically address how the Green Infrastructure BMPs will be implemented to the maximum extent practicable to meet the standards at Section § **157-8** of this article on the site.

(5) Stormwater management facilities map. The applicant shall submit a map, at the same scale as the topographic base map, depicting the following information:

(a) The total area to be disturbed, paved and/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 manage and dispose of stormwater; and

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

(6) Calculations (groundwater recharge and stormwater runoff rate, volume and quality). The applicant shall submit comprehensive hydrologic and hydraulic design calculations for the predevelopment and postdevelopment conditions for the design storms specified in Section § **157-6**. The standards for groundwater recharge and stormwater runoff rate, volume and quality required by Section § **157-8** shall be met using the methods, calculations and assumptions provided in Section § **157-6**.

(7) Inspection, maintenance and repair plan. The applicant shall submit a detailed plan describing how the proposed stormwater management measure(s) shall meet the maintenance and repair requirements of Section § **157-11** of this article. Said plan shall include, at a minimum, the following elements:

(a) The frequency with which inspections will be made;

(b) The specific maintenance tasks and requirements for each proposed structural and nonstructural BMP;

(c) The name, address and telephone number for the entity responsible for implementation of the maintenance plan;

(d) The reporting requirements; and

(e) Copies of the inspection and maintenance reporting sheets.

(8) Exception from submission requirements. An exception may be granted from submission of any of these required components (except Subsection **C(7)**, above, Inspection, maintenance

and repair plan) if 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.

§ 157-6 **Methodologies for the calculation of stormwater runoff rate and volume, stormwater runoff quality and groundwater recharge.**

A. Method of calculating stormwater runoff rate and volume.

(1) The design engineer shall calculate runoff using one of the following methods:

(a) The USDA Natural Resources Conservation Service (NRCS) methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph, as described in 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

(b) 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 pre-construction condition of a site or portion thereof is a wooded land use with good hydrologic condition. The term “runoff coefficient” applies to both the NRCS methodology above at Section § **157-6(1)(a)** and the Rational and Modified Rational Methods at Section § **157-6(1)(b)**. A runoff coefficient or a groundwater recharge land cover for an existing condition may be used on all or a portion of the site if the design engineer verifies that the hydrologic condition has existed on the site or portion of the site for at least five years without interruption prior to the time of application. If more than one land cover have existed on the site during the five years immediately prior to the time of application, the land cover with the lowest runoff potential shall be used for the computations. In addition, there is the presumption that the site is in good hydrologic condition (if the land use type is pasture, lawn, or park), with good cover (if the land use type is woods), or with good hydrologic condition

and conservation treatment (if the land use type is cultivation).

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

(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 or other methods may be employed.

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

B. Method of calculating stormwater runoff quality and 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 post-construction load of total suspended solids (TSS) in stormwater runoff generated from the water quality design storm as follows:

(a) 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.
(b) 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) 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 the table below. The calculation of the volume of runoff may take into account the implementation of stormwater management measures.

Table 1 – 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 x 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 § **157-8**.

(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.

C. Methods of calculating groundwater recharge.

The New Jersey Geological Survey Report GSR-32, A Method for Evaluating Groundwater-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.

§ 157-7 **Stormwater management performance standards for major development.**

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 ordinance apply only to new major development and are intended to minimize the impact of stormwater runoff on water quality and water quantity in receiving water bodies and maintain groundwater recharge. The standards do not apply to new major development to the extent that alternative design and performance standards are applicable under a regional stormwater management plan or Water Quality Management Plan adopted in accordance with Department rules.

§ 157-8 **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 § **157-11**.

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 quality, and stormwater runoff quantity requirements of Section § **157-8**:

(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 green infrastructure, groundwater recharge, stormwater runoff quality, and stormwater runoff quantity requirements of Section § **157-8** 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 stormwater management measures, the option selected complies with the requirements of Section § **157-8** to the maximum extent practicable;

(3) The applicant demonstrates that, in order to meet the requirements of Section § **157-8**, 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 § **157-8D** above within the upstream drainage area of the receiving stream, that would provide additional opportunities to mitigate the requirements of Section § **157-8** 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 § **157-8**. 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.

Table 2 **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 3 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 4 **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 § **157-8O(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 § **157-12**;

(h) manufactured treatment devices that do not meet the definition of green infrastructure at Section § **157-12**.

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 § **157-16B**. Alternative stormwater management measures may be used to satisfy the requirements at Section § **157-8** only if the measures meet the definition of green infrastructure at Section § **157-12**. Alternative stormwater management measures that function in a similar manner to a BMP listed at Section § **157-8O(2)** are subject to the contributory drainage area limitation specified at Section § **157-8O(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 § **157-8O(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 § **157-8D** is granted from Section § **157-8O**.

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 § **157-10D**;

(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 § **157-10**; 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 § **157-12** may be used only under the circumstances described at Section § **157-8O(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 Section § **157-8** 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 § **157-8** 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 § **157-8** 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 § **157-11**. 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 § **157-8** 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 Section § **157-8M** 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 Section § **157-8M** 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 § **157-8**, the design engineer shall utilize green infrastructure BMPs identified in Table 2 at Section § **157-8F**. and/or an alternative stormwater management measure approved in accordance with Section § **157-8G**. The following green infrastructure BMPs are subject to the following maximum contributory drainage area limitations:

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

(3) To satisfy the stormwater runoff quantity standards at Section § **157-8**, 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 § **157-8G**.

