

**Bergen Point Wastewater Treatment Plant Outfall Replacement Project
Environmental Assessment**



New York Governor's Office of Storm Recovery
December 3, 2015

Bergen Point Wastewater Treatment Plant Outfall Replacement Project Environmental Assessment

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Project Name: Bergen Point Wastewater Treatment Plant Outfall Replacement Project

Project Location: S.C.S.D. No. 3 – Bergen Point Wastewater Treatment Plant
600 Bergen Avenue, West Babylon, Suffolk County, NY 11707

Federal Agency: US Department of Housing and Urban Development
Responsible Entity: New York State Homes and Community Renewal

**Responsible Agency's
Certifying Officer:** Thomas J. King, Assistant General Counsel and Certifying Officer

Project Sponsor: Suffolk County Department of Public Works
Primary Contact: Gilbert Anderson, P.E.
Commissioner, Suffolk County Department of Public Works
335 Yaphank Avenue
Yaphank, NY 11980
(631)852-4010

Project NEPA Classification: 24 CFR 58.36 (Environmental Assessment)

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|-------------------------------|---|
| Environmental Finding: | <input checked="" type="checkbox"/> Finding of No Significant Impact - The project will not result in a significant impact on the quality of the human environment. |
| | <input type="checkbox"/> Finding of Significant Impact - The project may significantly affect the quality of the human environment. |
| | The undersigned hereby certifies that New York State Homes and Community Renewal has conducted an environmental review of the project identified above and prepared the attached environmental review record in compliance with all applicable provisions of the National Environmental Policy Act of 1969, as amended (42 USC Sec. 4321 et seq.) and its implementing regulations at 24 CFR Part 58. |
| |  Thomas J. King |

**Environmental Assessment
Prepared By:**

AKRF, Inc.
440 Park Avenue South, 7th Floor
New York, NY 10016

CERTIFICATION OF NEPA CLASSIFICATION

It is the finding of the New York State Housing Trust Fund Corporation that the activities proposed in its 2015 NYS CDBG-DR project, Bergen Point Wastewater Treatment Plant Outfall Replacement are:

Check the applicable classification.

- Exempt as defined in 24 CFR 58.34 (a).
- Categorically Excluded as defined in 24 CFR 58.35(b).
- Categorically Excluded as defined in 24 CFR 58.35(a) and no activities are affected by federal environmental statues and executive orders [i.e., exempt under 58.34(a)(12)].
- Categorically Excluded as defined in 24 CFR 58.35(a) and some activities are affected by federal environmental statues and executive orders.
- "Other" neither exempt (24 CFR 58.34(a)) nor categorically excluded (24 CFR 58.35).
- Part or all of the project is located in an area identified as a floodplain or wetland. For projects located in a floodplain or wetland, evidence of compliance with Executive Orders 11988 and/or 11990 is required.

For activities excluding those classified as "Other", attached is the appropriate Classification Checklist (Exhibit 2-4) that identifies each activity and the corresponding citation.



Signature of Certifying Officer

December 3, 2015

Date

Thomas J. King
Print Name

Assistant General Counsel and Certifying Officer
Title

CERTIFICATION OF SEQRA CLASSIFICATION

It is the finding of the New York State Housing Trust Fund Corporation that the activities proposed in its 2015 NYS CDBG-DR project, Bergen Point Wastewater Treatment Plant Outfall Replacement constitute a:

Check the applicable classification:

- Type I Action (6NYCRR Section 617.4)
- Type II Action (6NYCRR Section 617.5)
- Unlisted Action (not Type I or Type II Action)

Check if applicable:

- Environmental Impact Statement (EIS) Prepared
 - Draft EIS
 - Final EIS



Signature of Certifying Officer

December 3, 2015

Date

Thomas J. King

Print Name

Assistant General Counsel and Certifying Officer

Title

Description of the Proposed Project [24 CFR 50.12 & 58.32; 40 CFR 1508.25]:

The Bergen Point Wastewater Treatment Plant (WWTP), owned and operated by Suffolk County Department of Public Works, discharges treated effluent through an ocean outfall that passes beneath the Great South Bay and underneath Jones Beach Island to the Atlantic Ocean (See Figure 1). The 14,200-foot long segment of the outfall that extends from the WWTP to the Jones Beach Island, passing underneath Great South Bay, has been determined to be in a failing condition and needs to be replaced. The selected replacement alternative proposes to replace the failing outfall segment with a 10-foot diameter, 14,200-foot long tunnel constructed by means of a tunnel boring machine (TBM). Construction of the tunnel via TBM, as opposed to dredging and trenching, is the preferred alternative to be employed in the construction of the replacement outfall, as it was the alternative with the least impact to the Great South Bay and surrounding environment. The newly constructed outfall segment under the Great South Bay would be connected to the existing outfall segment that extends from Jones Beach Island south into the Atlantic Ocean. This connection would be made just north of Ocean Parkway. A bypass system with line stops would be installed to ensure that operation of the existing outfall would not be interrupted during the construction process.

Above ground construction includes an entry shaft at the Bergen Point WWTP site, and an exit shaft on Jones Beach Island within the existing easement north of Ocean Parkway. The TBM entry and exit shafts would be constructed by using either ground freezing techniques or through the installation of secant piles, and would extend to a depth of approximately 80 to 100 feet below the existing ground surface. An estimated 90,000 cubic yards of muck is anticipated to be removed during the construction of the proposed project, including both tunnel excavation and shaft construction. It is estimated that the daily muck hauling truck trips to remove this material offsite should be 8 to 10 truck trips, with an additional 5 to 7 truck trips for material delivery. It is estimated that tunneling will be ongoing for 18 months, with operations running 6 days per week. The new section of the outfall would connect to the existing ocean portion of the outfall on Jones Beach Island. Treated effluent would then continue to discharge through the outfall to the Atlantic Ocean as has been the case for over 30 years. No carrier pipes would be installed within the tunnel; the lined tunnel itself would be the replacement outfall.

The construction staging area on Jones Beach Island would be approximately 2 to 2.5 acres and the staging area at the WWTP would be approximately 2.5 to 3 acres. These areas would be restored to pre-construction conditions upon project completion. All disturbed area on the Jones Beach Island would be revegetated and restored. The footprint of these areas of disturbance and the path of the proposed outfall tunnel are shown in Figure 1 and Figure 2. Most of the construction would take place well below Great South Bay via the TBM to minimize impacts to the environment.

Statement of Purpose and Need for the Proposal [40 CFR 1508.9(b)]:

The Bergen Point WWTP treats up to 30.5 million gallons per day (MGD) of wastewater and discharges treated effluent to the Atlantic Ocean through an outfall passing under Great South Bay and the Jones Beach Island. The existing SPDES permit is attached as Appendix A. A portion of the existing outfall, constructed in 1977, is in a failing condition and is at particular risk during times of high discharge flow. Increased discharge flow increases the operating pressure of the pipeline, which increases the risk of pipe failure and subsequent discharge to the Great South Bay environment.

During normal flow and tidal conditions, there are moderate internal pressures within the outfall pipe. During storm conditions, when the plant must discharge at a rate of 90 MGD or more, these internal pressures increase dramatically, thereby significantly increasing the risk of failure. During Superstorm Sandy, plant flows exceeded 110 MGD, with an associated spike in internal outfall pressure, putting the

outfall pipe and the surrounding environment at even greater risk. Superstorm Sandy flow rates are included in Appendix A. Furthermore, Bergen WWTP is the largest wastewater treatment facility in Suffolk County, providing treatment and discharge of wastewater for nearly all of the Town of Babylon. Failure of the outfall pipe would not only have adverse effects on the Great South Bay environment, but would also cause significant disruption to the collection and treatment of wastewater in the Town of Babylon. Improving the resiliency and reliability of the outfall pipe during storm conditions in turn improves the resiliency of the entire sanitary sewer system of the surrounding area.

Existing Conditions and Trends [24 CFR 58.40(a)]:

Engineering studies have determined that the existing segment of prestressed concrete cylinder pipes (PCCP) outfall pipe between the WWTP and the Jones Beach Island is in a failing condition, which is exacerbated by the high internal pressures experienced during high flow events. The Engineering Report Executive Summary is included in Appendix B. Ongoing WWTP upgrades combined with the increasing frequency of extreme weather events result in sustained, higher internal pressures, resulting in the need to replace the failing segment of the outfall expeditiously before it fails. The predicted rise in sea level will also increase operating pressures in the outfall pipe, further exacerbating the need for its immediate decommissioning and replacement. Replacement of the outfall pipe is necessary in order to improve the resiliency of the Bergen Point WWTP.

The attached Figure 1 provides an overall project location plan, Figure 2 provides a project map with the existing outfall location depicted, Figure 3 provides a project map showing Federal Emergency Management Agency (FEMA) Special Flood Hazard Areas, and Figures 4A and 4B provide project location maps with the National Wetland Inventory (NWI) and New York State Department of Environmental Conservation (NYSDEC) wetland areas, respectively.

Funding Information

Estimated Total HUD Funded Amount: up to \$12,000,000.00

Estimated Total Project Cost (HUD and non-HUD funds) [24 CFR 58.32(d)]: \$207,000,000

Compliance with 24 CFR 50.4, 58.5, and 58.6 Laws and Authorities

Record below the compliance or conformance determinations for each statute, executive order, or regulation. Provide credible, traceable, and supportive source documentation for each authority. Where applicable, complete the necessary reviews or consultations and obtain or note applicable permits or approvals. Clearly note citations, dates/names/titles of contacts, and page references. Attach additional documentation as appropriate.

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| Compliance Factors: Statutes, Executive Orders, and Regulations listed at 24 CFR §58.5 and §58.6 | Are formal compliance steps or mitigation required? | Compliance determinations |
| STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 and 58.6 | | |
| Airport Hazards 24 CFR Part 51 Subpart D | Yes No <input type="checkbox"/> <input checked="" type="checkbox"/> | Not applicable. Based on guidance provided by HUD in Fact Sheet #D1, the National Plan of Integrated Airport Systems was reviewed for civilian, commercial service airports within the vicinity of the project site. No known civil airports are located within 2,500 feet and no known military airports are located within 15,000 feet of the project site. Therefore there are no anticipated adverse impacts. |

STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 and 58.6 (cont'd)

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| <p>Coastal Barrier Resources Coastal Barrier Resources Act, as amended by the Coastal Barrier Improvement Act of 1990 [16 USC 3501]</p> | <p>Yes No <input type="checkbox"/> <input checked="" type="checkbox"/></p> | <p>The Jones Beach Island portion of the proposed project (exit access shaft staging area) is located within the Fire Island Unit (NY-59) of the Coastal Barrier Resources System. Section 5 of the Coastal Barrier Resources Act (CBRA; 16 U.S.C. § 3504) prohibits new Federal expenditures or financial assistance within System units of the Coastal Barrier Resources System (CBRS). However, a Federal expenditure is allowable within the CBRS, if it meets one of several exceptions, including: The maintenance, replacement, reconstruction, or repair, but not the expansion, of publicly owned or publicly operated roads, structures, or facilities that are essential links in a larger network or system. (16 U.S.C. § 3505(a)(3). The proposed project falls within this exception. A letter of consultation detailing these findings was submitted to the US Fish and Wildlife Service (USFWS) on April 16, 2015. The response from USFWS, received July 9, 2015, indicates that USFWS concurs with the determination that the proposed project meets the exception for federal expenditures within a CBRS unit and is consistent with the purposes of the CBRA (see Appendix C for correspondence).</p> |
| <p>Flood Insurance Flood Disaster Protection Act of 1973 and National Flood Insurance Reform Act of 1994 [42 USC 4001-4128 and 42 USC 5154a]</p> | <p>Yes No <input type="checkbox"/> <input checked="" type="checkbox"/></p> | <p>Not applicable. Based on review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) (Panels 0861H, 0862H, and 0863H), the proposed project is located within the 100-year flood zone (see Figure 3). However, as the proposed project contains only subsurface access shafts and outfall tunnel, it is exempt from the Flood Insurance requirement. https://msc.fema.gov/portal</p> |

| STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.5 | | |
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| <p>Clean Air Clean Air Act, as amended, particularly section 176(c) & (d); 40 CFR Parts 6, 51, 93</p> | <p>Yes No <input type="checkbox"/> <input checked="" type="checkbox"/></p> | <p>The proposed action would be located in Suffolk County, which is in attainment for CO, NO₂, SO₂, and PM₁₀, is in an attainment maintenance area for PM_{2.5}, in a moderate non-attainment area for ozone, and considered an area source for hazardous air pollutants (HAPs) emissions.</p> <p>A screening analysis was performed (see Appendix D – Draft Construction Analysis) and it was determined that construction activities associated with the proposed project would not result in any significant adverse air quality impacts.</p> <p>To confirm compliance, idling restrictions, emissions controls, tailpipe reductions and concrete batch plant controls will be incorporated into the contract documents and a more detailed conformity analysis will be required to be completed for the bid package using the “General Conformity Worksheet” (See Appendix D- Draft Construction Analysis) http://www.epa.gov/airquality/greenbook/adden.html</p> |
| <p>Coastal Zone Management Coastal Zone Management Act, sections 307(c) & (d)</p> | <p>Yes No <input type="checkbox"/> <input checked="" type="checkbox"/></p> | <p>The proposed project is located within the New York State Coastal Zone. A Coastal Assessment Form has been prepared (see Appendix E) and was submitted to the New York State Department of State (NYS DOS) on July 14, 2015 which determined that the proposed project is consistent with the policies of the Coastal Zone Management Act. As the proposed project would consist almost entirely of underground activities, no impacts to the coastal zone are anticipated. A response was received from NYSDOS on July 15, 2015 indicating concurrence with this determination (see Appendix E for correspondence). The proposed project is not located within a Local Waterfront Revitalization Program boundary.</p> |
| <p>Contamination and Toxic Substances 24 CFR Part 50.3(i) & 58.5(i)(2)</p> | <p>Yes No <input type="checkbox"/> <input checked="" type="checkbox"/></p> | <p>Not applicable. The proposed project location is not on or adjacent to any listed EPA contamination or toxic substances facilities. The Bergen Point WWTP is a RCRA-permitted generator of hazardous waste but there have been no reports of chemical releases or other contamination events at the site.</p> |

STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.5 (cont'd)

Endangered Species
 Endangered Species Act of 1973,
 particularly section 7; 50 CFR
 Part 402

Yes No

The proposed project involves the construction of approximately 14,200 linear feet of 10-foot diameter tunnel beneath Great South Bay and excavation of two access shafts at the Bergen Point WWTP and on the Jones Beach Island.

The USFWS Information, Planning and Conservation (IPaC) online planning tool Trust Resource List generated for the proposed project on April 14, 2015 (see Appendix C) lists the following Federally-listed species as having the potential to occur within the vicinity of the Proposed project: piping plover (*Charadrius melodus*) - threatened, roseate tern (*Sterna gougallii*) - endangered, rufa red knot (*Calidris canutus rufa*) – threatened, northern long-eared bat (*Myotis septentrionalis*) - threatened, sandplain gerardia (*Agalinis acuta*) - endangered, and seabeach amaranth (*Amaranthus pumilus*) - threatened.

An evaluation of proposed project activities relative to species habitats was performed and it was concluded that the proposed project is unlikely to affect piping plover, roseate tern, rufa red knot, northern long-eared bat, sandplain gerardia and seabeach amaranth or the habitats on which these species depend.

A letter of consultation was submitted to the USFWS on April 16, 2015 detailing the proposed project would have no effect on the above-listed species. A detailed discussion of the evaluation performed is provided in the consultation letter. A response was received from USFWS on July 9, 2015 (see Appendix C for correspondence) which indicated USFWS concurrence with the determination of no effect. USFWS requires that they be contacted every 90 days from receipt of the response to confirm that species presence/absence for the project area is current.

It was determined through consultation with USFWS (see Appendix C) that the 2000-2005 New York State Breeding Bird Atlas documented 50 species of birds as confirmed or possibly/probably breeding in the census block in which the proposed staging area at the Jones Beach Island is located (Block 6349A). All but two of the identified bird species (see species list in Appendix C) are migratory birds and are protected under the Migratory Bird Treaty Act (MBTA). Due to the fact that construction activities may take place partially within bird breeding locations, which could be disruptive to breeding populations, USFWS recommended in their July 9, 2015 response that a breeding bird survey be conducted prior to the start of construction, or alternatively that time-of-year restrictions should be applied to construction activities. Accordingly, site clearing activities at the barrier island would be restricted to the period November 1 through February 28, during which time there would be no potential for active nests to be lost or any other direct impacts to these species to occur.

| STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.5 (cont'd) | | |
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| <p>Explosive and Flammable Hazards 24 CFR Part 51 Subpart C</p> | <p>Yes No <input type="checkbox"/> <input checked="" type="checkbox"/></p> | <p>Not applicable. This criterion is applicable to HUD-assisted projects that involve new residential construction, conversion of non-residential buildings to residential use, rehabilitation of residential properties that increase the number of units, or restoration of abandoned properties to habitable condition. The proposed project does not include these activities.</p> |
| <p>Farmlands Protection Farmland Protection Policy Act of 1981, particularly sections 1504(b) and 1541; 7 CFR Part 658</p> | <p>Yes No <input type="checkbox"/> <input checked="" type="checkbox"/></p> | <p>Not applicable. The proposed project is not located within an Agricultural District. It would not cause disturbance to Prime, Unique, or Statewide Important Farmland and would not involve the conversion of farmland to non-agricultural use. Therefore, the proposed project would not violate the Farmland Protection Policy Act. http://www.agriculture.ny.gov/ap/agsservices/agricultural-districts.html</p> |
| <p>Floodplain Management Executive Order 11988, particularly section 2(a); 24 CFR Part 55</p> | <p>Yes No <input type="checkbox"/> <input checked="" type="checkbox"/></p> | <p>Based on a review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), the majority of the project area is located within a Special Flood Hazard Area in the 100-year floodplain or under open water (see Figure 3). Only subsurface outfall tunnel and access shafts will be located within the flood zone and would not adversely affect the floodplain and no impacts on floodplain management are anticipated. A Floodplain Management Plan was developed and is attached (see Appendix F). https://msc.fema.gov/portal</p> |

STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.5 (cont'd)

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| <p>Historic Preservation National Historic Preservation Act of 1966, particularly sections 106 and 110; 36 CFR Part 800; Tribal notification for new ground disturbance.</p> | <p>Yes No <input type="checkbox"/> <input checked="" type="checkbox"/></p> | <p>The access entry shaft location is on the Bergen Point WWTP site and the access exit shaft is located in an easement north of and adjacent to Ocean Parkway on the Jones Beach Island. The proposed project does not involve any landmark structures. A search of the national and state historic databases indicates that the proposed project does not involve any historic structures or sites listed in the National Register of Historic Places or the New York State Register of Historic Places.</p> <p>A consultation letter was submitted to the New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP) on October 28, 2013. A response received from NYSOPRHP on December 6, 2013 confirmed that the proposed project would have No Effect on cultural resources or historic places (see Appendix G for correspondence).</p> <p>As per an April 10, 2015 list of New York State tribal contacts collected by FEMA, two (2) Native American tribes have identified areas of interest in Suffolk County: the Shinnecock Nation and the Unkechaug Nation. Consultation letters were sent to both tribes on July 22, 2015 (see Appendix G for correspondence). http://www.nationalregisterofhistoricplaces.com/ny/state.html http://parks.ny.gov/shpo/online-tools/</p> |
| <p>Noise Abatement and Control Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978; 24 CFR Part 51 Subpart B</p> | <p>Yes No <input type="checkbox"/> <input checked="" type="checkbox"/></p> | <p>The proposed project is not a noise sensitive use, and furthermore, the policies of 24 CFR 51.101(a)(3) do not apply to any action or emergency assistance under disaster assistance provisions or appropriations which are provided to protect property and protect public health and safety.</p> <p>The proposed project will cause temporary increases in noise levels during construction that will be mitigated by complying with local noise ordinances. (See Noise section in Appendix D, "Construction," for further detail.) Existing ambient noise levels will not be exceeded during operations. Therefore, the proposed project would not generate any significant adverse noise impacts.</p> |

STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.5 (cont'd)

Sole Source Aquifers
 Safe Drinking Water Act of 1974,
 as amended, particularly section
 1424(e); 40 CFR Part 149

Yes No

The proposed project is located on the Nassau-Suffolk Sole Source Aquifer (SSA) system. An Initial Screen/Preliminary Review was submitted to the EPA on April 13, 2015 as per the Memorandum of Understanding (MOU) between EPA and HUD dated August 24, 1990. Comments from the EPA were received on August 31, 2015 (see correspondence in Appendix H).

No negative impacts to the Sole Source Aquifer are anticipated. The proposed project will have a positive impact on the Sole Source Aquifer as it will prevent failure of the existing outfall line. The proposed project would prevent impacts to the SSA and other sensitive environmental features due to failure of the existing outfall.

The access shafts constructed will employ either ground freezing or secant pile technology in order to minimize interaction with groundwater during construction.

The proposed project must comply with all local groundwater protection and withdrawal provisions, including:

- Article 4 of the Suffolk County Sanitary Code, Water Supply. Note that no Special Groundwater Protection Area is mapped for the proposed project location.
- Article 12 of the Suffolk County Sanitary Code, Toxic and Hazardous Materials Storage and Handling Controls.

Although minimal dewatering of the two access shafts is expected, depending on the amount of dewatering necessary, a Long Island Well dewatering permit may be required. See Section 601-602 of Title 6 the New York Code of Rules and Regulations, Applications for Long Island Wells (dewatering in excess of 45 gallons per minute (64,800 gallons per day).

The proposed project would require a permit from the USACE under Section 404 of the Clean Water Act and from the NYSDEC under Article 25 of the NY Environmental Conservation Law for activities within freshwater wetlands. All permit conditions would be implemented.

Ground freezing, if utilized, must be conducted by using a pressure-tested closed loop system with constant monitoring in place to detect system failure and provide emergency shut-off.

<http://www.epa.gov/region02/water/aquifer/>

<http://www.suffolkcountyny.gov/Portals/0/planning/Cartography/NewLayout/SGPA.pdf>

STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.5 (cont'd)

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| <p>Wetlands Protection Executive Order 11990, particularly sections 2 and 5</p> | <p>Yes No <input checked="" type="checkbox"/> <input type="checkbox"/></p> | <p>The proposed project involves the construction of approximately 14,200 linear feet of 10-foot diameter outfall tunnel beneath Great South Bay and excavation of a new 35-foot diameter entry shaft at the WWTP site and a new 30-foot diameter exit shaft at Gilgo State Park on Jones Beach Island. Portions of the proposed outfall tunnel route are located beneath wetlands identified on both the National Wetlands Inventory (see Figure 4A) and the New York State Department of Environmental Conservation inventory of Tidal and Freshwater Wetlands (see Figure 4B).</p> <p>Because the proposed project includes work beneath tidal wetland areas, the 8-step decision making process was followed, pursuant to EO 11990 and a Floodplain Management and Wetland Protection Plan was prepared (see Appendix F).</p> <p>Wetlands delineation will be prepared and will be shown on project drawings. A Joint Application for Permit to permit the boring of the outfall tunnel beneath and potentially encroaching into state and/or federal wetlands and/or adjacent areas and to permit the placement of utility line under a navigable/historically-navigable waterway for USACE R Rivers and harbors Act Section 10 and Clean Water Act Section 404 and 401 will be submitted for the proposed project.</p> |
| <p>Wild and Scenic Rivers Wild and Scenic Rivers Act of 1968, particularly section 7(b) and (c)</p> | <p>Yes No <input type="checkbox"/> <input checked="" type="checkbox"/></p> | <p>Not applicable. The proposed project area is not located near any Wild and Scenic Rivers as designated by the U.S. Department of the Interior, National Wild and Scenic Rivers System as designated by the National Wild and Scenic Rivers System, or Wild, Scenic and Recreational Rivers as determined by the NYSDEC. Therefore, the proposed project would not violate the Wild and Scenic Rivers Act.</p> <p>http://www.nps.gov/ncrc/programs/rtca/nri/states/ny.html http://www.rivers.gov/new-york.php http://www.dec.ny.gov/permits/32739.html</p> |

ENVIRONMENTAL JUSTICE

Environmental Justice
Executive Order 12898

Yes No

Not applicable. The proposed project is not located in a potential environmental justice area as established in New York State Department of Environmental Conservation CP-29. The proposed project is not expected to have any effect on environmental justice.
<http://www.dec.ny.gov/public/899.html>

Environmental Assessment Factors [24 CFR 58.40; Ref. 40 CFR 1508.8 &1508.27] Recorded below is the qualitative and quantitative significance of the effects of the proposal on the character, features and resources of the project area. Each factor has been evaluated and documented, as appropriate and in proportion to its relevance to the proposed project. Verifiable source documentation has been provided and described in support of each determination, as appropriate. Credible, traceable and supportive source documentation for each authority has been provided. Where applicable, the necessary reviews or consultations have been completed and applicable permits of approvals have been obtained or noted. Citations, dates/names/titles of contacts, and page references are clear. Additional documentation is attached, as appropriate. **All conditions, attenuation or mitigation measures have been clearly identified.**

Impact Codes: Use an impact code from the following list to make the determination of impact for each factor.

- (1) Minor beneficial impact
- (2) No impact anticipated
- (3) Minor Adverse Impact – May require mitigation
- (4) Significant or potentially significant impact requiring avoidance or modification which may require an Environmental Impact Statement

| Environmental Assessment Factor | Impact Code | Impact Evaluation |
|--|-------------|---|
| LAND DEVELOPMENT | | |
| Conformance with Plans / Compatible Land Use and Zoning / Scale and Urban Design | 2 | No impact anticipated. The proposed project would be located on the wastewater treatment plant site and within an existing easement beneath Great South Bay and on the Jones Beach Island. The proposed project solely serves to replace an existing segment of outfall and proposes no change to land use, zoning, or urban design. The proposed project would not result in the creation of new jobs and/or an increase in the number of employees and would therefore not have an urbanizing effect. |
| Soil Suitability/ Slope/ Erosion/ Drainage/ Storm Water Runoff | 2 | No impact anticipated. Additional stormwater runoff will not be generated as a result of the proposed project, as there will be no change to impervious surface as a result of the proposed project. Approximately 2 to 2.5 acres of currently vegetated area at the WWTP and 2.5 to 3 acres of vegetated area on the Jones Beach Island will be disturbed in order to construct the access shafts. These areas will be restored to original condition upon completion of construction. Applicable soil erosion and sediment control best practices will be implemented during construction activities. A NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activities will be obtained prior to the start of construction. |

| LAND DEVELOPMENT (cont'd) | | |
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| Hazards and Nuisances including Site Safety and Noise | 2 | <p>No impact anticipated. Impacts such as road closures and fugitive dust would be addressed under existing regulations governing construction activity in New York State, Suffolk County, and local municipalities.</p> <p>The proposed project would only temporarily increase noise levels at nearby residences during construction and would be mitigated by implementing best management practices, including outfitting of equipment with mufflers, and compliance with local noise ordinances including time-of-day work limitations. Construction of the proposed project would not result in a significant increase in ambient noise levels. (See Noise section in Appendix D, "Construction," for further detail.)</p> <p>Existing ambient noise levels would not be exceeded during operations.</p> |
| Energy Consumption | 2 | <p>No impacts anticipated. Operation of the proposed project would not consume any additional energy.</p> <p>Construction of the proposed project would consume energy, including the use of fossil fuels for construction equipment and the shipment of materials required for construction activities. This increase in energy consumption would be temporary and limited to the periods of construction activity. The proposed project would not increase long-term energy consumption once construction is complete.</p> |

| SOCIOECONOMIC | | |
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| Employment and Income Patterns | 2 | <p>No impact anticipated. The proposed project would create temporary jobs during construction. However, these jobs would not significantly increase employment opportunities or impact income patterns as total construction duration is expected to be approximately three years. Operation of the proposed project would not result in any changes to existing employment opportunities or impact income patterns.</p> |
| Demographic Character Changes, Displacement | 2 | <p>No impact anticipated. The proposed project would not result in the creation of new jobs and therefore would not alter the demographic characteristics of the surrounding community. The proposed project would not directly or indirectly displace people, businesses, institutions, or community facilities.</p> |

| COMMUNITY FACILITIES AND SERVICES | | |
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| Educational and Cultural Facilities | 2 | No impacts anticipated. The proposed project would not result in the creation of new jobs and therefore would not increase demand on educational facilities. |
| Commercial Facilities | 2 | No impacts anticipated. The proposed project would not result in the creation of new jobs and therefore would not increase demand on commercial facilities nor have any adverse effects on existing facilities. |
| Health Care and Social Services | 2 | No impacts anticipated. The proposed project would not result in the creation of new jobs and therefore would not increase demand on health care and social services nor have any adverse effects on existing facilities. |
| Solid Waste Disposal / Recycling | 3 | Minor adverse impact anticipated. Construction of the proposed project would result in the generation of sands, silts, clays and gravel materials from excavation of the shafts and tunnel. The total amount of muck expected to be generated by construction activities is estimated at approximately 90,000 cubic yards. Muck would be analyzed for contamination, soil type and suitability and to the extent practicable be put to beneficial use. The specific uses would vary depending on demand, suitability, contractor preference, and contamination test results. If muck is somehow contaminated or reuse is not viable, such contaminated or unusable muck would be disposed of in accordance with solid and hazardous waste laws and regulations. All waste would be hauled off-site by a licensed contractor and would be handled in accordance with all applicable State and local solid and hazardous waste regulations. Prior to excavation and/or tunneling activities, a materials management plan will be submitted to Suffolk County, EFC and GOSR for approval. If required, this management plan will be submitted for approval to any and all federal, state or local government agencies with regulatory jurisdiction over the actions proposed in the plan. |
| Waste Water / Sanitary Sewers | 1 | The proposed project would improve the resiliency of the wastewater treatment system. The proposed project will not generate any additional stormwater runoff. All stormwater generated during construction will be managed in accordance with NYSDEC Stormwater Management Standards and the Suffolk County Soil and Water Conservation District soil erosion and sediment control best management practices. A NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activities will be required for construction activities. It is anticipated that muck and excavated material will be dewatered above ground on site in a drying area. Soil conditioners (which must be non-toxic and biodegradable) and produced water will be reused or treated in the Bergen Point Facility. If the contractor selected for the construction effort proposes a different strategy for produced waters and conditioner reuse, the EA will be re-evaluated accordingly. |

| COMMUNITY FACILITIES AND SERVICES (cont'd) | | |
|--|---|---|
| Water Supply | 2 | <p>No impacts anticipated during operation of the proposed project. Operation of the proposed project would not generate any additional demand for water nor have any adverse effects on existing facilities.</p> <p>Construction of the proposed project would require cooling water for the TBM, as well as water for mixing concrete, ground freezing and other uses. The approximately 25,000 gallons of water that would be required for cooling the TBM would be stored in a tank at the WWTP staging area and recirculated. All required water would be supplied either by the Suffolk County Water Authority or by water delivery trucks; no private wells would be used.</p> <p>The exact amount of water required for the transporting muck away from the TBM boring head depends on the method of tunneling proposed by the contractor. There is both a cart method in which very little water is used for this purpose and a slurry method in which more water is used. It is anticipated that the cart method will be used; however, the exact amount of water to be used in this process will be dependent on this factor as well as the soil characteristics in any given interval of tunneling. Should the slurry method be proposed and selected, the EA will be reevaluated in coordination with EPA and DEC.</p> |
| Public Safety - Police, Fire and Emergency Medical | 2 | <p>No impacts anticipated. The proposed project would not result in the creation of new jobs and therefore would not increase demand on police protection, fire protection, or emergency medical services nor have any adverse effects on existing facilities.</p> |
| Parks, Open Space and Recreation | 2 | <p>No impacts anticipated. The proposed project would not result in the creation of new jobs and therefore would not increase demand on parks, open space, or recreation facilities nor have any adverse effects on existing facilities. Though the staging area on the Jones Beach Island will be located in Gilgo State Park, it is not located in an area currently used for recreation and it will be fully restored to its condition as vegetated open space upon completion of construction of the proposed project.</p> |
| Transportation and Accessibility | 2 | <p>No impacts anticipated. The proposed project would not generate any additional demand for transportation or accessibility services nor have any adverse effects on existing facilities. Construction activities would generate construction worker and truck traffic. Based on the relatively modest increase in vehicular trips due to construction activities, the temporary nature of the proposed activities, and the expectation that construction-related worker and truck trips would primarily occur outside of commuter peak hours, construction of the proposed project is not expected to result in any significant adverse transportation impacts. (See Transportation section in Appendix D, "Construction," for further detail.)</p> |

| NATURAL FEATURES | | |
|---|---|--|
| Unique Natural Features, Water Resources | 2 | No impacts anticipated. The proposed project is located on the Nassau-Suffolk Sole Source Aquifer system but is not anticipated to impact the Aquifer. A portion of the proposed project location passes beneath tidal wetland and marsh areas (see Figures 4A and 4B). Wetlands delineation will be prepared and will be shown on project drawings. A Joint Application for Permit to permit the boring of the outfall tunnel beneath and potentially encroaching into state and/or federal wetlands and/or adjacent areas and to permit the placement of utility line under a navigable/historically-navigable waterway for USACE R Rivers and harbors Act Section 10 and Clean Water Act Section 404 and 401 will be submitted for the proposed project. |
| Vegetation, Wildlife | 2 | <p>The proposed project involves the construction of approximately 14,200 linear feet of 10-foot diameter tunnel beneath Great South Bay and excavation of a new 35-foot diameter entry shaft at the WWTP site and a new 30-foot diameter exit shaft at Gilgo State Park on Jones Beach Island.</p> <p>The USFWS Information, Planning and Conservation (IPaC) online planning tool Trust Resource List generated for the proposed project on April 14, 2015 (see Appendix C) lists the following Federally-listed species as having the potential to occur within the vicinity of the proposed project: piping plover (<i>Charadrius melodus</i>) - threatened, roseate tern (<i>Sterna gougallii</i>) - endangered, rufa red knot (<i>Calidris canutus rufa</i>) – threatened, northern long-eared bat (<i>Myotis septentrionalis</i>) - threatened, sandplain gerardia (<i>Agalinis acuta</i>) - endangered, and seabeach amaranth (<i>Amaranthus pumilus</i>) - threatened.</p> <p>An evaluation of proposed project activities relative to species habitats was performed and it was concluded that the proposed project is unlikely to affect piping plover, roseate tern, rufa red knot, northern long-eared bat, sandplain gerardia and seabeach amaranth or the habitats on which these species depend.</p> <p>A letter of consultation was submitted to the USFWS on April 16, 2015 detailing the proposed project would have no effect on the above-listed species. A detailed discussion of the evaluation performed is provided in the consultation letter. A response was received from USFWS on July 9, 2015 (see Appendix C for correspondence) which indicated USFWS concurrence with the determination of no effect. USFWS requires that they be contacted every 90 days from receipt of the response to confirm that species presence/absence for the project area is current.</p> <p>The consultation letter to USFWS also outlined a determination of no effect on bald eagles as per the Bald and Golden Eagle Protection Act, with which USFWS concurred in the July 9, 2015 response letter.</p> |

| NATURAL FEATURES (cont'd) | | |
|----------------------------------|---|--|
| Vegetation, Wildlife (cont'd) | 2 | <p>Through consultation with USFWS, it was determined that the 2000-2005 New York State Breeding Bird Atlas documented 50 species of birds as confirmed or possibly/probably breeding in the census block in which the proposed staging area at the Jones Beach Island is located (Block 6349A). All but two of the identified bird species (see species list in Appendix C) are migratory birds and are protected under the Migratory Bird Treaty Act (MBTA). Due to the fact that construction activities may take place partially within bird breeding locations, which could be disruptive to breeding populations, USFWS recommended in their July 9, 2015 response that a breeding bird survey be conducted prior to the start of construction, or alternatively that time-of-year restrictions should be applied to construction activities. Accordingly, site clearing activities at the barrier island would be restricted to the period October 31 through February 28, during which time there would be no potential for active nests to be lost or any other direct impacts to these species to occur.</p> <p>All equipment to be used on the barrier island must be cleaned to the extent possible prior to arrival on and exit from the project site to prevent movement of non-native invasive species. Restoration of the disturbed areas must use species native to the site and as locally sourced as possible and be monitored until successfully established.</p> <p>Prior to site disturbing activities the areas to be disturbed will be surveyed for the presence of rare plants, seabeach amaranth, sandplain gerardia, short-eared owl and northern harrier. If present, measures will be taken to minimize disturbance or relocate such resources to a suitable site in consultation with USFWS and the NYS DEC.</p> |
| Other Factors | 2 | There are no other factors applicable to the proposed project. |

Additional Studies Performed:

- NY Rising Community Reconstruction Plan: Village of Babylon/West Babylon. March 2014.
- Suffolk County Full Environmental Assessment Form (EAF). July 2012.
- Suffolk County Department of Public Works, Sewer District 3 – Southwest. Bergen Point Wastewater Treatment Plant Outfall Replacement Project Engineering Design Report. CDM, May 2011.

List of Sources, Agencies and Persons Consulted [40 CFR 1508.9(b)]:

- Ruth Pierpont, New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP) Division for Historic Preservation (December 6, 2013)
- Patricia Cole, U.S. Fish and Wildlife Service (USFWS) New York Field Office (April 16, 2015)
- Grace Musemeci, U.S. Environmental Protection Agency (USEPA) Environmental Impacts Branch (April 13, 2015)

- Jeffrey Zappieri, New York State Department of State (NYS) Division of Coastal Resources (April 22, 2015)
- New York State Environmental Facilities Corporation (NYSEFC)
- New York State Department of Transportation (NYSDOT), Region 2
- Suffolk County
- Suffolk County Department of Health Services
- Town of Babylon
- EPA, Greenbook:
<http://www.epa.gov/oaqps001/greenbk/index.html>
- EPA, Greenbook – Federal Register Notices:
<http://www.epa.gov/oaqps001/greenbk/adden.html>
- EPA NEPAAssist:
<http://nepassisttool.epa.gov/nepassist/entry.aspx>
- EPA Region 2 Sole Source Aquifers:
<http://www.epa.gov/region02/water/aquifer/>
- FEMA Coastal Barrier Resource System – New York:
<https://www.fema.gov/national-floodinsuranceprogram/coastal-barrier-resource-system-new-york>
- FEMA Floodplain Map Service Center:
<https://msc.fema.gov/portal>
- Military and Civilian Airports:
https://www.michigan.gov/documents/mshda/mshda_cd_nsp2_air_accident_315724_7.pdf
- NYRCR – NY Rising Community Reconstruction Plan: Village of Babylon/West Babylon
http://stormrecovery.ny.gov/sites/default/files/crp/community/documents/babylon-westbabylon_nyrcr_plan.pdf
- National Park Service – New York Segments:
<http://www.nps.gov/ncrc/programs/rtca/nri/states/ny.html>
- New York State Department of Agriculture and Markets:
<http://www.agriculture.ny.gov/ap/agsservices/agricultural-districts.html>
- New York State Department of Environmental Conservation (NYSDEC), Coastal Management:
<http://www.dec.ny.gov/lands/86541.html>
- NYSDEC Environmental Resource Mapper:
<http://www.dec.ny.gov/animals/38801.html>
- NYSDEC Wild, Scenic and Recreational Rivers:
<http://www.dec.ny.gov/permits/32739.html>
- NYSDEC Potential Environmental Justice Areas in West Suffolk County:
http://www.dec.ny.gov/docs/permits_ej_operations_pdf/suffolkejwest.pdf
- New York State Department of State (NYSDOS) – Coastal Boundary Map:
<http://www.dos.ny.gov/opd/atlas/> and http://appext20.dos.ny.gov/coastal_map_public/map.aspx
- NYSDOS – Local Waterfront Revitalization Program – Coastal Waterbodies and Inland Waterways.
http://www.dos.ny.gov/opd/programs/pdfs/Waterways_List_08-14.pdf
- State Register of Historic Places – Cultural Resources Information Systems (CRIS):
<http://parks.ny.gov/shpo/online-tools/>
- Suffolk County Comprehensive Water Resources Management Plan
<http://www.suffolkcountyny.gov/Departments/HealthServices/EnvironmentalQuality/WaterResources/ComprehensiveWaterResourcesManagementPlan.aspx>
- United States Fish and Wildlife Service (USFWS) IPaC, accessed March 19, 2015.
<http://ecos.fws.gov/ipac/>

- USFWS Coastal Barrier Resources Act
<http://www.fws.gov/cbra/Maps/index.html>
- USFWS Wetlands Online Mapper – National Wetlands Inventory Map:
<http://www.fws.gov/wetlands/Data/Mapper.html>
- Wild and Scenic Rivers Act – Sections 3 and 5 (16 USC 1274 and 1276):
<http://www.rivers.gov/rivers/delaware-upper.php>
<http://www.rivers.gov/maps/conus.php>
- The Wyandanch Hamlet Plan – Wyandanch Rising
<http://sustainableli.org/what-we-do/community-revitalization/wyandanch/>

List of Permits Obtained or Required:

- US Army Corps of Engineers (USACE) Nationwide Permit
- US Coast Guard Long Island Sound Sector Approval
- National Marine Fisheries Service – Habitat Conservation Division, Consultation and/or Essential Fish Habitat Assessment
- NYSDEC Section 401 Water Quality Certification
- NYSDEC Long Island Well Permit (6 NYCRR § 602.1)
- NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activities
- NYSDEC Air Registration
- NYS Parks Approval
- NYSDOT Divisible Load Permit
- NYSDOT Highway Work Permit for Utility Work

Public Outreach [24 CFR 50.23 & 58.43]:

- NY Rising Community Reconstruction Program: Village of Babylon/West Babylon
Public Engagement Meetings held:
 - September 26, 2013
 - November 7, 2013
 - February 24, 2014
- Early Notice and Public Explanation of a Proposed Activity in a 100-Year Floodplain and Wetland published in Babylon Beacon April 23, 2015.
- Final Notice and Public Explanation of a Proposed Activity in a 100-Year Floodplain and Wetland published in Babylon Beacon August 17, 2015.
- Notice giving the public the opportunity to comment on the proposed project prior to submittal of the Final Application to GOSR will be published in the local newspapers and posted to the SCDPW website once Pre-Application is finalized.

Cumulative Impact Analysis [24 CFR 58.32]:

In accordance with NEPA, this EA considers the overall cumulative impact of the proposed project and other actions that are related in terms of time or proximity. According to the Council of Environmental Quality (CEQ) regulations, cumulative impacts represent the “impact on the environment which results from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.7).

This section examines the proposed project as well as other actions occurring or proposed in the vicinity of the proposed project. The combined effects of these actions are evaluated to determine if they could result in any cumulative impacts. The Town of Babylon has undertaken a number a planning initiatives that address the existing capacity and reliability of the sanitary sewer system, the cumulative impacts of which are described below. According to the 2015 *Suffolk County Comprehensive Water Resources Management Plan*, Bergen Point WWTP is the largest wastewater treatment plant in Suffolk County. The WWTP currently has an operating capacity of 30 MGD and is undergoing a project to increase capacity to 40 MGD.

A separate environmental review was conducted for the Final Effluent Pump Station (FEPS) replacement project and was determined to have no significant adverse impacts.

In an effort to reduce nitrogen pollution in groundwater and surface water, Suffolk County has allocated \$383 million of funding from New York State to connect approximately 10,000 existing, developed properties to sanitary sewer systems, as reported in the *Suffolk County Comprehensive Water Resources Management Plan*. Among these 10,000 parcels are approximately 6,600 in the Carlls River area of North Babylon and West Babylon, from which flow would ultimately be conveyed to Bergen Point WWTP for treatment and discharge. Feasibility studies are also underway to evaluate creation of new sewer districts associated with collection and treatment of wastewater from newly sewered areas. Although these new areas would create additional flow, the Bergen Point WWTP could handle the additional flow.

The *Wyandanch Rising* plan, prepared by Sustainable Long Island, is a community plan aimed at revitalization of the downtown and business district areas of Wyandanch, an economically distressed hamlet in the Town of Babylon. Wyandanch , as of January 1015, is connected to the to the Bergen Point WWTP for treatment and discharge. It was estimated that the Hamlet would contribute approximately 380,000 GPD of wastewater flow. The sewerling of this area would alleviate negative environmental impacts associated with on-site septic systems and would be accommodated by the Bergen Point WWTP, with or without expansion.

Considered cumulatively, these projects, both proposed and ongoing, serve to improve the capacity, reliability, and resiliency of the sanitary sewer system in the Town of Babylon. The project proposed herein, replacement of the damaged section of outfall at the Bergen Point WWTP, supports these goals and further contributes to the resiliency of the system. Overall, the proposed project and other ongoing projects are anticipated to have a positive effect on infrastructure capacity and reliability.

Alternatives [24 CFR 58.40(e); 40 CFR 1508.9]

Alternative 1 – Replace Outfall with Carrier Pipes Installed within a Tunnel

This alternative would replace the section of the existing outfall extending from the Bergen Point WWTP south beneath Great South Bay to the Jones Beach Island by tunneling. On the Jones Beach Island, the new outfall section beneath the Bay would be connected to the existing ocean outfall to convey treated effluent to discharge. Most of the construction associated with this alternative would take place underground to avoid impacts to Great South Bay and to the environment. Above ground construction includes an access shaft at the Bergen Point WWTP site, and an exit shaft on the Jones Beach Island within the existing easement north of Ocean Parkway.

Tunnel implementation would begin with construction of a new entry shaft at the WWTP site and a new exit shaft at Gilgo State Park on Jones Beach Island, with ground freezing recommended to reduce impacts to the surrounding area. Approximately 2 to 2.5 acres on the Jones Beach Island and approximately 2.5 to 3 acres at the WWTP site would likely be disturbed in each location during construction. After the tunnel is constructed, two 54-inch diameter steel carrier pipes would be installed within the tunnel. Five hundred and eighty 25-foot long pipe sections would be lowered into the tunnel. The pipes would be joined with lap joints, welded from the inside of the pipes, and the pipes would be grouted in place. Installation of carrier pipes would require a larger diameter tunnel than that proposed under the selected alternative.

The new section of the outfall would be joined to the existing ocean portion of the outfall within the existing easement north of Ocean Parkway on the Jones Beach Island. Treated effluent would then continue to discharge through the outfall to the Atlantic Ocean.

When the construction is complete, the disturbed area at the Bergen Point WWTP would be restored and the disturbed area on the Jones Beach Island would be revegetated and restored. This alternative would also require work within the floodplain and wetland.

Alternative 2 – Construct Replacement Outfall by Open Cut

This alternative would replace the existing deteriorated section of the outfall crossing Great South Bay by excavating an approximately 16 foot deep trench approximately 75 feet to the west of the existing outfall, within the existing easement. For redundancy, two 54-inch diameter ductile iron pipes would be positioned within the trench, and mechanically joined underwater.

Hydraulic dredging would be used to excavate the trench for the replacement outfall pipes, causing the least disturbance to the work area and removing the sands and silts that exist within this alignment twice as quickly as with mechanical dredging. The fluidized materials removed by the hydraulic dredge would be pumped to hopper barges while the pipes are being installed. Due to the shallow nature of the Bay in the area, the barges could only be partially filled to avoid disturbing the bottom. Silt curtains would be required for sediment control.

The section of the outfall passing between Cedar Island, the State Boat Channel and the Jones Beach Island would be constructed using a mechanical excavator mounted on a jack-up barge or a low draft barge; steel sheeting would be installed to isolate the work area. Construction of the replacement outfall by open cut requires significant work within Great South Bay, and a much greater potential for environmental impact than the other tunnel alternatives. This alternative would require significant work within the floodplain and wetland.

Alternative 3 – Construct New Outfall Discharging to Great South Bay

This alternative, construction of a new outfall discharging directly to Great South Bay, was determined to be infeasible from a regulatory perspective.

The existing Bergen Point WWTP outfall discharges to the Atlantic Ocean, which provides significant dilution of the constituents that are found in effluent from a wastewater treatment facility. In contrast, Great South Bay is a much smaller and shallower water body that would not be expected to assimilate the effluent without unacceptable water quality impacts. Consequently it is anticipated that the existing WWTP would have to be upgraded to provide a higher level of treatment, including seven additional aeration tanks and two additional final clarifiers, as well as denitrification filters or membranes. It would be a challenge to fit all of the additional tankage and processes onto the existing Bergen Point WWTP site.

Along the existing easement following the alignment of the existing outfall, the Bay is very shallow, primarily between one and five feet deep. Several approaches to discharging the treated effluent to the Bay were explored. One option would site a network of diffusers along the Bay bottom to the east of the easement where the water is somewhat deeper; another would carry the treated effluent to the State Boat Channel where additional dilution would be provided. Based on the preliminary dimensions of the diffusers required to discharge the treated effluent, approximately 30 acres of Bay bottom would be disturbed during construction.

In addition to the short term construction-related impacts associated with implementation of this alternative, the potential long-term impacts associated with implementation are significant. They include addition of a significant fresh water flow to the Bay (which would alter local salinity and the distribution of benthic organisms and finfish, and could significantly affect the local ecosystem), closure of shellfish beds and closure of parts of the Bay to recreational users. This alternative would require significant work within the floodplain and wetland.

Alternative 4 – Line Existing Outfall Pipe (with Temporary Outfall Discharging to Great South Bay)

This alternative would slip line the existing outfall pipe crossing beneath the bottom of Great South Bay by assembling new pipe segments on land or on barges, and then either pushing or pulling the assembled liner pipe through the existing outfall pipe. During installation of the slip liner, the existing outfall could not be utilized so treated effluent from the Bergen Point WWTP would need to be redirected for over two (2) years while the slip-lining was being performed.

Several challenges associated with implementation of the slip-lining alternative were identified. The existing outfall pipe would need to be removed from service, dewatered and cleaned prior to installing the 68-inch diameter liner pipe. Based on the information available, it is not known whether the external water pressure would cause the existing outfall to collapse when it was dewatered. If the existing outfall were to collapse, it would have to be replaced by one of the other five alternatives and treated effluent would have to be discharged elsewhere for an extended design and construction period. Due to the limits in pulling or pushing a liner pipe, at least 15 sheeted access points would be required to access the outfall. This would require disturbance of the bottom of the Great South Bay.

Given the uncertainty concerning the condition of the existing outfall and the ability to safely dewater it for cleaning and lining, as well as the difficulties associated with temporarily disposing of the treated wastewater, this alternative would be challenging, if not impossible, to implement. This alternative would require significant work within the floodplain and wetland.

Alternative 5 – Replace Existing Outfall with Upland Recharge

This alternative would replace the existing ocean outfall in its entirety with a new upland effluent force main. Treated effluent would be pumped to discharge via a network of recharge basins and/or injection wells located throughout the Southwest Sewer District, to the north of the Bergen Point WWTP.

This alternative would require:

- Upgrade of the Bergen Point WWTP to provide the higher level of treatment required to achieve groundwater (drinking water) standards,
- Booster pump stations (in addition to the upgraded effluent pump station) to convey the treated wastewater to the distribution network,
- A piping/distribution network to convey the treated effluent to the recharge/injection locations,
- A network of recharge basins/injection wells to recharge the treated effluent to the groundwater system,
- Instrumentation and SCADA system to monitor water levels at the recharge facilities and turn the pumps on/off at specific locations, and
- Network of monitoring wells for routine testing of groundwater downgradient of the recharge locations.

The necessary upgrades to the Bergen Point WWTP would require significant additional tankage and process equipment, which would be a challenge to fit onto the existing Bergen Point WWTP site.

The final effluent pump station would be renovated for each of the alternatives. For this alternative, the new pumps in the renovated pump station would need to be sized for the head conditions associated with pumping the treated effluent to the higher elevations found upgradient of the plant. It is also anticipated that booster pump stations would be required at each recharge site, as well as dual force mains, located within the Long Island Expressway right-of-way, to convey wastewater between pump stations.

Based on the preliminary estimate of the number of leaching pools that would be required to recharge over 90 MGD, it was determined that the use of leaching pools would be eliminated from further consideration and recharge via open recharge basins and/or injection wells would be evaluated. A total of 10 parcels large enough to recharge a minimum of 1 MGD via recharge basins were identified, and approximately 79 parcels were identified as potential sites for injection wells.

The recharge piping network would be equipped with flow meters and flow control valves at key distribution points to distribute flow to the appropriate recharge facilities. In addition, it is anticipated that a minimum of one upgradient and one downgradient monitoring well would be required at each recharge location; these wells would be monitored on a quarterly basis.

This alternative would also require work within the floodplain and wetland as well as require significant impacts to the Nassau-Suffolk Sole Source Aquifer system.

No Action Alternative [24 CFR 58.40(e)]:

Because of the potential consequences of existing outfall failure (e.g., release of treated effluent directly to Great South Bay), the No Action Alternative was not considered to be a viable option for the Suffolk County Department of Public Works.

Summary of Findings and Conclusions:

The proposed project involves the construction of approximately 14,200 linear feet of 10-foot diameter tunnel beneath Great South Bay and excavation of a new 35-foot diameter entry shaft at the WWTP site and a new 30-foot diameter exit shaft at Gilgo State Park on Jones Beach Island. All proposed project structures would be located underground. In addition, when the construction is complete, the disturbed area at the Bergen Point WWTP would be restored and the disturbed area on the Jones Beach Island would be revegetated and restored. As is typical with construction projects, during periods of construction activity there would be some disruption to the nearby area. This disruption would be temporary in nature, and would have limited effects given that most construction activities would take place within construction staging and laydown areas that would be carefully managed and isolated from the general public. The proposed project would include boring of a 10-foot diameter tunnel beneath Great South Bay and adjacent wetland areas but is not anticipated to cause impacts to the wetland or floodplain areas. Similarly, the proposed project is located on the Nassau-Suffolk Sole Source Aquifer system but is not anticipated to affect the aquifer system. No significant adverse environmental impacts are anticipated. Rather, the proposed project provides an environmental benefit by alleviating the risk of catastrophic failure of the existing outfall pipe and improves the resiliency of the Bergen Point WWTP.

