

Chapter 2: Local Stormwater Management

Although not all of New York's communities and institutions are required to adopt formal stormwater management programs, they all can benefit from controlling stormwater runoff. The program elements and structure required under the Stormwater Phase II program are designed to maximize water resource benefits while retaining local control.

This chapter discusses how communities can determine the best regulatory strategy and program elements for local stormwater management, and recommends ways to tailor the stormwater program to local water quality and natural resource circumstances.

Current Municipal Stormwater Management Practice in New York State

New York's communities already have many programs that are related in purpose and similar in methods to the state/federal stormwater management program.

- To prevent flood damage, most New York communities, urban and rural, have adopted local laws regulating the effects of development on the conveyance of runoff through areas of special flood hazard (as defined on the community's Flood Insurance Rate Map).
- Many urban areas of New York State use stormwater regulation to maintain the integrity of drainage systems.
- A few municipalities are controlling both construction site erosion and stormwater runoff after construction through Erosion and Sediment Control Laws.
- A small number of municipalities require developers to prepare stormwater plans that are reviewed as part of the construction permit application.

The *Sample Stormwater Management Local Law* in Appendix 1 of this Guidance Manual builds on work done by communities and government agencies toward a comprehensive mechanism for protecting local water quality and natural resources from the impacts of construction/post-construction stormwater runoff.

Determining Your Community's Approach to Stormwater Management

The Stormwater Phase II rule requires regulated MS4s to adopt a local law or other regulatory mechanism for controlling construction site erosion and post-construction stormwater runoff. The local law must be at least as stringent as the state *SPDES General Permit for Stormwater Discharges from Construction Activities* (GP-02-01), and should integrate stormwater management with other local land use controls.

Further Stormwater Management Information

MS4 Requirements: *SPDES General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s)* [GP-02-02],
<http://www.dec.state.ny.us/website/dow/MS4Permit.pdf> .

MS4 stormwater programs must provide protection equivalent to the requirements for construction site operators: *SPDES General Permit for Stormwater Discharges from Construction Activities* [GP-02-01],
http://www.dec.state.ny.us/website/dow/gen_constr.pdf

Construction/Post-Construction Stormwater Management

Checklist 1—Land Use Controls and Regulatory Resources

Use this checklist to assess current local land use controls and related resources. Consult Table 3 (Page 30) for ways to adapt the Sample Stormwater Management Local Law to the local regulatory environment.

LOCAL LAWS, REGULATIONS AND RESOURCES	Yes	No	Guidance Manual Reference
Does your municipality have a subdivision regulation?			Pages 12, 13; 27-28
Are developers required to submit a Stormwater Pollution Prevention Plan (SWPPP) with a subdivision application?			Pages 9, 18-19, 28
Does your municipality have a planning board?			Page 15
Does your municipality have a site plan regulation?			Pages 12, 27-28
Are developers required to submit a stormwater plan with their site plan application?			Pages 9, 19, 28
Does your municipality have a zoning ordinance?			Pages 12, 27-28
Does the zoning ordinance require submittal of a SWPPP with application for special use permit, variance or zoning change?			Pages 9, 19, 28
Does your municipality issue building permits?			Page 14
Is there a Building Inspector/Code Enforcement Officer?			Pages 15, 29
Are code enforcement officers, ZBA and Planning Board members reviewing stormwater plans or prepared to review them?			Pages 15, 19, 34-35, 37
Does your municipality have a Conservation Advisory Council or other environmental committee?			Page 15
Are environmental committee members trained to review stormwater plans?			Pages 15, 34-35, 37
Does your municipality have an erosion and sediment control or stormwater management law?			Pages 9, 13, 28
Does your municipality have a stormwater drainage district?			Pages 13, 39

Checklist 1 - What Your Answers Mean

First three questions in gray boxes — *Yes* answers to all three questions mean a municipality can adopt the sample local law without modification. Any *No* answer indicates that the sample law must be adapted to fit local circumstances (see Table 3).

Last four questions in gray boxes — Any *Yes* answer means a program is in place that can be used to help manage stormwater. Table 3 shows how to integrate some of these programs with the stormwater management program.

Questions in white boxes — Any *Yes* answer means that a procedure is in place that can be used for accepting and reviewing stormwater plans. *No* answers indicate areas to address as you develop stormwater management procedures.

