

Ordinance of the City of Paterson, N.J.

No. 7 1st Reading No. 21-007  
No. 1 Public Hearing  
(2nd Rdg. & Final Passage)

Division  
TITLE: ORDINANCE UPDATING PATERSON  
CODE SECTION 433, REGARDING  
STORMWATER CONTROL  
(pw.ord.amend.section433.02.16.2021)

Date MARCH 9, 2021  
Date to Mayor MARCH 11, 2021  
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Date Submitted to Council FEBRUARY 23, 2021  
Factual Contents Certified to By  
Title Date 2/19/21  
Approved As To Form and Legality  
on Basis of Facts Set Forth  
Title Date 2/10/21  
CORPORATION COUNSEL

COUNCILPERSON ALEX MENDEZ Moved the Following Ordinance:

WHEREAS, the State of New Jersey amended the Stormwater Management rules at N.J.A.C. 7:8 and adopted revised rules on March 2, 2020.; and

WHEREAS, it is the goal of stormwater management to minimize pollution caused by stormwater in order to restore, enhance and maintain the integrity of waters within the City of Paterson; and

WHEREAS, the City of Paterson is required by the State of New Jersey Department of Environmental Protection (NJDEP) to amend Municipal Ordinance Section 433 in order to reflect the amendments to the Stormwater Management Rules; and

WHEREAS, an amendment to said Ordinance is necessary in order to protect public health, safety and welfare of the Paterson residents; and

WHEREAS, such amendments have been recommended by the City Engineer:

NOW, THEREFORE, BE IT ORDAINED BY THE MUNICIPAL COUNCIL FOR THE CITY OF PATERSON that the Paterson Code shall be amended and supplemented, with additions indicated by underlining and deletions indicated by [brackets], to state as follows:

SECTION I:

§ 433-1 Scope and purpose.

- A. Unchanged.
- B. Unchanged.
- C. Unchanged.

§ 433-2 Definitions.

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



### CAFRA CENTERS, CORES OR NODES

Those areas within boundaries [accepted by the Department pursuant to N.J.A.C. 7:8e-5B] incorporated by reference or revised by the Department in accordance with N.J.A.C. 7:17-13.16.

### CAFRA PLANNING MAP

[The geographic depiction of the boundaries for Coastal Planning Areas, CAFRA centers, CAFRA cores and CAFRA nodes pursuant to N.J.A.C. 7:7E-5B.3.] 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.

### COMPACTION

The increase in soil bulk density.

### CONTRIBUTORY DRAINAGE AREA

means 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 Commissioners to review municipal stormwater management plans and implementing ordinance(s). The county review agency may either be:

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

### DEPARTMENT

The New Jersey Department of Environmental Protection.

### 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 are not necessarily be limited to, development of project requirements, creation and development of project design and preparation of drawings and specifications.



## DEVELOPMENT

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

## DISTURBANCE

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 particular receiving waterbody or to a particular point along a receiving waterbody.

## EMPOWERMENT NEIGHBORHOOD

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

## 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 species; large areas of contiguous open space or upland forest; steep slopes; and wellhead protection and groundwater recharge areas. Habitats of endangered or threatened species are identified using the Department's Landscape Project as approved by the Department's Endangered and Nongame Species Program.

## EMPOWERMENT 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.

## EROSION

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

## 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.



#### HUC 14" 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 water seeps into the soil from precipitation.

#### MAJOR DEVELOPMENT

an individual "development," as well as multiple developments that individually or collectively result in:

1. The disturbance of one or more acres of land since February 2, 2004;
2. The creation of one-quarter acre or more of "regulated impervious surface" since February 2, 2004;
3. The creation of one-quarter acre or more of "regulated motor vehicle surface" since March 2, 2021; or
4. A combination of 2 and 3 above that totals an area of one-quarter acre or more. The same surface shall not be counted twice when determining if the combination area equals one-quarter acre or more.