(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 2, 3, or 4, and/or an alternative stormwater management measure approved in accordance with Section § **157-8G** may be used to meet the groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards at Section § **157-8**.

(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 § **157-8**, unless the project is granted a waiver from strict compliance in accordance with Section § **157-8D**.

P. Stormwater runoff quantity and rate standards.

(1) The design engineer, using the assumptions and factors for stormwater runoff and groundwater recharge calculations contained in Section § **157-6**, shall either:

(a) Demonstrate through hydrologic and hydraulic analysis that the postdeveloped stormwater runoff hydrographs from the project site for the two-, ten-, and one-hundred-year storms do not exceed, at any point in time, the site's predeveloped runoff hydrographs for the same storms.

(b) Demonstrate through hydrologic and hydraulic analysis that under postdeveloped site conditions:

[1] There is no increase in predeveloped stormwater runoff rates from the project site for the two-, ten-, and one-hundred-year storms; and

[2] Any increased stormwater runoff volume or change in stormwater runoff timing for the two-, ten-, and one-hundred-year storms will not increase flood damage at or downstream of the project site. When performing this analysis for predeveloped site conditions, all off-site development levels shall reflect existing conditions. When performing this analysis for postdeveloped site conditions, all off-site development levels shall reflect full development in accordance with current zoning and land use ordinances in the drainage area.

(c) Demonstrate that the peak postdeveloped stormwater runoff rates from the project site for the two-, ten-, and one-hundred-year storms are 50%, 75% and 80%, respectively, of the site's peak predeveloped stormwater runoff rates for the same storms. Peak outflow rates from on-site stormwater measures for these storms shall be adjusted where necessary to account for the discharge of increased stormwater runoff rates and/or volumes from

project site areas not controlled by the on-site measures. These percentages do not have to be applied to those portions of the project site that are not proposed for development at the time of application.

(2) In tidal flood hazard areas, a stormwater runoff quantity analysis in accordance with Subsection **P** above shall be applied 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

(4) The standards for stormwater runoff quantity and rate required by this section shall be met using the methods, calculations and assumptions provided in Section § **157-6**.

Q. Groundwater recharge standards.

(1) For all major developments, with the exception of those described in Section § **157-8C**, below, the design engineer, using the assumptions and factors for stormwater runoff and groundwater recharge calculations contained in Section § **157-6**, shall either:

(a) Demonstrate through hydrologic and hydraulic analysis that the postdeveloped project site maintains 100% of the site's predeveloped average annual groundwater recharge volume; or

(b) Demonstrate through hydrologic and hydraulic analysis that any increase in the project site's stormwater runoff volume for the two-year, twenty-four hour storm from predeveloped to postdeveloped conditions is infiltrated onsite.

(2) The design engineer shall assess the hydraulic impact on the groundwater table and design the project site and all site groundwater recharge measures so as to avoid adverse hydraulic impacts. Adverse hydraulic impacts include, but are not limited to: raising the groundwater table so as to cause surface ponding; flooding of basements and other subsurface structures and areas; preventing a stormwater infiltration basin from completely draining via infiltration within 72 hours of a design storm event; and interference with the proper operation of subsurface sewage disposal systems and other surface and subsurface facilities in the vicinity of the groundwater recharge measure.

(3) The standards for groundwater recharge required by this section shall be met using the methods, calculations and assumptions provided in Section § **157-6**.

(4) Exceptions.

(a) The preceding groundwater recharge standards shall not apply to projects within the urban redevelopment area, or to projects subject to Section § **157-8C**.

(b) The following types of stormwater shall not be recharged:

[1] 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

[2] 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.

R. Erosion control standards. The minimum design and performance standards for erosion control are those established under the Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq., and its implementing regulations, N.J.A.C. 2:90-1.1 through 1.4.

S. Threatened and endangered species and associated habitat standards. Stormwater management measures shall avoid adverse impacts of the development on habitat for threatened and endangered species, in accordance with N.J.A.C. 7:8-5.2(c).

T. Exemptions, exceptions and mitigation requirements.

(1) Exceptions from strict compliance from the groundwater recharge, stormwater runoff quantity, and stormwater runoff quality requirements established by this article may be granted, at the discretion of Woolwich Township, provided that all of the following conditions are met:

(a) The exception is consistent with that allowed by Woolwich Township;

(b) Woolwich Township has an adopted and effective municipal stormwater management plan in accordance with N.J.A.C. 7:8-4.4, which includes a mitigation plan in accordance with N.J.A.C. 7:8-4.2(c)11. The mitigation plan shall identify what measures are necessary to offset the deficit created by granting the exception, and the municipality shall submit a written report to the county review agency and the NJDEP describing the exception and the required mitigation. Guidance for developing municipal stormwater

management plans, including mitigation plans, is available from the NJDEP, Division of Watershed Management and the New Jersey BMP Manual.

