Home

Customer Services
- Pay Online
- Ways to Pay Your Bill
- eBilling
- Account Information
- Customer Assistance
- Service Line Protection Program
- Water Rates
- Property Managers & Trade Professionals

Water Utilities
- Drinking Water
- Wastewater
- Stormwater
- Harbor Water
- Long Term Control Plan

The Watershed
- Watershed Protection
- Watershed Recreation

Citywide Initiatives
- Regulatory Reform
- Environmental Education
- Conservation Programs
- Air Pollution Control
- Noise Codes & Complaints

Business and Professionals
- Forms & Permits
- Support for Businesses
- Doing Business with DEP
- Asbestos Abatement
- Construction, Demolition & Abatement

About DEP
- Inside DEP
- News
  - DEP Featured In…
  - Press Releases
  - Public Notices

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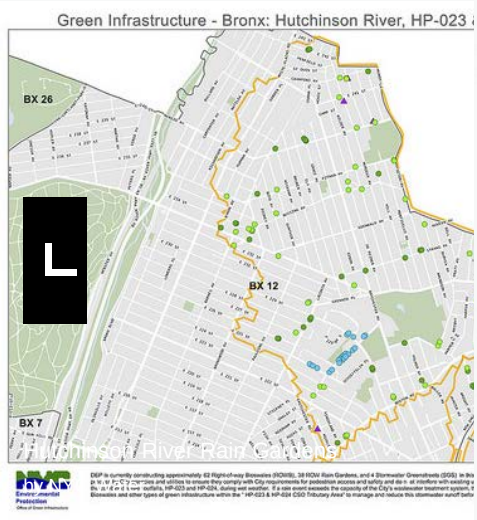
122 New Curbside Rain Gardens in Bronx Will Help Clean Hutchinson River While Improving Air Quality



Photos and a Map of Curbside Garden Locations are Available on DEP's Flickr page

The Departments of Environmental Protection (DEP) and Design and Construction (DDC) today announced that work has been completed on the construction of 122 rain gardens in the Bronx neighborhoods of Wakefield, Edenwald, and Eastchester. Each rain garden has been specially designed to collect and absorb up to 2,500 gallons of stormwater each time it rains. The 122 rain gardens will capture an estimated 12 million gallons of stormwater each year. This will ease pressure on the combined sewer system during heavy rain storms and reduce overflows into the Hutchinson River, thereby improving the health of the waterway. The addition of hardy plants and trees will also help to improve air quality. To view a video of a rain garden collecting stormwater go here. DEP funded the $2 million project and the construction was managed by DDC.

"The construction of these 122 curbside rain gardens is part of DEP's commitment to greening the Bronx, cleaning up the Hutchinson River and improving the quality of life for residents and businesses," said **DEP Acting Commissioner Vincent Sapienza**. "This $2 million investment will beautify the communities of Wakefield, Edenwald, and Eastchester, capture the stormwater that would otherwise drain into the sewer system and use it to nourish new plantings and trees, while also improving air quality."

"In keeping with Mayor de Blasio's vision for a sustainable and resilient city, we are proud to partner with DEP to improve infrastructure for the Bronx

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Testimony & Public Comments
- Capital Projects
- Careers at DEP
- Environmental Reviews
- Interagency MOUs
- A to Z Index
- Contact Us

neighborhoods of Wakefield, Edenwald and Eastchester," said **DDC Commissioner Feniosky Peña-Mora**. "The installation of the rain gardens will decrease stormwater runoff into the existing combined sewer system. The addition of the plants and trees will provide an attractive green amenity for the surrounding neighborhoods. DDC is committed to providing services that enhance our communities and contribute to the City's growth."

"These new rain gardens are an exciting and environmentally sound addition to our communities that will have numerous benefits to residents," said **NYS Assembly Speaker Carl Heastie**. "The stormwater captured by the gardens will not only help prevent flooding and improve water quality in the Hutchinson River, but they also bring new plants and trees to our streets, improving air quality and adding natural beauty."

"As a part of my 12-point plan to beautify the 12th Council District, I'm elated this project has been completed," said **NYC Council Member Andy King**, who represents the Wakefield, Edenwald and Eastchester communities. "For years, people dreaded driving near the Hutchinson River Parkway during heavy rain storms because the roads would become flooded. The creation of 122 new curbside rain gardens, containing trees and plants that flourish in areas of heavy water flow, is most welcomed. This project brings natural beauty and improves the quality of life for the residents in my district. I applaud the DEP and DDC on the completion of this project."

