

Stormwater Management Guidance Manual for Local Officials

Construction and Post-Construction
Stormwater Runoff Management

Prepared in Cooperation with:
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How to Use this Guidance Manual

This Guidance Manual contains information and references to detailed information that will help municipalities develop and implement local control of Construction Site and Post-Construction stormwater runoff, as required under state and federal law.

Because stormwater management is a complex regulatory undertaking, municipal officials developing stormwater management programs should consult the two state General Permits, the technical guidance manuals and the other guidance documents in the References section at the end of this Guidance Manual.

This Guidance Manual contains information useful to all local governments, whether or not they are subject to state/federal stormwater regulation. It includes:

1. **Local Law Sample Language:** The *Sample Stormwater Management Local Law* (Appendix 1) meets the requirements of state and federal law for managing Construction and Post-Construction stormwater runoff.
2. **Local Law Strategy:** Use the two-part checklist for local officials (Chapter 2) to help identify relevant local laws and programs in place in your municipality, then consult Table 2 in Chapter 3 for a strategy using the language in the *Sample Stormwater Management Local Law*.
3. **Program Requirements:** To help design and implement a stormwater management program appropriate for the individual locality, consult: Chapter 2 (summaries of state/federal stormwater management requirements) Chapter 3 (approaches to developing stormwater management local laws), and Chapter 4 (recommendations for local stormwater plan review procedures and other stormwater management program elements).

For All New York State Municipalities

Any New York State municipality can use the Guidance Manual to identify ways to improve local management of construction/post-construction stormwater.

- The *Stormwater Requirements and Opportunities* table in Chapter 1 highlights opportunities in the state/federal stormwater program for all municipalities to improve their management of stormwater runoff, even if they do not create a formal stormwater management program.
- The *Sample Stormwater Management Local Law* and program implementation recommendations can be used by unregulated, as well as regulated, municipalities.

For Regulated MS4s

The state/federal stormwater management program requires urbanized municipalities that operate MS4s to adopt local laws governing construction and post-construction stormwater. It also requires certain procedures and other measures to implement the local laws.

This Guidance Manual will help regulated MS4s to:

- Identify the strategy they should follow in tailoring the requirements of the state/federal stormwater program to their own circumstances.
- Develop the required Stormwater Management Local Law.
- Develop procedures and program features to implement the Stormwater Management Local Law.
- Identify existing local programs that complement local stormwater management.

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Executive Summary

Runoff of water during and after land development (*construction/post-construction runoff*) causes flooding and erosion, and is the largest source of water pollution from stormwater discharges. Because local governments control land use and development, federal and state law require urbanized communities in New York to establish local stormwater management programs, meeting a deadline of January 8, 2008. Ideally, with these programs in place, water falling on sites during and after development should be retained or absorbed on-site, with the quantity, rate and quality of runoff not significantly different from what they would be if the site were not developed.

To protect resources and quality of life, New York State encourages all localities to manage stormwater. Construction site and post-construction stormwater, which are usually the most polluted types of stormwater discharges, are the focus of this Guidance Manual; local actions to control construction/post-construction stormwater can lead to significant water quality improvements, even for localities that are not currently required to establish a full stormwater management program.

The *Sample Stormwater Management Local Law* in this Guidance Manual includes all of the requirements for stormwater management local laws in regulated municipalities, and can be adjusted to reflect local needs and conditions. It does not introduce a new permit or review process, but rather makes use of existing land use permits and processes. The State of New York recommends that every community, whether or not it is regulated under the Stormwater Phase II program, adopt a Stormwater Management Local Law.

Stormwater Management Requirements

Under delegation from the federal government, New York State is using two Stormwater Management General Permits as the framework for stormwater management in the state. Regulations require operators of construction sites and operators of Municipal Separate Storm Sewer Systems (MS4s) to obtain coverage under a general permit (the size of the disturbed area or the population of the MS4 determine who must obtain permit coverage).

The General Permits impose these obligations:

- **Under GP-02-01, operators of Construction Sites** must prepare formal written stormwater management plans, called Stormwater Pollution Prevention Plans (SWPPPs), before beginning construction, and must adhere to the provisions of these plans during and after construction.
- **Under GP-02-02, operators of Municipal Separate Storm Sewer Systems (MS4s)** must establish stormwater management programs with components specified in federal and state regulation; certain parts of the local stormwater program must be embodied in a local law or other regulatory mechanism.

Local Stormwater Management Programs must include six elements (called Minimum Control Measures) that EPA has determined will together improve local conditions and protect water bodies from future stormwater pollution, erosion and sedimentation. Regulated MS4s that discharge stormwater to streams or watersheds identified by federal or state government as being impacted by pollution are required to meet the standard of “no increase of pollutants of concern” through implementation of Stormwater Management Programs.

Controlling Construction/Post-Construction Stormwater

Municipalities should integrate stormwater management with local land use controls by amending existing laws or ordinances that regulate subdivision, site plan and/or zoning. The local law that contains these amendments must include the requirement that developers prepare a SWPPP and submit it to the local Governing Body with any application for a land use approval; it must also include sanctions for non-compliance.

The New York State Department of State recommends that localities adopt a construction/post-construction stormwater regulation as a local law under the Municipal Home Rule Law. The *Sample Stormwater Management Local Law* in this manual can be adapted to any combination of existing local land use laws and ordinances.

Once the stormwater management local law has been adopted, the municipality must put it into effect. This is done through: procedures for review and approval of SWPPPs; procedures for site inspections and enforcement; procedures to ensure proper post-construction maintenance; training in construction/post-construction stormwater management for construction site operators and people who operate and maintain facilities; public education and involvement in stormwater management.

Intermunicipal cooperation can play an important role in the success of local stormwater management, both in program effectiveness and in cost saving. Municipalities that share the same watershed or are neighbors can cooperate in resource assessments, stormwater management training and cost-sharing of other activities.

Chapter 1: Stormwater Regulation Basics

Stormwater is an important water resource. As rain falls, water soaks into the soil, replenishing lakes and streams and recharging groundwater. While natural landscapes like forests, wetlands and grasslands readily trap most rainfalls, very strong rains or rapid snowmelt can create overflow conditions that erode soil and flood low-lying areas.

When land is developed, stormwater runoff intensifies. Downstream, bank erosion and coastal flooding increase, and even upstream communities begin to experience road washouts and flooded basements. Instead of a resource, stormwater becomes a costly and sometimes dangerous problem.

Because local governments have the principal responsibility for controlling land use and development, federal and state law require urbanized communities to establish local stormwater management programs whose goal is to maintain pre-development runoff conditions. The state/federal stormwater management program is set up to allow flexibility for local governments to manage stormwater in a way the suits their own individual conditions.

To protect resources and quality of life, New York State encourages all localities to manage stormwater. Ideally, water falling on a developed site should be retained or absorbed on-site; the quantity, rate and quality of runoff should not be significantly different from what they would be if the site were not developed.

About this Guidance Manual

This Guidance Manual will help regulated localities in New York State set up and implement stormwater management programs that meet state/federal requirements. Further, it is intended to encourage all New York State communities, including those not currently covered by state and federal regulations, to manage stormwater as a valuable resource.

The focus of this Guidance Manual is management of stormwater runoff during two stages of the land development process:

- **Construction** – the period while land development activities are going on at a site,
- **Post-construction** – a term used to designate the continuing flow of runoff from impermeable surfaces, such as buildings, roads and parking lots, that remain on the site after construction ends.

The Guidance Manual includes information and methods for designing local programs that meet the state/federal construction and post-construction stormwater management requirements. It presents detailed information on local laws and procedures for stormwater management, along with a sample local law that meets the requirements of the state/federal program.

To help both regulated and non-regulated communities design effective programs, the manual encourages localities to use resource assessment and planning as a basis for developing stormwater management goals and selecting activities.

The Need for Stormwater Management

Recent research by the US Environmental Protection Agency finds stormwater runoff to be the leading source of water quality impairments to estuaries and the third largest source of impairments to lakes. Pollutants from untreated stormwater runoff can damage fish and wildlife, kill native vegetation, taint drinking water supplies and foul recreational areas. Stormwater runoff also increases the volume and rate at which water moves into lakes and streams, leading to flooding and erosion.

The Dynamics of Stormwater

Numerous features of the natural landscape trap runoff and allow rainwater to filter into the ground, percolating gradually toward lakes and streams. Wetlands and ponds can retain very significant volumes of water; leaf litter in forests and grasslands absorbs water liberally, releasing it slowly and removing pollutants as the water percolates through the ground.

Construction often eliminates natural features that retain and absorb water, so rainwater flows rapidly across the building site, picking up large amounts of eroded soil, plus pollutants from vehicles and construction processes. After construction is finished, parts of the site are usually covered by paving, buildings and other impervious surfaces. Water can no longer percolate into these areas, so more stormwater remains above the surface, running off very quickly overland, or through storm drains, to nearby surface waters.

Runoff from developed sites typically carries soil and sediments, road salts, nutrients and pesticides, vehicle oils and toxic chemicals in amounts that are damaging to natural resources. In many communities, lands previously developed without attention to stormwater management continue to release this kind of polluted runoff directly into water bodies without any treatment.

Generally speaking, damage to water resources from development is directly proportional to the amount of impervious surface on the developed site. Studies show that water resources are damaged whenever impervious surface area within a watershed exceeds 25 to 30 percent, and degradation can be detected with as little as 10 percent impervious surface.

How Stormwater is Managed

Controlling runoff during and after construction is a core activity in effective stormwater management. To control construction/post-construction stormwater, the state/federal stormwater management law establishes the following obligations:

- **Operators of construction sites** must create and abide by Stormwater Pollution Prevention Plans (SWPPPs) governing the management of stormwater during construction and post-construction, and must construct any needed stormwater management facilities (such as stormwater ponds, retention or detention basins or absorption areas).
- **Urbanized municipalities and certain other jurisdictions** must create stormwater management programs to review and enforce developers' stormwater pollution prevention plans and ensure ongoing operation and maintenance of stormwater management measures on developed sites.

SWPPPs formalize the design of stormwater management measures for each site. The SWPPP has two parts: an erosion and sediment control plan and a post-construction stormwater control plan. The erosion and sediment control plan, required for all regulated construction activities, lays out the nature, placement and capacity of runoff control measures to be used during construction. Where permanent measures are necessary to manage stormwater runoff after construction is completed, a post-construction stormwater control plan is also required, setting forth engineering details, construction schedules and responsibility for ongoing operation and maintenance of permanent stormwater management measures.

Controlling Pollutants in Stormwater

Treating stormwater that contains soil and other pollutants requires on-site holding, filtration and processing, usually through a system of vegetative, structural and other measures. Historic water flows indicate where on the site treatment measures should be placed and how much water they need to handle; the activities conducted at the site and the condition of the receiving waters determine which pollutants need to be treated.

Stormwater Pollution Prevention Plans (SWPPPs) lay out the specifications for stormwater management measures selected for the site, along with construction schedules and other information helpful to overseeing implementation. When stormwater runoff is discharged to waters that have already been harmed by pollution, the law requires additional care to ensure that the runoff is clean.

Preventing Erosion, Sedimentation and Flooding

During a storm, water collects quickly on the ground and, unless absorbed or impeded by natural or man-made barriers, runs off rapidly toward the nearest waterbody. As it flows overland, the water erodes soil, often depositing it later in inconvenient or unstable locations. Further erosion, as well as flooding, occur along the shores of the receiving water body, as the runoff swells an already-full lake or stream.

Managing the rate and amount of stormwater runoff requires measures that slow the water's flow, preventing it from leaving the disturbed area of the site too rapidly. Sometimes, the same system of vegetative and structural measures that is used to treat polluted stormwater can be engineered to store runoff water and reduce the rate at which it is released to a receiving water body, such as a stream. In other cases, water quality controls will be installed in combination with measures to control water quantity.

Protecting Local Quality of Life

Problems from stormwater vary in severity, depending on soil and surface water conditions and on the way people use land and other resources. But uncontrolled stormwater runoff always harms local quality of life, whether through high-visibility occurrences such as floods and washouts, or through subtler and more pervasive losses, like degradation of drinking water, swimming or fishing.

The state/federal stormwater program provides a framework to help localities manage stormwater effectively and protect their 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 harvest of fish, shellfish and other edible resources, and when the physical hazards of flooding, erosion and subsidence are reduced.

- **The environment**, both locally and more widely, improves when pollution and sedimentation of water bodies are reduced. Important biological resources, natural habitats and ecosystems will be healthier and more productive.
- **The local economy** reaps numerous benefits, including protection for property values (by avoiding flooding and 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 autonomy** benefits when the community determines stormwater management goals and oversees construction/post-construction stormwater management measures, as well as when local citizens participate in stormwater management decisions.

Who Should Use this Guidance Manual

This Guidance Manual contains information useful to local officials involved in stormwater management, whether in a regulated municipality or in a community that is not subject to the state/federal stormwater management rules. The local officials who will find this guidance manual most useful are:

- **Agencies directly involved in stormwater management** S Building Department; City/County Attorney; Department of Environmental Management; Engineering Department; Fire Department; Health Department; Planning Department; Public Works Department; Water and Sewer Department; Soil and Water District.
- **City/County Personnel whose duties include or relate to stormwater management** – Emergency responders; engineers and environmental planners; financial officers; enforcement personnel, including zoning, planning and building inspectors; public health officers; public outreach personnel; public works directors; site plan reviewers; treatment works operators; Zoning Board of Appeal and Planning Board members.
- **Municipal Governing Boards and others with roles in initiating and promoting stormwater runoff control** – elected officials; community representatives; educators; environmental advocates.

State/ Federal Stormwater Management Laws, Regulations and Programs

More than a decade ago, the U.S. government created the federal stormwater management program under the National Pollutant Discharge Elimination System (NPDES). The program's goal is to limit pollution of the nation's lakes, streams and rivers by runoff from construction sites and developed areas. It is administered by the US Environmental Protection Agency (EPA).

The NYS Department of Environmental Conservation (DEC) has received delegation from the federal government to carry out the NPDES program, using a system of state permits called SPDES (State Pollutant Discharge Elimination System). The state has issued two non-industrial Stormwater Management General Permits under SPDES, one for construction site operators and one for regulated localities.

State/federal regulations require operators of construction sites and operators of Municipal Separate Storm Sewer Systems (MS4s) to obtain coverage under the appropriate general permit (the size

of the land disturbance or the population of the MS4 determine which entities must obtain permit coverage). The General Permits impose these obligations:

- **Under GP-02-01, Operators of Construction Sites** must prepare formal written stormwater management plans, called Stormwater Pollution Prevention Plans (SWPPPs), before beginning construction, and must adhere to the provisions of these plans during and after construction;
- **Under GP-02-02, Operators of Municipal Separate Storm Sewer Systems (MS4s)** must establish stormwater management programs that include elements specified in federal and state regulation. Certain parts of the local stormwater program must be embodied in a local law or other regulatory mechanism.

Note: 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. An MS4 may be a municipal system, or one serving a large complex such as a military base, hospital or prison.

Phase I Stormwater Management Regulations

In 1990, EPA published rules establishing Phase I of the federal stormwater program. Phase I required operators of Municipal Separate Storm Sewer Systems (MS4s) in large urbanized areas (populations of 100,000 or greater) to implement storm water management programs that would control polluted discharges. It also required operators of construction projects disturbing five acres or more of land to prepare SWPPPs. In New York State, the Phase I MS4 regulations were applied only to New York City.

The Stormwater Phase II Program

The federal *Storm Water Phase II* rule expands the applicability of the stormwater program to smaller MS4s. The Phase II rule automatically applies to all MS4s located in “urbanized areas” as defined by the Bureau of the Census, plus additional MS4s designated by the state. The rule includes special requirements for stormwater management programs in areas where the receiving waters are already polluted.

Under Phase II, all operators of construction sites disturbing one acre or more of land must prepare SWPPPs, regardless of whether the construction sites are located within the jurisdiction of a regulated MS4. The rule requires regulated MS4s to establish stormwater management programs whose components match a federal standard. The locality must integrate review of the required stormwater plans into local land use regulation.

Note: DEC has established a list of MS4s in the state that are regulated under Phase II. (See NYSDEC’s publication, Guidelines for Completing the Notice of Intent Based on SPDES General Permit (GP-02-02) for Stormwater Discharges from Municipal Separate Stormwater Sewer Systems.) Municipalities that have stormwater transport systems meeting the definition of MS4s, but that are not located within urbanized areas or specially designated by DEC, are not subject to stormwater Phase II regulation at this time.

New York State Implementation of Phase II

In New York State, the Phase II Stormwater Program is being implemented through two General Permits under SPDES, issued in January, 2003: the *SPDES General Permit for Stormwater Discharges from Construction Activity (GP-02-01)*, and the *SPDES General Permit for Stormwater Discharges from Municipal Separate Stormwater Sewer Systems, or MS4s (GP-02-02)*.

GP-02-02 requires operators of regulated MS4s to establish stormwater management programs that reduce the discharge of pollutants to the *maximum extent practicable* to protect water quality. Stormwater discharges from regulated MS4s must satisfy any applicable water quality requirements of the New York State Environmental Conservation Law and the federal Clean Water Act.

The federal rule requires stormwater management programs in regulated MS4s to include six Minimum Control Measures established by 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.**

Table 1 gives a broad summary of the responsibilities of all parties under the Phase II rule for construction and post-construction stormwater management (these responsibilities are fully laid out in GP-02-01 and GP-02-02).

Construction/Post-Construction Stormwater Management Opportunities for Local Governments

In conjunction with its summary of construction and post-construction stormwater management responsibilities, Table 1 also highlights opportunities that the Stormwater Phase II program makes available to all New York State municipalities, whether or not they are regulated under Phase II. All New York State municipalities can make use of stormwater management plans and other stormwater management techniques to protect and enhance surface waters, land resources and wildlife habitats, and to protect and improve local quality of life.