(c) The applicant demonstrates that mitigation, in addition to the requirements of the mitigation plan, will be provided consistent with one of the following options:

[1] Mitigation may be provided off site, but within Woolwich Township and within the same drainage area as the development site, and shall meet or exceed the equivalent recharge, quality or quantity performance standard which is lacking on the development site due to the exception; or

[2] In lieu of the required mitigation, a monetary in-lieu contribution may be provided by the applicant to Woolwich Township in accordance with the following:

[a] The amount of the in-lieu contribution shall be determined by Woolwich Township, but the maximum in-lieu contribution required shall be equivalent to the cost of implementing and maintaining the stormwater management measure(s) for which the exception is granted;

[b] The in-lieu contribution shall be used to fund an off-site stormwater control mitigation project(s) located within Woolwich Township, within the same drainage area as the development site, and shall meet or exceed the equivalent recharge, quality or quantity performance standard which is lacking on the development site. Such mitigation project shall be identified by Woolwich Township in Woolwich Township's adopted municipal stormwater management plan. The stormwater control project to which the monetary contribution will be applied shall be identified by Woolwich Township at the time the exception is granted. The applicant shall amend the project description and site plan required in Section § **157-5C(3)** to incorporate a description of both the standards for which an on-site exception is being granted and of the selected off-site mitigation project.

[c] Woolwich Township shall expend the in-lieu contribution to implement the selected off-site mitigation project within five years from the date that payment is received. Should Woolwich Township fail to expend the in-lieu contribution within the required time frame, the mitigation option shall be void, and Woolwich Township shall be prohibited from collecting in-lieu contributions.

§ 157-9 **Solids and Floatable Materials Control Standards**

A. Site design features identified under Section **§ 157-8**, or alternative designs in accordance with Section **§ 157-8G** 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 **§ 157-9A(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:

(a) 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

(b) 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.

(c) 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 Section **§ 157-9A(1)** above does not apply:

(a) 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;

(b) 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;

(c) 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:

[1]. 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

[2]. 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).

(d) 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

(e) 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.

§ 157-10 Safety standards for stormwater management basins.

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

B. Requirements for Trash Racks, Overflow Grates and Escape Provisions

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

(a) The trash rack shall have parallel bars, with no greater than six-inch spacing between the bars;

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

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

(d) The trash rack shall be constructed of rigid, durable, and corrosion resistant material and designed to withstand a perpendicular live loading of 300 pounds per square foot.

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

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

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

(c) The overflow grate shall be constructed and installed to be rigid, durable, and corrosion resistant, and shall be designed to withstand a perpendicular live loading of 300 pounds per square foot.

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

(a) 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 Section **§ 157-10**, a free-standing outlet structure may be exempted from this requirement;

(b) Safety ledges shall be constructed on the slopes of all new stormwater management BMPs having a permanent pool of water deeper than two and one-half feet. Safety ledges shall be comprised of two steps. Each step shall be four to six feet in width. One step shall be located approximately two and one-half feet below the permanent water surface, and the second step shall be located one to one and one-half feet above the permanent water surface. See Section **§ 157-10D** for an illustration of safety ledges in a stormwater management BMP; and

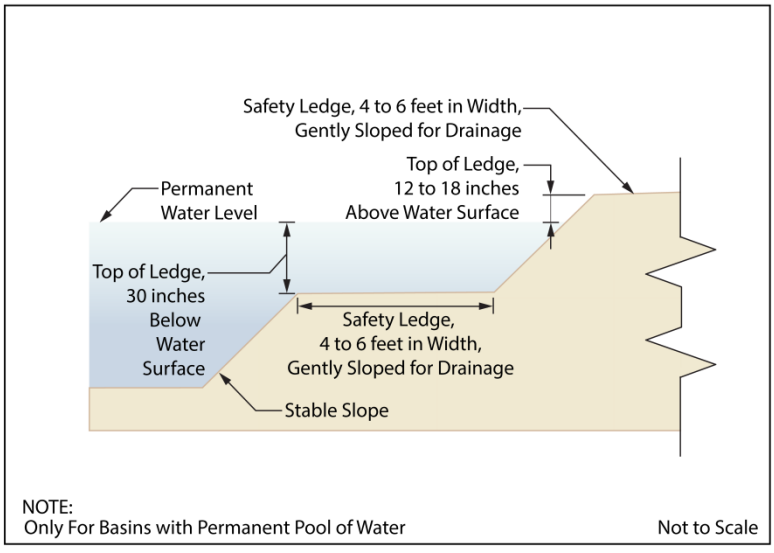
(c) In new stormwater management BMPs, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than three horizontal to one vertical.

C. Variance or Exemption from Safety Standard

A variance or exemption from the safety standards for stormwater management BMPs may be granted only upon a written finding by the municipality that the variance or exemption will not constitute a threat to public safety.

D. Safety Ledge Illustration

Elevation View –Basin Safety Ledge Configuration



§ 157-11 **Inspection, maintenance and repair of stormwater management measures.**

A. Applicability. Projects subject to review pursuant to Section § **157-4C** of this article shall comply with the requirements of Subsections **B** and **C** below.

B. General inspection, maintenance and repair plan.

(1) The design engineer shall prepare an inspection, maintenance and repair plan for the stormwater management measures incorporated into the design of a major development. This

plan shall be submitted as part of the checklist requirements established in Section § **157-5C**. Inspection and maintenance guidelines for stormwater management measures are available in the New Jersey BMP Manual.