Construction/Post-Construction Stormwater Management

Checklist 2—Programs Supporting Stormwater Management

These questions identify local laws, regulations and resources that can contribute to successful stormwater management. References lead to discussions of each topic in this manual.

LOCAL PROGRAM, STAFF OR INFORMATION RESOURCE	Yes	No	Guidance Manual Reference
Natural Resource Protections (Integrate with Stormwater Program)			
Does your municipality have restrictions on filling and grading?			Page 13
Does your municipality have floodplain or wetlands controls?			Page 14
Does your municipality have watercourse, stream corridor or riparian buffer requirements?			Page 14
Does your municipality have a zoning overlay or other special district?			Page 12
Technical Staff with Important Stormwater Roles			
Does your municipality have Municipal Engineer/Engineering Dept.?			Pgs 16, 34
Does your municipality have a Building Inspector/Building Dept.?			Pgs 15, 29
Does your municipality have a Municipal Attorney/Legal Dept.?			Pgs 16, 26
Does your municipality have a Public Works Department?			Pgs 15, 37-38
Does your municipality have a Municipal Planner/Planning Dept.?			Page 16
Community Resources for Stormwater Management			
Has your municipality prepared a natural resource inventory?			Page 21
Does your municipality have a citizen participation program?			Pgs 31-34
Does your municipality share programs with other jurisdictions?			Page 39
Does your municipality operate any stormwater infrastructure?			Pgs 14, 20, 37, 38
Does your municipality have a Comprehensive Plan or Master Plan?			Page 21; Appendix 2
Does the plan assess and provide for stormwater needs?			Appendix 2

Checklist 2- What Your Answers Mean

Yes answers indicate existing programs that support and reinforce stormwater management goals. Take these resources into account in program design and give them a role in implementation.

No answers identify approaches that the locality may want to consider adopting, or expertise that an MS4 may need to obtain for successful stormwater management.

Because communities in New York State approach land use regulation in a variety of ways, no single prescription for stormwater management will serve all municipalities in the state. The state/federal program provides flexibility for municipalities to design and implement stormwater management in a way that complements other programs and respects community goals and resources.

Integrating Stormwater Management into Existing Municipal Programs

Municipal stormwater management shares many goals and techniques with other municipal programs, in particular land use controls and environmental conservation programs. To integrate stormwater management with these existing local programs, municipalities should amend local laws or ordinances that regulate subdivision, site plan and/or zoning by means of a local law that requires a SWPPP to be submitted with any application for discretionary land use approvals. The language of the *Sample Stormwater Management Local Law* in Appendix 1 accomplishes this integration.

Establishing a stormwater management program will be easier if a municipality has in place zoning laws, subdivision review and site plan review. Checklists 1 and 2 are “thumbnail” assessment tools that local officials can use to quickly inventory existing laws, programs and staffing as they relate to stormwater management.

- **Checklist 1** inventories critical land use laws and closely-related programs;
- **Checklist 2** inventories other natural resource laws and programs that can contribute to stormwater management.

Based on the information developed in the checklists, Table 3 (page 30) shows how to adapt the *Sample Stormwater Management Local Law* in this manual to various combinations of local laws and ordinances.

Municipal Legislative and Enforcement Powers for Stormwater Management

This section discusses local government powers that municipalities can use to accomplish effective stormwater management. The local stormwater management program should be designed to enhance existing local programs, and to make the best use of local government powers. Municipalities should integrate local review of SWPPPs with existing programs.

State law gives local governments the power to control land use. Adoption of subdivision plats is authorized under General City Law Section 32, Town Law Section 276, and Village Law Section 7-728. Site plan review is authorized under General City Law Section 27-a, Town Law Section 274-a, and Village Law Section 7-725-a. Adoption of zoning laws is enabled under General City Law Section 20, Town Law Section 261, and Village Law Section 7-700.

Establishing Special Districts and Uses

- **Zoning overlay districts and special districts** are allowed under the zoning law enabling legislation. Special Use Permits are allowed under General City Law Section 27-b, Town Law Section 274-b and Village Law Section 7-725-b. Under zon-

ing overlay districts, special zoning districts or special use permits, the municipality may place conditions on certain uses in a sensitive area. (For example, to reduce erosion and sedimentation into a stream during construction, a stream corridor overlay district may restrict land uses within a specified distance from the stream.) The provisions of special districts and uses may be amended to require review of SWPPPs, ensuring that they meet special district conditions.