Among the most promising of the opportunities created by Phase II are:

- **Stormwater Pollution Prevention Plans:** SWPPPs offer an excellent means to increase municipal oversight of development in a way that maintains a “level playing field” for local developers. Since the plans are required for all construction sites in the state that disturb one acre or more, any municipality can review these plans and incorporate them into its system of land use controls without adding a new obligation for developers.
- **Technical Guidance:** guidance created for the Stormwater Phase II program includes detailed specifications for many excellent techniques that localities can use to manage stormwater effectively.
- **Local Planning and Facility Operation/Maintenance:** Local stormwater management programs offer excellent opportunities for increasing the effectiveness of local land use planning and of routine stormwater facility operation and maintenance.

Table 1 - Requirements and Opportunities
Phase II Construction/Post-Construction Stormwater Management

Phase II places requirements on regulated MS4s, and creates opportunities for all New York municipalities, whether or not they are covered by the federal rule.

Entity	Phase II Requirements	Opportunities for Municipalities
<p>Construction Site Operators Statewide (GP-02-01)</p>	<p>Obtain permit coverage for construction disturbing one acre or more <i>Prepare SWPPP during site design</i> <i>File NOI before beginning construction</i> Implement SWPPP <i>Practices follow state technical guidance</i> <i>Control waste on construction site</i> Submit SWPPP to local government; copy on site</p>	<p>Gain control of the handling of stormwater during and after construction by reviewing and amending SWPPPs.</p> <p>Achieve effective performance in the handling of runoff from construction sites and developed lands through the advanced technical standards of the state/federal program.</p>
<p>Regulated MS4s (GP-02-02)</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 or other regulatory mechanism</i> Require construction site waste management <i>Comply with water quality standards</i> <i>Inform and involve the public</i> Identify stormwater program goals/activities Review/approve SWPPPs Inspect construction sites; enforce Stormwater Pollution Prevention Plans Require management practices that follow state technical guidance Assure maintenance of management practices Educate construction site operators and O&M personnel about stormwater requirements Maintain permit coverage with annual program evaluation report, Compliance Certificate</p>	<p>Protect natural resources and property values by using technical guidance to tailor stormwater management to local conditions</p> <p>Reduce property owner and MS4 expenditures for future flooding/siltation by requiring developers to engineer sites properly to manage stormwater</p> <p>Enhance effectiveness of MS4 stormwater management practices and infrastructure: <i>Increase public understanding and support</i> <i>Provide resources for program support</i> <i>Strengthen local law support for stormwater management</i> <i>Training to improve operation and maintenance</i></p> <p>Enhance effectiveness of local planning and resource assessment by applying them directly to land use and regulatory decisions affecting stormwater.</p>
<p>All Communities</p>	<p><i>NON-REGULATED COMMUNITIES HAVE NO REQUIREMENTS UNDER PHASE II.</i></p> <p><i>BUT STORMWATER MANAGEMENT HAS SIGNIFICANT BENEFITS FOR ALL MUNICIPALITIES, WHETHER OR NOT THEY ARE SUBJECT TO PHASE II.</i></p>	<p>Join with other localities to manage stormwater.</p> <p>Review and approve construction site SWPPPs, even if no local stormwater program is in place</p> <p>Use local planning/regulatory power to minimize water problems</p> <p>Add tangible stormwater control outcomes to local resource evaluation and planning</p> <p>Improve stormwater management at low cost during routine maintenance and operation of municipally-owned facilities</p>

Chapter 2: Local Stormwater Management

Stormwater management uses technical and regulatory practices that are already familiar to many communities in New York State. Although not all of New York's communities are required to adopt formal stormwater management programs, they can all benefit from controlling stormwater. The elements and program structure required under the Stormwater Phase II program can be used by any community to maximize benefits while retaining local flexibility and initiative.

Current Municipal Stormwater Management in New York State

Many urban areas of New York State use stormwater regulation to maintain the integrity of drainage systems. A number of New York municipalities, both urban and rural, have adopted flood plain regulations to control runoff from major storms and to ensure participation in the National Flood Insurance Program. A few municipalities are controlling both construction site erosion and stormwater runoff after construction through Erosion and Sediment Control Laws. Only 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

Because communities in New York state approach land use management and regulation in a wide 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 their other programs and respects community goals and resources.

Integrating Stormwater Management into Existing Municipal Programs

Municipal stormwater management functions in an integrated fashion with other municipal programs, in particular land use controls and environmental conservation.

The most effective mechanism for integrating stormwater management with local land use controls is to amend existing local laws or ordinances that regulate subdivision, site plan and/or zoning, by means of a local law that requires a SWPPP to be prepared and submitted whenever discretionary land use decisions are made. Establishing a stormwater management program will be easier if a municipality has in place subdivision, site plan review and zoning laws. The *Sample Stormwater Management Local Law* in this manual can be adapted to any combination of these local laws and ordinances.

Checklists on the next two pages provide "thumbnail" assessment tools that local officials can use to quickly inventory existing laws, programs and staffing as they relate to stormwater management. *Checklist 1* deals with critical land use laws and closely-related programs; in conjunction with Table 2 on page 26, this checklist can help to establish a legislative strategy for stormwater management. *Checklist 2* inventories other natural resource laws and programs that are important for stormwater management.

Construction/Post-Construction Stormwater Management Checklist

PART 1 - LOCAL LAWS, REGULATIONS AND RESOURCES

Answers can be used with Table 2 (Chapter 3) to help localities select provisions for Local Laws. Guidance Manual References cite discussions of ways to use land use land use controls for managing stormwater.

LAND USE CONTROLS AND STORMWATER PLAN REVIEWS	YES	NO	GUIDANCE MANUAL REFERENCE
Does your municipality have a subdivision regulation?			Pages 13, 24, 26; Sample Law
Are developers required to submit a Stormwater Pollution Prevention Plan (SWPPP) with a subdivision application?			Page 13
Does your municipality have a planning board?			Pages 13, 26
Does your municipality have a site plan regulation?			Pages 13, 26; Sample Law
Are developers required to submit a stormwater plan with their site plan application?			Page 13
Does your municipality have a zoning ordinance?			Pages 11, 13; Sample Law
Does the zoning ordinance require submittal of a SWPPP with application for special use permit, variance or zoning change?			Page 11
Does your municipality issue building permits?			Page 12
Is there a building inspector/code enforcement officer?			Pages 12, 13
Are code enforcement officers, ZBA and Planning Board members reviewing stormwater plans or prepared to review them?			Pages 29-31
Does your municipality have a Conservation Advisory Council or Environmental Conservation Committee?			Page 13
Are environmental council members prepared to review stormwater plans?			Pages 29-31
Does your municipality have an erosion and sediment control or stormwater management law?			Page 12
Does your municipality have a stormwater drainage district?			Page 12

What Your Answers to the Part 1 Checklist Mean

Three *Yes* answers to questions on dark grey backgrounds mean your municipality can use the *Sample Stormwater Management Local Law* without modification. Any *No* answer means that you will need to make some modification to the sample law. See Table 2 on page 26 for how to make these modifications.

A *Yes* answer to a question on a light grey background means that you have additional closely-related programs for managing stormwater. Your stormwater management program should make full use of these programs, and be integrated with them as shown in Table 2.

Yes answers to questions on a white background mean that your municipality has already begun establishing procedures that are needed for stormwater plan review. *No* answers indicate areas to address in developing procedures.

Construction/Post-Construction Stormwater Management Checklist

PART 2 - LOCAL PROGRAMS RELATED TO STORMWATER MANAGEMENT

These questions identify laws and rules, staff and resources that can play important roles in creating and maintaining a successful stormwater management program. References lead to more detailed discussions of each topic.

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 12
Does your municipality have floodplain controls?			Page 12
Does your municipality have wetlands controls?			Page 12
Watercourse, stream corridor or riparian buffer requirements?			Page 12
Zoning overlay district or other special districts?			Pages 12-13
Technical Staff with Important Stormwater Roles - Consult about program design			
Does your municipality have a Municipal Engineer/engineering Department?			Page 14
Does your municipality have a Building Inspector or Building Department?			Pages 12, 13-14
Does your municipality have a Municipal Attorney or Legal Department?			Page 14
Does your municipality have a Public Works Department?			Page 14
Does your municipality have a Municipal Planner or Planning Department?			Page 14
Community Resources for Stormwater Management - Use to determine needs			
Has your municipality prepared a natural resource inventory?			Pages 20-22
Does your municipality have a citizen information/participation program?			Pages 27-29
Does your municipality share programs with neighboring jurisdictions?			Pages 32-33
Does your municipality operate/maintain any stormwater infrastructure?			Pages 12-13, 17-18
Does your municipality have a Comprehensive Plan or Master Plan?			Appendix 2
Does the plan assess stormwater problems and provide for stormwater needs?			Appendix 2

What Your Answers to the Part 2 Checklist Mean

Yes answers indicate existing programs that the municipality can use to support stormwater management goals; through these programs, stormwater management accomplishments can enhance other local goals.

No answers indicate local resource protections that the locality may want to consider adopting, or key expertise that the municipality may need to obtain.

Municipal Legislative and Enforcement Powers for 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 should be at least as stringent as the state *SPDES General Permit for Stormwater Discharges from Construction Activities* (GP-02-01), which requires construction site operators to prepare a Stormwater Pollution Prevention Plan (SWPPP) as specified in GP-02-01, and should also provide a framework for long term maintenance of stormwater management practices.

This section discusses the powers that municipalities can use to accomplish this key stormwater management program element.

Home Rule Authority (Local Law vs. Ordinance)

The New York State Department of State recommends that a regulation for stormwater management be adopted as a local law under the Municipal Home Rule Law, rather than as an ordinance under New York General City Law, Town Law, and Village Law.

New York State Municipal Home Rule Law (Article 2, Section 10) provides the guidelines and procedure for adopting and amending local laws for a broad range of activities, including the “protection and enhancement of the physical and visual environment.” When adopted under the Municipal Home Rule Law, a local law has the same status as an act of the New York State Legislature. The local law must be filed with the Secretary of State, but it can be made effective immediately. By adopting the stormwater management law under Home Rule Law, a municipality can amend all necessary local laws and ordinances with one law.

Municipalities can adopt local ordinances under the New York General City Law, Town Law, and Village Law. However, an ordinance adopted under these statutes must deal with powers specifically allocated to local government by state law. Because there is no specific statutory reference to stormwater management and its related activities, New York State recommends that municipalities adopt local laws, rather than ordinances, for stormwater management.

Municipal Powers that Apply to Stormwater Management

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 zoning 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 and approval of SWPPPs to ensure 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 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 will be conserved and reduce stormwater runoff.

Stormwater Drainage Districts. Cities, towns, villages and counties may construct drainage facilities under other sections of law, and General Municipal Law, 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 intermunicipal drainage facilities to be constructed. 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, NY (Appendix 3).

Adopting Natural Resource Protection Regulations

Municipalities can adopt **erosion and sediment control laws or filling and grading regulations**, laws or ordinances, which 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 to amend these regulations, requiring review and approval 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. Each city, town or village enacts a local law that reflects and enforces the state law, rather than enacting its own separate building code. Under this law, a municipality retains a Building Inspector and/or Code Enforcement Officer who inspects buildings under construction and enforces the code.

State law does not presently provide for approval of SWPPPs as part of the building permit process, but a municipality may direct the building inspector to require these documents when an application is made for another land use permit (such as a site plan, subdivision, zoning change or special use permit). The Building Inspector may also require an approved SWPPP before releasing the Certificate of Occupancy.

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 go a long way towards protecting water quality and reducing the quantity of stormwater runoff to its water resources.

A municipality may also undertake operation and maintenance of stormwater management structures located on privately-constructed properties and subdivisions, 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; a stormwater district can be used to fund stormwater facility operation and maintenance.

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.

Stormwater Management-Related Responsibilities of Municipal Officials

Stormwater management is a shared task that involves a variety of municipal functions and official responsibilities.

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

Zoning Board of Appeals

Zoning Boards of Appeals (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.

Environmental Review

The environmental review of a project 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, and the placing of conditions upon project approval that further the mitigation measures identified in environmental review.

Code Enforcement Officer

The Code Enforcement Officer (Building Inspector) is often a builder's or developer's first official contact with the municipality where the construction site is located. This official has an important role in educating developers about the municipality's land use controls. If authorized, the Code Enforcement

Officer interprets and applies local land use laws, issues building and other permits, and enforces the law. If directed by the municipality, the Code Enforcement Officer can make sure that a SWPPP is submitted by the applicant and can inspect construction/post-construction stormwater management practices.

Public Works Department

The municipal Public Works Department installs and maintains the municipality's storm drain system, addresses erosion problems on roads and bridges, and carries out emergency maintenance. 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 many counties, a county Water Quality Coordinating Committee coordinates local stormwater management with Regional Planning Councils, watershed groups, coalitions and related local groups.

Municipal Attorneys, Engineers, Planners and Planning Consultants

Municipal attorneys, engineers 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 a local law for stormwater management, to ensure that the local law relates appropriately to other laws and ordinances in the municipality's code. The Municipal Attorney is also responsible for 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.

Stormwater Management Program Elements

The six Minimum Control Measures of the Stormwater Phase II program are designed to "cover all bases" for local stormwater management. A program that includes the Minimum Measures will improve local conditions and protect water bodies from future pollution, erosion and sedimentation. Construction/post-construction stormwater management figures prominently in the Minimum Measures program design.

- **Unregulated communities** should use the Minimum Control Measures as a framework for their stormwater management programs, to provide maximum protection for their natural resources.

- **Regulated MS4s** are required by law to include all six Minimum Measures in their programs. They must set goals and select activities for each Minimum Measure 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 on their progress.

The federal requirement that regulated MS4s determine measurable goals and appropriate methods and program activities for each Minimum Control Measure provides local flexibility in selecting appropriate ways to satisfy the Minimum Measures. This provision of the Phase II rule allows localities to integrate the elements of stormwater management with their existing structure of programs and local laws and to respond to local needs and conditions.

Table 3 gives requirements, suggested activities and practices and sample measurable goals for all six Minimum Measures. County Soil and Water Conservation Districts can help municipalities identify and select appropriate activities to meet the Minimum Measures. EPA offers guidance for developing measurable goals for the Minimum Control Measures under a general permit at <http://cfpub.epa.gov/npdes/stormwater/measurablegoals/part2.cfm>.

DEC recommends that municipalities consider sharing elements of their stormwater management programs with neighboring jurisdictions that share common watersheds. Working with the SWCD, Regional Planning Councils, watershed groups, coalitions and related local groups through the County Water Quality Coordinating Committee (WQCC) can open opportunities to network and share resources with other jurisdictions.

Construction site and post-construction stormwater, which are usually the most polluted types of stormwater discharges, are the focus of this Guidance Manual. The following brief survey of all six Minimum control Measures emphasizes Minimum Measures 4 and 5, which address construction/post-construction stormwater control.

Minimum Control Measure 1: Public Education and Outreach

Informing citizens about the water quality impacts of polluted stormwater runoff discharges 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 activities about the impacts of stormwater discharges on local waterbodies, the pollutants of concern and the steps that can be taken to reduce stormwater pollution.

Minimum Control Measure 2: Public Participation/Involvement

Operators of 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 public participation and involvement provisions of the federal Clean Water Act that apply.

The stormwater management public involvement/participation program must identify key individuals and groups affected by the stormwater permitting 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.

Minimum Control Measure 3: Illicit Discharge Detection and Elimination

Regulated MS4s must establish a plan to detect and eliminate illicit discharges (any discharge 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 other 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. These activities typically include water line flushing, landscape irrigation, lawn watering, swimming pool discharges, street washing, irrigation, foundation drains and other discharges.

Minimum Control Measure 4: Construction Site Runoff Control

To comply with 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. Regulated MS4s must demonstrate that the protection provided by local regulation is at least equivalent to that provided by 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/approval of SWPPPs** prepared by construction site operators.
- **Require 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.

Regulated MS4s must also establish procedures to ensure that the law is effectively 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 in reviews of individual site stormwater plans. Procedures should also be established for site inspections and enforcement, and for accepting and considering complaints, comments and other information from the public. Training should be provided for construction site operators on the requirements of the local stormwater management program.

Minimum Control Measure 5: Post-Construction Site Runoff Control

Either separately or in combination with Minimum Measure 4, municipalities must 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 sites to the MS4 after completion of construction.

The stormwater management program uses the term *post-construction* to designate runoff from the impermeable surfaces, such as buildings, roads and parking lots, that remain on a developed site after construction ends. Often, to reduce pollutants in post-construction stormwater runoff, construction site operators will need to build permanent runoff control facilities (structural measures) and/or establish other (non-structural) measures on sites during development or re-development. Like construction site requirements, post-construction runoff control requirements apply to sites of one acre or more in size or are part of a larger plan of development.

Local laws adopted by regulated MS4 municipalities must:

- **Require review/approval 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* and the *New York Standards and Specifications for Sediment and Erosion Control*.

- **Establish responsibility for ongoing maintenance** of structural or non-structural stormwater 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 needs to be made part of the municipality's land use control and resource protection programs, with adequate support and funding. For sensitive water bodies, ongoing water quality monitoring may be needed to evaluate the effectiveness of structures or stormwater management 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 activities that can pollute stormwater or increase the volume of runoff. 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 management 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 numerous opportunities to improve stormwater management with minimum expenditure of additional taxpayer funds. These include restoration/protection of stream buffers and wetlands through grants available for such projects; retrofitting the existing storm sewer system 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*).

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. Each year, regulated MS4s should use the annual reporting process to further define the initial goals included in their Notices Of Intent. Below are examples of measurable goals that MS4s might set for control of construction/post-construction stormwater runoff (Minimum Measures 4 and 5):

- Complete preliminary inventory of water quality problems/pollutants of concern, to identify water bodies in need of special controls for construction/post-construction stormwater.
- Adopt a Stormwater Management Local Law with requirements for construction/post-construction stormwater control.
- Establish procedure for receiving and following up on information submitted by the public about construction/post-construction stormwater concerns.
- Establish procedure for construction site plan review (can be established in local law).
- Establish and implement procedures for site inspections (can be established in local law).
- Complete initial training for (specify percent) of construction site operators active in the municipality. Establish procedure for delivering training as needed when new operators seek local permits.
- Achieve (specify percent) construction site operator compliance with local law this year.