(2) The inspection, maintenance and repair plan shall contain the following:

(a) Accurate and comprehensive drawings of the site's stormwater management measures;

(b) Specific locations of each stormwater management measure identified by means of longitude and latitude as well as block and lot number;

(c) Specific preventative and corrective maintenance tasks and schedules for such tasks for each stormwater BMP;

(d) Cost estimates, including estimated cost of sediment, debris or trash removal; and

(e) The name, address and telephone number of the person or persons responsible for regular inspections and preventative and corrective maintenance (including repair and replacement). If the responsible person or persons is a corporation, company, partnership, firm, association, municipality or political subdivision of this state, the name and telephone number of an appropriate contact person shall also be included.

(3) The person responsible for inspection, maintenance and repair identified under Section § **157-11B(2)** above shall maintain a detailed log of all preventative and corrective maintenance performed for the site's stormwater management measures, including a record of all inspections and copies of all maintenance-related work orders in the inspection, maintenance and repair plan. Said records and inspection reports shall be retained for a minimum of five years.

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

(5) If the person responsible for inspection, maintenance and repair identified under Section § **157-11B(2)** above is not a public agency, the maintenance plan and any future revisions based on Section § **157-11B(6)** below shall be recorded upon the deed of record for each property on which the maintenance described in the maintenance plan shall be undertaken.

(6) The person responsible for inspection, maintenance and repair identified under Section § **157-11B(2)** above shall evaluate the effectiveness of the inspection, maintenance and repair plan at least once per year and update the plan and the deed as needed.

(7) The person responsible for inspection, maintenance and repair identified under Section § **157-11B(2)** above shall submit the updated inspection, maintenance and repair plan and the documentation required by Section § **157-11B(2)** and **B(3)** above to Woolwich Township

once per year.

(8) The person responsible for inspection, maintenance and repair identified under Section § **157-11B(2)** above shall retain and make available, upon request by any public entity with administrative, health, environmental or safety authority over the site the inspection, maintenance and repair plan and the documentation required by Section § **157-11B(2)** and **B(3)** above.

C. Responsibility for inspection, repair and 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.

D. Preventative and corrective maintenance shall be performed to maintain the function of the stormwater management measure (storage volume, infiltration rates, inflow/outflow capacity, etc.), including, but not limited to: repairs or replacement to any associated appurtenance of the measure; removal of sediment, debris or trash; restoration of eroded areas; snow and ice removal; fence repair or replacement; restoration of vegetation; repair or replacement of linings; and restoration of infiltration function.

E. Stormwater management measure easements shall be provided by the property owner as necessary for facility inspections and maintenance and preservation of stormwater runoff conveyance, infiltration, and detention areas and facilities. The purpose of the easement shall be specified in the maintenance agreement.

F. In the event that the stormwater management measure becomes a public health nuisance or danger to public safety or public health, or if it is in need of maintenance or repair, Woolwich Township 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 the municipal engineer's designee. Woolwich Township, at 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 within the allowable time, Woolwich Township may immediately proceed to do so with its own forces and equipment and/or through contractors. The costs and expenses of such maintenance and repair by Woolwich Township shall be entered on the tax roll as a special charge against the property and collected with any other taxes levied for the year in which the maintenance and repair was performed.

G. Requirements for inspection, maintenance and repair of stormwater BMPs that rely on infiltration. If a stormwater infiltration BMP is incorporated into the design of a major development, the applicant shall include the following requirements in its inspection, maintenance and repair plan:

(1) Once per month (if needed); Mow side slopes, remove litter and debris, stabilize eroded banks, repair erosion at inflow structure(s);

(2) After every storm exceeding one inch of rainfall: Ensure that infiltration BMPs drain

completely within 72 hours after the storm event. If stored water fails to infiltrate 72 hours after the end of the storm, corrective measures shall be taken. Raking or tilling by light equipment can assist in maintaining infiltration capacity and break up clogged surfaces;

(3) Four times per year (quarterly): Inspect stormwater infiltration BMPs for clogging and excessive debris and sediment accumulation within the BMP, remove sediment (if needed) when completely dry;

(4) Two times per year: Inspect for signs of damage to structures, repair eroded areas, check for signs of petroleum contamination and remediate;

(5) Once per year: Inspect BMPs for unwanted tree growth and remove if necessary, disc or otherwise aerate bottom of infiltration basin to a minimum depth of six inches; and

(6) After every storm exceeding one inch of rainfall, inspect and, if necessary, remove and replace K5 sand layer and accumulated sediment to restore original infiltration rate.

(7) Additional guidance for the inspection, maintenance and repair of stormwater infiltration BMPs can be found in the New Jersey BMP Manual.

H. Maintenance guarantee.

(1) The applicant shall provide a maintenance guarantee in accordance with N.J.S.A. 40:55D-53 to ensure that all stormwater management measures required under the provisions of this article will be maintained in accordance with the specifications established herein.