- **Cluster subdivisions** (enabled under General City Law Section 37, Town Law Section 278 and Village Law Section 7-738) can be used by municipalities that have subdivision regulations in place to reduce the percentage of impervious surface and provide open space and natural areas that are useful for managing stormwater runoff. **Conservation subdivision** is a term similar to, and used to describe, cluster subdivisions.

- **Low-impact development** is a new concept in site planning that may be used to complement other land use tools. The goal of low impact development is to mitigate construction and post-construction impacts to land, water and air. By integrating site design and planning techniques such as narrower streets, rain gardens and bioretention areas, local officials can conserve hydrologic functions and natural systems on a site and reduce stormwater runoff from the site.

- **Stormwater Drainage Districts.** Cities, towns, villages and counties may construct drainage facilities under other sections of law, and General Municipal Law (GML) Article 5-E provides express authorization for the “construction and development of capacity *in excess of its own needs* for the purpose of conveying and disposing of storm waters and other surface or sub-surface waters *collected by another public corporation or improvement district.*”

The practical effect of this provision is to allow construction of intermunicipal drainage facilities. It should be noted that this provision was enacted in 1955, five years before the broad authority in Article 5-G of the GML. The authority given under GML Art. 5-E, is additional authority for intermunicipal drainage construction without the necessity to create a “district,” as illustrated in the Local Law from Elmira, New York (Appendix 3).

Revegetation prevents erosion of soil exposed during construction. Here, fabric will stabilize the large exposed bank until grass is established. Stormwater Pollution Prevention Plans (SWPPPs) include erosion and sediment control practices to be used during and after construction.

Adopting Natural Resource Protection Regulations

Municipal erosion and sediment control laws or filling and grading regulations, laws or ordinances usually require some type of erosion and sediment control plan. If a municipality has one of these laws in place, it should be amended to reflect the Stormwater Phase II regulations for construction. Chapter 3 of this Guidance Manual and the *Sample Stormwater Management Local Law* in Appendix 1 provide the information municipalities need to amend these laws.

Floodplain regulations and **wetland and watercourse protection laws** are other mechanisms that municipalities can adopt as local laws or ordinances to restrict land uses near streams and wetlands and to control stormwater runoff into water bodies. The sample local law includes language that amends these regulations to require review of SWPPPs.

Issuing Building Permits and Certificates of Occupancy

Building construction in New York State is regulated by the Uniform Fire Prevention and Building Code. Rather than enacting a separate building code, each city, town and village is responsible for administering and enforcing the Uniform Code. Local legislation is necessary to provide for the building permits, construction inspections and certificates of occupancy used in administering the Uniform Code. The functions of code administration and enforcement are typically performed by a municipal officer designated as the Building Inspector or Code Enforcement Officer.

State law does not presently provide for the review of SWPPPs in the building permit process, but a municipality may direct the Building Inspector to require a SWPPP when application is made for another land use permit (site plan, subdivision, zoning change, special use permit). Local law can also require an approved SWPPP before the Building Inspector releases the Certificate of Occupancy.

Every storm drain discharges into a lake, stream or estuary where people swim and fish. This stencil reminds the public that every drain connects with an important waterbody, and that stormwater is not treated to remove debris, chemicals or dirt.

Operating and Maintaining Stormwater Infrastructure

Municipalities have ultimate responsibility for constructing and maintaining stormwater drainage facilities along municipally-owned roads and on municipal properties, such as parks and municipal buildings. By operating and maintaining these structures in accordance with best management practices for pollution prevention, the municipality will protect water quality and reduce the quantity of stormwater runoff.

A municipality may also undertake operation and maintenance of stormwater management structures located on privately-constructed properties, by accepting an easement or ownership of the land on which the structures are located. This gives the municipality control over the operation and maintenance of the stormwater facilities and allows it to use a stormwater district to fund facility operation and maintenance. If the municipality does not control operation and maintenance of stormwater management structures on private property, it must ensure that these functions are provided for in the construction operator's SWPPP.

Building Effective Municipal Stormwater Management Programs

The Stormwater Phase II rule requires regulated MS4s to establish municipal stormwater management programs by January 8, 2008. These programs must include six elements (Minimum Control Measures) that EPA has determined will together result in effective stormwater management.



Photo courtesy of Don Lake.

Stormwater Management-Related Responsibilities of Municipal Officials

Establishing and running a stormwater management program involves a variety of municipal functions and official responsibilities. This section discusses how local officials' responsibilities bear on stormwater management.