Rain gardens are built in City sidewalks and do not result in the loss of any parking spaces. They resemble standard street tree pits, except that they vary in size, have curb cuts that allow stormwater to enter and overflow if it becomes saturated, and have been designed in a way that will allow them to manage up to 2,500 gallons each during a storm. DEP has developed standard designs, specifications and procedures for building green infrastructure in the streets and sidewalks of New York City. In partnership with the Departments of Transportation and Parks and Recreation, DEP conducts an extensive site selection process that includes geotechnical investigations and surveys. During construction, the rain gardens are excavated to a depth of five feet and are then backfilled with layers of stone and engineered soil. The stone layers contain void spaces that store the stormwater and the engineered soil promotes infiltration. The addition of hardy plants further encourages infiltration through root growth and increases the capacity of the rain garden through evapotranspiration. The rain gardens are designed so that all the stormwater is absorbed in less than 48 hours and dedicated maintenance crews ensure that they are functioning properly, including removing any trash that may have accumulated and pruning the trees and plants. The crews visit each rain garden approximately once a week and additional staff will continue to be added as the program expands. To date, approximately 2,500 rain gardens have been built throughout New York City with 1,000 more beginning construction this fall and thousands more planned for the next several years.

DEP primarily builds rain gardens in neighborhoods that are serviced by combined sewers, which carry both sanitary waste and rainwater during wet weather. Within these neighborhoods, locations for the bioswales are initially chosen by engineers who, armed with maps of the local sewer systems, walk the streets and identify sidewalk locations that are upstream of a catch basin and have the room necessary to accommodate a rain garden. This initial group of potential locations is then reviewed by the Department of Transportation to ensure that they meet all necessary pedestrian and vehicle clearance requirements and the Department of Parks and Recreation, who provides guidance on trees and planting plans. Soil samples are then taken from the approved locations to ensure they can absorb the necessary amount of stormwater. The extensive survey and geotechnical testing ensures that each site functions as designed. The locations that meet all these requirements will then be approved for construction.

DEP has conducted extensive outreach in the Hutchinson River watershed area, including meeting with elected officials, Community Boards 10 and 12, residents

of the Edenwald Houses, as well as neighborhood and environmental organizations. These meetings help to inform communities about the purpose of green infrastructure and the benefits it will bring to their neighborhoods, as well as plans for future construction. In addition, brochures with Frequently Asked Questions are distributed to the properties abutting the locations of future rain gardens.

New York City, like other older urban communities, is largely serviced by a combined sewer system where stormwater that falls on roofs, streets, and sidewalks, and wastewater from homes and businesses are carried through a single sewer line to treatment plants. The city's 14 treatment plants can manage and treat to federal Clean Water Act standards all the wastewater created in New York City on a dry weather day, or about 1.3 billion gallons on average. On a rainy day they have the capacity to clean more than twice the dry weather flows. However, during intense precipitation events, the stormwater that falls on the city's impervious surfaces exceeds that capacity and overflows can be discharged into local waterways. If the overflows were not discharged, the City's treatment plants would be flooded and severely damaged and wastewater could backup into homes and businesses.

Over the last decade the City has invested more than $10 billion in upgrades to wastewater treatment plants and related efforts to reduce combined sewer overflows and testing confirms that the water in New York Harbor is cleaner today than it has been in more than a century. However, overflows remain the city's primary harbor water quality challenge. As traditional "grey" infrastructure upgrades became increasingly expensive, the NYC Green Infrastructure Plan was launched. An alternative approach to improving harbor water quality, it combines traditional infrastructure upgrades and the integration of green infrastructure to capture and retain stormwater runoff before it can ever enter the sewer system and contribute to overflows. New York City and New York State have entered into a Modified Consent Order which formalized the City's inclusion of green infrastructure as an important component of its plan to reduce combined sewer overflows into local waterways and improve the ecological health and cleanliness of New York City harbor water.

DEP manages New York City's water supply, providing more than one billion gallons of water each day to more than nine million residents, including eight million in New York City. The water is delivered from a watershed that extends more than 125 miles from the city, comprising 19 reservoirs and three controlled lakes. Approximately 7,000 miles of water mains, tunnels and aqueducts bring water to homes and businesses throughout the five boroughs, and 7,500 miles of sewer lines and 96 pump stations take wastewater to 14 in-city treatment plants. DEP has nearly 6,000 employees, including almost 1,000 in the upstate watershed. In addition, DEP has a robust capital program, with nearly $14 billion in investments planned over the next 10 years that will create up to 3,000 construction-related jobs per year. For more information, visit nyc.gov/dep, like us on Facebook, or follow us on Twitter.

The Department of Design and Construction is the City's primary capital construction project manager. In supporting Mayor de Blasio's lenses of growth, sustainability, resiliency, equity and healthy living, DDC provides communities with new or renovated public buildings such as such as firehouses, libraries, police precincts, new or upgraded roadways, sewers, and water mains in all five boroughs. To manage this $10 billion portfolio, DDC partners with other City agencies, architects and consultants, whose experience bring efficient, innovative, and environmentally-conscious design and construction strategies to city projects. For more information, please visit nyc.gov/ddc.

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