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Water flows over a weir in Arbutus Creek, where the NYCDEP maintains a system of BMPs for stormwater control and conveyance. *Photo: NYCDEP*

STILL WATERS RUN DEEP ON STATEN ISLAND

STREAMLINED PERMIT PROCESS SPEEDS NYCDEP BLUEBELT PROGRAM TO RELIEVE FLOODING AND IMPROVE WATERSHEDS.

By JoAnne Castagna, Ed.D.

RESIDENTS OF GRIMSBY Street in Midland Beach, Staten Island, N.Y., noticed a large puddle of water in their neighborhood. Days went by — there was the puddle; a few months passed — the puddle remained. The body of water was there so long — 280 days — that residents named it Grimsby Lake.

How that puddle appeared on Grimsby Street really wasn't a mystery to the residents who for decades have been frustrated by chronic flooding problems. The island, which is a borough of New York City, is low lying and, in many parts, there is no conventional underground storm sewer system. Rainwater has no place to go.



New Creek meanders through the Midland Beach neighborhood on Staten Island.
Photo: NYCDEP

To help resolve this problem, the New York City Department of Environmental Protection (NYCDEP) created a stormwater management system — The Staten Island Bluebelt Program. So far, many residents have benefited and the agency wants to expand the program to more communities, such as flood-prone Midland Beach.

The U.S. Army Corps of Engineers, New York District is helping the city in this effort. The district developed an innovative permitting mechanism that is helping to move the Bluebelt Program along faster and, as a result, it will help reduce flooding, save taxpayer money, and improve the environment and wildlife habitats.

The Staten Island Bluebelt Program is preserving and restoring streams, ponds, and other wetland areas — called Bluebelts — in 16 of the island's natural watershed systems (see Figure 1). These watershed systems are being used to collect stormwater runoff during rainstorms, hold it, filter it, and gradually release it into the Raritan Bay and Arthur Kill.

In the areas served by a Bluebelt Program, conventional storm sewers are built in the beds of city streets, but instead of draining into a large trunk storm sewer, the water is channeled into the Bluebelt wetland systems. At every point where the storm sewer pipe ends and the Bluebelt begins, NYCDEP builds special drainage facilities — best management practices (BMPs) — that minimize the impacts of urban stormwater discharges into wetlands.

Many of these BMPs are manmade wetlands that include weirs that help reduce the water speed so it is much less destructive. Wetland native plants are planted in these areas to help clean and purify the water of sediment and pollutants. These contaminants eventually settle to the bottom of the water in specially designed sumps and are regularly removed by the NYCDEP.



Streets in the Midland Beach neighborhood failed to drain even days after a storm in 2013. *Photo: NYCDEP*

The stormwater is detained in some of these wetland areas during the peak of a storm and then slowly released downstream into the ocean after the storm has passed. The amount of water released downstream is carefully controlled to prevent flood surges to communities living downstream.

The program is not only successfully controlling flooding, but also beneficial to the environment and cost effective when compared with conventional storm sewer systems. The Bluebelt Program is less intrusive, improves the environment, and provides for wildlife habitats and community open space. Additionally, it saves considerable taxpayer money. According to the NYCDEP, the Bluebelt Program has already saved the city more than \$80 million in sewer construction costs.

Presently, two-thirds of the island drains into the Bluebelt system. For the NYCDEP to build out the system, it has to design and construct additional BMPs. To do this it must submit permits for review and approval to the Army Corps' New York District.

The Army Corps' New York District is responsible for reviewing permit applications for work that is going to be performed in any of the waterways, including wetlands that are within the district's boundaries. These permit applications need to be reviewed to make sure that there will be no adverse environmental impact to the aquatic environment and the work proposed is not contrary to the public interest. For the Bluebelt Program, the NYCDEP has been sending the Army Corps a large number of permit applications every year to perform its work.

“Reviewing these applications and having them done within the NYCDEP's timeframe can get very time consuming and resource intensive to the Army Corps and also the NYCDEP,” said Jodi McDonald, chief, Regulatory Branch, New York District, U.S. Army