Mitigation Measures and Conditions [40 CFR 1505.2(c)]

Summarize below all mitigation measures adopted by the Responsible Entity to reduce, avoid, or eliminate adverse environmental impacts and to avoid non-compliance or non-conformance with the above-listed authorities and factors. These measures/conditions must be incorporated into project contracts, development agreements, and other relevant documents. The staff responsible for implementing and monitoring mitigation measures should be clearly identified in the mitigation plan.

| Law, Authority, or Factor | Mitigation Measure |
|--|--|
| <p>Clean Air Clean Air Act, as amended, particularly section 176(c) & (d); 40 CFR Parts 6, 51, 93</p> | <p>To demonstrate compliance, the following specifications will be incorporated into the contract documents:</p> <p>Idling Restriction. In addition to adhering to the New York State law restricting unnecessary idling on roadways, on-site vehicle idle time will also be restricted to five minutes for all equipment and vehicles not using their engines to operate a loading, unloading, or processing operation (e.g., concrete mixing trucks), or otherwise required to idle to ensure proper engine operation.</p> <p>Utilization of Newer Equipment. EPA's Tier 3 and 4 standards for nonroad engines regulate the emission of criteria pollutants from new engines, including PM, CO, NOx, and hydrocarbons (HC). All non-road construction equipment with a power rating of 50 hp or greater would meet at least the Tier 3 and 4 emissions standards, to the extent practicable.</p> <p>Best Available Tailpipe Reduction Technologies. Non-road diesel engines with a power rating of 50 horsepower (hp) or greater and controlled truck fleets (i.e., those under long-term contract with the project) including but not limited to concrete mixing and pumping trucks would utilize the best available tailpipe (BAT) technology for reducing DPM emissions to the extent practicable. Diesel particulate filters (DPFs) are the tailpipe technology currently proven to have the highest reduction capability. Construction contracts would specify that all diesel non-road engines rated at 50 hp or greater would utilize DPFs, either installed by the original equipment manufacturer (OEM) or retrofitted. Retrofitted DPFs must be verified by EPA or the California Air Resources Board (CARB). Active DPFs or other technologies proven to achieve an equivalent reduction may also be used.</p> <p>Concrete Batch Plant Controls. If an on-site concrete batch plant is utilized at the WWTP, all required permits or registrations would be obtained by the Contractor prior to the start of construction. The batch plant's cement weigh hopper, gathering hopper, mixing loading operations, and storage silo chutes would be required to vent to an appropriate dust control device; e.g. baghouse or fabric filter.</p> |

| Law, Authority, or Factor | Mitigation Measure |
|---|---|
| <p>Floodplain Management Executive Order 11988, particularly section 2(a); 24 CFR Part 55</p> | <p>Based on a review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), a portion of the proposed project that passes under a Special Flood Hazard Area in the 100-year floodplain and in wetland areas. Only subsurface outfall tunnel will be located within the flood zone and would not adversely affect the floodplain. A Floodplain and Wetland Management Plan was developed (see Appendix F).</p> |
| <p>Wetlands Protection Executive Order 11990, particularly sections 2 and 5</p> | <p>Because the proposed project includes work beneath tidal wetland areas, the 8-step decision making process was followed, pursuant to EO 11990 and a Floodplain Management and Wetland Protection Plan was prepared (see Appendix F).</p> <p>Due to the fact that construction activities may take place partially within bird breeding locations, which could be disruptive to breeding populations, site clearing activities at the barrier island would be restricted to the period October 31 through February 1, during which time there would be no potential for active nests to be lost or any other direct impacts to these species to occur.</p> <p>Wetlands delineation will be prepared and will be shown on project drawings. A Joint Application for Permit to permit the boring of the outfall tunnel beneath and potentially encroaching into state and/or federal wetlands and/or adjacent areas and to permit the placement of utility line under a navigable/historically-navigable waterway for USACE R Rivers and harbors Act Section 10 and Clean Water Act Section 404 and 401 will be submitted for the proposed project.</p> |
| <p>Sole Source Aquifers Safe Drinking Water Act of 1974, as amended, particularly section 1424(e); 40 CFR Part 149</p> | <p>The proposed project is located on the Nassau-Suffolk Sole Source Aquifer system. An Initial Screen/Preliminary Review was submitted to the EPA on April 13, 2015 as per the Memorandum of Understanding (MOU) between EPA and HUD dated August 24, 1990. EPA's approval was received on August 31, 2015 (see correspondence in Appendix H).</p> <p>The proposed project must comply with all state local groundwater protection and withdrawal provisions. No impacts to the Sole Source Aquifer are anticipated.</p> |
| <p>Permit Requirements</p> | <p>All permit conditions listed above or otherwise required for activities under the proposed project must be adhered to.</p> |

| Law, Authority, or Factor | Mitigation Measure |
|--------------------------------|--|
| Additional Requirements | <p>All equipment to be used on the barrier island must be cleaned to the extent possible prior to arrival on and exit from the project site to prevent movement of non-native invasive species.</p> <p>Restoration of the disturbed areas must use species native to the site and as locally sourced as possible and be monitored until successfully established.</p> <p>Prior to site disturbing activities the areas to be disturbed will be surveyed for the presence of rare plants, seabeach amaranth, sandplain gerardia, short-eared owl and northern harrier. If present, measures will be taken to minimize disturbance or relocate such resources to a suitable site in consultation with USFWS and the NYS DEC.</p> <p>Prior to excavation and/or tunneling activities, a materials management plan will be submitted to Suffolk County, EFC and GOSR for approval. If required, this management plan will be submitted for approval to any and all federal, state or local government agencies with regulatory jurisdiction over the actions proposed in the plan.</p> |

Determination:

Finding of No Significant Impact [24 CFR 58.40(g)(1); 40 CFR 1508.27]
 The project will not result in a significant impact on the quality of the human environment.

Finding of Significant Impact [24 CFR 58.40(g)(2); 40 CFR 1508.27]
 The project may significantly affect the quality of the human environment.

Preparer Signature:  Date: 12/3/15

Name/Title/Organization: Jennifer M. Franco, PE, Senior Technical Director, AKRF, Inc.

Certifying Officer Signature:  Date: 12/3/15

Name/Title: Thomas J. King, Assistant General Counsel and Certifying Officer

This original, signed document and related supporting material must be retained on file by the Responsible Entity in an Environmental Review Record (ERR) for the activity/project (ref: 24 CFR Part 58.38) and in accordance with recordkeeping requirements for the HUD program(s).

FIGURES

4/9/2015



Source: ESRI, Inc. USGS Aerials

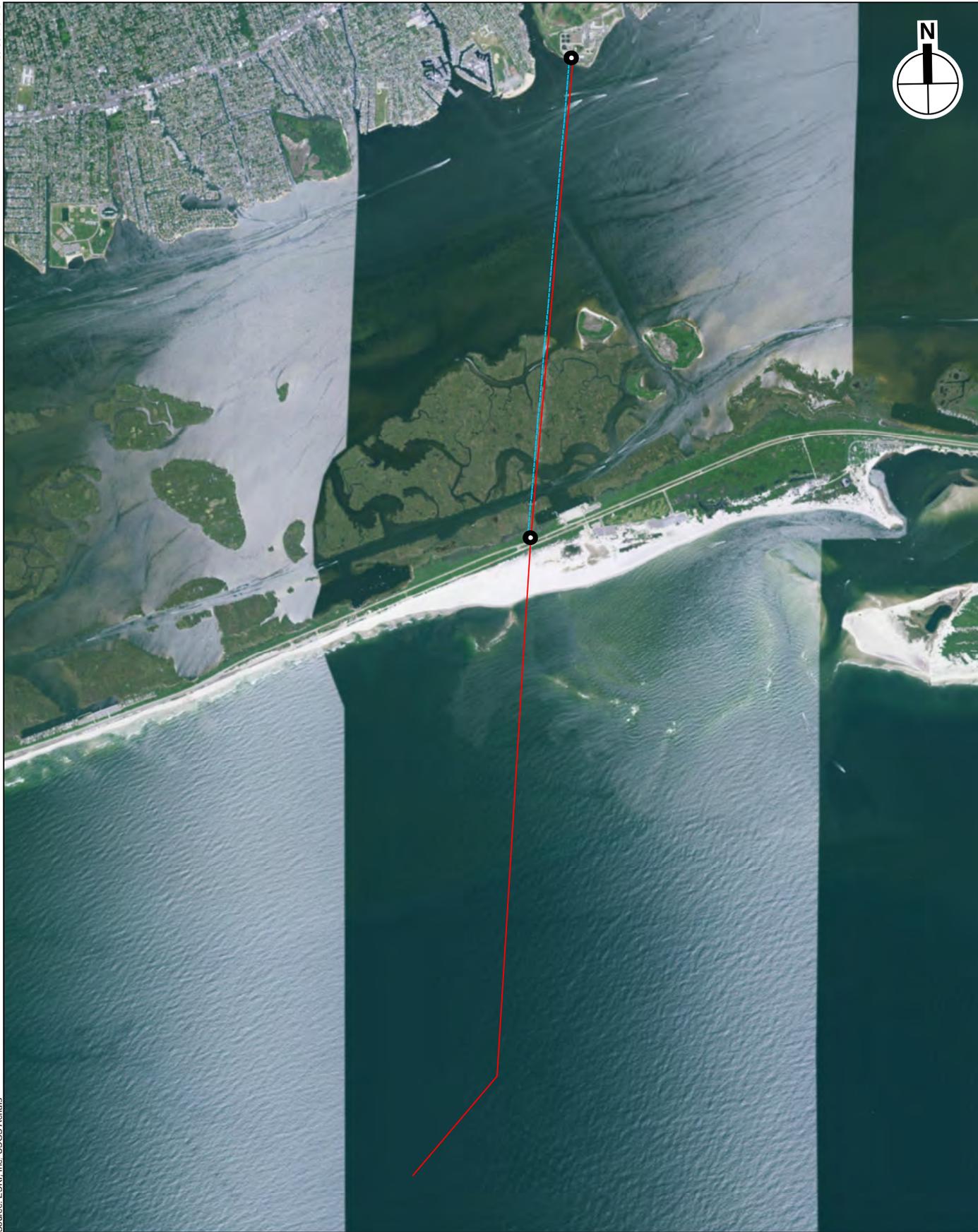
-  Proposed Staging Areas
-  Proposed Outfall

0 1,000 FEET

5/6/2015



Source: ESRI, Inc.; USGS Aerials



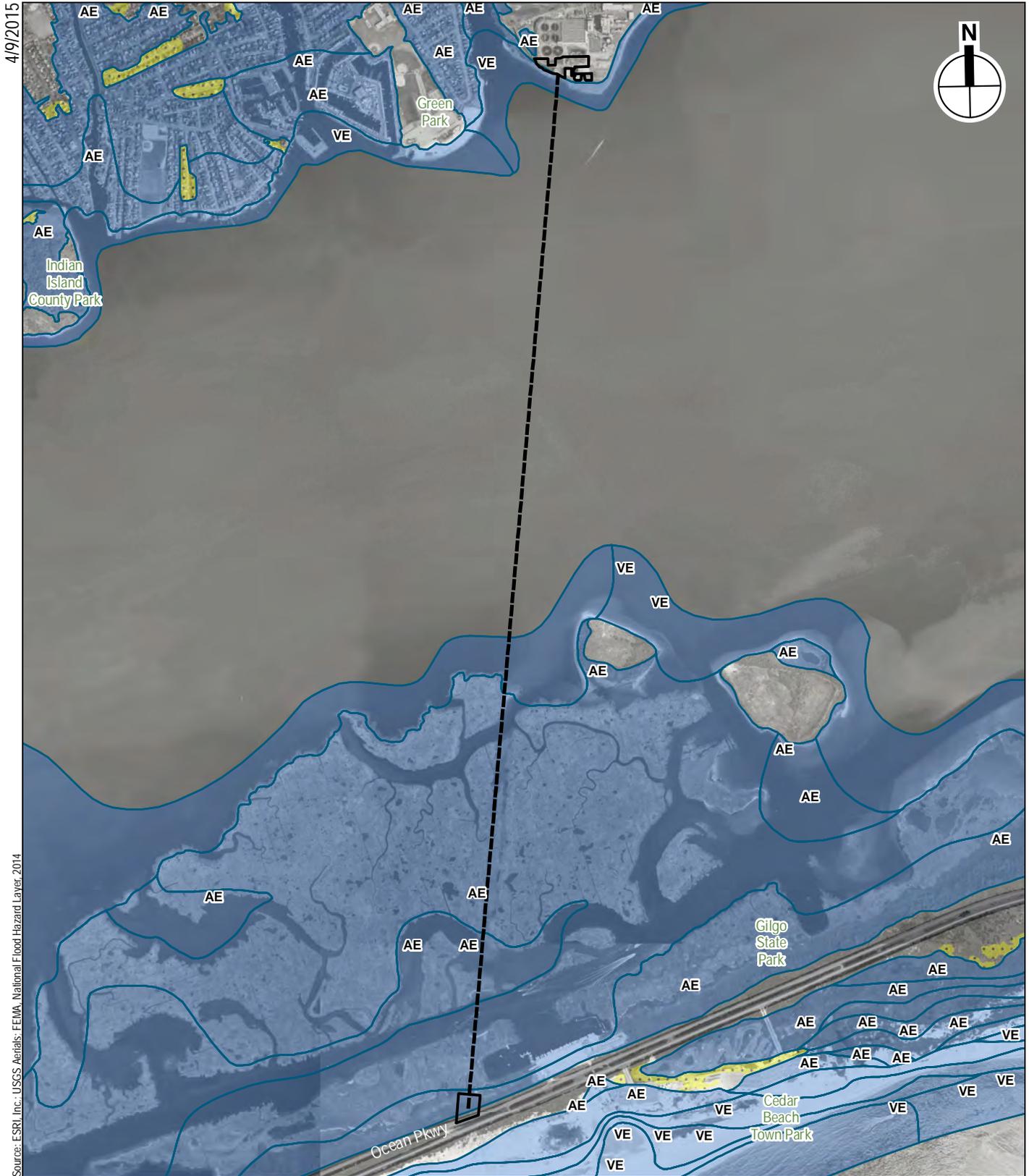
- Existing Outfall
- Access Shafts
- Proposed Replacement Outfall Segment

0 4,000 FEET



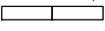
BERGEN POINT WWTP OUTFALL REPLACEMENT PROJECT

Existing Outfall
Figure 2



-  Proposed Staging Areas
-  Proposed Outfall
-  100-Year Floodplain
-  500-Year Floodplain

0 1,000 FEET

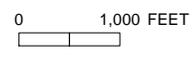


4/10/2015



Source: E.SRI, Inc.; USGS Aerials; NWI Mapped Wetlands; USFWS, 2014

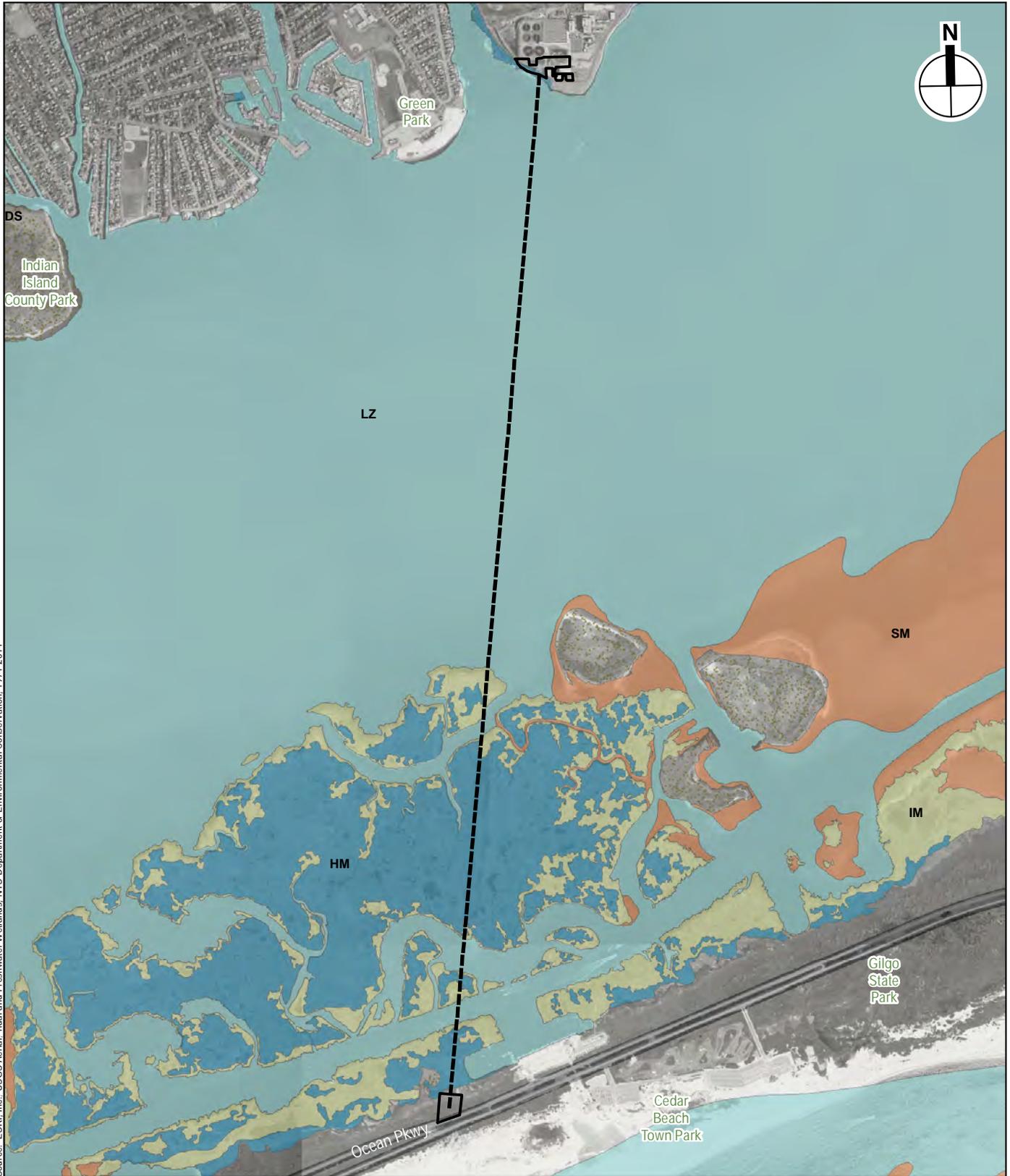
- Proposed Staging Areas
- Proposed Outfall
- Freshwater Pond
- Estuarine and Marine Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Emergent Wetland
- Estuarine and Marine Deepwater



BERGEN POINT WWTP OUTFALL REPLACEMENT PROJECT

NWI Wetlands
Figure 4A

4/10/2015



Source: ESRI, Inc.; USGS Aerial; Tidal and Freshwater Wetlands, NYS Department of Environmental Conservation, 1974-2014

-  Proposed Staging Areas
-  Proposed Outfall
-  Littoral Zone
-  Coastal Shoals, Bars and Mudflats
-  High Marsh
-  Intertidal Marsh
-  Dredged Spoil
-  Formerly Connected Wetlands

0 1,000 FEET

[Appendix A](#)

State Pollutant Elimination System (SPDES) Permit

[Appendix B](#)

Engineering Report Executive Summary

[Appendix C](#)

USFWS Correspondence

[Appendix D](#)

Construction Impact Analysis

[Appendix E](#)

Coastal Zone Management

[Appendix F](#)

Floodplain Management and Wetland Protection Plan

[Appendix G](#)

Historic Preservation

[Appendix H](#)

Sole Source Aquifer

APPENDIX A

State Pollutant Elimination System (SPDES) Permit

New York State Department of Environmental Conservation

Division of Environmental Permits

NYSDEC HEADQUARTERS

625 BROADWAY

ALBANY, NY 12233

(518) 402-9167



SPDES PERMIT RENEWAL

9/17/2014

ROBERT N FALK
SUFFOLK CO DEPT OF PUBLIC WORKS SANITATION
O&M DIV
335 YAPHANK AVE
YAPHANK NY 11980-9744

Permittee Name: SUFFOLK COUNTY
Facility Name: BERGEN POINT WWTP
Ind. Code: 4952 County: SUFFOLK
DEC ID: 1-4720-00355/00008 SPDES No.: NY0104809
Permit Effective Date: 1/1/2015
Permit Expiration Date: 12/31/2019

Dear Permittee,

The State Pollutant Elimination System (SPDES) permit renewal for the facility referenced above is approved with the new effective and expiration dates. This letter together with the previous valid permit for this facility effective on 01/01/2010 and any subsequent modifications constitute authorization to discharge wastewater in accordance with all terms, conditions and limitations specified in the previously issued permit(s).

As a reminder, SPDES permits are renewed at a central location in Albany in order to make the process more efficient. All other concerns with your permit, including applications for permit modification or transfer to a new owner, a name change, and other questions, should be directed to:

Regional Permit Administrator
NYSDEC REGION 1 HEADQUARTERS
SUNY @ STONY BROOK|50 CIRCLE RD
STONY BROOK, NY 11790-3409
(631) 444-0365

If you have already filed an application for modification of your permit, it will be processed separately by that office.

If you have questions concerning this permit renewal, please contact LINDY SUE CZUBERNAT at (518) 402-9167.

Sincerely,

Stuart M. Fox
Deputy Chief Permit Administrator

CC:
RPA
BWC

RWE
File

BWP
EPA

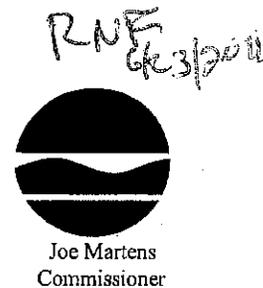
New York State Department of Environmental Conservation

Division of Environmental Permits, 4th Floor

625 Broadway, Albany, NY 12233-1750

Phone: (518) 402-9167 • Fax: (518) 402-9168

Website: www.dec.ny.gov



June 17, 2011

SD#3
Mod
Rec'd
6/23/11
Current
AK
6/23/11
as of
6/23/11

Mr. Robert Falk
Permit Administrator
Suffolk County Department of Public Works
335 Yaphank Avenue
Yaphank, NY 11980

Re: Suffolk County Sewer District No. 3-Southwest (aka Bergen Point)
DEC#1-4720-00355/00008 SPDES#: NY0104809

Dear Mr. Falk:

Enclosed is a final modified State Pollutant Discharge Elimination System (SPDES) permit for the above referenced facility. This permit has been modified in accordance with the Environmental Benefit Permit Strategy. Comments were received from you on this modification and are addressed in the enclosed response to comments.

Should you have questions on the administration of this modification, please feel free to contact me at the address or phone number listed above. Should you have technical questions on permit content, please contact the permit writer, Rashid Ahmed, at (518) 402-8272, or the Regional Water Engineer, Bill Spitz, at (631) 444-0405.

Sincerely,

Teresa Diehsner
Division of Environmental Permits

Enclosure

- c: R. Evans, RPA
- B. Spitz, RWE
- R. Ahmed, Permit Writer
- C. Jamison, CO-BWP Permit Coordinator
- M. Josilo, EPA Reg 2
- N. Myers, NYSEFC
- Suffolk Co DOH
- R. Brady, IEC

p3 Hg FW (6) should be (5)
CC DONO 6/14
FBI-Mg-



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
State Pollutant Discharge Elimination System (SPDES)
DISCHARGE PERMIT

File#3.99

| | |
|--------------------------|--------------------------------------|
| Industrial Code: 4952 | SPDES Number: NY0104809 |
| Discharge Class (CL): 05 | DEC Number: 1-4720-00355/00008 |
| Toxic Class (TX): T | Effective Date (EDP): 1/01/2010 |
| Major Drainage Basin: 17 | Expiration Date (ExDP): 12/31/2014 |
| Sub Drainage Basin: 01 | Modification Dates:(EDPM) 08/01/2011 |
| Water Index Number: AO | |
| Compact Area: | |

*Rec'd
6/23/2011*

This SPDES permit is issued in compliance with Title 8 of Article 17 of the Environmental Conservation Law of New York State and in compliance with the Clean Water Act, as amended, (33 U.S.C. §1251 et.seq.)(hereinafter referred to as "the Act").

PERMITTEE NAME AND ADDRESS

| | |
|---|---|
| Name: Suffolk County | Attention: Robert Falk, Permit Administrator |
| Street: H. Lee Dennison Building | |
| City: Hauppauge | State: NY Zip Code: 11788 |

is authorized to discharge from the facility described below:

FACILITY NAME AND ADDRESS

| | |
|---|---|
| Name: Suffolk County Sewer District No. 3 – Southwest (aka Bergen Point) | County: Suffolk |
| Location (C,T,V): West Babylon (T) | |
| Facility Address: 600 Bergen Avenue | |
| City: West Babylon | State: NY Zip Code: 11704 |
| NYTM -E: From Outfall No.: 001 | NYTM - N: at Latitude: 40 ° 35 ' 28 " & Longitude : 73 ° 21 ' 06 " |
| into receiving waters known as: Atlantic Ocean | Class: SA |

and; (list other Outfalls, Receiving Waters & Water Classifications) **None**

in accordance with: effluent limitations; monitoring and reporting requirements; other provisions and conditions set forth this permit; and 6 NYCRR Part 750-1.2(a) and 750-2.

DISCHARGE MONITORING REPORT (DMR) MAILING ADDRESS

| | |
|---|---|
| Mailing Name: Suffolk County Sewer District No. 3 – Southwest (aka Bergen Point) | |
| Street: 600 Bergen Avenue | |
| City: West Babylon | State: NY Zip Code: 11704 |
| Responsible Official or Agent: David Krol | Phone: (631) 852-4204 |

This permit and the authorization to discharge shall expire on midnight of the expiration date shown above and the permittee shall not discharge after the expiration date unless this permit has been renewed, or extended pursuant to law. To be authorized to discharge beyond the expiration date, the permittee shall apply for permit renewal not less than 180 days prior to the expiration date shown above.

DISTRIBUTION:

CO BWP - Permit Coordinator
 RWE/RPA
 EPA Region II - Michelle Josilo
 NYSEFC
 Suffolk County Department of Health
 Brain Baker – Section Chief, BWP
 IEC

| | |
|---|----------------------|
| Deputy Chief Permit Administrator: Stuart M. Fox | |
| Address: Division of Environmental Permit 625 Broadway Albany, NY 12233-1750 | |
| Signature: <i>Stuart M. Fox</i> | Date: <i>6/17/11</i> |

PERMIT LIMITS, LEVELS AND MONITORING DEFINITIONS

L:\DDW\SPDES\FORMS\REORGANIZED PERMIT FORMS\10 Easy permit\ind EZ.wpd

| OUTFALL | WASTEWATER TYPE | RECEIVING WATER | EFFECTIVE | EXPIRING | | |
|---------------------------------|--|---|--|--|---|---|
| | This cell describes the type of wastewater authorized for discharge. Examples include process or sanitary wastewater, storm water, non-contact cooling water. | This cell lists classified waters of the state to which the listed outfall discharges. | The date this page starts in effect. (e.g. EDP or EDPM) | The date this page is no longer in effect. (e.g. ExDP) | | |
| PARAMETER | MINIMUM | MAXIMUM | UNITS | SAMPLE FREQ. | SAMPLE TYPE | |
| e.g. pH, TRC, Temperature, D.O. | The minimum level that must be maintained at all instants in time. | The maximum level that may not be exceeded at any instant in time. | SU, °F, mg/l, etc. | | | |
| PARA-METER | EFFLUENT LIMIT | PRACTICAL QUANTITATION LIMIT (ML) | ACTION LEVEL | UNITS | SAMPLE FREQUENCY | SAMPLE TYPE |
| | Limit types are defined below in Note 1. The effluent limit is developed based on the more stringent of technology-based standards, required under the Clean Water Act, or New York State water quality standards. The limit has been derived based on existing assumptions and rules. These assumptions include receiving water hardness, pH and temperature; rates of this and other discharges to the receiving stream; etc. If assumptions or rules change the limit may, after due process and modification of this permit, change. | For the purposes of compliance assessment, the analytical method specified in the permit shall be used to monitor the amount of the pollutant in the outfall to this level, provided that the laboratory analyst has complied with the specified quality assurance/quality control procedures in the relevant method. Monitoring results that are lower than this level must be reported, but shall not be used to determine compliance with the calculated limit. This ML can be neither lowered nor raised without a modification of this permit. | Action Levels are nonitoning requirements, as defined below in Note 2, that trigger additional monitoring and permit review when exceeded. | This can include units of flow, pH, mass, Temperature, concentration. Examples include µg/l, lbs/d, etc. | Examples include Daily, 3/week, weekly, 2/month, monthly, quarterly, 2/yr and yearly. | Examples include grab, 24 hour composite and 3 grab samples collected over a 6 hour period. |

Note 1: DAILY DISCHARGE: The discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for the purposes of sampling. For pollutants expressed in units of mass, the 'daily discharge' is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the 'daily discharge' is calculated as the average measurement of the pollutant over the day. **DAILY MAX:** The highest allowable daily discharge. **DAILY MIN:** The lowest allowable daily discharge. **MONTHLY AVG (daily avg):** The highest allowable average of daily discharges over a calendar month, calculated as the sum of each of the daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. **RANGE:** The minimum and maximum instantaneous measurements for the reporting period must remain between the two values shown. **7 DAY ARITHMETIC MEAN (7 day average):** The highest allowable average of daily discharges over a calendar week. **12 MRA (twelve month rolling avg):** The average of the most recent twelve month's monthly averages. **30 DAY GEOMETRIC MEAN (30 d geo mean):** The highest allowable geometric mean of daily discharges over a calendar month, calculated as the antilog of : the sum of the log of each of the daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. **7 DAY GEOMETRIC MEAN (7 d geo mean):** The highest allowable geometric mean of daily discharges over a calendar week.

Note 2: ACTION LEVELS: Routine Action Level monitoring results, if not provided for on the Discharge Monitoring Report (DMR) form, shall be appended to the DMR for the period during which the sampling was conducted. If the additional monitoring requirement is triggered as noted below, the permittee shall undertake a short-term, high-intensity monitoring program for the parameter(s). Samples identical to those required for routine monitoring purposes shall be taken on each of at least three consecutive operating and discharging days and analyzed. Results shall be expressed in terms of both concentration and mass, and shall be submitted no later than the end of the third month following the month when the additional monitoring requirement was triggered. Results may be appended to the DMR or transmitted under separate cover to the same address. If levels higher than the Action Levels are confirmed, the permit may be reopened by the Department for consideration of revised Action Levels or effluent limits. The permittee is not authorized to discharge any of the listed parameters at levels which may cause or contribute to a violation of water quality standards. The additional monitoring requirement is triggered upon receipt by the permittee of any monitoring results in excess of the stated Action Level.

PERMIT LIMITS, LEVELS AND MONITORING:

| OUTFALL No. | LIMITATIONS APPLY: | | | | | RECEIVING WATER | EFFECTIVE | EXPIRING | | |
|---|---------------------------------------|-----------|------------|--------|-------|-------------------------|-------------|----------------|------|-------|
| 001 | [X] All Year Unless otherwise noted | | | | | Atlantic Ocean | 08/01/2011 | See Footnote 7 | | |
| PARAMETER | EFFLUENT LIMIT | | | | | MONITORING REQUIREMENTS | | | | FN |
| | Type | Limit | Units | Limit | Units | Sample Frequency | Sample Type | Location | | |
| | | | | | | | | Inf. | Eff. | |
| Flow | Monthly Average | 30.5 | MGD | | | Continuous | Recorder | X | | |
| CBOD ₅ | Monthly average | 25 | mg/l | 6,400 | lbs/d | 1/day | 24 hr Comp. | X | X | (1) |
| CBOD ₅ | 7 day average | 40 | mg/l | 10,000 | lbs/d | 1/day | 24 hr Comp. | | X | |
| BOD ₅ | 6 cons. hr. sample mean | 50 | mg/l | | | | Grab | | X | (2) |
| Solids, Suspended | Monthly average | 30 | mg/l | 7,600 | lbs/d | 1/day | 24 hr Comp. | X | X | (1) |
| Solids, Suspended | 7 day average | 45 | mg/l | 11,000 | lbs/d | 1/day | 24 hr Comp. | | X | |
| Solids, Suspended | 6 cons. hr. sample mean | 50 | mg/l | | | | Grab | | X | (2) |
| Solids, Settleable | Daily Max. | 0.3 | ml/l | | | 6/day | Grab | | X | |
| pH | Range | 6.0 - 9.0 | SU | | | 6/day | Grab | | X | |
| Ammonia (as NH ₃ -N) May 1 – Oct 31 | Daily Maximum | 14.6 | mg/l | | | 1/day | 24 hr Comp. | X | X | (12) |
| Ammonia (as NH ₃ -N) Nov 1 – April 30 | Daily Maximum | Monitor | mg/l | | | 1/month | 24 hr Comp. | X | X | |
| Nitrogen, TKN (as N) | Daily Max. | Monitor | mg/l | | | 1/month | 24 hr Comp. | X | X | |
| Nitrate, (as N) | Daily Max. | Monitor | mg/l | | | 1/month | 24 hr Comp. | X | X | |
| Nitrite, (as N) | Daily Max. | Monitor | mg/l | | | 1/month | 24 hr Comp. | X | X | |
| Temperature | Daily Maximum | Monitor | Deg C | | | 6/day | Grab | | X | |
| Effluent Disinfection required: [X] All Year | | | | | | | | | | |
| Coliform, Fecal | 30 day geometric mean | 200 | No./100 ml | | | 1/day | Grab | | X | (3,4) |
| Coliform, Fecal | 7 day geometric mean | 400 | No./100 ml | | | 1/day | Grab | | X | (3,4) |
| Chlorine, Total Residual | Daily Max. | 3.0 | mg/l | | | 6/day | Grab | | X | (6) |
| Coliform, Total | Monthly median | 700 | No./100 ml | | | 1/day | Grab | | X | (3,4) |
| Coliform, Fecal | 6 hr. geometric mean | 800 | No./100 ml | | | | Grab | | X | (2) |
| Coliform, Fecal | Individual sample | 2400 | No./100 ml | | | | Grab | | X | (2) |

FOOTNOTES: See pages 8, 9, and 10.

Permit Limits, Levels and Monitoring:

| OUTFALL No. | WASTEWATER TYPE | RECEIVING WATER | EFFECTIVE | EXPIRING |
|-------------|-----------------|-----------------|------------|----------------|
| 001 | Municipal | Atlantic Ocean | 08/01/2011 | See Footnote 7 |

| PARAMETER | COMPLIANCE LIMIT | | MONITORING ACTION LEVEL | | UNITS | SAMPLE FREQUENCY | SAMPLE TYPE | FN |
|------------------------------|------------------|------------|-------------------------|---------|---------|------------------|--------------|------|
| | Monthly Avg. | Daily Max. | TYPE I | TYPE II | | | | |
| Mercury, Total | | 200 | | | ng/L | 1/quarter | Grab | (5) |
| Copper, Total | | | 13 | | lbs/day | 1/month | 24 hr. Comp. | |
| Arsenic, Total | | | 12 | | lbs/day | 1/month | 24 hr. Comp. | |
| Thallium, Total | | | 6.3 | | lbs/day | 1/month | 24 hr. Comp. | |
| Zinc, Total | | | 23 | | lbs/day | 1/month | 24 hr. Comp. | |
| Methylene Chloride | | | 5.5 | | lbs/day | 1/month | 24 hr. Comp. | |
| Tetrachloroethylene | | | 0.4 | | lbs/day | 1/month | 24 hr. Comp. | |
| Bis (2-ethylhexyl) Phthalate | | | 1.7 | | lbs/day | 1/month | 24 hr. Comp. | |
| Chloroform | | | 1.4 | | lbs/day | 1/month | 24 hr. Comp. | |
| Toluene | | | 0.4 | | lbs/day | 1/month | 24 hr. Comp. | |
| Phenolics, Total | | | 7.2 | | lbs/day | 1/month | 24 hr. Comp. | |
| WET - Acute Invertebrate | | | 3.6 | | TUa | Quarterly | see footnote | (11) |
| WET - Acute Vertebrate | | | 3.6 | | TUa | Quarterly | see footnote | (11) |
| WET - Chronic Invertebrate | | | 25 | | TUc | Quarterly | see footnote | (11) |
| WET - Chronic Vertebrate | | | 25 | | TUc | Quarterly | see footnote | (11) |

FOOTNOTES: See pages 8, 9, and 10

PERMIT LIMITS, LEVELS AND MONITORING:

| OUTFALL No. | LIMITATIONS APPLY: | | | | RECEIVING WATER | EFFECTIVE | EXPIRING | | | |
|---|---|-----------|------------|--------|-----------------|-------------------------|----------------|----------|---|-------|
| 001 | [X] All Year [] Seasonal from _____ to _____ | | | | Atlantic Ocean | See Footnote 8 | See Footnote 9 | | | |
| PARAMETER | EFFLUENT LIMIT | | | | | MONITORING REQUIREMENTS | | | | FN |
| | Type | Limit | Units | Limit | Units | Sample Frequency | Sample Type | Location | | |
| Flow | Monthly Average | 38.5 | MGD | | | Continuous | Recorder | X | | |
| CBOD ₅ | Monthly average | 25 | mg/l | 8,075 | lbs/d | 1/day | 24 hr Comp. | X | X | (1) |
| CBOD ₅ | 7 day average | 40 | mg/l | 12,620 | lbs/d | 1/day | 24 hr Comp. | | X | |
| BOD ₅ | 6 cons. hr. sample mean | 50 | mg/l | | | | Grab | | X | (2) |
| Solids, Suspended | Monthly average | 30 | mg/l | 9,590 | lbs/d | 1/day | 24 hr Comp. | X | X | (1) |
| Solids, Suspended | 7 day average | 45 | mg/l | 13,880 | lbs/d | 1/day | 24 hr Comp. | | X | |
| Solids, Suspended | 6 cons. hr. sample mean | 50 | mg/l | | | | Grab | | X | (2) |
| Solids, Settleable | Daily Max. | 0.3 | ml/l | | | 6/day | Grab | | X | |
| pH | Range | 6.0 - 9.0 | SU | | | 6/day | Grab | | X | |
| Ammonia (as NH ₃) May 1 - Oct 31 | Monthly Average | 16.43 | mg/l | | | 1/day | 24 hr Comp. | X | X | (12) |
| Ammonia (as NH ₃) Nov 1 - April 30 | Monthly Average | 48.50 | mg/l | | | 1/day | 24 hr Comp. | X | X | |
| Nitrogen, TKN (as N) | Daily Max. | Monitor | mg/l | | | 1/month | 24 hr Comp. | X | X | |
| Nitrate, (as N) | Daily Max. | Monitor | mg/l | | | 1/month | 24 hr Comp. | X | X | |
| Nitrite, (as N) | Daily Max. | Monitor | mg/l | | | 1/month | 24 hr Comp. | X | X | |
| Temperature | Daily Maximum | Monitor | Deg C | | | 6/day | Grab | | X | |
| Effluent Disinfection required: [X] All Year [] Seasonal from _____ to _____ | | | | | | | | | | |
| Coliform, Fecal | 30 day geometric mean | 200 | No./100 ml | | | 1/day | Grab | | X | (3,4) |
| Coliform, Fecal | 7 day geometric mean | 400 | No./100 ml | | | 1/day | Grab | | X | (3,4) |
| Chlorine, Total Residual | Daily Maximum | 3.00 | mg/l | | | 6/day | Grab | | X | (6) |
| Coliform, Total | Monthly median | 700 | No./100 ml | | | 1/day | Grab | | X | (3,4) |
| Coliform, Fecal | 6 hr. geometric mean | 800 | No./100 ml | | | | Grab | | X | (2) |
| Coliform, Fecal | Individual sample | 2400 | No./100 ml | | | | Grab | | X | (2) |

FOOTNOTES: See on the pages 8, 9, and 10

PERMIT LIMITS, LEVELS AND MONITORING:

| OUTFALL No. | WASTEWATER TYPE | RECEIVING WATER | EFFECTIVE | EXPIRING |
|-------------|-----------------|-----------------|----------------|----------------|
| 001 | Municipal | Atlantic Ocean | See Footnote 8 | See Footnote 9 |

| PARAMETER | COMPLIANCE LIMIT | | MONITORING ACTION LEVEL | UNITS | SAMPLE FREQUENCY | SAMPLE TYPE | FN |
|------------------------------|------------------|------------|-------------------------|---------|------------------|--------------|------|
| | Monthly Avg. | Daily Max. | | | | | |
| Mercury, Total | | 200 | | ng/L | 1/quarter | Grab | (5) |
| Copper, Total | | | 16 | lbs/day | 1/month | 24 hr. Comp. | |
| Arsenic, Total | | | 15 | lbs/day | 1/month | 24 hr. Comp. | |
| Thallium, Total | | | 7.98 | lbs/day | 1/month | 24 hr. Comp. | |
| Zinc, Total | | | 29 | lbs/day | 1/month | 24 hr. Comp. | |
| Methylene Chloride | | | 6.94 | lbs/day | 1/month | 24 hr. Comp. | |
| Tetrachloroethylene | | | 0.50 | lbs/day | 1/month | 24 hr. Comp. | |
| Bis (2-ethylhexyl) Phthalate | | | 2.1 | lbs/day | 1/month | 24 hr. Comp. | |
| Chloroform | | | 1.76 | lbs/day | 1/month | 24 hr. Comp. | |
| Toluene | | | 0.50 | lbs/day | 1/month | 24 hr. Comp. | |
| Phenolics, Total | | | 9.0 | lbs/day | 1/month | 24 hr. Comp. | |
| | | | | | | | |
| WET - Acute Invertebrate | | | 3.6 | TUa | Quarterly | see footnote | (11) |
| WET - Acute Vertebrate | | | 3.6 | TUa | Quarterly | see footnote | (11) |
| WET - Chronic Invertebrate | | | 25 | TUc | Quarterly | see footnote | (11) |
| WET - Chronic Vertebrate | | | 25 | TUc | Quarterly | see footnote | (11) |

FOOTNOTES: See on the pages 8, 9, and 10

PERMIT LIMITS, LEVELS AND MONITORING:

| OUTFALL No. | LIMITATIONS APPLY: | | RECEIVING WATER | | | EFFECTIVE | EXPIRING | | | |
|---|---|-----------|-----------------|--------|-------|-------------------------|-------------|----------|------|-------|
| 001 | [X] All Year [] Seasonal from _____ to _____ | | Atlantic Ocean | | | See Footnote 10 | 12/31/2014 | | | |
| PARAMETER | EFFLUENT LIMIT | | | | | MONITORING REQUIREMENTS | | | | FN |
| | Type | Limit | Units | Limit | Units | Sample Frequency | Sample Type | Location | | |
| | | | | | | | | Inf. | Eff. | |
| Flow | Monthly Average | 40.5 | MGD | | | Continuous | Recorder | X | | |
| CBOD ₅ | Monthly average | 25 | mg/l | 8500 | lbs/d | 1/day | 24 hr Comp. | X | X | (1) |
| CBOD ₅ | 7 day average | 40 | mg/l | 13,500 | lbs/d | 1/day | 24 hr Comp. | | X | |
| BOD ₅ | 6 cons. hr. sample mean | 50 | mg/l | | | | Grab | | X | (2) |
| Solids, Suspended | Monthly average | 30 | mg/l | 10,350 | lbs/d | 1/day | 24 hr Comp. | X | X | (1) |
| Solids, Suspended | 7 day average | 45 | mg/l | 15,200 | lbs/d | 1/day | 24 hr Comp. | | X | |
| Solids, Suspended | 6 cons. hr. sample mean | 50 | mg/l | | | | Grab | | X | (2) |
| Solids, Settleable | Daily Max. | 0.3 | ml/l | | | 6/day | Grab | | X | |
| pH | Range | 6.0 - 9.0 | SU | | | 6/day | Grab | | X | |
| Ammonia (as NH ₃) May 1 - Oct 31 | Monthly Average | 16.43 | mg/l | | | 1/day | 24 hr Comp. | X | X | (12) |
| Ammonia (as NH ₃) Nov 1 - April 30 | Monthly Average | 48.50 | mg/l | | | 1/day | 24 hr Comp. | X | X | |
| Nitrogen, TKN (as N) | Daily Max. | Monitor | mg/l | | | 1/month | 24 hr Comp. | X | X | |
| Nitrate, (as N) | Daily Max. | Monitor | mg/l | | | 1/month | 24 hr Comp. | X | X | |
| Nitrite, (as N) | Daily Max. | Monitor | mg/l | | | 1/month | 24 hr Comp. | X | X | |
| Temperature | Daily Maximum | Monitor | Deg C | | | 6/day | Grab | | X | |
| Effluent Disinfection required: [X] All Year [] Seasonal from _____ to _____ | | | | | | | | | | |
| Coliform, Fecal | 30 day geometric mean | 200 | No./100 ml | | | 1/day | Grab | | X | (3,4) |
| Coliform, Fecal | 7 day geometric mean | 400 | No./100 ml | | | 1/day | Grab | | X | (3,4) |
| Chlorine, Total Residual | Daily Maximum | 3.00 | mg/l | | | 6/day | Grab | | X | (6) |
| Coliform, Total | Monthly median | 700 | No./100 ml | | | 1/day | Grab | | X | (3,4) |
| Coliform, Fecal | 6 hr. geometric mean | 800 | No./100 ml | | | | Grab | | X | (2) |
| Coliform, Fecal | Individual sample | 2400 | No./100 ml | | | | Grab | | X | (2) |

FOOTNOTES: See on the pages 8, 9, and 10

PERMIT LIMITS, LEVELS AND MONITORING:

| OUTFALL No. | WASTEWATER TYPE | RECEIVING WATER | EFFECTIVE | EXPIRING |
|-------------|-----------------|-----------------|-----------------|------------|
| 001 | Municipal | Atlantic Ocean | See Footnote 10 | 12/31/2014 |

| PARAMETER | COMPLIANCE LIMIT | | MONITORING ACTION LEVEL | UNITS | SAMPLE FREQUENCY | SAMPLE TYPE | FN |
|------------------------------|------------------|------------|-------------------------|---------|------------------|--------------|------|
| | Monthly Avg. | Daily Max. | TYPE I | | | | |
| Mercury, Total | | 200 | | ng/L | 1/quarter | Grab | (6) |
| Copper, Total | | | 17 | lbs/day | 1/month | 24 hr. Comp. | |
| Arsenic, Total | | | 16 | lbs/day | 1/month | 24 hr. Comp. | |
| Thallium, Total | | | 8.4 | lbs/day | 1/month | 24 hr. Comp. | |
| Zinc, Total | | | 30 | lbs/day | 1/month | 24 hr. Comp. | |
| Methylene Chloride | | | 7.3 | lbs/day | 1/month | 24 hr. Comp. | |
| Tetrachloroethylene | | | 0.53 | lbs/day | 1/month | 24 hr. Comp. | |
| Bis (2-ethylhexyl) Phthalate | | | 2.25 | lbs/day | 1/month | 24 hr. Comp. | |
| Chloroform | | | 1.85 | lbs/day | 1/month | 24 hr. Comp. | |
| Toluene | | | 0.53 | lbs/day | 1/month | 24 hr. Comp. | |
| Phenolics, Total | | | 9.5 | lbs/day | 1/month | 24 hr. Comp. | |
| | | | | | | | |
| WET - Acute Invertebrate | | | 3.6 | TUa | Quarterly | see footnote | (11) |
| WET - Acute Vertebrate | | | 3.6 | TUa | Quarterly | see footnote | (11) |
| WET - Chronic Invertebrate | | | 25 | TUc | Quarterly | see footnote | (11) |
| WET - Chronic Vertebrate | | | 25 | TUc | Quarterly | see footnote | (11) |

FOOTNOTES: See on the pages 8, 9, and 10

FOOTNOTES:

(1) Effluent shall not exceed 15 % and 15 % of influent concentration values for CBOD₅ & TSS respectively.

(2) This is an Interstate Environmental Commission (IEC) requirement. The permittee is not required to perform this sampling but shall be required to meet the permit limit at all times. EPA, DEC or IEC may perform the sampling.

(3) Additional Coliform Limitations and Requirements:

(a) The multiple tube fermentation procedure (MPN) is the only approved fecal and total coliform testing procedure.

FOOTNOTES – Continued:

(b) Facilities may regularly sample on a more frequent schedule than the minimum required by this permit.

(c) For facilities sampling less than ten (10) times per month, the estimated 90th percentile of total coliform readings shall not exceed an MPN of 3,300/100 ml for the 3 tube per decimal dilution MPN test, nor an MPN of 2,300/100 for the 5 tube per decimal dilution MPN test. The estimated 90th percentile is calculated using the Guideline in the National Shellfish Sanitation Program Manual of Operations, 1989 revision, Page APF-3.

(d) For facilities sampling ten (10) or more times per month, no more than 10 percent of the total coliform readings shall exceed an MPN of 3,300/100 ml for the 3 tube per decimal dilution MPN test, nor an MPN of 2,300/100 ml for the 5 tube per decimal dilution MPN test.

(4) Grab samples shall be taken during periods which include normally high effluent flows.

(5) Mercury analysis is to be performed by EPA method 1631 and limit units are in nanograms/liter.

Permittee may use EPA method 245.7 for mercury analysis. If the Permittee decides to use EPA method 245.7, duplicate samples shall be collected each monitoring event. One sample shall be analyzed by using EPA method 245.7. In case the EPA method 245.7 does not detect any mercury in the effluent wastewater, the duplicate sample must be analyzed by EPA method 1631.

(6) The limit of 3.0 mg/l for TRC is an interim limit. This interim limit will expire in the permit upon startup of the UV disinfection system. And upon startup of the UV system, the Water Quality Based Effluent Limit (WQBEL) of 0.40 mg/l for TRC will become effective in the permit.

In addition, TRC limit is applicable to the permit when chlorine is used for disinfection. If chlorine is not used at all during a reporting period, the permittee will note NODI 9 on the DMR.

(7) The limits on this page shall expire upon startup of the 38.5 MGD facility. The startup date for the 38.5 MGD facility will be identified in a letter from the permittee to the offices listed on the Monitoring, Reporting and Recording page of this permit and to the Chief, Bureau of Water Permits, West Section, 625 Broadway, Albany, NY 12233-3505. Startup shall commence only after receipt of certification from a PE, licensed in NYS, that the treatment plant was constructed in accordance with DEC or EFC approved reports, plans and specifications.

(8) The limits on this page shall become effective upon startup of the 38.5 MGD facility.

(9) The limits on this page shall expire upon startup of the 40.5 mgd facility. The startup dates for the 40.5 mgd will be identified in letters from the permittee to the offices listed on the Monitoring, Reporting and Recording page of this permit and to the Chief, Bureau of Water Permits, West Section, 625 Broadway, Albany, NY 12233-3505. Startup shall commence only after receipt of certification from a PE, licensed in NYS, that the treatment plant was constructed in accordance with DEC or EFC approved reports, plans and specifications.

(10) The limits on this page shall become effective upon startup of the 40.5 MGD facility.

(11) Whole Effluent Toxicity (WET) Testing:

Testing Requirements - WET testing shall consist of Chronic only. WET testing shall be performed in accordance with 40 CFR Part 136 and TOGS 1.3.2 unless prior written approval has been obtained from the Department. The test species shall be *Mysidopsis bahia* (mysid shrimp - invertebrate) and *Cyprinodon*

FOOTNOTES – Continued:

variegatus (sheepshead minnow - vertebrate). Artificial salt water should be used for dilution. All tests conducted should be static-renewal (two 24 hr composite samples with one renewal for Acute tests and three 24 hr composite samples with two renewals for Chronic tests). The appropriate dilution series bracketing the IWC and including one exposure group of 100% effluent should be used to generate a definitive test endpoint, otherwise an immediate rerun of the test is required. WET testing shall be coordinated with the monitoring of chemical and physical parameters limited by this permit so that the resulting analyses are also representative of the sample used for WET testing. The ratio of critical receiving water flow to discharge flow (i.e. dilution ratio) is 12:1 for acute, and 25:1 for chronic. Discharges which are disinfected using chlorine should be dechlorinated prior to WET testing or samples shall be taken immediately prior to the chlorination system.

Monitoring Period - WET testing shall be performed at the specified sample frequency during calendar years ending in 4 and 9, beginning in January and lasting for a period of one full year.

Reporting - Toxicity Units shall be calculated and reported on the DMR as follows: $TU_a = (100)/(48 \text{ hr LC50})$ or $(100)/(48 \text{ hr EC50})$ (note that Acute data is generated by both Acute and Chronic testing) and $TU_c = (100)/(NOEC)$ when Chronic testing has been performed or $TU_c = (TU_a) \times (20)$ when only Acute testing has been performed and is used to predict Chronic test results, where the 48 hr LC50 or 48 hr EC50 and NOEC are expressed in % effluent. This must be done for both species and using the Most Sensitive Endpoint (MSE) or the lowest NOEC and corresponding highest TU_c . Report a TU_a of 0.3 if there is no statistically significant toxicity in 100% effluent as compared to control.

The complete test report including all corresponding results, statistical analyses, reference toxicity data, daily average flow at the time of sampling and other appropriate supporting documentation, shall be submitted within 60 days following the end of each test period to the Toxicity Testing Unit. A summary page of the test results for the invertebrate and vertebrate species indicating TU_a , 48 hr LC50 or 48 hr EC50 for Acute tests and/or TU_c , NOEC, IC25, and most sensitive endpoints for Chronic tests, should also be included at the beginning of the test report.

WET Testing Action Level and Limit Exceedances - If an action level or limit is exceeded then the Department may require the permittee to conduct additional WET testing including Acute and/or Chronic tests. Additionally, the permittee may be required to perform a Toxicity Reduction Evaluation (TRE) in accordance with Department guidance. If such additional testing or performance of a TRE is necessary, the permittee shall be notified in writing by the Regional Water Engineer. The written notification shall include the reason(s) why such testing or a TRE is required. Additionally, if a permit limit is exceeded the permittee is in noncompliance.

(12) Influent ammonia shall be monitored once per month.

SPECIAL CONDITIONS

No sewer extensions (outside the approved district) without prior DEC approval. Any proposed connections, not identified and qualified in an approved facility engineering report, will require necessary on-line capacity and separate DEC approval.

SCHEDULE OF COMPLIANCE

a) Total Residual Chlorine

| Action Code | Outfall Number(s) | Compliance Action | Due Date |
|-------------|-------------------|---|--|
| | 001 | <p>The Permittee shall commence construction of the facilities described in the approved report titled "Southwest Sewer District No. 3, Bergen Point wastewater Treatment Plant, Effluent Ultraviolet Disinfection" dated July 2010.</p> <p>The Permittee shall submit progress reports detailing the work done in accordance with the approved engineering report and schedule of construction.</p> <p>The permittee shall complete all construction works for the UV disinfection facilities as per approved plans and specifications. And the permittee shall start its operation.</p> | <p>Before July 1st, 2012</p> <p>Every 3 months from the commencement date</p> <p>Commencement of construction + 24 months</p> |

The above compliance actions are one time requirements. The permittee shall comply with the above compliance actions to the Department's satisfaction once. When this permit is administratively renewed by NYSDEC letter entitled "SPDES NOTICE/RENEWAL APPLICATION/PERMIT", the permittee is not required to repeat the submission. The above due dates are independent from the effective date of the permit stated in the letter of "SPDES NOTICE/RENEWAL APPLICATION/PERMIT."

- b) The permittee shall submit a written notice of compliance or non-compliance with each of the above schedule dates no later than 14 days following each elapsed date, unless conditions require more immediate notice as prescribed in 6 NYCRR Part 750-1.2(a) and 750-2. All such compliance or non-compliance notification shall be sent to the locations listed under the section of this permit entitled RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS. Each notice of non-compliance shall include the following information:
1. A short description of the non-compliance;
 2. A description of any actions taken or proposed by the permittee to comply with the elapsed schedule requirements without further delay and to limit environmental impact associated with the non-compliance;
 3. A description or any factors which tend to explain or mitigate the non-compliance; and
 4. An estimate of the date the permittee will comply with the elapsed schedule requirement and an assessment of the probability that the permittee will meet the next scheduled requirement on time.
- c) The permittee shall submit copies of any document required by the above schedule of compliance to NYSDEC Regional Water Engineer at the location listed under the section of this permit entitled RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS and to the Bureau of Water Permits, 625 Broadway, Albany, N.Y. 12233-3505, unless otherwise specified in this permit or in writing by the Department.

