

EPA 2007 New Jersey Regulations Summary (DCN 43042)

This summary was prepared based on publicly available information at the time of collection, and may differ from actual requirements currently in place. See the Summary of State Construction and Development Requirements Memorandum (DCN 43066 in Section 1 of the record) for documentation of the state construction site requirements that were used in modeling baseline construction costs and pollutant loads.

New Jersey

Regulations

Stormwater management regulations can be found at New Jersey Administrative Code (NJAC), Title 7, Chapter 8 Stormwater Management, which were effective as of February 2, 2004. Design and performance standards for erosion control are established under the Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq. and implementing rules. These rules establish the permit requirements contained in the 2006 New Jersey Stormwater Permit No. *NJG0088323 General Permit for Construction and Mining Activity* and the *Draft 2007 Construction Activity Stormwater General Permit*. New Jersey specifies stormwater performance and design criteria in the 2004 *New Jersey Stormwater Best Management Practices Manual*, and specifies erosion and sediment control standards in the *Standards for Soil Erosion and Sediment Control*, last modified in 1999.

State Erosion and Sediment Control and Stormwater Management Requirements

On February 5, 2006 amendments to the New Jersey Soil Erosion and Sediment Control Program (SESC) came into effect. In particular, rules defining single-family home exemptions have been changed. Prior to February, most single-family dwelling construction was exempt from the soil erosion and sediment control requirements. Now, an application for a construction permit for a single-family dwelling, the construction of which would disturb greater than 5,000 square feet on a lot that has arisen from, or is part of, a subdivision comprising two or more single-family dwelling lots, is subject to the SESC act. The applicant/owner is required to secure certification of a soil erosion and sediment control plan.

Another rule revision includes any demolition activity of one or more structures and any associated new disturbance activity involving more than 5,000 square feet in size including the construction of one single-family dwelling or other project now requires a soil erosion and sediment control plan certification.

Stormwater management requirements are specified in the *New Jersey Administrative Code (NJAC), Title 7, Chapter 8 Stormwater Management*.

Stormwater Criteria

Groundwater Recharge Requirements

(§ 7:8-5.4)

The minimum design and performance standards for groundwater recharge are as follows:

i. The design engineer shall, using the assumptions and factors for stormwater runoff and groundwater recharge calculations at 7:8-5.6, either:

- (1) 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
- (2) Demonstrate through hydrologic and hydraulic analysis that the increase of stormwater runoff volume from pre-construction to post-construction for the two-year storm is infiltrated.

In order to control stormwater runoff quantity impacts, the design engineer shall, using the assumptions and factors for stormwater runoff calculations at 7:8-5.6, complete one of the following:

- i. Demonstrate through hydrologic and hydraulic analysis that for stormwater leaving the site, post-construction runoff hydrographs for the two, 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 two, 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 two, 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 (a)3i, ii and iii above shall only be applied if the increased volume of stormwater runoff could increase flood damages below the point of discharge.

Stormwater Runoff Quality Standards

(§ 7:8-5.5)

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 by 80 percent of the anticipated load from the developed site, expressed as an annual average. Stormwater management measures shall only be required for water quality control if an additional one-quarter acre of impervious surface is being proposed on a development site. The water quality design storm is 1.25 inches of rainfall in two hours.

Special Water Resource Protection Areas

(§ 7:8-5.5)

Special water resource protection areas shall be established along all waters designated Category One at 7:9B and perennial or intermittent streams that drain into or upstream of the Category One waters as shown on the USGS Quadrangle Maps or in the County Soil Surveys, within the associated HUC 14 drainage. These areas shall be designated and protected according to the following standards, in addition to other standards found at § 7:8-5.5:

The applicant shall preserve and maintain a special water resource protection area in accordance with one of the following:

- i. A 300-foot special water resource protection area shall be provided on each side of the waterway, measured perpendicular to the waterway from the top of bank outwards or from the centerline of the waterway where the bank is not defined, consisting of existing vegetation or vegetation allowed to follow natural succession is provided.

ii. Encroachment within the designated special water resource protection area under (h)1i above shall only be allowed where previous development or disturbance has occurred (for example, active agricultural use, parking area or maintained lawn area). In no case shall the remaining special water resource protection area be reduced to less than 150 feet as measured perpendicular to the top of bank of the waterway or centerline of the waterway where the bank is undefined.

