Municipal Phase II Stormwater Management: Protecting and Restoring Long Island Sound

by Eileen Keenan

Nonpoint sources of pollution to the Long Island Sound are one of the primary causes of Long Island Sound impairments. Contaminated runoff carries nutrients, heavy metals, pathogens, debris, and toxic chemicals to the Sound. Diffuse in nature, these pollutants are transported by stormwater and can result in closed or restricted beaches and shellfish beds, degraded wetlands and wildlife habitats, declining aesthetics, impaired navigation, reduced recreational opportunities, poor water quality, and fish kills. Such impacts pose serious economic as well as human health concerns throughout the Long Island Sound region.

Directed at polluted runoff, the US Environmental Protection Agency's (USEPA) Phase II stormwater regulations are important components of the management strategy being employed to address these problems. Comprised of two overlapping programs designed to address construction activity and discharges by municipal separate storm sewer systems (MS4s), the Phase II regulations are comprehensive and serve to promote watershed-based intermunicipal stormwater management. In New York, the Phase II stormwater program is administered by the New York State Department of Environmental Conservation (NYSDEC).

On Long Island, municipalities that have for many years been engaged in resource protection have also been working steadily to implement their Phase II stormwater programs by the January 2008 federal deadline. Throughout Long Island, municipal Phase II stormwater programs are progressing. Efforts are being made to protect and restore the Long Island Sound, as well as the Peconic and South Shore estuaries. Long Island's municipalities are implementing measures to reduce their discharges of such pollutants as pathogens, nutrients, sediment, toxic chemicals, and debris. New and innovative programs are being utilized to satisfy Phase II requirements, including those that cover public education and outreach, public participation and involvement, illicit discharge detection and elimination, construction site runoff control, post-construction runoff control and pollution prevention and good housekeeping. Moreover, these programs are being designed to promote efficiency as well as effectiveness by addressing local priorities and by leveraging efforts with neighboring municipalities and watershed organizations. Nearly all of Long Island's 100 municipalities are implementing Phase II stormwater management programs. Some of the current highlights of their activities appear below.

Nassau County

In Nassau County, an intermunicipal Stormwater Coalition brings together the efforts of over 50 municipal partners. The County has taken the lead on behalf of the Coalition in mapping outfalls, in facilitating the development of protocols, studies, and local laws, and in the implementation of education and involvement programs. As a result, the Nassau County Stormwater Coalition ensures cost-effective stormwater management for each jurisdiction by eliminating costly local efforts that would otherwise be duplicative. The County has also been successful in applying for state grant funding on behalf of the Coalition. Initiatives underway include development of generic pollution prevention protocols for municipal operations and facilities, a drainage use ordinance, and a procedure manual for outfall inspection, GIS mapping, and watershed vulnerability analysis.

Also in Nassau County are two Long Island Sound intermunicipal consortia, which are important partners with the Stormwater Coalition. Known as the Hempstead Harbor and Manhasset Bay Protection Committees (HHPC and MBPC), these watershed management organizations were established well before the advent of the Phase II regulations. Having made strides in protecting and restoring Hempstead Harbor and Manhasset Bay, they provided a foundation of experience in multi-jurisdictional endeavors which proved helpful in expediting formation of the Nassau Stormwater Coalition.

Members of both committees have co-implemented a number of projects to mitigate the impacts of polluted stormwater. For example, when Scudder's Pond (in the Village of Sea Cliff) was identified as one of the most significant contributors of stormwater-related pollutants to Hempstead Harbor, the HHPC worked with the Village of Sea Cliff, the North Shore Country Club, Nassau County, and the NYS Department of State to identify and fund a number of improvement projects. To date, nearly $1 million has been earmarked to remove sediment from the pond, create natural bio-filter wetlands, replace an aging weir, create native buffer areas, and replace invasive plants with native species. Contracts to begin this work are now being finalized and efforts are expected to get underway this fall.