PRETREATMENT PROGRAM IMPLEMENTATION REQUIREMENTS

- A. **DEFINITIONS.** Generally, terms used in this Section shall be defined as in the General Pretreatment Regulations (40 CFR Part 403). Specifically, the following definitions apply to terms used in this Section (PRETREATMENT PROGRAM IMPLEMENTATION REQUIREMENTS):
1. **Categorical Industrial User (CIU)**- an industrial user of the POTW that is subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N;
 2. **Local Limits** - General Prohibitions, specific prohibitions and specific limits as set forth in 40 CFR 403.5.
 3. **The Publicly Owned Treatment Works (the POTW)** - as defined by 40 CFR 403.3(o) and that discharges in accordance with this permit.
 4. **Program Submission(s)** - requests for approval or modification of the POTW Pretreatment Program submitted in accordance with 40 CFR 403.11 or 403.18 and approved by letter dated September 1985.
 5. **Significant Industrial User (SIU)** -
 - a. CIUs;
 - b. Except as provided in 40 CFR 403.3(t)(2), any other industrial user that discharges an average of 25,000 gallons per day or more of process wastewater (excluding sanitary, non-contact cooling and boiler blowdown wastewater) to the POTW;
 - c. Except as provided in 40 CFR 403.3(t)(2), any other industrial user that contributes a process wastestream which makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant;
 - d. Any other industrial user that the permittee designates as having a reasonable potential for adversely affecting the POTW's operation or for violating a pretreatment standard or requirement.
 6. **Substances of Concern** - Substances identified by the New York State Department of Environmental Conservation Industrial Chemical Survey as substances of concern.
- B. **IMPLEMENTATION.** The permittee shall implement a POTW Pretreatment Program in accordance 40 CFR Part 403 and as set forth in the permittee's approved Program Submission(s). Modifications to this program shall be made in accordance with 40 CFR 403.18. Specific program requirements are as follows:
1. **Industrial Survey.** To maintain an updated inventory of industrial dischargers to the POTW the permittee shall:
 - a. Identify, locate and list all industrial users who might be subject to the industrial pretreatment program from the pretreatment program submission and any other necessary, appropriate and available sources. This identification and location list will be updated, at a minimum, every five years. As part of this update the permittee shall collect a current and complete New York State Industrial Chemical Survey form (or equivalent) from each SIU.
 - b. Identify the character and volume of pollutants contributed to the POTW by each industrial user identified in B.1.a above that is classified as a SIU.
 - c. Identify, locate and list, from the pretreatment program submission and any other necessary, appropriate and available sources, all significant industrial users of the POTW.
 2. **Control Mechanisms.** To provide adequate notice to and control of industrial users of the POTW the permittee shall:

PRETREATMENT PROGRAM IMPLEMENTATION REQUIREMENTS-Continued

- a. Inform by certified letter, hand delivery courier, overnight mail, or other means which will provide written acknowledgment of delivery, all industrial users identified in B.1.a. above of applicable pretreatment standards and requirements including the requirement to comply with the local sewer use law, regulation or ordinance and any applicable requirements under section 204(b) and 405 of the Federal Clean Water Act and Subtitles C and D of the Resource Conservation and Recovery Act.
 - b. Control through permit or similar means the contribution to the POTW by each SIU to ensure compliance with applicable pretreatment standards and requirements. Permits shall contain limitations, sampling frequency and type, reporting and self-monitoring requirements as described below, requirements that limitations and conditions be complied with by established deadlines, an expiration date not later than five years from the date of permit issuance, a statement of applicable civil and criminal penalties and the requirement to comply with Local Limits and any other requirements in accordance with 40 CFR 403.8(f)(1).
3. Monitoring and Inspection. To provide adequate, ongoing characterization of non-domestic users of the POTW, the permittee shall:
- a. Receive and analyze self-monitoring reports and other notices. The permittee shall require all SIUs to submit self-monitoring reports at least every six months unless the permittee collects all such information required for the report, including flow data.
 - b. The permittee shall adequately inspect each SIU at a minimum frequency of once per year.
 - c. The permittee shall collect and analyze samples from each SIU for all priority pollutants that can reasonably be expected to be detectable at levels greater than the levels found in domestic sewage at a minimum frequency of once per year.
 - d. Require, through permits, each SIU to collect at least one 24 hour, flow proportioned composite (where feasible) effluent sample every six months and analyze each of those samples for all priority pollutants that can reasonably be expected to be detectable in that discharge at levels greater than the levels found in domestic sewage. The permittee may perform the aforementioned monitoring in lieu of the SIU except that the permittee must also perform the compliance monitoring described in 3.c.
4. Enforcement. To assure adequate, equitable enforcement of the industrial pretreatment program the permittee shall:
- a. Investigate instances of noncompliance with pretreatment standards and requirements, as indicated in self-monitoring reports and notices or indicated by analysis, inspection and surveillance activities. Sample taking and analysis and the collection of other information shall be performed with sufficient care to produce evidence admissible in enforcement proceedings or in judicial actions. Enforcement activities shall be conducted in accordance with the permittee's Enforcement Response Plan developed and approved in accordance with 40 CFR Part 403.
 - b. Enforce compliance with all national pretreatment standards and requirements in 40 CFR Parts 406 - 471.
 - c. Provide public notification of significant non-compliance as required by 40 CFR 403.8(f)(2)(vii).
 - d. Pursuant to 40 CFR 403.5(e), when either the Department or the USEPA determines any source contributes pollutants to the POTW in violation of Pretreatment Standards or Requirements the Department or the USEPA shall notify the permittee. Failure by the permittee to commence an appropriate investigation and subsequent enforcement action within 30 days of this notification may result in appropriate enforcement action against the source and permittee.

5. Record keeping. The permittee shall maintain and update, as necessary, records identifying the nature, character, and volume of pollutants contributed by SIUs. Records shall be maintained in accordance with 6 NYCRR Part 750-2.5(c).
 6. Staffing. The permittee shall maintain minimum staffing positions committed to implementation of the Industrial Pretreatment Program in accordance with the approved pretreatment program.
- C. SLUDGE DISPOSAL PLAN. The permittee shall notify NYSDEC, and USEPA as long as USEPA remains the approval authority, 60 days prior to any major proposed change in the sludge disposal plan. NYSDEC may require additional pretreatment measures or controls to prevent or abate an interference incident relating to sludge use or disposal.
- D. REPORTING. The permittee shall provide to the offices listed on the Monitoring, Reporting and Recording page of this permit and to the Chief-Water Compliance Branch; USEPA Region II; 290 Broadway; New York, NY 10007; a periodic report that briefly describes the permittee's program activities over the previous year. This report shall be submitted to the above noted offices within 28 days of the end of the reporting period. The reporting period shall be TWICE PER YEAR, with reporting period(s) ending on June 30th & December 31st.

The periodic report shall include:

1. Industrial Survey. Updated industrial survey information in accordance with 40 CFR 403.12(I)(1) (including any NYS Industrial Chemical Survey forms updated during the reporting period).
 2. Implementation Status. Status of Program Implementation, to include:
 - a. Any interference, upset or permit violations experienced at the POTW directly attributable to industrial users.
 - b. Listing of significant industrial users issued permits.
 - c. Listing of significant industrial users inspected and/or monitored during the previous reporting period and summary of results.
 - d. Listing of significant industrial users notified of promulgated pretreatment standards or applicable local standards who are on compliance schedules. The listing should include for each facility the final date of compliance.
 - e. Summary of POTW monitoring results not already submitted on Discharge Monitoring Reports and toxic loadings from SIU's organized by parameter.
 - f. A summary of additions or deletions to the list of SIUs, with a brief explanation for each deletion.
 3. Enforcement Status. Status of enforcement activities to include:
 - a. Listing of significant industrial users in Significant Non-Compliance (as defined by 40 CFR 403.8(f)(2)(vii)) with federal or local pretreatment standards at end of the reporting period.
 - b. Summary of enforcement activities taken against non-complying significant industrial users. The permittee shall provide a copy of the public notice of significant violators as specified in 40 CFR Part 403.8(f)(2)(vii).
- E. ADDITIONAL CONDITIONS.
1. Scavenger Waste. The volume of scavenger waste accepted at the scavenger waste system shall be limited to 500,000 gpd monthly average and 560,000 gpd daily maximum. These limits are based on the available capacity of the scavenger waste pretreatment system on site. The Permittee shall document the daily receipt of scavenger and leachate waste from each hauler in a log book to be kept on site for the Department's review.

PRETREATMENT PROGRAM IMPLEMENTATION REQUIREMENTS-Continued

2. Leachate. The Babylon leachate flow, which is a portion of the total scavenger waste volume, shall be limited to 60,000 gpd. This is based on previous analysis of how much leachate can be accepted without causing treatment problems to the plant.
3. Volume Limits. The permittee may request an increase to the above volume limits by submitting a request for a permit modification with relevant documentation to support the request.
4. Monitoring. The permittee must perform random sampling of scavenger waste received at the plant. The sampling shall include volume and characteristics (see below)

| Parameter | Monitoring Location | Type of Sample | Monitoring Frequency |
|---|---------------------|--|----------------------|
| Volume | Rapid Mix | Estimated, by using a suitable flow measurement technique or flow meter. | Continuous |
| 13 Priority Pollutants (EPA Method 200) | Rapid Mix | Composite* | 1/week |
| Purgeables (EPA Method 624) | Rapid Mix | Composite* | 1/week |

5. Reporting.
 - A. The permittee must submit an annual scavenger waste report to the Department each April 1st that contains:
 1. The volume of scavenger waste received each day (in gallons) as well as a yearly summary;
 2. The characteristics of the scavenger wastes that were sampled, including volume, concentration, type of waste, and source.
 - B. If a new source of scavenger waste requests treatment of wastes at the scavenger waste plant and the waste contains pollutants not already regulated in this permit, the permittee must fill out a New Discharge Form and submit the form to the Department. The Department will determine whether a modification of the permit is necessary before the waste can be accepted. The New Discharge Form is available from the Department.

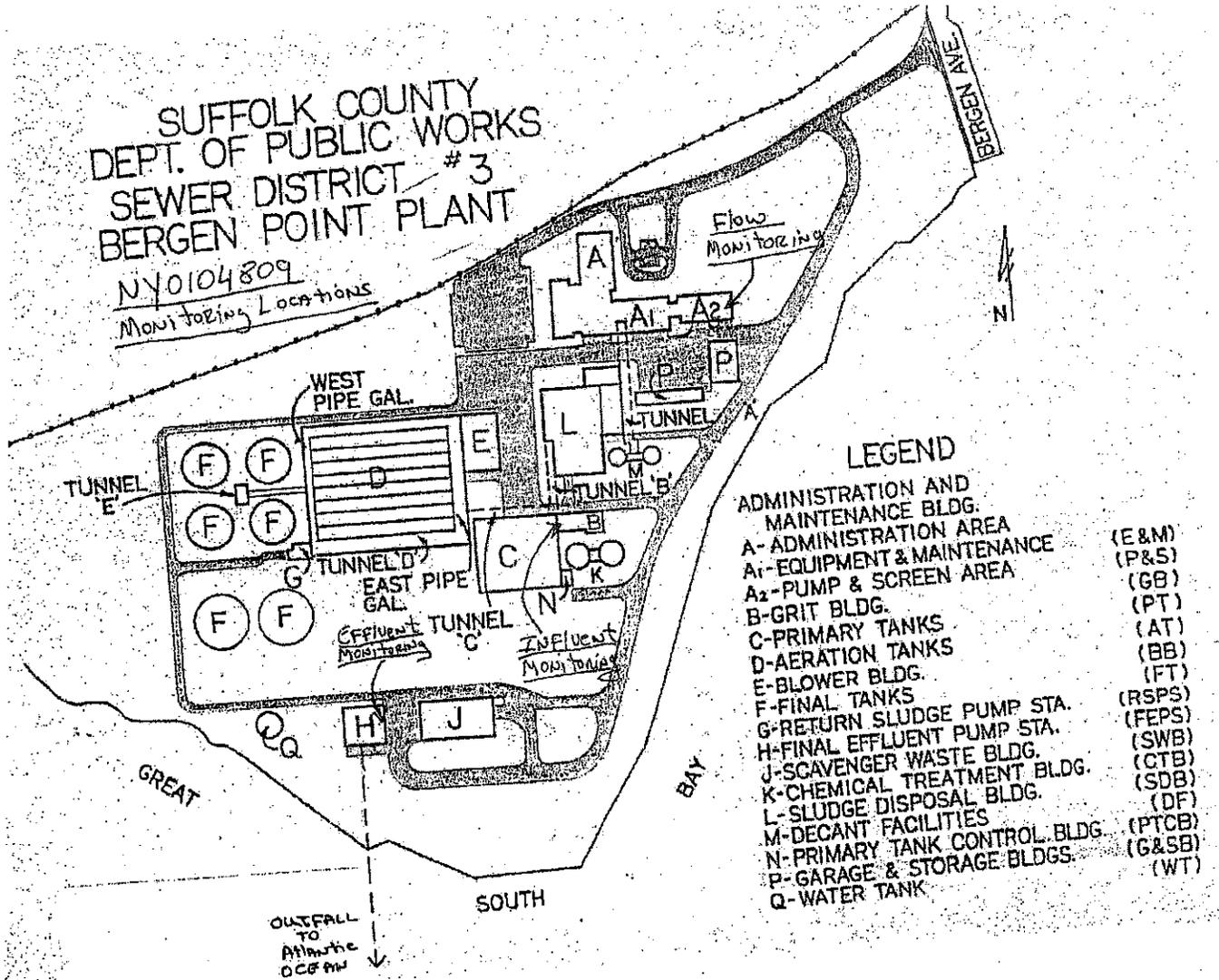
* Priority pollutants and purgeables are to be sampled and analyzed in accordance with the methods contained in EPA regulations (40 CFR Part 136).

F. BABYLON LANDFILL LEACHATE DIRECT FLOW TO SEWAGE COLLECTION SYSTEM. Upon completion of the Babylon Landfill leachate conveyance system that will be built under Southwest Sewer District Extension Project (County's Project No. RFP 04G134), the landfill leachate can be directly pumped to Town's sewer system if the leachate meets the local limits in the Suffolk County SUO. Prior to start pumping Landfill leachate to sewer system, the permittee shall develop a leachate monitoring program and shall obtain an approval on the monitoring program from the office of the US EPA region-2.

(see attached)
(2/2/2012)

Monitoring Location

The permittee shall take samples and measurements, to comply with the monitoring requirements specifies in the permit, at the location(s) specified below:



RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS

- a) The permittee shall also refer to 6 NYCRR Part 750-1.2(a) and 750-2 for additional information concerning monitoring and reporting requirements and conditions.
- b) The monitoring information required by this permit shall be summarized, signed and retained for a period of five years from the date of the sampling for subsequent inspection by the Department or its designated agent. Also, monitoring information required by this permit shall be summarized and reported by submitting;

(if box is checked) completed and signed Discharge Monitoring Report (DMR) forms for each 1 month reporting period to the locations specified below. Blank forms are available at the Department's Albany office listed below. The first reporting period begins on the effective date of this permit and the reports will be due no later than the 28th day of the month following the end of each reporting period.

(if box is checked) an annual report to the Regional Water Engineer at the address specified below. The annual report is due by February 1 and must summarize information for January to December of the previous year in a format acceptable to the Department.

(if box is checked) a monthly "Wastewater Facility Operation Report..." (form 92-15-7) to the:

Regional Water Engineer and County Health Department or Environmental Control Agency specified below

Send the DMRs with original signatures to:

Department of Environmental Conservation
 Division of Water
 Bureau of Water Compliance Programs
 625 Broadway
 Albany, New York 12233-3506
 Phone: (518) 402-8177

Send a copy of each DMR page to:

Department of Environmental Conservation
 Regional Water Engineer
 NYSDEC
 50 Circle Road, SUNY
 Stony Brook, NY 11790
 Phone: (631)-444-0420

Send an additional copy of each DMR page to:

Walter Hilbert, P.E.
 Suffolk County Department of Health
 360 Yaphank Avenue
 Yaphank, NY 11980

- c) Noncompliance with the provisions of this permit shall be reported to the Department as prescribed in 6 NYCRR Part 750-1.2(a) and 750-2.
- d) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.
- e) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring shall be included in the calculations and recording of the data on the Discharge Monitoring Reports.
- f) Calculation for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this permit.
- g) Unless otherwise specified, all information recorded on the Discharge Monitoring Report shall be based upon measurements and sampling carried out during the most recently completed reporting period.
- h) Any laboratory test or sample analysis required by this permit for which the State Commissioner of Health issues certificates of approval pursuant to section five hundred two of the Public Health Law shall be conducted by a laboratory which has been issued a certificate of approval. Inquiries regarding laboratory certification should be sent to the Environmental Laboratory Accreditation Program, New York State Health Department Center for Laboratories and Research, Division of Environmental Sciences, The Nelson A. Rockefeller Empire State Plaza, Albany, New York 12201.

MUNICIPAL FACT SHEET

Treatment Plant Description

The Suffolk County Sewer District No. 3- Southwest Wastewater Treatment Plant (Bergen Point WWTP) was constructed in 1981 to provide primary and secondary treatment for a design flow of 30.5 MGD. The facility treats BOD and Total Suspended Solids in the wastewater flow. Current treatment includes influent screening, influent pumping, grit removal, and primary sedimentation; activated sludge process, secondary sedimentation, and chlorination. The facility processes sludge and sends dewatered sludge to off-site facilities.

Background Information

The current SPDES permit NY 0104809 for the Bergen Point WTP became effective on August 1, 1988. The permit was most recently modified on 9/23/2008 pursuant to 6 NYCRR Part 750-1.18(b)(1) and 1.19 under the priority ranking system known as New York State's Environmental Benefit Permit Strategy (EBPS).

In December 2009, the Department of Environmental Conservation (DEC) received a permit modification application from the Suffolk County Department of Public Works. In the application, the County requested to increase the plant's design treatment capacity from 30.5 MGD to 40.5 MGD. The County proposed that the expansion work to the treatment plant will be completed under two phases of construction. Under the first phase of construction, the plant will be upgraded to 38.5 MGD facility, and under second phase of construction, the facility will be upgraded to 40.5 MGD. In June 2009, the County submitted a engineering report to the Department for the expansion project. The Department approved it in November 2010.

For the purpose of processing the permit modification request, the Department reviewed of the facility's Discharge Monitoring Reports from 08/31/2006 to 09/30/2009. The review showed that: the monthly average inflow exceeded 95% of the plant's design flow many times; settleable solids exceeded its effluent limit during two monitoring events; and chloroform exceeded its action level during three monitoring events.

Summary of Proposed Permit Changes

The following changes have been made in the draft permit:

- The permit pages and conditions have been updated to reflect current Department guidance, format and nomenclature.
- Permit pages and conditions have been renumbered and reordered.
- The names and addresses of the facility and the permittee have been updated.

- The footnotes for the Permit Limits, Levels and Monitoring pages have been updated and reordered.
- Permit limits, levels and monitoring requirements have been modified to reflect the design flows, 30.5 MGD, 38.5 MGD and 40.5 MGD respectively.

The effluent limits and action levels in the draft permit have been developed following the Technology based effluent limitation, Water Quality Based Effluent Limitation, and best professional judgment.

- The permittee has developed a pollution minimization program for mercury. Therefore, the special conditions for mercury has been removed from the permit.

In addition, the compliance requirements under sludge management program are completed. Therefore, the requirements for Sludge Management Program has also been removed from the permit.

- TRC compliance schedule in the current permit has been updated based on its current status.
- The action levels for Whole Effluent Toxicity (WET) Testing have been modified in the draft permit following a revision to dilution ratio (the ratio of critical receiving water flow to discharge flow). The section, *Critical Flows and Dilution/Mixing Zone Analysis* on page 3 of 14, includes detail information about dilution ratio.
- Action levels for Mercury, Copper, Arsenic, Thallium, Zinc, Methylene Chloride, Tetrachloroethylene, Bis (2-ethylhexyl) Phthalate, Chloroform, Toluene and Phenolics have been revised for design for 38.5 MGD and 40.5 MGD in the draft permit.
- For the design flows, 38.5 MGD and 40.5 MGD, the draft permit has included limits for Total Ammonia (as NH_3) instead of Total Ammonia (as $\text{NH}_3\text{-N}$). In addition, the effluent limit for the Total Ammonia (as NH_3) is a monthly average limit.
- Warm season has been revised to *May 1 to October 31* from *June 1 to October 31*.

Discharge Composition

Table 1 and Table 2 in Appendix B present the existing effluent quality for the Suffolk County Sewer District No. 3- Southwest WWTP. The average and maximum concentration and mass reported are based on 3 years from 7/31/2006 to 09/31/2009 of Discharge Monitoring Report (DMR) data submitted by the permittee. Additional pollutants detected in the effluent were reported in the SPDES NY-2A permit application.

Outfall and Receiving Water Information

Treated sanitary wastewater is discharged through Outfall 001, located at latitude 40 ° 35' 28" and longitude 73° 21' 06", into the Atlantic Ocean (AO). The Atlantic Ocean is classified as Class SA by the Department with the following beneficial uses: The best usages of Class SA waters are shellfishing for market purposes, primary and secondary contact recreation and fishing. These waters shall be suitable for fish, shellfish, and wildlife propagation and survival.

The facility maintains the following outfalls:

| Outfall No. | Design Flow Rate (MGD) | Latitude | Longitude | Receiving Water | Water Class | Water Index Number |
|-------------|------------------------|---------------|-------------|-----------------|-------------|--------------------|
| 001 | 40.5 | 40 ° 35' 28 " | 73° 21' 06" | Atlantic Ocean | SA | AO |

Critical flow and receiving water data is as follows:

| Outfall No. | Receiving Water | Dilution/Mixing | pH-(SU) | Temp-°C) | Salinity -ppt | Period |
|-------------|-----------------|-----------------|---------|----------|---------------|------------------|
| 001 | Atlantic Ocean | 25:1 | 8.06 | 29 | 30.3 | 1 May – 31 Oct. |
| 001 | Atlantic Ocean | 25:1 | 8.06 | 15 | 30.3 | 1 Nov. - 30 Apr. |

Critical Flows and Dilution/Mixing Zone Analysis: The discharge is to the estuarine marine waters of the Atlantic Ocean thru a 2 miles long outfall pipe which is equipped with a high rate diffuser. Critical conditions for determining dilution for the discharge are the warm climate, thermal stratification, low tidal velocity and slack tides. Hydrosience Inc., (currently HydroQual Inc.) developed the water quality for the noted discharge in 1970s. Assuming full capacity of the outfall pipe of 94 mgd, a dilution of 12:1 was established. Since the proposed discharge flow is 40.5 mgd, a dilution of 25:1 is suggested (best professional judgment) for developing water quality based effluent limits for toxic pollutants.

Critical Receiving Water Data

Ambient temperature, pH and salinity data are available at the site of discharge in the Atlantic Ocean. The information was used in computing chronic ammonia standards of 0.657mg/l and 1.94 mg/l for warm and cold weather months.

The Atlantic ocean is not listed on the 303(d) Impaired Waterbody list as the water quality of the receiving body is good.

Effluent Limitations

NYSDEC followed the Clean Water Act, State and federal regulations, and the Division of Waters Technical and Operational Guidance Series documents for developing the effluent limits. In general, the Clean Water Act requires that the effluent limits for a particular pollutant are the more stringent of either the technology-based or water quality-based limits. A technology-based

effluent limit requires a minimum level of treatment for municipal point sources based on currently available treatment technologies. A water quality-based effluent limit is designed to ensure that the water quality standards of receiving waters are being met. The table detailing the effluent limits is presented on pages 3, 4, 5, 6 and 8 in the draft permit. More information on the derivation of technology-based and water quality-based effluent limits is presented in Appendices A and B.

Monitoring Requirements

Section 308 of the Clean Water Act and federal regulations 40 CFR 122.44(i) require that monitoring be included in permits to determine compliance with effluent limitations. Additional effluent monitoring may also be required to gather data to determine if effluent limitations may be required. The Suffolk County Department of Public Works is responsible for conducting the monitoring and for reporting results on Discharge Monitoring Reports (DMRs) to NYSDEC.

Pages from 3 to 8 of the draft permit has included the monitoring requirements for the facility. Monitoring frequency is based on the minimum sampling necessary to adequately monitor the facility's performance. For municipal facilities, sampling frequency is based on the 1973 NYSDEC-USEPA Agreement as documented in TOGS 1.3.3.

Other Permit Conditions

Mini Pretreatment Schedule

The permittee has previously submitted the results of an industrial survey to the Department, documentation of procedures for obtaining and ensuring compliance with applicable standards, the results of industrial and POTW monitoring and completed Fast Report on Significant Industries forms (FROSIs), and an approvable and enacted local sewer use law. The permittee is required to continue implementation of the Pretreatment Program with annual submissions of completed FROSIs for each Significant Industrial User (SIU) by May 1 of each calendar year. Every third year, the permittee is required to submit completed Industrial Chemical Surveys for each SIU.

Mercury Minimization Program

The permittee developed a Mercury Minimization Program (MMP) in 2009. The goal of the MMP is to reduce mercury effluent levels in pursuit of the calculated WQBEL of 0.7 ng/L. The permittee is required to implement a monitoring program to track the reduction of mercury levels and a control strategy to reduce mercury discharges. The permittee is also required to submit an annual status report.

Additional Permit Provisions

Page 17 of the draft permit contains standard regulatory language that is/are required to be in all SPDES permits. These permit provisions are based largely upon 40 CFR 122, subpart C and include requirements pertaining to monitoring, recording, reporting, and compliance responsibilities.

Other Legal Requirements

Discharge Notification Act

In accordance with Discharge Notification Act ECL 17-0815-a, the permittee is required to post a sign at each point of wastewater discharge to surface waters. The permittee is also required to provide a public repository for DMRs as required by the SPDES permit.

Antidegradation Policy

New York State implements the antidegradation portion of the CWA based upon two documents:

1. Organization and Delegation Memorandum #85-40, entitled "Water Quality Antidegradation Policy," signed by the Commissioner of NYSDEC, dated September 9, 1985.
2. TOGS 1.3.9, entitled "Implementation of the NYSDEC Antidegradation Policy – Great Lakes Basin (Supplement to Antidegradation Policy dated September 9, 1985)."

An SPDES permit cannot be issued that would result in the water quality criteria being violated. The draft permit for Suffolk County District #3 – Southwest contains effluent limits which ensure that the existing beneficial uses of the Atlantic Ocean, class SA will be maintained.

Appendix A

Basis for Effluent Limitations

Statutory and Regulatory Basis for Limits

Sections 101, 301(b), 304, 308, 401, 402, and 405 of the Clean Water Act (CWA) provide the basis for the effluent limitations and other conditions in the draft permit. The NYSDEC evaluates discharges with respect to these sections of the CWA and the relevant SPDES regulations to determine which conditions to include in the draft permit.

In general, the permit writer does a statistical analysis of the monitoring data provided in permittee-submitted discharge monitoring reports (DMRs). Pollutant screening data as required in the Request for Information are also reviewed to determine the presence of additional contaminants that should be considered for inclusion in the permit. The permit writer determines the technology-based limits that must be incorporated into the permit. The Department then evaluates the water quality expected to result from these controls to determine if any violations of water quality standards in the receiving water would result. If violations could occur, water quality-based limits must be included in the permit. The draft permit limits reflect whichever requirements, technology or water quality, are more stringent. The proposed limits are located on Pages 3 to 6 of the draft permit. This Appendix describes the technology-based and water quality-based evaluation for the Suffolk County Sewer District No. 3.

Technology-Based Evaluation

The 1972 Clean Water Act required publicly owned treatment works (POTWs) to meet performance-based requirements based on wastewater treatment technology. Section 301 of the Act established a required performance level, referred to as "secondary treatment", which all POTWs were required to meet by July 1, 1977.

More specifically, Section 301(b)(1)(B) of the Clean Water Act requires that EPA develop secondary treatment standards for POTWs as defined in Section 304(d)(1) of the CWA. Based on this statutory requirement, EPA developed secondary treatment regulations which are specified in 40 CFR Part 133.102. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of five-day biochemical oxygen demand (BOD₅), total suspended solids, and pH. In addition to the federal regulations, settleable solids need to be monitored for SA waters according to 6 NYCRR Part 703.2.

Water Quality-Based Evaluation

In addition to the technology-based limits previously discussed, the NYSDEC evaluated the discharge to determine compliance with Section 301(b)(1)(C) of the Clean Water Act. This

section requires the establishment of limitations in permits necessary to meet water quality standards by July 1, 1977.

The regulations in 40 CFR 122.44(d)(1) implement Section 301(b)(1)(C) of the Clean Water Act. These regulations require that SPDES permits include limits for all pollutants or parameters which "are or may be discharged at a level which will cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." The limits must be stringent enough to ensure that water quality standards are met and must be consistent with any available wasteload allocation (WLA).

The recommendations for effluent limitations for this permit were developed by conducting a site specific total maximum daily load analysis for the Atlantic Ocean, classified as "SA". The technical detail of the analysis is provided under the heading of "Pollutant Specific Analysis".

Water Quality Criteria

Water quality regulations detailed in 6 NYCRR Parts 700-706 and ambient water quality standards and guidance values specified in TOGS 1.1.1 were applied to the Suffolk County Sewer District No. 3 – Southwest (aka Bergen Point) discharge. Specific application of the regulations and standards is detailed in Tables of this Appendix A.

Reasonable Potential Evaluation

Reasonable potential analysis is the process for determining whether a discharge causes, has the reasonable potential to cause, or contributes to an excursion above New York State water quality criteria for toxic pollutants. When conducting a reasonable potential analysis for each pollutant of concern, factors such as receiving water classification, corresponding water quality criteria and guidance values, pollutant concentration in the effluent, dilution available in the receiving water, background concentrations and additional upstream and downstream dischargers containing the pollutant of concern are used to quantify the receiving water quality. If the expected concentration of the pollutant of concern in the receiving water exceeds the ambient water quality criteria or guidance value then there is reasonable potential that the discharge may cause or contribute to a violation of the water quality standard, and a water quality-based effluent limit or wasteload allocation for the pollutant is required. Calculations performed specifically for the effluent of this facility can be found at the end of this Appendix.

Procedure for Deriving Water Quality-Based Effluent Limits (WQBELs)

The TMDL process is a water quality based approach to implementing water quality standards. It is applied to an entire watershed or drainage basin whenever possible, but may also be applied to waterbody segments with individual or multiple pollutant sources. The TMDL analysis is carried out separately for each pollutant. It allows for the consideration of all sources of the pollutant including point sources, non-point sources, atmospheric deposition and natural background. Dependant on the complexity of the issue and the amount of data available, the analysis can be relatively simple such as a desk-top, mass-balance calculation or it can be exacting and detailed by using complex, multidimensional water quality models. The TMDL

process serves a dual function in the permit development process. It provides the basis for the reasonable potential analysis. If the reasonable potential analysis indicates that the pollutant of concern has the potential to cause or contribute to an excursion of water quality standards; the TMDL process is then used to determine the WQBELs for all sources of the pollutant to assure compliance with the standards. (See under Pollutant Specific Analysis)

Pollutant-Specific Analysis

This section outlines the basis for each of the effluent limitations in the Suffolk County Department of Public Works' draft permit.

Biochemical Oxygen Demand and Total Suspended Solids

The Suffolk County Sewer District No. 3 is a publicly owned treatment works (POTW). Therefore, the facility is subject to the technology-based limits required for BOD₅ and TSS of 40 CFR 133.102, as shown in the following table:

| Parameter | 30-day Average (mg/L) | 7-day Average (mg/L) | Percent Removal (%) |
|------------------|-----------------------|----------------------|---------------------|
| BOD ₅ | 30 | 45 | 85 |
| TSS | 30 | 45 | 85 |

In addition to the concentration limits, 40 CFR 122.45(f) requires that SPDES permits contain mass-based limits for most pollutants. Mass-based limits in lbs/day are derived by multiplying the design flow in MGD by the concentration limit in mg/L by a conversion factor of 8.34.

pH

In addition to limits on BOD₅ and TSS, 40 CFR 133.102 requires that the effluent pH be within the range of 6.0 to 9.0 standard units (SU) for POTWs.

Settleable Solids

The narrative water quality standards provided in 6 NYCRR Part 703.2 state that the discharge of settleable solids shall not cause deposition or impair the receiving waters for their best usages.

A Daily Maximum limit of 0.3 mL/L for settleable solids is included in the permit. This parameter is a measure of the proper design and operation of biological treatment facility without sand filtration.

Nitrogen, including Total Kjeldahl Nitrogen, Ammonia, Nitrate, and Nitrite: All POTWs with a design flow of 1.0 MGD or greater presently monitor for Ammonia and Total Kjeldahl Nitrogen at the influent and effluent per TOGS 1.3.3.

Dischargers to saline waters are required to monitor for Nitrite and Nitrate per TOGS 1.3.3.

Disinfection Requirements

Suffolk County Sewer District #3 –Southwest discharges into the Atlantic Ocean, which is a Class SA water. In accordance with TOGS 1.3.3, year round disinfection of all coliform and/or pathogen bearing wastes discharged into Class SA waters is required.

Fecal Coliform

During periods when disinfection is required, TOGS 1.3.3 and 6 NYCRR Part 703.4 establish a minimum requirement and a water quality standard that the WWTP should achieve a monthly geometric mean of less than 200 per 100 ml. A geometric mean of samples taken within a 7 consecutive day period shall be less than 400 per 100 ml.

Total Residual Chlorine (TRC)

A water quality based effluent limit of 0.40 mg/l as daily maximum has been developed. The effluent limit is calculated by multiplying the Ambient Water Quality Criteria concentration of 0.0075 mg/l, a dilution ratio of 25:1 and considering TRC losses in the outfall pipe and ambient waters.

Mercury

A water quality based effluent limit of 0.0206 ug/l expressed as monthly average has been developed. The limit is calculated by multiplying the Ambient Water Quality Criteria concentration of 0.0007 ug/l, a dilution ratio of 25:1 and a translator of 1.176. The translator converts dissolved to total form of mercury.

Copper

A water quality based effluent limit of 102.43 ug/l expressed as daily maximum has been developed. The limit is calculated by multiplying the Ambient Water Quality Criteria concentration of 3.4 ug/l, a dilution ratio of 25:1 and a translator of 1.205. The translator converts dissolved to total form of copper.

Arsenic

A water quality based effluent limit of 900 ug/l expressed as daily maximum has been developed. The limit is calculated by multiplying the Ambient Water Quality Criteria concentration of 36 ug/l, and a dilution ratio of 25:1.

Zinc

A water quality based effluent limit of 1744.0 ug/l expressed as daily maximum has been developed. The limit is calculated by multiplying the Ambient Water Quality Criteria

concentration of 66 ug/l, a dilution ratio of 25:1 and a translator of 1.057. The translator converts dissolved to total form of zinc.

Tetrachloroethylene

A water quality based effluent limit of 25 ug/l expressed as monthly average has been developed. The limit is calculated by multiplying the Ambient Water Quality Criteria concentration of 1.0 ug/l, and a dilution ratio of 25:1.

Toluene

A water quality based effluent limit of 1200 ug/l expressed as monthly average has been developed. The limit is calculated by multiplying the Ambient Water Quality Criteria concentration of 48ug/l, and a dilution ratio of 25:1.

Thallium, Methylene Chloride, Bis (2-ethylhexyl) Phthalate, Chloroform, and Phenolics

The water quality based effluent limits for these parameters have not been developed due to lack of standards and guidance values. The technology-based effluent limits for these pollutants may be protective of water quality of receiving waters.

Total Ammonia (as NH₃)

The water quality-based effluent limits for total Ammonia (as NH₃) of 16.42 mg/l during May 1 through October 31 and 48.50 mg/l during November 1 through April 30 have been developed.

Low concentration of ammonia can be toxic to freshwater fish. Un-ionized ammonia (NH₃) is the principal toxic form of ammonia. The ammonium ion (NH₄⁺) is less toxic. The relative percentage of these forms of ammonia in the water varies as the salinity, temperature and pH vary. As the pH and temperature increases, the percentage of un-ionized ammonia (NH₃) increases, causing increased toxicity. For salinity, it is quite opposite. The site specific salinity, pH and temperature data for the receiving waterbody is available and is listed below for warm months. Such data for cold months are not available; therefore, the DEC has used the warm month's values for cold months with the exception of temperature data, which is set at 10 degree centigrade (Best professional Judgment-BPJ). The salinity, temperature and pH data have been used in developing the applicable water quality standards for warm and cold weather seasons.

| Season | Salinity, PPT | pH | Temp.-°C | W.Q. Standard, mg/l |
|---------------------------|---------------|------|----------|---------------------|
| Warm - (1 May - 31 Oct.) | 30.3 | 8.06 | 29 | 0.657 |
| Cold - (1 Nov. - 30 Apr.) | 30.3 | 8.06 | 15 | 1.347 |

The water quality based effluent limits for summer and winter seasons were developed by multiplying the seasonal water quality standards and the associated dilution factors. These limits will be revised upon the availability of site specific data for salinity, pH and temperature for cold months, in future.

Whole Effluent Toxicity (WET) Testing

Whole effluent toxicity (WET) tests are laboratory tests that replicate to the greatest extent possible the total effect and actual environmental exposure of aquatic life to effluent toxicants without requiring the identification of specific toxicants. WET tests use small vertebrate and invertebrate species, and/or plants, to measure the aggregate toxicity of an effluent. There are two different durations of toxicity tests: acute and chronic. Acute toxicity tests measure survival over a 96-hour test exposure period. Chronic toxicity tests measure reductions in survival, growth, and reproduction over a 7-day exposure.

Federal regulations at 40 CFR 122.44(d)(1) require that permits contain limits on whole effluent toxicity when a discharge has reasonable potential to cause or contribute to an exceedence of a water quality standard.

- Per TOGS 1.3.2, WET testing is required for this facility because there is the presence of substances in the effluent for which ambient water quality criteria do not exist and POTW exceeds a discharge of 1.0 MGD.

An effluent acute action level of 3.75 TU_a for both invertebrates and vertebrates has been included in the draft permit and an effluent chronic action levels of 25 TU_c for both invertebrates and vertebrates has been included in the draft permit. The requirements for WET testing are explained in the footnote of Pages 9 and 10 of the draft permit.

Appendix B

Individual Outfall Data Summaries and Permit Limit Development

Existing Effluent Quality and Technology Based Effluent Limits (TBEL)

Technology Based Effluent Limit (TBEL) is set based upon an evaluation of Best Available Technology Economically Achievable (BAT), Best Conventional Pollutant Control Technology (BCT), Best Practicable Technology Currently Available (BPT), and Best Professional Judgment (BPJ). BPJ limits may be set using any reasonable method that takes into consideration the criteria set forth in 40 CFR 125.3.

For the Existing Effluent Quality, the statistical methods utilized are in accordance with TOGS 1.2.1 and the USEPA, Office of Water, Technical Support Document For Water Quality-based Toxics Control, March 1991, Appendix E. Statistical calculations were not performed for parameters with insufficient data. Generally, ten or more data points are needed to calculate percentiles (See TOGS 1.2.1 Appendix D). Two or more data points are necessary to calculate an average and a maximum. Non-detects were excluded in the statistical calculations.

Monitoring data collected during the following time period of 08/31/2006 to 09/30/2009 was used to calculate statistics and these data were taken from the data recovered in Department's Statistical Information System.

Water Quality Based Effluent Limits (WQBEL)

Ambient Water Quality Criteria (AWQC) and guidance values specified in "Water Quality Regulations" New York State Codes, Rules and Regulations Title 6, Chapter X, Parts 700-705 and TOGS 1.1.1 were applied to the following pollutants identified in the facilities discharge. Water Quality Based Effluent Limits (WQBEL's) were calculated by applying the TMDL process for each pollutant

Table 1: Outfall 001

| Effluent Parameter (Units) | Existing Effluent Quality | | | | Technology Based Effluent Limit | | | | Water Quality Based Effluent Limit | | | Permit Basis (T or WQ) | |
|---|---------------------------|--------|--------------|------|---------------------------------|--------|----------------|--------------|------------------------------------|----------------|-------|---------------------------|------|
| | concentration | | mass | | conc. | mass | Type | Basis | AWQC | Effluent Limit | | | |
| | Avg | Max | Avg | Max | | | | | | conc. | mass | | Type |
| Flow Rate, units = MGD | Average 25.32 | | Maximum 32.7 | | 40.5 | | | Monthly Avg. | BPL, TOGS 1.3.3 | | | T | |
| pH (SU) | Minimum 6.61 | | Maximum 7.33 | | 6.0-9.0 | | | Range | 40 CFR 133.102(c) | | | T | |
| BOD ₅ (30 day), mg/l, lbs/day | 8.17 | 13 | 1655 | 2846 | 25 | 6400 | MA | | 40 CFR 133.102 | Acceptable | | T | |
| BOD ₅ (7 day), mg/l, lbs/day | 10.15 | 16 | 2045 | 3962 | 40 | 10,000 | DM | | 40 CFR 133.102 | Acceptable | | T | |
| TSS (30 day), mg/l, lbs/day | 17.31 | 23 | 3456 | 5474 | 30 | 7600 | MA | | 40 CFR 133.102 | Acceptable | | T | |
| TSS (7 day), mg/l, lbs/day | 21.08 | 34 | 4327 | 8215 | 45 | 11,000 | DM | | 40 CFR 133.102 | Acceptable | | T | |
| Solids, Settleable, ml/l | 0.17 | 0.4 | | | 0.3 | | DM | | TOGS 1.3.3 | Acceptable | | T | |
| Temperature deg. C (not thermal discharge) | 21.692 | 26 | | | Monitor | | | | | | | | |
| Ammonia, as (NH ₃), mg/l May 1 - October 31 | 2.81 | 5.1 | | | 14.9 | | DM | | | 0.657 | 16.43 | MA | WQ |
| Ammonia, as (NH ₃), mg/l November 1 - April 30 | 2.81 | 5.1 | | | Monitor | | | | | 1.94 | 48.50 | MA | WQ |
| Nitrogen, TKN as (N), mg/l | 5.969 | 10.7 | | | Monitor | | | | | | | | |
| Nitrate, (as N) mg/l | 13.39 | 18.1 | | | Monitor | | | | | | | | |
| Nitrite, (as N) mg/l | 0.8385 | 2.5 | | | Monitor | | | | | | | | |
| Effluent Disinfection: [X] All Year [] Seasonal from: | | | | | | | | | | | | | |
| Fecal Coliform (30 day/7 day), #/100 ml | 26.05/39.38 | 48/104 | | | 200/400 | | GM | | TOGS 1.3.3 | Acceptable | | | T |
| Total Coliform (Monthly Median) # 100 ml | 113 | 300 | | | 700 | | Monthly Median | | | | | | T |
| Chlorine, Total Residual, mg/l | 2.05 | 2.50 | | | 3.0 | | Daily Max | | TOGS 1.3.3 | 0.0075 | 0.40 | DM | WQ |

Table 2: Outfall 001

| Effluent Parameter (Units) (concentration units - mg/l, ug/l or ng/l; mass units - lbs/d or g/d) | Existing Effluent Quality | | | | Technology Based Effluent Limit | | | | Water Quality Based Effluent Limit | | | | Permit Basis (T or WQ) |
|---|---------------------------|-----|----------------|---------------|---------------------------------|----------------|------|------------------|------------------------------------|-----------------------|----------------|------|---------------------------|
| | concentration | | mass | | conc. | Mass (lbs/day) | Type | Basis | Effluent Limit | | | Type | |
| | Avg | Max | Avg. (lbs/day) | Max (lbs/day) | | | | | AWQC conc. (ug/l) | Effluent conc. (ug/l) | mass (lbs/day) | | |
| Mercury, Total, ng/l | 72.2 | 170 | | | 200 | | | | 0.007 | 0.0206 | | MA | T |
| Copper, Total | | | 8.65 | 27 | | 13 | AL | Togs 1.3.3 & BPJ | 3.4 | 102.43 | | DM | T |
| Arsenic, Total | | | 5.86 | 11 | | 12 | AL | Togs 1.3.3 & BPJ | 36 | 900.0 | | DM | T |
| Thallium, Total | | | 5.49 | 11 | | 6.3 | AL | Togs 1.3.3 & BPJ | No Standard/guidance value | | | | T |
| Zinc, Total | | | 10.91 | 15 | | 23 | AL | Togs 1.3.3 & BPJ | 66.0 | 1744.0 | | DM | T |
| Methylene Chloride | | | 0.17 | 0.7 | | 5.5 | AL | Togs 1.3.3 & BPJ | No Standard/guidance value | | | | T |
| Tetrachloroethylene | | | 0.14 | 0.2 | | 0.4 | AL | Togs 1.3.3 & BPJ | 1.0 | 25.0 | | DM | T |
| Bis (2-ethylhexyl) Phthalate | | | 0.38 | 0.5 | | 1.7 | AL | Togs 1.3.3 & BPJ | No Standard/guidance value | | | | T |
| Chloroform | | | 1.22 | 2.1 | | 1.4 | AL | Togs 1.3.3 & BPJ | No Standard/guidance value | | | | T |
| Toluene | | | 0.31 | 0.6 | | 0.4 | AL | Togs 1.3.3 & BPJ | 48.0 | 1200.0 | | DM | T |
| Phenolics, Total | | | 14.53 | 74.4 | | 7.2 | AL | Togs 1.3.3 & BPJ | No Standard/guidance value | | | | T |
| WET - Acute Invertebrate, TUa | | | | | | | | | | | | | WQ |
| WET - Acute Vertebrate, TUa | | | | | | | | | | | | | WQ |
| WET - Chronic Invertebrate, TUc | | | | | | | | | | | | | WQ |
| WET - Chronic Vertebrate, TUc | | | | | | | | | | | | | WQ |

Daily Influent Flows at Bergen Point WWTP during Superstorm Sandy

**Daily Influent Flows at Bergen Point WWTP:
10/01/2012-11/12/2012**

| Date | Avg MGD |
|----------------|----------------|
| 10/1/12 0:01 | 24.666 |
| 10/2/12 0:01 | 25.537 |
| 10/3/12 0:01 | 24.796 |
| 10/4/12 0:01 | 24.727 |
| 10/5/12 0:01 | 24.869 |
| 10/6/12 0:01 | 24.570 |
| 10/7/12 0:01 | 23.858 |
| 10/8/12 0:01 | 24.657 |
| 10/9/12 0:01 | 25.122 |
| 10/10/12 0:01 | 25.815 |
| 10/11/12 0:01 | 24.882 |
| 10/12/12 0:01 | 24.375 |
| 10/13/12 0:01 | 24.032 |
| 10/14/12 0:01 | 23.845 |
| 10/15/12 0:01 | 24.014 |
| 10/16/12 0:01 | 24.446 |
| 10/17/12 0:01 | 24.149 |
| 10/18/12 0:01 | 23.970 |
| 10/19/12 0:01 | 25.769 |
| 10/20/12 0:01 | 26.244 |
| 10/21/12 0:01 | 25.637 |
| 10/22/12 0:01 | 24.128 |
| 10/23/12 0:01 | 23.616 |
| 10/24/12 0:01 | 23.819 |
| 10/25/12 0:01 | 23.469 |
| 10/26/12 0:01 | 23.878 |
| 10/27/12 0:01 | 24.781 |
| 10/28/12 0:01 | 27.167 |
| 10/29/12 0:01 | 62.933 |
| 10/30/12 0:01 | 93.589 |
| 10/31/12 0:01 | 33.497 |
| 11/1/12 0:01 | 30.784 |
| 11/2/12 0:01 | 28.472 |
| 11/3/12 0:01 | 27.526 |
| 11/4/12 0:01 | 26.978 |
| 11/4/12 23:01 | 25.598 |
| 11/5/12 23:01 | 25.319 |
| 11/6/12 23:01 | 25.918 |
| 11/7/12 23:01 | 32.788 |
| 11/8/12 23:01 | 28.399 |
| 11/9/12 23:01 | 27.368 |
| 11/10/12 23:01 | 25.752 |
| 11/11/12 23:01 | 25.742 |
| 11/12/12 23:01 | 20.257 |

MGD = Millions of Gallons per Day

Influent Flows at Bergen Point WWTP:**10/28/2012**

| Date/Time | Influent Flow 0101F MGD | Influent 0101F Totalized MGD |
|------------------|--|---|
| 10/28/2012 10:50 | 27.098 | 0.094 |
| 10/28/2012 10:55 | 27.350 | 0.189 |
| 10/28/2012 11:00 | 27.745 | 0.285 |
| 10/28/2012 11:05 | 27.985 | 0.383 |
| 10/28/2012 11:10 | 28.261 | 0.481 |
| 10/28/2012 11:15 | 28.627 | 0.580 |
| 10/28/2012 11:20 | 28.982 | 0.681 |
| 10/28/2012 11:25 | 29.181 | 0.782 |
| 10/28/2012 11:30 | 29.272 | 0.884 |
| 10/28/2012 11:35 | 29.530 | 0.986 |
| 10/28/2012 11:40 | 29.829 | 1.090 |
| 10/28/2012 11:45 | 30.169 | 1.195 |
| 10/28/2012 11:50 | 30.720 | 1.301 |
| 10/28/2012 11:55 | 31.341 | 1.410 |
| 10/28/2012 12:00 | 31.669 | 1.520 |
| 10/28/2012 12:05 | 31.912 | 1.631 |
| 10/28/2012 12:10 | 32.176 | 1.743 |
| 10/28/2012 12:15 | 32.413 | 1.855 |
| 10/28/2012 12:20 | 32.636 | 1.968 |
| 10/28/2012 12:25 | 33.017 | 2.083 |
| 10/28/2012 12:30 | 33.254 | 2.198 |
| 10/28/2012 12:35 | 33.451 | 2.315 |
| 10/28/2012 12:40 | 33.767 | 2.432 |
| 10/28/2012 12:45 | 34.057 | 2.550 |
| 10/28/2012 12:50 | 34.292 | 2.669 |
| 10/28/2012 12:55 | 34.620 | 2.789 |
| 10/28/2012 13:00 | 34.863 | 2.910 |
| 10/28/2012 13:05 | 34.945 | 3.032 |
| 10/28/2012 13:10 | 35.144 | 3.154 |
| 10/28/2012 13:15 | 35.244 | 3.276 |
| 10/28/2012 13:20 | 35.511 | 3.400 |
| 10/28/2012 13:25 | 35.572 | 3.523 |
| 10/28/2012 13:30 | 35.719 | 3.647 |
| 10/28/2012 13:35 | 35.783 | 3.771 |
| 10/28/2012 13:40 | 35.868 | 3.896 |
| 10/28/2012 13:45 | 35.918 | 4.021 |
| 10/28/2012 13:50 | 35.895 | 4.145 |
| 10/28/2012 13:55 | 35.965 | 4.270 |
| 10/28/2012 14:00 | 35.988 | 4.395 |
| 10/28/2012 14:05 | 36.126 | 4.520 |
| 10/28/2012 14:10 | 36.132 | 4.646 |
| 10/28/2012 14:15 | 36.325 | 4.772 |

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| 10/28/2012 14:20 | 36.460 | 4.899 |
| 10/28/2012 14:25 | 36.654 | 5.026 |
| 10/28/2012 14:30 | 36.633 | 5.153 |
| 10/28/2012 14:35 | 36.838 | 5.281 |
| 10/28/2012 14:40 | 36.759 | 5.409 |
| 10/28/2012 14:45 | 36.903 | 5.537 |
| 10/28/2012 14:50 | 36.850 | 5.665 |
| 10/28/2012 14:55 | 36.891 | 5.793 |
| 10/28/2012 15:00 | 36.783 | 5.921 |
| 10/28/2012 15:05 | 36.903 | 6.049 |
| 10/28/2012 15:10 | 36.876 | 6.177 |
| 10/28/2012 15:15 | 36.947 | 6.305 |
| 10/28/2012 15:20 | 36.903 | 6.433 |
| 10/28/2012 15:25 | 36.844 | 6.561 |
| 10/28/2012 15:30 | 36.961 | 6.689 |
| 10/28/2012 15:35 | 36.932 | 6.818 |
| 10/28/2012 15:40 | 36.914 | 6.946 |
| 10/28/2012 15:45 | 36.853 | 7.074 |
| 10/28/2012 15:50 | 36.654 | 7.201 |
| 10/28/2012 15:55 | 36.305 | 7.327 |
| 10/28/2012 16:00 | 36.132 | 7.453 |
| 10/28/2012 16:05 | 36.006 | 7.578 |
| 10/28/2012 16:10 | 36.003 | 7.703 |
| 10/28/2012 16:15 | 36.047 | 7.828 |
| 10/28/2012 16:20 | 36.214 | 7.954 |
| 10/28/2012 16:25 | 36.513 | 8.080 |
| 10/28/2012 16:30 | 36.651 | 8.208 |
| 10/28/2012 16:35 | 36.633 | 8.335 |
| 10/28/2012 16:40 | 36.692 | 8.462 |
| 10/28/2012 16:45 | 36.703 | 8.590 |
| 10/28/2012 16:50 | 36.674 | 8.717 |
| 10/28/2012 16:55 | 36.689 | 8.844 |
| 10/28/2012 17:00 | 36.618 | 8.971 |
| 10/28/2012 17:05 | 36.560 | 9.098 |
| 10/28/2012 17:10 | 36.557 | 9.225 |
| 10/28/2012 17:15 | 36.460 | 9.352 |
| 10/28/2012 17:20 | 36.478 | 9.479 |
| 10/28/2012 17:25 | 36.369 | 9.605 |
| 10/28/2012 17:30 | 36.334 | 9.731 |
| 10/28/2012 17:35 | 36.328 | 9.857 |
| 10/28/2012 17:40 | 36.375 | 9.984 |
| 10/28/2012 17:45 | 36.381 | 10.110 |
| 10/28/2012 17:50 | 36.504 | 10.237 |
| 10/28/2012 17:55 | 36.293 | 10.363 |
| 10/28/2012 18:00 | 36.164 | 10.488 |
| 10/28/2012 18:05 | 36.012 | 10.613 |
| 10/28/2012 18:10 | 36.009 | 10.738 |