All stormwater shall be discharged outside of but may flow through the special water resource protection area and shall comply with the Standard For Off-Site Stability in the "Standards for Soil Erosion and Sediment Control in New Jersey," established under the Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq. (see 2:90-1.3) or with stabilization measures in accordance with the requirements of the above standards that may be placed within the special water resource protection area, provided that:

- i. Stabilization measures shall not be placed within 150 feet of the waterway;
- ii. Stormwater associated with discharges allowed by this paragraph shall achieve a 95 percent TSS post construction removal rate.

Erosion and sediment controls standards are specified in the *NJG0088323 General Permit for Construction and Mining Activity*.

Permit Validity

(p. 3)

Authorization for new stormwater discharges commencing in the Pinelands Area (as defined by N.J.S.A. 13:18A-11) after November 2, 1992, under this permit becomes effective only if, pursuant to N.J.S.A. 13:18A-15, certain determinations are made by the Pinelands Commission.

(p. 7)

Construction Site Waste Control requirements become operative on March 3, 2004 and apply only to construction activities that commence on or after March 3, 2004. Public projects that have gone out for bid or have been awarded a contract prior to March 3, 2004 are exempt from implementing the new requirements for construction site waste management. Construction activities that commenced prior to March 3, 2004 but did not obtain certification (or approval from exempt municipality) required under the Soil Erosion and Sediment Control Act are not exempt from the requirements in this section. Any other new construction activity for which an RFA is submitted on or after March 3, 2004 or which receive automatic renewal of authorization under this permit after March 3, 2004 also shall comply with these requirements. These requirements apply only to such facilities with "stormwater discharge associated with small construction activity" as defined at N.J.A.C. 7:14A-1.2, and to such facilities with stormwater discharge associated with construction activity described under subparagraph 1x of the N.J.A.C. 7:14A-1.2 definition of "stormwater discharge associated with industrial activity."

Numeric Pollutant Removal Standard

Numeric pollutant removal standards are not specified.

Erosion and Sediment Control Plan

(p. 5)

Construction activity that may result in a stormwater discharge authorized by this permit shall be executed only in accordance with a Stormwater Pollution Prevention Plan (SPPP) that contains an erosion and sediment control component.

(p. 13)

All sediment barriers shall be installed in accordance with Standards for Soil Erosion and Sediment Control in New Jersey, July 1999.

Sediment Traps/Basins

(p. 17)

Sediment Control Tanks shall be sized accordingly: 1 cubic foot of storage for each gallon per minute of pump discharge capacity. Tanks may be connected in series to increase effectiveness.

Soil Stabilization

Soil Stabilization requirements are not specified.

Monitoring

Monitoring requirements are not specified.

Erosion and sediment controls standards are specified in the *Draft 2007 Construction Activity Stormwater General Permit*.

Permit Validity

(p. 3)

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Erosion and Sediment Control Plan

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Soil Stabilization

Soil Stabilization requirements are not specified.

Monitoring

Monitoring requirements are not specified.

Stormwater performance and design criteria in the 2004 *New Jersey Stormwater Best Management Practices Manual*.

Numeric Pollutant Removal Standard

(Chapter 4, p. 1)

A “major development” project that creates at least 0.25 acres of new or additional impervious surface must include stormwater management measures that reduce the average annual total suspended solids (TSS) load in the development site’s post-construction runoff by 80 percent. In addition, these stormwater management measures must reduce the average annual nutrient load in the post-construction runoff by the maximum extent feasible.

NJ Department of Environmental Protection (DEP) has adopted official TSS removal rates for each of the BMPs described in the Manual. These BMPs and their adopted TSS removal rates are presented below in Table 4-1.

Table 4-1: TSS Removal Rates for BMPs

Best Management Practice (BMP)	Adopted TSS Removal Rate (%)
Bioretention System	90
Constructed Stormwater Wetland	90
Dry Well	Volume Reduction Only ¹
Extended Detention Basin	40 to 60 ²
Infiltration Structure	80
Manufactured Treatment Device	See N.J.A.C. 7:8-5.7(d) ³
Pervious Paving System	Volume Reduction Or 80 ⁴
Sand Filter	80
Vegetative Filter	60-80
Wet Pond	50-90 ⁵

¹ See text below.

² Final rate based upon detention time. See Chapter 9.

³ To be determined through testing on a case-by-case basis. See text below.

⁴ If system includes a runoff storage bed that functions as an infiltration basin. See Chapter 9.

⁵ Final rate based upon pool volume and detention time. See Chapter 9.

Chapter 4, beginning on page 3, also provides guidelines for installation and calculation methods for TSS Removal Rates for BMPs in series.

(p. 7)

The chosen BMP must meet the TSS criteria, but must also maximize nutrient removal for the site. To assist with the selection of BMPs for nutrients, information regarding estimated nutrient removal rates is provided in Table 4-2.

