

Stormwater Management – A National Priority to Reduce Water Pollution

What is stormwater? What type of management is required of municipalities? What is the CNY Regional Planning and Development Board doing to assist the community? How can the public get involved and make a difference?

While significant improvements have been achieved in controlling point source water pollution, such as discharges from sewage and wastewater treatment plants, the U.S. Environmental Protection Agency (EPA) estimates that one half of all impaired waterways are affected by nonpoint sources of pollution, such as stormwater runoff. As a result, stormwater management has become a national priority in the effort to further reduce water pollution.

Federal and State Stormwater Management Regulations

In response to the 1987 Amendments to the Clean Water Act (CWA), the U.S. Environmental Protection Agency (EPA) developed Phase I of the National Pollutant Discharge Elimination System (NPDES) Stormwater Program in 1990. The Phase I program addressed sources of stormwater runoff that had the greatest potential to negatively impact water quality. The Department of Environmental Conservation (DEC) is responsible for administering the program in New York State as part of the State Pollutant Discharge Elimination System (SPDES). Under Phase I, SPDES permit coverage was required for stormwater discharges from medium and large municipal separate storm sewer systems (MS4s) located in incorporated places or counties, eleven categories of industrial activity and construction activity that disturbed five or more acres of land.

The Phase II Final Rule, published in the Federal Register on December 8, 1999, expanded the stormwater permit program to include stormwater discharges from certain regulated small MS4s and construction activity that disturbs between 1 and 5 acres of land. On January 8, 2003, the DEC finalized two new permits for stormwater discharges in New York State as required by the Federal EPA: the small MS4 and small construction permits.

The MS4 permit requires regulated municipal MS4s (those with a minimum population density of 1,000 people per square mile and are located in urban areas as defined by the U.S. Census Bureau) to develop and fully implement a stormwater management program by 2008. Stormwater management programs must contain appropriate management practices in each of the following minimum control measure categories: Public Education and Outreach; Public Involvement and Participation; Illicit Discharge Detection and Elimination; Construction Site Stormwater Runoff Control; Post-Construction Site Stormwater Runoff Control; and Pollution Prevention for Municipal Employees.

As a first step toward obtaining SPDES permit coverage, regulated MS4s were required to submit a Notice of Intent (NOI) form to DEC by March 10, 2003. The NOI required MS4s to provide an initial outline of planned management practices and to identify measurable goals to annually assess progress toward the full implementation of an appropriate stormwater management program. Although DEC has specified a few required actions and provided a list of approved management practices for each minimum control category, regulated MS4s are encouraged to tailor the development of their stormwater management programs to best meet local stormwater problems.

DEC is encouraging MS4s to take a watershed approach to local stormwater management by working with neighboring MS4s to develop complementary or cooperative programs for solving shared problems. By combining efforts, sharing costs and working together, regulated municipalities will recognize a higher level of environmental benefits at a decreased program cost.

Regional Assistance Program

To assist the regulated municipalities in the Syracuse Urban Area comply with the new regulations, the Central New York Regional Planning Board (CNY RPDB) has launched a unified, regional assistance program. The goal of the program is to help municipalities identify and develop intermunicipal compliance strategies that will lower their individual program costs while maximizing regional water quality improvements. The CNY RPDB is also providing unified assistance in the areas of public education, outreach and participation, municipal training, research assistance and efforts to secure funding for compliance. Of the thirty-two automatically designated municipalities in Central New York, twenty-six municipalities (from Onondaga and Madison Counties) are participating in the CNY RPDB's program and four Oswego County municipalities are participating in a similar assistance program being conducted by the Oswego County Planning Department. Because intermunicipal cooperation and the development of complimentary stormwater management programs are critical to the overall success of Phase II regulations, widespread participation in regional assistance programs bodes well for the future of the region.