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| 10/28/2012 18:15 | 36.021 | 10.863 |
| 10/28/2012 18:20 | 36.006 | 10.988 |
| 10/28/2012 18:25 | 35.988 | 11.113 |
| 10/28/2012 18:30 | 35.816 | 11.238 |
| 10/28/2012 18:35 | 35.780 | 11.362 |
| 10/28/2012 18:40 | 35.710 | 11.486 |
| 10/28/2012 18:45 | 35.798 | 11.610 |
| 10/28/2012 18:50 | 35.736 | 11.734 |
| 10/28/2012 18:55 | 35.830 | 11.859 |
| 10/28/2012 19:00 | 35.619 | 11.982 |
| 10/28/2012 19:05 | 35.692 | 12.106 |
| 10/28/2012 19:10 | 35.613 | 12.230 |
| 10/28/2012 19:15 | 35.508 | 12.353 |
| 10/28/2012 19:20 | 35.446 | 12.476 |
| 10/28/2012 19:25 | 35.394 | 12.599 |
| 10/28/2012 19:30 | 35.361 | 12.722 |
| 10/28/2012 19:35 | 35.335 | 12.845 |
| 10/28/2012 19:40 | 35.382 | 12.968 |
| 10/28/2012 19:45 | 35.373 | 13.090 |
| 10/28/2012 19:50 | 35.446 | 13.213 |
| 10/28/2012 19:55 | 35.473 | 13.337 |
| 10/28/2012 20:00 | 35.505 | 13.460 |
| 10/28/2012 20:05 | 35.578 | 13.583 |
| 10/28/2012 20:10 | 35.649 | 13.707 |
| 10/28/2012 20:15 | 35.531 | 13.831 |
| 10/28/2012 20:20 | 35.405 | 13.954 |
| 10/28/2012 20:25 | 35.561 | 14.077 |
| 10/28/2012 20:30 | 35.766 | 14.201 |
| 10/28/2012 20:35 | 35.915 | 14.326 |
| 10/28/2012 20:40 | 36.085 | 14.451 |
| 10/28/2012 20:45 | 36.240 | 14.577 |
| 10/28/2012 20:50 | 36.460 | 14.704 |
| 10/28/2012 20:55 | 36.689 | 14.831 |
| 10/28/2012 21:00 | 36.994 | 14.959 |
| 10/28/2012 21:05 | 37.187 | 15.089 |
| 10/28/2012 21:10 | 37.565 | 15.219 |
| 10/28/2012 21:15 | 37.861 | 15.350 |
| 10/28/2012 21:20 | 38.175 | 15.483 |
| 10/28/2012 21:25 | 38.441 | 15.617 |
| 10/28/2012 21:30 | 38.790 | 15.751 |
| 10/28/2012 21:35 | 39.136 | 15.887 |
| 10/28/2012 21:40 | 39.523 | 16.024 |
| 10/28/2012 21:45 | 39.950 | 16.163 |
| 10/28/2012 21:50 | 40.302 | 16.303 |
| 10/28/2012 21:55 | 40.753 | 16.444 |
| 10/28/2012 22:00 | 41.128 | 16.587 |
| 10/28/2012 22:05 | 41.583 | 16.732 |

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| 10/28/2012 22:10 | 41.817 | 16.877 |
| 10/28/2012 22:15 | 42.069 | 17.023 |
| 10/28/2012 22:20 | 42.462 | 17.170 |
| 10/28/2012 22:25 | 42.620 | 17.318 |
| 10/28/2012 22:30 | 42.936 | 17.467 |
| 10/28/2012 22:35 | 43.168 | 17.617 |
| 10/28/2012 22:40 | 43.449 | 17.768 |
| 10/28/2012 22:45 | 43.523 | 17.919 |
| 10/28/2012 22:50 | 43.903 | 18.072 |
| 10/28/2012 22:55 | 44.050 | 18.225 |
| 10/28/2012 23:00 | 44.117 | 18.378 |
| 10/28/2012 23:05 | 44.296 | 18.532 |
| 10/28/2012 23:10 | 44.320 | 18.686 |
| 10/28/2012 23:15 | 44.498 | 18.840 |
| 10/28/2012 23:20 | 44.434 | 18.994 |
| 10/28/2012 23:25 | 44.410 | 19.149 |
| 10/28/2012 23:30 | 44.419 | 19.303 |
| 10/28/2012 23:35 | 44.214 | 19.456 |
| 10/28/2012 23:40 | 43.868 | 19.609 |
| 10/28/2012 23:45 | 43.438 | 19.759 |
| 10/28/2012 23:50 | 43.092 | 19.909 |
| 10/28/2012 23:55 | 42.857 | 20.058 |
| 10/29/2012 | 42.494 | 20.205 |
| 10/29/2012 0:05 | 42.116 | 20.352 |
| 10/29/2012 0:10 | 41.641 | 20.496 |
| 10/29/2012 0:15 | 41.421 | 20.640 |
| 10/29/2012 0:20 | 40.958 | 20.782 |
| 10/29/2012 0:25 | 40.583 | 20.923 |
| 10/29/2012 0:30 | 40.188 | 21.063 |
| 10/29/2012 0:35 | 39.860 | 21.201 |
| 10/29/2012 0:40 | 39.590 | 21.339 |
| 10/29/2012 0:45 | 39.458 | 21.476 |
| 10/29/2012 0:50 | 39.124 | 21.611 |
| 10/29/2012 0:55 | 38.693 | 21.746 |
| 10/29/2012 1:00 | 38.154 | 21.878 |
| 10/29/2012 1:05 | 37.580 | 22.009 |
| 10/29/2012 1:10 | 37.161 | 22.138 |
| 10/29/2012 1:15 | 36.589 | 22.265 |
| 10/29/2012 1:20 | 36.273 | 22.391 |
| 10/29/2012 1:25 | 35.701 | 22.515 |
| 10/29/2012 1:30 | 35.224 | 22.637 |
| 10/29/2012 1:35 | 34.831 | 22.758 |
| 10/29/2012 1:40 | 34.377 | 22.877 |
| 10/29/2012 1:45 | 33.931 | 22.995 |
| 10/29/2012 1:50 | 33.498 | 23.112 |
| 10/29/2012 1:55 | 33.061 | 23.226 |
| 10/29/2012 2:00 | 32.709 | 23.340 |

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|-----------------|--------|--------|
| 10/29/2012 2:05 | 32.413 | 23.452 |
| 10/29/2012 2:10 | 32.059 | 23.564 |
| 10/29/2012 2:15 | 31.725 | 23.674 |
| 10/29/2012 2:20 | 31.405 | 23.783 |
| 10/29/2012 2:25 | 31.115 | 23.891 |
| 10/29/2012 2:30 | 30.649 | 23.997 |
| 10/29/2012 2:35 | 30.300 | 24.103 |
| 10/29/2012 2:40 | 29.922 | 24.207 |
| 10/29/2012 2:45 | 29.571 | 24.309 |
| 10/29/2012 2:50 | 29.287 | 24.411 |
| 10/29/2012 2:55 | 28.906 | 24.511 |
| 10/29/2012 3:00 | 28.566 | 24.610 |
| 10/29/2012 3:05 | 28.252 | 24.709 |
| 10/29/2012 3:10 | 27.936 | 24.806 |
| 10/29/2012 3:15 | 27.625 | 24.901 |
| 10/29/2012 3:20 | 27.300 | 24.996 |
| 10/29/2012 3:25 | 27.027 | 25.090 |
| 10/29/2012 3:30 | 26.772 | 25.183 |
| 10/29/2012 3:35 | 26.356 | 25.275 |
| 10/29/2012 3:40 | 26.110 | 25.365 |
| 10/29/2012 3:45 | 25.846 | 25.455 |
| 10/29/2012 3:50 | 25.591 | 25.544 |
| 10/29/2012 3:55 | 25.345 | 25.632 |
| 10/29/2012 4:00 | 25.087 | 25.719 |
| 10/29/2012 4:05 | 24.774 | 25.805 |
| 10/29/2012 4:10 | 24.633 | 25.891 |
| 10/29/2012 4:15 | 24.434 | 25.975 |
| 10/29/2012 4:20 | 24.267 | 26.060 |
| 10/29/2012 4:25 | 24.076 | 26.143 |
| 10/29/2012 4:30 | 23.921 | 26.226 |
| 10/29/2012 4:35 | 23.777 | 26.309 |
| 10/29/2012 4:40 | 23.470 | 26.390 |
| 10/29/2012 4:45 | 23.420 | 26.472 |
| 10/29/2012 4:50 | 23.267 | 26.552 |
| 10/29/2012 4:55 | 23.089 | 26.633 |
| 10/29/2012 5:00 | 22.892 | 26.712 |
| 10/29/2012 5:05 | 22.684 | 26.791 |
| 10/29/2012 5:10 | 22.438 | 26.869 |
| 10/29/2012 5:15 | 22.274 | 26.946 |
| 10/29/2012 5:20 | 22.025 | 27.023 |
| 10/29/2012 5:25 | 21.829 | 27.098 |
| 10/29/2012 5:30 | 21.644 | 27.174 |
| 10/29/2012 5:35 | 21.383 | 27.248 |
| 10/29/2012 5:40 | 21.199 | 27.321 |
| 10/29/2012 5:45 | 20.832 | 27.394 |
| 10/29/2012 5:50 | 20.703 | 27.466 |
| 10/29/2012 5:55 | 20.574 | 27.537 |

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|-----------------|--------|--------|
| 10/29/2012 6:00 | 20.399 | 27.608 |
| 10/29/2012 6:05 | 20.255 | 27.678 |
| 10/29/2012 6:10 | 20.117 | 27.748 |
| 10/29/2012 6:15 | 19.980 | 27.817 |
| 10/29/2012 6:20 | 19.959 | 27.887 |
| 10/29/2012 6:25 | 19.918 | 27.956 |
| 10/29/2012 6:30 | 19.971 | 28.025 |
| 10/29/2012 6:35 | 19.941 | 28.094 |
| 10/29/2012 6:40 | 19.900 | 28.164 |
| 10/29/2012 6:45 | 19.827 | 28.232 |
| 10/29/2012 6:50 | 19.903 | 28.302 |
| 10/29/2012 6:55 | 19.854 | 28.370 |
| 10/29/2012 7:00 | 19.941 | 28.440 |
| 10/29/2012 7:05 | 20.158 | 28.510 |
| 10/29/2012 7:10 | 20.281 | 28.580 |
| 10/29/2012 7:15 | 20.686 | 28.652 |
| 10/29/2012 7:20 | 21.134 | 28.725 |
| 10/29/2012 7:25 | 21.524 | 28.800 |
| 10/29/2012 7:30 | 21.732 | 28.876 |
| 10/29/2012 7:35 | 21.993 | 28.952 |
| 10/29/2012 7:40 | 22.403 | 29.030 |
| 10/29/2012 7:45 | 22.737 | 29.109 |
| 10/29/2012 7:50 | 23.039 | 29.189 |
| 10/29/2012 7:55 | 23.399 | 29.270 |
| 10/29/2012 8:00 | 23.933 | 29.353 |
| 10/29/2012 8:05 | 24.935 | 29.440 |
| 10/29/2012 8:10 | 25.644 | 29.529 |
| 10/29/2012 8:15 | 26.374 | 29.620 |
| 10/29/2012 8:20 | 27.309 | 29.715 |
| 10/29/2012 8:25 | 27.997 | 29.812 |
| 10/29/2012 8:30 | 28.818 | 29.912 |
| 10/29/2012 8:35 | 29.814 | 30.016 |
| 10/29/2012 8:40 | 30.807 | 30.123 |
| 10/29/2012 8:45 | 31.903 | 30.234 |
| 10/29/2012 8:50 | 33.137 | 30.349 |
| 10/29/2012 8:55 | 34.277 | 30.468 |
| 10/29/2012 9:00 | 35.408 | 30.591 |
| 10/29/2012 9:05 | 36.660 | 30.718 |
| 10/29/2012 9:10 | 38.107 | 30.850 |
| 10/29/2012 9:15 | 39.531 | 30.987 |
| 10/29/2012 9:20 | 40.806 | 31.129 |
| 10/29/2012 9:25 | 42.424 | 31.276 |
| 10/29/2012 9:30 | 44.021 | 31.429 |
| 10/29/2012 9:35 | 45.594 | 31.588 |
| 10/29/2012 9:40 | 47.341 | 31.752 |
| 10/29/2012 9:45 | 48.847 | 31.922 |
| 10/29/2012 9:50 | 50.725 | 32.098 |

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| 10/29/2012 9:55 | 52.317 | 32.279 |
| 10/29/2012 10:00 | 53.926 | 32.467 |
| 10/29/2012 10:05 | 55.810 | 32.660 |
| 10/29/2012 10:10 | 57.600 | 32.860 |
| 10/29/2012 10:15 | 59.279 | 33.066 |
| 10/29/2012 10:20 | 60.009 | 33.275 |
| 10/29/2012 10:25 | 63.385 | 33.495 |
| 10/29/2012 10:30 | 70.421 | 33.739 |
| 10/29/2012 10:35 | 68.258 | 33.976 |
| 10/29/2012 10:40 | 69.290 | 34.217 |
| 10/29/2012 10:45 | 70.286 | 34.461 |

Influent Flows at Bergen Point WWTP:**10/29/2012**

| Date/Time | Influent Flow 0101F MGD | Influent 0101F Totalized MGD |
|------------------|--|---|
| 10/29/2012 10:50 | 70.600 | 0.245 |
| 10/29/2012 10:55 | 70.714 | 0.491 |
| 10/29/2012 11:00 | 71.101 | 0.738 |
| 10/29/2012 11:05 | 71.596 | 0.986 |
| 10/29/2012 11:10 | 73.105 | 1.240 |
| 10/29/2012 11:15 | 73.331 | 1.495 |
| 10/29/2012 11:20 | 74.394 | 1.753 |
| 10/29/2012 11:25 | 73.170 | 2.007 |
| 10/29/2012 11:30 | 73.767 | 2.263 |
| 10/29/2012 11:35 | 73.767 | 2.519 |
| 10/29/2012 11:40 | 73.383 | 2.774 |
| 10/29/2012 11:45 | 73.797 | 3.030 |
| 10/29/2012 11:50 | 73.993 | 3.287 |
| 10/29/2012 11:55 | 24.664 | 3.373 |
| 10/29/2012 12:00 | 0.000 | 3.373 |
| 10/29/2012 12:05 | 0.000 | 3.373 |
| 10/29/2012 12:10 | 0.000 | 3.373 |
| 10/29/2012 12:15 | 79.520 | 3.649 |
| 10/29/2012 12:20 | 80.273 | 3.928 |
| 10/29/2012 12:25 | 86.113 | 4.227 |
| 10/29/2012 12:30 | 88.214 | 4.533 |
| 10/29/2012 12:35 | 88.047 | 4.839 |
| 10/29/2012 12:40 | 88.214 | 5.145 |
| 10/29/2012 12:45 | 88.267 | 5.451 |
| 10/29/2012 12:50 | 87.953 | 5.757 |
| 10/29/2012 12:55 | 87.816 | 6.062 |
| 10/29/2012 13:00 | 87.995 | 6.367 |
| 10/29/2012 13:05 | 87.918 | 6.673 |
| 10/29/2012 13:10 | 87.907 | 6.978 |
| 10/29/2012 13:15 | 87.956 | 7.283 |
| 10/29/2012 13:20 | 87.948 | 7.589 |
| 10/29/2012 13:25 | 88.036 | 7.894 |
| 10/29/2012 13:30 | 88.041 | 8.200 |
| 10/29/2012 13:35 | 88.100 | 8.506 |
| 10/29/2012 13:40 | 88.226 | 8.812 |
| 10/29/2012 13:45 | 88.232 | 9.119 |
| 10/29/2012 13:50 | 88.311 | 9.425 |
| 10/29/2012 13:55 | 88.211 | 9.732 |
| 10/29/2012 14:00 | 18.377 | 9.795 |
| 10/29/2012 14:05 | 88.138 | 10.101 |
| 10/29/2012 14:10 | 52.158 | 10.282 |
| 10/29/2012 14:15 | 43.001 | 10.432 |

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| 10/29/2012 14:20 | 66.160 | 10.662 |
| 10/29/2012 14:25 | 89.211 | 10.971 |
| 10/29/2012 14:30 | 89.340 | 11.281 |
| 10/29/2012 14:35 | 89.167 | 11.591 |
| 10/29/2012 14:40 | 89.316 | 11.901 |
| 10/29/2012 14:45 | 89.293 | 12.211 |
| 10/29/2012 14:50 | 89.114 | 12.521 |
| 10/29/2012 14:55 | 89.205 | 12.830 |
| 10/29/2012 15:00 | 89.214 | 13.140 |
| 10/29/2012 15:05 | 89.088 | 13.450 |
| 10/29/2012 15:10 | 89.067 | 13.759 |
| 10/29/2012 15:15 | 89.184 | 14.068 |
| 10/29/2012 15:20 | 89.032 | 14.378 |
| 10/29/2012 15:25 | 88.947 | 14.686 |
| 10/29/2012 15:30 | 88.912 | 14.995 |
| 10/29/2012 15:35 | 88.877 | 15.304 |
| 10/29/2012 15:40 | 88.912 | 15.612 |
| 10/29/2012 15:45 | 88.818 | 15.921 |
| 10/29/2012 15:50 | 88.754 | 16.229 |
| 10/29/2012 15:55 | 88.809 | 16.537 |
| 10/29/2012 16:00 | 88.683 | 16.845 |
| 10/29/2012 16:05 | 88.759 | 17.154 |
| 10/29/2012 16:10 | 88.756 | 17.462 |
| 10/29/2012 16:15 | 88.642 | 17.769 |
| 10/29/2012 16:20 | 88.513 | 18.077 |
| 10/29/2012 16:25 | 88.707 | 18.385 |
| 10/29/2012 16:30 | 88.721 | 18.693 |
| 10/29/2012 16:35 | 88.795 | 19.001 |
| 10/29/2012 16:40 | 88.759 | 19.309 |
| 10/29/2012 16:45 | 88.540 | 19.617 |
| 10/29/2012 16:50 | 88.589 | 19.924 |
| 10/29/2012 16:55 | 88.789 | 20.233 |
| 10/29/2012 17:00 | 88.774 | 20.541 |
| 10/29/2012 17:05 | 88.830 | 20.849 |
| 10/29/2012 17:10 | 88.774 | 21.158 |
| 10/29/2012 17:15 | 88.830 | 21.466 |
| 10/29/2012 17:20 | 88.636 | 21.774 |
| 10/29/2012 17:25 | 88.563 | 22.081 |
| 10/29/2012 17:30 | 88.674 | 22.389 |
| 10/29/2012 17:35 | 88.739 | 22.697 |
| 10/29/2012 17:40 | 88.882 | 23.006 |
| 10/29/2012 17:45 | 88.880 | 23.315 |
| 10/29/2012 17:50 | 89.126 | 23.624 |
| 10/29/2012 17:55 | 89.070 | 23.933 |
| 10/29/2012 18:00 | 89.240 | 24.243 |
| 10/29/2012 18:05 | 89.527 | 24.554 |
| 10/29/2012 18:10 | 89.832 | 24.866 |

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| 10/29/2012 18:15 | 90.119 | 25.179 |
| 10/29/2012 18:20 | 90.570 | 25.493 |
| 10/29/2012 18:25 | 90.755 | 25.808 |
| 10/29/2012 18:30 | 91.312 | 26.126 |
| 10/29/2012 18:35 | 91.540 | 26.443 |
| 10/29/2012 18:40 | 92.153 | 26.763 |
| 10/29/2012 18:45 | 92.944 | 27.086 |
| 10/29/2012 18:50 | 93.307 | 27.410 |
| 10/29/2012 18:55 | 93.920 | 27.736 |
| 10/29/2012 19:00 | 94.488 | 28.064 |
| 10/29/2012 19:05 | 94.802 | 28.393 |
| 10/29/2012 19:10 | 95.236 | 28.724 |
| 10/29/2012 19:15 | 95.625 | 29.056 |
| 10/29/2012 19:20 | 96.364 | 29.391 |
| 10/29/2012 19:25 | 96.396 | 29.725 |
| 10/29/2012 19:30 | 96.739 | 30.061 |
| 10/29/2012 19:35 | 97.099 | 30.399 |
| 10/29/2012 19:40 | 97.571 | 30.737 |
| 10/29/2012 19:45 | 98.019 | 31.078 |
| 10/29/2012 19:50 | 98.403 | 31.419 |
| 10/29/2012 19:55 | 98.737 | 31.762 |
| 10/29/2012 20:00 | 99.007 | 32.106 |
| 10/29/2012 20:05 | 99.625 | 32.452 |
| 10/29/2012 20:10 | 99.998 | 32.799 |
| 10/29/2012 20:15 | 100.244 | 33.147 |
| 10/29/2012 20:20 | 100.610 | 33.496 |
| 10/29/2012 20:25 | 100.926 | 33.847 |
| 10/29/2012 20:30 | 101.732 | 34.200 |
| 10/29/2012 20:35 | 101.756 | 34.553 |
| 10/29/2012 20:40 | 101.987 | 34.908 |
| 10/29/2012 20:45 | 102.324 | 35.263 |
| 10/29/2012 20:50 | 102.761 | 35.620 |
| 10/29/2012 20:55 | 102.855 | 35.977 |
| 10/29/2012 21:00 | 103.376 | 36.336 |
| 10/29/2012 21:05 | 103.910 | 36.697 |
| 10/29/2012 21:10 | 104.106 | 37.058 |
| 10/29/2012 21:15 | 104.478 | 37.421 |
| 10/29/2012 21:20 | 104.795 | 37.785 |
| 10/29/2012 21:25 | 105.006 | 38.149 |
| 10/29/2012 21:30 | 105.193 | 38.515 |
| 10/29/2012 21:35 | 105.524 | 38.881 |
| 10/29/2012 21:40 | 105.700 | 39.248 |
| 10/29/2012 21:45 | 106.058 | 39.616 |
| 10/29/2012 21:50 | 106.233 | 39.985 |
| 10/29/2012 21:55 | 106.213 | 40.354 |
| 10/29/2012 22:00 | 106.485 | 40.724 |
| 10/29/2012 22:05 | 106.863 | 41.095 |

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| 10/29/2012 22:10 | 107.019 | 41.466 |
| 10/29/2012 22:15 | 107.162 | 41.838 |
| 10/29/2012 22:20 | 107.365 | 42.211 |
| 10/29/2012 22:25 | 107.634 | 42.585 |
| 10/29/2012 22:30 | 108.252 | 42.961 |
| 10/29/2012 22:35 | 108.428 | 43.337 |
| 10/29/2012 22:40 | 108.715 | 43.715 |
| 10/29/2012 22:45 | 109.220 | 44.094 |
| 10/29/2012 22:50 | 109.395 | 44.474 |
| 10/29/2012 22:55 | 109.477 | 44.854 |
| 10/29/2012 23:00 | 109.674 | 45.235 |
| 10/29/2012 23:05 | 110.113 | 45.617 |
| 10/29/2012 23:10 | 110.181 | 46.000 |
| 10/29/2012 23:15 | 110.207 | 46.382 |
| 10/29/2012 23:20 | 110.354 | 46.766 |
| 10/29/2012 23:25 | 110.307 | 47.149 |
| 10/29/2012 23:30 | 110.623 | 47.533 |
| 10/29/2012 23:35 | 110.318 | 47.916 |
| 10/29/2012 23:40 | 110.233 | 48.298 |
| 10/29/2012 23:45 | 110.442 | 48.682 |
| 10/29/2012 23:50 | 110.415 | 49.065 |
| 10/29/2012 23:55 | 110.398 | 49.449 |
| 10/30/2012 | 110.307 | 49.832 |
| 10/30/2012 0:05 | 110.330 | 50.215 |
| 10/30/2012 0:10 | 110.377 | 50.598 |
| 10/30/2012 0:15 | 110.105 | 50.980 |
| 10/30/2012 0:20 | 110.122 | 51.363 |
| 10/30/2012 0:25 | 110.014 | 51.745 |
| 10/30/2012 0:30 | 110.096 | 52.127 |
| 10/30/2012 0:35 | 110.233 | 52.510 |
| 10/30/2012 0:40 | 110.081 | 52.892 |
| 10/30/2012 0:45 | 109.835 | 53.273 |
| 10/30/2012 0:50 | 109.776 | 53.654 |
| 10/30/2012 0:55 | 109.721 | 54.035 |
| 10/30/2012 1:00 | 109.879 | 54.417 |
| 10/30/2012 1:05 | 109.691 | 54.798 |
| 10/30/2012 1:10 | 109.644 | 55.179 |
| 10/30/2012 1:15 | 109.463 | 55.559 |
| 10/30/2012 1:20 | 109.518 | 55.939 |
| 10/30/2012 1:25 | 109.518 | 56.319 |
| 10/30/2012 1:30 | 109.378 | 56.699 |
| 10/30/2012 1:35 | 109.255 | 57.078 |
| 10/30/2012 1:40 | 109.096 | 57.457 |
| 10/30/2012 1:45 | 108.997 | 57.836 |
| 10/30/2012 1:50 | 108.912 | 58.214 |
| 10/30/2012 1:55 | 108.929 | 58.592 |
| 10/30/2012 2:00 | 108.786 | 58.970 |

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|-----------------|---------|--------|
| 10/30/2012 2:05 | 108.727 | 59.347 |
| 10/30/2012 2:10 | 108.642 | 59.724 |
| 10/30/2012 2:15 | 108.592 | 60.101 |
| 10/30/2012 2:20 | 108.578 | 60.478 |
| 10/30/2012 2:25 | 108.428 | 60.855 |
| 10/30/2012 2:30 | 108.425 | 61.231 |
| 10/30/2012 2:35 | 108.420 | 61.608 |
| 10/30/2012 2:40 | 108.358 | 61.984 |
| 10/30/2012 2:45 | 108.153 | 62.360 |
| 10/30/2012 2:50 | 108.074 | 62.735 |
| 10/30/2012 2:55 | 108.056 | 63.110 |
| 10/30/2012 3:00 | 108.009 | 63.485 |
| 10/30/2012 3:05 | 107.578 | 63.859 |
| 10/30/2012 3:10 | 107.842 | 64.233 |
| 10/30/2012 3:15 | 107.702 | 64.607 |
| 10/30/2012 3:20 | 107.646 | 64.981 |
| 10/30/2012 3:25 | 107.602 | 65.355 |
| 10/30/2012 3:30 | 107.250 | 65.727 |
| 10/30/2012 3:35 | 107.189 | 66.099 |
| 10/30/2012 3:40 | 107.133 | 66.471 |
| 10/30/2012 3:45 | 107.022 | 66.843 |
| 10/30/2012 3:50 | 106.978 | 67.214 |
| 10/30/2012 3:55 | 106.899 | 67.585 |
| 10/30/2012 4:00 | 106.726 | 67.956 |
| 10/30/2012 4:05 | 106.676 | 68.326 |
| 10/30/2012 4:10 | 106.638 | 68.697 |
| 10/30/2012 4:15 | 106.365 | 69.066 |
| 10/30/2012 4:20 | 106.336 | 69.435 |
| 10/30/2012 4:25 | 106.172 | 69.804 |
| 10/30/2012 4:30 | 106.122 | 70.172 |
| 10/30/2012 4:35 | 105.961 | 70.540 |
| 10/30/2012 4:40 | 105.873 | 70.908 |
| 10/30/2012 4:45 | 105.680 | 71.275 |
| 10/30/2012 4:50 | 105.527 | 71.641 |
| 10/30/2012 4:55 | 105.299 | 72.007 |
| 10/30/2012 5:00 | 105.176 | 72.372 |
| 10/30/2012 5:05 | 105.017 | 72.737 |
| 10/30/2012 5:10 | 104.824 | 73.101 |
| 10/30/2012 5:15 | 104.651 | 73.464 |
| 10/30/2012 5:20 | 104.481 | 73.827 |
| 10/30/2012 5:25 | 104.305 | 74.189 |
| 10/30/2012 5:30 | 104.194 | 74.551 |
| 10/30/2012 5:35 | 103.942 | 74.912 |
| 10/30/2012 5:40 | 103.816 | 75.272 |
| 10/30/2012 5:45 | 103.696 | 75.632 |
| 10/30/2012 5:50 | 103.376 | 75.991 |
| 10/30/2012 5:55 | 103.367 | 76.350 |

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|-----------------|---------|--------|
| 10/30/2012 6:00 | 103.306 | 76.709 |
| 10/30/2012 6:05 | 103.312 | 77.067 |
| 10/30/2012 6:10 | 103.042 | 77.425 |
| 10/30/2012 6:15 | 102.981 | 77.783 |
| 10/30/2012 6:20 | 102.834 | 78.140 |
| 10/30/2012 6:25 | 102.693 | 78.496 |
| 10/30/2012 6:30 | 102.439 | 78.852 |
| 10/30/2012 6:35 | 102.301 | 79.207 |
| 10/30/2012 6:40 | 102.201 | 79.562 |
| 10/30/2012 6:45 | 102.110 | 79.917 |
| 10/30/2012 6:50 | 102.055 | 80.271 |
| 10/30/2012 6:55 | 101.926 | 80.625 |
| 10/30/2012 7:00 | 101.876 | 80.979 |
| 10/30/2012 7:05 | 101.624 | 81.332 |
| 10/30/2012 7:10 | 101.624 | 81.684 |
| 10/30/2012 7:15 | 101.436 | 82.037 |
| 10/30/2012 7:20 | 101.457 | 82.389 |
| 10/30/2012 7:25 | 101.381 | 82.741 |
| 10/30/2012 7:30 | 101.272 | 83.093 |
| 10/30/2012 7:35 | 101.249 | 83.444 |
| 10/30/2012 7:40 | 101.117 | 83.795 |
| 10/30/2012 7:45 | 101.082 | 84.146 |
| 10/30/2012 7:50 | 100.906 | 84.497 |
| 10/30/2012 7:55 | 100.774 | 84.846 |
| 10/30/2012 8:00 | 100.666 | 85.196 |
| 10/30/2012 8:05 | 100.654 | 85.545 |
| 10/30/2012 8:10 | 100.592 | 85.895 |
| 10/30/2012 8:15 | 100.519 | 86.244 |
| 10/30/2012 8:20 | 100.484 | 86.593 |
| 10/30/2012 8:25 | 100.381 | 86.941 |
| 10/30/2012 8:30 | 100.367 | 87.290 |
| 10/30/2012 8:35 | 100.373 | 87.638 |
| 10/30/2012 8:40 | 100.291 | 87.986 |
| 10/30/2012 8:45 | 100.188 | 88.334 |
| 10/30/2012 8:50 | 100.009 | 88.682 |
| 10/30/2012 8:55 | 100.118 | 89.029 |
| 10/30/2012 9:00 | 100.165 | 89.377 |
| 10/30/2012 9:05 | 100.194 | 89.725 |
| 10/30/2012 9:10 | 100.044 | 90.072 |
| 10/30/2012 9:15 | 100.053 | 90.420 |
| 10/30/2012 9:20 | 99.924 | 90.767 |
| 10/30/2012 9:25 | 99.971 | 91.114 |
| 10/30/2012 9:30 | 100.080 | 91.461 |
| 10/30/2012 9:35 | 99.939 | 91.808 |
| 10/30/2012 9:40 | 99.986 | 92.155 |
| 10/30/2012 9:45 | 99.921 | 92.502 |
| 10/30/2012 9:50 | 99.983 | 92.850 |

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|------------------|--------|--------|
| 10/30/2012 9:55 | 99.995 | 93.197 |
| 10/30/2012 10:00 | 99.898 | 93.544 |
| 10/30/2012 10:05 | 99.778 | 93.890 |
| 10/30/2012 10:10 | 99.874 | 94.237 |
| 10/30/2012 10:15 | 99.880 | 94.584 |
| 10/30/2012 10:20 | 99.751 | 94.930 |
| 10/30/2012 10:25 | 99.628 | 95.276 |
| 10/30/2012 10:30 | 99.652 | 95.622 |
| 10/30/2012 10:35 | 99.602 | 95.968 |
| 10/30/2012 10:40 | 99.652 | 96.314 |
| 10/30/2012 10:45 | 99.743 | 96.660 |

Influent Flows at Bergen Point WWTP:**10/30/2012**

| Date/Time | Influent Flow 0101F MGD | Influent 0101F Totalized MGD |
|------------------|--|---|
| 10/30/2012 10:50 | 99.766 | 0.346 |
| 10/30/2012 10:55 | 99.839 | 0.693 |
| 10/30/2012 11:00 | 99.839 | 1.040 |
| 10/30/2012 11:05 | 99.836 | 1.386 |
| 10/30/2012 11:10 | 99.848 | 1.733 |
| 10/30/2012 11:15 | 99.913 | 2.080 |
| 10/30/2012 11:20 | 99.830 | 2.427 |
| 10/30/2012 11:25 | 99.951 | 2.774 |
| 10/30/2012 11:30 | 99.854 | 3.120 |
| 10/30/2012 11:35 | 99.851 | 3.467 |
| 10/30/2012 11:40 | 99.804 | 3.814 |
| 10/30/2012 11:45 | 99.825 | 4.160 |
| 10/30/2012 11:50 | 99.728 | 4.507 |
| 10/30/2012 11:55 | 99.704 | 4.853 |
| 10/30/2012 12:00 | 99.734 | 5.199 |
| 10/30/2012 12:05 | 99.740 | 5.545 |
| 10/30/2012 12:10 | 99.787 | 5.892 |
| 10/30/2012 12:15 | 99.784 | 6.238 |
| 10/30/2012 12:20 | 99.699 | 6.584 |
| 10/30/2012 12:25 | 99.634 | 6.930 |
| 10/30/2012 12:30 | 99.491 | 7.276 |
| 10/30/2012 12:35 | 99.318 | 7.621 |
| 10/30/2012 12:40 | 99.326 | 7.966 |
| 10/30/2012 12:45 | 99.388 | 8.311 |
| 10/30/2012 12:50 | 99.329 | 8.656 |
| 10/30/2012 12:55 | 99.221 | 9.000 |
| 10/30/2012 13:00 | 99.324 | 9.345 |
| 10/30/2012 13:05 | 99.303 | 9.690 |
| 10/30/2012 13:10 | 99.168 | 10.034 |
| 10/30/2012 13:15 | 98.966 | 10.378 |
| 10/30/2012 13:20 | 98.998 | 10.722 |
| 10/30/2012 13:25 | 98.931 | 11.065 |
| 10/30/2012 13:30 | 98.878 | 11.408 |
| 10/30/2012 13:35 | 98.734 | 11.751 |
| 10/30/2012 13:40 | 98.559 | 12.093 |
| 10/30/2012 13:45 | 98.380 | 12.435 |
| 10/30/2012 13:50 | 98.441 | 12.777 |
| 10/30/2012 13:55 | 98.318 | 13.118 |
| 10/30/2012 14:00 | 98.184 | 13.459 |
| 10/30/2012 14:05 | 98.061 | 13.800 |
| 10/30/2012 14:10 | 97.852 | 14.139 |
| 10/30/2012 14:15 | 97.811 | 14.479 |

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| 10/30/2012 14:20 | 97.674 | 14.818 |
| 10/30/2012 14:25 | 97.627 | 15.157 |
| 10/30/2012 14:30 | 97.407 | 15.495 |
| 10/30/2012 14:35 | 97.052 | 15.832 |
| 10/30/2012 14:40 | 96.970 | 16.169 |
| 10/30/2012 14:45 | 96.976 | 16.506 |
| 10/30/2012 14:50 | 96.821 | 16.842 |
| 10/30/2012 14:55 | 96.592 | 17.177 |
| 10/30/2012 15:00 | 96.443 | 17.512 |
| 10/30/2012 15:05 | 96.229 | 17.846 |
| 10/30/2012 15:10 | 96.047 | 18.180 |
| 10/30/2012 15:15 | 95.842 | 18.513 |
| 10/30/2012 15:20 | 95.529 | 18.844 |
| 10/30/2012 15:25 | 95.285 | 19.175 |
| 10/30/2012 15:30 | 94.954 | 19.505 |
| 10/30/2012 15:35 | 94.819 | 19.834 |
| 10/30/2012 15:40 | 94.661 | 20.163 |
| 10/30/2012 15:45 | 94.406 | 20.491 |
| 10/30/2012 15:50 | 94.195 | 20.818 |
| 10/30/2012 15:55 | 94.046 | 21.144 |
| 10/30/2012 16:00 | 93.680 | 21.469 |
| 10/30/2012 16:05 | 93.398 | 21.794 |
| 10/30/2012 16:10 | 93.258 | 22.118 |
| 10/30/2012 16:15 | 93.170 | 22.441 |
| 10/30/2012 16:20 | 92.891 | 22.764 |
| 10/30/2012 16:25 | 92.777 | 23.086 |
| 10/30/2012 16:30 | 92.648 | 23.407 |
| 10/30/2012 16:35 | 92.361 | 23.728 |
| 10/30/2012 16:40 | 92.543 | 24.049 |
| 10/30/2012 16:45 | 92.162 | 24.369 |
| 10/30/2012 16:50 | 92.062 | 24.689 |
| 10/30/2012 16:55 | 91.816 | 25.008 |
| 10/30/2012 17:00 | 91.684 | 25.326 |
| 10/30/2012 17:05 | 91.564 | 25.644 |
| 10/30/2012 17:10 | 91.464 | 25.962 |
| 10/30/2012 17:15 | 91.306 | 26.279 |
| 10/30/2012 17:20 | 91.168 | 26.595 |
| 10/30/2012 17:25 | 91.054 | 26.912 |
| 10/30/2012 17:30 | 90.992 | 27.227 |
| 10/30/2012 17:35 | 90.740 | 27.543 |
| 10/30/2012 17:40 | 90.564 | 27.857 |
| 10/30/2012 17:45 | 90.365 | 28.171 |
| 10/30/2012 17:50 | 90.515 | 28.485 |
| 10/30/2012 17:55 | 90.339 | 28.799 |
| 10/30/2012 18:00 | 90.307 | 29.112 |
| 10/30/2012 18:05 | 90.207 | 29.426 |
| 10/30/2012 18:10 | 90.031 | 29.738 |

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| 10/30/2012 18:15 | 89.943 | 30.050 |
| 10/30/2012 18:20 | 89.835 | 30.362 |
| 10/30/2012 18:25 | 89.653 | 30.674 |
| 10/30/2012 18:30 | 89.674 | 30.985 |
| 10/30/2012 18:35 | 89.460 | 31.296 |
| 10/30/2012 18:40 | 89.243 | 31.606 |
| 10/30/2012 18:45 | 89.049 | 31.915 |
| 10/30/2012 18:50 | 88.944 | 32.224 |
| 10/30/2012 18:55 | 88.909 | 32.532 |
| 10/30/2012 19:00 | 88.815 | 32.841 |
| 10/30/2012 19:05 | 88.449 | 33.148 |
| 10/30/2012 19:10 | 88.396 | 33.455 |
| 10/30/2012 19:15 | 88.129 | 33.761 |
| 10/30/2012 19:20 | 87.883 | 34.066 |
| 10/30/2012 19:25 | 87.945 | 34.371 |
| 10/30/2012 19:30 | 87.631 | 34.676 |
| 10/30/2012 19:35 | 87.426 | 34.979 |
| 10/30/2012 19:40 | 87.253 | 35.282 |
| 10/30/2012 19:45 | 87.071 | 35.584 |
| 10/30/2012 19:50 | 86.928 | 35.886 |
| 10/30/2012 19:55 | 86.351 | 36.186 |
| 10/30/2012 20:00 | 86.591 | 36.487 |
| 10/30/2012 20:05 | 86.406 | 36.787 |
| 10/30/2012 20:10 | 86.239 | 37.086 |
| 10/30/2012 20:15 | 85.914 | 37.384 |
| 10/30/2012 20:20 | 85.852 | 37.683 |
| 10/30/2012 20:25 | 85.782 | 37.980 |
| 10/30/2012 20:30 | 85.495 | 38.277 |
| 10/30/2012 20:35 | 85.454 | 38.574 |
| 10/30/2012 20:40 | 85.231 | 38.870 |
| 10/30/2012 20:45 | 85.140 | 39.166 |
| 10/30/2012 20:50 | 85.140 | 39.461 |
| 10/30/2012 20:55 | 84.677 | 39.755 |
| 10/30/2012 21:00 | 84.402 | 40.048 |
| 10/30/2012 21:05 | 84.200 | 40.341 |
| 10/30/2012 21:10 | 83.833 | 40.632 |
| 10/30/2012 21:15 | 83.778 | 40.923 |
| 10/30/2012 21:20 | 83.552 | 41.213 |
| 10/30/2012 21:25 | 83.145 | 41.501 |
| 10/30/2012 21:30 | 83.177 | 41.790 |
| 10/30/2012 21:35 | 82.972 | 42.078 |
| 10/30/2012 21:40 | 82.693 | 42.365 |
| 10/30/2012 21:45 | 82.453 | 42.652 |
| 10/30/2012 21:50 | 82.119 | 42.937 |
| 10/30/2012 21:55 | 81.712 | 43.221 |
| 10/30/2012 22:00 | 81.111 | 43.502 |
| 10/30/2012 22:05 | 80.607 | 43.782 |

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|------------------|--------|--------|
| 10/30/2012 22:10 | 80.208 | 44.061 |
| 10/30/2012 22:15 | 79.599 | 44.337 |
| 10/30/2012 22:20 | 78.764 | 44.610 |
| 10/30/2012 22:25 | 77.744 | 44.880 |
| 10/30/2012 22:30 | 76.762 | 45.147 |
| 10/30/2012 22:35 | 75.341 | 45.409 |
| 10/30/2012 22:40 | 61.076 | 45.621 |
| 10/30/2012 22:45 | 51.273 | 45.799 |
| 10/30/2012 22:50 | 50.216 | 45.973 |
| 10/30/2012 22:55 | 49.348 | 46.144 |
| 10/30/2012 23:00 | 48.331 | 46.312 |
| 10/30/2012 23:05 | 47.716 | 46.478 |
| 10/30/2012 23:10 | 47.045 | 46.641 |
| 10/30/2012 23:15 | 46.860 | 46.804 |
| 10/30/2012 23:20 | 46.374 | 46.965 |
| 10/30/2012 23:25 | 46.189 | 47.125 |
| 10/30/2012 23:30 | 45.893 | 47.285 |
| 10/30/2012 23:35 | 45.641 | 47.443 |
| 10/30/2012 23:40 | 45.334 | 47.601 |
| 10/30/2012 23:45 | 45.084 | 47.757 |
| 10/30/2012 23:50 | 44.818 | 47.913 |
| 10/30/2012 23:55 | 44.613 | 48.068 |
| 10/31/2012 | 44.147 | 48.221 |
| 10/31/2012 0:05 | 44.050 | 48.374 |
| 10/31/2012 0:10 | 43.748 | 48.526 |
| 10/31/2012 0:15 | 43.523 | 48.677 |
| 10/31/2012 0:20 | 43.317 | 48.827 |
| 10/31/2012 0:25 | 42.966 | 48.976 |
| 10/31/2012 0:30 | 42.649 | 49.125 |
| 10/31/2012 0:35 | 42.327 | 49.272 |
| 10/31/2012 0:40 | 42.101 | 49.418 |
| 10/31/2012 0:45 | 41.817 | 49.563 |
| 10/31/2012 0:50 | 41.389 | 49.707 |
| 10/31/2012 0:55 | 41.155 | 49.850 |
| 10/31/2012 1:00 | 40.950 | 49.992 |
| 10/31/2012 1:05 | 40.531 | 50.132 |
| 10/31/2012 1:10 | 40.276 | 50.272 |
| 10/31/2012 1:15 | 39.962 | 50.411 |
| 10/31/2012 1:20 | 39.704 | 50.549 |
| 10/31/2012 1:25 | 39.036 | 50.684 |
| 10/31/2012 1:30 | 39.083 | 50.820 |
| 10/31/2012 1:35 | 38.784 | 50.955 |
| 10/31/2012 1:40 | 38.344 | 51.088 |
| 10/31/2012 1:45 | 37.993 | 51.220 |
| 10/31/2012 1:50 | 37.706 | 51.351 |
| 10/31/2012 1:55 | 37.430 | 51.481 |
| 10/31/2012 2:00 | 37.023 | 51.609 |

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|-----------------|--------|--------|
| 10/31/2012 2:05 | 36.654 | 51.737 |
| 10/31/2012 2:10 | 36.202 | 51.862 |
| 10/31/2012 2:15 | 36.112 | 51.988 |
| 10/31/2012 2:20 | 35.821 | 52.112 |
| 10/31/2012 2:25 | 35.461 | 52.235 |
| 10/31/2012 2:30 | 35.294 | 52.358 |
| 10/31/2012 2:35 | 35.147 | 52.480 |
| 10/31/2012 2:40 | 34.799 | 52.601 |
| 10/31/2012 2:45 | 34.570 | 52.721 |
| 10/31/2012 2:50 | 34.248 | 52.840 |
| 10/31/2012 2:55 | 33.969 | 52.958 |
| 10/31/2012 3:00 | 33.996 | 53.076 |
| 10/31/2012 3:05 | 33.750 | 53.193 |
| 10/31/2012 3:10 | 33.638 | 53.310 |
| 10/31/2012 3:15 | 33.351 | 53.425 |
| 10/31/2012 3:20 | 33.122 | 53.540 |
| 10/31/2012 3:25 | 33.005 | 53.655 |
| 10/31/2012 3:30 | 32.774 | 53.769 |
| 10/31/2012 3:35 | 32.692 | 53.882 |
| 10/31/2012 3:40 | 32.387 | 53.995 |
| 10/31/2012 3:45 | 32.199 | 54.107 |
| 10/31/2012 3:50 | 31.980 | 54.218 |
| 10/31/2012 3:55 | 31.757 | 54.328 |
| 10/31/2012 4:00 | 31.429 | 54.437 |
| 10/31/2012 4:05 | 31.338 | 54.546 |
| 10/31/2012 4:10 | 31.165 | 54.654 |
| 10/31/2012 4:15 | 30.878 | 54.761 |
| 10/31/2012 4:20 | 30.667 | 54.868 |
| 10/31/2012 4:25 | 30.500 | 54.974 |
| 10/31/2012 4:30 | 30.459 | 55.079 |
| 10/31/2012 4:35 | 30.383 | 55.185 |
| 10/31/2012 4:40 | 29.978 | 55.289 |
| 10/31/2012 4:45 | 29.934 | 55.393 |
| 10/31/2012 4:50 | 29.811 | 55.496 |
| 10/31/2012 4:55 | 29.547 | 55.599 |
| 10/31/2012 5:00 | 29.331 | 55.701 |
| 10/31/2012 5:05 | 29.131 | 55.802 |
| 10/31/2012 5:10 | 29.172 | 55.903 |
| 10/31/2012 5:15 | 29.090 | 56.004 |
| 10/31/2012 5:20 | 28.926 | 56.105 |
| 10/31/2012 5:25 | 28.759 | 56.205 |
| 10/31/2012 5:30 | 28.569 | 56.304 |
| 10/31/2012 5:35 | 28.252 | 56.402 |
| 10/31/2012 5:40 | 28.293 | 56.500 |
| 10/31/2012 5:45 | 27.903 | 56.597 |
| 10/31/2012 5:50 | 27.678 | 56.693 |
| 10/31/2012 5:55 | 27.402 | 56.788 |

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|-----------------|--------|--------|
| 10/31/2012 6:00 | 27.165 | 56.883 |
| 10/31/2012 6:05 | 27.045 | 56.976 |
| 10/31/2012 6:10 | 26.980 | 57.070 |
| 10/31/2012 6:15 | 26.649 | 57.163 |
| 10/31/2012 6:20 | 26.432 | 57.254 |
| 10/31/2012 6:25 | 26.362 | 57.346 |
| 10/31/2012 6:30 | 26.113 | 57.437 |
| 10/31/2012 6:35 | 25.993 | 57.527 |
| 10/31/2012 6:40 | 25.794 | 57.616 |
| 10/31/2012 6:45 | 25.626 | 57.705 |
| 10/31/2012 6:50 | 25.442 | 57.794 |
| 10/31/2012 6:55 | 25.269 | 57.882 |
| 10/31/2012 7:00 | 25.143 | 57.969 |
| 10/31/2012 7:05 | 25.155 | 58.056 |
| 10/31/2012 7:10 | 25.134 | 58.143 |
| 10/31/2012 7:15 | 25.117 | 58.231 |
| 10/31/2012 7:20 | 24.955 | 58.317 |
| 10/31/2012 7:25 | 25.166 | 58.405 |
| 10/31/2012 7:30 | 28.868 | 58.505 |
| 10/31/2012 7:35 | 29.606 | 58.608 |
| 10/31/2012 7:40 | 29.770 | 58.711 |
| 10/31/2012 7:45 | 29.260 | 58.813 |
| 10/31/2012 7:50 | 28.824 | 58.913 |
| 10/31/2012 7:55 | 27.769 | 59.009 |
| 10/31/2012 8:00 | 26.966 | 59.103 |
| 10/31/2012 8:05 | 26.928 | 59.196 |
| 10/31/2012 8:10 | 27.127 | 59.291 |
| 10/31/2012 8:15 | 27.103 | 59.385 |
| 10/31/2012 8:20 | 27.209 | 59.479 |
| 10/31/2012 8:25 | 27.051 | 59.573 |
| 10/31/2012 8:30 | 26.330 | 59.664 |
| 10/31/2012 8:35 | 26.365 | 59.756 |
| 10/31/2012 8:40 | 26.295 | 59.847 |
| 10/31/2012 8:45 | 26.479 | 59.939 |
| 10/31/2012 8:50 | 26.632 | 60.032 |
| 10/31/2012 8:55 | 27.027 | 60.126 |
| 10/31/2012 9:00 | 27.191 | 60.220 |
| 10/31/2012 9:05 | 27.285 | 60.315 |
| 10/31/2012 9:10 | 27.575 | 60.410 |
| 10/31/2012 9:15 | 27.854 | 60.507 |
| 10/31/2012 9:20 | 27.883 | 60.604 |
| 10/31/2012 9:25 | 28.258 | 60.702 |
| 10/31/2012 9:30 | 28.566 | 60.801 |
| 10/31/2012 9:35 | 28.583 | 60.901 |
| 10/31/2012 9:40 | 28.788 | 61.000 |
| 10/31/2012 9:45 | 29.205 | 61.102 |
| 10/31/2012 9:50 | 29.275 | 61.204 |

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|------------------|--------|--------|
| 10/31/2012 9:55 | 29.345 | 61.305 |
| 10/31/2012 10:00 | 29.454 | 61.408 |
| 10/31/2012 10:05 | 29.670 | 61.511 |
| 10/31/2012 10:10 | 29.955 | 61.615 |
| 10/31/2012 10:15 | 30.116 | 61.719 |
| 10/31/2012 10:20 | 30.479 | 61.825 |
| 10/31/2012 10:25 | 30.535 | 61.931 |
| 10/31/2012 10:30 | 30.933 | 62.039 |
| 10/31/2012 10:35 | 31.004 | 62.146 |
| 10/31/2012 10:40 | 31.379 | 62.255 |
| 10/31/2012 10:45 | 31.517 | 62.365 |

Influent Flows at Bergen Point WWTP:**10/31/2012**

| Date/Time | Influent Flow 0101F MGD | Influent 0101F Totalized MGD |
|------------------|--|---|
| 10/31/2012 10:50 | 31.906 | 0.111 |
| 10/31/2012 10:55 | 32.114 | 0.222 |
| 10/31/2012 11:00 | 32.437 | 0.335 |
| 10/31/2012 11:05 | 32.358 | 0.447 |
| 10/31/2012 11:10 | 32.756 | 0.561 |
| 10/31/2012 11:15 | 33.164 | 0.676 |
| 10/31/2012 11:20 | 33.149 | 0.791 |
| 10/31/2012 11:25 | 33.741 | 0.908 |
| 10/31/2012 11:30 | 33.761 | 1.026 |
| 10/31/2012 11:35 | 34.708 | 1.146 |
| 10/31/2012 11:40 | 34.271 | 1.265 |
| 10/31/2012 11:45 | 34.409 | 1.385 |
| 10/31/2012 11:50 | 35.610 | 1.508 |
| 10/31/2012 11:55 | 35.813 | 1.633 |
| 10/31/2012 12:00 | 36.208 | 1.758 |
| 10/31/2012 12:05 | 36.106 | 1.884 |
| 10/31/2012 12:10 | 37.137 | 2.013 |
| 10/31/2012 12:15 | 37.011 | 2.141 |
| 10/31/2012 12:20 | 37.120 | 2.270 |
| 10/31/2012 12:25 | 37.055 | 2.399 |
| 10/31/2012 12:30 | 37.591 | 2.529 |
| 10/31/2012 12:35 | 37.732 | 2.660 |
| 10/31/2012 12:40 | 36.777 | 2.788 |
| 10/31/2012 12:45 | 37.870 | 2.919 |
| 10/31/2012 12:50 | 37.799 | 3.051 |
| 10/31/2012 12:55 | 38.415 | 3.184 |
| 10/31/2012 13:00 | 37.887 | 3.316 |
| 10/31/2012 13:05 | 38.837 | 3.450 |
| 10/31/2012 13:10 | 38.394 | 3.584 |
| 10/31/2012 13:15 | 44.868 | 3.740 |
| 10/31/2012 13:20 | 41.061 | 3.882 |
| 10/31/2012 13:25 | 39.484 | 4.019 |
| 10/31/2012 13:30 | 39.575 | 4.157 |
| 10/31/2012 13:35 | 39.558 | 4.294 |
| 10/31/2012 13:40 | 39.701 | 4.432 |
| 10/31/2012 13:45 | 39.760 | 4.570 |
| 10/31/2012 13:50 | 39.757 | 4.708 |
| 10/31/2012 13:55 | 39.845 | 4.846 |
| 10/31/2012 14:00 | 40.053 | 4.985 |
| 10/31/2012 14:05 | 39.959 | 5.124 |
| 10/31/2012 14:10 | 40.238 | 5.264 |
| 10/31/2012 14:15 | 40.320 | 5.404 |

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|------------------|--------|--------|
| 10/31/2012 14:20 | 40.410 | 5.544 |
| 10/31/2012 14:25 | 40.531 | 5.685 |
| 10/31/2012 14:30 | 40.610 | 5.826 |
| 10/31/2012 14:35 | 40.604 | 5.967 |
| 10/31/2012 14:40 | 40.668 | 6.108 |
| 10/31/2012 14:45 | 40.645 | 6.249 |
| 10/31/2012 14:50 | 40.680 | 6.390 |
| 10/31/2012 14:55 | 40.621 | 6.532 |
| 10/31/2012 15:00 | 40.621 | 6.673 |
| 10/31/2012 15:05 | 40.492 | 6.813 |
| 10/31/2012 15:10 | 40.249 | 6.953 |
| 10/31/2012 15:15 | 40.346 | 7.093 |
| 10/31/2012 15:20 | 40.202 | 7.233 |
| 10/31/2012 15:25 | 40.261 | 7.372 |
| 10/31/2012 15:30 | 40.021 | 7.511 |
| 10/31/2012 15:35 | 40.018 | 7.650 |
| 10/31/2012 15:40 | 40.027 | 7.789 |
| 10/31/2012 15:45 | 39.901 | 7.928 |
| 10/31/2012 15:50 | 39.789 | 8.066 |
| 10/31/2012 15:55 | 39.660 | 8.204 |
| 10/31/2012 16:00 | 39.619 | 8.341 |
| 10/31/2012 16:05 | 39.839 | 8.480 |
| 10/31/2012 16:10 | 39.543 | 8.617 |
| 10/31/2012 16:15 | 39.517 | 8.754 |
| 10/31/2012 16:20 | 39.687 | 8.892 |
| 10/31/2012 16:25 | 39.716 | 9.030 |
| 10/31/2012 16:30 | 39.763 | 9.168 |
| 10/31/2012 16:35 | 39.842 | 9.306 |
| 10/31/2012 16:40 | 39.578 | 9.444 |
| 10/31/2012 16:45 | 39.748 | 9.582 |
| 10/31/2012 16:50 | 39.777 | 9.720 |
| 10/31/2012 16:55 | 39.780 | 9.858 |
| 10/31/2012 17:00 | 39.564 | 9.995 |
| 10/31/2012 17:05 | 39.537 | 10.133 |
| 10/31/2012 17:10 | 39.385 | 10.269 |
| 10/31/2012 17:15 | 39.376 | 10.406 |
| 10/31/2012 17:20 | 39.109 | 10.542 |
| 10/31/2012 17:25 | 39.153 | 10.678 |
| 10/31/2012 17:30 | 39.127 | 10.814 |
| 10/31/2012 17:35 | 39.127 | 10.950 |
| 10/31/2012 17:40 | 39.024 | 11.085 |
| 10/31/2012 17:45 | 39.174 | 11.221 |
| 10/31/2012 17:50 | 39.089 | 11.357 |
| 10/31/2012 17:55 | 39.112 | 11.493 |
| 10/31/2012 18:00 | 38.863 | 11.628 |
| 10/31/2012 18:05 | 38.948 | 11.763 |
| 10/31/2012 18:10 | 38.805 | 11.897 |