- Reduce impervious surfaces associated with new development by (specify percent).
- Establish procedure to periodically measure and record clarity and sedimentation of local water bodies, as part of ongoing construction/post-construction program evaluation.

Accommodating Water Quality Requirements in Stormwater Management

Regulated MS4s that discharge stormwater to streams or watersheds identified by federal or state government as being impacted by pollution are required to meet the standard of “no increase of pollutants of concern,” and to document that their stormwater management programs will cause discharges to meet that standard. Such stream reaches or watersheds are also subject to more stringent requirements under the *General Permit for Construction Activities* (GP-02-01).

DEC maintains a list of waterbodies of concern in New York State called the *303d List*. Federally required *Total Maximum Daily Loading (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 the TMDL plan. A full SWPPP must be prepared for any disturbance affecting 1 or more acres whose runoff discharges to an MS4 with an outfall to a 303(d) listed stream segment or a TMDL watershed.

Ensuring no increase of pollutants of concern may require monitoring, modeling or other measures. Except for discharges to 303(d) listed waters and TMDL watersheds, there is no specific requirement that a regulated MS4 ensure improvement in water quality as a result of implementing the six Minimum Control Measures. (GP-02-02 III B).

Doing the Best Job of Stormwater Management
A vision of life in a community where stormwater management is working

Public Outreach and Involvement

Citizens understand the harm done by stormwater runoff, what pollutants damage resources and how to prevent pollution. They know how to recognize stormwater-related problems.

Citizens understand their community's stormwater management program. They encourage developers to use stormwater management practices.

It is easy for citizens to obtain and review SWPPPs. All economic and ethnic groups can participate in decisions involving stormwater, which receive full legal notice.

The public contributes information about stormwater problems; the municipality adds information from the public to its data about local conditions and follows up on complaints.

Citizens hold municipal officials and property owners accountable for ongoing performance of stormwater management facilities and practices.

Illicit Discharge Detection and Elimination

No harmful substances reach surface waters through storm sewers; dischargers comply with the illegal discharge elimination plan and statutory prohibition. To encourage public awareness, maps showing discharge points to the storm sewer system are publicly available.

Construction/Post-Construction Runoff Control

No construction site or developed site discharges more pollution or volume of runoff than the site did when it was in a natural condition. Under a stormwater management local law, erosion and sediment controls are functioning during every regulated construction project. Environmentally sound land use practices minimize stormwater runoff.

Effective control of runoff from construction sites is accomplished through stormwater plans prepared by construction site operators and reviewed during local permitting. Inspections ensure that runoff controls are in place and functioning during construction.

Construction site operators routinely implement stormwater plans. Architects, engineers and designers follow state technical standards in planning and construction. Stormwater control measures remain on the site as needed after construction.

Pollution Prevention/Good Housekeeping

Municipal activities, such as road construction and maintenance, do not contribute polluted stormwater or excess runoff. The municipality maintains its own stormwater management facilities/practices, improving stormwater systems when the opportunity arises.

Municipal employees use good housekeeping and pollution prevention. Training, along with incorporation of good housekeeping standards into project plans and employee evaluations, keep these practices at the forefront of awareness and implementation.

Environmentally friendly local road construction, plus restoration/protection of stream buffers and wetlands, make management of stormwater runoff easier, and provide models of best management practices for developers to follow.

Stormwater Management Information

Resource assessment provides continually-updated information for stormwater management,

and local planning takes stormwater runoff into account.

Assessing the Community's Stormwater Problems and Needs

As municipalities implement a stormwater management program, they should revisit their community's Comprehensive Plan (Master Plan) to ensure that the community's natural resources have been identified and considered in the implementation of the plan. A discussion of the relationship between the Comprehensive Plan and the stormwater management program appears in Appendix 2, *Land Use Planning and Stormwater Management*.

Communities should base stormwater management program planning on data about natural resources. Numerous information resources and assessment tools are available for the use of New York communities. The remainder of this chapter is a brief discussion of sources where localities can find this data.

Municipalities should make it an ongoing practice to seek information from the public about stormwater needs and local conditions. (A brief discussion of the public information/public involvement requirements under Phase II can be found on page 16. A discussion of recommended public involvement approaches appears in Chapter 4, *Implementing Construction/Post-Construction Stormwater Management*.)

Gathering Information to Support Stormwater Management

As localities set up and carry out local construction/post-construction stormwater management, they will require information to accomplish several critical tasks:

- **Defining the community's goals** for construction/post-construction stormwater management.
- **Providing findings of fact** to help determine the purposes of the Stormwater Management Local Law and direct the program.
- **Supporting land use planning and individual land use decisions**, with the goal of helping decision makers to best manage stormwater runoff in developing and developed areas.
- **Providing an information base for reviewing SWPPPs**, for evaluating the appropriateness of proposed control measures and for developing conditions that will make local permits more effective in managing stormwater.
- **Identifying current and potential stormwater problem areas** where the stormwater management program should provide special protections.

Assessing Natural Resources

Natural resource assessments define the extent and condition of resources, identify resources that by their nature are sensitive and easily harmed by stormwater, and identify resources that are already being harmed by pollution or overuse. Natural resource assessments highlight areas where resource problems may already exist, and provide a basis for predicting future problems.

Because all natural resources within a watershed are interdependent, data about water quality, habitat integrity, fish and aquatic animals, and land uses are used together to describe the condition of a watershed and to highlight areas that are subject to problems.

Identifying Stormwater Concerns

Watershed-based Assessments

Assembling data on the extent and condition of waterbodies that receive stormwater discharges from the MS4 is a key to establishing a stormwater management program that will effectively address local conditions. To identify the waters receiving stormwater discharges, municipalities should consult

topographic maps, county, town and village maps and sewerage maps.

The watershed is the basic context for stormwater program development and implementation. The term *watershed* means an area of land that drains rainwater, beneath the ground and on the surface, downslope to a common outlet, such as a stream, river, estuary and, ultimately, the ocean. The larger the receiving water body, the larger the land area in its watershed. Each municipality lies within several watersheds of different sizes, draining into different receiving waters; only the smallest watersheds are likely to be within a single political jurisdiction. (Because so many municipalities share watersheds, it is often economical for municipalities to cooperatively prepare watershed assessments.)

A watershed assessment documents the extent and condition of the water resources within the watershed, along with the watershed's size, slopes and elevation, soils geology, extent of flood plains and land uses. The assessment begins with existing information and maps of water resources, including waterbodies, wetlands, streams, aquifers, groundwater recharge areas and related drainage systems. Municipalities may decide to supplement the available information by gathering further data, or may retain consultants to conduct studies, ranging from simple compilations to elaborate computer models. In some watersheds, municipalities can take advantage of extensive data already developed for a formal Watershed Plan.

Tools and Resources: The task of identifying watersheds can be carried out by the Conservation Advisory Council or Environmental Management Council, the local planner or engineer (or a planning or engineering consultant). EPA's web-based "Watershed Academy" tells how to delineate a watershed. Soil and Water Conservation Districts, Regional Planning boards and Regional DEC offices can help ensure that the identification is accurate.

Water Quality Assessment

To determine the water quality of receiving waterbodies, localities should consult the DEC *Waterbody Inventory/Priority Waterbodies List (WI/PWL)* of impaired, impacted and threatened waterbody segments. A fact sheet for each waterbody on the PWL inventory identifies whether urban runoff is one of the sources of pollutants to the waterbody. The associated *303d List* and the federally-required *Total Maximum Daily Loading (TMDL)* assessments identify waterbodies in need of special measures to limit pollution.

New York State Department of Health *Source Drinking Water Assessments* should also be reviewed to identify waterbodies with pollution concerns. Nutrient sensitivity and known sediment pollution are two key identifiers of water quality concerns.

Tools and Resources: The WI/PWL can be obtained from the DEC Division of Water's Bureau of Watershed Assessment and Research at (518) 402-8179. The 303(d) list can be found on the DEC web site at <http://www.dec.state.ny.us/website/dow/303dcalm.pdf>.

Natural Resource Assessment

Information about habitat integrity, fish and aquatic animals helps pinpoint areas where water quality or quantity problems already exist or may develop in the future. To identify such stormwater problem areas, the assessment should include data about natural resources and local land uses, such as:

- **Wetlands maps** (to identify hydrologic resources and related open space)
- **Floodplain maps** (to identify areas known to currently flood)
- **Soils maps** and other information showing soil permeability (to determine appropriate stormwater management practices and identify areas where development is likely to cause future flooding)
- **Agricultural districts** (to identify viable farms/farmland and adjacent open space that may be

valuable in stormwater management)

- **Tax parcels** (to understand land ownership factors affecting stormwater management)
- **Existing and allowed land uses** in the watershed, including amounts of impervious surface area in each subwatershed (to help estimate current and future pollutant loadings)
- **Special districts** (to identify areas already authorized to set up special protections)

Sensitive Natural and Cultural Resource Identification

Local resource assessment includes identification of sensitive land resources that may be affected by local stormwater management, such as farmland, parks (state or local) and Adirondack/Catskill Forest Preserve lands. Any local populations of endangered or threatened species, areas of critical habitat and sensitive cultural resources should also be identified.

Tools and Resources: Localities can consult the database of the New York Natural Heritage Program to determine the status and location of rare species and natural communities within their jurisdiction. For more information, contact DEC's Division of Fish, Wildlife and Marine Resources at (518) 402-8944. Information about properties listed or eligible to be listed on the National Register of Historic Places is available from the NYS Office of Parks, Recreation and Historic Preservation. The information can be found on the web at <http://nysparks.state.ny.us/field/statnatreg/> or through the Historic Preservation Field Services Bureau at (518) 237-8643.

Identifying Stormwater Problems and Assessing Risk

Overlaying or relating the data discussed above is a powerful method for identifying stormwater problem areas. Another key source of information about stormwater problems is reports by local citizens – residents, employees and owners of businesses – who observe conditions within the watershed during their daily activities. The public participation element of the local stormwater management program must emphasize attention and response to citizen reports of flooding, standing water, washouts and other indications of stormwater problems.

Assessing stormwater risk is an attempt to anticipate the impacts of future development on the community and its resources. These impacts typically include increased runoff to sensitive areas, erosion, flooding and degradation of water quality or other resources. An effective stormwater management program will use the risk findings to identify environmentally sound areas for future development and vulnerable areas that need to be protected, and will embody these in the local stormwater program and in the local Comprehensive Plan and zoning laws.

There are different ways to assess risk.

- For a rough estimate of the risk to water quality from stormwater runoff, calculate the percentage of impervious surface within a watershed. (According to studies, more than 10 percent impervious area means water quality will begin to degrade; 25 to 30 percent usually means significant degradation).
- Inspection of zoning maps and other information about existing and allowed land uses can provide the basis for an estimate of future pollutant loadings and a prediction of likely changes in land use and increases in impervious cover.
- To assess risk from pollution, estimates can be made of the response of the aquatic systems in the municipality to changes in input of nutrients, such as phosphorus and nitrogen. In some cases, measures are already required by regulation to improve or protect waterbodies where pollution is a concern, and risk estimates should include expected improvement in the condition of these waters.
- Inputting observations to computer models displayed in a Geographic Information System gives risk estimates that are more comprehensive and precise, and more time-consuming and expensive.

Tools and Resources: The US Department of Agriculture's Natural Resources Conservation Service provides assistance with assessing risk.

Chapter 3: Developing Stormwater Management Laws

Why Local Laws are Needed

Municipalities in New York State have the power and responsibility to make land use decisions that determine how each community uses not only its land, but also its water and other natural resources. These decisions directly determine whether the community's resources will support a good quality of life for its citizens.

The Stormwater Phase II program requires regulated MS4s to incorporate stormwater management into the local code. This requirement ensures that local stormwater management programs meet the community's objectives for protecting public health and welfare; makes certain that stormwater management takes into account the individual locality's natural resources, and gives local boards direct input into landscaping, placement of structures, long-term maintenance, enforcement and other issues that are best determined locally.

The State of New York recommends that every community, whether or not it is regulated under Phase II, adopt a Stormwater Management Local Law. By adopting the language recommended in this Guidance Manual, regulated MS4 communities will meet the Phase II requirement for "an ordinance or other regulatory mechanism" to carry out Minimum Control Measures 4 and 5 for control of construction site and post-construction runoff.

Developing Local Laws for Stormwater Management

While processes for developing local laws and regulatory programs vary from community to community, certain elements of stormwater management local law development will be common to all New York municipalities.

Recognizing the Cooperative Nature of Stormwater Management

Many different boards, agencies and personnel within the municipal government have roles in stormwater management. The best way to establish an effective stormwater management local law is for the local legislative body to create an inter-agency Stormwater Local Law Review Team that reflects these diverse roles and responsibilities. The team should include representatives from the Governing Board, Building Department, Planning Board, Zoning Board of Appeals, Conservation Advisory Council or Environmental Conservation Commission, Municipal Attorney, Municipal Engineer, Municipal Clerk, and Planning Department or consultant.

The Stormwater Local Law Review Team should review and comment on the draft local law and also should help create and recommend opportunities for public involvement in developing and implementing the local law and in carrying out the stormwater management program.

Design Legislative Strategy to Meet Phase II Requirements

Local land use law is the framework for carrying out the Phase II construction/post-construction stormwater management program. Authorization for local officials to make decisions on construction projects is found in the municipality's Zoning, Subdivision and Site Plan Laws.

Because stormwater management is a necessary part of all land development projects, the most straightforward way to establish local control of stormwater impacts during and after construction is to amend the existing laws and ordinances that govern zoning, subdivision and site plan review. By making use of existing local land use controls, the *Sample Stormwater Management Local Law* avoids creating a new permit for stormwater management.

Select Local Laws to be Amended or Supplemented

Using *Checklist 1* in Chapter 2 (page 9), municipal officials, staff or volunteer board members can inventory the municipality's current base of laws that can be amended for stormwater management. Municipalities can use Table 2 in this chapter as a guide to select from the *Sample Stormwater Management Local Law* the provisions needed to amend their existing land use laws into line with the Phase II requirements.

- **Municipalities that have one or more of the three basic land use laws** (zoning, subdivision and site plan approval, or a zoning law that incorporates site plan and/or subdivision approval) can meet all the requirements of Phase II by adopting sections of the *Sample Stormwater Management Local Law*.
- **Municipalities that do not have any of the three basic land use laws** can adopt the *Sample Stormwater Management Local Law* as a stand-alone regulation.

The Sample Stormwater Management Local Law

The *Sample Stormwater Management Local Law* includes all of the requirements for regulated MS4 municipalities to meet Phase II Minimum Control Measures 4 and 5 (Construction Site Runoff Control and Post-Construction Runoff Control). Any local government in New York State, whether or not it is regulated under Phase II, can use the sample local law to manage the impact of stormwater on natural resources. The municipal government can revise the language of the sample local law to reflect local needs.

Fundamental to a stormwater management program is the Stormwater Pollution Prevention Plan (SWPPP) that prescribes steps the construction site operator will take to control runoff from the site during and after construction. The language in the sample local law incorporates the SWPPP as part of the applicant's package for a local land use approval. The information below on legislative strategies for local governments with different combinations of existing local laws is summarized in Table 2.

- **Article 1 (General Provisions) and Article 2 (Stormwater Control)** of the sample local law must be adopted, to establish the stormwater management program and SWPPP requirements. Article 1 will be adopted as part of the body of the new stormwater management local law. Article 2 will be adopted as an amendment to the Zoning Law, or, if the municipality does not have zoning, it may be adopted as part of the local law itself or as an amendment to the Subdivision or Site Plan Review Law.
- **Article 3 (Subdivision Law Amendment)** should be adopted along with Articles 1 and 2 by all municipalities that have a Subdivision Law.
- **Article 4 (Site Plan Review Law Amendment)** should be adopted along with Articles 1 and 2 by all municipalities that have a Site Plan Law.
- **Article 5 (E&SC or Stormwater Management Law Update)** contains language to be used by municipalities that have previously adopted an Erosion & Sediment Control Law or a Stormwater Management Law to replace their existing law with the 2003 New York State Model Erosion & Sediment Control Ordinance (which meets the updated requirements for controlling construction site runoff). However, because Erosion and Sediment Control Laws do not address post-construction runoff control, municipalities that take this approach should also adopt Articles 1, 2, 3 and 4. These four articles provide for review and approval of stormwater pollution prevention plans, when these are needed to cover post-construction runoff control.
- **Article 6 (Administration and Enforcement)** contains enforcement-related provisions that are required by Phase II, but that may already exist in a municipality's local code. Regular inspection,

enforcement of stormwater provisions, sanctions to ensure compliance, and performance guarantees are required under Minimum Measures 4 and 5. The Municipal Attorney should examine existing requirements for inspection, enforcement and performance guarantees to evaluate their adequacy to achieve the purposes of the stormwater management local law. The municipality may wish to revise or amend its local regulations to incorporate some or all of the language in Article 6.

Terminology in the Sample Local Law

The *Sample Stormwater Management Local Law* uses terms that are the basis of the stormwater program. The terms are defined in Schedule A of the sample local law. Several key terms important for implementing a municipal Stormwater Management Program are also explained here.

Design Manual and *Erosion Control Manual* are short names for two publications, the *New York State Stormwater Design Manual* and the *New York Standards and Specifications for Erosion and Sediment Control* (for availability, see References, Appendix 4). The language of the sample local law incorporates these manuals as the technical guidance for controlling erosion and sedimentation on construction sites and installing stormwater management practices that are appropriate for New York State soils and climate. Phase II does not require municipalities to use these documents as the technical guidance for stormwater management local laws, but New York State highly recommends that they do so. These manuals contain the most up-to-date practices, as well as easy-to-use checklists and community implementation tools.