Table 4.2 – Typical Phosphorous and Nitrogen Removal Rates for BMPs

Best Management Practice (BMP)	Total Phosphorous Removal Rate (%)	Total Nitrogen Removal Rate (%)
Bioretention Basin	60	30
Constructed Stormwater Wetland	50	30
Extended Detention Basin	20	20
Infiltration Basin	60	50
Manufactured Treatment Devices	See N.J.A.C. 7:8-5.7(d)	See N.J.A.C. 7:8-5.7(d)
Pervious Paving ²	60	50
Sand Filter	50	35
Vegetative Filter	30	30
Wet Pond	50	30

Unified Stormwater Criteria

(Chapter 2, p. 3)

Subchapter 5 of the NJDEP Stormwater Management Rules requires the maximum practical use of the following nine nonstructural strategies at all major developments:

1. Protect areas that provide water quality benefits or areas particularly susceptible to erosion and sediment loss.
2. Minimize impervious surfaces and break up or disconnect the flow of runoff over impervious surfaces.
3. Maximize the protection of natural drainage features and vegetation.
4. Minimize the decrease in the pre-construction “time of concentration.”
5. Minimize land disturbance including clearing and grading.
6. Minimize soil compaction.
7. Provide low maintenance landscaping that encourages retention and planting of native vegetation and minimizes the use of lawns, fertilizers, and pesticides.
8. Provide vegetated open-channel conveyance systems discharge into and through stable vegetated areas.
9. Provide preventative source controls.

(Chapter 4, p. 1)

The stormwater management measures used to reduce the average annual TSS and nutrient loads can be structural and/or nonstructural in nature. To achieve the reduction requirements, they must be designed to treat the runoff from the stormwater quality design storm, a 1.25-inch/2-hour variable rate rainfall event.

(Chapter 5)

Chapter 5 presents a variety of methods for and examples of calculating the factors for determining compliance with the stormwater quality design storm criteria.

(Chapter 6)

This chapter presents the standards, data, and procedures necessary to meet the groundwater recharge requirements, in which a “major development” project, which is one that disturbs at least 1 acre of land or creates at least 0.25 acres of new or additional impervious surface, must include nonstructural and/or structural stormwater management measures that prevent the loss of groundwater recharge at the project site. Specifically, the Stormwater Management Rules require that a proposed major land development comply with one of the following two groundwater recharge requirements:

Requirement 1: That 100 percent of the site’s average annual pre-developed groundwater recharge volume be maintained after development; or

Requirement 2: That 100 percent of the difference between the site’s pre- and post-development 2-Year runoff volumes be infiltrated.

Regional Variations

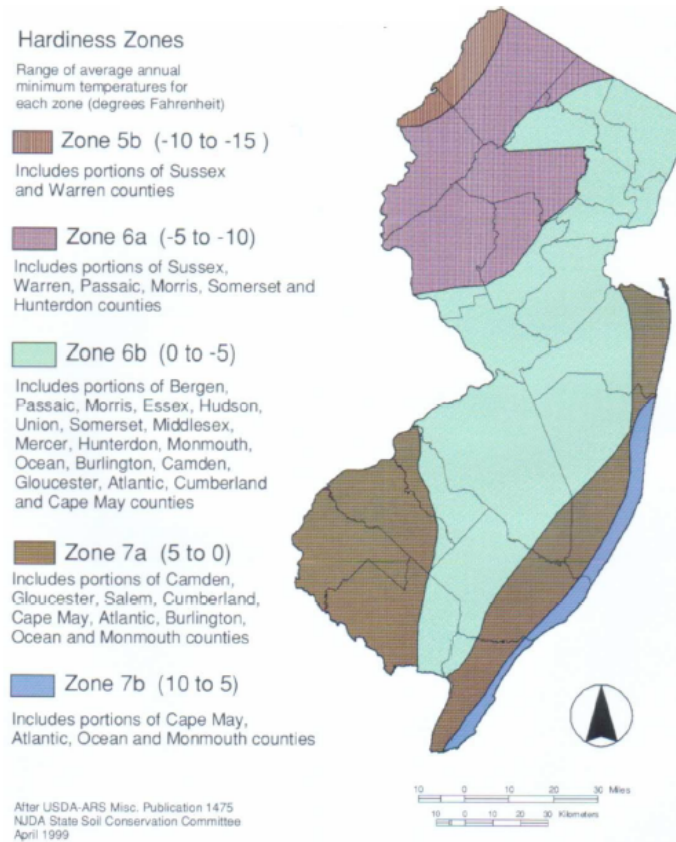
(Chapter 7, p. 3)