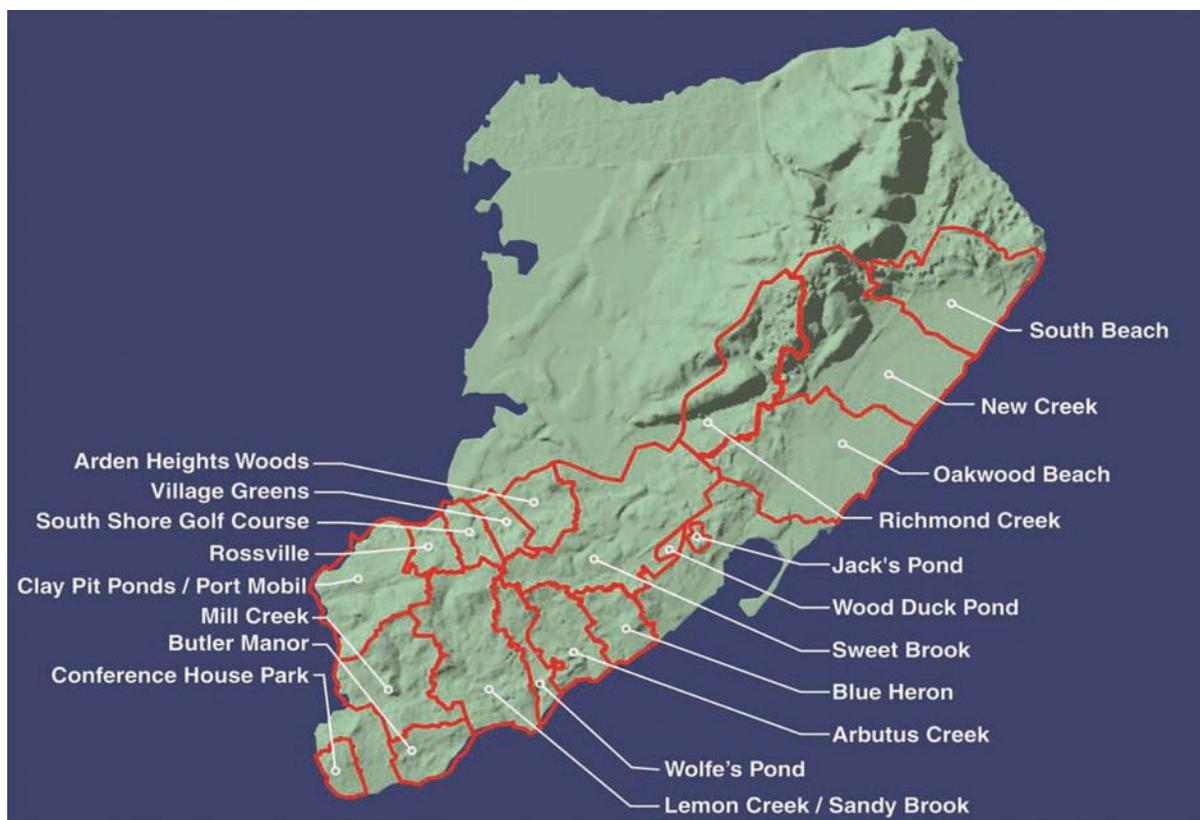


Figure 1: Staten Island Bluebelt Watersheds. Image: NYCDEP

Corps of Engineers. “These permit applications include a variety of activities such as replacing outfalls, doing minor dredging, and creating micro pools.”

Many of these permit applications can also be repetitive because they are to perform similar work.

“Most of these tasks have minimal environmental impact. So we decided to create a Regional General Permit that allows the NYCDEP to move forward and perform these minimally environmentally invasive projects without having to submit dozens of individual permit applications to the Army Corps,” McDonald said. “After years of working with the NYCDEP and other federal and state agencies, we now have a Regional General Permit that allows the NYCDEP to immediately move forward on a whole suite of activities for the Staten Island Bluebelt Program. They can just go and build them, without having to stop and wait for a permit application to be reviewed and authorization granted. This saves the district and the NYCDEP time and resources and leaves the district time to scrutinize those permit applications that will have more of an environmental impact.”

The new permit is already starting to move the Bluebelt Program ahead — specifically in Midland Beach, the location of Grimsby Lake.

Midland Beach is located within the New Creek Watershed. The NYCDEP is restoring the West Branch of New Creek so that it can be used as a channel to move stormwater away from streets. This includes

removing large amounts of silt that have accumulated in the channel and moving the channel away from homes.

Next, NYCDEP will restore an approximately 5-acre wetland complex. This will include removing approximately 5 acres of an invasive plant species called *Phragmites Australis* and replacing it with a diverse array of native wetland plants. In addition, there will be construction of culverts under streets, control structures, and sediment clean-out locations called forebays and micropools.

“This construction work wouldn’t have started for years if it wasn’t for the Regional General Permit,” said Dana Gumb, chief, Staten Island Bluebelt Program, NYCDEP. “We are easily saving years. When you are building a drainage system for thousands of acres in an urban setting, it’s a real big ticket item. And it’s something that costs lots of money and takes a lot of time to do. So whatever savings in time we can have is very significant. If you’re saving time, you are saving money.”

Moving the program faster along means quicker results for Staten Island communities. “The Regional General Permit streamlines the permit process so that the remaining Bluebelt BMPs can be constructed faster and the public can realize benefits sooner,” McDonald said. “This includes reduced flooding of homes, roads, and neighborhoods, as well as improved water, fish, and wildlife habitat quality.”

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