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|------------------|--------|--------|
| 10/31/2012 18:15 | 38.898 | 12.033 |
| 10/31/2012 18:20 | 38.623 | 12.167 |
| 10/31/2012 18:25 | 38.626 | 12.301 |
| 10/31/2012 18:30 | 38.462 | 12.434 |
| 10/31/2012 18:35 | 38.638 | 12.568 |
| 10/31/2012 18:40 | 38.547 | 12.702 |
| 10/31/2012 18:45 | 38.421 | 12.836 |
| 10/31/2012 18:50 | 38.403 | 12.969 |
| 10/31/2012 18:55 | 38.166 | 13.102 |
| 10/31/2012 19:00 | 38.391 | 13.235 |
| 10/31/2012 19:05 | 38.362 | 13.368 |
| 10/31/2012 19:10 | 38.268 | 13.501 |
| 10/31/2012 19:15 | 38.251 | 13.634 |
| 10/31/2012 19:20 | 38.160 | 13.766 |
| 10/31/2012 19:25 | 37.905 | 13.898 |
| 10/31/2012 19:30 | 37.791 | 14.029 |
| 10/31/2012 19:35 | 37.729 | 14.160 |
| 10/31/2012 19:40 | 37.726 | 14.291 |
| 10/31/2012 19:45 | 37.946 | 14.423 |
| 10/31/2012 19:50 | 37.612 | 14.553 |
| 10/31/2012 19:55 | 37.893 | 14.685 |
| 10/31/2012 20:00 | 37.855 | 14.816 |
| 10/31/2012 20:05 | 38.160 | 14.949 |
| 10/31/2012 20:10 | 37.899 | 15.081 |
| 10/31/2012 20:15 | 37.662 | 15.211 |
| 10/31/2012 20:20 | 38.233 | 15.344 |
| 10/31/2012 20:25 | 36.859 | 15.472 |
| 10/31/2012 20:30 | 36.976 | 15.600 |
| 10/31/2012 20:35 | 37.873 | 15.732 |
| 10/31/2012 20:40 | 37.029 | 15.861 |
| 10/31/2012 20:45 | 37.427 | 15.990 |
| 10/31/2012 20:50 | 38.301 | 16.123 |
| 10/31/2012 20:55 | 37.846 | 16.255 |
| 10/31/2012 21:00 | 37.993 | 16.387 |
| 10/31/2012 21:05 | 38.218 | 16.520 |
| 10/31/2012 21:10 | 38.538 | 16.653 |
| 10/31/2012 21:15 | 37.911 | 16.785 |
| 10/31/2012 21:20 | 37.612 | 16.916 |
| 10/31/2012 21:25 | 38.005 | 17.048 |
| 10/31/2012 21:30 | 37.612 | 17.178 |
| 10/31/2012 21:35 | 37.128 | 17.307 |
| 10/31/2012 21:40 | 38.429 | 17.440 |
| 10/31/2012 21:45 | 37.210 | 17.570 |
| 10/31/2012 21:50 | 37.512 | 17.700 |
| 10/31/2012 21:55 | 35.980 | 17.825 |
| 10/31/2012 22:00 | 37.709 | 17.956 |
| 10/31/2012 22:05 | 35.994 | 18.081 |

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|------------------|--------|--------|
| 10/31/2012 22:10 | 37.190 | 18.210 |
| 10/31/2012 22:15 | 36.827 | 18.338 |
| 10/31/2012 22:20 | 35.643 | 18.462 |
| 10/31/2012 22:25 | 36.475 | 18.588 |
| 10/31/2012 22:30 | 36.410 | 18.715 |
| 10/31/2012 22:35 | 37.093 | 18.843 |
| 10/31/2012 22:40 | 35.637 | 18.967 |
| 10/31/2012 22:45 | 36.865 | 19.095 |
| 10/31/2012 22:50 | 36.132 | 19.221 |
| 10/31/2012 22:55 | 35.552 | 19.344 |
| 10/31/2012 23:00 | 35.651 | 19.468 |
| 10/31/2012 23:05 | 35.933 | 19.593 |
| 10/31/2012 23:10 | 35.634 | 19.716 |
| 10/31/2012 23:15 | 35.042 | 19.838 |
| 10/31/2012 23:20 | 35.168 | 19.960 |
| 10/31/2012 23:25 | 34.825 | 20.081 |
| 10/31/2012 23:30 | 34.016 | 20.199 |
| 10/31/2012 23:35 | 34.060 | 20.317 |
| 10/31/2012 23:40 | 34.813 | 20.438 |
| 10/31/2012 23:45 | 34.462 | 20.558 |
| 10/31/2012 23:50 | 33.858 | 20.676 |
| 10/31/2012 23:55 | 34.218 | 20.794 |
| 11/1/2012 | 33.583 | 20.911 |
| 11/1/2012 0:05 | 33.890 | 21.029 |
| 11/1/2012 0:10 | 33.565 | 21.145 |
| 11/1/2012 0:15 | 34.025 | 21.263 |
| 11/1/2012 0:20 | 33.876 | 21.381 |
| 11/1/2012 0:25 | 33.251 | 21.496 |
| 11/1/2012 0:30 | 33.676 | 21.613 |
| 11/1/2012 0:35 | 32.616 | 21.727 |
| 11/1/2012 0:40 | 33.788 | 21.844 |
| 11/1/2012 0:45 | 32.762 | 21.958 |
| 11/1/2012 0:50 | 33.612 | 22.074 |
| 11/1/2012 0:55 | 32.753 | 22.188 |
| 11/1/2012 1:00 | 32.744 | 22.302 |
| 11/1/2012 1:05 | 32.328 | 22.414 |
| 11/1/2012 1:10 | 31.634 | 22.524 |
| 11/1/2012 1:15 | 32.994 | 22.638 |
| 11/1/2012 1:20 | 31.185 | 22.747 |
| 11/1/2012 1:25 | 32.167 | 22.858 |
| 11/1/2012 1:30 | 31.171 | 22.967 |
| 11/1/2012 1:35 | 31.273 | 23.075 |
| 11/1/2012 1:40 | 30.391 | 23.181 |
| 11/1/2012 1:45 | 30.898 | 23.288 |
| 11/1/2012 1:50 | 29.609 | 23.391 |
| 11/1/2012 1:55 | 30.400 | 23.496 |
| 11/1/2012 2:00 | 30.087 | 23.601 |

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|----------------|--------|--------|
| 11/1/2012 2:05 | 29.448 | 23.703 |
| 11/1/2012 2:10 | 29.102 | 23.804 |
| 11/1/2012 2:15 | 28.618 | 23.904 |
| 11/1/2012 2:20 | 28.484 | 24.002 |
| 11/1/2012 2:25 | 29.055 | 24.103 |
| 11/1/2012 2:30 | 29.243 | 24.205 |
| 11/1/2012 2:35 | 28.967 | 24.305 |
| 11/1/2012 2:40 | 28.595 | 24.405 |
| 11/1/2012 2:45 | 28.654 | 24.504 |
| 11/1/2012 2:50 | 28.211 | 24.602 |
| 11/1/2012 2:55 | 28.006 | 24.699 |
| 11/1/2012 3:00 | 26.731 | 24.792 |
| 11/1/2012 3:05 | 27.350 | 24.887 |
| 11/1/2012 3:10 | 27.018 | 24.981 |
| 11/1/2012 3:15 | 26.843 | 25.074 |
| 11/1/2012 3:20 | 26.948 | 25.168 |
| 11/1/2012 3:25 | 26.998 | 25.262 |
| 11/1/2012 3:30 | 25.902 | 25.351 |
| 11/1/2012 3:35 | 25.624 | 25.440 |
| 11/1/2012 3:40 | 25.966 | 25.531 |
| 11/1/2012 3:45 | 25.190 | 25.618 |
| 11/1/2012 3:50 | 25.339 | 25.706 |
| 11/1/2012 3:55 | 25.257 | 25.794 |
| 11/1/2012 4:00 | 25.328 | 25.882 |
| 11/1/2012 4:05 | 24.645 | 25.967 |
| 11/1/2012 4:10 | 24.721 | 26.053 |
| 11/1/2012 4:15 | 24.103 | 26.137 |
| 11/1/2012 4:20 | 24.158 | 26.221 |
| 11/1/2012 4:25 | 23.807 | 26.303 |
| 11/1/2012 4:30 | 23.646 | 26.385 |
| 11/1/2012 4:35 | 23.575 | 26.467 |
| 11/1/2012 4:40 | 23.558 | 26.549 |
| 11/1/2012 4:45 | 23.593 | 26.631 |
| 11/1/2012 4:50 | 22.520 | 26.709 |
| 11/1/2012 4:55 | 23.018 | 26.789 |
| 11/1/2012 5:00 | 22.878 | 26.869 |
| 11/1/2012 5:05 | 22.722 | 26.947 |
| 11/1/2012 5:10 | 22.394 | 27.025 |
| 11/1/2012 5:15 | 22.816 | 27.104 |
| 11/1/2012 5:20 | 22.426 | 27.182 |
| 11/1/2012 5:25 | 22.110 | 27.259 |
| 11/1/2012 5:30 | 22.573 | 27.337 |
| 11/1/2012 5:35 | 22.303 | 27.415 |
| 11/1/2012 5:40 | 21.829 | 27.491 |
| 11/1/2012 5:45 | 21.805 | 27.566 |
| 11/1/2012 5:50 | 21.890 | 27.642 |
| 11/1/2012 5:55 | 21.917 | 27.718 |

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|----------------|--------|--------|
| 11/1/2012 6:00 | 21.694 | 27.794 |
| 11/1/2012 6:05 | 21.345 | 27.868 |
| 11/1/2012 6:10 | 21.260 | 27.942 |
| 11/1/2012 6:15 | 21.102 | 28.015 |
| 11/1/2012 6:20 | 21.219 | 28.089 |
| 11/1/2012 6:25 | 21.246 | 28.162 |
| 11/1/2012 6:30 | 21.430 | 28.237 |
| 11/1/2012 6:35 | 21.533 | 28.312 |
| 11/1/2012 6:40 | 21.556 | 28.386 |
| 11/1/2012 6:45 | 21.887 | 28.462 |
| 11/1/2012 6:50 | 21.500 | 28.537 |
| 11/1/2012 6:55 | 21.714 | 28.613 |
| 11/1/2012 7:00 | 21.978 | 28.689 |
| 11/1/2012 7:05 | 22.177 | 28.766 |
| 11/1/2012 7:10 | 21.984 | 28.842 |
| 11/1/2012 7:15 | 21.779 | 28.918 |
| 11/1/2012 7:20 | 22.350 | 28.995 |
| 11/1/2012 7:25 | 22.309 | 29.073 |
| 11/1/2012 7:30 | 21.823 | 29.149 |
| 11/1/2012 7:35 | 21.937 | 29.225 |
| 11/1/2012 7:40 | 21.940 | 29.301 |
| 11/1/2012 7:45 | 21.509 | 29.376 |
| 11/1/2012 7:50 | 21.489 | 29.450 |
| 11/1/2012 7:55 | 8.601 | 29.480 |
| 11/1/2012 8:00 | 0.073 | 29.480 |
| 11/1/2012 8:05 | 0.000 | 29.480 |
| 11/1/2012 8:10 | 22.271 | 29.558 |
| 11/1/2012 8:15 | 45.334 | 29.715 |
| 11/1/2012 8:20 | 38.957 | 29.850 |
| 11/1/2012 8:25 | 28.495 | 29.949 |
| 11/1/2012 8:30 | 24.003 | 30.033 |
| 11/1/2012 8:35 | 23.766 | 30.115 |
| 11/1/2012 8:40 | 23.857 | 30.198 |
| 11/1/2012 8:45 | 24.158 | 30.282 |
| 11/1/2012 8:50 | 24.478 | 30.367 |
| 11/1/2012 8:55 | 24.818 | 30.453 |
| 11/1/2012 9:00 | 24.531 | 30.538 |
| 11/1/2012 9:05 | 24.982 | 30.625 |
| 11/1/2012 9:10 | 25.064 | 30.712 |
| 11/1/2012 9:15 | 26.072 | 30.803 |
| 11/1/2012 9:20 | 26.031 | 30.893 |
| 11/1/2012 9:25 | 25.902 | 30.983 |
| 11/1/2012 9:30 | 26.078 | 31.073 |
| 11/1/2012 9:35 | 25.823 | 31.163 |
| 11/1/2012 9:40 | 26.582 | 31.255 |
| 11/1/2012 9:45 | 26.863 | 31.349 |
| 11/1/2012 9:50 | 27.326 | 31.444 |

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|-----------------|--------|--------|
| 11/1/2012 9:55 | 28.041 | 31.541 |
| 11/1/2012 10:00 | 27.983 | 31.638 |
| 11/1/2012 10:05 | 28.378 | 31.737 |
| 11/1/2012 10:10 | 27.698 | 31.833 |
| 11/1/2012 10:15 | 27.859 | 31.930 |
| 11/1/2012 10:20 | 28.126 | 32.027 |
| 11/1/2012 10:25 | 27.915 | 32.124 |
| 11/1/2012 10:30 | 28.862 | 32.224 |
| 11/1/2012 10:35 | 28.551 | 32.323 |
| 11/1/2012 10:40 | 29.304 | 32.425 |
| 11/1/2012 10:45 | 29.676 | 32.528 |

**Influent Flows at Bergen Point WWTP:
10/31/2012**

| Date/Time | Influent Flow 0101F MGD | Influent 0101F Totalized MGD |
|------------------|--|---|
| 11/1/2012 10:50 | 29.788 | 0.103 |
| 11/1/2012 10:55 | 29.480 | 0.206 |
| 11/1/2012 11:00 | 30.300 | 0.311 |
| 11/1/2012 11:05 | 30.796 | 0.418 |
| 11/1/2012 11:10 | 30.427 | 0.524 |
| 11/1/2012 11:15 | 31.238 | 0.632 |
| 11/1/2012 11:20 | 30.596 | 0.738 |
| 11/1/2012 11:25 | 31.892 | 0.849 |
| 11/1/2012 11:30 | 32.229 | 0.961 |
| 11/1/2012 11:35 | 32.287 | 1.073 |
| 11/1/2012 11:40 | 31.039 | 1.181 |
| 11/1/2012 11:45 | 32.191 | 1.293 |
| 11/1/2012 11:50 | 31.903 | 1.403 |
| 11/1/2012 11:55 | 32.812 | 1.517 |
| 11/1/2012 12:00 | 32.847 | 1.631 |
| 11/1/2012 12:05 | 32.976 | 1.746 |
| 11/1/2012 12:10 | 34.336 | 1.865 |
| 11/1/2012 12:15 | 33.665 | 1.982 |
| 11/1/2012 12:20 | 33.849 | 2.099 |
| 11/1/2012 12:25 | 34.807 | 2.220 |
| 11/1/2012 12:30 | 34.816 | 2.341 |
| 11/1/2012 12:35 | 34.005 | 2.459 |
| 11/1/2012 12:40 | 35.306 | 2.582 |
| 11/1/2012 12:45 | 35.569 | 2.705 |
| 11/1/2012 12:50 | 36.478 | 2.832 |
| 11/1/2012 12:55 | 35.921 | 2.957 |
| 11/1/2012 13:00 | 36.196 | 3.082 |
| 11/1/2012 13:05 | 35.452 | 3.206 |
| 11/1/2012 13:10 | 36.082 | 3.331 |
| 11/1/2012 13:15 | 36.580 | 3.458 |
| 11/1/2012 13:20 | 37.606 | 3.588 |
| 11/1/2012 13:25 | 36.680 | 3.716 |
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| 11/1/2012 13:45 | 37.301 | 4.240 |
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| 11/1/2012 14:10 | 37.852 | 4.897 |
| 11/1/2012 14:15 | 37.805 | 5.028 |

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| 11/1/2012 14:45 | 36.372 | 5.811 |
| 11/1/2012 14:50 | 38.573 | 5.945 |
| 11/1/2012 14:55 | 38.538 | 6.079 |
| 11/1/2012 15:00 | 38.330 | 6.212 |
| 11/1/2012 15:05 | 38.347 | 6.345 |
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| 11/1/2012 15:20 | 38.034 | 6.749 |
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| 11/1/2012 16:25 | 36.897 | 8.463 |
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| 11/1/2012 16:55 | 36.616 | 9.232 |
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| 11/1/2012 17:05 | 37.627 | 9.494 |
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| 11/1/2012 18:45 | 35.690 | 12.033 |
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| 11/1/2012 19:35 | 35.089 | 13.265 |
| 11/1/2012 19:40 | 36.689 | 13.392 |
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| 11/1/2012 21:15 | 35.364 | 15.748 |
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| 11/1/2012 21:25 | 35.915 | 15.994 |
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| 11/1/2012 21:35 | 35.250 | 16.239 |
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| 11/2/2012 10:45 | 28.246 | 29.854 |

APPENDIX B

Engineering Report Executive Summary

2014 Executive Summary¹

Background and Project Need

The Suffolk County Department of Public Works (SCDPW) owns and operates Sewer District No. 3, Southwest - Bergen Point Wastewater Treatment Plant (WWTP) located in Babylon, NY. The WWTP operates under a New York State Pollution Discharge Elimination System (SPDES) permit and has a current permitted treatment capacity of 30.5 million gallons per day (MGD). Treated effluent from the WWTP is discharged to the Atlantic Ocean through a 72-inch diameter outfall. Acoustical monitoring has indicated that the portion of the existing outfall that extends from the WWTP southward beneath Great South Bay to the barrier island is in a failing condition; SCDPW is working to replace this portion of the outfall before failure occurs.

Treated effluent from the Bergen Point WWTP is discharged through a 32,000 foot long outfall constructed in 1977. The outfall consists of 72- inch diameter pre-stressed concrete cylinder pipe (PCCP) and concrete lined steel pipe. The 15,300 foot long PCCP section of the outfall starts at the WWTP effluent pump station and extends beneath the floor of the Great South Bay to the barrier island, (14,200 feet of pipe manufactured by Price Brothers) and then out beyond the surf zone into the ocean (1,100 feet of pipe manufactured by Interpace). The concrete lined steel pipe portion of the outfall extends out into the Atlantic Ocean for an additional 17,200 feet, including the 3,500-foot long diffuser that varies in diameter from 72 to 36 inches.

SCDPW became aware of PCCP pipe failures occurring throughout the world. These pipe failures were related to the breaking of the prestressed wires in the pipe. It has been documented that PCCP with Class IV wire manufactured from 1972 to 1980 has a higher rate of failure than other PCCP installed around the country. The failures are attributed to the use of the very high tensile strength, low ductility Class IV wire, poor quality control during fabrication, pipe coating damage, and/or the effects of corrosive environments. The Bergen Point WWTP outfall has both Class III and Class IV wire.

In 2003, SCDPW implemented a three month monitoring program to assess the condition of the PCCP portion of the WWTP outfall using an inline hydrophone system that recorded and located wire breaks in the PCCP as they occurred. The monitoring program documented the wire breaks that occurred during the testing period. The monitoring results revealed a significant number of breaks within the

¹ The Executive Summary for the May 2011 **Sewer District 3 – Southwest Bergen Point Wastewater Treatment Plant Outfall Replacement Project Engineering Design Report** was updated in January 2014 to incorporate new information, including the results of the review conducted by an independent team of engineering experts convened by SCDPW, the results of Suffolk County's Council on Environmental Quality environmental review, and the impetus to replace the failing outfall as expeditiously as possible, based on climate change and Superstorm Sandy. In addition, as a result of the need observed during Superstorm Sandy, the capacity of the Final Effluent Pump Station has been increased from 110 to 120 MGD, to be consistent with the capacity of the influent pump station. These updates have no effect on the recommended tunnel alternative, nor on the SEQRA determination.

section of the pipe manufactured by Price Brothers. In fact, Pure Technologies, who performed the monitoring program, reported that the outfall was one of the three worst pipelines for wire breaks that they had ever monitored. It was unknown at the time what stage of deterioration the pipeline was in regarding its overall condition assessment.

The SCDPW subsequently implemented a phased program including a structural integrity analysis, a wire and mortar condition assessment and testing of the cathodic protection system to further evaluate the outfall condition.

Outside specialty contractors were retained to conduct these testing programs that evaluated the condition of the prestressed wires, the steel cylinder, the mortar, the concrete core of the external coating of the pipe, and the cathodic protection system designed to protect the steel cylinder. The evaluations concluded that the pipe condition was compromised, and that the pressure rating of the outfall had been significantly reduced. Because of the unknown condition of the exterior concrete pipe coating and steel cylinder, and the actual number of broken wires, the existing pressure rating of the pipe was assumed to be that of the steel cylinder. To perform the required testing to assess the true condition of the pipeline required dewatering of the pipeline. However, this would require the outfall to be taken out of service and there was no means to bypass the outfall. In addition, depending upon the pipe's condition, it was determined that the pipe could potentially collapse as a result of an external water pressure of 11 feet, which exists along the length of the outfall beneath the Bay; therefore if the outfall was in a failed condition and was dewatered it could collapse, leaving no means of discharging the treated wastewater effluent. Therefore further outfall testing was not pursued. Instead, it was recommended that SCDPW minimize the operating pressure of the outfall pipe to the extent possible, to reduce the potential for pipe failure.

Due to the ramifications of the study conclusions, SCDPW retained additional independent experts to review the results of the pipe testing programs. All experts agreed that the breaks in the prestressed wire have led or will lead to cracking of the exterior concrete, which will allow water to reach the steel cylinder and cause it to corrode, eventually leading to the potential failure of the PCCP pipe. It is unknown exactly where the outfall is in the failure process, but all specialists concurred that based on the number of wire breaks, the outfall is in a deteriorated state and is subject to imminent failure. The specialists unanimously recommended that the County should minimize the outfall's operating pressures to the extent possible and should plan to replace the 14,200 foot PCCP portion of the outfall beneath Great South Bay.

Wastewater from the plant currently discharges by gravity when flows and tidal conditions allow; internal operating pressures during gravity flow conditions are approximately 4 to 5 pounds per square inch (psi). When pumping to discharge, the outfall currently experiences pressures between 23 and 27 psi. However, during storm conditions, when the plant must discharge 90 MGD or more, pressures can

exceed 30 psi. During Superstorm Sandy, plant flows were estimated to exceed 110 MGD; pumping must be maintained under these conditions to avoid submerging the plant processes and equipment and the sewer system back-ups experienced in neighboring Nassau County.

On-going plant upgrades along with the increase frequency of extreme weather events are reducing the County's ability to maintain low pressures in the outfall, prompting the need to replace the failing section of the outfall expeditiously before it is pushed to failure. The predicted rise in sea level elevation will also have an increasing impact in future years. In accordance with regulatory requirements to reduce effluent total residual chlorine (TRC) levels, Suffolk County is replacing the plant's chlorination system with a UV disinfection system that is scheduled to begin operating in March, 2014. The additional head loss through the UV-disinfection system will increase effluent pumping requirements as well as the operating pressure within the outfall. In addition, the plant is currently being upgraded and expanded to increase the design flow to 40.5 MGD to accommodate the increased need for wastewater treatment. The increased flow will again increase both the duration of effluent pumping (as compared to gravity discharge) and operating pressures. Climatologists and scientists have been predicting that the northeastern part of the United States, including Suffolk County, is likely to experience more frequent extreme events of precipitation²³⁴. In addition to the precipitation, Superstorm Sandy caused storm surges that further exacerbated the need to convey wet weather flow to discharge against higher head conditions. As a result, the Bergen Point Wastewater Treatment Plant will need to be able to convey up to 120 MGD of effluent to discharge safely to protect the plant and upstream areas from flooding on a more frequent basis.

Outfall Replacement Alternatives

Suffolk County identified and evaluated six alternatives to replace the deteriorated PCCP portion of the Bergen Point WWTP outfall beneath Great South Bay. The County also implemented a geotechnical exploration program to collect the subsurface information necessary to develop and evaluate preliminary engineering designs of the tunneling alternatives. Sufficient existing data was available to develop preliminary designs for the alternatives that did not include a new tunnel.

All alternatives include renovation of the existing final effluent pump station.

The implementation of each alternative was developed sufficiently to identify:

² Responding to Climate Change in New York State, Synthesis Report. New York State Energy Research and Development Authority in collaboration with Columbia University, CUNY and Cornell University, 2011.

³ Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. Special Report of the Intergovernmental Panel on Climate Change. 2012.

⁴ Climate Risk Information 2013. New York City Panel on Climate Change. June 2013.

- Construction methods,
- Construction-related and operational impacts,
- Permitting requirements,
- Preliminary implementation schedules and
- Capital and operating cost estimates.

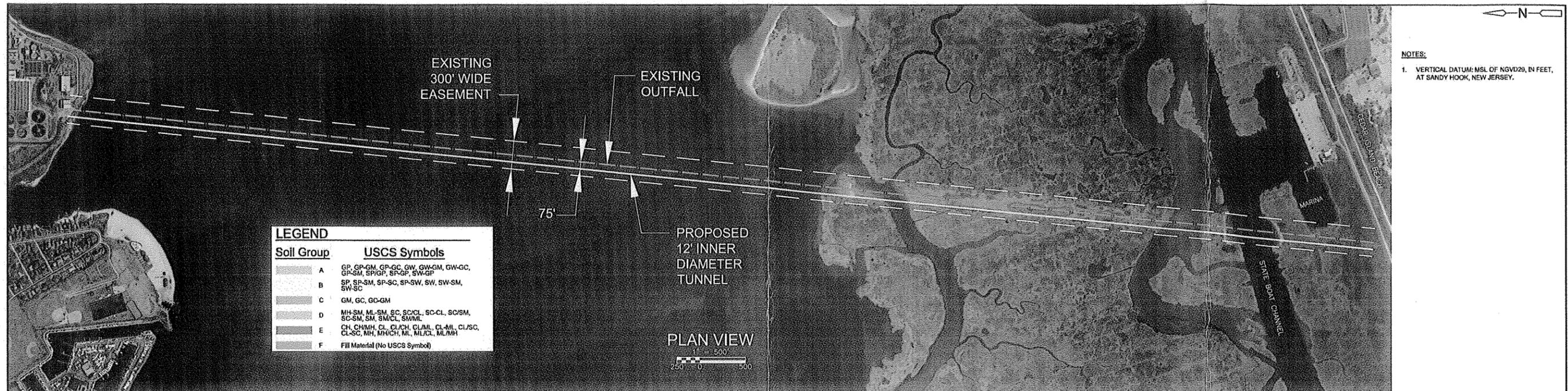
Each of the six alternatives is briefly described below.

Alternative 1 – Replace Outfall with Carrier Pipes Installed within a Tunnel

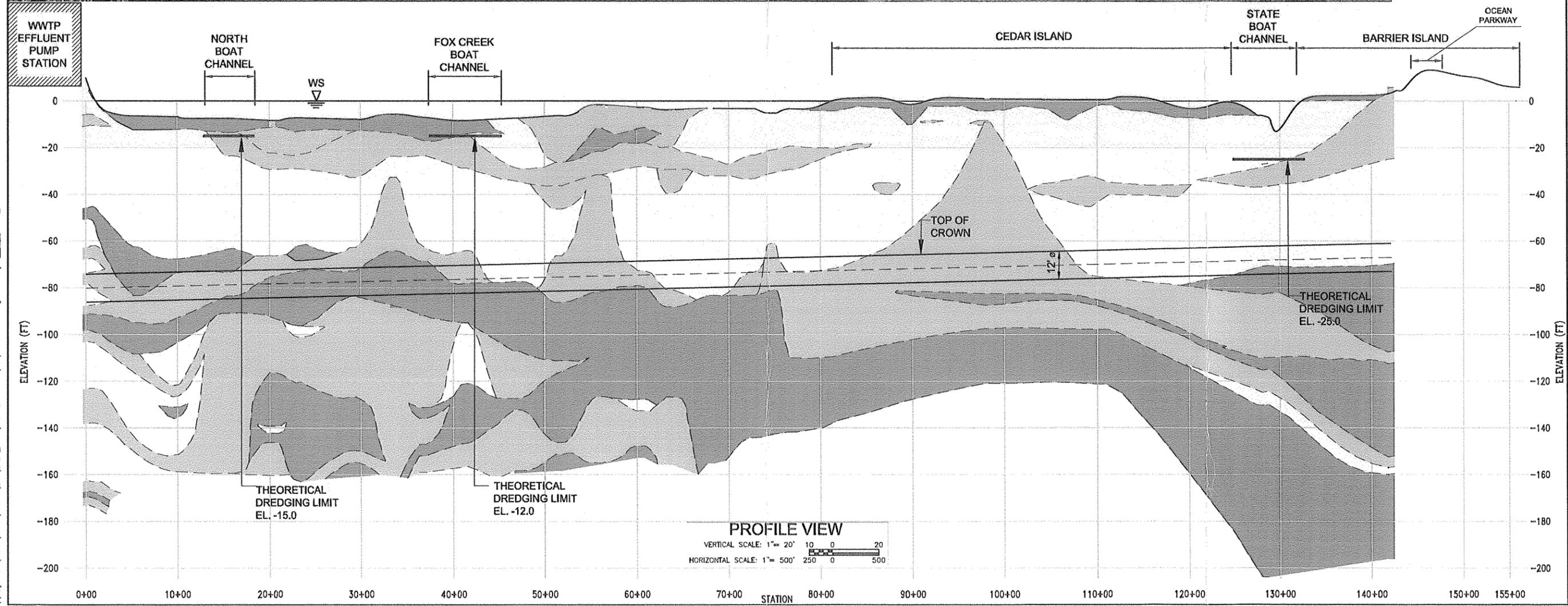
Alternative 1 would replace the section of the existing outfall extending from the Bergen Point WWTP south beneath Great South Bay to the barrier island by tunneling. On the barrier island, the new outfall section beneath the Bay would be connected to the existing ocean outfall to convey treated effluent to discharge. Most of the construction associated with this alternative would take place underground to avoid impacts to Great South Bay and to the environment. Above ground construction includes an access or working shaft at the Bergen Point WWTP site, and an exit or receiving shaft on the barrier island within the existing easement north of Ocean Parkway.

Several potential tunnel sizes and slopes were considered as this tunnel alternative was developed. **Figure ES-1** depicts the twelve foot diameter option sloped to the north towards the WWTP, in both plan view and section. The overall length of the tunnel would be approximately 14,200 feet. Based on the geotechnical boring program implemented during the winter of 2009, a Tunnel Boring Machine (TBM) was identified as the most feasible approach to construct the tunnel.

Tunnel implementation would begin with construction of an approximately 35-foot diameter access or working shaft at the Bergen Point WWTP site. Several alternative methods of constructing the shaft were considered; ground freezing was recommended to reduce impacts to the surrounding area. The TBM would be lowered into the approximately 70 foot deep shaft, and it would then advance southward along the alignment shown on **Figure ES-1** towards the barrier island. A concrete liner system would be installed as the TBM was advanced. An exit or receiving shaft would be constructed within the existing easement north of Ocean Parkway on the barrier island, where the TBM would be retrieved from the tunnel. It is estimated that approximately three acres at the Bergen Point WWTP site would be disturbed for construction equipment and materials storage, shaft construction and spoils storage. Up to three acres would also be disturbed within the existing easement on the barrier island for receiving/exit shaft construction, equipment storage and connection to the



NOTES:
1. VERTICAL DATUM: MSL OF NGVD29, IN FEET, AT SANDY HOOK, NEW JERSEY.



\\wbyev01\Cad3\5175\39512\EA\EXEC_SUM\ FIG ES-1 06/28/12 09:57 gencore\lirj_xbees: CDM_2436

existing outfall. After the tunnel is constructed, two 54-inch diameter steel carrier pipes would be installed within the tunnel. Five hundred and eighty 25-foot long pipe sections would be lowered into the tunnel. The pipes would be joined with lap joints, welded from the inside of the pipes, and the pipes would be grouted in place.

The new section of the outfall would be joined to the existing ocean portion of the outfall within the existing easement north of Ocean Parkway on the barrier island. Treated effluent would then continue to discharge through the outfall to the Atlantic Ocean as has been the case for over 30 years.

When the construction is complete, the disturbed area at the Bergen Point WWTP would be restored and the disturbed area on the barrier island would be revegetated and restored.

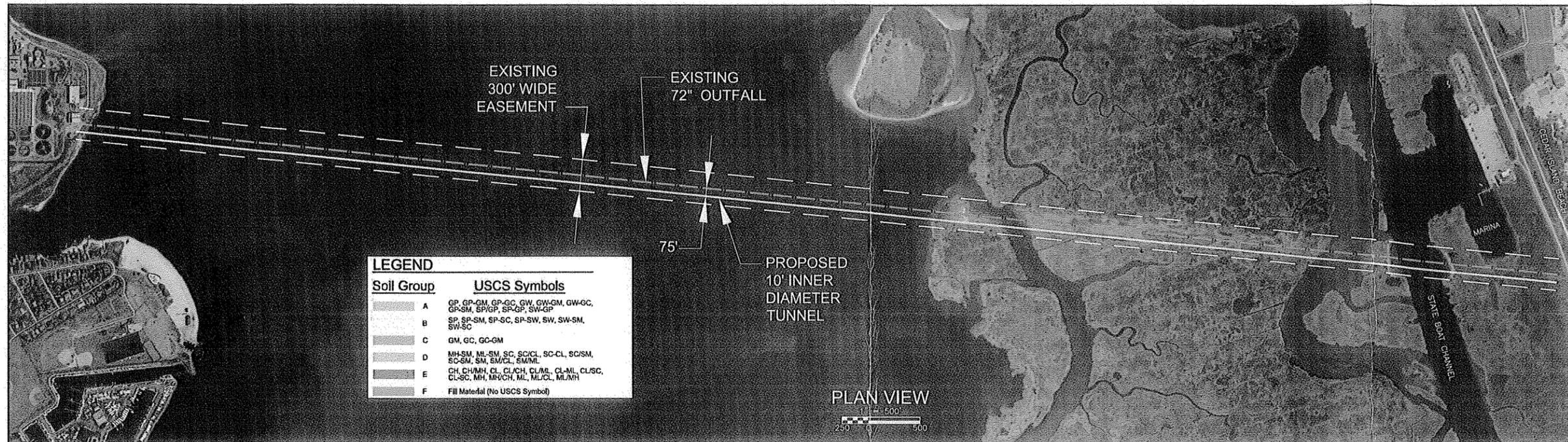
Including pump station renovation, it is estimated that implementation of Alternative 1 will take approximately eight years, at a cost of over \$270,000,000.

Alternative 2 – Replace Outfall with Tunnel

Alternative 2 would also replace the existing section of the outfall extending from the Bergen Point WWTP south beneath Great South Bay to the barrier island by tunneling. On the barrier island, the new outfall section beneath the Bay would be connected to the existing ocean outfall to convey treated effluent to discharge. Like Alternative 1, most of the construction associated with this alternative would take place underground to avoid impacts to Great South Bay and to the environment. Above ground construction includes an access or working shaft at the Bergen Point WWTP site, and an exit or receiving shaft on the barrier island within the existing easement north of Ocean Parkway. The primary difference between Alternative 1 and Alternative 2 is that no carrier pipes would be installed within the tunnel; the lined tunnel itself would become the replacement outfall.

Because installation of carrier pipes is not included, the tunnel size may be reduced to a ten foot diameter, the minimum size considered to be practicable for a TBM. **Figure ES-2** depicts a ten foot diameter tunnel in both plan view and section, sloped to drain to the north towards the WWTP. The overall length of the tunnel would be approximately 14,200 feet. Based on the geotechnical boring program implemented during the winter of 2009, a TBM was identified as the most feasible approach to replace the existing outfall.

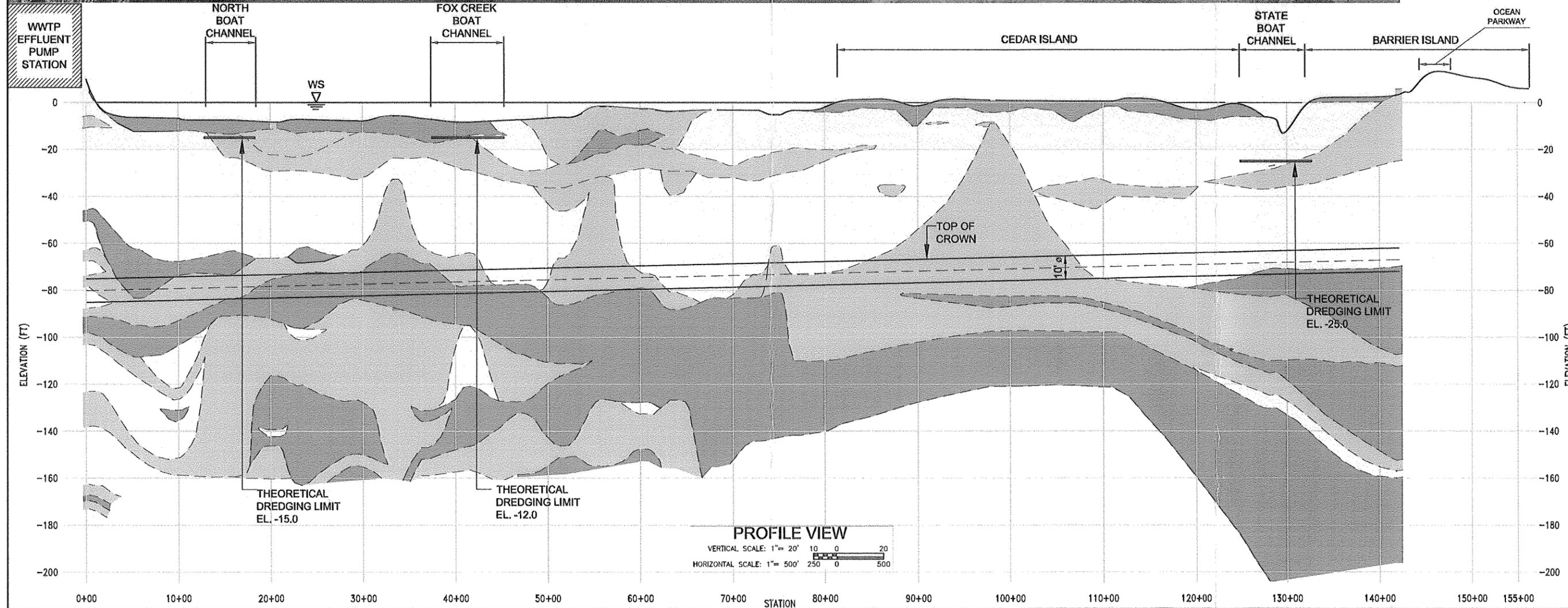
Tunnel implementation would begin with construction of an approximately 30 foot diameter access or working shaft at the Bergen Point WWTP site. Several alternative methods of constructing the shaft were considered; ground freezing was recommended to reduce impacts to the surrounding area. The TBM would be lowered into the approximately 70 foot deep shaft, and then advanced southward along the alignment shown on **Figure ES-2** towards the barrier island. An exit or receiving



LEGEND

| Soil Group | USCS Symbols |
|------------|---|
| A | GP, GP-GM, GP-GC, GW, GW-GM, GW-GC, GP-SM, SP/GP, SP-GP, SW-GP |
| B | SP, SP-SM, SP-SC, SP-SW, SW, SW-SM, SW-SC |
| C | GM, GC, GC-GM |
| D | MH-SM, ML-SM, SC, SC/CL, SC-CL, SC/SM, SC-SM, SM, SM/CL, SM/ML |
| E | CH, CH/WH, CL, CL/CH, CL/ML, CL/SL, CL/SC, CL-SC, MH, MH/CH, ML, ML/CL, ML/SH |
| F | Fill Material (No USCS Symbol) |

NOTES:
 1. VERTICAL DATUM: MSL OF NGVD20, IN FEET, AT SANDY HOOK, NEW JERSEY.



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shaft would be constructed within the existing easement north of Ocean Parkway where the TBM would be retrieved from the tunnel. It is estimated that approximately three acres at the Bergen Point WWTP site would be disturbed for construction equipment and materials storage, shaft construction and spoils storage. Up to three acres would also be disturbed at the receiving/exit shaft within the existing easement on the barrier island for receiving shaft construction, equipment storage and connection to the existing outfall.

The new section of the outfall would be joined to the existing ocean portion of the outfall within the existing easement north of Ocean Parkway on the barrier island. Treated effluent would then continue to discharge through the outfall to the Atlantic Ocean as has been the case for over 30 years.

When the construction is complete, the disturbed area at the Bergen Point WWTP will be restored and the disturbed area on the barrier island will be revegetated and restored.

Implementation of Alternative 2 will take approximately seven years, at an estimated capital cost of approximately \$234,500,000.

Alternative 3 – Construct Replacement Outfall by Open Cut

The third alternative would replace the existing deteriorated section of the outfall crossing Great South Bay by excavating an approximately 16 foot deep trench approximately 75 feet to the west of the existing outfall, within the existing easement, as shown on **Figure ES-3**. For redundancy, two 54-inch diameter ductile iron pipes would be positioned within the trench, and mechanically joined underwater.

Either mechanical dredging or hydraulic dredging could be used to excavate the trench for the replacement outfall pipes. Because hydraulic dredging would cause the least disturbance to the work area and because it can remove the sands and silts that exist within this alignment twice as fast as a mechanical dredge, it is the recommended method of excavation for construction in the open water part of the crossing. The fluidized materials removed by the hydraulic dredge would be pumped to hopper barges while the pipes were being installed. Due to the shallow nature of the Bay in the area, the barges could only be partially filled to avoid disturbing the bottom. Silt curtains would be required for sediment control.

The section of the outfall passing between Cedar Island, the State Boat Channel and the barrier island would be constructed using a mechanical excavator mounted on a jack-up barge or a low draft barge; steel sheeting would be installed to isolate the work area. Construction of the replacement outfall by open cut requires significant work within Great South Bay, and a much greater potential for environmental impact than the other tunnel alternatives.

New York State Department of Environmental Conservation (NYSDEC) identified some of the environmental issues that would have to be addressed if the County chose to pursue a tunnel option that involved open cut construction. These concerns included shellfish, finfish, commercial and recreational fishing, endangered species and submerged aquatic vegetation (SAV) impacts. In addition, NYSDEC assisted in the development of projected project schedules for the tunnel alternatives by identifying the permitted calendar windows for construction – e.g., the maximum window during which work could be allowed within the Bay would extend from September 30th through January 15th to protect the spawning and early life stages of shellfish and of important finfish species such as the winter flounder. Therefore, construction could only occur approximately 15 weeks each year. NYSDEC also noted that the potential for winter closures to accommodate over-wintering waterfowl would also exist and have to be evaluated; this could potentially reduce the work window even further. The permitted construction windows have significant schedule impacts upon the alternatives involving work in Great South Bay– because the work could not be completed in the several months allowed, multiple mobilizations and demobilizations would be required. In addition, construction would occur during the colder months when the weather conditions are generally harsher, rather than the warm weather months. Both of these considerations significantly extend the project schedule and increase project costs.

Preliminary discussions indicated that NYSDEC would require sheeting of the entire tunnel length to reduce impacts of turbidity on the Bay environment. NYSDEC also outlined the baseline monitoring program that would be required prior to consideration of an open cut alternative.

The new section of the outfall would be joined to the existing ocean portion of the outfall within the existing easement north of Ocean Parkway on the barrier island. Treated effluent would then continue to discharge through the outfall to the Atlantic Ocean as it has done for over 30 years.

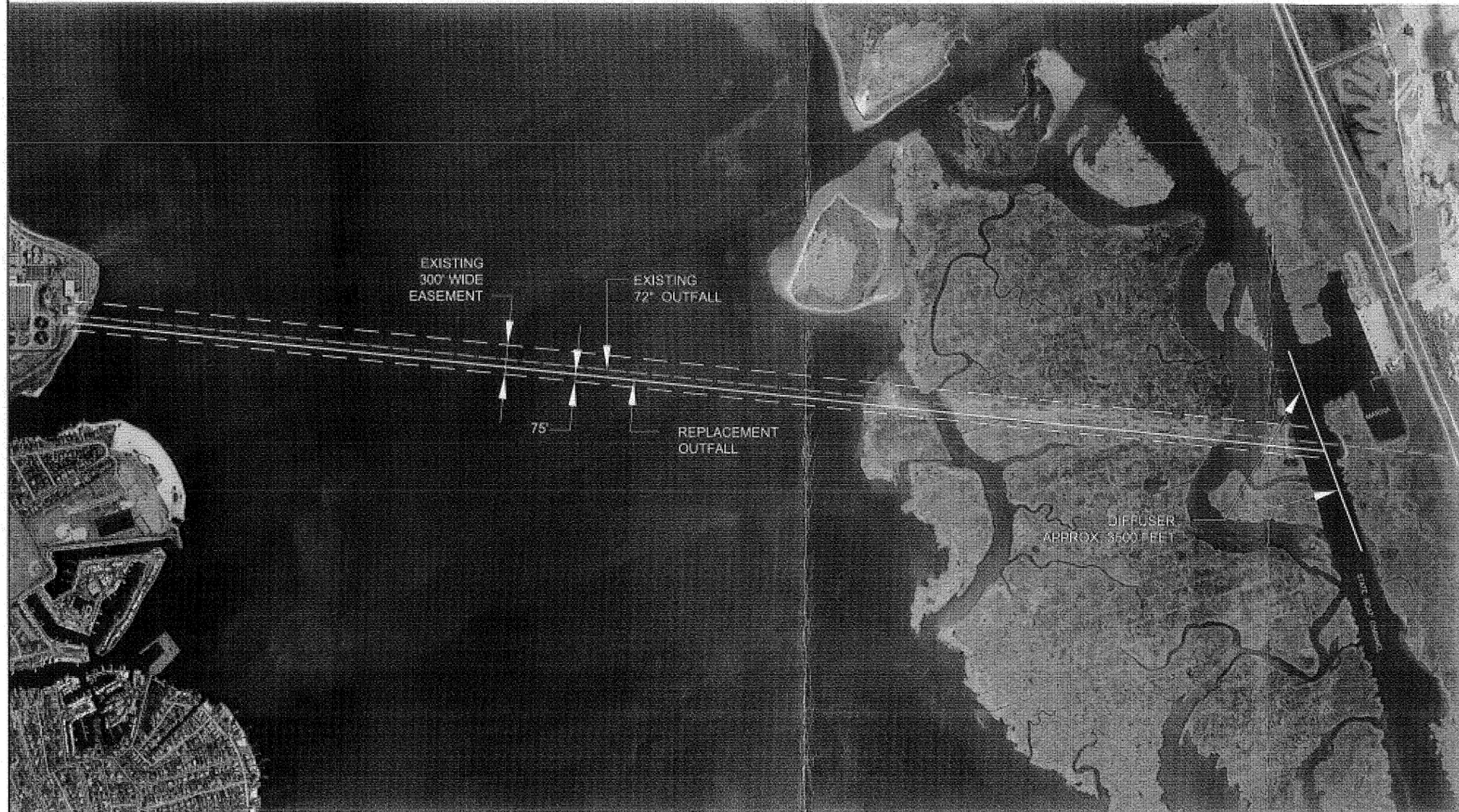
Due to the extended construction schedule dictated by the limited construction windows and the multiple mobilizations, as well as the baseline monitoring program that would be required to provide the information needed to guide the selection of construction techniques and establish construction constraints and mitigation requirements, it is estimated that project completion would take fifteen years.

The cost to construct the tunnel via open cut is estimated to be approximately \$315M.

Alternative 4 – Construct New Outfall Discharging to Great South Bay

Alternative 4, construction of a new outfall discharging directly to Great South Bay, was not developed to the same level of detail as the previous alternatives, because it was quickly determined that it was not implementable from a regulatory perspective. Alternative 4 is shown schematically by **Figure ES-4**.

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Figure ES-4
Replacement Outfall Discharging to Great South Bay
Alternative 4
Suffolk County Department of Public Works
Bergen Point WWTP Outfall Replacement Project - Engineering Report

NYSDEC provided a preliminary overview of several years of baseline sampling that would be required prior to consideration of this alternative. The existing Bergen Point WWTP outfall discharges to the Atlantic Ocean, which provides significant dilution of the constituents that are found in effluent from a wastewater treatment facility. In contrast, Great South Bay is a much smaller and shallower water body that would not be expected to assimilate the effluent without unacceptable water quality impacts. Consequently it is anticipated that the existing WWTP would have to be upgraded to provide a higher level of treatment. For example, it is assumed that nitrogen may need to be reduced to a practical technological limit of about 4 mg/L or less. Based on the information provided in the Bergen Point WWTP Expansion Report (CDM-D&B JV, June 2009), seven additional aeration tanks and two additional final clarifiers would need to be added if the nitrogen discharge limit was reduced to 10 mg/L. Further addition of either denitrification filters or membranes would be required to achieve the lower limit anticipated. It would be a challenge to fit all of the additional tankage and processes onto the existing Bergen Point WWTP site.

Along the existing easement following the alignment of the existing outfall, the Bay is very shallow, primarily between one and five feet deep. Several approaches to discharge the treated effluent to the Bay were explored. One option would site a network of diffusers along the Bay bottom to the east of the easement where the water is somewhat deeper; another would carry the treated effluent to the State Boat Channel where additional dilution would be provided. Based on the preliminary dimensions of the diffusers required to discharge the treated effluent, approximately 30 acres of Bay bottom would be disturbed during construction.

In addition to the short term construction-related impacts associated with implementation of this alternative, the potential long-term impacts associated with implementation are significant. They include addition of a significant fresh water flow to the Bay (which would alter local salinity and the distribution of benthic organisms and finfish, and could significantly affect the local ecosystem), closure of shellfish beds and closure of parts of the Bay to recreational users. The U.S. Environmental Protection Agency's designation of the Great South Bay as a no-discharge zone in November 2009, precludes issuance of the permits necessary to construct and operate this alternative. In the event that the alternative could be approved, it is estimated that it would take up to seventeen years to implement, at a capital cost of \$597M.

Alternative 5 - Line Existing Outfall Pipe (with Temporary Outfall Discharging to Great South Bay)

Alternative 5 would slip line the existing outfall pipe crossing beneath the bottom of Great South Bay. The slip-lining would be implemented by assembling new pipe segments on land or on barges, and then either pushing or pulling the assembled liner pipe through the existing outfall pipe. The ends of the liner pipe would be joined with the existing pipeline using adapters, tested, and put into service. During installation of the slip liner, the existing outfall could not be utilized so treated

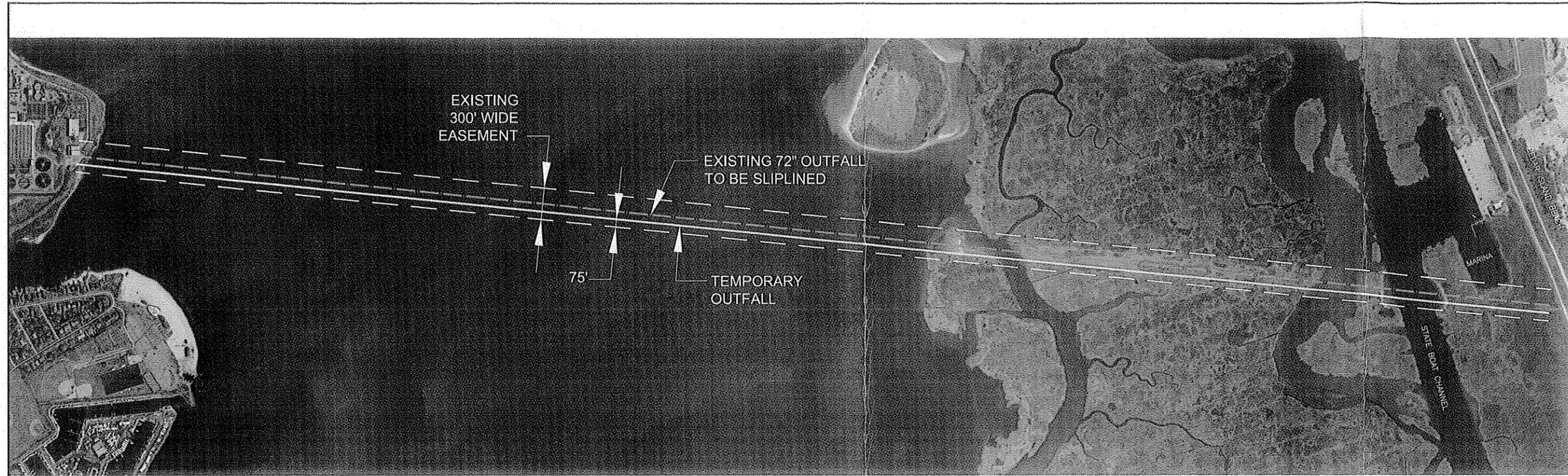
effluent from the Bergen Point WWTP would need to be redirected for over two years while the slip-lining was being performed. Three slip liner materials (centrifugally cast fiberglass pipe, ductile iron pipe and steel) and four options for bypass of the outfall (on-site storage, removal from the site via tanker truck, temporary outfall discharging to the Atlantic Ocean and temporary outfall discharging to Great South Bay) were considered.

Because of the vertical offsets needed to cross the existing boat channels in Great South Bay, sections of the slip liner and associated fittings would need to be cut and fabricated in the field at the WWTP. A steel liner was selected as the material for the liner pipe.

Several challenges associated with implementation of the slip-lining alternative were identified. The existing outfall pipe would need to be removed from service, dewatered and cleaned prior to installing the 68-inch diameter liner pipe. Based on the information available, it is not known whether the external water pressure would cause the existing outfall to collapse when it was dewatered. If the existing outfall were to collapse, it would have to be replaced by one of the other five alternatives and treated effluent would have to be discharged elsewhere for an extended design and construction period. Due to the limits in pulling or pushing a liner pipe, at least 15 sheeted access points would be required to access the outfall. This would require disturbance of the bottom of the Great South Bay.