(2) Additionally, for those stormwater management measures that are to be inspected, maintained and repaired by a public agency, Woolwich Township shall collect an upfront fee from the applicant in the amount Woolwich Township determines is needed to provide long-term inspection, maintenance and repair of all stormwater management measures. This upfront fee shall be placed in a dedicated cash management account and expended by Woolwich Township for the sole purpose of conducting inspection, maintenance and repair activities for all stormwater management measures required under the applicant's major development application approval. The calculation of the fee shall be based upon the inspection, maintenance and repair plan (plan) required to be prepared by the applicant and approved by Woolwich Township. The plan shall include an estimate of the present value of the cost to inspect, maintain and repair the stormwater management measure(s) in accordance with the plan for the useful life of those measure(s). The Woolwich Township shall furnish the applicant their published hourly rates as prescribed by their salary ordinance for public works' and other personnel having responsibilities associated with stormwater management. Added to this fee shall be an amount mutually determined by WOOLWICH TOWNSHIP and the applicant to account for the reconstruction of stormwater management measures that are reasonably anticipated to be subject to long-term failure. After an agreed number of years, depending on the type of measure(s), the measure(s) will need to be reconstructed. The amount shall be based on the future value of the measure(s) being reconstructed. Both inflation rates and bank interest rates shall be based on the ten-year average published in the Wall Street Journal or other approved publication. Interest accruing in the account must also

be accounted for at an agreed upon interest rate to arrive at an amount. The costs for reconstructing the measure(s) shall be taken from the engineer's probable cost estimate that is utilized to determine the amount of the required performance guarantee. It is acceptable to attach a percentage of failure to certain line items in the estimate.

(3) Additionally, for those stormwater management measures that are to be inspected, maintained and repaired by a homeowners' association, condominium association or some other form of nonpublic ownership, no fee shall be collected by Woolwich Township. Instead, the ownership entity shall establish and maintain a fund for the annual inspection and testing program, annual maintenance and repair program and annual contribution to a contingency fund for long-term reconstruction.

(a) The initial costs agreed to for the annual inspection and testing program and annual maintenance and repair program shall be based upon actual itemized proposals offered to the applicant by prospective vendors. The annual cost expended on inspection, testing and maintenance shall be reported to Woolwich Township to verify that maintenance is not being deferred and to inform Woolwich Township on the magnitude of those service.

(b) The contingency fund shall require sufficient funds to be committed for long-term reconstruction of the stormwater management measure(s). Major reconstruction activities will necessitate proper financial planning. After an agreed number of years, depending on the type of measure(s), the measure(s) will need to be reconstructed. The contingency fund in the financial schedule shall be based on the future value of the measure being reconstructed. Both inflation rates and bank interest rates shall be based on the ten-year average published in the Wall Street Journal or other approved publication. Interest accruing in the account must also be accounted for at an agreed upon interest rate, to arrive at an annual contribution amount.

§ 157-12 **Definitions.**

For the purpose of this ordinance, the following terms, phrases, words and their derivations shall have the meanings stated herein unless their use in the text of this Chapter clearly demonstrates a different meaning. When not inconsistent with the context, words used in the present tense include the future, words used in the plural number include the singular number, and words used in the singular number include the plural number. The word "shall" is always mandatory and not merely directory. The definitions below are the same as or based on the corresponding definitions in the Stormwater Management Rules at N.J.A.C. 7:8-1.2.

AQUACULTURE

The propagation, rearing and subsequent harvesting of aquatic organisms in controlled or selected environments, and their subsequent processing, packaging and marketing, including, but not limited to, activities to intervene in the rearing process to increase production such as stocking, feeding, transplanting and providing for protection from predators.

CAFRA CENTERS, CORES OR NODES

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

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

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.

CERTIFICATION

A written statement signed and sealed by a licensed New Jersey professional engineer attesting that a BMP design or stormwater management system conforms to or meets a particular set of standards. Depending upon the context in which the term is used, the term "certify" and "certified" shall be construed accordingly.

COMPACTION

The increase in soil bulk density caused by subjecting soil to greater-than-normal loading. Compaction can also decrease soil infiltration and permeability rates.

CONSTRUCTION

The construction, erection, reconstruction, alteration, conversion, demolition, removal or equipping of buildings, structures or components of a stormwater management system, including but not limited to collection inlets, stormwater piping, swales and all other conveyance systems, and stormwater BMPs.

CONTRIBUTORY DRAINAGE AREA

The area from which stormwater runoff drains to a stormwater management measure, not including the area of the stormwater management measure itself.

CORE

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

COUNTY REVIEW AGENCY

An agency 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

The Department of Environmental Protection.

DESIGNATED CENTER

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

DESIGN ENGINEER

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

DESIGN PERMEABILITY

The tested permeability rate with a factor of safety of two applied to it (e.g., if the tested permeability rate of the soils is four inches per hour, the design rate would be two inches per hour).