Municipal Governing Board: Members of the City Council, Town Board or Village Board of Trustees are responsible for key actions needed to establish and implement local stormwater management. Governing Boards adopt and amend local laws and comprehensive plans, conduct education programs, establish special districts and provide tax incentives or cost share funding. Under federal and state laws, Governing Boards of regulated MS4 municipalities have the overall responsibility for implementing a Stormwater Management Program by January 8, 2008. Governing Boards authorize the actions of other municipal officials to manage stormwater.

Planning Board: Planning Boards, which are responsible for approving subdivision and site plans, will also review any SWPPP submitted with those applications. Some Planning Boards may also be authorized to review Special Use Permits. The Governing Board can give the Planning Board authority to place conditions on approvals reflecting stormwater management goals and the intent of the zoning law and comprehensive plan. Where there is no Planning Board, the Town or Village Board has the responsibility to review SWPPPs.

Zoning Board of Appeals: Zoning Boards of Appeal (ZBAs) are limited by statute to considering variance applications, interpreting the zoning law and approving Special Use Permits when authorized by the Governing Board. When a SWPPP is submitted as part of an application, the ZBA should review the SWPPP for applicability and, if authorized by the Governing Board, has the power to place conditions on approvals to meet stormwater management goals.

Environmental Review: Environmental review under the State Environmental Quality Review Act may be conducted by the Governing Board, the Planning Board or the ZBA, depending on which board has jurisdiction over the permit or funding approval. The local environmental review process should include a requirement for developing SWPPPs, conditioning of project approvals to support mitigation measures identified in environmental review and a role for the Conservation Advisory Council.

Code Enforcement Officer: The Code Enforcement Officer (Building Inspector, CEO) is often a builder's or developer's first official contact with the municipality where a construction site is located. The CEO has an important role in educating developers about municipal land use controls. If authorized, the CEO applies local land use laws, issues building and other permits, and enforces the law. If directed by the municipality, the CEO can make sure that a SWPPP is submitted by the applicant and also inspect construction/post-construction stormwater management practices.

Public Works Department: The municipal Public Works Department installs and maintains the storm drain system and other stormwater management facilities, addresses erosion problems on roads and bridges, and carries out emergency maintenance.

Further Stormwater Management Information
Meeting the six Minimum Control Measures: *Overview of the Municipal Separate Storm Sewer Systems (MS4) Phase II Stormwater Permit Program*, Chapter 3; NYSDEC, Feb. 2003, rev. Aug 2003,
http://www.dec.state.ny.us/website/dow/toolbox/ms4toolbox/ms4_overview.pdf

Powers and responsibilities of local governments: *New York State Local Government Handbook*, NYS Department of State.
<http://www.dos.state.ny.us/lgss/pdfs/handbook.pdf>

nance. Training of employees in appropriate practices for stormwater control is an important component of a local stormwater management program; such training may be done in cooperation with other municipalities.

County Officials: A county that is wholly or partially within the EPA-designated urbanized area may be a regulated MS4, with an obligation to implement its own stormwater management program. Many powers and services of county government may come into play as county and municipal stormwater management programs are developed and implemented.

County Legislatures or Boards of Supervisors, in some cases in combination with a County Executive or County Administrator, adopt and amend county laws and collect property taxes. County departments offer technical and educational services related to water, sewer, health, and planning; county highway departments maintain the county road system and provide cost share funding.

County departments and agencies, in particular the county Soil & Water Conservation District, Planning Department and Environmental Management Council, are often excellent sources for natural resource maps and other information that can be crucial in the design and operation of an effective municipal stormwater management program. In addition, County Soil and Water Conservation Districts can provide other forms of technical assistance.

In many counties, a county Water Quality Coordinating Committee coordinates local stormwater management with Regional Planning Councils, watershed groups, coalitions and related local groups. County Water Quality Coordinating Committees include staff of County Soil and Water Conservation Districts, the United States Department of Agriculture Natural Resource Conservation Service, Cornell Cooperative Extension, Regional Planning Councils, County Environmental Management Councils, County Planning Departments, NYS Department of Environmental Conservation, local watershed groups or coalitions and municipal officials.