All publicly funded MS4s discharging stormwater within the boundaries of regulated municipal MS4s are also subject to the Phase II permit requirements. Examples of other regulated MS4s include school districts, public universities, prisons, state agencies and more. Defining the jurisdictional responsibilities of all regulated entities remains a somewhat difficult process at this time. It's expected that individual responsibilities will become more easily enforceable as municipal programs develop and are fully implemented. Eventually, the MS4 permit program will be expanded beyond urban areas, to statewide coverage of all small MS4s.

The small construction permit is somewhat different in that it is already a statewide requirement. Operators of all small construction activities disturbing at least one acre of soil must obtain a construction permit prior to breaking ground regardless of whether or not the construction takes place within a regulated MS4. Small construction operators must file an NOI form and develop an approved stormwater management pollution prevention plan that includes provisions for managing post-construction stormwater runoff over the life of the project. The one-acre soil disturbance is a cumulative threshold. In other words, if a construction activity disturbs less than one acre of soil, but is part of a common development plan that will cumulatively disturb one-acre or more, a construction permit is required for the entire development.

Why Worry?

Stormwater is water from rain or melting snow that doesn't soak into the ground, but runs off into waterways. It flows from rooftops, over paved areas and bare soil, and through sloped lawns. Flowing storm water collects and transports soil, animal wastes, pesticides, fertilizers, oil and grease, debris and other potential pollutants. The quality of runoff is affected by a variety of factors including the season, local weather, geography and the activities taking place along the path of flow. Concentrated development in urbanized areas substantially increases paved surfaces, such as roadways, driveways, parking lots and sidewalks. Pollutants from concentrated human activities settle and remain on these surfaces until a storm event washes them into a nearby waterbody or storm drain.

There are two main components to the stormwater pollution problem: the increased volume and rate of runoff from impervious surfaces and the concentration of pollutants in the runoff. The intensity of both components can be directly correlated to the degree of development in an area and may cause changes in the quantity, quality and movement of local waters resulting in a variety of problems, including habitat modification and loss, increased flooding, decreased biological diversity, increased sedimentation and erosion. When left uncontrolled, these untreated and sometimes harmful discharges can result in the

destruction of spawning and wildlife habitats, a reduction in the aesthetic value and recreational use of waterways and contamination of drinking water supplies that threaten public health.

During runoff events, mobilized pollutants carried by stormwater degrade the quality of the lakes, rivers, wetlands and other waterways they eventually enter. Nutrients such as phosphorus and nitrogen can promote the overgrowth of algae, deplete oxygen in the waterway and be harmful to other aquatic life. Toxic chemicals from automobiles, sediment from construction activities, and careless application of pesticides, herbicides and fertilizers threaten the health of the receiving waterway and can kill fish and other aquatic life. Bacteria from animal waste and illicit connections to sewerage systems can make lakes and bays unsafe for wading, swimming and fishing.

In addition, uncontained stormwater runoff from construction sites may have devastating effects on local waterbodies, particularly smaller streams, lakes and wetlands. During storms, construction sites may be the source of sediment-laden runoff, which can overwhelm a small stream's channel, resulting in streambed scour, streambank erosion and destruction of near stream vegetative cover. Uncontrolled sediment-laden runoff is a principal contributor to the loss of in-stream habitats for fish and other aquatic species and flood storage capacity. Construction activities may also yield pollutants such as pesticides, petroleum products, construction chemicals, solvents, asphalts and acids that can contaminate storm water runoff

Effective best management practice (BMP)-driven stormwater management provides a wide range of environmental and economic benefits including overall water quality improvement, protection of wetlands and aquatic ecosystems, conservation of water resources, protection of public health and flood control. As basic as the BMP stormwater management concept may seem, the battle against water quality impairment will not be easily won. To be successful, everyone will have to do his or her part.

Become Part of the Pollution Solution

The success of the Phase II regulatory program depends on voluntary cooperation and compliance from homeowners, local interest groups, municipal governments officials and you. Opportunities to make a difference in local water quality are everywhere. Simple actions such as picking up after your dog, participating in organized stream clean ups, or simply attending a municipal board meeting to learn more about local efforts in your community will make a difference.