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

#### MOTOR VEHICLE

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 (BMP) Manual or "BMP 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 433-4 (I) of this ordinance and N.J.A.C. 7:8-5.2(g), that the proposed measure and its design will contribute to achievement of the design and performance standards established by this chapter.

#### NODE

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

#### NUTRIENT

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

#### PERSON

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

#### POLLUTANT

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

#### 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

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.



#### 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.

#### 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 BASIN

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

#### STORMWATER MANAGEMENT MEASURE

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

#### 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.

#### 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.]

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



#### URBAN COORDINATING COUNCIL EMPOWERMENT NEIGHBORHOOD

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, wetlands, and bodies of surface or ground water, whether natural or artificial, within the boundaries of the State of New Jersey or subject to its jurisdiction.

#### WETLANDS or WETLAND

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

#### **§ 433-3 General design and performance standards.**

Design and performance standards for storm water management measures.

**A.**

**Unchanged.**

**B.**

**Unchanged.**

**C.**

**Unchanged.**

#### **§ 433-4 Requirements for major development.**

**A.**

**Unchanged.**

**B.**

**Unchanged.**



C.  
Unchanged.

D.  
Unchanged.

E.  
Unchanged.

F.  
Unchanged.

G.  
UNCHANGED

H.

1. 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 § 433-4 (R), (S), (T) and (U). 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](https://njstormwater.org/bmp_manual2.htm).

I.

1. 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 1 Green Infrastructure BMPs for Groundwater Recharge, Stormwater Runoff Quality, and/or Stormwater Runoff Quantity				
Best Management Practice	Stormwater Runoff Quality TSS Removal Rate (percent)	Stormwater Runoff Quantity	Groundwater Recharge	Minimum Separation from Seasonal High Water Table (feet)
Cistern	0	Yes	No	--
Dry Well <sup>(a)</sup>	0	No	Yes	2
Grass Swale	50 or less	No	No	2 <sup>(e)</sup> 1 <sup>(f)</sup>
Green Roof	0	Yes	No	--



<u>Manufactured Treatment Device<sup>(a) (g)</sup></u>	<u>50 or 80</u>	<u>No</u>	<u>No</u>	<u>Dependent upon the device</u>
<u>Pervious Paving System<sup>(a)</sup></u>	<u>80</u>	<u>Yes</u>	<u>Yes<sup>(b)</sup></u> <u>No<sup>(c)</sup></u>	<u>2<sup>(b)</sup></u> <u>1<sup>(c)</sup></u>
<u>Small-Scale Bioretention Basin<sup>(a)</sup></u>	<u>80 or 90</u>	<u>Yes</u>	<u>Yes<sup>(b)</sup></u> <u>No<sup>(c)</sup></u>	<u>2<sup>(b)</sup></u> <u>1<sup>(c)</sup></u>
<u>Small-Scale Infiltration Basin<sup>(a)</sup></u>	<u>80</u>	<u>Yes</u>	<u>Yes</u>	<u>2</u>
<u>Small-Scale Sand Filter</u>	<u>80</u>	<u>Yes</u>	<u>Yes</u>	<u>2</u>
<u>Vegetative Filter Strip</u>	<u>60-80</u>	<u>No</u>	<u>No</u>	<u>--</u>

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

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

**Table 3**  
**BMPs for Groundwater Recharge, Stormwater Runoff Quality, and/or Stormwater Runoff Quantity**  
**only with a Waiver or Variance from N.J.A.C. 7:8-5.3**

<u>Best Management Practice</u>	<u>Stormwater Runoff Quality TSS Removal Rate (percent)</u>	<u>Stormwater Runoff Quantity</u>	<u>Groundwater Recharge</u>	<u>Minimum Separation from Seasonal High Water Table (feet)</u>
<u>Blue Roof</u>	<u>0</u>	<u>Yes</u>	<u>No</u>	<u>N/A</u>
<u>Extended Detention Basin</u>	<u>40-60</u>	<u>Yes</u>	<u>No</u>	<u>1</u>



<u>Manufactured Treatment Device<sup>(h)</sup></u>	<u>50 or 80</u>	<u>No</u>	<u>No</u>	<u>Dependent upon the device</u>
Sand Filter <sup>(c)</sup>	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 § 433-4.(R)(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 § 433-2 ;
- (h) manufactured treatment devices that do not meet the definition of green infrastructure at Section II.

