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## **DEP Unveils New Green Infrastructure Installations in Brooklyn**

*Four Bioswales Will Help Manage Stormwater Runoff  
and Reduce Combined Sewer Overflows into the Gowanus Canal*

Environmental Protection Commissioner Carter Strickland today unveiled four bioswales on Dean Street in the Boerum Hill section of Brooklyn that will help reduce and manage stormwater in the area. The bioswales are part of the NYC Green Infrastructure Plan, which proposes a total investment of \$2.4 billion over the next 20 years in green infrastructure to improve harbor water quality by capturing and retaining stormwater runoff before it enters the sewer system. The city has also developed a maintenance protocol for upkeep of the bioswales. Under an agreement between DEP, the Parks Department and the Department of Transportation, Greenstreets crews will maintain green infrastructure built in streets and sidewalks, with DEP funding. Bioswales are designed to detain stormwater that otherwise would enter the combined sewer system when it rains. This will result in improving water quality by reducing the likelihood and intensity of combined sewer overflows. New York City, like other older urban centers, is largely serviced by a combined sewer system where stormwater and wastewater are carried through a single pipe. During heavy storms, the system can exceed its capacity and is designed to discharge a mix of stormwater and wastewater — called a combined sewer overflow, or CSO — into New York Harbor. This project will reduce combined sewer overflows to Gowanus Canal by keeping more than 7,200 gallons of stormwater out of the sewer system each time it rains.

“These four new bioswales are a perfect example of how green infrastructure projects not only help retain stormwater, but they also can beautify our streets and sidewalks,” said Commissioner Strickland. “Streets, medians, and sidewalks comprise a significant percentage of city-managed land, and when rain hits concrete and asphalt it becomes runoff that is funneled directly into the combined sewer system. By constructing bioswales in sidewalks we can absorb this water and introduce sustainable co-benefits like cleaner air and cooler temperatures into the community. The maintenance protocol for upkeep of the bioswales will ensure they remain in top working condition. I would like to thank the Parks Department, Transportation Department and the Department of Design and Construction for partnering with DEP on this and other green infrastructure projects to make a greener, greater New York.”

“Creating simple and effective infrastructure improvement projects like bioswales are the next generation tools we need in building green infrastructure projects citywide,” said Department of Design and Construction Commissioner David J. Burney, FAIA. “These four bioswales in Boerum Hill will significantly reduce the amount of combined sewer overflow released into the Gowanus Canal after every storm and points us in the right direction to meet our goals citywide by 2030.”

“This is an important partnership and a major step citywide for making our neighborhoods and infrastructure greener, sustainable, and increasingly efficient and effective,” said NYC Parks Commissioner Adrian Benepe. “We look forward to working with our friends at DEP to pursue this new and unprecedented infrastructural transformation of New York City.”

“Bioswales are just the latest innovation to make our streets more inviting and sustainable while also keeping them as safe as they can be,” said DOT Commissioner Janette Sadik-Khan. “These designs are included in the Street Design Manual, giving agencies a playbook to create streets that work not just for pedestrians, cars, buses and bikes, but also for the vast utility network that all New Yorkers rely on.”

Bioswales are vegetated tree pits that give the stormwater runoff time to seep into the ground, thereby decreasing the chance of sewer overflow running into surrounding bodies of water. Bioswales can also alleviate puddles and ponding during some storms. Bioswales differ from standard tree pits in that they include curb cuts to allow stormwater to enter, use a permeable soil with a significant portion of sand to facilitate infiltration, and include an underlayer of gravel to increase storage capacity. The use of hardy, native plants reduces maintenance, increases infiltration through root growth, and increases the capacity of the bioswale through uptake of water through evapotranspiration.

The four Dean Street bioswales—two on the north side, two on the south—are located near the street’s intersection with 4<sup>th</sup> Avenue. The bioswales are 20 feet by 5 feet with a 5 to 10-foot pit. Each one is designed to handle 1,870 gallons of stormwater per storm. There are 10 other bioswales in Brooklyn under construction, the first of many to be built by DDC with DEP’s guidance and funding

The NYC Green Infrastructure Plan proposed a total investment of \$2.4 billion over the next 20 years in green infrastructure to improve harbor water quality by capturing and retaining stormwater runoff before it enters the sewer system. Of the \$2.4 billion, \$900 million is expected to be funded through regulations on new developments. DEP has dedicated \$735 million in its most recent 10-year capital plan to building green infrastructure. Most green infrastructure includes vegetated features such as bioswales and green roofs, or structural aspects such as porous pavement, both of which can absorb and retain stormwater.

DEP manages the 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 7,400 miles of sewer lines and 95 pump stations take wastewater to 14 in-city treatment plants. DEP employs nearly 6,000 employees, including almost 1,000 in the upstate watershed. DEP has a robust capital program, with a planned \$13.2 billion in investments over the next 10 years. For more information, visit us on Facebook at [www.facebook.com/nycwater](http://www.facebook.com/nycwater), or follow us on Twitter at [www.twitter.com/nycwater](http://www.twitter.com/nycwater).

**Contact:** Farrell Sklerov / Michael Saucier (718) 595-6600