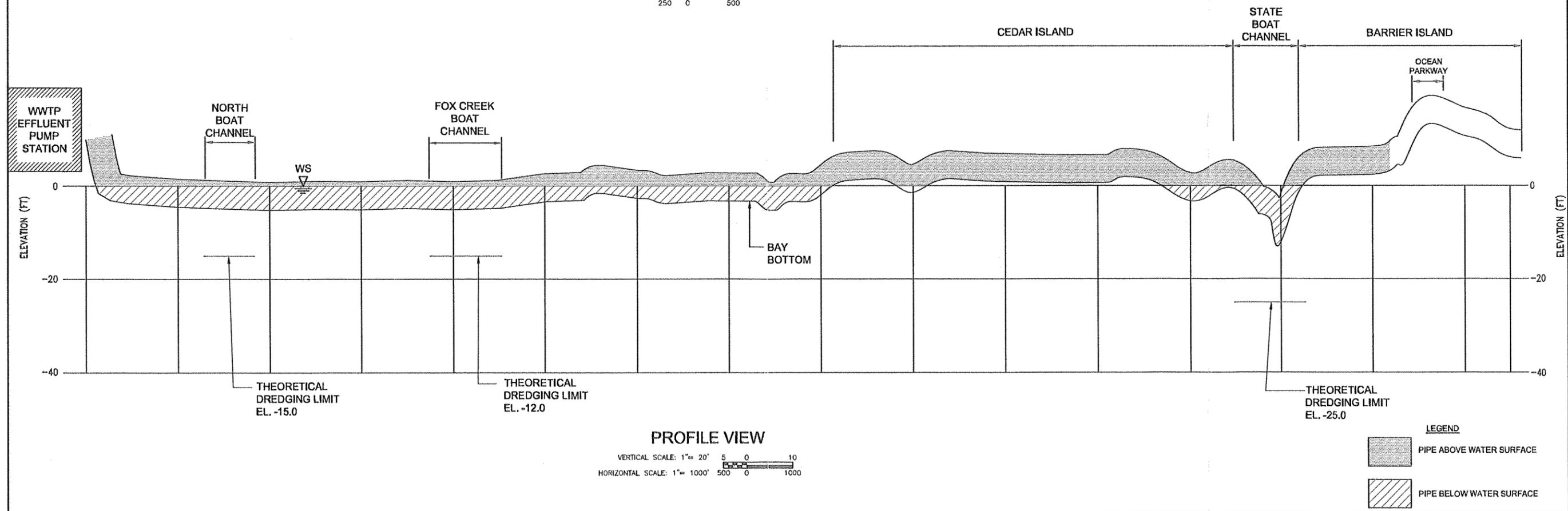
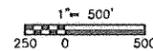
Four options to dispose of the treated effluent from the Bergen Point WWTP while the outfall pipe is being lined were considered. The first, on-site storage until the outfall was returned to service, was deemed to be infeasible. At an average daily flow rate of 30.5 MGD, over 25 billion gallons of treated effluent would need to be stored on-site. Assuming that fifteen foot deep storage tanks were used, over 5,100 acres would be required for effluent storage. It is anticipated that significantly more storage could be required; during storm events up to 120 MGD of wastewater is treated at the WWTP. Removal of the treated effluent from the site via tanker truck was also considered. Again assuming an average daily flow of 30.5 MGD, 6,100 5,000-gallon tanker trucks would be required to remove treated effluent from the WWTP each day. This second option was also deemed to be impractical.

The possibility of floating a temporary outfall across the Bay, or laying it along the Bay bottom to discharge to a shaft on the barrier island where it would connect to the existing ocean portion of the outfall was also evaluated. It was assumed that this temporary outfall would be 72-inches, the same size as the existing outfall. However, based upon the recent bathymetric survey of the outfall easement, the Bay is approximately five feet deep – or shallower – along most of the alignment. The temporary outfall would protrude from the water, would be a hazard to boaters, and would impact the Bay circulation, as shown by Figure ES-5. In addition, NYSDEC has indicated that disturbing the Bay bottom from January 15th to September 30th would not be permitted, due to the area's importance for winter flounder. Therefore,



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PLAN VIEW



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this third option was also considered to be infeasible. The last option identified for consideration was a temporary outfall to Great South Bay, as schematically depicted by **Figure ES-6**. Treated effluent would flow upwards from manholes sited in the Bay (to prevent scouring/erosion of the Bay bottom in the vicinity of the discharge, and to reduce the discharge velocity and aid in dispersion). The manholes would be located outside of the boat channels and would be marked with buoys. As described for Alternative 4, it is anticipated that if NYSDEC were to permit this temporary discharge to the Bay, more stringent discharge limits would be imposed, which would necessitate implementation of additional treatment processes for nitrogen removal, etc. at the WWTP.

Given the uncertainty concerning the condition of the existing outfall and the ability to safely dewater it for cleaning and lining, as well as the difficulties associated with temporarily disposing of the treated wastewater, Alternative 5 would be challenging, if not impossible, to implement.

If Alternative 5 could be constructed, it is estimated that it would take up to 17 years to complete the project. The capital cost for lining the existing outfall with a temporary discharge to Great South Bay is estimated to be approximately \$454M.

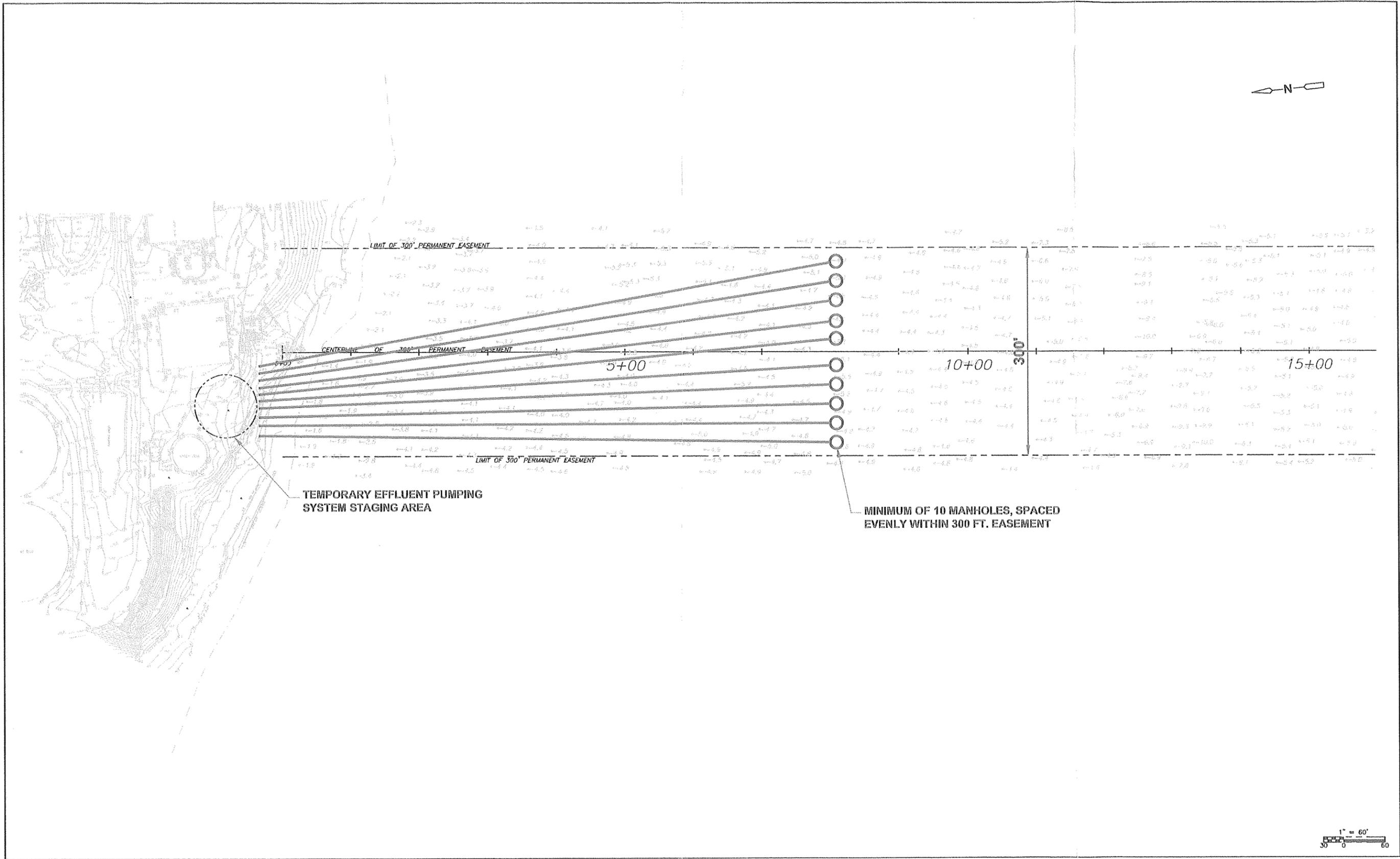
Alternative 6 – Replace Existing Outfall with Upland Recharge

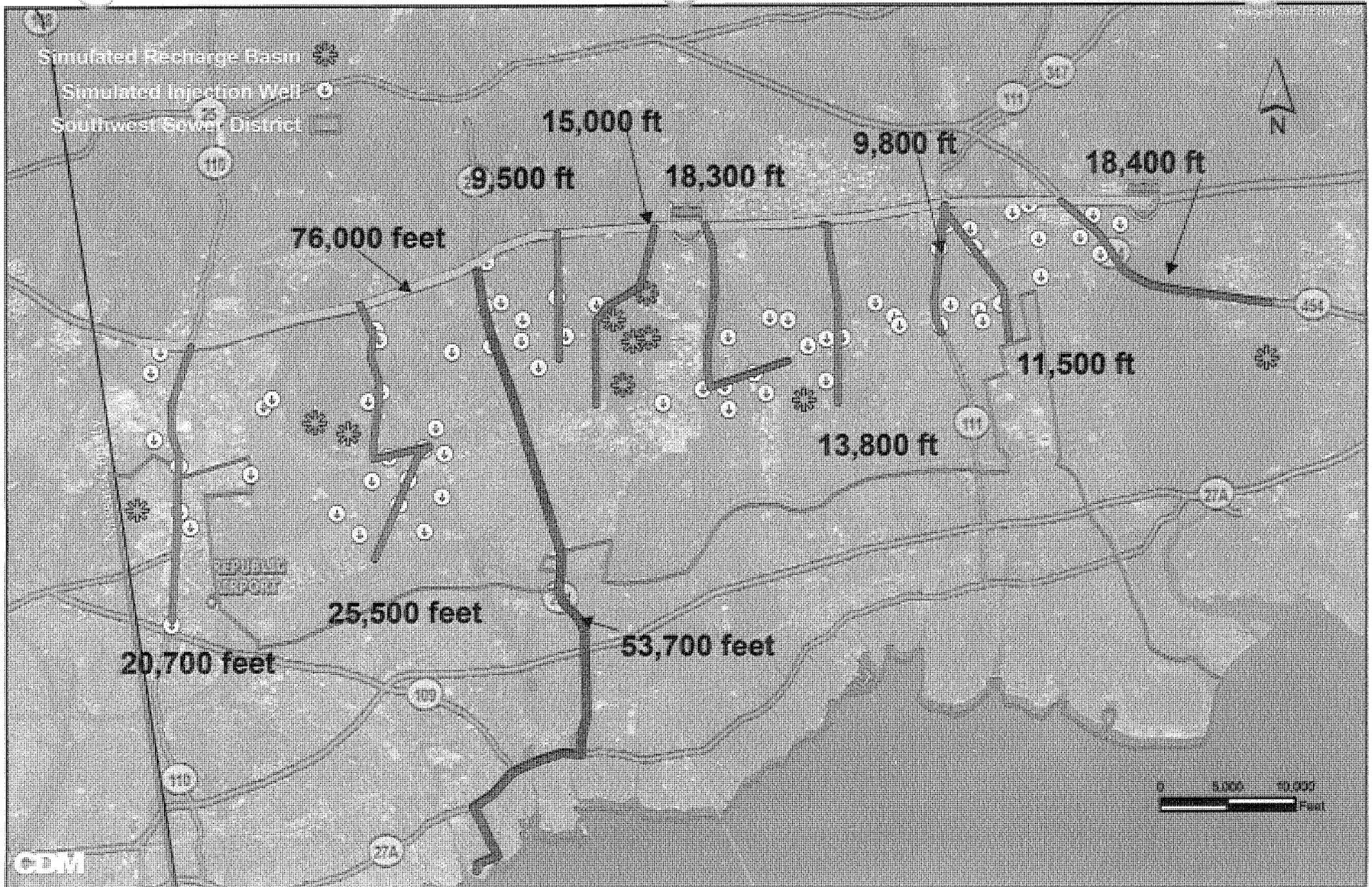
Alternative 6 would replace the existing ocean outfall in its entirety with a new upland effluent force main. Treated effluent would be pumped to discharge via a network of recharge basins and/or injection wells located throughout the Southwest Sewer District, to the north of the Bergen Point WWTP.

Alternative 6, shown schematically by **Figure ES-7** would require:

- Upgrade of the Bergen Point WWTP to provide the higher level of treatment required to achieve groundwater (drinking water) standards,
- Booster pump stations (in addition to the upgraded effluent pump station) to convey the treated wastewater to the distribution network,
- A piping/distribution network to convey the treated effluent to the recharge/injection locations,
- A network of recharge basins/injection wells to recharge the treated effluent to the groundwater system,
- Instrumentation and SCADA system to monitor water levels at the recharge facilities and turn the pumps on/off at specific locations, and
- Network of monitoring wells for routine testing of groundwater downgradient of the recharge locations.

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Suffolk County Department of Public Works

Alternative 6 - Bergen Point WWTP Outfall Replacement Project

Figure ES-7

Because upland recharge will directly affect the quality of area groundwater and because groundwater is the sole source of potable supply in the County, it is anticipated that a higher level of wastewater treatment will be required before the treated effluent can be released to the aquifer. For example, based on current standards, most treatment plants in Suffolk County that discharge to groundwater must remove nitrogen to less than 10 mg/L. Because most of the potential recharge sites would be located within Hydrogeologic Zones I or II, where the maximum target nitrogen concentration is 6 mg/L, it is also possible that removal of nitrogen to less than 6 mg/L or even 4 mg/L may be required. Based on the information provided in the Bergen Point WWTP Expansion Report (CDM-D&B JV, June 2009), seven additional aeration tanks and two additional final clarifiers would need to be added if the nitrogen discharge limit was reduced to 10 mg/L. Addition of either denitrification filters or membranes would be required to achieve the even lower limits anticipated. It would be a challenge to fit all of the additional tankage and processes onto the existing Bergen Point WWTP site.

The final effluent pump station would be renovated for each of the alternatives. For this alternative, the new pumps in the renovated pump station would need to be sized for the head conditions associated with pumping the treated effluent to the higher elevations found upgradient of the plant. It is also anticipated that booster pump stations would be required at each recharge site; these booster pump stations would include a minimum of two pumps, local controls and a security system. A dual 54-inch diameter force main would convey the flow from the WWTP to the upland recharge locations. The force mains would be installed north to the Long Island Expressway, where they would be installed within the LIE right-of-way running west to east.

The ability to recharge up to 90 MGD of wet weather flow via recharge basins, leaching pools and/or injection wells was evaluated. Based on Suffolk County Department of Health Services (SCDHS) design standards regarding minimum setback requirements, design flow and redundancy, a minimum depth to groundwater of 30 feet and existing land use, potential locations for effluent disposal were identified.

Based on the preliminary estimate of the number of leaching pools that would be required to recharge over 90 MGD, it was determined that the use of leaching pools would be eliminated from further consideration and recharge via open recharge basins and/or injection wells would be evaluated. The initial list of parcels potentially available for recharge was further reduced after review of aerial photography; a total of 10 parcels large enough to recharge a minimum of 1 MGD via recharge basins was identified, and approximately 79 parcels were identified as potential sites for injection wells.

The recharge piping network would be equipped with flow meters and flow control valves at key distribution points to distribute flow to the appropriate recharge

facilities. The system would be monitored by a SCADA system that would indicate active recharge sites, operating pumps, flow distribution, ground water levels, recharge basin levels, operational use and alarm conditions. The central control system would be located at the Bergen Point WWTP. The recharge facilities would need to be monitored and maintained so that they would continue to function as intended. In addition, it is anticipated that a minimum of one upgradient and one downgradient monitoring well would be required at each recharge location; these wells would be monitored on a quarterly basis.

It is estimated that Alternative 6 would take up to 15 years to implement, at an estimated cost of \$1.02B. The operation and maintenance costs associated with Alternative 6 have not been defined, but are significantly higher than the operation and maintenance costs for any of the other alternatives.

No Action Alternative

Because of the potential consequences of outfall failure (e.g., release of treated effluent directly to Great South Bay), the no-action alternative was not considered to be a viable option for the County.

Evaluation of Alternatives

SCDPW identified three primary criteria that were used to identify the preferred alternative:

- Can be implemented most cost-effectively,,
- Will have the least adverse impact to the environment, considering both construction and operational impacts, and
- Can be implemented the most quickly, to reduce the risk of outfall failure.

The potential outfall replacement alternatives were discussed with NYSDEC in 2008 and in 2009, to identify the regulatory requirements associated with implementation of each alternative as well as associated resource protection requirements. NYSDEC described their recommended approach to project implementation as:

- Avoid environmental impacts,
- Minimize environmental impacts, and finally
- Mitigate any unavoidable impacts.

NYSDEC guidance was used to help to guide the evaluation of construction methods, mitigation requirements, and scheduling; this information also directly impacted the cost.

Table ES-1 summarizes the evaluation of each of the six alternatives in terms of implementability, impacts, schedule and cost.

Replacement of the existing outfall pipeline beneath Great South Bay by Alternative 2, the tunnel, was identified as the recommended alternative, because it was the least environmentally damaging practicable alternative. It is one of two alternatives that will have the least impact to the area's ground and surface water resources and environment, and it is the alternative that has the shortest construction duration, enabling the County to replace the deteriorating outfall most quickly. Although the capital cost is significant, it is the lowest capital cost of all of the alternatives, and also is one of the alternatives with the lowest long-term operating cost.

Description of Preferred Alternative

The preferred alternative for replacement of the deteriorating section of the Bergen Point WWTP outfall beneath Great South Bay is Alternative 2, a tunnel. Alternative 2 has been selected as the preferred alternative because:

- It is one of the three alternatives that avoids construction within Great South Bay and/or any discharge to Great South Bay, which significantly reduces the potential for impact to the environment.
- It is one of the two alternatives with the lowest capital cost, and is one of the three alternatives with the lowest operational cost.
- The implementation schedule for Alternative 2 is significantly shorter than the other alternatives, thus reducing any potential impact to the Bay resulting from future failure of the existing outfall.
- It is one of the alternatives with the least impact to the surrounding community.

Description of Outfall Tunnel Construction

A minimum 10-foot inner diameter outfall tunnel that would be constructed to replace the existing 72-inch diameter PCCP outfall from the Bergen Point WWTP south beneath Great South Bay to the barrier island, was shown in plan and profile by **Figure ES-2**. The 14,200 linear foot tunnel would be constructed using a TBM. The TBM will be lowered into position through an approximately thirty-foot diameter 70 foot deep working shaft located at the southwest side of the Bergen Point WWTP site. The tunnel would be advanced southwards beneath the bottom of Great South Bay, to a new exit shaft, to be located just north of Ocean Parkway within the existing easement on the barrier island. The tunnel would be lined, and the lined tunnel would become the replacement outfall. On the barrier island, the new outfall would be connected to the existing ocean outfall to convey treated effluent to discharge.

Table ES-1
Comparison of Bergen Point WWTP Outfall Replacement Alternatives

| Criteria | Alternative 1- Tunnel with Carrier Pipes | Alternative 2 - Tunnel | Alternative 3 Open Cut | Alternative 4 Discharge to Great South Bay | Alternative 5 Line Existing Pipe/Temporary Discharge to Bay | Alternative 6 Upland Recharge of Treated Effluent |
|---|---|------------------------------------|------------------------------------|---|--|--|
| Implementability | | | | | | |
| <i>Permittable</i> | Yes | Yes | Potential | No | No | Potential |
| Impacts | | | | | | |
| <i>Short Term Impacts to Great South Bay</i> | Low | Low | Localized Significant | Potential Significant | Potential Significant | None |
| <i>Long Term Impacts to Great South Bay</i> | None | None | Potential Significant | Potential Significant | Potential | None |
| <i>Short Term Impacts to Upland Neighborhoods</i> | Minor - Construction Traffic | Minor - Construction Traffic | Minor - Construction Traffic | Minor - Construction Traffic | Minor - Construction Traffic | Significant |
| <i>Long Term Impacts to Upland Neighborhoods</i> | None | None | None | None | None | Significant |
| <i>Impacts to Aquifer</i> | None | None | None | None | None | Significant |
| Implementation Schedule | | | | | | |
| <i>Short (0 to 5 Years)</i> | | | | | | |
| <i>Medium (5 to 10 Years)</i> | Medium | Medium | Long to Very Long | Very Long | Very Long | Very Long |
| <i>Long (10 to 15 Years)</i> | | | | | | |
| <i>Very Long (> 15 Years)</i> | | | | | | |

| Cost | | | | | | |
|--|--------|--------|------|-----------|------|-----------|
| Capital Cost Lowest (0 - \$250M) High (\$250M - \$500M) Very High (\$500M - \$750M) Highest (>\$750M) | High | Lowest | High | Very High | High | Highest |
| Operation and Maintenance Cost <i>(based on Treatment and Pumping requirements)</i> | Lowest | Lowest | Low | High | High | Very High |

Shaft and Tunnel Construction

Shaft Construction

The initial construction activity for the tunnel would be construction of an approximately 30-foot diameter working or access tunnel shaft for TBM access. The access shaft would also support the tunnel construction activities by providing access for transportation of personnel and materials to the tunnel heading and removal of excavated soil or muck during the tunnel excavation. Although there are several methods to construct the shaft and to support the walls of the excavation, it is recommended that ground freezing be utilized to minimize impacts to the surrounding environment.

The depth of the working shaft subgrade from the ground surface to the bottom of the tunnel lining is estimated to be approximately 70 feet. After the working shaft is completed, the contractor will most likely hand mine a tail tunnel in the opposite direction of the tunnel drive. This tail tunnel would extend the working area at the bottom of the shaft and would provide the room necessary to more efficiently move materials to the tunnel heading.

The staging area adjacent to the working or access shaft must provide sufficient area to allow the TBM to be lowered into the shaft; provide storage space for the shafts' equipment, tunnel lining material and excavated spoil removal; provide space for construction equipment (e.g., cranes) and workshops; provide adequate power supply for the TBM and temporary utility connections for potable water, storm drainage, electricity and provide access to the site for materials delivery.

A similar process of excavating and supporting the exit or receiving shaft would be required to remove the TBM on the barrier island. Because there is less work associated with tunnel construction at the exit shaft, the diameter of this shaft is usually smaller than the working shaft diameter.

It is anticipated that the staging area at the plant would be approximately 3 acres, and the staging area on the barrier island would be between 1 and 3 acres.

Tunnel Construction

A minimum ten-foot inner diameter tunnel would be constructed moving south from the working shaft to the exit or receiving shaft on the barrier island, to the west of the existing outfall tunnel within the existing easement. The vertical profile of the tunnel was established based upon maintenance of a depth of 2.5 tunnel bored diameters between the dredge depths of the two boating channels and the tunnel crown. The tunnel would be driven up gradient to provide the ability to drain the outfall back to the working or access shaft at the treatment plant after the outfall is in service. A slight up slope of 0.1% was selected as the gradient, because it is adequate for the long term function of draining the tunnel during operation and because it also provides the necessary slope for drainage during construction.

The bored tunnel diameter of ten feet was selected as the minimum economical bored diameter to drive the tunnel and transport crew and materials (lighting, ventilation and lining segments) to the tunnel heading and to remove tunnel muck. Space within a tunnel is limited and haul times and related costs are weighed against the TBM size, and the increased cost for a larger diameter tunnel. The tunnel would be constructed using a TBM. The soil would be excavated at the front of the TBM through a cased auger screw, deposited onto a conveyor belt, and then transferred to muck carts which transport the muck to the working or launch shaft and then out of the tunnel to the ground surface. The screw helps to reduce the pressure of the material from the higher pressures encountered at the tunnel face, to normal atmospheric pressure conditions existing within the tunnel. Limiting the screw rotation enables a pressure to be built up in the forward chamber that helps to support the tunnel face; providing the name "Earth Pressure Balance" TBM.

By careful and continual monitoring of the face pressure to balance the resisting force to maintain a stable heading and without applying excess pressure that can cause the soil to fail and result in disturbance to the Bay bottom, the tunnel can be driven without causing disturbance to the Bay. As the work is proceeding at the front of the TBM, a tunnel lining is installed within the tail of the machine by a team working in atmospheric conditions. The subaqueous tunnel lining system consists of precast concrete ring segments with gaskets that are assembled into a ring as shown on **Figure ES-8**. The TBM then extends jacks against the newly assembled ring, exposing the ring to the soil outside of the tunnel bore.

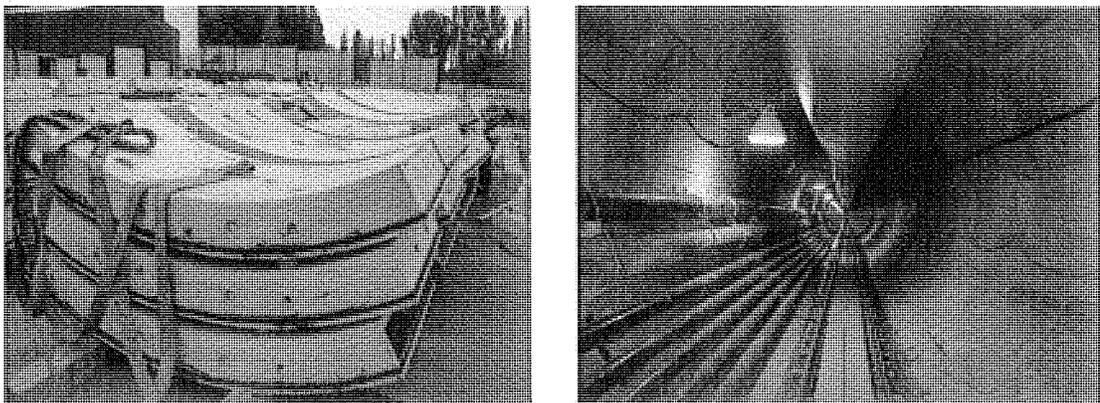


Figure ES-8
Stacked Precast Concrete Segments (left) and The Assembled Ring during Construction with Lighting, Yellow Ventilation, Utility Pipes and Railroad Tracks in the Tunnel (right)

As the tunnel is advanced in this manner, a cement grout is simultaneously injected through grout ports to fill the space between the outside of the ring and the soil to keep soil and water out of the tunnel. This process is repeated until the tunnel has

been driven from the working shaft on the plant site south to the exit/receiving shaft on the barrier island.

Connection to Existing Outfall

The outfall will connect to the existing ocean portion of the outfall near the existing sample chamber on the barrier island just north of the Ocean Parkway, within the existing easement. The existing outfall must remain in operation while the connection is made. To connect to the existing outfall, a bypass system with line stops would be installed as shown on **Figure ES-9**. The existing outfall would be tapped upstream and downstream of the area of the new tunnelled outfall connection. The taps on each side of the work area are for a bypass connection and for a line stop. The bypass piping is installed, followed by the line stops to direct the flow through the bypass piping and around the existing outfall piping to be removed and replaced. New piping with fittings and valving to isolate the new and existing outfalls would be installed and then the line stops and bypass piping removed and the existing outfall put back into normal operation. The tunnel outfall would then be connected to the existing outfall but the isolation valves will remain closed until the new outfall is ready for operation.

Disposal of Excavated Materials

Construction of the tunnel will generate a significant quantity of spoils that must be removed, managed and disposed. For the ten-foot inner diameter upgradient driven tunnel, it is estimated that up to 90,000 cubic yards of material (including excavated materials from the access/working and exit/receiving shafts) will require disposal. It is not anticipated that the materials removed from the sub-surface tunnel alignment would be contaminated so that they could either be stock-piled on-site in the spoils area for future use by the County, or transported off-site for disposal by the contractor.

Project Schedule

A preliminary schedule for project implementation is shown on **Figure ES-10**.

Project Costs

Estimated total project costs are summarized on **Table ES-2** and **Table ES-3**.

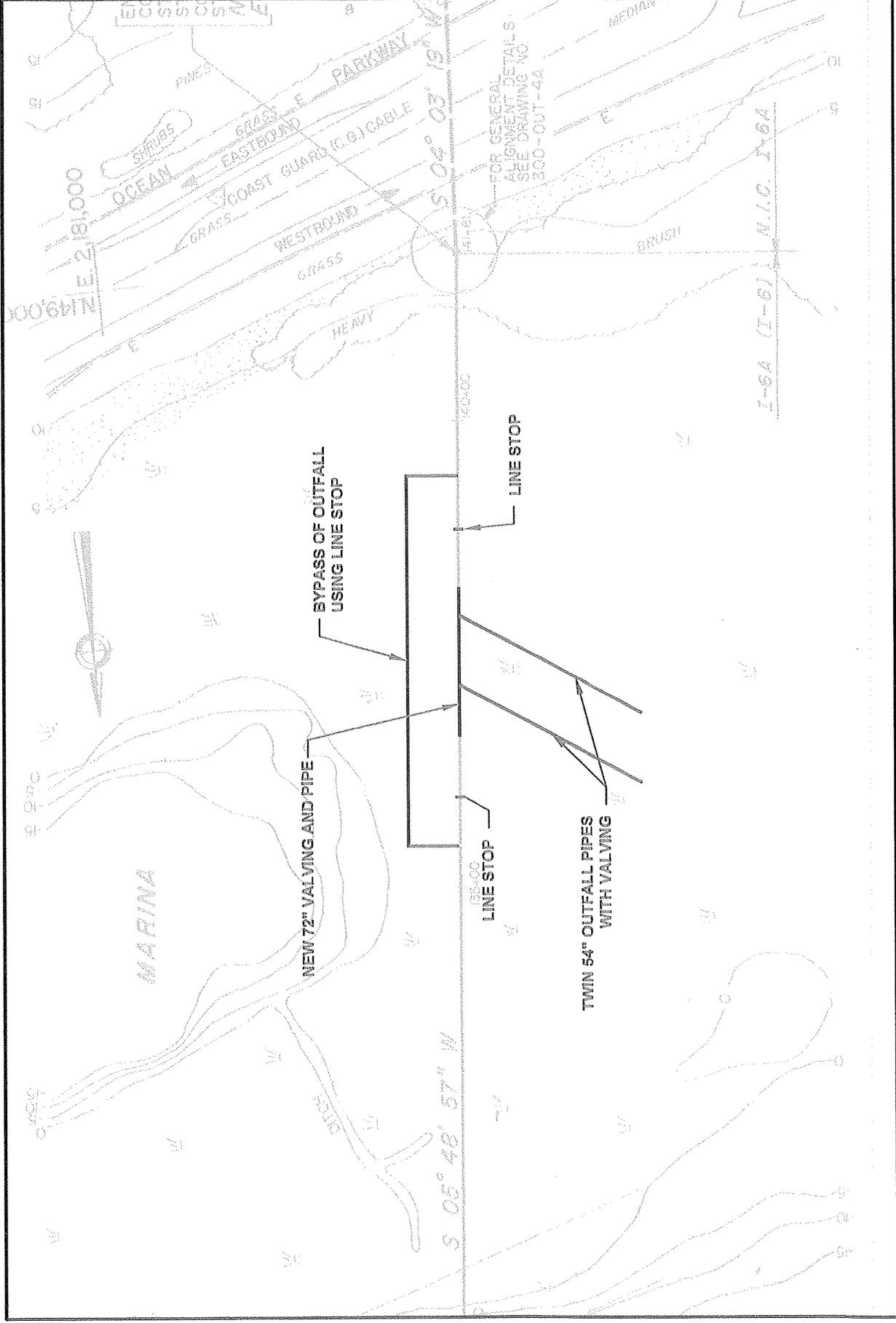


Figure ES-9
New Outfall Connection at Barrier Island
Suffolk County Department of Public Works
Bergen Point WWTP Outfall Replacement Project - Engineering Report

Figure ES-10 Preliminary Schedule for Alternative 2, Construct Replacement Outfall by Tunneling, Revised 6/2012

| Activity Description | Duration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|
| | 2013 | | | | | | | | | | | | 2014 | | | | | | | | | | | | 2015 | | | | | | | | | | | | 2016 | | | | | | | | | | | | 2017 | | | | | | | | | | | | 2018 | | | | | | | | | | | | 2019 | | | | |
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May |
| 1 Design/Permitting - Effluent Pump Station | █ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 Bidding/Award - Effluent Pump Station | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 Construction- Effluent Pump Station | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 Design/Permitting - Tunnel | █ | | | | | | | | | | | | █ | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 Bidding/Award - Tunnel | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 Construction- Tunnel | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | █ | | | | | | | | | | | | █ | | | | | | | | | | | | █ | | | | | | | | | | | | | | | | |

**Table ES-2
Preliminary Cost Estimate for the Recommended Tunnel Alternative**

| Project Component | Final Estimated Project Cost |
|---------------------------------------|------------------------------|
| | (\$) |
| Launch and Receiving Shafts | \$7,255,000 |
| Tunnel Boring Machine | \$20,000,000 |
| Tunnel Drive | \$110,000,000 |
| Site Reclamation | \$255,000 |
| Million Piping Section | \$3,300,000 |
| Connection | |
| Runoff Channel Connection | \$850,000 |
| Subtotal | \$141,660,000 |
| Contingency @ 20% | \$28,332,000 |
| Total | \$169,992,000 |
| Escalated to Midpoint of Construction | \$190,000,000 |
| Engineering | \$17,000,000 |
| Total Estimated Project Cost | \$207,000,000 |

**Table ES-3
Preliminary Cost Estimate for the Final Effluent Pump Station**

| Project Component | Final Effluent Pump Station |
|---------------------------------------|-----------------------------|
| | (\$) |
| Subtotal | \$19,300,000 |
| Contingency @ 20% | \$3,860,000 |
| Total | \$23,160,000 |
| Escalated to Midpoint of Construction | \$25,000,000 |
| Engineering | \$2,500,000 |
| Total Estimated Project Cost | \$27,500,000 |

These project costs are being updated as design of the outfall and effluent pump station proceed.

Project Approvals

A preliminary list of potential permit and approval requirements is summarized on Table ES-4.

Table ES-4

Potential Permits and Approvals for Alternative 2, Construct Replacement Outfall by Tunneling

| PERMIT/ APPROVAL | REGULATORY AGENCY | JURISDICTIONAL BASIS | REGULATED ACTIVITIES | KEY CONTACT |
|--|---|--|---|--|
| FEDERAL | | | | |
| Section 10 Permit - Nationwide/General/ Individual | U.S. Army Corps of Engineers - NY District | Section 10, Rivers and Harbors Act of 1899 | Required for construction activities within navigable waters of the U.S. Nationwide Permit 7 covers the construction/repair of an outfall while NWP 12 covers the installation of utility lines. Pre-construction notification is required to obtain coverage under these existing permits. | Frank Verga (KAS table) (917) 790-8212 |
| Approval | U.S. Coast Guard Coast Guard Sector Long Island Sound | N.A. | Construction activities within navigable waters may require a consultation and/or review, but typically no formal permit | Lt. Douglas J. Miller Chief, Waterways Management Division 203-468-4596 |
| Consultation &/ or Essential Fish Habitat Assessment | National Marine Fisheries Service (NOAA)- Habitat Conservation Division | Code of Federal Regulations, Title 50, Part 600, 1996 amendments to the Magnuson-Stevens Fishery Conservation & Mgt Act Section 305(b)(2) Act (Essential Fish Habitat), Endangered Species Act | Required for all activities impacting Essential Fish Habitat Areas | Peter Colosi Assistant Regional Administrator 978-282-9332 |
| Consultation &/ or Jeopardy/ No Jeopardy Determination | U.S. Fish & Wildlife Service - Division of Endangered Species | Code of Federal Regulations, Title 50, Part 17 - Section 7(a)(2) of the Endangered Species Act | Required for proposed activities that may have an effect upon threatened and/or endangered species | Long Island Field Office 631-776-1401 (KAS table) |

Table ES-4

Potential Permits and Approvals for Alternative 2, Construct Replacement Outfall by Tunneling

| PERMIT/ APPROVAL | REGULATORY AGENCY | JURISDICTIONAL BASIS | REGULATED ACTIVITIES | KEY CONTACT |
|---|---|---|---|--|
| STATE Section 401 Water Quality Certification | NYS Department of Environmental Conservation - Region 1 | ECL Article 15, Title 15 - NYCRR Title 6, Part 608.9 - Federal Water Pollution Control Act, Section 401 | Project includes placement of fill or activities that result in a discharge to jurisdictional waters. NYSDEC has issued/agreed to standard conditions associated with many of the NWP issued by ACOE. | Roger Evans, Regional Permit Administrator 631-444-0361 |
| SPDES General Permit for Stormwater Discharges from Construction Activities (GP-0-08-001) | NYS Department of Environmental Conservation | Article 17, Titles 7,8 and Article 70 of the ECL - NYCRR Title 6, Parts 750-757 | Required for construction projects that require 1 acre of disturbance or more. | Division of Water 625 Broadway, 4 th Floor Albany, NY 12233-3505 |
| Coastal Zone Consistency Assessment | NYS Department of State - Division of Coastal Resources | 15 CFR Part 930 and State Approved Coastal Zone Management Plan | Activities that would occur within the state designated coastal zone boundary require consistency assessment approval | NYSDOS One Commerce Plaza 99 Washington Ave, Suite 1010 Albany, NY 12231 Jeff Zappieri, Supervisor of Consistency Review 518-474-6000 |
| Air Registration | NYS Department of Environmental Conservation | Environmental Conservation Law Article 19 New York Code of Rules and Regulations Title 6, Part 200-203 N.A. | Contractor maybe required to obtain permit for onsite generators required for ground freezing event on barrier island. | Roger Evans, Regional Permit Administrator 631-444-0361 |
| Approval | NYS Parks - LI State | | Regulates access of parkland, including use | Scott Fish 631-669-1000 |

Table ES-4

Potential Permits and Approvals for Alternative 2, Construct Replacement Outfall by Tunneling

| PERMIT/ APPROVAL | REGULATORY AGENCY | JURISDICTIONAL BASIS | REGULATED ACTIVITIES | KEY CONTACT |
|---|---------------------|---|--|--|
| | Park Region | | of commercial vehicles. | Land Management and Regulatory Affairs Coordinator 631-321-3580 |
| Divisible Load Permit Highway Work Permit for Utility Work | NYS DOT - Region 10 | NYCRR Title 17, Part 126 - NYS Vehicle & Traffic Law Section 385 NY Highway Law Article 52 | NYS DOT regulates the use of NYS roadways. Permit required by vehicles that exceed the road weight. Permit required to work within a NYS ROW &/or install MPTs | Gene Smith, Regional HWP Contact 631-952-6028 |
| LOCAL | | | | |
| Consultation | SCDPW | | Approval of Plans and Specifications | John Donovan, Chief Engineer 631-852-4204 |
| Review and comment | SCDHS | | | Office of Ecology 631-852-5811 |
| Consultation | Town of Babylon | | The Department of Environmental Control enforces provisions of the Town Code as it pertains to Environmental Protection, including actions within the Great South Bay. | Vicky Russell, Commissioner Environmental Control 631-422-7640 |

SCDPW's Capital Program 8108 is being implemented in two phases. Phase I, the Final Effluent Pump Station renovation, includes replacement of the pumps, electrical controls and mechanical systems and construction is scheduled to begin in 2014. Renovation of the pump station was previously designated as a Type II action via Resolution No. 156-2011.

Funding for Phase II of the program, outfall replacement is included in the Capital Program and Budget for 2014-2016, however due to the increased operating pressures faced by the failing outfall, the County is seeking to accelerate the project. Replacement of the outfall was designated as a Type 1 action that will have no significant adverse impacts on the environment via Resolution 971-2012. This resolution has been added to the May 2011 Engineering Design Report as *Appendix E*.

Project Reviews

Due to the magnitude of the proposed outfall replacement project cost, SCDPW commissioned an independent engineering team to review the May 2011 **Sewer District 3-Southwest Bergen Point Wastewater Treatment Plant Engineering Design Report**. The engineering team of Dvirka and Bartilucci in association with Parsons reviewed the constructability of the alternatives, the tunnel construction costs, the tunnel construction schedule and risk evaluation. The independent review team concluded that "the tunnel alternatives presented are constructible. Cost estimates and schedules appear to be reasonably conservative and appropriate for the stage that the work is at" and that independent constructability and cost reviews should be conducted at key project milestones by an experienced tunnel design and construction firm. The Outfall Report Review, and response to the independent expert comments has been added to the May 2011 Engineering Design Report as *Appendix F*.

APPENDIX C

USFWS Correspondence



GOVERNOR'S OFFICE OF STORM RECOVERY

Andrew M. Cuomo
Governor

James Rubin
Executive Director



April 24, 2015

Steven T. Papa
U.S. Fish and Wildlife Service
Long Island Field office
340 Smith Rd
Shirley, NY 11967

Re: USFWS Consultation for the Suffolk County Department of Public Works (SCDPW) –Bergen Point Outfall Replacement Project, West Babylon, NY.

Dear Mr. Papa:

The Governor's Office of Storm Recovery (GOSR), acting under the auspices of New York State Homes and Community Renewal's (HCR) Housing Trust Fund Corporation (HTFC), on behalf of the United States Department of Housing & Urban Development (HUD), is currently preparing an Environmental Assessment (EA) for the Bergen Point Outfall Replacement Project (the "Proposed Action") located in West Babylon, NY. (See Project Location **Figure 1**).

GOSR is acting as HUD's non-federal representative for the purposes of conducting informal consultation pursuant to Section 7 of the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and the Migratory Bird Treaty Act of 1918 (MBTA) (40 Stat. 755, as amended; 16 U.S.C. 703-712). GOSR is also hereby notifying United States Fish & Wildlife Service (USFWS) of its determination under the Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 et seq). Additionally, as GOSR plans to prepare an Environmental Assessment to evaluate the Proposed Action, comments on the Proposed Action are also welcomed in accordance with the National Environmental Policy Act (42 U.S.C. 4321 et seq).

Proposed Action

The Bergen Point Wastewater Treatment Plant (WWTP), owned and operated by Suffolk County Department of Public Works, discharges treated effluent through an ocean outfall that passes beneath the Great South Bay and underneath the barrier island to the Atlantic Ocean. (see **Figure 1**). The 15,300-foot long segment of the outfall that extends from the WWTP to the barrier island, passing underneath Great South Bay, has been determined to be in a failing condition and needs to be replaced. The selected replacement alternative proposes to replace the failing outfall segment with a 10-foot diameter, 14,200-foot long tunnel constructed by means of a tunnel boring machine (TBM). Construction of the tunnel via TBM, as opposed to dredging and trenching, is the preferred alternative to be employed in the construction of the replacement outfall.

Above ground construction includes an access or working shaft at the Bergen Point WWTP site, and an exit or receiving shaft at Gilgo State Park on the barrier island within the existing easement north of Ocean Parkway. The access shafts will be constructed by using ground freezing techniques and allow the construction of the replacement outfall tunnel at a depth of approximately 60-80 feet below the existing surface. An estimated 90,000 cubic yards of muck is anticipated to be removed during the construction of the Proposed Action, including both tunnel excavation and shaft construction. It is estimated that the daily muck hauling truck trips to remove this material offsite should be 8 to 10 trucks. The new section of the outfall would be joined to the existing ocean portion of the outfall on the barrier island. Treated effluent would then continue to discharge through the outfall to the Atlantic Ocean as has been the case for over 30 years. No carrier pipes would be installed within the tunnel; the lined tunnel itself would be the replacement outfall.

The staging area at the barrier island would be approximately 2.33 acres and the staging area at WWTP would be approximately 2.5-3 acres. Staging areas would be remediated after completion. All disturbed area on the barrier island will be revegetated and restored. The footprint of these areas of disturbance and the path of the proposed outfall tunnel are shown in **Figure 1** and **Figure 2**. Most of the construction would take place well below Great South Bay via the TBM to minimize impacts to the environment.

Endangered Species Act

The USFWS Information, Planning and Conservation (IPaC) online planning tool Trust Resource List generated for the Proposed Action (see **Attachment 1**) lists the following Federally-listed species as having the potential to occur within the vicinity of the Proposed Action: piping plover (*Charadrius melodus*) - threatened, roseate tern (*Sterna gougallii*) - endangered, rufa red knot (*Calidris canutus rufa*) – threatened, northern long-eared bat (*Myotis septentrionalis*) - threatened, sandplain gerardia (*Agalinis acuta*) - endangered, and seabeach amaranth (*Amaranthus pumilus*) - threatened. This correspondence represents the GOSR's assessment of potential effects to these species in compliance with section 7 of the ESA of 1973, as amended, with respect to the Proposed Action.

Piping Plover

The breeding range of the piping plover within New York State is limited to the coastlines of Long Island, where plovers nest from Queens to eastern Suffolk County (Wasilco 2008). Most piping plover colonies on Long Island have grown steadily in recent decades in response to protection and management and currently represent approximately one quarter of the total Atlantic Coast population (Hecht and Melvin 2009). Piping plovers nest in several areas of oceanfront beach along the southern shoreline and eastern and western points of Jones Beach Island (e.g., McIntyre and Heath 2011), including Gilgo State Park (NYSOPRHP 2015), approximately 0.5 miles from the proposed outfall at the park's closest point. Although piping plovers nest on the oceanfront beaches of Long Island's barrier islands rather than bayside or mainland beaches, their home range commonly includes bayside flats and back-barrier storm overwash areas, which are important foraging habitats for adults and fledglings (Elias et al. 2000, McIntyre and Heath 2011). However, the location of the proposed outfall is expected to be beyond the distance that piping plovers would travel from nesting areas on Gilgo Beach to forage, particularly given

the wide tract of back-barrier habitat available to them immediately inland from and adjacent to their nesting area. In addition, piping plovers would not be expected to cross over Ocean Parkway, a four lane highway separating the northern half of Jones Beach Island where the outfall would be located and the southern half of the island where piping plovers nest. Likewise, no piping plovers would be expected to occur on the mainland side of the bay, at the northern end of the project site. As such, the Proposed Action is considered unlikely to affect the piping plover.

Northern long-eared bat

The northern long-eared bat, recently listed as federally threatened, is a temperate, insectivorous bat whose life cycle can be coarsely divided into two primary phases - reproduction and hibernation. Northern long-eared bats hibernate in caves or mines during winter and then emerge in early spring, with males dispersing and remaining solitary until mating season at the end of the summer, and pregnant females forming maternity colonies in which to rear young. No caves or mines occur near the project site. Summer habitat of the northern long-eared bat generally includes upland and riparian forest within heavily forested landscapes (Ford et al. 2005, Henderson et al. 2008). The long-eared bat is sensitive to fragmentation and urbanization, and requires interior forest for both foraging and breeding (Foster and Kurta 1999, Broders et al. 2006, Henderson et al. 2008). Roost trees are usually in intact forest, close to the core and away from large clearings, roads, or other sharp edges (Menzel et al. 2002, Owen et al. 2003, Carter and Feldhammer 2005). In contrast to these associations of the northern long-eared bat with mature, closed canopy, interior, upland forest habitat, habitats within the project site are limited to coastal shrub/scrub and manicured lawn. Northern long-eared bats are therefore considered unlikely to occur in the area.

The Proposed Action does not require tree clearing, is located in an urban area without dense forest, and in addition, the applicant is unaware of any maternity roosts or hibernacula on or near the Project Site. For these reasons, the Proposed Action is considered likely to have “No Effect” on the northern long-eared bat or the habitats on which it depends.

Red knot

The rufa subspecies of the red knot, which has recently been listed as federally threatened, migrates up to 30,000 miles round trip between primary wintering grounds in South America and breeding grounds in the high arctic, with conditions for refueling at staging areas along the Atlantic coast being critical determinants of migration and reproductive success and overall survival (Baker et al. 2004, Morrison et al. 2007). Delaware Bay is the most significant spring migration staging area for rufa red knots, which time their arrival in the bay to coincide with the peak horseshoe crab spawning period (Baker et al. 2004, Niles et al. 2009). Monomoy National Wildlife Refuge in Cape Cod, Massachusetts appears to be among the most significant staging areas for red knots during their southbound autumn migration (Harrington et al. 2010, Burger et al. 2012). In addition to these primary staging areas in Delaware Bay and Cape Cod, migrating red knots may stage in much lower densities elsewhere along the Atlantic coast (Harrington 2010, Burger et al. 2012). Although migrating red knots occur along Long Island (e.g., Tanacredi and Badger 1995:104, Fowle and Kerlinger 2001:81, Boretti et al. 2007), none of its beaches,

bays, or estuaries are known to be high-use staging areas that support large concentrations of individuals. Instead, red knots are usually seen on Long Island in small groups (e.g., Wells 1996:59) relative to the tens of thousands of birds observed staging together in Delaware Bay and Cape Cod. Additionally, red knots are highly sensitive to human disturbance at staging sites (Burger et al. 2004, 2007), and as such, would not be expected to occur near the Project Site. Because red knots are not expected to occur near the project site, the Proposed Action is considered likely to have “No Effect” on the red knot or the habitats on which it depends.

Roseate Tern

More than 90 percent of New York State’s population of roseate terns is made up by a single colony on Great Gull Island, off Long Island’s eastern end. The remainder occurs in small groups of often just a few breeding pairs in variable locations along the south shore of Long Island (Mitra 2008). Roseate terns have sporadically nested near the western end of Long Island in the past (e.g., 2 pairs in Jamaica Bay in 1996; Wells 1996), but during the most recent New York State Breeding Bird Atlas (2000-2005), they were not documented anywhere west of Suffolk County (Mitra 2008). The closest to the project site that roseate terns have nested in recent years is Goose Flat Island, approximately 7.5 miles to the west (NYSERDA 2010, NYSDEC 2013). Goose Flat Island had as many as 25 nesting pairs in 2005 (NYSERDA 2010), but no roseate terns have nested there in the last few years (NYSDEC 2012, 2013). The potential for roseate terns to occur near the project site is considered extremely low and limited to migrants moving overhead en route to nesting sites elsewhere in the region or to wintering grounds in the southern hemisphere. As such, the Proposed Action is considered likely to have “No Effect” on roseate terns or their habitat.

Sandplain gerardia and seabeach amaranth

Sandplain gerardia is an herbaceous annual plant that occurs in sandy coastal plain habitat in poor, dry soils. It is a member of sandplain grassland communities and openings in coniferous forest. (Neel 2002) It was once a common species when these communities were large and dominant on some areas of Long Island. It now survives in remnant grasslands in pine barrens with broad, grassy swaths; remnants of the Hempstead Plains dominated by grasses and composites with scattered shrubs and bare areas scraped by a bulldozer; and other remnant grasslands of the South Fork including those around golf courses, and along roadsides and railroads. (NYNHP 2013)

Seabeach amaranth is an herbaceous annual plant that occurs on barrier island beaches, where its primary habitat consists of overwash flats at accreting ends of islands and lower foredunes and upper strands of non-eroding beaches. It occasionally establishes small temporary populations in other habitats, including sound-side beaches, blowouts in foredunes, and sand and shell material placed as beach replenishment or dredge spoil. Seabeach amaranth appears to be intolerant of competition and does not occur on well-vegetated sites. The species appears to need extensive areas of barrier island beaches and inlets, functioning in a relatively natural and dynamic manner. These characteristics allow it to move around in the landscape as a fugitive species, occupying suitable habitat as it becomes available. (USFWS 2011)

The disturbed condition of the WWTP portion of the project site (access shaft location) precludes the presence of either of these listed plant species. The barrier island portion of the project site (exit shaft location) is comprised of tidal marsh with a shrub-dominated margin. Therefore, it does not provide the typical/prime habitats where either of these two plant species are likely to occur and is thus unlikely to affect the species or the habitat on which they depend. However, as both seabeach amaranth and sandplain gerardia may occur in sandy, nutrient poor soils, there is a remote possibility that they may occur within the barrier island portion of the Proposed Action. Therefore, prior to construction the barrier island staging area (exit shaft site) will be surveyed for the presence/absence of these two species during the growing season.

Compliance

For purposes of consultation under Section 7(a)(2) of the ESA, we conclude that the Proposed Action is unlikely to affect piping plover, sandplain gerardia and seabeach amaranth or the habitats on which these species depend and will have “No Effect” on the roseate tern, rufa red knot, northern long-eared bat or the habitats on which this species depends. We request your concurrence with this determination.

BGEPA

Bald Eagle (*Haliaeetus leucocephalus*) is listed in the IPaC Trust List – as one of the Migratory Birds known for the area. However, the Project Sponsor knows of no bald eagle nesting sites in proximity to the Proposed Action. The BGEPA guidelines recommend that any clearing, external construction, and landscaping within 660 feet of a bald eagle nest site be conducted outside the breeding season. In addition, blasting and other activities that produce extremely loud noise should be avoided within ½ mile of active nest sites during the breeding season. GOSR has determined that the proposed action would have no impact on the Bald Eagle.

MBTA

The Proposed Action takes place within the Atlantic Flyway. However, because the majority of the Proposed Action consists of sub-surface directional drilling, GOSR has determined that the Proposed Action would have no significant adverse impact on migratory birds or their habitat. It is anticipated that birds would temporarily leave the area during construction due to noise and disturbance.

CBRA:

A portion of the Proposed Action (exit access shaft and staging area) is located within the Fire Island Unit (NY-59) of the Coastal Barrier Resources System. The CBRA generally prohibits federal financial assistance for actions undertaken within System Units of the Coastal Barrier Resources System (16 U.S.C. § 3504). However, it is GOSR’s position that the Proposed Action falls within the CBRA’s exception for “[t]he maintenance, replacement, reconstruction, or repair, but not the expansion, of publicly owned or publicly operated roads, structures, or facilities that are essential links in a larger network or system.” (16 U.S.C. § 3505(a)(3)).

The Proposed Action conforms with the CBRA exception mentioned above because the Proposed Action would involve the replacement of an existing publically owned structure that is an essential and necessary link in a larger waste water treatment system. The Proposed Action would not encourage, or provide for, development of the barrier island. Rather, the Proposed Action is necessary to prevent degradation to the barrier island that could be posed by a catastrophic failure of the existing outfall. The WWTP and outfall serves existing development that is entirely on the mainland, outside of the boundaries of the CBRS. The Proposed Action is a replacement-in-kind installed via non-invasive horizontal tunneling that will minimize and virtually eliminate environmental impacts to the barrier island. The areas of temporary surface disturbance on the barrier island will be fully remediated and revegetated upon completion. Upon completion, no new above-ground development will exist on the barrier island. Furthermore, the Proposed Action is necessary to prevent the potential catastrophic failure of the existing outfall segment which would result in treated effluent discharging directly into the Great South Bay. Therefore, it is the position of GOSR that the Proposed Action is in compliance with the CBRA.

The proposed activity is consistent with the tripartite purpose of the CBRA.

First, replacement of the outfall segment considered by the Proposed Action is an activity that is protective of both human health and the environment. The activities undertaken by the State will help minimize the loss of human life by providing for human development on the mainland of Long Island and helping to prevent the discharge of treated effluent into the Great South Bay. If no action is taken, a subsequent storm event could result in a catastrophic failure of the existing outfall segment, potentially resulting in the loss of life. Moreover, the Proposed Action will not result in the development of buildings or structures on the barrier island that the CBRA seeks to avoid. In order to maintain the environmental quality of the Great South Bay, the outfall must pass under the barrier island, and it is the intent of GOSR to ensure that this is accomplished in in harmony with the environment, through the less-impactful TBM method.