#### J.

A. 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 § 433-6(B). Alternative stormwater management measures may be used to satisfy the requirements at § 433-4 (R) only if the measures meet the definition of green infrastructure at § 433-2. Alternative stormwater management measures that function in a similar manner to a BMP listed at § 433-4 (R)(2 ) are subject to the contributory drainage area limitation specified at § 433-4 (R)(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 § 433-4 (R)(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 § 433-4 (D) is granted from § 433-(O).

#### K.

A. 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.

L.

B. 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); 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 § 433-8 (C);
2. 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;
3. Stormwater management BMPs shall be designed to meet the minimum safety standards for stormwater management BMPs at § 433-8; and
4. 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.
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.

M.

- A. Manufactured treatment devices may be used to meet the requirements of this subchapter, provided the pollutant removal rates are verified by the New Jersey Corporation for Advanced Technology and certified by the Department. Manufactured treatment devices that do not meet the definition of green infrastructure at Section II may be used only under the circumstances described at. § 433-4 (R)(4).

N.

- A. 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 § 433-4 (R), (S), (T) and (U) 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.



O.

- A. If there is more than one drainage area, the groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards at § 433-4 (S), (T) and (U) 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.

P.

- B. Any stormwater management measure authorized under the municipal stormwater management plan or ordinance shall be reflected in a deed notice recorded in the Office of the Passaic County Clerk. 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 § 433-4 (R), (S), (T) and (U) 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 § 433-10 (B) (5). Prior to the commencement of construction, proof that the above required deed notice has been filed shall be submitted to the municipality. Proof that the required information has been recorded on the deed shall be in the form of either a copy of the complete recorded document or a receipt from the clerk or other proof of recordation provided by the recording office. However, if the initial proof provided to the municipality is not a copy of the complete recorded document, a copy of the complete recorded document shall be provided to the municipality within 180 calendar days of the authorization granted by the municipality.

Q.

- A. 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 § 433-4 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 Passaic County Clerk and shall contain a description and location of the stormwater management measure, as well as reference to the maintenance plan, in accordance with § 433-4 (P) 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 § 433-4 (P) above.

**R. 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 § 433-4.(S) and (T), the design engineer shall utilize green infrastructure BMPs identified in Table 1 at § 433-4(I). and/or an alternative stormwater management measure approved in accordance



with § 433-4 (J). The following green infrastructure BMPs are subject to the following maximum contributory drainage area limitations:

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

1. To satisfy the stormwater runoff quantity standards at § 433-4(U), the design engineer shall utilize BMPs from Table 1 or from Table 2 and/or an alternative stormwater management measure approved in accordance with § 433-4 (J).
2. If a variance in accordance with N.J.A.C. 7:8-4.6 or a waiver from strict compliance in accordance with 433-4(D) is granted from the requirements of this subsection, then BMPs from Table 1, 2, or 3, and/or an alternative stormwater management measure approved in accordance with § 433-4 J may be used to meet the groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards at § 433-4 (S), (T) and (U).
3. 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 § 433-4 (S), (T) and (U), unless the project is granted a waiver from strict compliance in accordance with § 433-4 (D).