Municipal Attorneys, Engineers, Planners and Planning Consultants: Municipal attorneys, engineers, planning staff and planning consultants play an important role in the development and implementation of a municipality's stormwater management program. The Municipal Attorney should be involved in developing local laws for stormwater management, to ensure that the local laws relate appropriately to other laws and ordinances in the municipality's code. The Municipal Attorney has an important role in enforcement of the terms of SWPPPs.

The Municipal Engineer and/or Planner, whether on staff or on retainer, will review SWPPPs and provide comments to the Planning Board, Zoning Board or municipal Governing Board. These professional staff or consultants are often trained in environmental planning and can help facilitate volunteer boards' and elected officials' understanding of the technical elements of stormwater pollution prevention plans. Local officials should not attempt to review SWPPPs without professional assistance. For full SWPPPs, which include design of post-construction measures as well as erosion and sediment control measures, reviewers should have training and experience in hydrology.

Stormwater Management Program Elements

This section briefly reviews the six Stormwater Phase II Minimum Control Measures, which must be included in every MS4 stormwater management program. A

program that makes use of the Minimum Measures will improve local conditions, reduce erosion and protect water bodies from pollution and sedimentation.

- **Unregulated communities** should use the Minimum Control Measures as a framework for stormwater management, to provide maximum protection for their natural resources.
- **Regulated MS4s** are required by law to include all six Minimum Measures in their programs. For each Minimum Measure, they must set goals and select activities that will reduce pollution to the maximum extent practicable, must make special provisions to protect water bodies already impaired by pollution, and must report annually to DEC. Table 2 (page 22) gives examples of measurable goals for the Minimum Measures, along with typical stormwater management activities used by communities.

The federal requirement that regulated MS4s determine measurable goals and appropriate methods and program activities for each Minimum Control Measure is a significant source of local stormwater management flexibility, allowing localities to integrate the elements of stormwater management with their existing structure of goals, programs and local laws in response to local needs and conditions.

DEC recommends that municipalities and public institutions consider developing elements of their stormwater management programs in cooperation with neighboring jurisdictions, especially those in the same watershed. Working with the county Soil and Water Conservation District, Regional Planning Councils, watershed groups and local coalitions through the County Water Quality Coordinating Committee (WQCC) can open opportunities to network and share resources.

The following brief survey of the six Minimum Control Measures emphasizes Measures 4 and 5, which address construction and post-construction runoff.

Minimum Control Measure 1—Public Education and Outreach: Informing citizens about the water quality impacts of polluted stormwater discharge is key to building support for and compliance with municipal stormwater management programs. Minimum Measure 1 requires a regulated MS4 to conduct ongoing public education and outreach about the impacts of stormwater on local waterbodies, the pollutants of concern and the steps that can be taken to reduce stormwater pollution.

Minimum Control Measure 2—Public Involvement/Participation: Regulated MS4s should include the public in developing, implementing, and evaluating stormwater management programs. This public participation process should reach out to engage all economic and ethnic groups. MS4s must comply with State, Tribal, and local public notice requirements and with any applicable public participation and involvement provisions of the federal Clean Water Act.

The stormwater management public involvement/participation program must: identify key individuals and groups affected by the stormwater program; identify the type of input sought and the participation methods the MS4 will employ; identify the name of a contact person for the stormwater management program, and present the draft annual program report at a meeting that is open to the public, accepting public comment on the content of the report.

Further Stormwater Management Information

Measurable Goals guidance for Small MS4s

<http://cfpub.epa.gov/npdes/stormwater/measurablegoals/index.cfm>

Sample measurable goals

Guidelines for Completing the Notice of Intent, Selecting Management Practices, Setting Measurable Goals for SPDES General Permit [GP-02-02] for Stormwater Discharges from Municipal Separate Stormwater Sewer Systems, Chapter 4 NYSDEC, 2003,

http://www.dec.state.ny.us/website/dow/toolbox/ms4toolbox/ms4_guidelines.pdf



This infiltration basin handles the stormwater from a large parking lot, catching pollutants as the water seeps into the soil. This practice replenishes local groundwater, rather than allowing stormwater to be lost. Integrated into the landscaping, the basin adds to the appeal of the property.

Minimum Control Measure 3—Illicit Discharge Detection and Elimination:

Regulated MS4s must establish plans to detect and eliminate illicit discharges (discharges not composed entirely of stormwater) to the storm sewer system. They must map all outfalls from the storm sewer system to surface waters (not only from pipes, but also from road ditches, swales and other stormwater carriers), and must inform public employees and the community about the hazards of illegal discharges and improper waste disposal. Illicit discharges to the storm sewer system must be prohibited by ordinance or regulation, and the prohibition must be enforced.

