

ANDREW M. CUOMO  
GOVERNOR



JOE MARTENS  
COMMISSIONER

STATE OF NEW YORK  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
ALBANY, NEW YORK 12233-1010

**MAY 06 2014**

Honorable W. Craig Fugate  
Administrator  
Federal Emergency Management Agency  
U.S. Department of Homeland Security  
500 C Street SW  
Washington, DC 20472

Dear Administrator Fugate:

As you know, FEMA and New York State recently concluded an agreement to fund the repair of major portions of the Bay Park waste water treatment plant and associated sewage collection systems. This agreement also directed the implementation of engineered resiliency projects to protect the Bay Park sewage collection and treatment systems against a 500-year level storm. Thank you for your extraordinary leadership on the initial phases of the Bay Park reconstruction and resiliency project.

I write to seek your assistance on the next phases of work at the Bay Park facility. Specifically, New York is requesting that FEMA Public Assistance funds be allotted for the construction of a large outfall pipe so that the effluent from the Bay Park plant will be discharged well out into the Atlantic Ocean. Currently, treatment plant effluent is discharged into a water body that is inland of a barrier island. New York further requests that FEMA Public Assistance funds be provided to implement a mid-stage level of nitrogen treatment (an 8 mg/L treatment level) at the Bay Park plant. Nassau County's initial engineering cost estimate for the ocean outfall is approximately \$690 million, while the cost of nitrogen treatment at the proposed level is an additional \$130 million.

The basis for New York's request for FEMA Public Assistance funding is two-fold. First, the ocean outfall and associated nitrogen treatment constitutes a "standard and code" legally applicable to this facility at the time that it was inundated and badly damaged by Superstorm Sandy. Second, the "back-bay" coastal water of southern Nassau County (a water body to the north of the barrier island) is characterized by extensive networks of marshlands that serve as a natural defense against coastal storm surge. Peer-reviewed scientific studies show that excess nitrogen discharges damage and degrade coastal marshlands. Loss of marshlands results in significant increases in erosion and shoreline damage during even moderate storm events, placing the densely populated communities of Southern Nassau County at greater risk.

As with the first phases of the Bay Park project, there is an opportunity to further employ FEMA's innovative "Alternative Procedures" program in this phase. This is so because in the vicinity of the Bay Park plant there are two other wastewater treatment plants that were badly damaged by Superstorm Sandy. New York would like to explore the consolidation of these two facilities into Bay Park. This approach would be an alternative to the far more costly "stand-alone" repair and resiliency upgrades of these plants. The resulting savings of FEMA Public Assistance funds associated could then help fund the ocean outfall.

#### Standard and Code for Nitrogen Discharge Reductions Applicable to the Bay Park Plant

The Bay Park plant discharges to the "Reynolds Channel" area whose waters directly connect to, intermingle with, and are adjacent to Hempstead Bay (Hempstead Bay is a large part of a general water way area also known as the "Western Bays"). Tides, prevailing winds and currents push much of the nitrogen loadings from the Bay Park plant into the shallow back waters and marshlands of Hempstead Bay, elevating the nitrogen levels and causing the algal growths (especially *Ulva* or sea lettuce) that cover surface waters and wash up on the shore in mats that then decay and cause foul odors. The nitrogen loadings also contribute to lower dissolved oxygen in the Bay.

In 2006, DEC first adopted the Clean Water Act Section 303(d) listing of Hempstead Bay as "impaired" due to excessive nitrogen. Thus, DEC, with EPA's oversight and approval, has formally identified the water quality in Hempstead Bay as violating State water quality standards for nitrogen. The violation of State standards further places these waters in non-attainment with federal Clean Water Act requirements. DEC's determination was premised upon the elevated loadings of nutrient nitrogen discharged from wastewater treatment plants and affecting Hempstead Bay, coupled with the determination that these pollutant loadings result in the violation of the applicable water quality standard for nitrogen ("none in amounts that result in growths of algae, weeds that impair waters for their best uses").

Based on this determination, any significant alterations to existing sewage treatment facilities or construction of new sewage treatment facilities are required to meet the standards established under the Clean Water Act and New York law. The significant repairs being undertaken at the Bay Park plant trigger a mandatory requirement for reductions in nitrogen discharges. These are required to bring Hempstead Bay into compliance with State and federal water quality standards found to be violated after the plant was constructed but prior to Superstorm Sandy. While the specific reductions were to be identified in a multi-year Clean Water Act "Total Maximum Daily Load" (TMDL) pollution budget process for the Western Bays complex, including Hempstead Bay, the large size of the Bay Park plant (70 MGD permit limit, 50 MGD average actual flow) and the estimate that the Bay Park facility (along with two smaller plants) contribute over 80 percent of the nitrogen pollution to the Western Bays/Hempstead Bay waters, obviates the need to conduct this lengthy TMDL study. The source of nitrogen pollutant loadings from the Bay Park facility is scientifically apparent and addressing the issues during the extensive repairs is legally required.