Land development activity encompasses construction and post-construction activities that are regulated by the stormwater management local law. While the sample local law regulates any disturbance of one acre or more (as required by the Phase II regulations), local governments have the option to regulate disturbances smaller than one acre. Municipalities that already regulate disturbances of one acre or less can incorporate their existing minimum into the Stormwater Management Local Law. Municipalities that wish to introduce a more stringent limit can do so by changing the language of the sample local law.

Stormwater Management Officer is used to designate a municipal employee or officer who will accept and review SWPPPs and forward the plans to the Planning Board, Zoning Board or Town Board (depending on the local approval needed). The Governing Board will probably designate the Code Enforcement Officer, Building Inspector or another official in the municipality's Building Department to serve as Stormwater Management Officer. The Stormwater Management Officer may also conduct inspections of erosion control measures on construction sites and stormwater management practices; alternatively, this function may be delegated to the Municipal Engineer or a planning consultant.

Legislative Findings and Purposes

The nine findings and six purposes in the *Sample Stormwater Management Local Law* reflect the basic Phase II regulatory requirements for stormwater management-related objectives of the local law. These finding and purposes may be valuable in proving validity if the local law is challenged.

Ideally, the legislative findings should also reflect the individual community's natural resources and its capacity for carrying out a stormwater management program. The information-gathering and risk assessment process discussed in Chapter 2 is an excellent basis for developing legislative goals, objectives and findings that will support an effective stormwater management local law and program. Based on natural resource assessment and risk analysis, legislators can develop water resource goals specific to the municipality and its unique resources.

Table 2: Local Legislative Actions for Stormwater Management

In conjunction with the information from Checklist 1, this table can help select a stormwater management legislative strategy to fit the community’s individual land use control circumstances.

LOCAL LAND USE CONTROLS	STORMWATER MANAGEMENT SAMPLE LOCAL LAW PROVISIONS						
	<i>Enacting Clause</i>	<i>Article 1 General Provisions</i>	<i>Article 2 Amend Zoning</i>	<i>Article 3 Amend Subdivision</i>	<i>Article 4 Amend Site Plan Law</i>	<i>Article 5 Amend E&SC Law</i>	<i>Article 6 Administration</i>
All Municipalities	Adopt	Adopt					
If the municipality has in place:							
Zoning, Subdivision, Site Plan Review Laws			Adopt	Adopt	Adopt		
Zoning, Subdivision Laws			Adopt	Adopt			
Zoning, Site Plan Review Laws			Adopt		Adopt		
Subdivision, Site Plan Review Laws			Adopt as part of Article 1 or 3	Adopt	Adopt		
Subdivision Law only			Adopt as part of Article 1 or 3	Adopt			
Site Plan Review Law only			Adopt as part of Article 1 or 4		Adopt		
E&SC Law, with or without other			Adopt with first five rows above	Adopt with first five rows above	Adopt with first five rows above	Adopt	
Construction Inspection							Update if needed
Performance Guarantees							Update if needed
Code Enforcement							Update if needed

Chapter 4: Implementing Construction/Post-Construction Stormwater Management

Adopting the local stormwater management law is the first step toward ongoing, effective implementation of a municipal construction/post construction stormwater management program.

- **Regulated MS4s** not only must implement all the terms of their stormwater management laws, but also must put in place other program elements prescribed by Minimum Control Measures 4 and 5.
- **Non-regulated communities** can use the implementation steps listed in this section to help ensure effective local management of construction/post-construction stormwater runoff.

Involving the Public in Local Stormwater Management

The stormwater management public information/public involvement program must begin during program development and continue for the life of the MS4's permit coverage under GP-02-02. This discussion lays out education and involvement requirements and recommendations for management of construction and post-construction stormwater runoff. For discussion of the requirements of the entire Phase II program for education, outreach and involvement requirements see Guidelines for Completing the Notice of Intent, Selecting Management Practices, Setting Measurable Goals Based on SPDES General Permit (GP-02-02) for Stormwater Discharges from Municipal Separate Stormwater Sewer Systems published by NYSDEC, February 2003, revised August 2003 located at: www.dec.state.ny.us/website/dow/toolbox/ms4toolbox/ms4_guidelines.pdf.

Target Audiences for Outreach and Involvement

Broadly speaking, successful management of construction/post-construction stormwater runoff in a municipality requires actions by three groups:

- **Construction site operators**, who must develop, submit and follow SWPPPs.
- **Owners/operators of properties with stormwater management discharges or facilities**, who must follow pollution prevention practices during ongoing operation and maintenance. (This group includes municipal government and private sector employees who operate and maintain stormwater management systems.)
- **Citizens** who may observe stormwater problems during or after construction and whose support is needed to ensure that the local stormwater management program is effective.

The specific identities and interests of the people in each of these three groups vary from community to community. Each municipality must identify the best ways of reaching local target audience(s), what the audience(s) need to know about stormwater, and the actions needed from each for successful stormwater management. Ongoing involvement of these groups in stormwater management is a key contributor to the success of the local program.

Phase II Requirements for Public Education and Involvement

Public education and involvement in construction/post-construction stormwater management should not end with the adoption of a local law, or even with the establishment of a stormwater management program. For public education/involvement, the local stormwater management program must include certain key activities.

Public Education and Outreach

Requirements: Phase II requires a regulated MS4 to keep stormwater management continually

before the public. Because routine activities are the source of many stormwater problems, education and outreach should also remain routine. Under Phase II, the regulated MS4 must:

- **Conduct an ongoing public education and outreach program** that covers topics specific to construction/post-construction stormwater management, such as: how stormwater behaves on construction sites and on developed lands that have impervious cover; the need for and nature of stormwater management facilities and practices during and after construction within that specific municipality; how to spot a failure in a stormwater management practice or facility.
- **Develop measurable public education/outreach goals and select appropriate activities** to ensure the reduction of all pollutants of concern in stormwater discharges to the maximum extent practicable.

Recommendations: Public information/education activities for construction/post-construction stormwater management might include:

- Offer the public information about stormwater dynamics and resource conditions within the municipality, to support goal-setting and selection of program activities.
- Make available presentations to community and professional groups (ask stakeholders in the stormwater management program and members of the Stormwater Management Local Law Review Team to identify appropriate audiences).
- Solicit news articles or broadcast interviews.
- Display posters or other graphic reminders and sponsor events featuring stormwater management.
- Provide information sessions or training for construction site operators and municipal employees.

Public Participation and Involvement

Requirements: Regulated MS4s must include the public in developing, implementing, and evaluating their stormwater management programs. Public participation activities for the construction/post-construction stormwater management program should emphasize involvement in the development of the local law and should encourage citizens to report stormwater-related problems that they observe within the municipality. Phase II stipulates certain broad obligations for regulated MS4s' construction/post-construction stormwater management programs:

- **Conduct a public involvement/participation program** that identifies key individuals and groups who are interested in or affected by construction/post-construction stormwater management, identifies the type of input sought and describes activities to provide program access and gather input.
- **Involve the public in developing goals** for construction and post-construction stormwater management.
- **Comply with state and local public notice rules** for local law development and other decisions regarding stormwater, and, where the federal law applies, with federal Clean Water Act public participation and involvement provisions. Details of the rules for public notice can be found in the *New York State Local Government Handbook*, published by the NYS Department of State and available on-line at www.dos.state.ny.us/lgss/pdfs/handbook.pdf.
- **Conduct public hearings as stipulated by law before adopting the Stormwater Management Local Law.** Ideally, interested parties should be invited to participate in drafting or reviewing the local law. The *New York State Local Government Handbook* is the source for detailed information on public hearing requirements of New York State municipalities.

- **Provide a contact for receipt and consideration of stormwater-related information submitted by the public.** The municipality's Stormwater Management Officer could also act as public contact for stormwater information, but dividing these functions between two municipal employees would be equally appropriate.
- **Develop measurable public involvement/participation goals and select appropriate activities.**

Recommendations: Include the public as the construction/post-construction stormwater management program proceeds.

- **Establish and publish the name of a stormwater management contact person.** This contact person should be responsible for involving the public in local law development, for following up and responding to citizen information and complaints about stormwater problems and for seeing to it that the information provided by citizens is incorporated into the stormwater management program. The stormwater management contact can be, but is not required to be, the same person who serves as Stormwater Management Officer.
- **Encourage citizens to report their observations** of conditions in the local watersheds and water bodies, as well as of flooding, washouts, standing water, natural resource damage and other effects of stormwater runoff. This adds to the municipality's data about its local resources and stormwater problems and helps keep the public active in managing stormwater runoff.
- **Sponsor volunteer activities**, such as beach cleanups, storm drain stenciling, stream monitoring and field surveys, which promote citizen interest and help to inform the public about local conditions and stormwater management program needs.
- **Form a stormwater management advisory committee.**
- **Seek out stakeholders with a special interest** in participating in stormwater management decisions.
- **Conduct a public review of the Stormwater Management Annual Report.**

Establishing Local Procedures and Practices that Support Construction/Post-Construction Stormwater Management

Once the stormwater management local law has been adopted, the municipality must put it into effect. This is done through:

- **Procedures for review and approval of SWPPPs**, and for receipt and consideration of information submitted by the public.
- **Procedures for site inspections** and enforcement of control measures.
- **Ongoing training** in construction/post-construction stormwater management for construction site operators and people responsible for operating and maintaining stormwater management facilities and practices.

Municipal Government Procedures

The procedures established by the regulated MS4, in particular by MS4s that are municipalities, will determine the long-term effectiveness of the stormwater management program. Regulated MS4s must address each provision of the local law and GP-02-02 with procedures that ensure that the provision is carried out.

Review and Approval of Stormwater Pollution Prevention Plans

Review of construction site SWPPPs is critical to the success of stormwater management.

Requirements: The sample local law does not introduce a new permit or review process for municipal government. The SWPPP should be submitted, reviewed and approved as part of the application for a subdivision, site plan, special use permit, erosion control permit, or other local approval for a land development project. If procedures for stormwater plan review are not established in the Stormwater Management Local Law, they must be set forth separately by the Governing Body. It is the Governing Body's responsibility to provide adequate funding for the stormwater management program.

Engineering expertise is required for stormwater plan review - municipalities should plan either to assign reviews to municipal engineers or to contract for engineering review. Local officials should not attempt to review stormwater plans without technical assistance.

Recommendations: Stormwater Plan review procedures should establish a review sequence for the plan documents, and ensure timely circulation of plan documents to all responsible officials. Designating a Stormwater Management Officer as suggested in the sample Stormwater Management Local Law will clarify responsibility for this function. The municipality's Stormwater Management Officer will forward the SWPPP to the appropriate municipal board, who will then include the SWPPP in the public hearing and SEQRA processes already prescribed in zoning, subdivision and/or site plan law. Providing an opportunity for the public to comment on SWPPPs at public hearings helps to meet the requirement for regulated MS4s to involve the public in SWPPP review.

To ensure that the review takes into account all necessary elements, localities may adopt the checklist for SWPPP preparation and review in the *New York State Stormwater Design Manual*, Appendix E. Detailed information about stormwater plan review is found in Chapter 3 of the manual, *Reducing the Impacts of Stormwater Runoff from New Development : A manual for local planners, building inspectors, and developers*: NYSDEC, Division of Water, Bureau of Water Quality Management, 1992.

Reviewing Stormwater Plans for Water Quality Impacts

Requirement: For regulated MS4s discharging to 303(d) water bodies and TMDL watersheds, reviewers of SWPPPs must assure themselves that the stormwater management practices proposed meet the standard of no net increase of pollutants to these waters.

Recommendation: Data from water quality monitoring, modeling or other measurements may be needed to determine whether the stormwater management measures and practices that are proposed in the SWPPP will enable the discharge to meet the no-increase standard. Where available, coordinate with existing watershed groups or county agencies with water quality monitoring programs.

Public Comment on SWPPPs

Requirements: Regulated MS4s are required to provide opportunities for the public to comment on all SWPPPs, making plan documents readily available for review, and allowing reasonable comment periods. No special comment process is required for SWPPPs - public review will be accomplished through land use permit and SEQRA hearings and comments.

Recommendation: Public comment will be most productive if educational materials are available explaining the program requirements, construction/post-construction management practices and stormwater plan terminology.

Coordination of State and Local Reviews of Stormwater Plans

Requirement: Under Phase II, a regulated MS4 stormwater management program must include a requirement for the Stormwater Pollution Prevention Plan (SWPPP) as defined in the *General*

Stormwater Discharge Permit for Construction Site Operators, GP-02-01. GP-02-01 requires construction site operators to submit SWPPPs to the local Governing Body, and to make the plans available to DEC.

Recommendation: Since review of SWPPPs may be taking place simultaneously at NYSDEC and locally, the question of coordinating reviews is important. As long as the local law requires the SWPPP to conform to the state technical standards, DEC can revise or amend the SWPPP to reflect local conditions. The *Sample Stormwater Management Local Law* in this Guidance Manual provides the language needed to meet this requirement.

Site Inspections and Enforcement

Requirements: Regulated MS4s are required to establish and implement procedures for inspections and enforcement. To cover both construction and post-construction stormwater management practices, localities must inspect both construction sites for compliance with the SWPPP, and periodically revisit post-construction facilities and measures to check condition, operation and maintenance. Inspection procedures and enforcement standards can be established in the local law. To take advantage of economy of scale, several communities can enter into an intermunicipal agreement to share the cost of a “dedicated” inspector, who will conduct the inspections and perform enforcement duties.

Phase II requires regulated MS4s to allocate adequate resources for programs to inspect development and redevelopment sites and to enforce and penalize violators.

GP-02-01 requires that each SWPPP “provide a maintenance schedule to ensure continuous and effective operation of each post-construction stormwater control practice,” and when operators apply for termination of permit coverage they are required to report who has responsibility for long-term maintenance of these practices and what maintenance will be needed. The information in SWPPPs forms the basis for the MS4's ongoing oversight of post-construction stormwater management practices.

Recommendation: MS4 Inspection and enforcement procedures should include steps to identify priority sites for inspection and enforcement based on the nature of the construction or post-construction activities, topography and characteristics of soils and receiving waters. Inspection should emphasize construction site waste management. Localities can adopt the site inspection checklists in the *New York State Stormwater Design Manual* as a procedure for inspecting stormwater management practices.

Training in Construction/Post-Construction Stormwater Management

Requirement: Regulated MS4s must provide formal training in stormwater management practices and the requirements of the Phase II program for operators of construction sites and for municipal employees who have operation or maintenance responsibility for municipally-owned stormwater management practices, roads and other facilities that generate runoff.

Recommendations for Training Construction Site Operators: Initial training can be done in groups, with training repeated individually for new construction site operators. The Stormwater Management Officer has an important role in training, as does the municipal stormwater management contact person. The MS4 should provide educational materials for construction site operators covering the requirements of the local stormwater management program and discussing the rationale for the municipality's approach to stormwater management. To avoid contamination of stormwater by construction wastes, educational materials should emphasize construction site waste management.

Recommendations for Training Municipal Officials and Employees: Initial training of municipal employees should be conducted in a group setting, with periodic refreshers offered. MS4s may find it

effective to specify stormwater management duties in work programs and evaluations. Stormwater management measure operation and maintenance should also be included in municipal work plans and protocols.

The NYS Department of State offers a 1½-hour course titled *Storm Water Control for Local Elected Officials*, which presents information on the implementation of local storm water control programs. Trainers will identify local and regional sources of technical assistance and review appropriate regulatory mechanisms, including basic land use tools available. Also discussed will be comprehensive planning to identify critical development areas. The long-term implications of stormwater regulation will be discussed, including on-going costs, maintenance, enforcement issues. The applications of regulations to specific sites will be illustrated.

Recommendations for Training Operation and Maintenance Personnel with Ongoing Responsibility for Post-Construction Measures and Practices: It is in the MS4's best interest to offer training to operation and maintenance personnel working within the municipality who have ongoing responsibility for post-construction stormwater measures and practices on government-owned and private-sector sites. Training sessions and educational materials offered to municipal employees could also be made available to other operation and maintenance personnel.

Resources for Construction/Post-Construction Stormwater Management

Effective local stormwater management will have many economic benefits to the local community, and could help municipalities avoid significant expenditures for washouts, flooding and erosion. Still, municipalities will need to budget for: program development and creation of the stormwater management local law; technical services that may be needed for stormwater plan reviews; the Stormwater Management Officer and Contact Person, and site inspections and enforcement actions.

Possible Funding Sources

- **Grants.** To help cover the basic costs of starting the regulated MS4 program, the state has earmarked some Environmental Protection Fund (EPF) funding for regulated MS4s implementing the Stormwater Phase II General Permit. DEC anticipates that additional assistance will be available in future years as regulated MS4s move to full implementation of their stormwater management programs.
- **Stormwater management authorities or districts.** Stormwater management authorities or districts could charge back management costs based on the amount of impervious area on a given property. Stormwater districts can also be used to fund operation and maintenance on stormwater facilities that the municipality has accepted from a private developer.
- **Other sources of funds.** Some municipalities are considering increased permit fees to support review of stormwater management plans and other program functions.

Maintenance of Stormwater Management Facilities, Practices and Measures

Requirement: Phase II requires regulated MS4s to provide for completion and for the ongoing operation and maintenance of stormwater management facilities, practices and measures.

Recommendations: The *Sample Stormwater Management Local Law* includes provisions establishing financial performance guarantees for completion of construction and for maintenance of stormwater management facilities, practices and measures. Periodic site inspections should be made part of the municipal stormwater management program, with sanctions imposed for failure to perform.

Cities, towns, villages and counties may develop drainage facilities, and may levy charges for conveyance and disposal of stormwater, as provided under General Municipal Law Article 5-E.

