

Photo courtesy of Don Lake.



Executive Summary

This manual will help local governments and publicly-owned institutions develop and implement stormwater runoff controls, including local stormwater management laws or regulations as required by state and federal law.

Stormwater that runs off during and after land development (*construction/post-construction runoff*) results in flooding and erosion, as well as significant pollution of lakes, streams, rivers and estuaries.

Control of land use and development rests with local governments. For this reason, state and federal law now require urbanized commu-

Filter strips are areas of native grass or plants created to trap the pollutants stormwater picks up as it flows across driveways and streets.

nities and publicly-owned institutions in New York State to establish stormwater management programs, which must be fully functional by January 8, 2008. The goal of these programs is to retain or absorb stormwater on developed sites wherever possible, with the quantity, rate and quality of runoff remaining as they were before the sites were developed.

To protect resources and quality of life, New York State encourages all localities, urban and rural, to manage stormwater through existing land use approval processes. This Guidance Manual includes information that localities need as they develop programs to manage construction site and post-construction stormwater runoff. The *Sample Stormwater Management Local Law* in Appendix 1 includes all of the requirements for stormwater management local laws in regulated New York State municipalities; communities can adjust the language of the law to reflect local needs and conditions.

The State of New York recommends that every community, whether or not it is regulated under the state/federal program, adopt a Stormwater Management Local Law similar to the sample law in Appendix 1 of this manual.

Stormwater Management Requirements

Under delegation from the federal government, New York State is using two Stormwater Management General Permits as the framework for managing stormwater across the state. Regulations require operators of construction sites to obtain coverage under a general permit for construction activity, and operators of regulated Municipal Separate Storm Sewer Systems (MS4s) to obtain coverage under a general permit for MS4s. The size of the disturbed area and the population of the MS4 determine who must obtain permit coverage. See Table 1 for a summary of stormwater management responsibilities under the state/federal program.

losses, like degradation of drinking water, swimming or fishing, or a general weakening of natural systems, with loss of native species and increase of invasive species.

The state/federal stormwater program provides a framework to help localities manage stormwater effectively and protect quality of life. When stormwater runoff is kept to pre-development amounts and quality, benefits accrue throughout the local community and beyond.

- **Public health** is protected when water is kept clean for drinking, contact recreation and the harvest of fish, shellfish and other edible resources; reducing the physical hazards of flooding, erosion and subsidence also protects public health.
- **The environment** improves when pollution and sedimentation of water bodies are reduced and groundwater recharge is increased. Important biological resources, natural habitats and ecosystems become healthier and more productive.
- **The local economy** reaps numerous benefits, including: protection for property values (by avoiding flooding, erosion and related costs to property owners, and by buffering developed areas from flooding); promotion of sustainable resources; improved tourism attracted by stable beaches and banks, clean swimming areas and successful fishing.
- **Local governance** benefits when the community determines stormwater management goals and oversees construction/post-construction measures, as well as when local citizens participate in stormwater management decisions.

How Stormwater is Managed

Controlling runoff during and after construction is central to effective stormwater management. To control construction/post-construction stormwater, the state/federal stormwater management laws establish the following obligations:

- **Operators of construction sites** must prepare and abide by Stormwater Pollution Prevention Plans (SWPPPs) that prescribe how stormwater must be managed during construction and post-construction, and must construct any needed stormwater management facilities (such as absorption areas, stormwater ponds or swales).
- **Urbanized municipalities, publicly-funded institutions and other public entities** must establish stormwater management programs to review and enforce Stormwater Pollution Prevention Plans (SWPPPs) and ensure ongoing operation and maintenance of permanent stormwater controls on developed sites.

Stormwater Plans: SWPPPs formalize the selection and design of stormwater management measures for each site. The SWPPP includes an erosion and sediment control plan, and, in most cases, a post-construction stormwater control plan.

- **The erosion and sediment control plan**, required for all construction activities disturbing one or more acres of land, lays out the nature, placement and capacity of runoff control measures to be used during construction.

Further Stormwater Management Information

Definition of MS4: *Overview of the Municipal Separate Storm Sewer Systems (MS4) Phase II Stormwater Permit Program*; NYSDEC, Feb. 2003, rev. August 2003; http://www.dec.state.ny.us/website/dow/toolbox/ms4toolbox/ms4_overview.pdf and <http://www.dec.state.ny.us/website/dow/Phasell.html>

Elements of a SWPPP: *SPDES General Permit for Stormwater Discharges from Construction Activity [GP-02-01] Part 3D.* http://www.dec.state.ny.us/website/dow/gen_constr.pdf

Phase II Construction/Post-Construction Stormwater Management

Table 1—Permittee Requirements and MS4 Opportunities

For a full description of all entities' responsibilities, see the General Permits, GP-02-01 and GP-02-02

