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Department of Environmental Protection Reactivates Gowanus Canal Flushing Tunnel After Four-Year \$177 Million

Upgrade

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1.2 Mile Long Flushing Tunnel Pumps Millions of Gallons of Highly Oxygenated Water from New York Harbor to Head of the Canal

Project is a Key Component of Plan to Improve the Health and Cleanliness of the Gowanus Canal

Photos of the Work Can be Viewed on DEP's Flickr Page

The New York City Department of Environmental Protection (DEP) today announced that the Gowanus Canal Flushing Tunnel has been reactivated after a full rehabilitation and upgrade that began in 2010. The activation of three submersible turbine pumps is bringing up to 252 million gallons of oxygen-rich water to the head of the Canal each day, or roughly 30 percent more than was possible before the upgrade. The rehabilitation work also included draining the 1.2 mile long, 12 foot diameter tunnel and inspecting and repairing its brick-lined interior. The infusion of fresher water provided through the Flushing Tunnel has already increased the dissolved oxygen content of the water in the Canal which will dramatically improve its aesthetics and provide a more suitable habitat for plant and aquatic life. In addition to the Flushing Tunnel, DEP is completing a rehabilitation and upgrade of a wastewater pumping station at the head of the Canal that will reduce sewer overflows during heavy rain storms. In June, DEP will reactivate the pump station which will allow it to send up to 30 million gallons of wastewater to the Red Hook Wastewater Treatment plant each day, a 50 percent upgrade over its previous capacity. DEP will continue site and building improvements over the summer, including the removal of the temporary

DEP Reactivates Gowanus Canal Flushing Tunnel After Four-Year \$177 Million Upgrade

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oxygenation system, with work on the \$177 million projects expected to be completed this fall.

"The \$177 million upgrade of the Flushing Tunnel is a significant milestone in the City's efforts to improve the health and cleanliness of the Gowanus Canal," said **DEP Commissioner Emily Lloyd**. "Over the summer we will also complete an upgrade to an important wastewater pump station and begin the installation of hundreds of curbside gardens in the surrounding neighborhoods, all of which will help to improve water quality in the Canal."

After Hurricane Sandy, construction plans for the Flushing Tunnel, wastewater pump station and the support buildings were altered to include resiliency measures such as raising the control room floor and its critical electrical equipment, flood-proofing the service building and installing a dike wall and mechanical flood gate. As part of the upgrade, the Flushing Tunnel will now operate around the clock, including at low-tide, when the Canal water is at its most stagnant. The system of three pumps also provides redundancy that will ensure that the tunnel remains operational during future maintenance and repairs.

The first turbine pump was activated in December 2013, and the second and third pumps were brought on-line during the spring. DEP worked in conjunction with the NYS Department of Environmental Conservation (DEC) and US Environmental Protection Agency to draw up plans that slowly raised the volume of water pumped into the Canal and installed silt curtains at the head of the Canal to mitigate any increase in turbidity during startup. Water sampling and visual monitoring are also taking place. The rehabilitation is proceeding pursuant to the federal Clean Water Act and a Consent Order entered into by DEP and DEC that aims to improve water quality throughout New York Harbor.

In addition to the Flushing Tunnel, DEP is completing a rehabilitation and upgrade of a wastewater pumping station at the head of the Canal. In June, DEP will reactivate the pump station which will allow it to send up to 30 million gallons of wastewater to the Red Hook Wastewater Treatment plant each day, a 50 percent upgrade over its previous capacity. DEP has also installed a new force main that will relocate discharges away from the Canal and, later this summer, a litter control device will be installed at a large outfall at the head of the Canal to prevent any litter in the combined sewer system from being discharged into the water during heavy rain storms.

The Gowanus Canal is a nearly two mile long man made waterway that was built in the 1860's to facilitate commerce in western Brooklyn. The Canal runs from New York Harbor northeast through the Red Hook, Carroll Gardens, and Park Slope neighborhoods where it dead ends at Butler Street. Over time, commerce in the area grew but the Canal and its environs were left with a legacy of industrial contamination. In addition, with limited natural movement of water, the Canal became a stagnant and polluted waterway.

In 1911, the Gowanus Canal Flushing Tunnel was built to pump polluted water from the head of the Canal to Buttermilk Channel, which is part of the East River and lies between Governors Island and the Red Hook neighborhood of Brooklyn. After decades of use and upgrades, the tunnel was taken out of service in the 1960's and the Canal remained stagnant for the next 30 years. DEP began a rehabilitation of the Flushing Tunnel in 1994 and this work included reversing the flow, so that more oxygenated water was now pumped from Buttermilk Channel to the head of the Canal and the lower quality water was flushed out. The tunnel was re-activated in 1999 and with clearer, more oxygenated water, within months schools of fish and blue crabs had returned to the Canal.

As part of the overall effort to improve the health and cleanliness of the Gowanus Canal, DEP will install separate storm sewer pipes, or high-level storm sewers, along 3rd Avenue in Park Slope. Once completed, this project will keep millions of gallons of stormwater out of the combined sewer system, help to mitigate chronic flooding during heavy rain storms and reduce sewer overflows into the Canal.

In addition, as part of the \$1.5 billion Green Infrastructure Plan, beginning this summer DEP will build hundreds of specially engineered curbside gardens, or bioswales, in sidewalks throughout the neighborhoods surrounding the Canal. Each bioswale can absorb approximately 2,500 gallons of stormwater when it rains which eases pressure on the combined sewer system and helps to reduce overflows into the Canal. Bioswales also have hardy plants and trees to help absorb the stormwater, which also beautify the neighborhood, provide shade during the warmer months, and help clean the air.

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. 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. This capital program is responsible for critical projects like City Water Tunnel No. 3; the Staten Island Bluebelt program, an ecologically sound and cost-effective stormwater management system; the city's Watershed Protection Program, which protects sensitive lands upstate near the city's reservoirs in order to maintain their high water quality; and the installation of more than 820,000 Automated Meter Reading devices, which will allow customers to track their daily water use, more easily manage their accounts and be alerted to potential leaks on their properties. For more information, visit nyc.gov/dep, like us on Facebook at facebook.com/nycwater, or follow us on Twitter at twitter.com/nycwater.

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