



“The Stormwater Primer by George Hawkins provides a non-technical, but comprehensive overview of the New Jersey Phase II Stormwater Regulations, and offers an invaluable service to all communities.”
Captain Bill Sheehan, Executive Director of the Hackensack Riverkeeper

A Municipal Stormwater Rule Primer

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The new stormwater Rules offer the opportunity to preserve or improve the quality and quantity of New Jersey’s waters. These Rules help to increase the recharge of fresh water into underground aquifers, decrease the amount of pollutants flowing into our water supplies from construction sites, new developments, public complexes and transportation agencies, and decrease the ferocity of storm surges that cause flooding and scour our stream banks. A sustainable supply of clean, fresh water is fundamental not only to people and all living organisms, but also to the economic well-being of our state.

These opportunities will be realized provided that the Rules are well understood and followed. For example, the March 3, 2004 deadline for municipalities, public and transportation complexes to request authorization to discharge stormwater under a new permit system has come and gone. Are municipalities ready for the deadlines that will continue to roll-out over the upcoming years? To help, this article is a stormwater primer about how the rules work for municipalities – its genesis, structure, language and schedule. If you invest the time, you will gain a working knowledge to help your town comply. Initially, we review six basic points.

1. **Federal Law.** New Jersey is required to develop a stormwater program stormwater under Phase Two requirements of Section 402 of the federal Clean Water Act. Although the NJ

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Department of Environmental Protection (NJDEP) has devised a strong program also based on New Jersey state statutes and implementing federal provisions, the program is a non-negotiable federal mandate.

2. Two Rules. The new stormwater program is the product of two new regulations. One governs how municipalities will plan for, regulate, and review new development with respect to stormwater (NJ Administrative Code Chapter 7, Subchapter 8; or Rule 7:8). The second requires municipalities to comply with new permits that control how municipalities design, manage and maintain municipal storm systems, and from stormwater that flows from lands owned or operated by the municipality (NJ Administrative Code Chapter 7, Subchapter 14A; or Rule 7:14A).
3. General Permits. Every municipality must comply with a “New Jersey Pollutant Discharge Elimination System” (or NJPDES) General Permit. A General Permit (GP) means that each municipality will not negotiate an individualized permit, but instead must request to be authorized to discharge in compliance with a common set of obligations established for four general categories, two pertaining to municipalities – Tier A and Tier B (Tier A is generally for larger municipalities, and covers most towns in New Jersey). Municipalities that do not have a municipal storm system, or are regulated due to a Combined Sewer Overflow (CSO) system, are not required to obtain a GP.
4. Five Year Phased Requirements. Obligations under these Rules and the associated GPs are phased over a five-year implementation schedule. For example, stormwater requirements for new residential development became effective on February 2, 2004 by being incorporated into the Residential Site Improvement Standards (RSIS). Yet a municipality does not have to adopt a stormwater plan until one year after a municipality is authorized to discharge under a GP.
5. Models are available. NJDEP does not expect that each town will create new plans, ordinances and education programs required under the program. NJDEP intends to create model documents that will satisfy regulatory requirements, many of which are appended to NJDEP’s Stormwater Best Management Practices Manual. Of course, towns will be able to modify these models to fit their own circumstances – but starting with approved models can save considerable effort and cost.
6. Information and funding. Every municipality should have received an information packet about the Rules; including summaries of requirements and information on grant funds that are available to help comply with the Rules. NJDEP will also send guidance on a CD to municipalities in late April or early May that will include copies of the Rules, model ordinances, BMP manual, educational information and forms required.

Overview. The two new Rules manage stormwater from new and existing development. Rule 7:8 focuses on stormwater from new and re-development. In general, the Rule governs development that disturbs more than one acre, or increases impervious cover by ¼ acre – a “Major Development” – with some exemptions for developments with existing approvals. Rule 7:8 includes requirements for non-structural management of stormwater, including careful site plan design in concert with ecological conditions. The Rule also has design standards, including new specifications for stormwater retention ponds and associated structures. The Rule includes standards to increase groundwater infiltration and to decrease peak storm flows and suspended solids leaving the site. The Rule also includes special protections for “Special Water Resource Areas” – including a 300 foot buffer for streams with the highest water quality (C-1). Rule 7:8 is implemented both through the application of the Residential Site Improvement Standards (RSIS),

and through the adoption of a municipal stormwater plan, or regional stormwater plan, that outlines the necessary ecological information and required stormwater control ordinances.