Intermunicipal Cooperation

Intermunicipal cooperation could play an important role in the success of local stormwater management, both in program effectiveness and in cost saving. DEC recommends that municipalities consider sharing elements of their stormwater management programs with neighboring jurisdictions and jurisdictions that share common watersheds. Working with the Soil and Water Conservation District, Regional Planning Councils, watershed groups, coalitions and related local groups through the County Water Quality Coordinating Committee can open opportunities to network and share resources with other jurisdictions.

Intermunicipal agreements are allowed under General Municipal Law Article 5-G, which states that two or more municipalities may enter into an agreement to undertake any activity that is allowed for individual municipalities under general or special laws.

Sharing Costs Through Stormwater Drainage Districts

Two or more municipalities may enter into an intermunicipal agreement to create a drainage district, sharing costs and services. An example is a project presently being considered by the Long Island Sound Watershed Intermunicipal Council in Westchester County to use a Stormwater District to manage stormwater on a regional basis. The Stormwater District would be governed by a District Board and fees would be allocated based on impervious area and other factors, with credits given for installing pollution prevention devices. A watershed-based stormwater district provides a long-term management tool with a dedicated funding mechanism for managing water resources and protecting public health, safety and welfare.

Training

Because most New York communities will find themselves employing stormwater management programs and techniques that are very similar to those used by neighboring communities, every community does not need to develop its own stormwater management training courses and educational materials to meet the public education and involvement requirements of Phase II. The common threads of stormwater management can be embodied in generic training courses and materials, with costs shared among neighboring communities, leaving only the elements that are specific to an individual community to be developed by that community.

Resource Assessment and Planning

Communities that share a watershed can work together to prepare watershed assessments and plans. This approach would be particularly fruitful in the case of a TMDL watershed, where close study of conditions, possibly even including local water quality monitoring and testing, is necessary to meet no-increase requirements.

Construction Site and Post-Construction Inspections

To take advantage of economy of scale, several communities can enter into an intermunicipal agreement to share the cost of a “dedicated” inspector, who will conduct the inspections and perform enforcement duties.

Appendices

Appendix 1 - Sample Stormwater Management Local Law

Model Local Law for Stormwater Management and Erosion & Sediment Control

This model local law is intended to be a guidance tool for communities that are subject to the Municipal Separate Storm Sewer System (MS4) Phase II stormwater management requirements of the National Pollutant Discharge Elimination System (NPDES) regulations, administered by New York State through the State Pollutant Discharge Elimination System (SPDES) regulations. The goal of providing this model law is to assist communities in amending existing laws and ordinances and/or adopting new provisions of local law to meet the new federal and state guidelines for stormwater control. In designing a model stormwater law for a New York State audience, we include suggestions for standard language and concepts that we believe a good stormwater management program should contain. This local law should not be construed as an exhaustive listing of all the language needed for a local law, but represents a good base that communities can build upon and customize to be consistent with the local conditions and staff resources available in their municipality.

Throughout the local law, there are sections in which you must insert the name of your municipality and the agency that you have given regulatory power over stormwater management issues. These sections are denoted by **bold** text placed in brackets. By using this document and customizing these sections, you can create a viable local law with minimal editing.

Italicized text with this symbol ☞ should be interpreted as comments, instructions, or information to assist the local law writer. This text *should not appear* in your final local law.

The contents of this local law are as follows:

Local Law title and enacting clause	1
Article 1 - General Provisions	1
Article 2 - Amendment to Zoning Law	4
Article 3 - Amendment to Subdivision Law	9
Article 4 - Amendment to Site Plan Review Law	10
Article 5 - Amendment to Erosion & Sediment Control Law	10
Article 6 - Administration and Enforcement	10
Schedule A - Definitions	14
Schedule B - Stormwater Management Practices Acceptable for Water Quality	17
Schedule C - Sample Stormwater Control Facility Maintenance Agreement	18

Model Local Law for Stormwater Management and Erosion & Sediment Control

A local law to amend the (**Zoning Law/Subdivision Law/Site Plan Review Law/Erosion and Sediment Control Law**) of the ((**City/Town/Village**) of _____), Local law Number _____ of the Year _____.

☞*Article 1 and Article 2 must be adopted for proper implementation. The municipality and its legal counsel, after reviewing their local codes and this model language, should pick additional provisions from Articles 3, 4, 5 and 6 to ensure review and enforcement of stormwater pollution prevention plans at the local level.*

Be it enacted by the (**City Council/Town Board/Village Board of Trustees**) of the ((**City/Town/Village**) of _____) as follows:

Article 1. General Provisions

Section 1. Findings of Fact

It is hereby determined that:

- 1.1** Land development activities and associated increases in site impervious cover often alter the hydrologic response of local watersheds and increase stormwater runoff rates and volumes, flooding, stream channel erosion, or sediment transport and deposition;
- 1.2** This stormwater runoff contributes to increased quantities of water-borne pollutants, including siltation of aquatic habitat for fish and other desirable species;
- 1.3** Clearing and grading during construction tends to increase soil erosion and add to the loss of native vegetation necessary for terrestrial and aquatic habitat;
- 1.4** Improper design and construction of stormwater management practices can increase the velocity of stormwater runoff thereby increasing stream bank erosion and sedimentation;
- 1.5** Impervious surfaces allow less water to percolate into the soil, thereby decreasing groundwater recharge and stream baseflow;
- 1.6** Substantial economic losses can result from these adverse impacts on the waters of the municipality;
- 1.7** Stormwater runoff, soil erosion and nonpoint source pollution can be controlled and minimized through the regulation of stormwater runoff from land development activities;
- 1.8** The regulation of stormwater runoff discharges from land development activities in order to control and minimize increases in stormwater runoff rates and volumes, soil erosion, stream channel erosion, and nonpoint source pollution associated with stormwater runoff is in the public interest and will minimize threats to public health and safety.
- 1.9** Regulation of land development activities by means of performance standards governing stormwater management and site design will produce development compatible with the natural functions of a particular site or an entire watershed and thereby mitigate the adverse effects of erosion and sedimentation from development.

Section 2. Purpose

The purpose of this local law is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing within this jurisdiction and to address the findings of fact in Section 1 hereof. This local law seeks to meet those purposes by achieving the following objectives:

- 2.1** Meet the requirements of minimum measures 4 and 5 of the SPDES General Permit for Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s), Permit no. GP-02-02 or as amended or revised;
- 2.2** Require land development activities to conform to the substantive requirements of the NYS Department of Environmental Conservation State Pollutant Discharge Elimination System (SPDES) General Permit for Construction Activities GP-02-01 or as amended or revised;
- 2.3** Minimize increases in stormwater runoff from land development activities in order to reduce flooding, siltation, increases in stream temperature, and streambank erosion and maintain the integrity of stream channels;
- 2.4** Minimize increases in pollution caused by stormwater runoff from land development activities which would otherwise degrade local water quality;
- 2.5** Minimize the total annual volume of stormwater runoff which flows from any specific site during and following development to the maximum extent practicable; and
- 2.6** Reduce stormwater runoff rates and volumes, soil erosion and nonpoint source pollution, wherever possible, through stormwater management practices and to ensure that these management practices are properly maintained and eliminate threats to public safety.

☞ *The above list is a general set of objectives to reduce the impact of stormwater on receiving waters. Section 2.1 applies to regulated MS4s; a municipality not currently under this program may wish to leave this objective out, although the community may become regulated in the future. The advantage to adopting a local law for all municipalities is that the local government then has control over review and approval of Stormwater Pollution Prevention Plans (SWPPPs) during subdivision and site plan review. The local government may also wish to set some more specific objectives, based on priority water quality (refer to New York State 303 (d) list of priority waters at www.dec.state.ny.us/website/dow/303dcalm.html) and habitat problems (e.g., to reduce phosphorus loads being delivered to recreational lakes, to sustain a Class TS trout fishery).*

Section 3. Statutory Authority

In accordance with Article 10 of the Municipal Home Rule Law of the State of New York, the **(City Council/Town Board/Village Board of Trustees of _____)** has the authority to enact local laws and amend local laws and for the purpose of promoting the health, safety or general welfare of the **((City/Town/Village) of _____)** and for the protection and enhancement of its physical environment. The **(City Council/Town Board/Village Board of Trustees of _____)** may include in any such local law provisions for the appointment of any municipal officer, employees, or independent contractor to effectuate, administer and enforce such local law.

Section 4. Applicability

- 4.1** This local law shall be applicable to all land development activities as defined in this local law.
- 4.2** The municipality shall designate a Stormwater Management Officer who shall accept and review all stormwater pollution prevention plans and forward such plans to the applicable municipal board. The Stormwater Management Officer may (1) review the plans, (2) upon approval by the ((City Council/Town Board/Village Board of Trustees) of the (Town/Village/City) of _____), engage the services of a registered professional engineer to review the plans, specifications and related documents at a cost not to exceed a fee schedule established by said governing board, or (3) accept the certification of a licensed professional that the plans conform to the requirements of this law.
- 4.3** All land development activities subject to review and approval by the (**applicable board of the (City/Town Village) of _____**) under (**subdivision, site plan, and/or special permit**) regulations shall be reviewed subject to the standards contained in this local law
- 4.4** All land development activities not subject to review as stated in section 4.3 shall be required to submit a Stormwater Pollution Prevention Plan (SWPPP) to the Stormwater Management Officer who shall approve the SWPPP if it complies with the requirements of this law.

Section 5. Exemptions

The following activities may be exempt from review under this law.

☞ *The municipality may elect to include some or all of the exemptions in Section 5.*

- 5.1** Agricultural activity as defined in this local law.
- 5.2** Logging activity undertaken pursuant to an approved timber management plan prepared or approved by the County Soil & Water Conservation District or the New York State Department of Environmental Conservation, except that landing areas and log haul roads are subject to this law.
- 5.3** Routine maintenance activities that disturb less than five acres and are performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility.
- 5.4** Repairs to any stormwater management practice or facility deemed necessary by the Stormwater Management Officer.
- 5.5** Any part of a subdivision if a plat for the subdivision has been approved by the ((**City/Town/Village) of _____**) on or before the effective date of this law.
- 5.6** Land development activities for which a building permit has been approved on or before the effective date of this law.
- 5.7** Cemetery graves.
- 5.8** Installation of fence, sign, telephone, and electric poles and other kinds of posts or poles.
- 5.9** Emergency activity immediately necessary to protect life, property or natural resources.
- 5.10** Activities of an individual engaging in home gardening by growing flowers, vegetable and other plants primarily for use by that person and his or her family.
- 5.11** Landscaping and horticultural activities in connection with an existing structure.

Article 2. Zoning Law Amendment: Stormwater Control

☞ *Municipalities that do not have zoning should add the language in Article 2 to Article 3 (Site Plan Review Law Amendment) or Article 4 (Subdivision Regulation Amendment) as applicable for their municipality.*

The Zoning Law is hereby amended to include Article ____, a new supplemental regulation titled Stormwater Control.

Section 1. Definitions

The terms used in this local law or in documents prepared or reviewed under this local law shall have the meaning as set forth in Schedule A of this Local Law.

☞ *Definitions should be incorporated into the appropriate section of the municipality's zoning law which contains definitions.*

Section 2. Stormwater Pollution Prevention Plans

2.1. Stormwater Pollution Prevention Plan Requirement

No application for approval of a land development activity shall be reviewed until the appropriate board has received a Stormwater Pollution Prevention Plan (SWPPP) prepared in accordance with the specifications in this local law.

2.2 Contents of Stormwater Pollution Prevention Plans

2.2.1 All SWPPPs shall provide the following background information and erosion and sediment controls:

1. Background information about the scope of the project, including location, type and size of project.
2. Site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map should show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); wetlands and drainage patterns that could be affected by the construction activity; existing and final slopes; locations of off-site material, waste, borrow or equipment storage areas; and location(s) of the stormwater discharges(s);

☞ *Site map should be at a scale no smaller than 1"=100' (e.g. 1"=500" is smaller than 1"=100")*

3. Description of the soil(s) present at the site;
4. Construction phasing plan describing the intended sequence of construction activities, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance. Consistent with the New York Standards and Specifications for Erosion and Sediment Control (Erosion Control Manual), not more than five (5) acres shall be disturbed at any one time unless pursuant to an approved SWPPP.

☞ *A municipality may choose to reduce the amount of land that may be exposed at any one time.*

5. Description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a pollutant source in stormwater runoff;
6. Description of construction and waste materials expected to be stored on-site with updates as appropriate, and a description of controls to reduce pollutants from these materials including storage practices to minimize exposure of the materials to stormwater, and spill prevention and response;

7. Temporary and permanent structural and vegetative measures to be used for soil stabilization, runoff control and sediment control for each stage of the project from initial land clearing and grubbing to project close-out;
 8. A site map/construction drawing(s) specifying the location(s), size(s) and length(s) of each erosion and sediment control practice;
 9. Dimensions, material specifications and installation details for all erosion and sediment control practices, including the siting and sizing of any temporary sediment basins;
 10. Temporary practices that will be converted to permanent control measures;
 11. Implementation schedule for staging temporary erosion and sediment control practices, including the timing of initial placement and duration that each practice should remain in place;
 12. Maintenance schedule to ensure continuous and effective operation of the erosion and sediment control practice;
 13. Name(s) of the receiving water(s);
 14. Delineation of SWPPP implementation responsibilities for each part of the site;
 15. Description of structural practices designed to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree attainable; and
 16. Any existing data that describes the stormwater runoff at the site.
- 2.2.2 Land development activities meeting Condition “A”, “B” or “C” below shall also include water quantity and water quality controls (post-construction stormwater runoff controls) as set forth in Section 2.2.3 below as applicable:
2. Condition A - Stormwater runoff from land development activities discharging a pollutant of concern to either an impaired water identified on the Department’s 303(d) list of impaired waters or a Total Maximum Daily Load (TMDL) designated watershed for which pollutants in stormwater have been identified as a source of the impairment.
 3. Condition B - Stormwater runoff from land development activities disturbing five (5) or more acres.
 4. Condition C - Stormwater runoff from construction activity disturbing between one (1) and five (5) acres of land during the course of the project, exclusive of the construction of single family residences and construction activities at agricultural properties.
- 2.2.3 SWPPP Requirements for Condition A, B and C:
1. All information in Section 2.2 .1 of this local law
 2. Description of each post-construction stormwater management practice;
 3. Site map/construction drawing(s) showing the specific location(s) and size(s) of each post-construction stormwater management practice;
 4. Hydrologic and hydraulic analysis for all structural components of the stormwater management system for the applicable design storms
 5. Comparison of post-development stormwater runoff conditions with pre-development conditions
 6. Dimensions, material specifications and installation details for each post-construction stormwater management practice;
 7. Maintenance schedule to ensure continuous and effective operation of each post-construction stormwater management practice.

8. Maintenance easements to ensure access to all stormwater management practices at the site for the purpose of inspection and repair. Easements shall be recorded on the plan and shall remain in effect with transfer of title to the property.
9. Inspection and maintenance agreement binding on all subsequent landowners served by the on-site stormwater management measures in accordance with Article 2, Section 4 of this local law.

2.3 Plan Certification

The SWPPP shall be prepared by a landscape architect, certified professional or professional engineer and must be signed by a the professional preparing the plan, who shall certify that the design of all stormwater management practices meet the requirements in this local law.

2.4 Other Environmental Permits

The applicant shall assure that all other applicable environmental permits have been or will be acquired for the land development activity prior to approval of the final stormwater design plan.

2.5 Contractor Certification

- 2.5.1 Each contractor and subcontractor identified in the SWPPP who will be involved in soil disturbance and/or stormwater management practice installation shall sign and date a copy of the following certification statement before undertaking any land development activity : “I certify under penalty of law that I understand and agree to comply with the terms and conditions of the Stormwater Pollution Prevention Plan. I also understand that it is unlawful for any person to cause or contribute to a violation of water quality standards.”
- 2.5.2 The certification must include the name and title of the person providing the signature, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification is made.
- 2.5.3 The certification statement(s) shall become part of the SWPPP for the land development activity.

2.6 A copy of the SWPPP shall be retained at the site of the land development activity during construction from the date of initiation of construction activities to the date of final stabilization.

Section 3. Performance and Design Criteria for Stormwater Management and Erosion and Sediment Control

All land development activities shall be subject to the following performance and design criteria:

3.1 Technical Standards

For the purpose of this local law, the following documents shall serve as the official guides and specifications for stormwater management. Stormwater management practices that are designed and constructed in accordance with these technical documents shall be presumed to meet the standards imposed by this law:

- 3.1.1 The New York State Stormwater Management Design Manual (New York State Department of Environmental Conservation, most current version or its successor, hereafter referred to as the Design Manual)

- 3.1.2 New York Standards and Specifications for Erosion and Sediment Control, (Empire State Chapter of the Soil and Water Conservation Society, 2004, most current version or its successor, hereafter referred to as the Erosion Control Manual).

3.2 Water Quality Standards

- 3.2.1 Any land development activity shall not cause an increase in turbidity that will result in substantial visible contrast to natural conditions in surface waters of the state of New York.

⇒ *The New York State technical guidance documents may be ordered from The Department. An order form as well as downloadable versions of the Manuals are available on the Internet at;*

<http://www.dec.state.ny.us/website/dow/toolbox/escstandards/index.html>

<http://www.dos.state.ny.us/lgss/stormwaterpub/index.html>

Section 4. Maintenance and Repair of Stormwater Facilities

4.1 Maintenance During Construction

- 4.1.1 The applicant or developer of the land development activity shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the applicant or developer to achieve compliance with the conditions of this local law. Sediment shall be removed from sediment traps or sediment ponds whenever their design capacity has been reduced by fifty (50) percent.
- 4.1.2 The applicant or developer or their representative shall be on site at all times when construction or grading activity takes place and shall inspect and document the effectiveness of all erosion and sediment control practices. Inspection reports shall be completed every 7 days and within 24 hours of any storm event producing 0.5 inches of precipitation or more. The reports shall be delivered to the Stormwater Management Officer and also copied to the site log book.