An Illicit Discharge Detection and Elimination Plan must address all non-stormwater discharge flows found to be substantial contributors of pollutants,

such as flows from water line flushing, irrigation, lawn watering, swimming pool discharge, street washing and foundation drains.

Minimum Control Measure 4—Construction Site Stormwater Runoff

Control: To comply with the MS4 General Permit (GP-02-02), operators of regulated MS4s are required to adopt a new local law, amend existing local laws and ordinances, or establish an equivalent regulatory mechanism to reduce pollutants in stormwater runoff from construction activities that disturb one or more acres of land or are part of a larger plan of development. (This requirement applies to redevelopment, as well as to new development.)

Regulated MS4s must demonstrate that the protection provided by local regulation is at least equivalent to that provided by the General Permit for Construction (GP-02-01). To comply with Minimum Measure 4, local law(s) must:

- **Require construction site operators to prepare SWPPPs** for controlling construction site pollution or erosion/sedimentation, and to implement the controls specified in the SWPPPs.
- **Provide for review of SWPPPs** prepared by construction site operators.
- **Require stormwater controls consistent with technical standards** found in the *New York State Stormwater Management Design Manual* and the *New York Standards and Specifications for Sediment and Erosion Control*.
- **Specify inspections, sanctions and enforcement** to ensure compliance with the stormwater plans.
- **Establish procedures** to ensure that the law is carried out.

New York State recommends that MS4s incorporate review of SWPPPs into local permitting reviews (building code, site plan, subdivision, zoning), preferably with specific procedures for considering potential water quality impacts. Procedures should be established for SWPPP review, for site inspections and enforcement and for accepting and considering information from the public. Training should be provided for construction site operators on local stormwater management requirements, and for local government officials responsible for SWPPP review on procedures and requirements.

Minimum Control Measure 5—Post-Construction Stormwater Management: Either separately or in combination with Minimum Measure 4, MS4 municipalities must adopt new local laws, amend existing local laws and ordinances, or establish equivalent regulatory mechanisms to reduce discharge of pollutants in stormwater runoff after completion of construction. Post-construction stormwater controls are required in SWPPPs for commercial and multi-family residential projects disturbing one acre or more; for single-family residential projects disturbing 5 acres or more, and for any project discharging to 303(d)/TMDL waters that disturbs one acre or more.

The stormwater management program uses the term *post-construction* to designate runoff from a site with impermeable surfaces, such as buildings, roads and parking lots, that remain after construction ends. Often, to reduce pollutants in post-construction stormwater runoff, construction site operators will need to build permanent stormwater management practices (structural measures) and/or establish other (non-structural) measures during land development or re-development.

Local laws adopted by regulated MS4 municipalities must:

- **Require review of post-construction stormwater management measures** in SWPPPs.
- **Require for post-construction stormwater control a combination of stormwater management practices consistent with technical standards** in the *New York State Stormwater Management Design Manual*.
- **Establish responsibility for and ensure ongoing maintenance** of structural or non-structural management measures needed to control post-construction stormwater.
- **Include inspection** of stormwater management measures and practices, compliance and enforcement.

Post-construction stormwater management is an ongoing responsibility that should receive adequate support and funding from every MS4. For sensitive water bodies, water quality monitoring may be needed to evaluate the effectiveness of post-construction stormwater management structures or other measures.

Achieving sound SWPPPs and ensuring ongoing implementation of the plans' provisions (Minimum Measures 4 and 5), lie at the heart of effective municipal stormwater management. Using the sample local law language and legislative strategies in this Guidance Manual, regulated MS4s can meet the construction/post-construction stormwater management requirements of Phase II, and unregulated localities can develop Stormwater Management Local Laws tailored to a variety of circumstances.

Minimum Control Measure 6—Pollution Prevention/Good Housekeeping:

Municipalities and other operators of MS4s engage in numerous construction, operation and maintenance activities. Phase II requires operators of regulated MS4s to develop operation and maintenance schedules, to select appropriate practices to ensure reduction of all pollutants of concern, and to design operation and maintenance procedures that follow the practices identified in the *New York State Management Practices Catalogue for Nonpoint Source Pollution Prevention* or other equivalent guidance. Regulated MS4s are required to provide their employees with training in correct operation and maintenance procedures.