Second, federal financial assistance to support these activities is not a wasteful use of federal resources; these activities represent a long-term public investment in a piece of critical infrastructure that is necessary to maintain the water quality of the Great South Bay and the critical habitats contained therein. Investing in the replacement of this outfall segment would protect federal investments on mainland Long Island by mitigating potential risks posed by extreme weather events and the associated increased inflow that threatens the integrity of the existing outfall. Federal funding would not have the effect of encouraging development of coastal barriers and is not being used for development of commercial, residential or other structures that CBRA construes as wasteful. Rather federal funding would support the replacement of critical infrastructure that by necessity must pass under the barrier island.

Finally, the Proposed Action will minimize damage to fish and wildlife by preserving critical environmentally-sensitive areas to help achieve the long-term conservation of natural resources. Rather

than replace the outfall segment by means of dredging and trenching, the Proposed Action will virtually eliminate harmful environmental impacts. As discussed above, the Proposed Action is not likely to adversely affect threatened or endangered species, and will help to preserve the water quality of the Great South Bay.

GOSR kindly requests USFWS concurrence with this CBRA determination.

If you have questions or require additional information regarding this request, please contact me at (646) 417-4660 or thomas.king@stormrecovery.ny.gov. Thank you for your time and consideration.

Sincerely,



Thomas J. King, Esq.
Assistant General Counsel
Certifying Officer

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4/9/2015



Source: ESRI, Inc. USGS Aerials

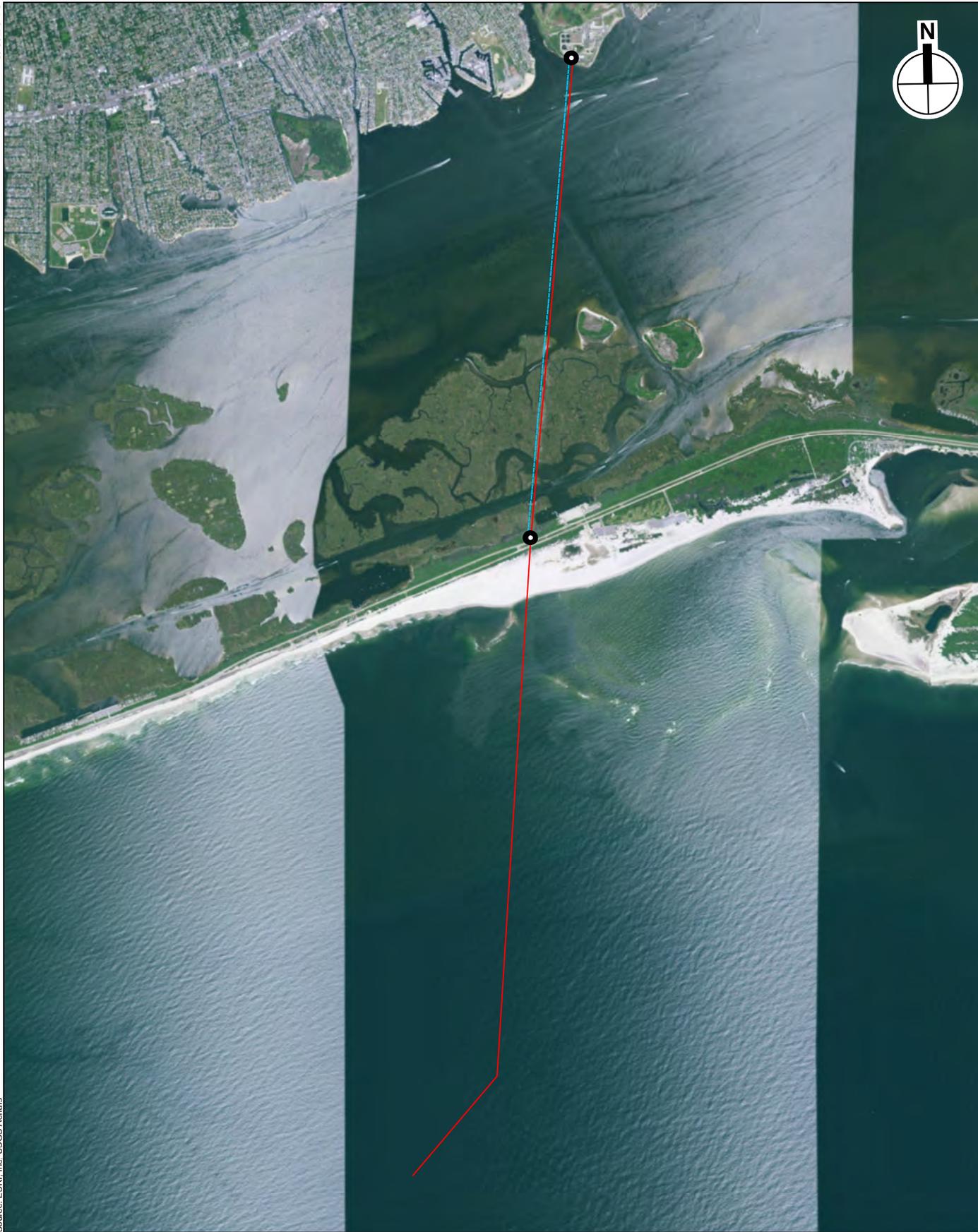
-  Proposed Staging Areas
-  Proposed Outfall

0 1,000 FEET

5/6/2015



Source: ESRI, Inc.; USGS Aerials



- Existing Outfall
- Access Shafts
- - - Proposed Replacement Outfall Segment

0 4,000 FEET

BERGEN POINT WWTP OUTFALL REPLACEMENT PROJECT

Existing Outfall
Figure 2



United States Department of the Interior

FISH AND WILDLIFE SERVICE

3817 Luker Road
Cortland, NY 13045



July 9, 2015

Thomas J. King, Esq.
Assistant General Counsel
Certifying Officer
Governor's Office of Storm Recovery
25 Beaver Street
New York, NY 10004

Dear Mr. King:

This is in response to the Governor's Office of Storm Recovery (GOSR) May 6, 2015, request for consultation with the U.S. Fish and Wildlife Service (Service) pursuant to the Coastal Barrier Resources Act (CBRA) of 1982, as amended (96 Stat. 1653, as amended; 16 U.S.C. 3501 *et seq.*), Endangered Species Act of 1973, as amended (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*), the Bald and Golden Eagle Protection Act (BGEPA) of 1940, as amended ((16 U.S.C. 668-668c), and Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. 703-712) for the construction of a tunnel and wastewater outfall pipe in Great South Bay, Babylon, New York. The project area is located within John H. Chafee, Coastal Barrier Resources System (CBRS) Unit NY-59.

Project Description

The Bergen Point Wastewater Treatment Plant (WWTP) discharges treated effluent through an ocean outfall that passes beneath the Great South Bay and underneath Jones Island to the Atlantic Ocean. The 14,200-foot segment of the outfall that extends from the WWTP to the barrier island, passing underneath Great South Bay, is in failing condition and needs to be replaced. The GOSR proposes to replace the failing outfall segment with a 10-ft diameter, 14,200-foot tunnel, constructed using a tunnel boring machine (TBM).

Construction of the tunnel using a TBM is the preferred alternative for the construction of the replacement outfall. Aboveground construction would include an access or working shaft at the Bergen Point WWTP site, and an exit or receiving shaft at Gilgo State Park on Jones Island within an existing easement north of Ocean Parkway. The access shafts would be constructed by using ground freezing techniques, with the construction of the replacement outfall tunnel at a depth of approximately 60-80 feet below the existing surface. An estimated 90,000 cubic yards of dredged material is anticipated to be removed during the construction of the tunnel excavation and shaft construction.

The staging area at the barrier island would be approximately 2.33 acres (ac), and the staging area at WWTP would be approximately 2.5 to 3 ac in size. Staging areas would be remediated after completion. All disturbed areas on Jones Island will be revegetated and restored.

GOSR CBRA Determination

A portion of the proposed project is located within the Fire Island Unit (NY-59) of the CBRS. The CBRA generally prohibits federal financial assistance for actions undertaken within System Units of the CBRS (16 U.S.C. § 3504). A federal expenditure is allowable within the CBRS if it meets any of the following exceptions found in 16 U.S.C. § 3505 (a)(6) and is also consistent with the three purposes of the CBRA, which include, 1) minimize loss of human life, 2) minimizes wasteful expenditure of federal revenues, and 3) minimizes the damage to fish and wildlife and other natural resources.

The GOSR has determined that the proposed project falls within the CBRA's exception for "[t]he maintenance, replacement, reconstruction, or repair, but not the expansion, of publicly owned or publicly operated roads, structures, or facilities that are essential links in a larger network or system" [16 U.S.C. § 3505(a)(3)], because it involves the replacement of an existing publically-owned structure that is an essential and necessary link in a larger wastewater treatment system.

In terms of consistency with the three purposes of the CBRA, the GOSR has determined that the proposed project would not encourage, or provide for, development of the barrier island, and, therefore, would assist in reducing the potential loss of life in the CBRS. Secondly, the GOSR has determined that the federal financial assistance it seeks to support these activities is not a wasteful use of federal resources, as these activities represent a long-term public investment in a piece of critical infrastructure that is necessary to maintain public and environmental health. Finally, the GOSR has determined that the proposed project would minimize damage to fish and wildlife by preserving critical environmentally-sensitive areas and help achieve the long-term conservation of natural resources via water quality protection and restoration of disturbed areas.

Service CBRA Concurrence

The Service has reviewed the information provided in your letter and concurs with your determination that the proposed project is an activity which meets the exception for federal expenditures in a CBRS Unit as specified in 16 U.S.C. § 3505 (a)(6) and is consistent with the three purposes of the CBRA.

GOSR ESA Determination

The GOSR has provided an effects analysis for listed species under the Service's jurisdiction and concluded that the proposed project would have no effect on the red knot (*Calidris canutus rufa*; threatened), northern long-eared bat (*Myotis septentrionalis*; threatened), and roseate tern (*Sterna dougallii dougallii*; endangered), and would not be likely to adversely affect the piping plover

(*Charadrius melodus*; threatened), sandplain gerardia (*Agalinis acuta*; endangered), and seabeach amaranth (*Amaranthus pumilus*; threatened).

Service ESA Comments

The Service acknowledges the GOSR's determination that the proposed project would have no effect on the red knot, northern long-eared bat, and roseate tern. Therefore, no further consultation with the Service is required at this time.

The Service believes that the proposed project would have no impacts to seabeach amaranth and sandplain gerardia, as we have no records of their occurrence in the proposed project areas both on the mainland and the vegetated portion of the northern extent of Jones Island.

The Service concurs with the GOSR determination that the proposed project would not be likely to adversely affect the piping plover. While piping plover breed on Jones Island, there is currently no information to suggest that they use the project areas as breeding or foraging areas.

As a reminder, until the proposed project is complete, we recommend that you contact our office every 90 days from the date of this letter to ensure that listed species presence/absence information for the proposed project area is current. Should project plans change or additional information on listed or proposed species or critical habitat become available, this determination may be reconsidered.

GOSR BGEPA Determination

The GOSR has consulted the Service's Information for Planning and Conservation (IPaC) webpage (<https://ecos.fws.gov/ipac>) and determined that the bald eagle (*Haliaeetus leucocephalus*) is listed in the IPaC Trust List – as one of the migratory birds known for the area. However, GOSR has determined that there are no known nesting bald eagles in the proposed project area, and, therefore, the proposed action would have no impact on this species.

Service BGEPA Comments

The Service concurs with the GOSR's determination that the proposed project would have no impacts to bald eagles, based on our current knowledge of their nesting distribution on Long Island.

GOSR MBTA Determination

The GOSR has noted that the proposed project takes place within the Atlantic Flyway, but since the majority of the project activities consist of sub-surface directional drilling, it has determined that the proposed project would have no significant adverse impact on migratory birds or their habitat. It is anticipated that birds would temporarily leave the area during construction due to noise and disturbance.

Service MBTA Comments

The MBTA prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The word “take” is defined as “to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect.” The unauthorized taking of birds is legally considered a “take” under the MBTA and is a violation of the law. Neither the MBTA nor its implementing regulations, 50 Code of Federal Regulations Part 21, provide for permitting of “incidental take” of migratory birds that may be killed or injured by wind projects.

In order to avoid the taking of migratory birds which may breed in the proposed project area, the Service recommends that the GOSR undertake a breeding bird survey prior to construction and apply the time of year restrictions found in the enclosed table. If a breeding survey is not possible due to planning constraints or funding, then the GOSR should consult the New York State Department of Environmental Conservation’s (NYSDEC) Breeding Bird Atlas database at <http://www.dec.ny.gov/animals/51030.html> to determine likely breeders in the project area and use the above referenced table to plan construction activities outside of the breeding season of the species noted in the NYSDEC database.

If you have any questions or require further assistance, please have your staff contact Steve Papa of the Long Island Field Office at 631-286-0485.

Sincerely,



David A. Stilwell
Field Supervisor

Enclosure

cc:

NYSDEC, Stony Brook, NY

Breeding Season Dates

The table on the following pages was compiled by Gordon M. Meade as an aid to Atlasers in their field surveying. The data on which it is based were derived from Forbush (1929), Bull (1974), and Harrison (1978). Additional data submitted by surveyors and Regional Coordinators have been incorporated into it. Information on the Canvasback and Brewer's Blackbird is also added, but the two exotic parakeets are omitted as are the hybrids. This table is still incomplete, however, because data on breeding in New York are minimal or lacking for many species. Species names and taxonomic order were updated according to the Federation of New York State Birds Clubs' 1999 *Checklist of the Birds of New York State*.

The "Egg dates" are the earliest and latest dates within which eggs have been found for each species. The "Incubation period" refers to the period during which each species incubates and hatches its clutch of eggs.

The "Nestling period" is the time during which the young bird is dependent on its parents for survival. Its length varies depending on several factors, including whether the species is altricial or precocial. The young of some species may remain with their parents after fledging and achieving independence. Because severing contact from the parents is a gradual process with many species, the times given for this period are necessarily approximations.

The dates given for "Unfledged juveniles" are those within which young have been found in the nest (altricial), and both in the nest and after they have left it (precocial) but before they are able to fly. Those dates in the table for "Fledglings" are the periods within which young have been found that are able to fly. Dates for "Unfledged juveniles" can be earlier than those for "Egg dates" because some data are incomplete, certain species may have more than one brood during the season, some single-brooded species replace broods if they are lost, and there is often a differential in time within a species as to when it commences egg laying. For some species only single dates rather than a period are known.

| Species | Egg Dates | # of broods | Incubation period | Nestling period (days) | Unfledged Juveniles | Fledglings |
|--------------------------|-------------------|-------------|-------------------|---|---------------------|------------|
| Common Loon | 5/15-7/17 | 1, occ. 2 | 29-30 | Lv. @10-17 (usually 12), near nest 2-3 | 6/5-8/22 | 6/20-9/15 |
| Pied-billed Grebe | 4/21-7/2 | 1, poss. 2 | 23-24 | ** | 5/14-8/20 | 6/30-9/23 |
| Double-crested Cormorant | 6/2 | 1 | 25-29 | Yg. wander @ 3-4 wks, fly @ 5-6 wks, indep. @10 wks | 8/31; 9/19 | * |
| American Bittern | 5/10-6/29 | 1 | 24-29 | Lv. nest @ 14 | 5/26-7/24 | 6/14-8/3 |
| Least Bittern | 5/15-7/29 | 1 or 2 | 15-19 | Lv. nest @ 5-14, flight age ? | 6/10-7/20 | 7/2-9/4 |
| Great Blue Heron | 4/15-6/9 | 1 | 25-29 | Yg. fly @ 60, lv. nest @ 64-90 | 5/19-7/17 | from 7/17 |
| Great Egret | 5/23-6/4 | 1 | 25-28 | Yg. fly @ 35-42 | 6/25-7/25 | 7/25 |
| Snowy Egret | 4/16-6/25 | 1 | 21-23 | Yg. lv. nest for branches @ 21-28 | 5/16-7/14 | 7/31-9/17 |
| Little Blue Heron | 6/18 | 1 | 21-24 | Lv. nest @ 12, fly @ 28, indep. @ 35-40 | 7/7 | 7/4-7/18 |
| Tricolored Heron | begin mid-May | 1 (?) | 21 | Yg. climb @ 11-17, fed away from nest @ 24 | July | July |
| Cattle Egret | 6/7 | 1 | 21-25 | Yg. fly @ 40, indep. @ 60 | 6/9-7/7 | * |
| Green Heron | 4/29-8/4 | 1, occ. 2 | 17-21 | Yg. fly @ 21-23, indep. @ 35-40 | 5/22-8/24 | 7/4-9/19 |
| Black-cr. Night-Heron | 4/1-7/23 | 1 | 24-26 | Lv. nest @ 14-21, fly @ 6 wks | 5/21-7/26 | 6/30-8/25 |
| Yellow-cr. Night-Heron | 4/30-6/10 | 1 or 2 | 24 | ** | 5/30-6/24 | 6/22-7/4 |
| Glossy Ibis | 5/3-7/27 | 1 | 21 | On branches @ 14, fly by 42 | 6/24-8/25 | 7/1-9/14 |
| Turkey Vulture | 5/4-6/20 | 1 | 38-41 | Fly @ 11 weeks | 6/15-8/27 | 7/14-9/24 |
| Canada Goose | 3/28-5/14 | 1 | 25-30 | Fly @ 9 weeks | 4/28-6/27 | from 5/18 |
| Mute Swan | 3/26-5/26 | 1 | 34-38 | Indep. @ about 4 months | 5/16-6/21 | * |
| Wood Duck | 3/28-7/15 | 1 | 28-32 | Lv. nest in 24-30 hours | 5/15-8/7 | 5/22-9/23 |
| Gadwall | 5/30-7/25 | 1 | 25-28 | Fly @ 7 weeks | 5/26-8/25 | 6/29-9/19 |
| American Wigeon | late May-mid-June | 1 | 24-25 | Indep. @ 6-7 weeks | 6/24-8/6 | * |
| American Black Duck | 4/2-6/22 | 1 | 26-28 | Fly @ 7-8 weeks | 4/28-7/14 | * |
| Mallard | 3/25-7/9 | 1-2 | 23-29 | Fly @ 7-8 weeks | 4/24-8/16 | * |
| Blue-winged Teal | 5/3-7/4 | 1 | 23-24 | Fly @ 7 weeks | 5/17-8/7 | * |
| Northern Shoveler | 5/29-6/11 | 1 | 21-26 | Indep. @ 6-7 weeks | 6/12-7/18 | 7/18 |

| Species | Egg Dates | # of broods | Incubation period | Nestling period (days) | Unfledged Juveniles | Fledglings |
|------------------------|------------------------|-------------|-------------------|---|---------------------|--------------|
| Northern Pintail | May-early June | 1 | 22-26 | Fly @ 7 weeks | * | * |
| Green-winged Teal | 5/25-7/15 | 1 | 21-24 | Fly @ 6 weeks | 6/16-7/28 | 7/5-8/11 |
| Canvasback | * | 1 | 24-27 | Fly @ 10-12 weeks | 7/3;7/7 | * |
| Redhead | mid-May-early June | 1 | 22-24 | ** | 6/4-7/27 | August |
| Ring-necked Duck | 5/20-6/30 | 1 | 26 | ** | 5/29-7/11 | 7/25-8/22 |
| Lesser Scaup | mid-May-June | 1 | 21-28 | ** | 6/1 | * |
| Common Goldeneye | mid-April-mid-June | 1 | 27-32 | Fly @ 51-60 | * | 7/21 |
| Hooded Merganser | 4/25-6/2 | 1 † | 31 | ** | 5/11-7/17 | 6/21-8/18 |
| Common Merganser | 5/5-7/10 | 1 | 28-32 | Indep. @ 5 weeks | 5/15-8/18 | 7/12-8/25 |
| Red-breasted Merganser | early June | 1 | 26-35 | Fly by 59 | * | * |
| Ruddy Duck | June-early July (Ont.) | 1 | 24-30 | ** | 5/30-9/1 | into Sept. |
| Osprey | 4/27-6/21 | 1 | 32-33 | Fly @ 51-59 | 6/18-7/25 | 7/10-8/22 |
| Bald Eagle | 3/16-5/14 | 1 | 28-46 | Lv. nest @ 10-11 weeks | 4/11-6/30 | from 5/20 |
| Northern Harrier | 4/20-6/25 | 1 | 21-36 | Fly @ 37 | 5/30-7/18 | 7/4-8/11 |
| Sharp-shinned Hawk | 4/16-6/21 | 1 | 21-35 | Fly @ 23 | 6/8-7/23 | 7/3-7/25 |
| Cooper's Hawk | 4/20-6/16 | 1 † | 21-36 | Lv. nest-male @ 30, female @ 34; indep. @ 8 weeks | 6/2-7/2 | 7/2-8/3 |
| Northern Goshawk | 4/20-5/15 | 1 | 28-41 | Fly @ 45, hunt @ 50, indep. @ 70 | 5/18-7/1 | 6/14-7/27 |
| Red-shouldered Hawk | 3/25-5/26 | 1 † | 23-25 | Lv. nest @ 5-6 weeks | 5/5-7/5 | early as 6/6 |
| Broad-winged Hawk | 4/27-6/26 | 1 | 23-28 | Lv. nest @ 29-30 | 5/30-7/27 | 7/4-8/16 |
| Red-tailed Hawk | 3/18-5/16 | 1 | 23-28 | Fly @ 45 | 4/17-6/20 | 6/1-7/8 |
| Golden Eagle | Mar.-June (U.S.) | 1 | 27-45 | Fly @ 9-10 weeks | 7/10 | 7/24 |
| American Kestrel | 4/5-6/29 | 1 | 29-30 | Fly @ 30 | 5/19-8/2 | 6/12-8/10 |
| Peregrine Falcon | 3/2-5/31 | 1 | 28-29 | Fly @ 35-42 | 4/19-7/10 | 5/21-7/27 |
| Gray Partridge | late Mar.-early June | 1-2 | 21-26 | Fly @ 16 | * | * |
| Ring-necked Pheasant | 4/14-8/16 | 1-2 | 23-27 | Fly @ 12-14 | 6/22-8/16 | 8/14 |

| Species | Egg Dates | # of broods | Incubation period | Nestling period (days) | Unfledged Juveniles | Fledglings |
|-------------------------|----------------------|-------------|-------------------|--|---------------------|------------|
| Ruffed Grouse | 4/1-6/22 | 1 † | 23-24 | Fly @ 10-12 | 5/27-7/5 | 6/15-9/4 |
| Spruce Grouse | Mid-early June | 1 | 17-24 | Fly @ 10-12 | 6/19-7/16 | 8/17-8/22 |
| Wild Turkey | 4/26-7/9 | 1 | 28 | Fly @ 14 | 5/13-8/13 | 6/1-9/7 |
| Northern Bobwhite | 5/25-9/14 | 1 | 23-24 | Fly @ 14; full grown @ 60 | 6/11-9/27 | 7/5-10/11 |
| Black Rail | 6/20-7/12 | * | * | ** | * | * |
| Clapper Rail | 4/11-8/4 | 1 | 20-24 | Lv. nest soon after hatching; swim @ 1 | 6/6-8/20 | * |
| King Rail | 5/20-7/3 | 1 | 21-24 | Lv. nest soon after hatching | 6/16-8/6 | 8/2-8/31 |
| Virginia Rail | 5/5-7/13 | 1 | 20 | Lv. nest soon after hatching | 5/11-8/14 | 7/23-9/8 |
| Sora | 4/30-7/17 | 1 | 14-20 | Lv. nest @ 1-2, fly @ 36 | 5/19-8/8 | 6/9-9/15 |
| Common Moorhen | 5/14-7/25 | 1 | 19-25 | Indep. @ 5 weeks | 6/3-8/27 | 7/9-9/17 |
| American Coot | 4/25-7/14 | 1-2 | 21-24 | Indep. @ 8 weeks | 5/17-8/12 | 6/29-8/21 |
| Piping Plover | 4/18-7/23 | 1 † | 26-30 | Fly @ 30-35 | 5/21-7/24 | 6/2-8/18 |
| Killdeer | 4/3-7/4 | 1-2 | 24-28 | Fly @ 40 | 5/3-7/30 | 5/21-8/12 |
| American Oystercatcher | 5/25-7/22 | 1 † | 24-27 | Indep. @ 34-37 | 5/30-7/28 | 6/7-8/19 |
| Willet | 5/19-6/30 | 1 | 22 | ** | 6/15 | * |
| Spotted Sandpiper | 5/6-7/26 | 1 | 18-24 | Fly @ 16-18 | 6/2-8/19 | * |
| Upland Sandpiper | 4/23-6/15 | 1 | 17-21 | Full grown @30 | 5/28-7/18 | 6/15-8/11 |
| Common Snipe | 4/20-6/16 | 1 | 18-20 | Fly @ 19-20 | 5/19-6/20 | 7/5 |
| American Woodcock | 3/24-6/17 | 1 | 20-21 | Fly @ 14-15 | 4/17-6/29 | 4/29-8/2 |
| Laughing Gull | late May; 6/14, 6/28 | 1 | 21-23 | Fly @ 4-6 weeks | | |
| Ring-billed Gull | 5/3-7/10 | 1 | 21-23 | Fly @ 35 | 5/16-7/10 | 6/25-7/24 |
| Herring Gull | 4/27-6/26 | 1 | 24-28 | Fly @ 6 weeks | 5/17-7/24 | 7/5-8/31 |
| Great Black-backed Gull | 4/25-6/19 | 1 | 26-30 | Fed for 7 weeks, then begin to fly | 5/30-6/27 | 7/10-7/26 |
| Gull-billed Tern | 6/2-7/8 (Va.) | 1 | 22-23 | Fly @ 4-5 weeks | * | * |
| Caspian Tern | 6/23, 7/6 | 1 † | 20-22 | Fly @ 25-30 | 6/23, 7/6 | * |

| Species | Egg Dates | # of broods | Incubation period | Nestling period (days) | Unfledged Juveniles | Fledglings |
|------------------------|------------------------|-------------|-------------------|-------------------------------|---------------------|------------|
| Roseate Tern | 5/20-7/27 | 1 | 21-26 | ** | 6/13-8/31 | 7/11-9/9 |
| Common Tern | 5/12-8/15 | 1 † | 20-23 | Fly @ 4 weeks | 6/11-9/3 | 7/10-9/9 |
| Forster's Tern | 6/8 | 1 | 23-25 | ** | 6/16, 6/23 | * |
| Least Tern | 5/9-7/27 | 1 † | 14-22 | Fly @ 15-17 | 6/4-8/11 | 7/15-8/29 |
| Black Tern | 5/27-7/23 | 1 | 20-22 | Fly @ 3-4 weeks | 6/13-8/5 | 7/3-8/25 |
| Black Skimmer | 5/31-9/3 | 1 | * | ** | 6/20-9/24 | 7/17-10/11 |
| Rock Dove | every month | 2-3 | 14-19 | Indep. @ 30-35 | | |
| Mourning Dove | 3/9-9/28 | 2-3 | 12-15 | Fly @ 13-15 | 4/6-10/5 | 4/24-10/26 |
| Black-billed Cuckoo | 5/20-8/28 | 1 | 14 | Fly @ 21-24 | 6/1-9/10 | 6/20-9/27 |
| Yellow-billed Cuckoo | 5/26-8/19 | 1 | 14 | ** | 6/21-9/17 | 6/23-9/23 |
| Barn Owl | all mos., usu. Apr-Jun | 1-2 | 32-34 | Fly @ 60, indep. @ 70 | all months | all months |
| Eastern Screech-Owl | 3/23-5/11 | 1 | 21-26 | Lv. nest @ 35 | 4/24-6/25 | 5/5-8/17 |
| Great Horned Owl | 1/28-5/8 | 1 † | 30-35 | Lv. nest @ 31-35 | 3/8-6/12 | 4/9-6/9 |
| Barred Owl | 3/23-5/3 | 1 † | 21-28 | Fly @ 6 weeks | 4/14-6/11 | 5/13-7/1 |
| Long-eared Owl | 3/21-5/23 | 1, occ. 2 | 21-30 | Lv. nest @ 23-24 | 5/5-6/24 | 6/1-8/8 |
| Short-eared Owl | 4/2-5/19 | 1, occ. 2 | 24-28 | Lv. nest @ 12-17, fly @ 22-27 | 5/7-6/19 | 6/11-7/13 |
| Northern Saw-whet Owl | 3/31-6/11 | 1 | 26-28 | Lv. nest @ 36, occ. longer | 4/21-7/16 | 5/28-8/22 |
| Common Nighthawk | 5/25-7/25 | 1 | 16-19 | Fly @ 23, indep. @ 30 | 6/14-8/14 | 7/7-8/30 |
| Chuck-will's-widow | 5/23 (Va.) | 1 † | 20 | ** | 6/22-6/28 | 6/29 |
| Whip-poor-will | 5/6-6/30 | 1 | 14-20 | ** | 6/2-7/14 | 6/16-8/8 |
| Chimney Swift | 5/30-7/27 | 1 | 18-22 | Fly @ 24-26 | 6/25-8/12 | 7/18-9/1 |
| Ruby-thr. Hummingbird | 5/21-8/16 | 1-2 | 14-16 | Lv. nest @ 19 | 6/24-9/6 | 7/12-9/30 |
| Belted Kingfisher | 4/28-6/10 | 1 † | 17-24 | Lv. nest @ 30-35 | 6/8-7/14 | 7/29-8/9 |
| Red-headed Woodpecker | 5/16-6/19 | 1-2 | 14 | Lv. nest @ 27 | 5/31-8/26 | 7/5-9/15 |
| Red-bellied Woodpecker | 4/26-6/28 | 1 † | 12-14 | Lv. nest @ 26 | 5/18-8/29 | 6/23-8/13 |

| Species | Egg Dates | # of broods | Incubation period | Nestling period (days) | Unfledged Juveniles | Fledglings |
|---------------------------|-----------|-------------|-------------------|---|----------------------|------------|
| Yellow-bellied Sapsucker | 4/29-6/19 | 1 † | 12-14 | Lv. nest @ 25-29, depend. 1-2 wks more | 5/29-7/8 | 6/12-8/15 |
| Downy Woodpecker | 5/6-6/30 | 1 | 12 | Lv. nest @ 20-22, depend. 3 wks more | 5/31-7/3 | 6/9-7/16 |
| Hairy Woodpecker | 4/23-5/19 | 1 † | 11-14 | Lv. nest @ 28-30, depend. 2 wks more | 5/5-6/14 | 6/13-8/1 |
| Three-toed Woodpecker | 5/14-6/14 | 1 | 14 | ** | 7/2, 7/31 | 7/9-7/24 |
| Black-backed Woodpecker | 5/18-6/12 | 1 | 14 | ** | 5/30-6/20 | 6/20-7/23 |
| Northern Flicker | 4/20-6/19 | 1-2 † | 11-16 | Lv. nest @ 25-28 | 5/18-7/26 | 6/19-8/15 |
| Pileated Woodpecker | 4/22-5/20 | 1 † | 18 | Lv. nest @ 22-26 | 5/10-6/21 | 6/9-7/15 |
| Olive-sided Flycatcher | 6/9-6/27 | 1 | 14-17 | Lv. nest @ 15-19 | 6/22 | 7/10-7/24 |
| Eastern Wood-Pewee | 5/30-8/15 | 1 | 12-13 | Lv. nest @ 15-18 | 6/22-8/13 | 8/3, 9/16 |
| Yellow-bellied Flycatcher | 6/10-6/27 | 1 | 12-15 | Lv. nest @ 13 | * | 7/25 |
| Acadian Flycatcher | 5/28-7/4 | 1 | 12-14 | Lv. nest @ 13, fed by parents 12 more | 6/19 | * |
| Alder Flycatcher | 6/2-7/29 | 1 | 12 | Lv. nest @ about 14 | 6/21-8/14 | 7/11-8/24 |
| Willow Flycatcher | 6/11-7/29 | 1 | 13-15 | Lv. nest @ 12-15 | 6/21-8/14 | 7/11-8/24 |
| Least Flycatcher | 5/16-6/28 | 1-2 | 12-16 | Lv. nest @ 13-16 | 6/22-8/6 | 7/8-8/16 |
| Eastern Phoebe | 4/20-8/4 | 1-3 | 12-16 | Lv. nest @ 15-17, fed by parents 2-3 wks more | 5/13-8/10 | 6/9-8/24 |
| Great Crested Flycatcher | 5/22-7/11 | 1 | 13-15 | Lv. nest @ 14-15 | 6/10-7/26 | 6/27-9/14 |
| Eastern Kingbird | 5/20-7/18 | 1-2 | 12-16 | Lv. nest @ 13-14, fed by parents 5 wks more | 6/3-8/5 | 6/21-8/21 |
| Loggerhead Shrike | 4/18-6/28 | 1-2 | 13-16 | Lv. nest @ 20, indep. @ 26-35 | 5/18-6/25 | 5/25-7/26 |
| White-eyed Vireo | 5/17-7/17 | 1 | 12-15 | ** | 6/18 | 6/30 |
| Yellow-throated Vireo | 5/17-6/18 | 1 | 12-14 | ** | 6/16-7/30 | 7/1-8/14 |
| Blue-headed Vireo | 5/10-8/9 | 1 | 10-11 | ** | 6/7-8/13 | 6/28-8/31 |
| Warbling Vireo | 5/16-6/16 | 1 | 12 | Lv. nest @ 16 | 5/31-6/29 | 6/21-7/24 |
| Philadelphia Vireo | June-July | * | 13-14 | Lv. nest @ 13-14 | * | * |
| Red-eyed Vireo | 5/13-8/1 | 1-2 | 12-14 | Lv. nest @ 12 | 6/8-8/17 (2nd : 9/4) | 8/6-9/13 |
| Gray Jay | 3/10-4/10 | 1 | 16-18 | Lv. nest @ about 15 | * | 5/19-8/12 |

| Species | Egg Dates | # of broods | Incubation period | Nestling period (days) | Unfledged Juveniles | Fledglings |
|-------------------------|----------------------|-------------|-------------------|--|---------------------|----------------|
| Blue Jay | 4/15-6/17 | 1 † | 15-18 | Lv. nest @ 17-21, indep. in 3 wks more but may be fed longer | 5/18-7/5 | 6/1-7/31 |
| American Crow | 3/30-6/14 | 1 | 15-18 | Lv. nest @ about 5 wks | 5/1-7/28 | * |
| Fish Crow | 3/20-6/5 | 1 † | 16-18 | ** | * | * |
| Common Raven | 3/26-4/14 | 1 | 19-21 | Lv. nest @ 5-6 wks | 3/21, 4/12 | 4/17,5/30,6/14 |
| Horned Lark | 2/28-7/31 | 1-3 | 11-14 | Lv. nest @ 9-10, fly well @ 20 | 3/11-8/4 | 3/31-9/13 |
| Purple Martin | 5/21-7/13 | 1, occ. 2 | 12-20 | Lv. nest @ 24-28, roost in nest after leaving | 6/22-8/15 | 7/30-8/22 |
| Tree Swallow | 5/5-7/18 | 1-2 | 13-16 | Lv. nest @ 16-14 | 5/22-8/10 | 6/10-8/2 |
| N. Rough-winged Swallow | 5/12-7/5 | 1 | 15-16 | Lv. nest @ 18-21 | 6/14-7/11 | 7/6-7/28 |
| Bank Swallow | 5/15-7/13 | 1-2 | 12-16 | Fly @ 17-18, lv. nest 1-2 days later | 5/31-8/12 | 6/28-9/1 |
| Cliff Swallow | 5/9-7/14 | 1-2 | 12-16 | Fly @ 23, return to nest for 2-3 more | 5/29-8/19 | 6/23-8/23 |
| Barn Swallow | 5/15-8/4 | 2-3 | 13-16 | Lv. nest @ 17-24 | 5/24-8/28 | 6/25-9/22 |
| Black-capped Chickadee | 4/29-7/15 | 1 | 11-14 | Lv. nest @ 16 | 5/21-7/20 | 5/21-8/3 |
| Boreal Chickadee | 6/11-7/17 | * | ** | ** | 6/27-7/26 | 7/2-8/27 |
| Tufted Titmouse | 4/29-5/27 | 1 | 12-13 | Lv. nest @ 15-16 | 5/13-6/30 | 5/20-8/4 |
| Red-breasted Nuthatch | 4/30-6/17 | 1 | 12 | Lv. nest @ 18-21 | 5/15-7/1 | 6/8-8/18 |
| White-breasted Nuthatch | 4/13-6/6 | 1 | 12(?) | Fed for 2 wks after leaving nest | 5/8-6/11 | 6/3-6/22 |
| Brown Creeper | 4/24-6/30 | 1 | 14-15 | Lv. nest @ 14-16 | 5/27-7/28 | 6/24-8/20 |
| Carolina Wren | 4/1-8/5 | 2-3 | 12-14 | Lv. nest @ 12-14 | 4/21-10/2 | 5/8-8/29 |
| Bewick's Wren | late Mar.-early Apr. | 2-3 | about 14 | Lv. nest @ about 14, fed for 2 wks more | * | * |
| House Wren | 5/15-7/31 | 1-2 | 13-15 | Lv. nest @ 12-18, feed selves @ 13 | 5/22-8/28 | 6/26-9/11 |
| Winter Wren | 5/22-7/29 | 1-2 | 14-17 | Lv. nest @ 15-20 | 6/3-8/4 | 6/15-8/16 |
| Sedge Wren | 5/28-7/30 | 1-2 | 12-14 | Lv. nest @ 12-14 | 6/30-8/22 | 8/4-9/15 |
| Marsh Wren | 5/22-8/7 | 2-3 | 10-14 | Lv. nest @ 13-15, fed for 7 more | 6/21-8/12 | 7/2-8/31 |
| Golden-crowned Kinglet | 5/28-7/26 | 1-2 | 12-17 | ** | 6/11-7/25 | 6/17-8/30 |
| Ruby-crowned Kinglet | May-6/29 | 1-2 | 14-15 | ** | 7/2 | 7/24 |

| Species | Egg Dates | # of broods | Incubation period | Nestling period (days) | Unfledged Juveniles | Fledglings |
|--------------------------|-----------|-------------|-------------------|---|---------------------|------------|
| Blue-gray Gnatcatcher | 5/14-6/17 | 1 | 15 | Lv. nest @ 12-13, fed for up to 19 more | 6/1-7/11 | 6/28-7/25 |
| Eastern Bluebird | 4/1-8/18 | 2-3 | 12 | Lv. nest @ 15-18, male may continue to feed yg. | 4/28-9/6 | 5/10-9/17 |
| Veery | 5/15-6/25 | 1-2 | 10-12 | Lv. nest @ 10-12 | 6/14-7/22 | 6/20-7/31 |
| Bicknell's Thrush | 6/12-6/27 | 1 | 13-14 | Lv. nest @ 11-13 | 7/1-7/25 | 7/12-8/7 |
| Swainson's Thrush | 5/31-7/11 | 1 | 10-13 | Lv. nest @ 10-12 | 6/30-7/22 | 7/10-8/10 |
| Hermit Thrush | 5/10-8/24 | 2-3 | 12-13 | Lv. nest @ 10 | 5/30-8/31 | 6/9-9/23 |
| Wood Thrush | 5/14-7/7 | 1-2 | 12-14 | Feed selves @ 10, lv. nest @ 12-13 | 5/22-8/1 | 6/9-8/31 |
| American Robin | 3/23-7/19 | 2-3 | 11-14 | Lv. nest @ 14-16 | 4/21-8/30 | 5/25-9/10 |
| Gray Catbird | 5/5-8/12 | 2-3 | 10-14 | Lv. nest @ about 10 | 5/29-8/20 | 6/6-9/21 |
| Northern Mockingbird | 4/27-7/21 | 2-3 | 10-14 | Lv. nest @ 12-14 | 5/5-8/11 | 5/25-8/29 |
| Brown Thrasher | 5/6-6/26 | 1-2 | 11-14 | Lv. nest @ 9-12 | 5/19-7/29 | 6/19-7/26 |
| European Starling | 4/10-6/15 | 1-2 | 12-16 | Fed by parents for 20-22 | 5/1-7/30 | 5/19-8/30 |
| Cedar Waxwing | 6/5-9/23 | 1-2 | 12-16 | Lv. nest @ 16-18 | 6/12-10/1 | 6/16-10/8 |
| Blue-winged Warbler | 5/18-6/17 | 1 | 10-11 | Lv. nest @ 8-10 | 6/4-7/11 | 6/8-8/12 |
| Golden-winged Warbler | 5/18-6/16 | 1 | 10-11 | Lv. nest @ 10 | 6/8-7/6 | 6/27-8/6 |
| Tennessee Warbler | June-July | 1 | * | ** | * | * |
| Nashville Warbler | 5/19-6/10 | 1 | 11 | Lv. nest @ 11 | 5/30-6/22 | 6/15-8/17 |
| Northern Parula | 5/17-6/27 | 1-2 | 12-14 | ** | 6/6-7/4 | 7/4-8/5 |
| Yellow Warbler | 5/15-7/3 | 1-2 | 9-15 | Lv. nest @ 9-12 | 6/4-7/23 | 6/12-8/1 |
| Chestnut-sided Warbler | 5/20-7/25 | 1, occ. 2 | 10-13 | Lv. nest @ 10-12 | 6/15-8/6 | 6/22-8/20 |
| Magnolia Warbler | 5/25-7/11 | 1-2 | 11-13 | Lv. nest @ 8-10 | 6/5-7/24 | 6/15-8/26 |
| Cape May Warbler | 6/6-6/16 | 1 | * | ** | * | 6/23-7/4 |
| Black-thr. Blue Warbler | 5/29-7/17 | * | 12 | Lv. nest @ 10 | 6/14-7/29 | 6/22-8/14 |
| Yellow-rumped Warbler | 5/19-7/10 | 1 | 12-13 | Lv. nest @ 12-14 | 6/2-7/22 | 6/9-8/17 |
| Black-thr. Green Warbler | 5/24-7/2 | 1-2 | 12 | Lv. nest @ 8-10 | 6/11-7/29 | 6/23-8/15 |

| Species | Egg Dates | # of broods | Incubation period | Nestling period (days) | Unfledged Juveniles | Fledglings |
|-------------------------|-----------|-------------|-------------------|----------------------------------|---------------------|------------|
| Blackburnian Warbler | 6/1-6/24 | * | * | ** | 6/17-7/1 | 7/13-8/4 |
| Yellow-throated Warbler | * | * | * | ** | 7/21 | * |
| Pine Warbler | 5/4-6/6 | 1-2 | * | ** | 5/19-6/17 | 5/30-8/8 |
| Prairie Warbler | 5/25-6/29 | 1 | 12-14 | Lv. nest @ 8-10 | 6/19-7/15 | 6/30-7/14 |
| Palm Warbler | 7/8 | 1-2 (?) | 12 | Lv. nest @ 12 | * | * |
| Bay-breasted Warbler | mid-June | 1 | 12-13 | Lv. nest @ 11 | 6/25-7/6 | 7/23 |
| Blackpoll Warbler | 6/5-7/10 | * | 11 | Lv. nest @ 10-11 | * | 6/30 |
| Cerulean Warbler | 5/19-6/23 | 1 | ** | ** | 6/12-7/6 | 6/22-7/22 |
| Black-and-white Warbler | 5/10-6/30 | 1 | 11-13 | Lv. nest @ 8-12 | 6/5-7/23 | 6/19-7/31 |
| American Redstart | 5/14-7/16 | 1 | 12 | Lv. nest @ 9 | 6/4-8/5 | 6/26-8/19 |
| Prothonotary Warbler | 5/17-6/29 | 1-2 | 10-14 | Lv. nest @ 10-11 | 6/8-7/6 | 7/10-8/6 |
| Worm-eating Warbler | 5/24-6/18 | * | 13 | Lv. nest @ 10 | 6/6-7/15 | 6/16-7/29 |
| Ovenbird | 5/17-7/22 | 1-2 | 12-14 | Lv. nest @ 8-10 | 6/8-8/8 | 6/18-9/10 |
| Northern Waterthrush | 5/10-6/28 | 1 | 14 | ** | 5/24-7/5 | 6/4-7/20 |
| Louisiana Waterthrush | 4/25-6/20 | 1 | 12-14 | Lv. nest @ 10, fly @ 16 | 5/20-7/6 | 6/9-7/25 |
| Kentucky Warbler | 6/1-6/27 | 1 | 12-13 | Lv. nest @ 8-10, fed for 17 more | 6/20 | 6/29 |
| Mourning Warbler | 5/28-7/7 | 1 | 12-13 | Lv. nest @ 7-9, fly 2nd wk | 6/17-7/28 | 6/27-8/16 |
| Common Yellowthroat | 5/15-7/12 | 1-2 | 12 | Lv. nest @ 9-10 | 6/2-8/22 | 6/15-9/11 |
| Hooded Warbler | 5/25-7/10 | 1-2 | 12 | Lv. nest @ 8-9 | 6/14-8/12 | 7/8-9/10 |
| Wilson's Warbler | 8/1 | 1 | 11-13 | Lv. nest @ 10-11 | * | * |
| Canada Warbler | 5/31-7/24 | 1 | * | ** | 6/14-7/29 | 6/20-8/15 |
| Yellow-breasted Chat | 5/25-7/13 | 1 | 11-15 | Lv. nest @ 8-11 | 6/8-7/17 | 6/22 |
| Scarlet Tanager | 5/20-7/23 | 1 | 13-14 | Lv. nest @ 15 | 6/9-Aug. | 7/4-9/19 |
| Eastern Towhee | 5/15-8/4 | 1-2 | 12-13 | Lv. nest @ 8-10 | 5/18-8/15 | 6/2-8/31 |
| Chipping Sparrow | 5/2-7/19 | 1-2 | 10-14 | Lv. nest @ 9-12, fly @ 14 | 5/23-9/3 | 6/4-9/21 |

| Species | Egg Dates | # of broods | Incubation period | Nestling period (days) | Unfledged Juveniles | Fledglings |
|----------------------------|-----------|-------------|-------------------|--|---------------------|------------|
| Clay-colored Sparrow | May-June | 1-2 | 10-11 | Lv. nest @ 7-9, fed for 8 more | 6/15 | 6/20-7/15 |
| Field Sparrow | 5/16-8/17 | 2-3 | 10-13 | Lv. nest @ 7-8, fly @ 12, indep. 18-20 later | 5/26-8/20 | 6/17-6/20 |
| Vesper Sparrow | 5/5-8/16 | 1-3 | 11-13 | Lv. nest @ 9-13, depend. 21 more | 6/11-7/16 | 7/11-7/31 |
| Savannah Sparrow | 5/11-6/16 | 1-2 | 12 | ** | 5/30-7/23 | 6/12-8/30 |
| Grasshopper Sparrow | 5/17-8/2 | 1-3 | 11-12 | Lv. nest @ 9 | 6/29-8/19 | 7/21-9/5 |
| Henslow's Sparrow | 5/17-7/5 | 1-2 | 11 | Lv. nest @ 9-10 | 6/1-7/22 | 6/19-7/30 |
| Saltmarsh Sharp-tailed Sp. | 5/30-7/21 | 1 | 11 | Lv. nest @ 10, depend. 20 more | 6/11-8/5 | 8/1 |
| Seaside Sparrow | 5/25-7/10 | 1-2 | 11-12 | Lv. nest @ 9, depend. 21 more | 6/8-7/23 | * |
| Song Sparrow | 4/17-8/13 | 1-3 | 12-14 | Lv. nest @ 10, fly @ 17, depend. 18-20 more | 5/5-9/3 | 5/18-9/23 |
| Lincoln's Sparrow | 6/10-6/28 | 1-2 | 13-14 | Lv. nest @ 10-12 | 6/18 | 7/21 |
| Swamp Sparrow | 5/5-7/22 | 1-2 | 12-15 | Lv. nest @ 9-10 | 5/21-7/30 | 6/28-8/3 |
| White-throated Sparrow | 5/30-7/21 | 1-2 † | 11-14 | Lv. nest @ 7-12, fly 3 later | 6/14-8/16 | 6/27-8/31 |
| Dark-eyed Junco | 4/28-8/13 | 1-3 | 11-13 | Lv. nest @ 10-13, depend. 21 more | 5/16-8/17 | 6/7-8/27 |
| Northern Cardinal | 4/10-9/9 | 2-3 | 12 | Lv. nest @ 9-11, fly well @ 19, indep. @ 38-45 | 4/23-9/23 | 4/30-9/23 |
| Rose-breasted Grosbeak | 5/6-7/19 | 1-2 | 12-14 | Lv. nest @ 9-12, depend. 3 wks more | 5/30-7/26 | 6/11-8/15 |
| Blue Grosbeak | 6/17 | 1-2 | 11 | Lv. nest @ 9-13 | * | 7/1 |
| Indigo Bunting | 5/20-8/3 | 1-2 | 12-13 | Lv. nest @ 9-13 | 6/18-8/14 | 6/21-9/20 |
| Dickcissel | May-6/29 | 1-2 | 11-13 | Lv. nest @ 7-10, fly @ 11-12 | * | * |
| Bobolink | 5/18-6/20 | 1 | 10-13 | Lv. nest @ 10-14, fly a few days later | 5/30-7/20 | * |
| Red-winged Blackbird | 4/26-7/9 | 1-2, occ. 3 | 10-15 | Lv. nest @ 10-11, stay near nest 10 more | 5/29-7/19 | 6/20-7/30 |
| Eastern Meadowlark | 5/9-8/1 | 1-2 | 13-17 | Lv. nest @ 11-12 | 5/24-8/12 | 6/5-8/24 |
| Western Meadowlark | May-July | 1-2 | 13-15 | Lv. nest @ 12, fed for a few days more | 6/23 | 6/26 |
| Rusty Blackbird | 5/17-6/15 | 1 | 14 | Lv. nest @ 13 | 5/30-7/8 | 7/7-7/24 |
| Brewer's Blackbird | * | 2 | 12-13 | Lv. nest @ 13, fed for further 12-13 | * | * |
| Common Grackle | 4/12-6/4 | 1-2 | 12-14 | Lv. nest @ 10-17, near nest only 2-3 | 5/3-6/28 | 5/18-7/29 |

| Species | Egg Dates | # of broods | Incubation period | Nestling period (days) | Unfledged Juveniles | Fledglings |
|------------------------|-------------|-------------|-------------------|---|-----------------------------|------------|
| Boat-tailed Grackle | 5/31-6/15 | 1-2-3 | 13 | Lv. nest @ 20-23 | 6/9-7/11 | 6/23, 7/29 |
| Brown-headed Cowbird | 4/23-7/31 | * | 10-12 | Lv. nest @ 10, usually before host yg., fed for 2 wks | 5/19-8/2 | 5/30-8/19 |
| Orchard Oriole | 5/18-6/22 | 1 | 12-15 | Lv. nest @ 11-14 | 5/28-7/26 | 6/19-8/21 |
| Baltimore Oriole | 5/15-6/13 | 1 | 14 | ** | 6/6-7/9 | 6/15-7/14 |
| Purple Finch | 5/13-7/16 | 1 | 13 | Lv. nest @ 14 | 6/2-7/24 | 6/10-9/3 |
| House Finch | 4/11-8/6 | 2-3 | 12-14 | Lv. nest @ 14-16 | 4/24-8/23 | 5/18-8/11 |
| Red Crossbill | 3/30-4/30 | 1-2 | 12-16 | Lv. nest @ 17-23, depend. 3-4 wks more | 4/24-5/27 | 3/29-6/19 |
| White-winged Crossbill | mid-Jan-Aug | * | * | ** | * 2/4,6/15,9/11,10/10,11/25 | |
| Pine Siskin | 3/15-5/25 | 1-2 | 13-14 | Lv. nest @ 14-15 | 4/13-6/10 | 4/17-7/16 |
| American Goldfinch | 6/25-9/16 | 1 | 12-14 | Lv. nest @ 11-17 | 7/24-9/30 | 8/17-10/10 |
| Evening Grosbeak | 5/19-6/4 | * | 12-14 | Lv. nest @ 13-14 | 5/31-6/17 | 6/15-9/5 |
| House Sparrow | 3/23-7/16 | 2-3 | 11-14 | Lv. nest @ 15 | 4/15-8/4 | 6/24-9/6 |

- * No New York data available.
- ** No information from references checked.
- (?) Probable.
- † If brood is lost, it usually will be replaced.

Birds Documented by the 2000-2005 New York State Breeding Bird Atlas in Block 6349A

| Common Name | Scientific Name |
|-----------------------------|-------------------------------|
| Canada Goose | <i>Branta canadensis</i> |
| American Black Duck | <i>Anas rubripes</i> |
| Mallard | <i>Anas platyrhynchos</i> |
| Great Egret | <i>Ardea alba</i> |
| Snowy Egret | <i>Egretta thula</i> |
| Tricolored Heron | <i>Egretta tricolor</i> |
| Green Heron | <i>Butorides virescens</i> |
| Black-crowned Night-Heron | <i>Nycticorax nycticorax</i> |
| Glossy Ibis | <i>Plegadis falcinellus</i> |
| Osprey | <i>Pandion haliaetus</i> |
| Northern Harrier | <i>Circus cyaneus</i> |
| Clapper Rail | <i>Rallus longirostris</i> |
| Piping Plover | <i>Charadrius melodus</i> |
| American Oystercatcher | <i>Haematopus palliatus</i> |
| Willet | <i>Tringa semipalmata</i> |
| Herring Gull | <i>Larus argentatus</i> |
| Great Black-backed Gull | <i>Larus marinus</i> |
| Least Tern | <i>Sternula antillarum</i> |
| Roseate Tern | <i>Sterna dougallii</i> |
| Common Tern | <i>Sterna hirundo</i> |
| Black Skimmer | <i>Rynchops niger</i> |
| Mourning Dove | <i>Zenaida macroura</i> |
| Willow Flycatcher | <i>Empidonax traillii</i> |
| Eastern Phoebe | <i>Sayornis phoebe</i> |
| Eastern Kingbird | <i>Tyrannus tyrannus</i> |
| American Crow | <i>Corvus brachyrhynchos</i> |
| Fish Crow | <i>Corvus ossifragus</i> |
| Horned Lark | <i>Eremophila alpestris</i> |
| Tree Swallow | <i>Tachycineta bicolor</i> |
| Barn Swallow | <i>Hirundo rustica</i> |
| Marsh Wren | <i>Cistothorus palustris</i> |
| American Robin | <i>Turdus migratorius</i> |
| Gray Catbird | <i>Dumetella carolinensis</i> |
| Northern Mockingbird | <i>Mimus polyglottos</i> |
| Brown Thrasher | <i>Toxostoma rufum</i> |
| European Starling | <i>Sturnus vulgaris</i> |
| Yellow Warbler | <i>Dendroica petechia</i> |

| | |
|--|--------------------------------|
| Common Yellowthroat | <i>Geothlypis trichas</i> |
| Eastern Towhee | <i>Pipilo erythrophthalmus</i> |
| Saltmarsh Sparrow | <i>Ammodramus caudacutus</i> |
| Seaside Sparrow | <i>Ammodramus maritimus</i> |
| Song Sparrow | <i>Melospiza melodia</i> |
| Northern Cardinal | <i>Cardinalis cardinalis</i> |
| Red-winged Blackbird | <i>Agelaius phoeniceus</i> |
| Common Grackle | <i>Quiscalus quiscula</i> |
| Boat-tailed Grackle | <i>Quiscalus major</i> |
| Brown-headed Cowbird | <i>Molothrus ater</i> |
| House Finch | <i>Carpodacus mexicanus</i> |
| American Goldfinch | <i>Spinus tristis</i> |
| House Sparrow | <i>Passer domesticus</i> |
| Notes: Boldface indicates the subset of species considered to have the potential to nest within the staging area on the basis of their habitat associations and sensitivity to disturbance. | |
| Sources: 2000-2005 New York State Breeding Bird Atlas Results for Block 6349A. | |

Literature Cited:

Sommers, L.A. 2008. Appendix 2: Breeding season table. Pp. 635-641 in: The second atlas of breeding birds in New York State (K.J. McGowan and K. Corwin, eds.). Cornell University Press, Ithaca, NY.