**S.Groundwater Recharge Standards**

1. This subsection contains the minimum design and performance standards for groundwater recharge as follows:
2. The design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at
3. § 433-5 , either:
  - i. Demonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measures maintain 100 percent of the average annual pre-construction groundwater recharge volume for the site; or



- ii. Demonstrate through hydrologic and hydraulic analysis that the increase of stormwater runoff volume from pre-construction to post-construction for the 2-year storm is infiltrated.
- 4. This groundwater recharge requirement does not apply to projects within the "urban redevelopment area," or to projects subject to 4 below.
- 5. The following types of stormwater shall not be recharged:
  - i. Stormwater from areas of high pollutant loading. High pollutant loading areas are areas in industrial and commercial developments where solvents and/or petroleum products are loaded/unloaded, stored, or applied, areas where pesticides are loaded/unloaded or stored; areas where hazardous materials are expected to be present in greater than "reportable quantities" as defined by the United States Environmental Protection Agency (EPA) at 40 CFR 302.4; areas where recharge would be inconsistent with Department approved remedial action work plan or landfill closure plan and areas with high risks for spills of toxic materials, such as gas stations and vehicle maintenance facilities; and
  - ii. Industrial stormwater exposed to "source material." "Source material" means any material(s) or machinery, located at an industrial facility, that is directly or indirectly related to process, manufacturing or other industrial activities, which could be a source of pollutants in any industrial stormwater discharge to groundwater. Source materials include, but are not limited to, raw materials; intermediate products; final products; waste materials; by-products; industrial machinery and fuels, and lubricants, solvents, and detergents that are related to process, manufacturing, or other industrial activities that are exposed to stormwater.

#### **T. Stormwater Runoff Quality Standards**

- 1. This subsection contains the minimum design and performance standards to control stormwater runoff quality impacts of major development. Stormwater runoff quality standards are applicable when the major development results in an increase of one-quarter acre or more of regulated motor vehicle surface.
- 2. Stormwater management measures shall be designed to reduce the post-construction load of total suspended solids (TSS) in stormwater runoff generated from the water quality design storm as follows:
  - i. Eighty percent TSS removal of the anticipated load, expressed as an annual average shall be achieved for the stormwater runoff from the net increase of motor vehicle surface.
  - ii. If the surface is considered regulated motor vehicle surface because the water quality treatment for an area of motor vehicle surface that is currently receiving water quality treatment either by vegetation or soil, by an existing stormwater management measure, or by treatment at a wastewater treatment plant is to be modified or removed, the project shall maintain or increase the existing TSS removal of the anticipated load expressed as an annual average.
- 3. The requirement to reduce TSS does not apply to any stormwater runoff in a discharge regulated under a numeric effluent limitation for TSS imposed under the New Jersey Pollutant Discharge Elimination System (NJPDES) rules, N.J.A.C. 7:14A, or in a discharge specifically exempt under a NJPDES permit from this requirement. Every major development, including any that discharge into a combined sewer system, shall comply with 2 above, unless the major development is itself subject to a NJPDES permit with a numeric effluent limitation for TSS or the NJPDES permit to



which the major development is subject exempts the development from a numeric effluent limitation for TSS.

4. The water quality design storm is 1.25 inches of rainfall in two hours. Water quality calculations shall take into account the distribution of rain from the water quality design storm, as reflected in Table 4, below. The calculation of the volume of runoff may take into account the implementation of stormwater management measures.

**Table 4 - Water Quality Design Storm Distribution**

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



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

$$R = A + B - (A \times B) / 100.$$

Where

R = total TSS Percent Load Removal from application of both BMPs,  
and

A = the TSS Percent Removal Rate applicable to the first BMP

B = the TSS Percent Removal Rate applicable to the second BMP.

6. Stormwater management measures shall also be designed to reduce, to the maximum extent feasible, the post-construction nutrient load of the anticipated load from the developed site in stormwater runoff generated from the water quality design storm. In achieving reduction of nutrients to the maximum extent feasible, the design of the site shall include green infrastructure BMPs that optimize nutrient removal while still achieving the performance standards in § 433-4 (S), (T) and (U).
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.