Routine operation and maintenance of local facilities offer many opportunities to improve stormwater management with minimum cost, such as restoration/protection of stream buffers and wetlands through grants; retrofitting storm sewer systems and other runoff control measures (as budget allows or through grants); employing environmentally friendly local road construction techniques (information about these techniques can be found in the *Great Lakes Better Backroads Guidebook*, published by the Great Lakes Commission).

Setting Measurable Construction/Post-Construction Stormwater

Management Goals: Each Minimum Control Measure must be accompanied by at least one goal that is quantifiable in some way, so that progress can be reported in the MS4's Stormwater Management Program Annual Report. Below are examples of measurable goals for Minimum Measures 4 and 5:

Stormwater Management Program Development

- Adopt a Stormwater Management Local Law with requirements for construction/post-construction stormwater control.
- Establish procedures for receiving information from the public about construction/post-construction stormwater concerns and for investigating complaints.
- Establish procedures for construction site plan review and site inspections.
- Establish procedures for enforcing the provisions of SWPPPs.

Stormwater Management Program Implementation

- Assure training for (specify percent) of construction site operators active in the MS4.
- Establish procedure for delivering training as needed for new construction operators.
- Review SWPPPs for all projects that disturb one acre or more of land.
- Inspect all projects of one acre or more for preconstruction ES&C controls.
- Inspect all projects of one acre or more at least once during site development.
- Inspect all projects of one acre or more at site stabilization.
- Investigate stormwater-related complaints.

Table 2 summarizes requirements, suggested activities and sample measurable goals for the six Minimum Control Measures. County Soil and Water Conservation Districts can help MS4s identify and select appropriate activities. EPA offers guidance for developing measurable goals at <http://cfpub.epa.gov/npdes/stormwater/measurablegoals/part2.cfm>.

Accommodating Water Quality Requirements in Stormwater Management:

Regulated MS4s that discharge stormwater to 303(d) listed streams or TMDL watersheds are required to meet the standard of “no increase of listed pollutants of concern,” and to document that their stormwater management programs will cause stormwater discharges to meet that standard. Construction sites in areas discharging to impacted stream reaches or watersheds are also subject to more stringent requirements under the *General Permit for Construction Activities* (GP-02-01).

DEC’s website gives the latest list of waterbodies of concern in New York State, called the *Section 303(d) List of Impaired Waters* (available at <http://www.dec.state.ny.us/website/dow/303dcalm.html>). Federally required *Total Maximum Daily Load (TMDL)* assessments are developed from this list. Regulated MS4s that discharge directly to a 303(d) stream segment or to a TMDL watershed must meet the no increase standard and conform to any TMDL plan. A full SWPPP with post-construction controls must be prepared for any disturbance affecting one or more acres whose runoff discharges to a 303(d) listed stream segment or a TMDL watershed that is impaired by stormwater.

Ensuring no increase of pollutants of concern may require monitoring, modeling or other measures. A regulated MS4 discharging to a TMDL water is required to ensure improvement in water quality (GP-02-02 III B2). Stormwater management programs in MS4s that discharge to 303(d) listed waters must ensure no increase in the listed pollutants of concern to the listed water.

Assessing the Community’s Stormwater Problems and Needs

The most effective stormwater management programs are tailored to protect the community’s assets while solving its problems and meeting its particular needs. Designing a program that fits a community’s specific circumstances requires gathering information about existing stormwater problems, as well as identifying natural resources that are valuable and potentially vulnerable to damage from stormwater.

As municipalities plan and implement stormwater management, they should consult planning experts and revisit their community’s Comprehensive Plan (Master Plan). Appendix 2, *Land Use Planning and Stormwater Management*, discusses the relationship between planning and local stormwater management.

Communities should base stormwater management program design on data about natural resources. Numerous information resources and assessment tools are available for the use of New York communities; many are downloadable over the Internet at no cost.

The Bureau of Water Assessment and Management is compiling a list of tools and references (such as aerial photographs, floodplain and agricultural district maps, hydrologic soils data and training), with contact information and internet links. To obtain a copy of this resource, contact the Nonpoint Source Section at (518) 402-8179.

Post-construction stormwater management may involve re-establishing wetlands near developed areas. Benefits of this practice include stormwater detention, flood mitigation and wildlife habitat.



Photo courtesy of Monroe County