DEVELOPMENT

A. The division of a parcel of land into two or more parcels, the construction, reconstruction, conversion, structural alteration, relocation or enlarge-enlargement of any building or structure, any mining excavation or landfill, and any use or change in the use of any building or other structure, or land or extension of use of land, for which permission is required under the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq. , including, but not limited to:

(1) A change in type of use of a structure or land;

(2) A reconstruction, alteration of the size, or material change in the external appearance of a structure or land;

(3) A material increase in the intensity of use of land, such as an increase in the number of businesses, manufacturing establishments, offices or dwelling units in a structure or on land;

(4) Commencement of resource extraction or drilling or excavation on a parcel of land;

(5) Demolition of a structure or removal of trees;

(6) Commencement of forestry activities;

(7) Deposit of refuse, solid or liquid waste or fill on a parcel of land;

(8) In connection with the use of land, the making of any material change in noise levels, thermal conditions, or emissions of waste material; and

(9) Alteration, either physically or chemically, of a shore, bank or floodplain, seacoast, river, stream, lake, pond, wetlands or artificial body of water.

B. In the case of development on agricultural land, i.e., lands used for an agricultural use or purpose as defined at N.J.A.C. 7:50-2.11, development means: any activity that requires a state permit; any activity reviewed by the County Agricultural Boards (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.

DEVELOPMENT, MAJOR

An individual "development," as well as multiple developments that individually or collectively result in the disturbance of one or more acres of land since February 2, 2004.

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 result in the disturbance of one or more acres of land since February 2, 2004. 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."

DEVELOPMENT, MINOR

All development other than major development.

DISTURBANCE

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

A geographic area within which stormwater, sediments, or dissolved materials drain to a BMP, a stormwater management system, a particular receiving water body or a particular point along a receiving water body.

EMPOWERMENT NEIGHBORHOODS

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.

ENVIRONMENTALLY CONSTRAINED AREA

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 AREA

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 animal species; threatened or endangered plants; large areas of contiguous open space or upland forest; steep slopes; and wellhead protection and groundwater recharge areas. T & E habitat constitutes habitat that is critical for the survival of a local population of threatened and endangered species or habitat that is identified using the Department's Landscape Project as approved by the Department's Endangered and Nongame Species Program, whichever is more inclusive.

EROSION

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

EXCEPTION

The approval by the approving authority of a variance or other material departure from strict compliance with any section, part, phrase or provision of this article. An exception may be granted only under certain specific, narrowly-defined conditions described herein.

EXTENDED DETENTION BASIN

A facility constructed through filling and/or excavation that provides temporary storage of stormwater runoff. It has an outlet structure that detains and attenuates runoff inflows and promotes the settlement of pollutants. An extended detention basin is normally designed as a multistage facility that provides runoff storage and attenuation for both stormwater quality and quantity management. The term "stormwater detention basin" shall have the same meaning as "extended detention basin."

FINISHED GRADE

The elevation of the surface of the ground after completion of final grading, either via cutting, filling or a combination thereof.

GRADING

Modification of a land slope by cutting and filling with the native soil or redistribution of the native soil which is present at the site.

GREEN INFRASTRUCTURE

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.

GROUNDWATER

Water below the land surface in a zone of saturation.

GROUNDWATER MOUNDING ANALYSIS

A test performed to demonstrate that the groundwater below a stormwater infiltration basin will not mound up, encroach on the unsaturated zone, break the surface of the ground at the infiltration area or downslope, and create an overland flow situation.

HEAVY EQUIPMENT

Equipment, machinery, or vehicles that exert ground pressure in excess of eight pounds per square inch.

HIGH POLLUTANT LOADING AREA

An area in an industrial or commercial development site: where solvents and/or petroleum products are loaded/unloaded, stored, or applied; where pesticides are loaded/unloaded or stored; 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; where recharge would be inconsistent with NJDEP-approved remedial action work plan or landfill closure plan; and/or where a high risk exists for spills of toxic materials, such as gas stations and vehicle maintenance facilities. The term "HPLA" shall have the same meaning as "high pollutant loading area."

HUC OR HYDROLOGIC UNIT CODE 14

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

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

INFILTRATION

The process by which precipitation enters the soil through its surface.

IN-LIEU CONTRIBUTION

A monetary fee collected by Woolwich Township in lieu of requiring strict on-site compliance with the groundwater recharge, stormwater runoff quantity and/or stormwater runoff quality standards established in this article.

INSTALL

To assemble, construct, put in place or connect components of a stormwater management system.

LEAD PLANNING AGENCY

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.

MITIGATION

Acts necessary to prevent, limit, remedy or compensate for conditions that may result from those cases where an applicant has demonstrated the inability or impracticality of strict compliance with the stormwater management requirements set forth in N.J.A.C. 7:8, in an adopted regional stormwater management plan, or in a local ordinance which is as protective as N.J.A.C. 7:8, and an exception from strict compliance is granted by Woolwich Township.

MOTOR VEHICLE

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

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

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

NEW JERSEY STORMWATER BEST MANAGEMENT PRACTICES MANUAL

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.

NJDEP

The New Jersey Department of Environmental Protection.

NJPDES

The New Jersey Pollutant Discharge Elimination System as set forth in N.J.S.A. 58:10A-1 et seq., and in N.J.A.C. 7:14A.

NJPDES PERMIT

A permit issued by the NJDEP pursuant to the authority of the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., and N.J.A.C. 7:14A for a discharge of pollutants.