4.2 Maintenance Easement(s)

Prior to the issuance of any approval that has a stormwater management facility as one of the requirements, the applicant or developer must execute a maintenance easement agreement that shall be binding on all subsequent landowners served by the stormwater management facility. The easement shall provide for access to the facility at reasonable times for periodic inspection by the ((City/Town/Village) of _____) to ensure that the facility is maintained in proper working condition to meet design standards and any other provisions established by this local law. The easement shall be recorded by the grantor in the office of the County Clerk after approval by the counsel for the ((City/Town/Village) of _____).

4.3 Maintenance after Construction

The owner or operator of permanent stormwater management practices installed in accordance with this law shall be operated and maintained to achieve the goals of this law. Proper operation and maintenance also includes as a minimum, the following:

- 4.3.1 A preventive/corrective maintenance program for all critical facilities and systems of treatment and control (or related appurtenances) which are installed or used by the owner or operator to achieve the goals of this law.
- 4.3.2 Written procedures for operation and maintenance and training new maintenance personnel.
- 4.3.3 Discharges from the SMPs shall not exceed design criteria or cause or contribute to water quality standard violations in accordance with Article 2, section 3.2.

4.4 Maintenance Agreements

The ((City/Town/Village) of _____) shall approve a formal maintenance agreement for stormwater management facilities binding on all subsequent landowners and recorded in the office of the County Clerk as a deed restriction on the property prior to final plan approval. The maintenance agreement shall be consistent with the terms and conditions of Schedule C of this local law entitled Sample Stormwater Control Facility Maintenance Agreement. The ((City/Town/Village) of _____), in lieu of a maintenance agreement, at its sole discretion may accept dedication of any existing or future stormwater management facility, provided such facility meets all the requirements of this local law and includes adequate and perpetual access and sufficient area, by easement or otherwise, for inspection and regular maintenance.

Section 5. Severability and Effective Date

5.1 Severability

If the provisions of any article, section, subsection, paragraph, subdivision or clause of this local law shall be judged invalid by a court of competent jurisdiction, such order of judgment shall not affect or invalidate the remainder of any article, section, subsection, paragraph, subdivision or clause of this local law.

5.2 Effective Date

This Local Law shall be effective upon filing with the office of the Secretary of State.

Approved by: _____ Date _____

Article 3. Subdivision Regulation Amendment

Sections ___ and ___ of the Subdivision Regulations of the ((City/Town/Village) of _____) are hereby amended by adding the following to the information requirements:

A. For Preliminary Subdivision Plat add: Stormwater Pollution Prevention Plan: A Stormwater Pollution Prevention Plan (SWPPP) consistent with the requirements of Article 1 and 2 of this local law shall be required for Preliminary Subdivision Plat approval. The SWPPP shall meet the performance and design

criteria and standards in Article 2 of this local law. The approved Preliminary Subdivision Plat shall be consistent with the provisions of this local law.

B. For Final Subdivision Plat approval add: Stormwater Pollution Prevention Plan: A Stormwater Pollution Prevention Plan consistent with the requirements of Article 1 and 2 of this local law and with the terms of preliminary plan approval shall be required for Final Subdivision Plat approval. The SWPPP shall meet the performance and design criteria and standards in Article 2 of this local law. The approved Final Subdivision Plat shall be consistent with the provisions of this local law.

☞ *If the municipality has only one requirement for a final plan (no preliminary) then use Paragraph A language only.*

Article 4. Site Plan Review Regulation Amendment

Sections ___ and ___ of the Site Plan Review regulations of the ((City/Town/Village) of _____) are hereby amended by adding the following to the information requirements:

For Site Plan Approval add: Stormwater Pollution Prevention Plan: A Stormwater Pollution Prevention Plan consistent with the requirements of Article 1 and 2 of this local law shall be required for Site Plan Approval. The SWPPP shall meet the performance and design criteria and standards in Article 2 of this local law. The approved Site Plan shall be consistent with the provisions of this local law.

Article 5. Erosion & Sediment Control Law Amendment

The Erosion & Sediment Control Law of the ((City/Town/Village) of _____) is hereby repealed and replaced with the New York State Model Erosion and Sediment Control Ordinance, March 2003.

☞ *The New York State Model Erosion and Sediment Control Law should be tailored to the municipality by inserting municipality name where appropriate and removing comment lines.*

OR

Section _____ of the Erosion & Sediment Control Law of the ((City/Town/Village) of _____) is hereby amended by adding the following clause: Stormwater Pollution Prevention Plan: A Stormwater Pollution Prevention Plan consistent with the requirements of Article 1 and 2 of this local law shall be required. The SWPPP shall meet the performance and design criteria and standards in Article 2 of this local law. The approved erosion control permit shall be consistent with the provisions of this local law.

☞ *For both options in Article 5, the municipality must also adopt Articles 1, 2, 3 and 4 (as applicable for their municipality) in order to address post-construction stormwater runoff control in stormwater pollution prevention plans.*

Article 6. Administration and Enforcement

☞ *The following provisions for construction inspection, performance guarantees and bonds, and enforcement are important to include in a stormwater control program, but may already exist in*

local law. Therefore the municipality and its counsel should review their existing provisions for these activities, compare them with the following provisions, and consider whether revisions or amendments are necessary to achieve the purposes of this local law.

Section 1. Construction Inspection

1.1 Erosion and Sediment Control Inspection

The ((City/Town/Village) of _____) Stormwater Management Officer may require such inspections as necessary to determine compliance with this law and may either approve that portion of the work completed or notify the applicant wherein the work fails to comply with the requirements of this law and the stormwater pollution prevention plan (SWPPP) as approved. To obtain inspections, the applicant shall notify the ((City/Town/Village) of _____) enforcement official at least 48 hours before any of the following as required by the Stormwater Management Officer:

- 1.1.1 Start of construction
- 1.1.2 Installation of sediment and erosion control measures
- 1.1.3 Completion of site clearing
- 1.1.4 Completion of rough grading
- 1.1.5 Completion of final grading
- 1.1.6 Close of the construction season
- 1.1.7 Completion of final landscaping
- 1.1.8 Successful establishment of landscaping in public areas.

If any violations are found, the applicant and developer shall be notified in writing of the nature of the violation and the required corrective actions. No further work shall be conducted except for site stabilization until any violations are corrected and all work previously completed has received approval by the Stormwater Management Officer.

1.2 Stormwater Management Practice Inspections

The ((City/Town/Village) of _____) Stormwater Management Officer, is responsible for conducting inspections of stormwater management practices (SMPs). All applicants are required to submit “as built” plans for any stormwater management practices located on-site after final construction is completed. The plan must show the final design specifications for all stormwater management facilities and must be certified by a professional engineer.

1.3 Inspection of Stormwater Facilities After Project Completion

Inspection programs shall be established on any reasonable basis, including but not limited to: routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; inspection of drainage basins or areas identified as higher than typical sources of sediment or other contaminants or pollutants; inspections of businesses or industries of a type associated with higher than usual discharges of contaminants or pollutants or with discharges of a type which are more likely than the typical discharge to cause violations of state or federal water or sediment quality standards or the SPDES stormwater permit; and joint inspections with other agencies inspecting under environmental or safety laws.

Inspections may include, but are not limited to: reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in drainage control facilities; and evaluating the condition of drainage control facilities and other stormwater management practices.

Inspections may be performed by local government staff or the local government may designate an inspector required to have a Professional Engineer's (PE) license or Certified Professional in Erosion and Sediment Control (CPESC) certificate, as long as the designated inspector is required to submit a report.

1.4 Submission of Reports

The ((City/Town/Village) of _____) Stormwater Management Officer may require monitoring and reporting from entities subject to this law as are necessary to determine compliance with this law.

1.5 Right-of-Entry for Inspection

When any new stormwater management facility is installed on private property or when any new connection is made between private property and the public storm water system, the landowner shall grant to the ((City/Town/Village) of _____) the right to enter the property at reasonable times and in a reasonable manner for the purpose of inspection as specified in paragraph 1.3.

Section 2. Performance Guarantee

2.1 Construction Completion Guarantee

In order to ensure the full and faithful completion of all land development activities related to compliance with all conditions set forth by the ((City/Town/Village) of _____) in its approval of the Stormwater Pollution Prevention Plan, the ((City/Town/Village) of _____) may require the applicant or developer to provide, prior to construction, a performance bond, cash escrow, or irrevocable letter of credit from an appropriate financial or surety institution which guarantees satisfactory completion of the project and names the ((City/Town/Village) of _____) as the beneficiary. The security shall be in an amount to be determined by the ((City/Town/Village) of _____) based on submission of final design plans, with reference to actual construction and landscaping costs. The performance guarantee shall remain in force until the surety is released from liability by the ((City/Town/Village) of _____), provided that such period shall not be less than one year from the date of final acceptance or such other certification that the facility(ies) have been constructed in accordance with the approved plans and specifications and that a one year inspection has been conducted and the facilities have been found to be acceptable to the ((City/Town/Village) of _____). Per annum interest on cash escrow deposits shall be reinvested in the account until the surety is released from liability.

2.2 Maintenance Guarantee

Where stormwater management and erosion and sediment control facilities are to be operated and maintained by the developer or by a corporation that owns or manages a commercial or industrial facility, the developer, prior to construction, may be required to provide the ((City/Town/Village) of _____) with an irrevocable letter of credit from an approved financial institution or surety to ensure proper operation and maintenance of all stormwater management and erosion control facilities both during and after construction, and until the facilities are removed from operation. If the developer or landowner fails to properly operate and maintain stormwater management and erosion and sediment

control facilities, the ((City/Town/Village) of _____) may draw upon the account to cover the costs of proper operation and maintenance, including engineering and inspection costs.

2.3 Recordkeeping

The ((City/Town/Village) of _____) may require entities subject to this law to maintain records demonstrating compliance with this law.

Section 3. Enforcement and Penalties

3.1 Notice of Violation.

When the ((City/Town/Village) of _____) determines that a land development activity is not being carried out in accordance with the requirements of this local law, it may issue a written notice of violation to the landowner. The notice of violation shall contain :

- 3.1.1 the name and address of the landowner, developer or applicant;
- 3.1.2 the address when available or a description of the building, structure or land upon which the violation is occurring;
- 3.1.3 a statement specifying the nature of the violation;
- 3.1.4 a description of the remedial measures necessary to bring the land development activity into compliance with this local law and a time schedule for the completion of such remedial action;
- 3.1.5 a statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed;
- 3.1.6 a statement that the determination of violation may be appealed to the municipality by filing a written notice of appeal within fifteen (15) days of service of notice of violation.

3.2 Stop Work Orders

The ((City/Town/Village) of _____) may issue a stop work order for violations of this law. Persons receiving a stop work order shall be required to halt all land development activities, except those activities that address the violations leading to the stop work order. The stop work order shall be in effect until the ((City/Town/Village) of _____) confirms that the land development activity is in compliance and the violation has been satisfactorily addressed. Failure to address a stop work order in a timely manner may result in civil, criminal, or monetary penalties in accordance with the enforcement measures authorized in this local law.

3.3 Violations

Any land development activity that is commenced or is conducted contrary to this local law, may be restrained by injunction or otherwise abated in a manner provided by law.

3.4 Penalties

In addition to or as an alternative to any penalty provided herein or by law, any person who violates the provisions of this local law shall be guilty of a violation punishable by a fine not exceeding three hundred fifty dollars (\$350) or imprisonment for a period not to exceed six months, or both for conviction of a first offense; for conviction of a second offense both of which were committed within a period of five years,

punishable by a fine not less than three hundred fifty dollars nor more than seven hundred dollars (\$700) or imprisonment for a period not to exceed six months, or both; and upon conviction for a third or subsequent offense all of which were committed within a period of five years, punishable by a fine not less than seven hundred dollars nor more than one thousand dollars (\$1000) or imprisonment for a period not to exceed six months, or both. However, for the purposes of conferring jurisdiction upon courts and judicial officers generally, violations of this local law shall be deemed misdemeanors and for such purpose only all provisions of law relating to misdemeanors shall apply to such violations. Each week's continued violation shall constitute a separate additional violation.

3.5 Withholding of Certificate of Occupancy

If any building or land development activity is installed or conducted in violation of this local law the Stormwater Management Officer may prevent the occupancy of said building or land.

3.6 Restoration of lands

Any violator may be required to restore land to its undisturbed condition. In the event that restoration is not undertaken within a reasonable time after notice, the ((City/Town/Village) of _____) may take necessary corrective action, the cost of which shall become a lien upon the property until paid.

Section 4. Fees for Services

The ((City/Town/Village) of _____) may require any person undertaking land development activities regulated by this law to pay reasonable costs at prevailing rates for review of SWPPPs, inspections, or SMP maintenance performed by the ((City/Town/Village) of _____) or performed by a third party for the ((City/Town/Village) of _____).

Schedule A - Definitions

Agricultural Activity - the activity of an active farm including grazing and watering livestock, irrigating crops, harvesting crops, using land for growing agricultural products, and cutting timber for sale, but shall not include the operation of a dude ranch or similar operation, or the construction of new structures associated with agricultural activities.

Applicant - a property owner or agent of a property owner who has filed an application for a land development activity.

Building - any structure, either temporary or permanent, having walls and a roof, designed for the shelter of any person, animal, or property, and occupying more than 100 square feet of area.

Channel - a natural or artificial watercourse with a definite bed and banks that conducts continuously or periodically flowing water.

Clearing - any activity that removes the vegetative surface cover.

Dedication - the deliberate appropriation of property by its owner for general public use.

Department - the New York State Department of Environmental Conservation

Design Manual - the New York State Stormwater Design Manual, most recent version including applicable updates, that serves as the official guide for stormwater management principles, methods and practices.

Developer - a person who undertakes land development activities.

Erosion Control Manual - the most recent version of the “New York Standards and Specifications for Erosion and Sediment Control” manual, commonly known as the “Blue Book”.

Grading - excavation or fill of material, including the resulting conditions thereof.

Impervious Cover - those surfaces, improvements and structures that cannot effectively infiltrate rainfall, snow melt and water (e.g., building rooftops, pavement, sidewalks, driveways, etc).

Industrial Stormwater Permit - a State Pollutant Discharge Elimination System permit issued to a commercial industry or group of industries which regulates the pollutant levels associated with industrial stormwater discharges or specifies on-site pollution control strategies.

Infiltration - the process of percolating stormwater into the subsoil.

Jurisdictional Wetland - an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation.

Land Development Activity - construction activity including clearing, grading, excavating, soil disturbance or placement of fill that results in land disturbance of equal to or greater than one acre (*see Note*), or activities disturbing less than one acre of total land area that is part of a larger common plan of development or sale, even though multiple separate and distinct land development activities may take place at different times on different schedules.

↪ A community should review their local site plan, subdivision, zoning and erosion & sediment control laws and ordinances to see if there are minimum land disturbance requirements already specified in those laws. To meet the SPDES guidelines under GP-02-02, the municipality must require SWPPPs for construction activities that result in land disturbance equal to or greater than one acre, or activities disturbing less than one acre if they are part of a larger common plan of development or sale or in a specified watershed. The municipality may wish to reduce this threshold to a lesser amount of disturbance to conform to local standards which may be stricter than the standards set forth in the state regulations. Many communities regulate land disturbance activities of more than 5000 square feet (1/8 acre), with an exemption if the amount of impervious cover created does not exceed 1000 square feet.

Landowner - the legal or beneficial owner of land, including those holding the right to purchase or lease the land, or any other person holding proprietary rights in the land.

Maintenance Agreement - a legally recorded document that acts as a property deed restriction, and which provides for long-term maintenance of stormwater management practices.

Nonpoint Source Pollution - pollution from any source other than from any discernible, confined, and discrete conveyances, and shall include, but not be limited to, pollutants from agricultural, silvicultural, mining, construction, subsurface disposal and urban runoff sources.

Phasing - clearing a parcel of land in distinct pieces or parts, with the stabilization of each piece completed before the clearing of the next.

Pollutant of Concern - sediment or a water quality measurement that addresses sediment (such as total suspended solids, turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the land development activity.

Project - land development activity

Recharge - the replenishment of underground water reserves.

Sediment Control - measures that prevent eroded sediment from leaving the site.

Sensitive Areas - cold water fisheries, shellfish beds, swimming beaches, groundwater recharge areas, water supply reservoirs, habitats for threatened, endangered or special concern species.

SPDES General Permit for Construction Activities GP-02-01 - A permit under the New York State Pollutant Discharge Elimination System (SPDES) issued to developers of construction activities to regulate disturbance of one or more acres of land.

SPDES General Permit for Stormwater Discharges from Municipal Separate Stormwater Sewer Systems GP-02-02 - A permit under the New York State Pollutant Discharge Elimination System (SPDES) issued to municipalities to regulate discharges from municipal separate storm sewers for compliance with EPA established water quality standards and/or to specify stormwater control standards

Stabilization - the use of practices that prevent exposed soil from eroding.

Stop Work Order - an order issued which requires that all construction activity on a site be stopped.

Stormwater - rainwater, surface runoff, snowmelt and drainage

Stormwater Hotspot - a land use or activity that generates higher concentrations of hydrocarbons, trace metals or toxicants than are found in typical stormwater runoff, based on monitoring studies.

Stormwater Management - the use of structural or non-structural practices that are designed to reduce stormwater runoff and mitigate its adverse impacts on property, natural resources and the environment.

Stormwater Management Facility - one or a series of stormwater management practices installed, stabilized and operating for the purpose of controlling stormwater runoff.

Stormwater Management Officer - an employee or officer designated by the municipality to accept and review stormwater pollution prevention plans, forward the plans to the applicable municipal board and inspect stormwater management practices.

Stormwater Management Practices (SMPs) - measures, either structural or nonstructural, that are determined to be the most effective, practical means of preventing flood damage and preventing or reducing point source or nonpoint source pollution inputs to stormwater runoff and water bodies.

