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DEP Breaks Ground on Green Infrastructure Project Along North and South Conduit Avenues in Queens

Pilot Project Will Reduce Combined Sewer Overflows and Improve Harbor Water Quality in Jamaica Bay

Environmental Protection Commissioner Cas Holloway today announced the groundbreaking of a $730,000 green infrastructure project to capture and treat stormwater runoff along North and South Conduit Avenue in Queens. The project will create a stormwater bioretention and treatment zone within an existing grass-covered roadway median to help improve harbor water quality in Jamaica Bay. The 13,000-square-foot bioretention zone is a below-ground water-retention system made of vegetation, sand and soil, which can absorb rainwater before it enters the sewer system, where it could trigger a combined sewer overflow. 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 often reaches capacity and must discharge a mix of stormwater and wastewater — called a combined sewer overflow, or CSO — into New York Harbor. The green infrastructure project started today will have the capacity to divert at least 200,000 gallons of stormwater from a nine-acre drainage area that would otherwise flow into the combined sewer system—roughly 90% of the stormwater that accumulates within the drainage area during a moderate storm. The project will also improve runoff water quality because it uses engineered soil and vegetation that helps to remove pollutants.

"DEP is moving forward aggressively with cutting-edge green infrastructure projects that capture and treat stormwater runoff at the source — which reduces combined sewer overflows and improves water quality," said Commissioner Holloway. "Traditional 'grey' infrastructure investments, like tanks and tunnels, still provide benefits, but green infrastructure must be part of any successful citywide CSO strategy. This September, Mayor Bloomberg announced the NYC Green Infrastructure Plan, which will reduce combined sewer overflows by 40%, and save $2.4 billion of public investment that an all-grey infrastructure

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approach would require. Not only will the plan improve harbor water quality, which is already at its best in the last 100 years, but it will also beautify our communities, save energy, and improve our quality of life."

"I'm grateful for the City's investment in my community," said Councilman Eric Ulrich. "This project will have a positive impact on our local environment, especially for Jamaica Bay. I applaud the DEP's commitment to upgrading the City's water management system. This pilot program is an exciting step in the right direction."

The stormwater capture project will cover a nine-acre area bounded by Sutter Avenue, North Conduit, 80th Street and South Conduit. It will maximize stormwater retention without causing ponding in the retention zone. First, 900 cubic yards of material will be excavated to create a shallow basin. Then, the basin will be filled in with three layers. The bottom two layers will contain a mix of engineered sand and stone that provide temporary storage space for stormwater before the water is naturally absorbed by the ground instead of entering the sewer system. These layers also naturally filter the stormwater of pollutants as it passes through. The sand and stone layers will then be covered with a top layer that consists of natural vegetation, including grass, trees and shrubbery. To ensure that water flows into the new green infrastructure, a series of street drainage modifications, including a combination of curb cuts and new and modified catch basins, were installed that divert runoff into the swales without disrupting the existing infrastructure or negatively impacting the sewer system capacity. During heavy storms, when the retention zone's capacity to absorb water has been reached, excess water will enter the local sewer system. Once in operation, DEP will evaluate the results of this pilot for application to future similar projects around the city.

In September, Mayor Bloomberg unveiled the NYC Green Infrastructure Plan, which will improve harbor water quality by capturing and retaining stormwater runoff before it enters the sewer system. The plan, which includes $2.4 billion in green infrastructure, will reduce sewer overflows by 40% by 2030. This approach will also save $2.4 billion over the next 20 years because it will reduce more costly investments in traditional sewage retention projects, like tanks and tunnels. Green infrastructure uses vegetation, soils, and other structural elements to absorb and evaporate water and to mimic natural areas and hydrologic cycles. These types of projects are a key component of PlaNYC's sustainability effort because they also shade and cool the city, improve air quality, and increase property values. These characteristics, the minimal energy and manpower required for operation, and the relatively quick installation mean that green infrastructure can be cost-effective and provide immediate benefits. The Green Infrastructure Plan has been submitted for approval to the State Department of Environmental Conservation in order for the plan to move forward.

The City has more than 30 demonstration projects to test the performance and costs of green infrastructure over time and to determine how to best encourage their widespread adoption. The demonstrations include tree pits, which allow water to pool in underground holding areas until it can dissipate; blue roofs, which slow roof water from draining too quickly and overwhelming storm sewers; and permeable pavement, which allows water to seep through it and be absorbed into the ground rather than becoming runoff.

DEP manages the city's water supply, providing more than 1 billion gallons of water each day to more than 9 million residents, including 8 million in New York City. New York City's water is delivered from a watershed that extends more than 125 miles from the city, and comprises 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 take wastewater to 14 in-city treatment plants. For more information, visit www.nyc.gov/dep or follow us on Facebook at www.facebook.com/nycwater.

Related Documents and Links

- NYC Green Infrastructure Plan
- Green Infrastructure Pilot Projects in New York City

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