The HHPC also oversees a water quality monitoring program (with a USEPA-approved Quality Assurance Project Plan) and gathers data on a number of parameters including dissolved oxygen, salinity, pH,

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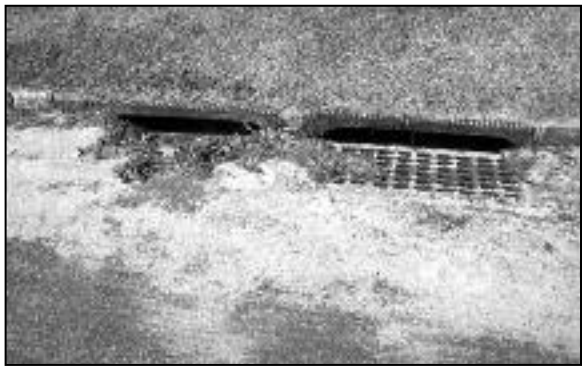

Photo by Eileen Keenan, NY Sea Grant NEMO

The Nassau County Stormwater Coalition is working on generic municipal pollution prevention protocols for Coalition partners.

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Photo by Eileen Keenan, NY Sea Grant NEMO

Long Island municipal Phase II stormwater programs address discharges of toxic substances, nutrients, sediment, bacteria, and debris from storm sewer system outfalls such as these.

ammonia, nitrate, nitrite, clarity, fecal coliform and enterococci. Further, the HHPC has implemented a pet waste management project (DogiPot) which includes waste stations, disposal bags, and brochures. Another HHPC project, directed at sediment removal, entails installation of a Swirl Separator structural treatment device in the Village of Sea Cliff.

The Manhasset Bay Protection Committee supports the water quality monitoring conducted by the Town of North Hempstead and Nassau County and is currently working with a consultant on the use of software to analyze about 10 previous years of non-digital water quality data. The results of this study will point the way for future Manhasset Bay research and remediation efforts. Other MBPC projects include an educational signage program, a stream runoff study for Stannards Brook, and creation of a Manhasset Bay educational curriculum in cooperation with the Science Museum of Long Island.

Further east on the Island's Sound shore, the Town of Huntington has established an intermunicipal task force and steering committee with the Villages of Asharoken, Lloyd Harbor, Huntington Bay, and Northport. Among their projects is an illicit discharge GIS database and mapping and monitoring program, which is being implemented through Cornell Cooperative Extension of Suffolk County.

Suffolk County

Suffolk County's stormwater management efforts have advanced as well. Its program includes plans for a demonstration site with a scaled down green roof system, rain barrel and garden, and permeable surfaces.Targeting pathogens, Suffolk has also developed a pet waste public service announcement and plans to expand waterfowl and pet waste control efforts at County parks. Additionally, Suffolk's illicit discharge detection and elimination program is coordinated and documented through an information management system (IMS) created in ArcGIS software, through which field data are linked to aerial photographs. Future plans include additional linkages to municipal pollution prevention and construction/post-construction program data. To minimize the impacts of winter sanding and salting operations, the County is currently conducting an ongoing research and development program into the use of alternative road surface de-icing materials.

Securing the Sound's Future

Municipalities' continuing dedication to Long Island Sound protection is evidenced by their noteworthy, adaptive Phase II stormwater program accomplishments. Having reached key milestones in meeting Phase II requirements, they have also moved forward in securing the vitality of their communities and the sustainability of their coastal resources. Long Island's leaders will doubtless continue to prove strong in their resolve as stewards of the Long Island Sound as they build on their achievements in the second cycle of the Phase II program in 2008 and beyond.

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This no shellfishing sign indicates pathogen contamination, which poses serious economic and human health concerns on Long Island.

Photo by Eileen Keenan, NY Sea Grant NEMO

New York Sea Grant NEMO – Nonpoint Education for Municipal Officials

Delivered by Eileen Keenan, manager, and Jeanne Brown, water quality educator, New York Sea Grant NEMO assists Long Island municipalities in complying with the EPA Phase II stormwater regulations and in reducing the impacts of nonpoint source water pollution. Working at the local level, NYSG NEMO provides individual support to cities, counties, towns, and villages concerning such topics as: inter-municipal programs, revisions to local laws, oversight of construction activity, addressing impaired waterbodies, eliminating illicit discharges, and reducing the contaminants generated by municipal facilities and operations. Working in conjunction with the Island's estuary programs, NYSG NEMO also conducts presentations that address regional priority management issues, such as the use of structural treatment devices and pathogen control.