Stormwater Pollution Prevention Plan (SWPPP) - a plan for controlling stormwater runoff and pollutants from a site during and after construction activities.

Stormwater Runoff - flow on the surface of the ground, resulting from precipitation

Surface Waters of the State of New York - lakes, bays, sounds, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.

Storm sewers and waste treatment systems, including treatment ponds or lagoons which also meet the criteria of this definition are not waters of the state. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the state (such as a disposal area in wetlands) nor resulted from impoundment of waters of the state.

Watercourse - a permanent or intermittent stream or other body of water, either natural or man-made, which gathers or carries surface water.

Waterway - a channel that directs surface runoff to a watercourse or to the public storm drain.

Schedule B

Stormwater Management Practices Acceptable for Water Quality (From: New York State Stormwater Management Design Manual, Table 5.1)

Group	Practice	Description
Pond	Micropool Extended Detention Pond (P-1)	Pond that treats the majority of the water quality volume through extended detention, and incorporates a micropool at the outlet of the pond to prevent sediment resuspension.
	Wet Pond (P-2)	Pond that provides storage for the entire water quality volume in the permanent pool.
	Wet Extended Detention Pond (P-3)	Pond that treats a portion of the water quality volume by detaining storm flows above a permanent pool for a specified minimum detention time.
	Multiple Pond System (P-4)	A group of ponds that collectively treat the water quality volume.
	Pocket Pond (P-5)	A stormwater wetland design adapted for the treatment of runoff from small drainage areas that has little or no baseflow available to maintain water elevations and relies on groundwater to maintain a permanent pool.
Wetland	Shallow Wetland (W-1)	A wetland that provides water quality treatment entirely in a shallow marsh.
	Extended Detention Wetland (W-2)	A wetland system that provides some fraction of the water quality volume by detaining storm flows above the marsh surface.
	Pond/Wetland System (W-3)	A wetland system that provides a portion of the water quality volume in the permanent pool of a wet pond that precedes the marsh for a specified minimum detention time.
	Pocket Wetland (W-4)	A shallow wetland design adapted for the treatment of runoff from small drainage areas that has variable water levels and relies on groundwater for its permanent pool.
Infiltration	Infiltration Trench (I-1)	An infiltration practice that stores the water quality volume in the void spaces of a gravel trench before it is infiltrated into the ground.
	Infiltration Basin (I-2)	An infiltration practice that stores the water quality volume in a shallow depression before it is infiltrated into the ground.
	Dry Well (I-3)	An infiltration practice similar in design to the infiltration trench, and best suited for treatment of rooftop runoff.
Filtering Practices	Surface Sand Filter (F-1)	A filtering practice that treats stormwater by settling out larger particles in a sediment chamber, and then filtering stormwater through a sand matrix.
	Underground Sand Filter (F-2)	A filtering practice that treats stormwater as it flows through underground settling and filtering chambers.
	Perimeter Sand Filter (F-3)	A filter that incorporates a sediment chamber and filter bed as parallel vaults adjacent to a parking lot.
	Organic Filter (F-4)	A filtering practice that uses an organic medium such as compost in the filter in place of sand.
	Bioretention (F-5)	A shallow depression that treats stormwater as it flows through a soil matrix, and is returned to the storm drain system.
Open Channels	Dry Swale (O-1)	An open drainage channel or depression explicitly designed to detain and promote the filtration of stormwater runoff into the soil media.
	Wet Swale (O-2)	An open drainage channel or depression designed to retain water or intercept groundwater for water quality treatment.

Schedule C

SAMPLE STORMWATER CONTROL FACILITY MAINTENANCE AGREEMENT

Whereas, the Municipality of _____ ("Municipality") and the _____ ("facility owner") want to enter into an agreement to provide for the long term maintenance and continuation of stormwater control measures approved by the Municipality for the below named project, and

Whereas, the Municipality and the facility owner desire that the stormwater control measures be built in accordance with the approved project plans and thereafter be maintained, cleaned, repaired, replaced and continued in perpetuity in order to ensure optimum performance of the components. Therefore, the Municipality and the facility owner agree as follows:

1. This agreement binds the Municipality and the facility owner, its successors and assigns, to the maintenance provisions depicted in the approved project plans which are attached as Schedule A of this agreement.
2. The facility owner shall maintain, clean, repair, replace and continue the stormwater control measures depicted in Schedule A as necessary to ensure optimum performance of the measures to design specifications. The stormwater control measures shall include, but shall not be limited to, the following: drainage ditches, swales, dry wells, infiltrators, drop inlets, pipes, culverts, soil absorption devices and retention ponds.
3. The facility owner shall be responsible for all expenses related to the maintenance of the stormwater control measures and shall establish a means for the collection and distribution of expenses among parties for any commonly owned facilities.
4. The facility owner shall provide for the periodic inspection of the stormwater control measures, not less than once in every five year period, to determine the condition and integrity of the measures. Such inspection shall be performed by a Professional Engineer licensed by the State of New York. The inspecting engineer shall prepare

and submit to the Municipality within 30 days of the inspection, a written report of the findings including recommendations for those actions necessary for the continuation of the stormwater control measures.

5. The facility owner shall not authorize, undertake or permit alteration, abandonment, modification or discontinuation of the stormwater control measures except in accordance with written approval of the Municipality.

6. The facility owner shall undertake necessary repairs and replacement of the stormwater control measures at the direction of the Municipality or in accordance with the recommendations of the inspecting engineer.

7. The facility owner shall provide to the Municipality within 30 days of the date of this agreement, a security for the maintenance and continuation of the stormwater control measures in the form of (a Bond, letter of credit or escrow account).

8. This agreement shall be recorded in the Office of the County Clerk, County of _____ together with the deed for the common property and shall be included in the offering plan and/or prospectus approved pursuant to _____.

9. If ever the Municipality determines that the facility owner has failed to construct or maintain the stormwater control measures in accordance with the project plan or has failed to undertake corrective action specified by the Municipality or by the inspecting engineer, the Municipality is authorized to undertake such steps as reasonably necessary for the preservation, continuation or maintenance of the stormwater control measures and to affix the expenses thereof as a lien against the property.

10. This agreement is effective _____ .

From: Lake George Park Commission Model Stormwater Management Ordinance, Schedule E

Appendix 2 - Land Use Planning and Stormwater Management

Comprehensive Planning

The Comprehensive Plan serves three key functions.

- **Expression of a community's desires:** Concerned with values and methods.
- **Guide to Decision-makers:** Implementation strategies adopted based on the plan's recommendations.
- **Legal Document:** Provides evidence of coordinated effort and rationale for adoption of specified actions.

Steps in Comprehensive Planning

There are five primary steps or phases in the comprehensive planning process

1. **Research:** Includes study and analysis; issue identification; assessment of existing characteristics/present state of events and probable future trends/directions; analysis of environmental and economic constraints/potential problems.
2. **Community Goals and Objectives:** Determine the municipality's basic goals, or the balances the community wants/needs to achieve; base goals on values and statutory requirements. Planning goals should not be contradictory and should have a reasonable chance of actually coming to pass.
3. **Plan/Policy Preparation and Formulation:** Assess the options available to achieve defined goals and objectives and consider their respective costs and merits. Assess direct and indirect costs, risks/benefits associated with different options.
4. **Plan Implementation:** Identify the tools available to carry out the plans, including: zoning ordinances; land subdivision regulations; capital improvements programs, and general guidelines for private development and public investment. Within each of these general options, there are a range of tools in the toolbox for the community's consideration and adoption.
5. **Review and Updating:** Conduct a periodic review of problems and progress, which includes evaluation to determine if goals are realistic, if the pattern of development is occurring as anticipated, whether unforeseen occurrences are taking shape. Goals may change as realities both inside and outside the municipality change. Planning activity and responsibility is dynamic and ongoing and not static.

It is important to understand that planning is not just a series of orderly steps; rather, it is constantly interwoven into a continuous process that requires oversight and management.

Citizen Education and Involvement

An important component of the planning process is to educate and involve citizens in identifying the challenges the community faces and the resources available to achieve the desired goals and objectives. Citizen participation and input should occur throughout each phase of the planning process. The data collected should be communicated to the stakeholders and their ideas considered.

The process of setting goals and objectives should be an open one that includes citizens and groups who have a stake in the outcome. Stakeholders should also be included in the assessment of

options and in evaluating the types of regulations and other actions the locality plans to initiate. This involvement secures community support and avoids future litigation.

Planning for Productive Local Reviews

Successful comprehensive plan development requires blend and balance and understanding of the inter-relationships among issues, avoiding specialization and segregation and stressing the interdependence and diversity of issues encountered during the planning process. Review processes should be “horizontal,” avoiding the traditional “vertical” review approach.

An example of the need to balance the diverse viewpoints represented in a typical local government review process is the question of pavement widths to be used in municipal projects. Fire safety officials support wider pavements, while environmental boards may propose reducing the area of impervious surfaces to facilitate stormwater management. Establishing an understanding of these issues and policies during comprehensive planning allows for a coordinated response during the project review phase to determine the best actions. The planning process allows the community to address an issue before it becomes a problem rather than managing a problem that could have been avoided.

How Municipalities Shape Land Use

There are two broad categories of direct actions by which a municipality can shape its land use pattern: public capital investments and land use controls.

Public Capital Investments

Public capital investments, from roads to water and sewer lines to schools, create very powerful economic forces that shape development. Accessibility is an important determinant of land value and the availability of public water and sewer can remove significant environmental constraints and permit a much higher density of development. Unlike land use controls, public investments are not easily altered. A decision to build a roadway or extend water and sewer lines is there to stay for many decades. Public acquisition of land can also be important, because by permanently rendering that land undevelopable, it diverts and channels the flow of development.

Planning is important in helping the community to avoid conflicting goals or implementation strategies. For instance if there is a recommendation to minimize development in a particular part of town, then that policy should not be contradicted by a recommendation that public water and sewer services be extended to that same area.

Land Use Control Measures

Although land use control measures are not quite so powerful at shaping land use as is public investment, they are still extremely important. There are three primary types of regulations: subdivision, zoning and site plan review. Within these general categories, there is a range of other tools available to encourage land development and conservation. The comprehensive plan can be implemented by adopting an appropriate combination of regulatory and non-regulatory land development strategies. By combining these techniques in creative ways, local governments can encourage both land development and resource conservation in conformance to the comprehensive plan.

State law does not require the adoption of a comprehensive plan. However, if a community has an adopted plan, all local land use regulations must be consistent with the community’s comprehensive plan. State statutes do not outline required components of a comprehensive plan; rather, they specify what may be included in a comprehensive plan.

Though public hearings are required prior to the plan's adoption, the state law does not explain how to undertake the process or whom to engage during the plan's preparation. The comprehensive plan must be subjected to environmental review, must be consistent with any agricultural district in the community and must be submitted to the county or regional planning board for review and comment. The Plan must also be adopted by the local legislature and upon its adoption, filed in accordance with the law. Where localities have a recently adopted comprehensive plan and conform their regulations to the plan, the regulations are insulated from attack and a successful court challenge¹.

New York is a strong home rule state, which means that each city, town, and village is delegated the responsibility to enact land use regulations. Though authorized, local governments are not required to adopt land use regulations. If a community adopts land use regulations, it may create a planning board and other special boards to serve in an advisory capacity or as a final review authority for specified actions. Planning boards must be formed if a subdivision law is adopted, but are not required for site plan review. However, if the local legislature adopts a zoning ordinance, it must create a zoning board of appeals to review appeals of administrative opinions and requests for variances. When the zoning board of appeals hears appeals or grants variances, it is acting in a quasi-judicial capacity. Appeals of their decision go directly to the Courts through an Article 78 proceeding and not to the elected legislative body.

Tools for Achieving a Balanced Land Development Pattern

There are three basic types of control measures and any number of tools and techniques that can be adopted to achieve a balanced land development pattern and to protect the natural resources within a community. The three primary regulatory techniques are Zoning, Subdivision and Site Plan review.

Generally speaking, there are two parts to the zoning ordinance. The first part is the map that divides the community into a number of zones. The second part is the text, which specifies in detail what uses are permitted in each zone, requirements for structural characteristics, site layout requirements and procedural matters. In New York State, all of the cities, 88 percent of the villages, and 69 percent of the towns have adopted zoning laws².

Subdivision regulations control the manner in which land may be converted into building lots. Before building lots can be sold or improvements made, the municipality must approve a plat map of the property that shows, at a minimum, lot lines, streets, and utility easements. Subdivision regulations also stipulate the specification requirements for the improvements to meet community standards. In New York State, 92 percent of the cities, 71 percent of the towns, and 66 percent of the villages have adopted subdivision regulations³.

Site plan review typically applies to developments over a certain size. It provides the community an opportunity to review site characterizes such as internal circulation, adequacy of parking, stormwater management, and buffering from adjacent land uses prior to the issuance of a building permit. Site plan review does not supersede zoning. Rather, it is another layer of review primarily applied to commercial and multi-family development proposals.

Many other measures are available to protect a community's resources and to balance development and conservation. An excellent resource document is the publication entitled *Well Grounded; Using Local Land Use Authority to Achieve Smart Growth* by John Nolon, Professor of Law and Director of the land Use Center at the Pace University School of Law.

Stormwater Management and the Municipal Comprehensive/Master Plan

Amending the Comprehensive Plan to Reflect Stormwater Management

The Comprehensive Plan (also known as the Master Plan) adopted by a municipality is the basis for land use planning in the community. While not required, adoption of a Comprehensive Plan is encouraged in General City Law Section 28-a, Town Law Section 272-a and Village Law Section 7-722. Since New York State law requires that local land use regulations reflect the Comprehensive plan, it is recommended that municipalities that are considering adopting a local law also adopt a short amendment to these plans to reflect the need for stormwater management regulations. If the Comprehensive Plan that is in place already mentions the need to protect the health and welfare of its citizens and natural resources from the impacts of stormwater runoff from development, this would not be necessary.

The following is draft language for an amendment to the Comprehensive Plan:

Draft Comprehensive Plan Amendment

Stormwater Management

Proper stormwater practices reduce potential damage to properties due to flooding and erosion and can significantly affect stream quality, wildlife habitat and groundwater recharge. The provisions for stormwater management are contained in the _____ **(Subdivision, Site Plan, Zoning and/or Erosion & Sediment Control)** regulations and were recently updated to emphasize the use of Best Management Practices.

****Enforce the use of Best Management Practices in stormwater management planning.***

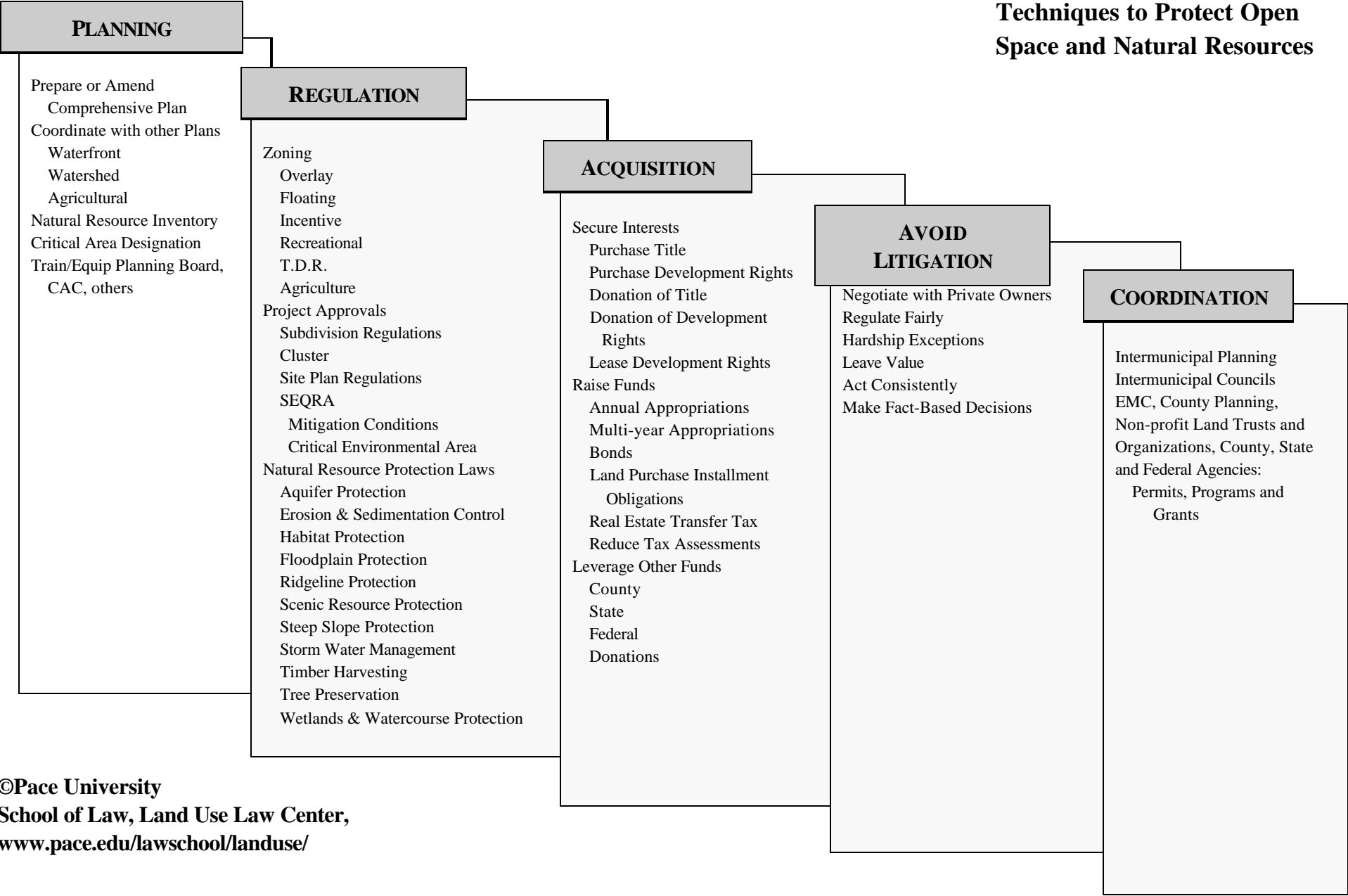
Existing neighborhoods should be examined for stormwater management problems and steps should be taken to rectify any problems. New development should be strictly scrutinized to incorporate well planned stormwater systems to reduce the impacts of runoff and promote groundwater recharge through the most applicable techniques. All proposed developments should be consistent with the recently updated provisions of the _____ **(Subdivision, Site Plan, Zoning and/or Erosion & Sediment Control)** regulations.