NODE

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

NONPOINT SOURCE

Any human-made or human-induced activity, factor, or condition, other than a point source, from which pollutants are or may be discharged; any human-made or human-induced activity, factor, or condition, other than a point source, that may temporarily or permanently change any chemical, physical, biological, or radiological characteristic of waters of the state from what was or is the natural, pristine condition of such waters, or that may increase the degree of such change; or any activity, factor, or condition, other than a point source, that contributes or may contribute to water pollution. The term "NPS" shall have the same meaning as "nonpoint source."

NONSTRUCTURAL BMP

A stormwater management measure, strategy or combination of strategies that reduces adverse stormwater runoff impacts through sound site planning and design. Nonstructural BMPs include such practices as minimizing site disturbance, preserving important site features, reducing and disconnecting impervious cover, flattening slopes, utilizing native vegetation, minimizing turf grass lawns, maintaining natural drainage features and characteristics and controlling stormwater runoff and pollutants closer to the source. The term "low-impact development technique" shall have the same meaning as "nonstructural BMP."

NUTRIENT

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

PERMEABILITY

The rate at which water moves through a saturated unit area of soil or rock material at hydraulic gradient of one, determined as prescribed in N.J.A.C. 7:9A-6.2 (tube permeameter test), N.J.A.C. 6.5 (pit bailing test) or N.J.A.C. 6.6 (piezometer test). Alternative permeability test procedures may be accepted by the

approving authority, provided the test procedure attains saturation of surrounding soils, accounts for hydraulic head effects on infiltration rates, provides a permeability rate with units expressed in inches per hour and is accompanied by a published source reference. Examples of suitable sources include hydrogeology, geotechnical, or engineering text and design manuals, proceedings of American Society for Testing and Materials (ASTM) symposia, or peer-review journals. Neither a soil permeability class rating test, as described in N.J.A.C. 7:9A-6.3, nor a percolation test, as described in N.J.A.C. 7:9A-6.4, are acceptable tests for establishing permeability values for the purpose of complying with this article.

PERMEABLE

Having a permeability of one inch per hour or faster. The terms "permeable soil," "permeable rock" and "permeable fill" shall be construed accordingly.

PERSON

Any individual, corporation, company, partnership, firm, association, municipality 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.

PINELANDS COMMISSION or COMMISSION

The Commission created pursuant to Section 5 of the Pinelands Protection Act, N.J.S.A. 13:18A-5.

PINELANDS CMP

The New Jersey Pinelands Comprehensive Management Plan (N.J.A.C. 7:50 1.1 et seq).

POINT SOURCE

Any discernible, confined and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture.

POLLUTANT

Any dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, refuse, oil, grease, sewage sludge, munitions, chemical wastes, biological materials, medical wastes, radioactive substances [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, suspended solids, 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.

PROFESSIONAL ENGINEER

A person licensed to practice professional engineering in the State of New Jersey pursuant to N.J.S.A. 48:8-27 et seq.

RECHARGE

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

REGULATED IMPERVIOUS SURFACE

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
4. 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

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.

REPLICATE

One of two or more soil samples or tests taken at the same location (within five feet of each other) and depth, within the same soil horizon or substratum. In the case of fill material, replicate tests are tests performed on subsamples of the same bulk sample packed to the same bulk density.

SAND

A particle size category consisting of mineral particles which are between 0.05 millimeters and 2.0 millimeters in equivalent spherical diameter. Also, a soil textural class having 85% or more of sand and a content of silt and clay such that the percentage of silt plus 1.5 times the percentage of clay does not exceed 15.

SEASONALLY HIGH WATER TABLE

The upper limit of the shallowest zone of saturation which occurs in the soil, identified as prescribed in N.J.A.C. 7:9A-5.8.

SEDIMENT

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

SITE

The lot or lots upon which a major development is to occur or has occurred.

SOIL

All unconsolidated mineral and organic material of any origin.

SOURCE MATERIAL

Any material(s) or machinery, located at an industrial facility, which 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.

STATE DEVELOPMENT AND REDEVELOPMENT PLAN METROPOLITAN PLANNING AREA (PA1)

An area delineated on the State Plan Policy Map and adopted by the State Planning Commission that is intended to be the focus for much of the State's future redevelopment and revitalization efforts.

STATE PLAN POLICY MAP

The geographic application of the State Development and Redevelopment Plan's goals and statewide policies, and the official map of these goals and policies.

STORMWATER

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

STORMWATER MANAGEMENT BMP

An excavation or embankment and related areas designed to retain stormwater runoff. A stormwater management BMP may either be normally dry (that is, a detention basin or infiltration system), retain water in a permanent pool (a retention basin), or be planted mainly with wetland vegetation (most constructed stormwater wetlands).

STORMWATER MANAGEMENT MEASURE

Any practice, technology, process, program, or other method intended to control or reduce stormwater runoff and associated pollutants, or to induce or control the infiltration or groundwater recharge of stormwater or to eliminate illicit or illegal non-stormwater discharges into stormwater conveyances.

STORMWATER RUNOFF

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

STORMWATER MANAGEMENT PLANNING AGENCY

A public body authorized by legislation to prepare stormwater management plans.

STORMWATER MANAGEMENT PLANNING AREA

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.

SUITABLE SOIL

Unsaturated soil, above the seasonally high water table, which contains less than 50% by volume of coarse fragments and which has a tested permeability rate of between one and 20 inches per hour.

SURFACE WATER

Any waters of the state which are not groundwater.