#### **U. Stormwater Runoff Quantity Standards**

1. This subsection contains the minimum design and performance standards to control stormwater runoff quantity impacts of major development.
2. In order to control stormwater runoff quantity impacts, the design engineer shall, using the assumptions and factors for stormwater runoff calculations at § 433-5, complete one of the following:
- i. Demonstrate through hydrologic and hydraulic analysis that for stormwater leaving the site, post-construction runoff hydrographs for the 2-, 10-, and 100-year storm events do not exceed, at any point in time, the pre-construction runoff hydrographs for the same storm events;
- ii. Demonstrate through hydrologic and hydraulic analysis that there is no increase, as compared to the pre-construction condition, in the peak runoff rates of stormwater leaving the site for the 2-, 10- and 100-year



- storm events and that the increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site. This analysis shall include the analysis of impacts of existing land uses and projected land uses assuming full development under existing zoning and land use ordinances in the drainage area;
- iii. Design stormwater management measures so that the post-construction peak runoff rates for the 2-, 10- and 100-year storm events are 50, 75 and 80 percent, respectively, of the pre-construction peak runoff rates. The percentages apply only to the post-construction stormwater runoff that is attributable to the portion of the site on which the proposed development or project is to be constructed; or
  - iv. In tidal flood hazard areas, stormwater runoff quantity analysis in accordance with 2.i, ii and iii above is required unless the design engineer demonstrates through hydrologic and hydraulic analysis that the increased volume, change in timing, or increased rate of the stormwater runoff, or any combination of the three will not result in additional flood damage below the point of discharge of the major development. No analysis is required if the stormwater is discharged directly into any ocean, bay, inlet, or the reach of any watercourse between its confluence with an ocean, bay, or inlet and downstream of the first water control structure.
3. The stormwater runoff quantity standards shall be applied at the site's boundary to each abutting lot, roadway, watercourse, or receiving storm sewer system.

#### **§ 433-5 Calculation of Stormwater runoff and Groundwater recharge.**

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

- 1. The design engineer shall calculate runoff using one of the following methods:
  - a. The USDA Natural Resources Conservation Service (NRCS) methodology, including the NRCS Runoff Equation and Dimensionless Unit Hydrograph, as described in 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](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>

**Remainder of the Section is Unchanged.**

**B.  
Unchanged**

**[§ 433-6 Standards for structural stormwater management measures. ]**

[Standards for structural stormwater management measures are as follows:

**(1)**

Structural stormwater management measures shall be designed to take into account the existing site conditions, including, for example, environmentally critical areas, wetlands, flood-prone areas, slopes, depth to seasonal high water table, soil type, permeability and texture, drainage area and drainage patterns, and the presence of solution-prone carbonate rocks (limestone).

**(2)**

Structural stormwater management measures shall be designed to minimize maintenance, facilitate maintenance and repairs, and ensure proper functioning. Trash racks shall be installed at the intake to the outlet structure as appropriate, and shall have parallel bars with one-inch spacing between the bars to the elevation of the water quality design storm. For elevations higher than the water quality design storm, the parallel bars at the outlet structure shall be spaced no greater than 1/3 the width of the diameter of the orifice or 1/3 the width of the weir, with a minimum spacing between bars of one inch and a maximum spacing between bars of six inches. In addition, the design of trash racks must comply with the requirements of § **433-8D**.]

**(3)**

Structural stormwater management measures shall be designed, constructed, and installed to be strong, durable, and corrosion resistant. Measures that are consistent with the relevant portions of the residential site improvement standards at N.J.A.C. 5:21-7.3, 5:21-7.4, and 5:21-7.5 shall be deemed to meet this requirement.]

**(4)**

At the intake to the outlet from the stormwater management basin, the orifice size shall be a minimum of 2 1/2 inches in diameter.]

**(5)**

Stormwater management basins shall be designed to meet the minimum safety standards for stormwater management basins at § **433-8**.]