(This amendment was adapted from the North Coventry, Pennsylvania Comprehensive Plan Amendment)

Other Tools for Natural Resource Protection

Protecting natural resources is an ongoing task best done by employing as many as possible of the tools available to local governments. The tools listed in the following chart, prepared by Pace University Land Use Law Center, are effective for managing stormwater, as well as for protecting open space.

Techniques to Protect Open Space and Natural Resources



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 School of Law, Land Use Law Center,
www.pace.edu/lawschool/landuse/

Appendix 3 - Local Law for Utilization of the Beecher Creek Detention Facility, Town of Elmira

SECTION 1: SHORT TITLE

This Local Law shall be known as the "Local Law for Utilization of the Beecher Creek Detention Facility."

SECTION 2: FINDINGS

The Town of Elmira regulates stormwater runoff from developing areas in order to minimize the adverse effects that may result from changes in the land cover and grade. Policies have been adopted by the Town of Elmira for the expressed purpose of protecting public and private property from damages that may result from flooding, erosion, and water quality impairment. The management of stormwater runoff is the responsibility of the developer, who assumes the cost of implementing all necessary measures at the time of development.

The Town of Elmira has constructed the Beecher Creek Detention Facility on property owned by the Elmira Country Club. This facility was designed to protect existing development located downstream of the project from flood damages. The volume of water that can be contained by the Beecher Creek Detention Facility exceeds the volume necessary to provide downstream protection. This EXCESS CAPACITY can be utilized to detain increased stormwater discharges from upstream development sites.

SECTION 3: STATEMENT OF PURPOSE

The purpose of this Local Law is to provide a mechanism by which developers of property located upstream of the Beecher Creek Detention Facility can utilize the EXCESS CAPACITY of this facility to manage the increased stormwater runoff that results from their development activities. Permission to utilize the Beecher Creek Detention Facility will be granted by the Town of Elmira to developers who pay a UTILIZATION FEE to the Town, as specified in this Local Law. Participating developers will retain responsibility for preparing a stormwater management plan meeting stormwater quality standards, implementing interior drainage, and managing stormwater flow into the Beecher Creek Detention Facility. Developers who chose not to utilize the EXCESS CAPACITY of the Beecher Creek Detention Facility will be responsible for managing stormwater runoff in some other manner, as required by Town of Elmira Zoning Ordinance, Subdivision Regulations, and Local Laws.

The anticipated benefits to upstream developers include: (1) reduced costs for the design of stormwater management systems, (2) reduced costs for construction of stormwater management structures, (3) increased ability to utilize property since space need not be preserved for on-site retention/detention of stormwater, and (4) reduced maintenance responsibilities since the Town of Elmira has assumed responsibility for maintenance of the Beecher Creek Detention Facility.

SECTION 4: DEFINITIONS

CONSTRUCTED CAPACITY: The actual volume of stormwater that can be contained by the Beecher Creek Detention Facility during the 100-year, 24-hour storm. The initial CONSTRUCTED CAPACITY is 17.16 acre-feet or 747,490 cubic feet. This may be increased subsequent to project completion by expansion of the facility.

DESIGN CAPACITY: The volume of stormwater that the Beecher Creek Detention Facility is designed to contain during the 100-year, 24-hour storm to avoid exceeding the design outflow volume of the facility. This is based on the land uses and runoff characteristics that exist at the time of project design.

EXCESS CAPACITY: The difference in volume between the CONSTRUCTED CAPACITY and the DESIGN CAPACITY of the Beecher Creek Detention Facility.

IMPERVIOUS AREA: Impermeable surfaces, such as pavement or rooftops, that prevent the percolation of water into the soil.

INCREASED STORMWATER VOLUME: The calculated volume of additional stormwater runoff (in excess of the pre-development stormwater runoff) that will be released into the Beecher Creek Detention Facility during the 100-year, 24-hour design storm as a result of a development project.

MINOR DEVELOPMENT: Minor construction activities for which hydrologic computation of surface runoff volumes is not needed to insure compliance with the stormwater management requirements of the Town of Elmira Zoning Ordinance, Town of Elmira Subdivision Regulations, Town of Elmira Local Laws, or New York State Regulations (State Pollutant Discharge Elimination System, SPDES).

TOWN ENGINEER: The person licensed as a professional engineer by the State of New York who is duly authorized by the Town of Elmira Town Board to act in the capacity specified in this Local Law.

UTILIZATION FEE: A fee that will be paid to the Town of Elmira for utilization of the Beecher Creek Detention Facility to manage the INCREASED STORMWATER VOLUME resulting from a development project.

SECTION 5: LANDS TO WHICH THIS LOCAL LAW APPLIES

This Local Law applies to properties within the upper portions of the Beecher Creek Watershed from which surface runoff naturally drains into Beecher Creek upstream of the dam for the Beecher Creek Detention Facility. The tax parcel identification numbers (as identified on the date of this Law) for parcels located partially or completely within this area are:

88.00-1-6.2	88.00-1-12.24	88.00-1-15	88.00-1-12.11
88.00-1-12.25	88.00-1-16	88.00-1-12.12	88.00-1-12.26
88.00-1-17.1	88.00-1-12.21	88.00-1-13.2	88.00-1-31.1
88.00-1-12.22	88.00-1-13.3	88.00-1-32	88.00-1-12.23 88.00-1-14

SECTION 6: BASIS FOR DETERMINING THE AMOUNT OF EXCESS CAPACITY AVAILABLE FOR UTILIZATION

The *As-Built Drawings for the Beecher Creek Detention Facility* indicate that the initial EXCESS CAPACITY of this facility is 1.4 acre-feet, which is equivalent to 60,984 cubic feet. The total utilization of the Beecher Creek Detention Facility for stormwater detention shall not exceed this EXCESS CAPACITY unless the facility is expanded. The Town of Elmira will retain records pertaining to the design and construction of the Beecher Creek Detention Facility and all subsequent increases in the stormwater discharge into this facility.

In the event that upstream development utilizes all of the EXCESS CAPACITY of the Beecher Creek Detention Facility and additional capacity is desired for further development, the Town of Elmira may chose to expand the facility. The increased capacity provided by such an expansion would be added to the EXCESS CAPACITY of the facility and would become available for utilization by upstream developers in accordance with the provisions of this Local Law.

SECTION 7: BASIS FOR DETERMINING THE INCREASED STORMWATER VOLUME FOR A DEVELOPMENT PROJECT

Any developer who chooses to utilize the Beecher Creek Detention Facility for stormwater management must first determine the volume of increased stormwater that will be directed to this facility as a result of the proposed development. The design storm for these stormwater calculations will be the 100-year, 24-hour rainfall event. The developer may select either of the following procedures for calculating the INCREASED STORMWATER VOLUME that will be released into the Beecher Creek Detention Facility:

1) An estimate of the INCREASED STORMWATER VOLUME may be computed using the following formula. It is anticipated that this procedure will be used for MINOR DEVELOPMENT projects to avoid the expense of hydrologic modeling.

INCREASED STORMWATER VOLUME (ft³) = Increased impervious area (ft²) x 100-yr, 24-hr Precipitation (ft)

where,

Increased Impervious Area = the increase in IMPERVIOUS AREA resulting from the development project; and
100-year, 24-hour Precipitation = 0.458 feet (5.5 inches).

2) The USDA-NRCS-TR-55 runoff curve number procedure can be used to calculate the INCREASED STORMWATER VOLUME that will be directed to the Beecher Creek

Detention Facility as a result of the 100-year, 24-hour precipitation event (post-development runoff minus pre-development runoff). This calculation will be a part of the stormwater management plan for the proposed development and is the developer's responsibility.

The TOWN ENGINEER will review the calculation of INCREASED STORMWATER VOLUME for accuracy and to insure that the volume of stormwater that is proposed to enter the Beecher Creek Detention Facility does not exceed the available EXCESS CAPACITY of the facility. The TOWN ENGINEER may also utilize hydrologic modeling to evaluate the structure's response to the INCREASED STORMWATER VOLUME. The TOWN ENGINEER will provide the Town of Elmira Code Enforcement Officer and Town of Elmira Town Board with recommendations concerning the acceptability of the proposed stormwater management plan. All costs incurred by the Town of Elmira for review shall be reimbursed to the Town by the developer before any building permit is issued.

SECTION 8: BASIS FOR ESTABLISHING THE UTILIZATION FEE

The Town of Elmira will collect a UTILIZATION FEE from any developer whose stormwater management plan for a development project utilizes the Beecher Creek Detention Facility to manage increased stormwater runoff. This fee will be paid prior to issuance of a building permit by the Town.

The amount of the UTILIZATION FEE for the Beecher Creek Detention Facility prior to any expansion is \$25,641 per acre-foot or \$0.59 per cubic foot of INCREASED STORMWATER VOLUME.

If the Beecher Creek Detention Facility is expanded, the UTILIZATION FEE will be determined using the following formula:

UTILIZATION FEE = $\frac{\text{Cost of Facility X INCREASED STORMWATER VOLUME}}{\text{CONSTRUCTED CAPACITY}}$

where,

Cost of Facility = The cost of the Beecher Creek Detention Project. This includes design, construction, and expansion of the Beecher Creek Detention Facility. This cost is \$440,000 for initial design and construction of the facility plus the cost of any subsequent expansion.

INCREASED STORMWATER VOLUME = The storage capacity that will be utilized by the development project, determined using one of the procedures specified in Section 7 of this Local Law.

CONSTRUCTED CAPACITY = The initial CONSTRUCTED CAPACITY of the Beecher Creek Detention Facility of 17.16 acre-feet or 747,490 cubic feet (as specified in the As- Built Drawings for the Beecher Creek Detention Facility) plus the additional capacity enabled by any subsequent expansion of the facility.

SECTION 9: ENFORCEMENT

This Local Law shall be enforced by the Town of Elmira Code Enforcement Officer, in consultation with the TOWN ENGINEER. Decisions made by the Code Enforcement Officer can be appealed to the Town of Elmira Town Board, which shall hear and decide any appeals.

SECTION 10: VALIDITY

If any section, paragraph, subdivision or provision of this Local Law is declared invalid, such invalidity shall apply only to the section, paragraph, subdivision or provision adjudged invalid and the rest of this Local Law shall remain valid and effective.

SECTION 11: EFFECTIVE DATE

This Local Law shall take effect immediately upon filing in the office of the Secretary of State of the State of New York.

For Additional Information: TOWN OF ELMIRA CONTACTS, Paul Kingsbury, Drainage Officer (607) 732-7698; Gary Pateiunas, Code Enf. Officer (607) 734-1486; Southern Tier Central Planning Board Janet Thigpen, Flood Mitigation (607) 737-5271

Appendix 4 - References

New York State Department of Environmental Conservation Publications

These publications are also available on DEC's web site,
<http://www.dec.state.ny.us>

SPDES Stormwater General Permits

- *SPDES General Permit for Stormwater Discharges from Construction Activity* [GP-02-01]
- *SPDES General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s)* [GP-02-02]

Regulatory Guidance

Final Designation Criteria for Identifying Regulated Municipal Separate Storm Sewer Systems (MS4s), January, 2003

Guidelines for Completing the Notice of Intent Based on SPDES General Permit (GP-02-02) for Stormwater Discharges from Municipal Separate Stormwater Sewer Systems, published February 2003, revised August 2003
(http://www.dec.state.ny.us/website/dow/toolbox/ms4toolbox/ms4_guidelines.pdf)

Overview of the Municipal Separate Storm Sewer Systems (MS4) phase II Stormwater Permit Program: A Summary of MS4 Phase II Permit Requirements, published February 2003, revised August 2003

New York State Phase II Stormwater Program, Frequently Asked Questions (Permit Requirements and Technical Requirements), last revised July, 2003

Technical Standards and Guidance

Reducing the Impacts of Stormwater Runoff from New Development : A manual for local planners, building inspectors, and developers; Division of Water, Bureau of Water Quality Management, 1992 (see Chapter 3 for stormwater plan review procedures)
Available at <http://www.dec.state.ny.us/website/dow/toolbox/index.html>

New York State Stormwater Management Design Manual, October, 2001
Available at <http://www.dec.state.ny.us/website/dow/swmanual/swmanual.html>

New York Standards and Specifications for Erosion and Sediment Control, Empire State Chapter of the Soil and Water Conservation Society, 2004
<http://www.dec.state.ny.us/website/dow/toolbox/escstandards/index.html>

Other Useful Publications

New York State Management Practices Catalogue for Nonpoint Source Pollution Prevention

New York State Local Government Handbook, published by the NYS Department of State and available on-line at www.dos.state.ny.us/lgss/pdfs/handbook.pdf.

Great Lakes Better Backroads Guidebook

Nolon, John R., *Open Ground: Effective Local Strategies for Protecting Natural Resources*. Environmental Law Institute, Washington, D.C., May 2003.

Nolon, John R., *Well Grounded: Shaping the Destiny of the Empire State*, Pace University School of Law, White Plains, NY, March 1999.

Related Web Sites

<http://cfpub.epa.gov/npdes/stormwater/menuofbmps/menu.cfm> EPA's National Menu of Best Management Practices for Storm Water Phase II, intended to provide guidance to regulated small MS4s as to the types of practices they could use to develop and implement their storm water management programs.

<http://www.stormwatercenter.net> Created and maintained by the Center for Watershed Protection, the Stormwater Manager's Resource Center is designed for stormwater practitioners, local government officials and others needing technical assistance on stormwater management issues.

<http://www.lowimpactdevelopment.org> Website of the Low Impact Development (LID) Center, a nonprofit group promoting low impact development

Appendix 5 - Glossary of Stormwater Management Terms

Best Management Practice (BMP): A structural or non-structural device designed to temporarily store or treat urban stormwater runoff in order to mitigate flooding, reduce pollution and provide other amenities. (Also called Stormwater Practice.)

Building: Any structure, either temporary or permanent, having walls and a roof, designed for the shelter of any person, animal or property

Channel: A natural or artificial watercourse with a definite bed and banks that conducts continuously or periodically flowing water

Clearing: Any activity that removes the vegetative surface cover

Conservation Advisory Council (CAC): A committee formed by the local legislative body under NYS General Municipal Law Article 12-F, section 239-x that prepares a natural resource inventory of the municipality and advises other local boards on environmental issues.

Cluster or Open Space Development: The use of designs that incorporate open space into a development site. These areas can be used for either passive or active recreational activity or preserved as naturally vegetated land.

Construction site operator: the person, persons or legal entity that owns or leases the property on which the construction activity is occurring.

Developer: A person who undertakes land development activities

Drainage Area (Watershed): All land and water area from which runoff may run to a common (design) point.

Grading: Excavation or fill of material, including the resulting conditions thereof

Impervious Cover: Those surfaces, improvements and structures that cannot effectively infiltrate rainfall, snow melt and water (e.g. building rooftops, pavement, sidewalks, driveways, etc)

Land Development Activity: Construction activity including clearing, grading, excavating, soil disturbance or placement of fill that results in land disturbance of equal to or greater than one acre, or activities disturbing less than one acre of total land area that is part of a larger common plan of development or sale, even though multiple separate and distinct land development activities may take place at different times on different schedules.

Maintenance Agreement: A legal recorded document that acts as a property deed restriction, and which provides for long-term maintenance of stormwater management practices.

Outfall: The point where water flows from a conduit, stream, or drain.

New York State 303(d) list: DEC prepares this list under Section 303(d) of the federal Clean Water Act. It identifies waters where designated uses are not fully supported by existing water quality. These “303(d) waters” are listed with the pollutant that is the cause of the water quality problem. If stormwater discharges to a 303(d) listed water, the stormwater management program must ensure no increase in the listed pollutant of concern to the water. The 303(d) list is updated every two years and is available on the DEC web site at www.dec.state.ny.us/website/dow/303dcalm.pdf.

Nonstructural Stormwater Practices: Stormwater runoff treatment techniques that use natural measures to reduce pollution levels, do not require extensive construction efforts, and/or promote pollutant reduction by eliminating the pollutant source.

Stormwater: Rainwater, surface runoff, snowmelt and drainage

Stormwater Management: The use of structural or non-structural practices that are designed to reduce stormwater runoff and mitigate its adverse impacts on property, natural resources and the environment

Stormwater Management Facility: One or a series of stormwater management practices installed, stabilized and operating for the purpose of controlling stormwater runoff

Stormwater Pollution Prevention Plan (SWPPP): A plan for controlling stormwater runoff and pollutants from a site during and after construction activities

Stormwater Management Practice: Measures, either structural or nonstructural, that are determined to be the most effective, practical means of preventing flood damage and preventing or reducing point source or nonpoint source pollution inputs to stormwater runoff and water bodies

Structural Stormwater Practices: Devices that are constructed to provide short-term storage and treatment of stormwater runoff.

Total Maximum Daily Load (TMDL): A numerical limit on the amount of a particular contaminant that can be discharged to a waterbody from all sources. If a TMDL requiring reduction of a pollutant associated with stormwater is approved by the US EPA for any waterbody or watershed into which the MS4 discharges, the stormwater management program (six minimum measures) must ensure reduction of the pollutant of concern specified in the TMDL.

Urbanized area: An area is automatically designated as urbanized for purposes of Phase II coverage if the population is at least 50,000 and there is an overall population density of at least 1,000 people per square mile, based on the 2000 US Census.