Rule 7:14A creates a permit program that both requires the implementation of the stormwater control measures for new development contained in Rule 7:8, and requires plans, ordinances and Best Management Practices (BMPs) to manage stormwater from lands owned and operated by the municipality, and the design, operation and maintenance of municipal storm sewer systems. This Rule, through requirements in General Permits, requires municipalities and other public complexes and transportation agencies to adopt a broad range of practices to reduce the pollutants that are picked up in stormwater. These requirements include: management of wildlife feeding, litter and pet waste, maintenance of municipal yards, deicing and stormwater facilities, identification stormwater outfalls and elimination of illicit connections, and regular education and outreach to the community about stormwater and prevention efforts. A municipality stormwater program is described in a written Stormwater Pollution Prevention Plan that outlines how a municipality will compile, monitor and report on the GP requirements.

Stormwater Plans and New Development (Rule 7:8). The program establishes standards to govern stormwater from new and re-development in five categories:

- Nonstructural strategies: minimize disturbances and impervious cover, reduce lawn cover and implement pollution prevention steps.
- Groundwater recharge: retain 100% of pre-development groundwater recharge on-site or infiltrate the increase in the 2-year storm.
- Water quantity: reduce post development peak flows for the 2, 10 and 100-year storms by 50%, 75, and 80% respectively, or demonstrate no impact with full development in stream area.
- Water quality: reduce the total suspended solids by 80% and remove nutrients to the maximum extent possible in the post construction runoff.
- Special Resource Area: prohibit, with some narrow exceptions, development within a 300-foot buffer in the HUC (hydrologic unit code) 14 around C-1 waters.

These standards apply to new “Major Developments” (disturbance of more than 1 acre, impervious more than ¼ acre) and are implemented and enforced in four ways. 1) These standards are immediately applicable to new residential development through application of the Residential Site Improvement Standards. 2) These standards will be reviewed by NJDEP when associated permits are required for a project (Flood Hazard Area Control Act - Stream Encroachment, Freshwater Wetlands Protection Act, Coastal Area Facilities Review Act - CAFRA and the Waterfront and Harbor Facilities Act). 3) These standards will be reviewed by the municipality after it has adopted, and has had approved, an appropriate Stormwater Management Plan and associated Stormwater Ordinance(s). 4) These standards will be reviewed by the relevant agency after a Regional Stormwater Management Plan is adopted as part of the Water Quality Management Plan – which also requires the adoption of a consistent municipal stormwater plan. This chronological schedule overlaps the permit schedule described below:

February 2, 2004:

- Municipalities must review new residential development that disturbs more than one acre to be consistent with new stormwater requirements, as incorporated through the Residential Site Improvement Standards.

One year from EDPA or Next Master Plan Reexamination, likely Spring 2005:

- Municipalities must adopt a Stormwater Management (SWM) Plan by the sooner of a) the deadline in the 7:14A General Permit (see below) or b) the next Master Plan Reexamination. (See summary of SWM Plan elements at the end of this article.)

Note: See below about the Effective Date of the Permit Authorization (EDPA). Under Rule 7:14A, municipalities will need to complete a SWM Plan one year after being authorized by NJDEP – which will likely be in the Spring of 2005.

One year from adoption of SWM Plan, likely Spring 2006:

- Municipalities must adopt municipal stormwater control ordinance that implements the design and performance standards contained in Rule 7:8. The municipality must submit the plan and ordinances to the county review agency.

Sixty days from adoption of SWM Plan and Ordinance, likely Summer 2006:

- County must approve, conditionally approve or disapprove the municipal plan and ordinance. If the county does not act within 60 days, the plan and ordinances are deemed approved and effective immediately. Upon approval, the stormwater control ordinance is effective. Thirty days thereafter, the municipality must post the plan and ordinance on the web and provide them to the Soil Conservation District. NJDEP retains authority to review the sufficiency of the SWM Plan and Ordinances.

General Permits and Existing Development, Rule 7:14A. The stormwater program creates General Permits for Municipal Separate Storm Sewer Systems (MS4s), which include municipalities and public complexes and transportation agencies. A municipality must request authorization to discharge stormwater in compliance with the standardized terms of a Tier A or Tier B GP by submitting a one-page Request for Authorization (RFA) to NJDEP by March 3, 2004. By submitting the RFA, a municipality acknowledges it understands the GP requirements, and has identified a contact person to be responsible for implementing the program.