**B.**

Stormwater management measure guidelines are available in the New Jersey Stormwater Best Management Practices Manual. Other stormwater management measures may be utilized, provided the design engineer demonstrates that the proposed measure and its design will accomplish the required water quantity, groundwater recharge and water quality design and performance standards established by § **433-4** of this chapter.]

**C.**

Manufactured treatment devices may be used to meet the requirements of § **433-4** of this chapter, provided the pollutant removal rates are verified by the New Jersey Corporation for Advanced Technology and certified by the Department.]



**[§ 433-7 Sources for technical guidance. ] § 433-6 Sources for technical guidance.**

A. [Technical guidance for stormwater management measures can be found in the documents listed, in Subsection A(1) and (2) below, which are available from Maps and Publications, New Jersey Department of Environmental Protection, 428 East State Street, P.O. Box 420, Trenton, New Jersey, 08625; telephone (609) 777-1038.

[(1)]

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

[(2)]

The New Jersey Department of Environmental Protection Stormwater Management Facilities Maintenance Manual, as amended.]

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](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](https://www.njstormwater.org/maintenance_guidance.htm).

**[B.]**

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

(1)

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

[(2)]

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

[(3)]

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



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.

**§ 433-7 Solids and Floatable Materials Control Standards.**

A. Site design features identified under § 433-4(I) above, or alternative designs in accordance with § 433-4 (I) 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 § 433-7 (1) (ii) below.

1. Design engineers shall use one of the following grates whenever they use a grate in pavement or another ground surface to collect stormwater from that surface into a storm drain or surface water body under that grate:

- i. The New Jersey Department of Transportation (NJDOT) bicycle safe grate, which is described in Chapter 2.4 of the NJDOT Bicycle Compatible Roadways and Bikeways Planning and Design Guidelines;  
or
- ii. A different grate, if each individual clear space in that grate has an area of no more than seven (7.0) square inches, or is no greater than 0.5 inches across the smallest dimension.

Examples of grates subject to this standard include grates in grate inlets, the grate portion (non-curb-opening portion) of combination inlets, grates on storm sewer manholes, ditch grates, trench grates, and grates of spacer bars in slotted drains. Examples of ground surfaces include surfaces of roads (including bridges), driveways, parking areas, bikeways, plazas, sidewalks, lawns, fields, open channels, and stormwater system floors used to collect stormwater from the surface into a storm drain or surface water body.

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

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

- i. Where each individual clear space in the curb opening in existing curb-opening inlet does not have an area of more than nine (9.0) square inches;
- ii. Where the municipality agrees that the standards would cause inadequate hydraulic performance that could not practicably be overcome by using additional or larger storm drain inlets;  
Where flows from the water quality design storm as specified in N.J.A.C. 7:8 are conveyed through any device (e.g., end of pipe netting



facility, manufactured treatment device, or a catch basin hood) that is designed, at a minimum, to prevent delivery of all solid and floatable materials that could not pass through one of the following:

- a. A rectangular space four and five-eighths (4.625) inches long and one and one-half (1.5) inches wide (this option does not apply for outfall netting facilities); or
- b. A bar screen having a bar spacing of 0.5 inches.

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

- iii. 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
- iv. 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.

#### **§ 433-8 Safety standards for stormwater management basins.**

##### **A.**

**Unchanged.**

##### **B.**

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

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

(a) The trash rack shall have parallel bars, with no greater than six-inch spacing between the bars. (b) The trash rack shall be designed so as not to adversely affect the hydraulic performance of the outlet pipe or structure.