Table 7-1 and Figure 7-1 depict New Jersey plant hardiness zones:

Table 7-1: USDA Hardiness Zones for New Jersey

Zone		USDA Minimum Temperature
Temperate Zone 5	a	-20 to -15
	b	-15 to -10
Temperate Zone 6	a	-10 to -5
	b	-5 to 0
Temperate Zone 7	a	0 to 5
	b	5 to 10

Figure 7-1: USDA Plant Hardiness Zones' Average Annual Minimum Temperature (New Jersey)

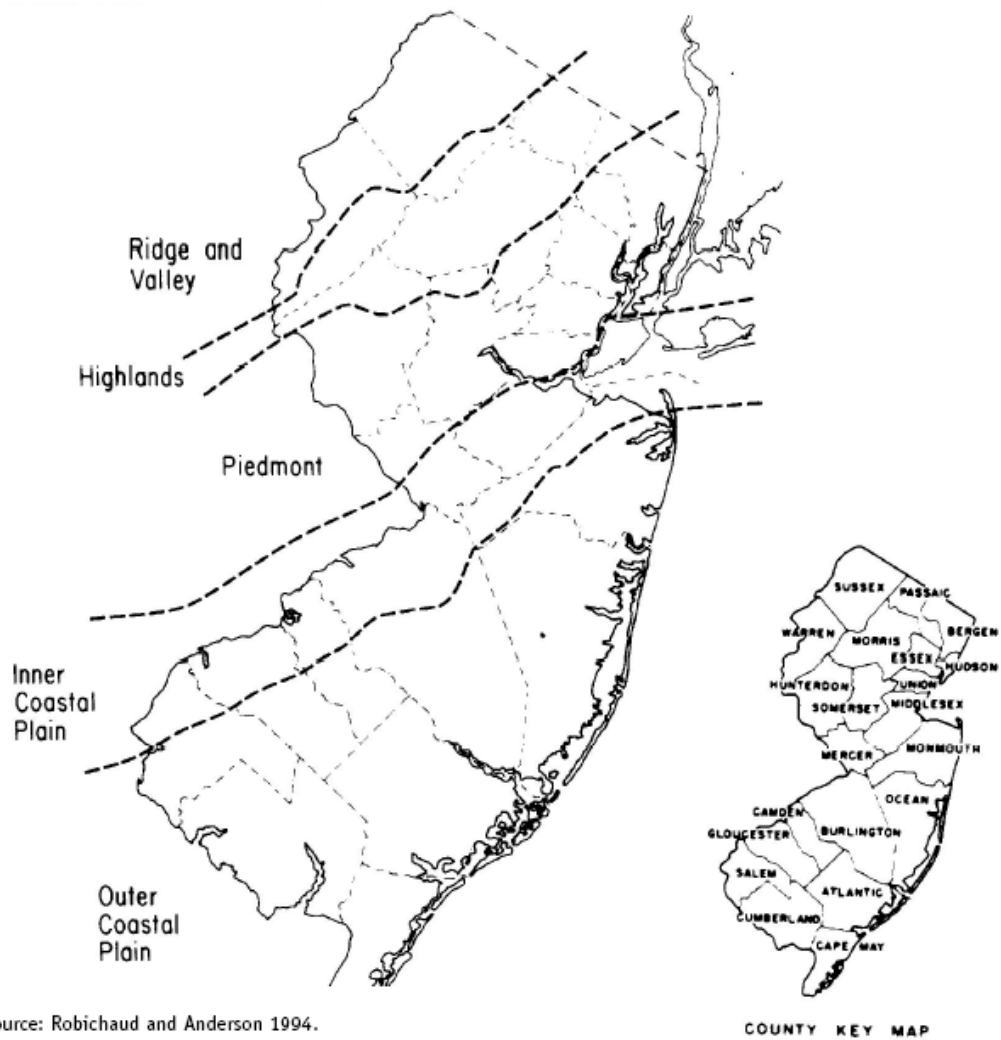


This figure can be viewed in color in the PDF version of this chapter available at <http://www.state.nj.us/dep/watershedmgt/bmpmanualfeb2004.htm>

(Chapter 7, p. 4)

Figure 7-2 shows the physiographic regions of New Jersey; Chapter 7 contains detailed information on the associated vegetation for each of the regions.

Figure 7-2: The Five Physiographic Sections of New Jersey



Source: Robichaud and Anderson 1994.