Permit Schedule and Requirements. Although NJDEP does not include a deadline for reviewing the RFA, they intend to respond to RFAs submitted on March 3 in the Spring of 2004. NJDEP will review each RFA and ensure that each municipality is in the proper Tier, has filled out the form correctly, and has identified an appropriate officer in charge. The response date from NJDEP is important because it triggers the Effective Date of Permit Authorization (EDPA), which starts the clock on the State Basic Requirements (SBRs) mandated in the Rule and GPs. The GPs list SBRs in six categories:

- Stormwater Pollution Prevention Plan (SPPP). Prepare and implement a SPPP that outlines the program, an implementation schedule and deliverables, and measurable outcomes.
- Post-Construction Standards. Comply with RSIS standards and Stormwater plan and ordinances as required by Rule 7:8 for new and re-development projects, including operation and maintenance of best management practices and new storm drain inlets.

- Education. Conduct an annual event and distribute information that informs the public on topics such as over-fertilizing and pesticide use, and pet and waste disposal. NJDEP will provide an educational brochure that can be copied and distributed. Implement a program to stencil municipality operated stormwater drain inlets.
- Waste Disposal. Adopt ordinances to properly manage pet waste, litter, wildlife feeding, yard waste and to reduce other improper waste disposal, and implement programs to eliminate illicit connections to the municipal storm system.
- Floatables. Implement program to reduce solids and floatables in stormwater, including street sweeping in predominantly commercial areas, storm drain retrofitting, road erosion control maintenance, and remediation of stream scouring due to outfall discharges.
- Maintenance Yard. Implement pollution prevention techniques at maintenance yards including permanent structure for storage of de-icing materials, fueling, vehicle maintenance, and good housekeeping operating procedures.
- Employee Training. Implement appropriate employee training programs.

The GP may require Additional Measures (AM), which can include implementation strategies to reduce a particular pollutant from stormwater in an impaired waterway (from a Total Maximum Daily Load, or TMDL strategy), or requirements from an Areawide (or Statewide) Water Quality Management Plan, which addresses the extension of sewer service and other wastewater alternatives on a regional basis.

The GP also requires an Annual Report that outlines implementation steps, deliverables and outcomes. NJDEP will provide the forms and format for the Annual Report.

Every municipality should check these requirements in more detail, but a short chronological list of SBRs for Tier A municipalities follows:

Upon EDPA (in most cases, Spring 2004):

- Ensure compliance with RSIS requirements for new residential development for stormwater. This includes extensive stormwater standards included in Rule 7:8.
- Comply with notice requirements for public participation in the program.
- Ensure operation and maintenance of Best Management Practices (BMPs) for stormwater from lands owned and operated by the municipality, or for stormwater BMPs installed in a new or redevelopment project.

12 Months from EDPA (Spring 2005):

- Prepare and implement a Stormwater Pollution Prevention Plan (SPPP), which describes how the SBRs will be implemented. SPPP requirements are in Rule 7:14A.
- Adopt a Stormwater Management (SWM) Plan in accordance with Rule 7:8, which describes how stormwater will be managed from new development
- Comply with new design standards for stormwater drain inlets installed by the municipality. Retrofit existing stormwater inlets during road repair, reconstruction and repaving.
- Initiate education program including distribution of brochure and holding of annual stormwater education event.
- Conduct monthly sweeping of roads in predominantly commercial areas, weather and road conditions permitting.

- Implement a stormwater facility maintenance program that includes yearly catch basin cleaning to ensure proper function of municipal stormwater facilities.
- Develop and implement comprehensive stormwater requirements for maintenance yards, including storage, vehicle fueling, vehicle maintenance and housekeeping.
- Develop and conduct employee training for appropriate employees covered by requirements in the general permit.

18 months from EDPA (Fall 2005):

- Adopt ordinances that provide for the control of pet waste, litter, improper waste disposal, wildlife feeding and yard waste. Adopt an ordinance that prohibits illicit connections to municipal stormwater systems.
- Develop a program to detect and eliminate illicit connections.
- Develop and implement programs to identify, stabilize and repair areas of roadside erosion, and to identify, stabilize and remediate streambank scouring from outfall pipes.

24 months from EDPA or 12 months from adoption of the SWM Plan (Spring 2006):

- Adopt an ordinance to govern stormwater management from new and re-development.
- Ensure operation and maintenance of BMPs for stormwater on non-municipal property.
- Ensure design standards are met for new storm drain inlets installed by non-municipal entities.

36 months from EDPA (roughly, April 2007):

- Implement a program to map all municipal stormwater outfall pipes to surface water in two phases. Complete first phase.
- Complete permanent structure to cover de-icing materials.

60 months from EDPA (roughly, April 2010):

- Map second phase of municipal stormwater outfall pipes to surface water.
- Complete labeling of all stormwater inlets near sidewalks, in plazas, parking areas and maintenance yards.

