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**DEPARTMENT OF ENVIRONMENTAL PROTECTION RELEASES
RESILIENCY PLAN FOR NEW YORK CITY WASTEWATER
FACILITIES**

Hurricane Sandy's Storm Surge Caused \$100 Million in Damage to Wastewater Facilities

*Asset-by-asset Analysis of Wastewater Collection and Treatment Infrastructure Finds Equipment
Valued at More Than \$1 Billion At-Risk From Rising Sea Levels and Storm Surge Events*

*\$315 million in Upgrades Recommended to Protect Equipment and Minimize Disruption in
Critical Services in the Event of Future Storms*

*Resiliency Measures Already Incorporated Into Ongoing Upgrades at Manhattan and Gowanus
Pump Stations*

New York City Department of Environmental Protection (DEP) Commissioner Carter Strickland today released the NYC Wastewater Resiliency Plan, the nation's most detailed and comprehensive assessment of the risk climate change poses to a wastewater collection and treatment system. The groundbreaking study, initiated in 2011 and expanded after Hurricane Sandy, was based on an asset-by-asset analysis of the risks from storm surge under new flood maps at all 14 treatment plants and 58 pumping stations, representing more than \$1 billion in infrastructure. If no action is taken, it is estimated that damage to the equipment from repeated coastal flooding at projected sea levels could exceed \$2 billion over the next 50 years. The analysis recommends \$315 million in cost-effective upgrades at these facilities to protect valuable equipment and minimize disruptions to critical services during future storms. The [NYC Wastewater Resiliency Plan](#) puts into action initiatives laid out in Mayor Bloomberg's [A Stronger, More Resilient New York](#).

"New York City's waterways are one of our greatest assets and we have invested well over \$10 billion during the last decade to make our harbor cleaner than it has been in a century," said DEP Commissioner Carter Strickland. "We are committed to ensuring that our wastewater infrastructure is resilient and can stand up to the rising sea levels and extreme weather events associated with climate change in order to limit future disruptions to the system."

"DEP is a critical partner in the effort to build a stronger, more resilient New York," said Daniel Zarrilli, Director of Resiliency for the City of New York. "The Wastewater Resiliency Plan builds upon PlaNYC and the City's efforts to mitigate and adapt to a changing climate and is critical to protecting a vital part of the City's infrastructure."

“Safeguarding our vital wastewater treatment infrastructure and continuing to improve our water quality are twin goals advanced by DEP’s resiliency plan,” said Roland Lewis, President & CEO of the Metropolitan Waterfront Alliance. “This is a wise and farsighted investment in a resilient and revitalized waterfront.”

“The NY Water Environment Association commends DEP for being a leader in the field and creating this wastewater resiliency plan that can be used as a model by other municipalities to help protect public health and the environment from the effect of sea level rise and climate change,” said Patricia Cerro-Reehil, Executive Director of the NY Water Environment Association.

“New York City has demonstrated exceptional leadership in gathering community leaders to move forward on adapting and enhancing resilience to the substantial risks posed by climate change,” said Daniel Kreeger, Executive Director of the Association of Climate Change Officers. “The latest product of these efforts, the NYC Wastewater Resiliency Plan, is a model for local, state, and federal government officials nationwide.”

DEP operates 7,500 miles of sewers, 96 pumping stations, and 14 wastewater treatment plants that employ advanced biological and chemical processes to treat more than 1.3 billion gallons of wastewater to federal Clean Water Act standards every day. Hurricane Sandy’s storm surge inundated many of the facilities with sea water that damaged pumps and electrical equipment. DEP staff worked around the clock, in often dangerous conditions, to maintain or restore service and, just four days after the storm, 99 percent of all New York City wastewater was being treated. DEP also enacted a number of emergency preparedness and response plans prior to the storm to protect its facilities. Those measures prevented much higher costs and significantly longer service disruptions.

In total, 10 of the City’s 14 treatment plants, and 42 of the City’s 96 pumping stations, were damaged during Sandy and nearly \$50 million has been already been spent on repairs. When completed, DEP estimates that the immediate damages from Sandy will top \$100 million. All of the repair costs are expected to be reimbursed through federal government response funds, with no impact to New York City ratepayers. However, flooding risk is likely to increase as climate change results in rising sea levels and more intense storms.

The New York City Wastewater Resiliency Plan presents an assessment of the facilities identified as at-risk for flooding, potential costs of future damages, and suggested protective measures, such as elevating and water proofing critical equipment to reduce the risk of damage and loss of services. The study, the first to assess coastal flooding risks based on fine resolution maps and a detailed analysis of the elevation of individual components of the wastewater system, will serve as a national model. In addition, the NYC Wastewater Resiliency Plan will provide the basis for requests to the federal government to fund resiliency measures.

The Federal Emergency Management Agency’s new advisory base flood elevation maps for a 100 year flood event were selected as the baseline for the analysis. An additional 30 inches of flooding was added to this baseline to account for expected sea level rise by the 2050s, the high end of projections from the New York City Panel on Climate Change. Flood pathways at each DEP facility and the location of critical equipment were then compared to the anticipated flood elevation level to determine which infrastructure is potentially at risk. In determining the

appropriate resiliency measures and the level of acceptable costs, DEP considered the value of each asset at wastewater treatment plants and pump stations, the population and critical facilities they serve, and potential impacts on nearby beaches and waterways. Cost-effective protective measures, such as elevating equipment, water proofing buildings, and replacing traditional pumps with submersible pumps, were then selected based upon cost and level of risk reduction. The result is a portfolio of strategies that will be implemented as part of future capital projects or as other funding mechanisms are identified. DEP will coordinate this work with the broader coastal protection initiatives, such as engineered barriers and wetlands, described in A Stronger, More Resilient New York.

At two facilities already in the midst of upgrades, the Manhattan and Gowanus Pump Stations, DEP has already incorporated a number of resiliency measures into ongoing work. At a cost of more than \$700,000, DEP is installing a mechanical flood gate at the Gowanus Pump Station building, raising the control room floor and its critical electrical equipment, constructing a dike wall, and adding a waterproof membrane to the building's exterior.

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 a planned \$14 billion in investments 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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