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

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

(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 foot square. (3) For purposes of this Subsection B(3), "escape provisions" means the permanent installation of ladders, steps, rungs, or other features that provide easily accessible means of egress from stormwater management basins. Stormwater management basins shall include escape provisions as follows: (a) If a stormwater management basin has an outlet structure, escape provisions shall be incorporated in or on the structure. With the prior approval of the reviewing agency identified in Subsection C, a freestanding outlet structure may



be exempted from this requirement.(b) Safety ledges shall be constructed on the slopes of all new stormwater management basins having a permanent pool of water deeper than 2 1/2 feet. Such safety ledges shall be comprised of two steps. Each step shall be four to six feet in width. One step shall be located approximately 2 1/2 feet below the permanent water surface, and the second step shall be located one to 1 1/2 feet above the permanent water surface. See Subsection D for an illustration of safety ledges in a stormwater management basin.(c) In new stormwater management basins, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than three horizontal to one vertical.]

The provisions of this section are not intended to preempt more stringent municipal or county safety requirements for new or existing stormwater management BMPs. Municipal and county stormwater management plans and ordinances may, pursuant to their authority, require existing stormwater management BMPs to be retrofitted to meet one or more of the safety standards in § 433-8 (C)(1), (C)(2), and (C) (3) for trash racks, overflow grates, and escape provisions at outlet structures.

### C.

[Variance or exemption from safety standards.

(1) A variance or exemption from the safety standards for stormwater management basins may be granted only upon a written finding by the appropriate reviewing agency (municipality, county or Department) that the variance or exemption will not constitute a threat to public safety.]

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:
  - i. The trash rack shall have parallel bars, with no greater than six-inch spacing between the bars;
  - ii. The trash rack shall be designed so as not to adversely affect the hydraulic performance of the outlet pipe or structure;
  - iii. The average velocity of flow through a clean trash rack is not to exceed 2.5 feet per second under the full range of stage and discharge. Velocity is to be computed on the basis of the net area of opening through the rack; and
  - iv. 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:
  - i. The overflow grate shall be secured to the outlet structure but removable for emergencies and maintenance.
  - ii. The overflow grate spacing shall be no less than two inches across the smallest dimension
  - iii. The overflow grate shall be constructed and installed to be rigid, durable, and corrosion resistant, and shall be designed to withstand a perpendicular live loading of 300 pounds per square foot.
3. Stormwater management BMPs shall include escape provisions as follows:
  - i. If a stormwater management BMP has an outlet structure, escape provisions shall be incorporated in or on the structure. Escape provisions include the installation of permanent ladders, steps, rungs, or



other features that provide easily accessible means of egress from stormwater management BMPs. With the prior approval of the municipality pursuant to § 433-8 (C), a free-standing outlet structure may be exempted from this requirement;

- ii. Safety ledges shall be constructed on the slopes of all new stormwater management BMPs having a permanent pool of water deeper than 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 § 433-8 (E) for an illustration of safety ledges in a stormwater management BMP; and
- iii. In new stormwater management BMPs, the maximum interior slope for an earthen dam, embankment, or berm shall not be steeper than three horizontal to one vertical.

**D. [Illustration of safety ledges in a new stormwater management basin.**

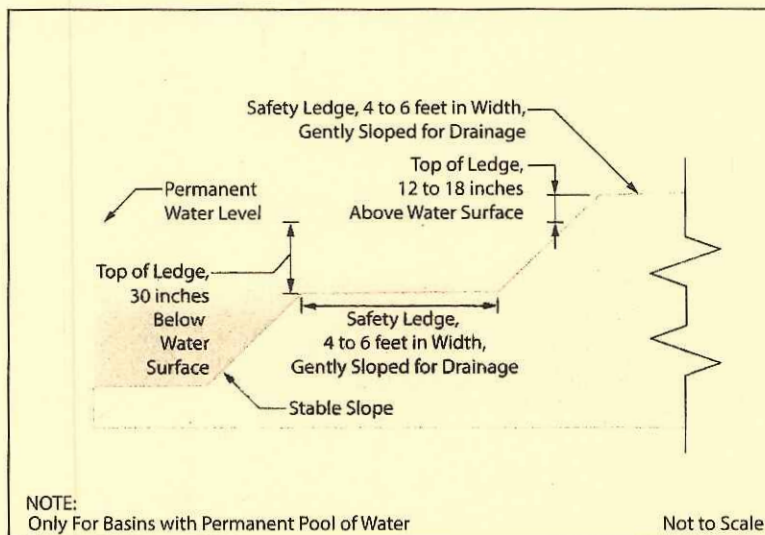
**A. Submission]**

Variance or exemption from safety standards.