Additional Resources. Extensive additional information is available on the web to help municipalities and other regulated parties embrace and join in the effort to protect this precious resource. In particular, NJDEP provides on its website the text of the Rules, the language of the Tier A and Tier B permits, and a Best Management Practices Manual that explains technologies and approaches that comply with the new stormwater standards for new development, as well as model plans and ordinances. NJDEP will be sending guidance to municipalities on a CD in late April or Early May that will include copies of the Rules, model ordinances, BMP manual, and required educational information and forms.

Stormwater Resources

Main Site:

NJDEP's Stormwater and Nonpoint Source Pollution – www.njstormwater.org

(listing of state funding resources, regulations, best management practices manual, model ordinances, and training opportunities to assist implementation of the stormwater Rules)

Supplemental Information:

Association of New Jersey Environmental Commissions (ANJEC) - www.anjec.org (fact sheets and compilation of ordinances throughout the state)

Center for Watershed Protection's The Stormwater Manager's Resource Center – <http://www.stormwatercenter.net/> (one stop source for anything pertinent to stormwater)

Delaware Riverkeeper Network – www.delawariverkeeper.org (stormwater handbook)

Florida Stormwater Association – <http://www.florida-stormwater.org/> (publications and resources on stormwater)

FX Browne Watershed/Stormwater Fact Sheets – <http://www.fxbrowne.com/html/gs-facts/facts.htm> (compilation of fact sheets from organizations nationwide on various aspects of storm water management).

Great Swamp Watershed Association – www.greatswamp.org (stormwater model ordinance and stormwater handbook and video)

The GIS Center – www.giscenter.org (assistance with mapping and model applications to implement stormwater regulations)

International Stormwater Best Management Practices Database – www.bmpdatabase.org (“This database provides access to BMP performance data in a standardized format for roughly 200 BMP studies conducted over the past fifteen years.”)

Local Government Environmental Assistance Network – www.lgean.org (developed a toolbox to assist local government officials in their efforts to protect the environment and public health)

Low Impact Development Center – <http://www.lowimpactdevelopment.org/> (publications, brochures and training opportunities on low impact development)

New Jersey Future's Smart Growth Gateway – <http://www.smartgrowthgateway.org/> (consolidate resource of case studies and ordinances within New Jersey)

Stony Brook-Millstone Watershed Association Natural Lands Network's – Making Sense of the Stormwater Rules Stormwater – <http://www.thewatershed.org/WSM/nln/stormwater.html>

Stormwater, the Journal for Surface Water Quality Professionals (Magazine) – <http://www.forester.net/sw.html>

Ten Towns Great Swamp Watershed Management Committee – www.tentowns.org (stormwater ordinances and fact sheets)

USEPA Nonpoint Source Pollution – www.epa.gov/nps (comprehensive listing of federal funding resources, newsletters, outreach materials, ordinances and various other links throughout EPA’s website on stormwater management)

USEPA’s NPSINFO Email Listserver - www.epa.gov/OWOW/NPS/changes.html
 (“NPSINFO is a forum for open discussion of nonpoint source pollution issues and is sponsored by the United States Environmental Protection Agency's Office of Wetlands, Oceans, and Watersheds.”)

Elements of a Stormwater Management Plan (Rule N.J.A.C. 7:8-4.2)

1. Describe how plans will achieve goals of stormwater planning and include structural and nonstructural strategies.
2. Include maps showing water bodies.
3. Map groundwater recharge areas and wellhead protection areas.
4. Describe how the plan incorporates the design standards in Rule 7:8.
5. Describe long term operation and maintenance of stormwater measures.
6. Describe how plans will comply with stormwater safety standards.
7. Describe how municipal plan is coordinated with stormwater ordinances and the appropriate Soil Conservation District, and any other regional stormwater plans.
8. Evaluate how the municipalities Master Plan, official map and development regulations implement the non-structural stormwater strategies.
9. Include a map of the municipality showing a) projected land uses (build-out); b) estimate drainage area; c) total acreage of impervious cover; and d) future non-point source loading assuming build-out.
10. If a municipality is near full build-out, it may elect that it has less than one mile of vacant and open lands rather than provide information in #8 and #9. Agricultural and open lands may be excluded if development rights have been purchased or are otherwise environmentally constrained.
11. Identify a mitigation plan for any variances granted from stormwater standards.
12. Copy of the stormwater control ordinance(s).
13. May include a stream corridor protection plan to address protection of C-1 waters as well as other streams within the municipality.