TIDAL FLOOD HAZARD AREA

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.

TIME OF CONCENTRATION

The time it takes for runoff to travel from the hydraulically most distant point of the drainage area to the point of interest within a watershed.

TOTAL SUSPENDED SOLIDS

The insoluble solid matter suspended in water and stormwater that is separable by laboratory filtration in accordance with the procedure contained in the Standard Methods for the Examination of Water and Wastewater prepared and published jointly by the American Public Health Association, American Water Works Association and the Water Pollution Control Federation. The term "TSS" shall have the same meaning as "total suspended solids."

TIDAL FLOOD HAZARD AREA

A flood hazard area, which may be influenced by stormwater runoff from inland areas, but which is primarily caused by the Atlantic Ocean.

URBAN COORDINATING COUNCIL EMPOWERMENT NEIGHBORHOOD

A neighborhood given priority access to State resources through the New Jersey Redevelopment Authority.

URBAN ENTERPRISE ZONES

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

URBAN REDEVELOPMENT AREA

Previously developed portions of areas:

A. Delineated on the State Plan Policy Map (SPPM) as the Metropolitan Planning Area (PA1). Designated Centers, Cores or Nodes;

B. Designated as CAFRA Centers, Cores or Nodes;

C. Designated as Urban Enterprise Zones; and

D. Designated as Urban Coordinating Council Empowerment Neighborhoods.

WATER CONTROL STRUCTURE

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

The ocean and its estuaries, all springs, streams and bodies of surface and ground water, whether natural or artificial, within the boundaries of New Jersey or subject to its jurisdiction.

WATER TABLE

The upper surface of a zone of saturation.

WELL

A bored, drilled or driven shaft, or a dug hole, which extends below the seasonally high water table and which has a depth which is greater than its largest surface dimension.

WETLANDS OR WETLAND

An area that is inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation.

WET POND

A stormwater facility constructed through filling and/or excavation that provides both permanent and temporary storage of stormwater runoff. It has an outlet structure that creates a permanent pool and detains and attenuates runoff inflows and promotes the settling of pollutants. A stormwater retention basin can also be designed as a multistage facility that also provides extended detention for enhanced stormwater quality design storm treatment and runoff storage and attenuation for stormwater quantity management. The term "stormwater retention basin" shall have the same meaning as "wet pond."

WOOLWICH TOWNSHIP

The Planning Board, Zoning Board of Adjustment or other board, agency or official of Woolwich Township with authority to approve or disapprove subdivisions, site plans, construction permits, building permits or other applications for development approval. For the purposes of reviewing development applications and ensuring compliance with the requirements of this article, Woolwich Township may designate the Municipal Engineer or other qualified designee to act on behalf of Woolwich Township.

§ 157-13 **Violations and penalties.**

Any person who erects, constructs, alters, repairs, converts, maintains, or uses any building, structure or land in violation of this article shall be subject to the following penalties: (municipality to specify).

§ 157-14 **Effective date.**

This article shall take effect immediately upon the following:

A. Approval by the county review agency in accordance with N.J.S.A. 40:55D-97.

§ 157-15 **Severability.**

If the provisions of any section, subsection, paragraph, subdivision, or clause of this article shall be judged invalid by a court of competent jurisdiction, such order of judgment shall not affect or invalidate the remainder of any section, subsection, paragraph, subdivision or clause of this article.

§ 157-16 **Additional 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.

C. Additional guidance sources.

(1) New Jersey Pinelands Commission, PO Box 7, 15 Springfield Road, New Lisbon, New Jersey 08064; Phone: (609) 894-7300; Web site: http://www.state.nj.us/pinelands.

(2) State Soil Conservation Committee Standards for Soil Erosion and Sediment Control in New Jersey. Available from all state soil conservation districts including Burlington County Soil Conservation District, Tiffany Square, Suite 100, 1289 Route 38, Hainesport, New Jersey 08036; Phone: (609) 267-7410; Fax: (609) 267-3347; Web site: http:/bscd.org.

(3) State soil conservation districts.

(4) New Jersey Department of Transportation, PO Box 600, Trenton, NJ 08625-0600; Phone: (609) 530-3536; Web site: http://www.state.nj.us/transportation.

TOWNSHIP OF WOOLWICH

_____
Vernon Marino, Mayor

ATTEST: _____
Jane DiBella, Clerk

CERTIFICATION

The foregoing Ordinance was introduced by the Township Committee of the Township of Woolwich at a meeting held on the 1st day of February, 2021. It will further be considered for final adoption upon second reading and subsequent to a public hearing to be held on the Ordinance, at a meeting of the Woolwich Township Committee, scheduled for the 16th day of February, 2021, at the Woolwich Township Municipal Building, 120 Village Green Drive, Woolwich Township, New Jersey, beginning at 6:00 p.m. at which time and place any interested person(s) may be heard.

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Jane DiBella

CERTIFICATION OF ADOPTION

The foregoing Ordinance was duly adopted by the Township committee of the Township of Woolwich upon second reading and subsequent to a public hearing conducted on same, at a meeting of the Woolwich Township Committee held on the 16th day of February, 2021, and therefore becomes effective according to law.

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Jane DiBella, Clerk