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

**E. Safety Ledge Illustration**

**Elevation View –Basin Safety Ledge Configuration**



**§ 433-9 Requirements for site development stormwater plan.**

**A.  
Unchanged.**

**B.  
Unchanged.**

**C.  
Unchanged.**

**§ 433-10 Maintenance and repair.**

**A.  
Unchanged.**



**B.**  
**Unchanged.**

**C.**  
**Unchanged.**

**§ 433-11 Prohibited Conduct**

**A.**  
**Unchanged.**

**B.**  
**Unchanged.**

**C.**  
**Unchanged.**

**D.**

No person in control of private property shall connect a private drainage system to the combined sewer system for the purpose of any (Major or Non-Major) Development.

**§ 433-12 Exceptions to Prohibition**

**Unchanged.**

**§ 433-13 Penalties**

**Unchanged.**

**SECTION II:**

This Ordinance shall take effect thirty (30) days from the date of publication.



**SECTION III:**

All Ordinances or portions of Ordinances inconsistent herewith are hereby repealed to the extent of their inconsistency only.

**SECTION IV:**

If any part of this Ordinance shall be declared to be invalid or inoperative, such part shall be deemed severable and the invalidity thereof shall not affect the remaining parts of this Ordinance.

**SECTION V:**

The City Clerk and Corporation Counsel may change chapter numbers, article numbers and section numbers if codification of this Ordinance reveals a conflict between those numbers and the existing Code, in order to avoid confusion and possible accidental repealers of existing provisions.

**SECTION VI:**

The City Clerk and the Corporation Counsel may correct any clerical errors in the printing, publication and codification of this Ordinance, provided both concur with the correction being made and both certify in writing to the Municipal Council as to the specifics of the clerical correction no later than seven (7) days before the correction is made, or, where a legal deadline for publication applies, no later than the date of the next Regular Meeting. The said certifications shall also be prominently posted no later than the date of the next Regular Meeting, and thereafter shall be annexed to the corrected original Ordinance and retained by the City Clerk.

**STATEMENT OF PURPOSE**

The purpose of this Ordinance is to update and supplement Chapter 433, of the Code of the City of Paterson regarding Stormwater Control in order to comply with the revised Stormwater Management rules at N.J.A.C. 7:8, as adopted on March 2, 2020 by the New Jersey Department of Environmental Protection.

SECONDED BY COUNCILPERSON .. DR., LILISA MIMMS .....

*Do Not Use Space Below This Line*

RECORD OF COUNCIL VOTE ON FINAL PASSAGE	AYE	NAY	ABSTAIN	ABSENT
1. ABDELAZIZ, ALAA "AL"				X
2. COTTON, RUBY N.	X			
3. DAVILA, MARITZA	X			
4. JACKSON, MICHAEL	X			
5. KHALIQUE, SHAHIN	X			
6. MENDEZ, ALEX	X			
7. MIMMS, LILISA	X			
8. RIVERA, FLAVIO				X
9. VELEZ, LUIS				X

Adopted on first reading at a meeting of the Council of the City of Paterson, N.J., on .. FEBRUARY 23, 2021 .. Adopted on

second and final reading after hearing on .. MARCH 9, 2021 ..

Approved  
Rejected By ..  
Mayor .. ANDRE SAYEGH ..  
Reconsidered  
By Council .. 3/12/21 ..  
Date ..  
Over  
Ride  
Vote ..  
Aye ..  
Nay ..

.. DR. LILISA MIMMS .. Council President ..  
.. SONIA L. GORDON .. City Clerk