DEC sent a letter (enclosed) and held discussions to alert the owners of the subject waste water treatment plants of the high likelihood that very expensive "limit of technology" nitrogen treatment (or the ocean outfall alternative) will be necessary. Nassau County and DEC engineering estimates indicate that the cost of limit of technology treatment is equivalent to that of an ocean outfall coupled with moderate nitrogen treatment, with the proposed ocean outfall project being a superior solution.

DEC is responsible for implementation of the Clean Water Act and takes action in the stead of the federal government (as an EPA authorized program) in determining what technological solutions will be required in wastewater treatment plant repair and construction. In DEC's opinion, stringent nitrogen treatment at the Bay Park plant (or an ocean outfall with a moderate level of nitrogen treatment) is legally required to ensure the Bay Park facility meets current water quality standards. This is an existing standard and code under both New York law and the Clean Water Act programs. Under FEMA's Public Assistance program, upgrades of damaged facilities required for regulatory agency permitting approval and code compliance are eligible for reimbursement.

#### Adverse Impact of Excess Nitrogen on Resilient Coastal Marshlands

Another important factor to consider when evaluating nitrogen discharges is the effect of nitrogen on salt marsh loss, and with it, the loss of the significant natural resiliency provided by healthy marshlands. DEC has recently published a technical summary of the peer-reviewed literature and New York specific data that supports this conclusion. This paper is enclosed for your consideration. Governor Cuomo's recent NYS 2100 Commission expert report summarized this point when it concluded that, "tidal wetlands can protect coastal communities from storm damage by reducing wave energy and amplitude, slowing water velocity, and stabilizing the shoreline through sediment deposition."

Excess nitrogen demonstrably contributes to reduced coastal resiliency by harming, even destroying, marshlands in areas along the south shore of Long Island. The Hempstead Bay/Western Bays area that is impacted by current discharges from the Bay Park plant is characterized by extensive marshlands – natural infrastructure, if you will – that is being destroyed by the noxious action of nitrogen pollution. Reduction of nitrogen will serve as an effective mitigation measure, with the unique benefit of increasing in effectiveness over time, as damaged marshlands are naturally restored.

#### Wastewater Treatment Plant Consolidation and FEMA's Alternate Procedures Program

In addition to the Bay Park plant, there are two waste water treatment plants located on the coastal barrier island along Nassau County's South Shore. The Long Beach and Atlantic Beach plants were also inundated and badly damaged by Superstorm Sandy. As with the Bay Park plant, the initial intent was to seek FEMA Public Assistance funds to rebuild these two facilities and implement the costly engineering practices necessary to protect these facilities against the

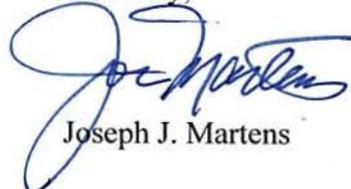
500-year storm. Because these two facilities also discharge to the Hempstead Bay/Western Bays area, they will also be required to treat effluent to remove nitrogen to the very expensive "limit of technology" level, adding significant FEMA regulatory compliance reimbursable costs to these projects if they are pursued as independent projects.

A reasonable and cost-effective option that should be evaluated is the removal of these facilities from their highly exposed barrier island locations by converting them into simple sewage pumping stations. All of the associated sewage would then be piped to the Bay Park facility for treatment. Under this proposed program, the treated effluent from these two barrier island collection systems would ultimately be discharged through the Bay Park ocean outfall. While the exact cost estimate is not yet available, it is clear that consolidation of these two facilities into the Bay Park plant is a far more cost-effective and resilient approach than undertaking stand-alone repairs. This approach would also be much better for marshlands, water quality and habitat.

I ask that you consider the potential under the FEMA Public Assistance program (Section 428) for treating the consolidation of these three facilities as a single sewage treatment system. This consolidation approach will allow for redirecting the savings to support the costs of the required Bay Park ocean outfall and moderate nitrogen treatment systems. While achieving a significant overall savings for sewage plant restoration, this option will increase desired resiliency, as pump stations are much easier to protect than entire sewage treatment plants. Moreover, this approach, by further reducing nitrogen loadings, will further protect and enhance resilient marshlands.

Thank you for your time and consideration of this request. Given its importance, I felt it useful to provide a more detailed presentation of our thoughts. My offices will be contacting your staff soon to seek an appointment to meet on this important matter.

Sincerely,



Joseph J. Martens

Enclosures

c: Governor Cuomo  
Honorable Charles Schumer  
Honorable Kirsten Gillibrand  
Long Island Congressional Delegation  
Honorable Shaun Donovan  
Honorable Gina McCarthy  
Honorable Jo-Ellen Darcy