Entity	Phase II Requirements	Opportunities for MS4s
<p>Construction Site Operators Statewide</p> <p><i>See Stormwater General Permit for Construction Activities, GP-02-01</i></p>	<p>Obtain permit coverage for construction disturbing one acre or more: <i>File NOI with DEC before starting</i> <i>Prepare SWPPP (erosion & sediment controls, post-construction controls)</i> <i>Implement SWPPP</i> <i>Practices follow state technical guidance</i> <i>Control waste on construction site</i></p> <p>Submit NOI & SWPPP to local governing body, copy on site and available to public</p>	<p>Gain control of the handling of stormwater during and after construction by reviewing and amending SWPPPs.</p> <p>Achieve effective performance in handling runoff from construction sites and developed lands through the advanced technical standards of the state/federal program.</p>
<p>Regulated MS4s; Publicly Owned and/or Operated Institutions; Other Public Entities</p> <p><i>See Stormwater General Permit for MS4s, GP-02-02</i></p>	<p>Obtain permit coverage for MS4 discharge under GP-02-02: <i>Submit NOI (due 3/10/03)</i> <i>Adopt Stormwater Management Local Law</i> <i>Require construction site waste mgt.</i> <i>Comply with water quality standards</i> <i>Inform and involve the public</i></p> <p>Identify stormwater management program goals and activities</p> <p>Review SWPPPs</p> <p>Inspect construction sites; enforce SWPPPs</p> <p>Require management practices to follow state technical standards</p> <p>Assure maintenance of mgt. practices</p> <p>Educate construction site operators and O&M personnel</p> <p>Maintain permit coverage with annual program report, Compliance Cert.</p>	<p>Protect natural resources and property values by avoiding floods, pollution</p> <p>Reduce property owner and MS4 costs by requiring developers to engineer sites properly</p> <p>Enhance effectiveness of MS4 stormwater management practices, infrastructure: <i>Increase public understanding, support</i> <i>Provide resources for program support</i> <i>Strengthen local stormwater law</i> <i>Improve O&M through training</i></p> <p>Enhance effectiveness of local planning and resource assessment by applying them directly to stormwater-related land use and regulatory decisions.</p>
<p>All Communities and Institutions</p>	<p>Non-regulated communities, privately owned/operated institutions:</p> <ul style="list-style-type: none"> • No MS4 permitting requirements • Subject to the construction permit requirements above when they disturb one acre or more of land 	<p>Join with nearby MS4s for effective stormwater management.</p> <p>Review construction site SWPPPs, even if no full local stormwater program in place</p> <p>Serve property owners by using local planning and regulatory powers to minimize stormwater problems</p> <p>Improve stormwater management at low cost during routine maintenance and operation of municipally-owned facilities</p>

Phase II includes special requirements for stormwater management programs in MS4s discharging to waters that are already polluted. Phase II requirements apply to redevelopment of previously-developed sites, as well as to new development, and to publicly-owned institutions as well as to municipalities.

New York State Implementation of Phase II: To comply with Phase II, New York State in January, 2003 issued two non-industrial Stormwater Management General Permits under the State Pollutant Discharge Elimination System (SPDES).

State/federal regulations require operators of regulated construction sites and regulated MS4s to obtain coverage under the appropriate general permit.

- ***Under the SPDES General Permit for Stormwater Discharges from Construction Activity (GP-02-01)***, construction site operators must notify the state of any project disturbing one acre or more, prepare a formal written Stormwater Pollution Prevention Plan (SWPPP) and adhere to the provisions of the plan during and after construction.
- ***Under the SPDES General Permit for Stormwater Discharges from Municipal Separate Stormwater Sewer Systems, or MS4s (GP-02-02)***, regulated MS4s must establish stormwater management programs that reduce the discharge of pollutants to the *maximum extent practicable*, employing program elements specified by the Phase II rule and embodying certain parts of the program in a local law or other regulatory mechanism.

The term *MS4* includes both municipal and non-municipal systems of underground pipes, and also systems of streets and roads with drainage, catch basins, curbs, gutters, ditches, man-made channels or storm drains, whether or not the system is owned by a municipality. An MS4 may be a city, town or village system, or one serving a large publicly-owned complex such as a military base, hospital, school or prison.

DEC has established a list of municipal MS4s in New York State that are regulated under Phase II. Municipalities that have stormwater transport systems meeting the definition of MS4s, but that are not located within urbanized areas or areas specially designated by DEC, are not subject to MS4 permitting requirements at this time. However, DEC encourages all municipalities to develop stormwater management programs.

In regulated MS4s, Phase II requires stormwater management programs to include the six Minimum Control Measures established by the EPA, or to demonstrate that the program provides at least equivalent protection. **In New York State, stormwater management programs in all regulated MS4s must be fully developed and implemented by January 8, 2008.** In most municipalities in the state, program development is underway.



Stormwater management practices include wet ponds, which detain runoff on-site, allowing pollutants like sediment to settle out so that the water that finally reaches a lake or stream is clear.