U.S. Fish and Wildlife Service

Trust Resources List

This resource list is to be used for planning purposes only — it is not an official species list.

Endangered Species Act species list information for your project is available online and listed below for the following FWS Field Offices:

Long Island Ecological Services Field Office
340 SMITH ROAD
SHIRLEY, NY 11967
(631) 286-0485

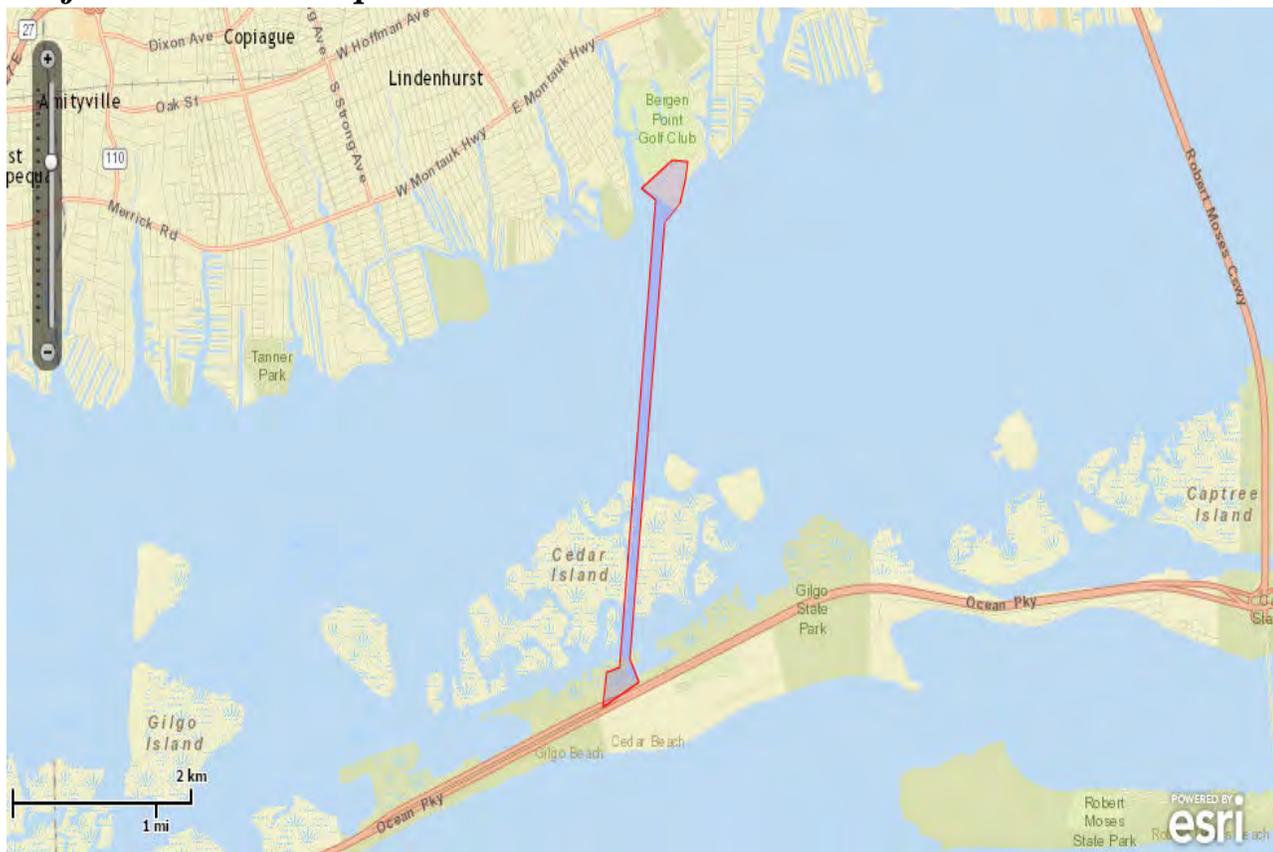
Project Name:

Bergen Point



Trust Resources List

Project Location Map:



Project Counties:

Suffolk, NY

Geographic coordinates (Open Geospatial Consortium Well-Known Text, NAD83):

MULTIPOLYGON (((-73.3422081 40.6745036, -73.3401567 40.6743734, -73.3405 40.6729412, -73.3411867 40.6711185, -73.3432466 40.6695561, -73.3478815 40.6353042, -73.3466798 40.6334804, -73.3514778 40.6315263, -73.3509628 40.634262, -73.3492462 40.6346528, -73.3444397 40.6713789, -73.3463279 40.6722903, -73.3422081 40.6745036)))

Project Type:

Wastewater Pipeline



Trust Resources List

Endangered Species Act Species List (USFWS Endangered Species Program).

There are a total of 6 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fishes may appear on the species list because a project could cause downstream effects on the species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section below for critical habitat that lies within your project area. Please contact the designated FWS office if you have questions.

Species that should be considered in an effects analysis for your project:

| Birds | Status | | Has Critical Habitat | Contact |
|--|------------|------------------------------|--|--|
| Piping Plover (<i>Charadrius melodus</i>) Population: except Great Lakes watershed | Threatened | species info | Final designated critical habitat Final designated critical habitat | Long Island Ecological Services Field Office |
| Red Knot (<i>Calidris canutus rufa</i>) Population: | Threatened | species info | | Long Island Ecological Services Field Office |
| Roseate tern (<i>Sterna dougallii dougallii</i>) Population: northeast U.S. nesting pop. | Endangered | species info | | Long Island Ecological Services Field Office |
| Flowering Plants | | | | |
| Sandplain gerardia (<i>Agalinis acuta</i>) | Endangered | species info | | Long Island Ecological Services Field Office |
| Seabeach amaranth (<i>Amaranthus pumilus</i>) | Threatened | species info | | Long Island Ecological Services Field Office |
| Mammals | | | | |
| Northern long-eared Bat (<i>Myotis septentrionalis</i>) Population: | Threatened | species info | | Long Island Ecological Services Field Office |

Critical habitats within your project area:

There are no critical habitats within your project area.



Trust Resources List

FWS National Wildlife Refuges ([USFWS National Wildlife Refuges Program](#))

There are no refuges found within the vicinity of your project.

FWS Migratory Birds ([USFWS Migratory Bird Program](#))

The protection of birds is regulated by the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. For more information regarding these Acts see: <http://www.fws.gov/migratorybirds/RegulationsandPolicies.html>.

All project proponents are responsible for complying with the appropriate regulations protecting birds when planning and developing a project. To meet these conservation obligations, proponents should identify potential or existing project-related impacts to migratory birds and their habitat and develop and implement conservation measures that avoid, minimize, or compensate for these impacts. The Service's Birds of Conservation Concern (2008) report identifies species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become listed under the Endangered Species Act as amended (16 U.S.C 1531 et seq.).

For information about Birds of Conservation Concern, go to:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BCC.html>.

To search and view summaries of year-round bird occurrence data within your project area, go to the Avian Knowledge Network Histogram Tool links in the Bird Conservation Tools section at: <http://www.fws.gov/migratorybirds/CCMB2.htm>.

For information about conservation measures that help avoid or minimize impacts to birds, please visit:

<http://www.fws.gov/migratorybirds/CCMB2.htm>.

Migratory birds of concern that may be affected by your project:

There are **25** birds on your Migratory birds of concern list. The underlying data layers used to generate the migratory bird list of concern will continue to be updated regularly as new and better information is obtained. User feedback is one method of identifying any needed improvements. Therefore, users are encouraged to submit comments about any questions regarding species ranges (e.g., a bird on the USFWS BCC list you know does not occur in the specified location appears on the list, or a BCC species that you know does occur there is not appearing on the list). Comments should be sent to [the ECOS Help Desk](#).



Trust Resources List

| Species Name | Bird of Conservation Concern (BCC) | Species Profile | Seasonal Occurrence in Project Area |
|---|------------------------------------|------------------------------|-------------------------------------|
| American Oystercatcher (<i>Haematopus palliatus</i>) | Yes | species info | Year-round |
| American bittern (<i>Botaurus lentiginosus</i>) | Yes | species info | Breeding |
| Bald eagle (<i>Haliaeetus leucocephalus</i>) | Yes | species info | Year-round |
| Black rail (<i>Laterallus jamaicensis</i>) | Yes | species info | Breeding |
| Black-billed Cuckoo (<i>Coccyzus erythrophthalmus</i>) | Yes | species info | Breeding |
| Blue-winged Warbler (<i>Vermivora pinus</i>) | Yes | species info | Breeding |
| Canada Warbler (<i>Wilsonia canadensis</i>) | Yes | species info | Breeding |
| Fox Sparrow (<i>Passerella iliaca</i>) | Yes | species info | Wintering |
| Great Shearwater (<i>Puffinus gravis</i>) | Yes | species info | Migrating |
| Gull-billed Tern (<i>Gelochelidon nilotica</i>) | Yes | species info | Breeding |
| Horned Grebe (<i>Podiceps auritus</i>) | Yes | species info | Wintering |
| Hudsonian Godwit (<i>Limosa haemastica</i>) | Yes | species info | Migrating |
| Least Bittern (<i>Ixobrychus exilis</i>) | Yes | species info | Breeding |
| Least tern (<i>Sterna antillarum</i>) | Yes | species info | Breeding |
| Pied-billed Grebe (<i>Podilymbus podiceps</i>) | Yes | species info | Year-round |
| Prairie Warbler (<i>Dendroica discolor</i>) | Yes | species info | Breeding |
| Purple Sandpiper (<i>Calidris maritima</i>) | Yes | species info | Wintering |
| Red Knot (<i>Calidris canutus rufa</i>) | Yes | species info | Wintering |



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| | | | |
|--|-----|------------------------------|------------|
| Rusty Blackbird (<i>Euphagus carolinus</i>) | Yes | species info | Wintering |
| Saltmarsh Sparrow (<i>Ammodramus caudacutus</i>) | Yes | species info | Breeding |
| Seaside Sparrow (<i>Ammodramus maritimus</i>) | Yes | species info | Year-round |
| Short-eared Owl (<i>Asio flammeus</i>) | Yes | species info | Wintering |
| Snowy Egret (<i>Egretta thula</i>) | Yes | species info | Breeding |
| Upland Sandpiper (<i>Bartramia longicauda</i>) | Yes | species info | Breeding |
| Wood Thrush (<i>Hylocichla mustelina</i>) | Yes | species info | Breeding |

NWI Wetlands ([USFWS National Wetlands Inventory](#)).

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and status of wetlands in the U.S., via the National Wetlands Inventory Program (NWI). In addition to impacts to wetlands within your immediate project area, wetlands outside of your project area may need to be considered in any evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local hydrology within, and outside of, your immediate project area). It may be helpful to refer to the USFWS National Wetland Inventory website. The designated FWS office can also assist you. Impacts to wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes. Project Proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

Data Limitations, Exclusions and Precautions

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work



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conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery and/or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Exclusions - Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Precautions - Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

IPaC is unable to display wetland information at this time.

BACKGROUND

In its July 9, 2015 response to GOSR's May 6, 2015 request for consultation with the US Fish and Wildlife Service (USFWS) pursuant to the Migratory Bird Treaty Act (MBTA) as to whether other laws under USFWS responsibility, USFWS recommended that GOSR undertake breeding bird survey prior to construction and apply the time of year restrictions found in the New York breeding bird table provided by the USFWS (e.g., dates for egg laying, unfledged juveniles and fledged juveniles, and nesting duration) for those species observed during the breeding season at the project site. As an alternative to a breeding bird survey, the USFWS offered GOSR the option of consulting the New York State Department of Environmental Conservation (NYSDEC) Breeding Bird Atlas database to determine likely breeders in the project area and use the time of year breeding periods identified in the table provided by the USFWS to plan construction activities outside of the breeding season. The memorandum identifies the species from the Breeding Bird Atlas Block (Block 6349A) with the potential to breed within the staging area on Jones Beach Island on the basis of existing habitat information, and on the basis of the USFWS table, identifies the period during which breeding for these species may occur, and recommended measures to minimize potential impacts to bird species protected under the MBTA.

ANALYSIS

The 2000-2005 New York State Breeding Bird Atlas documented 50 species of birds as confirmed or possibly/probably breeding in the census block in which the proposed staging area at the Jones Beach Island is located (Block 6349A). This 3 square mile census block encompasses numerous habitat types, including sandy beach, salt marsh, mudflat, coastal scrub/shrub, stunted maritime forest, open marine and estuarine waters, and dredge spoil islands. As such, suitable nesting habitat for many of the species documented within the census block does not occur within the approximately 2 to 2.5 acres staging area on Jones Beach Island. The staging area primarily consists of Phragmites-dominated marsh with small areas of spartina salt marsh, and a narrow band of coastal woodland and scrub/shrub along Ocean Parkway. The staging area is nearly 200 feet inland from the nearest water's edge at its closest point and therefore lacks nesting habitat for many of the coastal waterbirds that breed on Long Island. The woodland is narrow and has a sharp edge with a major road on its southern side, and is therefore unsuitable for supporting forest interior species and birds that are intolerant of roadside edge conditions. On the basis of their habitat associations and sensitivity to disturbance, the following birds documented in Block 6349A by the 2000-2005 Breeding Bird Atlas are considered to have the potential to nest within the 2 to 2.5 acres staging area: Canada goose, mourning dove, willow flycatcher, eastern phoebe, eastern kingbird, American crow, fish crow, marsh wren, American robin, gray catbird, northern mockingbird, brown thrasher, European starling, yellow warbler, common yellowthroat, eastern towhee, saltmarsh sparrow, seaside sparrow, song sparrow, red-winged blackbird, northern cardinal, common grackle, brown-headed cowbird, house finch, American goldfinch, and house sparrow (scientific names shown in **Table 1**).

Each of these species, with the exception of the non-native European starling and house sparrow, is considered a migratory bird by, and protected under, the MBTA. Because of the diversity of species that could nest within the site and the long breeding period of some of these species (e.g., mourning dove, which can nest in New York anywhere between March and

October), nesting activity of birds protected under the MBTA could be occurring within the staging area at any given time outside of the winter months. Based on the nesting phenology of these and most other breeding bird species of Long Island, the period during which no nesting activity would occur within the staging area is from late October through the end of February (Sommers 2008). Without consideration of the mourning dove, which is an extremely abundant, generalist species that is ubiquitous throughout the eastern U.S., the period during which nesting activity may be occurring within the staging area is likely from April through August.

By clearing the staging area between October and March, there would be no potential for active nests to be lost or any other direct impacts to these species to occur. During construction, some activities within the staging area could generate noise disturbances that could displace some birds from nesting in the immediately adjacent areas and require them to find alternative nesting habitat elsewhere. Given the abundance of comparable Phragmites-dominated marsh and fragmented woodland habitat nearby, these individuals would not be expected to have difficulty acquiring alternative nesting sites. Any such displacement of birds from the adjacent areas would also be temporary. Following construction activity, the staging area would be restored and the composition of the breeding bird community within and adjacent to the site would be expected to return to its current state. Overall, by limiting clearing to the non-breeding period and by restoring the site after construction is complete, use of this area as a staging site would not have significant adverse impacts to populations of bird species that are protected under the MBTA.

Table 1

Birds Documented by the 2000-2005 New York State Breeding Bird Atlas in Block 6349A

| Common Name | Scientific Name |
|-----------------------------|-------------------------------|
| Canada Goose | <i>Branta canadensis</i> |
| American Black Duck | <i>Anas rubripes</i> |
| Mallard | <i>Anas platyrhynchos</i> |
| Great Egret | <i>Ardea alba</i> |
| Snowy Egret | <i>Egretta thula</i> |
| Tricolored Heron | <i>Egretta tricolor</i> |
| Green Heron | <i>Butorides virescens</i> |
| Black-crowned Night-Heron | <i>Nycticorax nycticorax</i> |
| Glossy Ibis | <i>Plegadis falcinellus</i> |
| Osprey | <i>Pandion haliaetus</i> |
| Northern Harrier | <i>Circus cyaneus</i> |
| Clapper Rail | <i>Rallus longirostris</i> |
| Piping Plover | <i>Charadrius melodus</i> |
| American Oystercatcher | <i>Haematopus palliatus</i> |
| Willet | <i>Tringa semipalmata</i> |
| Herring Gull | <i>Larus argentatus</i> |
| Great Black-backed Gull | <i>Larus marinus</i> |
| Least Tern | <i>Sternula antillarum</i> |
| Roseate Tern | <i>Sterna dougallii</i> |
| Common Tern | <i>Sterna hirundo</i> |
| Black Skimmer | <i>Rynchops niger</i> |
| Mourning Dove | <i>Zenaida macroura</i> |
| Willow Flycatcher | <i>Empidonax traillii</i> |
| Eastern Phoebe | <i>Sayornis phoebe</i> |
| Eastern Kingbird | <i>Tyrannus tyrannus</i> |
| American Crow | <i>Corvus brachyrhynchos</i> |
| Fish Crow | <i>Corvus ossifragus</i> |
| Horned Lark | <i>Eremophila alpestris</i> |
| Tree Swallow | <i>Tachycineta bicolor</i> |
| Barn Swallow | <i>Hirundo rustica</i> |
| Marsh Wren | <i>Cistothorus palustris</i> |
| American Robin | <i>Turdus migratorius</i> |
| Gray Catbird | <i>Dumetella carolinensis</i> |
| Northern Mockingbird | <i>Mimus polyglottos</i> |
| Brown Thrasher | <i>Toxostoma rufum</i> |
| European Starling | <i>Sturnus vulgaris</i> |
| Yellow Warbler | <i>Dendroica petechia</i> |

| | |
|--|--------------------------------|
| Common Yellowthroat | <i>Geothlypis trichas</i> |
| Eastern Towhee | <i>Pipilo erythrophthalmus</i> |
| Saltmarsh Sparrow | <i>Ammodramus caudacutus</i> |
| Seaside Sparrow | <i>Ammodramus maritimus</i> |
| Song Sparrow | <i>Melospiza melodia</i> |
| Northern Cardinal | <i>Cardinalis cardinalis</i> |
| Red-winged Blackbird | <i>Agelaius phoeniceus</i> |
| Common Grackle | <i>Quiscalus quiscula</i> |
| Boat-tailed Grackle | <i>Quiscalus major</i> |
| Brown-headed Cowbird | <i>Molothrus ater</i> |
| House Finch | <i>Carpodacus mexicanus</i> |
| American Goldfinch | <i>Spinus tristis</i> |
| House Sparrow | <i>Passer domesticus</i> |
| Notes: Boldface indicates the subset of species considered to have the potential to nest within the staging area on the basis of their habitat associations and sensitivity to disturbance. | |
| Sources: 2000-2005 New York State Breeding Bird Atlas Results for Block 6349A. | |

Literature Cited:

Sommers, L.A. 2008. Appendix 2: Breeding season table. Pp. 635-641 in: The second atlas of breeding birds in New York State (K.J. McGowan and K. Corwin, eds.). Cornell University Press, Ithaca, NY.

APPENDIX D

Construction Impact Analysis

ANTICIPATED CONSTRUCTION IMPACT ANALYSIS

As is typical with construction projects, during periods of construction activity there would be some disruption to the nearby area. This disruption would be temporary in nature, and would have limited effects given that most construction activities would take place within construction staging and laydown areas that would be carefully managed and isolated from the general public. This section summarizes the construction program for the proposed project and assesses the potential for significant adverse impacts to occur as a result of construction activities.

DESCRIPTION OF CONSTRUCTION PHASING AND ACTIVITIES

Construction of the proposed project would require approximately three years—from 2016 to 2019—and would entail the following primary construction tasks: site preparation; shaft construction; tunnel construction, connection of the new outfall segment and site restoration. First, the project area would be prepared for construction, including site clearing activities and establishment of staging and laydown areas. An entry shaft for the Tunnel Boring Machine (TBM) would then be constructed at the Bergen Point WWTP to allow excavation and lining of the new outfall tunnel under the Great South Bay. Finally, the TBM would be extracted through an exit shaft that would be constructed on Jones Beach Island, and the new outfall would be connected to the WWTP and the existing portion of the ocean outfall. These construction stages are described in greater detail below.

Site Preparation

Site preparation work would prepare the project area for construction and would involve site clearing activities and the establishment of staging areas for a new 35-foot diameter TBM entry shaft at the WWTP site and a new 30-foot diameter exit shaft at Gilgo State Park on Jones Beach Island. The staging area at the WWTP would be approximately 2.5 to 3 acres and the staging area on Jones Beach Island would be approximately 2 to 2.5 acres. Appropriate equipment, including, e.g., dunnage or low ground pressure equipment would be used to the extent practicable for activities within the wetlands areas on Jones Beach Island; such equipment is designed to have its weight spread over a larger area to reduce soil compaction and other impacts to soft terrain. While the entry shaft would remain once construction is complete the staging areas would be restored to pre-construction conditions, and all disturbed areas on Jones Beach Island will be revegetated and restored. The staging area at the WWTP would be established at the beginning of the construction period whereas the staging area on Jones Beach Island, which is needed for the removal of the TBM and connection to the existing ocean outfall, would likely be established later in the construction period. Site clearing activities are expected to take approximately one month to complete at each site.

Since site clearing activities on Jones Beach Island would require disturbance to existing habitat, and the Migratory Bird Treaty Act (MBTA) requires protection of the bird nesting

activity, site clearing activities on Jones Beach Island would take place only between November 1 and February 28.

Shaft Construction

The TBM entry and exit shafts would be constructed using either ground freezing techniques or through the installation of secant piles, and would extend to a depth of approximately 80 to 100 feet below the existing ground surface. Ground freezing is the preferred method for the entry shaft at the WWTP site and would involve the installation of freeze pipes to circulate a cooling medium (e.g., calcium chloride) in a closed system to freeze the ground. The frozen earth wall eliminates the need for dewatering and provides lateral support of the excavation during shaft construction. On Jones Beach Island—due to limited access to electrical grid power in the vicinity of the proposed exit shaft, and the undesirability from an environmental perspective of using diesel-power electrical generators to power ground freezing equipment—installation of secant piles is the preferred method of shaft construction. The secant pile method involves the installation of concrete piles with an augered drill to form the perimeter wall of the shaft. Overall, ground freezing at the WWTP site would take up to three to four months to complete, whereas secant pile installation on Jones Beach Island would require approximately two to three months.

Once structural support for shaft construction is achieved as described above, an excavator would be used to dig the entry and exit shafts. The excavated material (muck) would be temporarily stored on-site before being loaded onto haul trucks for transport to a licensed disposal facility. All excavated soil requiring off-site disposal would be handled and disposed of in accordance with applicable regulatory requirements, including for contaminated soils should any be encountered. A crane would also be located adjacent to each shaft to facilitate the transfer of materials and equipment. The bottom of the entry shaft at the WWTP site would likely include a tail tunnel dug in the opposite direction to that of tunnel excavation, in order to provide additional storage space for materials and equipment as well as sufficient area for the TBM to be lowered into the shaft and assembled. Entry shaft construction would require approximately six months and exit shaft construction would require approximately three to four months (also in addition to the duration of secant pile installation), due to the exit shaft's smaller diameter (5 feet less) and shallower depth (13 feet less), as well as the absence of a tail tunnel.

Tunnel Construction

Once the TBM is lowered into the entry shaft and assembled, construction of the approximately 10-foot inner diameter, 14,200-foot long tunnel would begin. A TBM's drilling head is outfitted with numerous rotating, hardened steel roller bits, which cut as they rotate, producing a circular tunnel. Behind the drilling head, hydraulic jacks press against the newly excavated tunnel in order to move the TBM forward; various compartments containing computerized control rooms and trailing gear on wheels support the drilling operations; and a conveyor belt and muck carts transport excavated material back to the entry shaft and up to

the surface. As with the shaft construction described above, muck generated by tunnel excavation would be temporarily stored on-site before being loaded onto haul trucks for transport to a licensed disposal facility. All excavated soil requiring off-site disposal would be handled and disposed of in accordance with applicable regulatory requirements, including for contaminated soils should any be encountered.

As a TBM advances, it also installs the tunnel lining—which is composed of pre-cast concrete panels that fit together to form a ring—against the newly excavated tunnel wall. As each segment of tunnel lining is placed, the void between the panels and the tunnel face is filled with grout, which is injected by the TBM under high pressure in order to create an effective seal and prevent leakage. The grout needed for the lining of the new outfall tunnel would either be supplied by concrete trucks traveling to and from the WWTP, or by a concrete batch plant that would be constructed on-site.

Finally, once the new tunnel is complete, the TBM would be dismantled and removed through the exit shaft. Overall, tunnel construction activities are expected to have a total duration of approximately one and a half to two years.

Connection to Existing Outfall

The newly constructed outfall segment under the Great South Bay would be connected to the existing outfall segment that extends from Jones Beach Island south into the Atlantic Ocean. This connection would be made just north of Ocean Parkway. A bypass system with line stops would be installed around the connection point to ensure that operation of the existing outfall would not be interrupted during the connection of the new outfall pipe to the existing outfall. Overall, this connection would require approximately four months to complete.

LEVEL OF CONSTRUCTION ACTVIITY

The intensity of construction activities would vary over time, as described in greater detail below.

Hours of Work

The stages of construction dealing with site preparation, shaft construction, and connection to the existing outfall would utilize one eight-hour shift, five days per week. Tunnel construction is anticipated to occur 24 hours per day using either two or three shift , seven days per week (six days of tunneling work and one day for repair and maintenance of the TBM and other equipment). This activity will not result in noticeable noise impacts beyond truck traffic, which will be limited to 7 AM to 8 PM.

It is anticipated that construction worker shifts for site preparation, shaft construction, and connection to the existing outfall would likely occur from 7 AM to 3 PM, Monday through Friday. Construction worker shifts (3 shifts) for tunnel construction are generally expected to be 7 AM to 3 PM for the first shift, 3 PM to 11 PM for the second shift, and 11 PM to 7 AM for

the third shift. If two shifts are used for tunnel construction, worker shifts are generally expected to be 7 AM to 7 PM for the first shift and 7 PM to 7 AM for the second shift.

Worker and Truck Projections

The number of daily on-site workers and associated vehicle trips, as well as the number of expected truck trips would vary greatly depending on the stage of construction. To assess the potential worst-case scenario, the maximum numbers of daily workers and truck trips over the approximately three-year-long overall construction period were estimated, based on the amount of material and equipment to be brought to and from the site, the average truck capacity, and the likely activities expected to occur during each construction stage.

Based on these calculations, approximately 40 to 50 workers are expected to be on-site daily during peak construction activities, which would occur during the tunnel construction stage. This construction stage also has the greatest number of anticipated daily truck trips, due to the delivery of materials to, and hauling of muck from the project site. The total estimated maximum daily truck trips during this peak construction period would be approximately 13-17 truck trips per day, with approximately 8 to 10 daily muck hauling trips and 5 to 7 material delivery trips.

PROBABLE IMPACTS OF PROJECT CONSTRUCTION ACTIVITIES

Construction of the proposed project may result in temporary disruptions in the general vicinity of the project site. The analysis presented below examines these potential effects for all of the environmental areas that have the potential to be affected—transportation, air quality, noise, natural resources, water supply, solid waste disposal, and stormwater management. No potential adverse effects are expected in any other environmental categories.

Transportation

As mentioned above, during peak construction activities associated with the tunnel construction stage, it is estimated that approximately 40 to 50 workers would commute to and from the project site¹. By applying an auto vehicle occupancy rate of 1.25 persons (based on the latest available U.S Census data for workers in the construction and excavation industry near the project site), an estimated 32 to 40 peak hour worker vehicle trips would access the WWTP site during peak construction activities. Each vehicle is expected to make two trips per workday – one arrival (during the hour before the work shift starts) and one departure (during the hour after the shift ends). Since tunnel construction is anticipated to occur 24 hours a day, construction worker arrival and departure trips (using 3 shifts) are expected to take place from 6 AM to 7AM and 3PM to 4PM for the first shift, 2PM to 3PM and 11PM to 12 AM for the second shift, and 10PM to 11PM and 7AM to 8AM for the third shift. Given these construction

¹ Parking for all worker vehicles would be provided at the WWTP.

hours, the majority of worker trips would occur during off-peak travel times and therefore would likely not adversely affect the commuter peak hours of 8:00 AM to 9:00 AM and 5:00 PM to 6:00 PM.

During tunnel construction, approximately 13 to 17 construction-related truck trips per day would be generated by material delivery to, and muck hauling from the staging area at the WWTP site. These truck trips would be distributed throughout the work day. Moreover, it is expected that only a limited number of trucks would travel to or from the project site during the commuter peak hours. To the greatest extent practicable, construction trucks would use nearby State routes (e.g., NYS Route 27, NYS Route 27A, NYS Route 109, and NYS Route 909D [Ocean Parkway]) to travel to and from the project site, and would minimize the use of County and Town roads (with the exception of County Route 96 where the access point to the WWTP site is located). These nearby State routes are already heavily traveled and the construction-generated traffic would therefore likely represent a small increment in comparison to existing traffic volumes.

Based on the relatively modest increase in vehicular trips due to construction activities, the temporary nature of the proposed activities, and the expectation that construction-related worker and truck trips would primarily occur outside of commuter peak hours, the tunnel construction stage of the proposed project is not expected to result in any significant adverse transportation impacts. All other stages of construction would generate fewer vehicular and truck trips, and would have shorter durations. Finally, if required, construction traffic management plans would be developed in consultation with affected stakeholders in order to minimize any traffic-related disturbances during the proposed construction period.

Based on the information and analysis presented above, construction activities associated with the proposed project are not expected to result in any significant adverse transportation impacts, and no further analysis is required.

Air Quality

Emissions from on-site construction equipment and on-road construction vehicles, as well as dust-generating construction activities, have the potential to affect air quality. In general, much of the heavy equipment used in construction have diesel-powered engines that produce nitrogen oxides (NO_x) and particulate matter (PM). Fugitive dust generated by construction activities also contains particulate matter. Finally, gasoline engines produce relatively high levels of carbon monoxide (CO). As a result, the primary air pollutants of concern for construction activities include nitrogen dioxide (NO₂), particulate matter with an aerodynamic diameter of less than or equal to 10 micrometers (PM₁₀), particulate matter with an aerodynamic diameter of less than or equal to 2.5 micrometers (PM_{2.5}), and CO. As required by EPA regulations, ultra-low-sulfur diesel (ULSD) fuel would be used for all construction-related vehicles and non-road construction equipment. Since all diesel engines would use ULSD, sulfur dioxide (SO₂) emissions would be negligible.

The analyses presented in this section focus on the potential for local (microscale) impacts near the project area, and on the potential region-wide (mesoscale) change in emissions due to construction of the proposed project.

Air Quality Regulations, Standards, and Benchmarks

As required by the Clean Air Act (CAA), primary and secondary National Ambient Air Quality Standards (NAAQS) have been established for six major (or criteria) air pollutants: CO, ozone, respirable particulate matter (both PM_{2.5} and PM₁₀), SO₂, and lead. The primary standards represent levels that are required to protect public health, while allowing for an adequate margin of safety. The secondary standards are intended to protect the nation's welfare, and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the environment. The NAAQS are presented in **Table 1**.

NAAQS Attainment Status and State Implementation Plans

The CAA, as amended in 1990, defines non-attainment areas (NAA) as geographic regions that have been designated as not meeting one or more of the NAAQS. When an area is designated as non-attainment by EPA, the State is required to develop and implement a State Implementation Plan (SIP), which delineates how the NAAQS will be achieved under the deadlines established by the CAA, followed by a plan for maintaining attainment status.

Suffolk County is in attainment for CO, NO₂, SO₂, and PM₁₀, is an attainment maintenance area for PM_{2.5}, and a moderate non-attainment area for ozone.

Table 1
National Ambient Air Quality Standards (NAAQS)

| Pollutant | Primary | | Secondary | |
|--|---------|-------------------|-----------|-------------------|
| | ppm | µg/m ³ | ppm | µg/m ³ |
| Carbon Monoxide (CO) | | | | |
| 8-Hour Average ⁽¹⁾ | 9 | 10,000 | None | |
| 1-Hour Average ⁽¹⁾ | 35 | 40,000 | | |
| Lead | | | | |
| Rolling 3-Month Average ⁽²⁾ | NA | 0.15 | NA | 0.15 |
| Nitrogen Dioxide (NO₂) | | | | |
| 1-Hour Average ⁽³⁾ | 0.100 | 188 | None | |
| Annual Average | 0.053 | 100 | 0.053 | 100 |
| Ozone (O₃) | | | | |
| 8-Hour Average ^(4,5) | 0.075 | 150 | 0.075 | 150 |
| Respirable Particulate Matter (PM₁₀) | | | | |
| 24-Hour Average ⁽¹⁾ | NA | 150 | NA | 150 |
| Fine Respirable Particulate Matter (PM_{2.5}) | | | | |
| Annual Mean ⁽⁶⁾ | NA | 12 | NA | 15 |
| 24-Hour Average ⁽⁷⁾ | NA | 35 | NA | 35 |
| Sulfur Dioxide (SO₂) ⁽⁸⁾ | | | | |
| 1-Hour Average ⁽⁹⁾ | 0.075 | 196 | NA | NA |
| Maximum 3-Hour Average ⁽¹⁾ | NA | NA | 0.50 | 1,300 |
| <p>Notes:</p> <p>ppm – parts per million (unit of measure for gases only)</p> <p>µg/m³ – micrograms per cubic meter (unit of measure for gases and particles, including lead)</p> <p>NA – not applicable</p> <p>All annual periods refer to calendar year.</p> <p>Standards are defined in ppm. Approximately equivalent concentrations in µg/m³ are presented.</p> <p>⁽¹⁾ Not to be exceeded more than once a year.</p> <p>⁽²⁾ EPA has lowered the NAAQS down from 1.5 µg/m³, effective January 12, 2009.</p> <p>⁽³⁾ 3-year average of the annual 98th percentile daily maximum 1-hr average concentration. Effective April 12, 2010.</p> <p>⁽⁴⁾ 3-year average of the annual fourth highest daily maximum 8-hr average concentration.</p> <p>⁽⁵⁾ EPA has proposed lowering the primary and secondary standards further to within the range 0.065-0.070 ppm. EPA will take final action on the proposed standards by Oct. 1, 2015.</p> <p>⁽⁶⁾ 3-year average of annual mean. EPA has lowered the primary standard from 15 µg/m³, effective March 2013.</p> <p>⁽⁷⁾ Not to be exceeded by the annual 98th percentile when averaged over 3 years.</p> <p>⁽⁸⁾ EPA revoked the 24-hour and annual primary standards, replacing them with a 1-hour average standard. Effective August 23, 2010.</p> <p>⁽⁹⁾ 3-year average of the annual 99th percentile daily maximum 1-hr average concentration.</p> <p>Source: 40 CFR Part 50: National Primary and Secondary Ambient Air Quality Standards.</p> | | | | |

Determining the Significance of Air Quality Impacts

The State Environmental Quality Review Act (SEQRA) regulations state that the significance of a predicted consequence of a project (i.e., whether it is material, substantial, large or important) should be assessed in connection with its setting (e.g., urban or rural), its probability of occurrence, its duration, its irreversibility, its geographic scope, its magnitude, and the number of people affected.¹ In terms of the magnitude of air quality impacts, any action predicted to increase the concentration of a criteria air pollutant to a level that would exceed the concentrations defined by the NAAQS (see **Table 1**) would be deemed to have a potential significant adverse impact. This guidance was followed to assess the potential for construction air quality impacts from the proposed project.

Microscale Analysis

As detailed above, air quality could be affected by emissions from on-site construction equipment, emissions from on-road construction vehicles, and from these vehicles' effects on traffic congestion.

On-site construction equipment would mostly be diesel or gasoline powered. The TBM and ground freezing equipment at the WWTP would be electrically powered, with the power supplied by the existing grid or a temporary generators. If the ground freezing technique were utilized to construct the TBM exit shaft on Jones Beach Island², it would require approximately two, diesel on-site generators, one operating and one provided as a backup standby unit. Ground freezing for the TBM exit shaft would take approximately two to three months.

A screening level analysis was performed to determine whether the proposed project would have a significant adverse impact on local air quality. As discussed above, under SEQRA, the determination of the significance of air quality impacts is based on an assessment of the predicted intensity, duration, geographic extent, and the number of people who would be affected by the predicted impacts. Based on experience with similarly sized sources for another recently approved tunnel construction project in New York State (the "Bypass Project")³, sources of similar size, quantity, duration, and intensity would not be expected to cause any exceedance of the NAAQS at receptors that are located roughly 50 feet or more from non-road construction equipment operating during all phases of tunnel construction.

¹ New York City. *CEQR Technical Manual*. Chapter 1, section 222. March 2014; and New York State Environmental Quality Review Regulations, 6 NYCRR § 617.7

² Although installation of secant piles is the preferred method of construction for the TBM exit shaft, the potential use of diesel-powered generators is analyzed here as a worst-case air quality scenario.

³ 2012 *Water for the Future Program: Delaware Aqueduct Roundout-West Branch Tunnel Repair Final Environmental Impact Statement (Bypass Project FEIS)*

In the case of the proposed project, the construction phase anticipated to have the greatest level of emissions, and subsequently the greatest concentrations is the tunnel construction phase. While the overall construction duration for the proposed project is anticipated to be approximately three years, the most intense construction activities (during the tunnel construction phase) in terms of air pollutant emissions would last for only a portion of this duration, taking approximately a year and half to two years to complete. In addition, the proposed tunnel would be constructed using a TBM, as opposed to much more emission-intensive methods such as dredging and trenching, in which heavy equipment such as dredgers and mechanical excavators would be used. Sensitive receptors with the greatest potential to experience elevated levels of air emissions would be the residences to the east and to the west of the WWTP at distances of more than 850 feet and 1,700 feet from the WWTP, respectively, much greater than sensitive receptor distances that were demonstrated to have no significant adverse air quality impacts in other tunnel construction projects. At these distances, air emissions generated by construction activities would be greatly dispersed before reaching sensitive receptors, and would result in very low concentrations.

Further, as discussed above in the Transportation section, construction of the proposed project is expected to generate only a relatively modest increase in vehicular trips; therefore, the increase in air emissions along the likely truck routes to and from the proposed project site and at the residences along County Route 96 south of NYS Route 27A is also not expected to be significant. All other stages of construction are expected to result in similar or lower concentrations as compared to tunnel construction, because these activities would require fewer pieces of equipment, fewer truck deliveries, and would therefore result in lower air emissions and lower concentrations. Even with the potential addition of stationary diesel engine generators for ground freezing on Jones Beach Island, predicted pollutant concentrations are expected to be less than the NAAQS thresholds due to the approximate two mile distance from the non-road construction equipment and the proposed generators to the nearest sensitive receptors

Based on the information and analysis presented above, construction activities associated with the proposed project would not result in any significant adverse microscale air quality impacts, and no further analysis is required.

Mesoscale Analysis

The conformity requirements of the CAA and regulations promulgated thereunder limit the ability of federal agencies to assist, fund, permit, and approve projects that do not conform to the applicable SIP. When subject to this regulation, the federal agency is responsible for demonstrating conformity for its proposed action. Conformity determinations for federal actions other than those related to transportation plans, programs, and projects which are developed, funded, or approved under title 23 U.S.C. or the Federal Transit Act (49 U.S.C. 1601

et seq.) must be made according to the requirements of 40 CFR Part 93 (federal general conformity regulations).

Under the general conformity regulations, a determination for federal actions is required for each criteria pollutant or precursor in non-attainment or maintenance areas where the action's direct and indirect emissions have the potential to emit one or more of the six criteria pollutants at rates equal to or exceeding the prescribed *de minimis* rates for that pollutant. In the case of the proposed project, the prescribed annual rates are 50 tons of volatile organic compounds (VOCs) and 100 tons of nitrogen oxides (NO_x) (ozone precursors, ozone non-attainment area in transport region), 100 tons of CO, and 100 tons of PM_{2.5}, SO₂, or NO_x (PM_{2.5} and precursors in PM_{2.5} attainment areas).

The proposed project, located in Suffolk County, is within a maintenance area for PM_{2.5}, a marginal non-attainment area for the eight-hour Ozone standard, and considered an area source for hazardous air pollutants (HAPs) emissions. Therefore, a conformity screening analysis was conducted to determine whether the proposed project would have a regional effect on air quality.

Based on experience with the Bypass Project—with construction equipment and activities similar to those required for the proposed project—construction of the proposed project would likely result in much lower criteria pollutant emissions levels than the conformity *de minimis* rates. For example, for the Bypass Project, NO_x emissions during tunnel construction activities, including drill rigs, cranes, compressors, loaders, forklifts, excavators, pumps, small generators, and trucks were estimated to be 16 percent of the conformity threshold, while PM_{2.5} emissions were estimated as 1.2 percent of the de conformity threshold. Since construction activities associated with the proposed project would be smaller in extent and duration than those required for the Bypass Project—due to a shorter tunnel length, shallower shafts, and a much smaller area that needs to be cleared for the construction staging areas—the proposed project is also expected to result in much lower emissions levels than the conformity thresholds. Finally, even if stationary diesel engine generators were to be used for ground freezing to construct the TBM exit shaft on Jones Beach Island—instead of the preferred method of secant pile installation—emissions would still remain below the conformity thresholds.

In addition to the above considerations, the proposed project would implement emission control measures to reduce pollutant emissions during construction, in accordance with all applicable laws, regulations, and codes. To further reduce air emissions during construction, the following specifications would be incorporated into the contract documents:

- *Idling Restriction.* In addition to adhering to the New York State law restricting unnecessary idling on roadways, on-site vehicle idle time will also be restricted to five minutes for all equipment and vehicles not using their engines to operate a loading, unloading, or

processing operation (e.g., concrete mixing trucks), or otherwise required to idle to ensure proper engine operation.

- *Utilization of Newer Equipment.* EPA's Tier 3 and 4 standards for nonroad engines regulate the emission of criteria pollutants from new engines, including PM, CO, NOx, and hydrocarbons (HC). All non-road construction equipment with a power rating of 50 hp or greater would meet at least the Tier 3 and 4 emissions standards, to the extent practicable.
- *Best Available Tailpipe Reduction Technologies.* Non-road diesel engines with a power rating of 50 horsepower (hp) or greater and controlled truck fleets (i.e., those under long-term contract with the project) including but not limited to concrete mixing and pumping trucks would utilize the best available tailpipe (BAT) technology for reducing DPM emissions to the extent practicable. Diesel particulate filters (DPFs) are the tailpipe technology currently proven to have the highest reduction capability. Construction contracts would specify that all diesel non-road engines rated at 50 hp or greater would utilize DPFs, either installed by the original equipment manufacturer (OEM) or retrofitted. Retrofitted DPFs must be verified by EPA or the California Air Resources Board (CARB). Active DPFs or other technologies proven to achieve an equivalent reduction may also be used.
- *Concrete Batch Plant Controls.* If an on-site concrete batch plant is utilized at the WWTP, all required permits or registrations would be obtained by the Contractor prior to the start of construction. Need for such a batch plant is not anticipated. The batch plant's cement weigh hopper, gathering hopper, mixing loading operations, and storage silo chutes would be required to vent to an appropriate dust control device, such as a baghouse or fabric filter.

Based on the information and analysis presented above, construction of the proposed project would not result in any significant adverse mesoscale air quality impacts, and no further analysis is required.

Noise

Construction activities for the proposed project have the potential to affect community noise levels, due to the operation of construction equipment on the project site, as well as the movement of construction and delivery vehicles to and from the site. Noise and vibration levels at a given receptor are dependent on the type and quantity of construction equipment being operated, the percentage of time the equipment is operating, the distance between the receptor and the construction site, and any shielding effects from structures such as buildings, walls, or barriers. Noise levels caused by construction activities would vary widely, depending on the stage of construction (i.e., shaft excavation, tunneling, etc.) and the location of the construction activities relative to noise-sensitive receptors.

Construction activities on the project site are subject to the Town of Babylon Noise Code, which prohibits construction between the hours of 8:00 PM and 7:00 AM on weekdays and at

any time on Sundays and legal holidays. Although tunnel construction activities are anticipated to occur 24 hours a day, 7 days a week, a majority of the work would take place inside the proposed tunnel where the noise generated would be shielded by the tunnel itself. The receptors with the greatest potential to experience elevated noise levels would be the residences to the east and west of the WWTP, as well as those along County Route 96 south of NYS Route 27A, along which trucks and other construction vehicles would travel to access the WWTP site. However, the residences to the east and to the west of the WWTP are separated from the construction site by long distances - more than 850 feet and 1,700 feet respectively. Consequently, construction activities at the WWTP site are not expected to result in substantial noise level increases at these locations. With respect to the residences along County Route 96 south of NYS Route 27A, the noise generated by construction-related traffic would be temporary and limited to the periods of construction activity on the WWTP site. Moreover, as discussed above in the "Transportation" section, construction of the proposed project is expected to generate a relatively modest increase in vehicular trips as compared to existing conditions.

Based on the information and analysis presented above, construction of the proposed project would not result in any significant adverse noise impacts, and no further analysis is required.

Natural Resources

Construction of the proposed project would not result in any significant adverse impacts in the areas of groundwater, floodplains, wetlands, vegetation and ecological communities, or wildlife. As discussed in further detail above in the section titled "Compliance with 24 CFR 50.4, 58.5, and 58.6 Laws and Authorities," construction of the proposed project would be conducted in compliance with all existing regulations, including all local groundwater protection and withdrawal provisions, as well as all requirements for protection of migratory birds under MBTA. In addition, a Floodplain Management and Wetland Protection Plan (see Appendix B) was developed, given that the majority of the proposed project area is located within a Special Flood Hazard Area in the 100-year floodplain or under open water, and the proposed project includes work beneath tidal wetland areas. Furthermore, the proposed project would obtain all applicable permits, including a US Army Corps of Engineers (USACE) Nationwide Permit, a US Coast Guard Long Island Sound Sector Approval, a National Marine Fisheries Conservation Division Consultation and/or Essential Fish Habitat Assessment, a NYSDEC Section 401 Water Quality Certification, and a NYSDEC Tidal Wetlands Permit.

A letter of consultation was submitted to the U.S. Fish and Wildlife Service (USFWS) documenting that the project would have no effect on a list of vegetation and ecological communities and wildlife in the surrounding area. The response from USFWS, received July 9, 2015, indicates that USFWS concurs with the determination that the project meets the exception for federal expenditures within a Coastal Barrier Resources System (CBRS) unit and is consistent with the purposes of the Coastal Barrier Resources Act (CBRA), and concurs that the project would have no effects on endangered species, vegetation, or wildlife. Due to the fact

that construction activities may take place partially within bird breeding locations, which could be disruptive to breeding populations, USFWS recommended in their July 9, 2015 response that a breeding bird survey should be conducted prior to the start of construction, or alternatively that time-of-year restrictions should be applied to construction activities. Accordingly, site clearing activities at the barrier island would be restricted to the period November 1 through February 28.

Based on the information and analysis presented above, construction of the proposed project would not result in any significant adverse natural resource impacts, and no further analysis is required.

Stormwater Management

The construction staging area on Jones Beach Island would be approximately 2 to 2.5 acres and the staging area at the WWTP would be approximately 2.5 to 3 acres. These areas would be restored to pre-construction conditions upon project completion, with the exception of the TBM entry and exit shafts, which would remain. Construction of the proposed project would fulfill the requirements of the New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity, Permit No. GP-0-15-002, which will be obtained prior to the start of construction.

APPENDIX E

Coastal Zone Management



GOVERNOR'S OFFICE OF STORM RECOVERY

Andrew M. Cuomo
Governor

James Rubin
Executive Director



July 14, 2015

Jeffrey Zappieri
Supervisor, Consistency Review Unit
Division of Coastal Resources
State of New York
Department of State
One Commerce Plaza
99 Washington Avenue
Albany, NY 12231-0001

Re: General Consistency Concurrence for the Bergen Point Wastewater Treatment Plant Outfall Replacement Project – Suffolk County, NY

Dear Mr. Zappieri:

The Governor's Office of Storm Recovery (GOSR), acting under the auspices of New York State Homes and Community Renewal's (HCR) Housing Trust Fund Corporation (HTFC), on behalf of the United States Department of Housing & Urban Development (HUD), and the New York State Environmental Facilities Corporation (EFC), are currently preparing an Environmental Assessment (EA) for the Bergen Point Wastewater Treatment Plant Outfall Replacement Project (the "Proposed Action") located in West Babylon, NY (See Project Location Figure 1). GOSR is acting as HUD's non-federal representative for the purposes of compliance with the National Environmental Policy Act (NEPA).

The purpose of this letter is to provide the New York State Department of State (DOS) notice of the Proposed Action and to obtain written confirmation from DOS that the proposed activities will be in compliance with general consistency concurrence criteria.

Project Overview

The Bergen Point Wastewater Treatment Plant (WWTP), owned and operated by Suffolk County Department of Public Works, discharges treated effluent through an ocean outfall that passes beneath the Great South Bay and underneath the barrier island to the Atlantic Ocean (See Figure 1). The 14,200-foot long segment of the outfall that extends from the WWTP to the barrier island, passing underneath Great South Bay, has been determined to be in a failing condition and needs to be replaced. The selected replacement alternative proposes to replace the failing outfall segment with a 10-foot diameter, 14,200-foot long tunnel constructed by means of a tunnel boring machine (TBM). Construction of the tunnel via TBM, as opposed to dredging and trenching, is the preferred alternative to be employed in the construction of the replacement outfall, as it was the alternative with the least

impact to the Great South Bay and surrounding environment. The new section of the outfall will be connected to the existing ocean portion of the outfall near the existing sample chamber on the barrier island just north of Ocean Parkway using stainless steel piping. A bypass system with line stops will be installed to ensure that the operation of the tunnel outfall will not be interrupted during the connection process.

Above ground construction includes an access or working shaft at the Bergen Point WWTP site, and an exit or receiving shaft at Gilgo State Park on the barrier island within the existing easement north of Ocean Parkway. The access shafts will be constructed by using ground freezing techniques or secant piles and allow the construction of the replacement outfall tunnel at a depth of approximately 80-100 feet below the existing surface. An estimated 90,000 cubic yards of muck is anticipated to be removed during the construction of the Proposed Action, including both tunnel excavation and shaft construction. It is estimated that the daily muck hauling truck trips to remove this material offsite should be 5 to 8 trucks. The new section of the outfall would be joined to the existing ocean portion of the outfall on the barrier island. Treated effluent would then continue to discharge through the outfall to the Atlantic Ocean as has been the case for over 30 years. No carrier pipes would be installed within the tunnel; the lined tunnel itself would be the replacement outfall.

The staging area at the barrier island would be approximately 2 to 2.5 acres and the staging area at the WWTP would be approximately 2.5-3 acres. Staging areas would be restored after completion. All disturbed area on the barrier island will be revegetated and restored. The footprint of these areas of disturbance and the path of the proposed outfall tunnel are shown in Figure 1 and Figure 2. Most of the construction would take place well below Great South Bay via the TBM to minimize impacts to the environment.

Compliance

GOSR is requesting a response letter from DOS that can be included in the EA to document that coordination with DOS is being completed, and general consistency concurrence criteria will be met. Attached to this letter is a Federal Consistency Assessment Form, including an addendum analyzing the consistency of the Proposed Project with the relevant policies from the State's Coastal Management Plan.

If you have questions or require additional information regarding this request, please contact me at (646) 417-4660 or thomas.king@stormrecovery.ny.gov. Thank you for your time and consideration.

Sincerely,



Thomas J. King, Esq.
Assistant General Counsel and Certifying Officer
Governor's Office of Storm Recovery

NEW YORK STATE DEPARTMENT OF STATE
COASTAL MANAGEMENT PROGRAM

Federal Consistency Assessment Form

An applicant, seeking a permit, license, waiver, certification or similar type of approval from a federal agency which is subject to the New York State Coastal Management Program (CMP), shall complete this assessment form for any proposed activity that will occur within and/or directly affect the State's Coastal Area. This form is intended to assist an applicant in certifying that the proposed activity is consistent with New York State's CMP as required by U.S. Department of Commerce regulations (15 CFR 930.57). It should be completed at the time when the federal application is prepared. The Department of State will use the completed form and accompanying information in its review of the applicant's certification of consistency.

A. **APPLICANT** (please print)

1. Name: _____
2. Address: _____
3. Telephone: Area Code () _____

B. **PROPOSED ACTIVITY:**

1. Brief description of activity:

2. Purpose of activity:

3. Location of activity:

| | | |
|--------|------------------------|----------------------------|
| _____ | _____ | _____ |
| County | City, Town, or Village | Street or Site Description |

4. Type of federal permit/license required: _____

5. Federal application number, if known: _____

6. If a state permit/license was issued or is required for the proposed activity, identify the state agency and provide the application or permit number, if known:

C. **COASTAL ASSESSMENT** Check either "YES" or "NO" for each of these questions. The numbers following each question refer to the policies described in the CMP document (see footnote on page 2) which may be affected by the proposed activity.

- | | |
|---|--------|
| 1. Will the proposed activity result in any of the following: | YES/NO |
| a. Large physical change to a site within the coastal area which will require the preparation of an environmental impact statement? (11, 22, 25, 32, 37, 38, 41, 43) | — — |
| b. Physical alteration of more than two acres of land along the shoreline, land under water or coastal waters? (2, 11, 12, 20, 28, 35, 44) | — — |
| c. Revitalization/redevelopment of a deteriorated or underutilized waterfront site? (1) | — — |
| d. Reduction of existing or potential public access to or along coastal waters? (19, 20) | — — |
| e. Adverse effect upon the commercial or recreational use of coastal fish resources? (9,10) | — — |
| f. Siting of a facility essential to the exploration, development and production of energy resources in coastal waters or on the Outer Continental Shelf? (29) | — — |
| g. Siting of a facility essential to the generation or transmission of energy? (27) | — — |
| h. Mining, excavation, or dredging activities, or the placement of dredged or fill material in coastal waters? (15, 35) | — — |
| i. Discharge of toxics, hazardous substances or other pollutants into coastal waters? (8, 15, 35) | — — |
| j. Draining of stormwater runoff or sewer overflows into coastal waters? (33) | — — |
| k. Transport, storage, treatment, or disposal of solid wastes or hazardous materials? (36, 39) | — — |
| l. Adverse effect upon land or water uses within the State's small harbors? (4) | — — |
| 2. Will the proposed activity affect or be located in, on, or adjacent to any of the following: | YES/NO |
| a. State designated freshwater or tidal wetland? (44) | — — |
| b. Federally designated flood and/or state designated erosion hazard area? (11, 12, 17) | — — |
| c. State designated significant fish and/or wildlife habitat? (7) | — — |
| d. State designated significant scenic resource or area? (24) | — — |
| e. State designated important agricultural lands? (26) | — — |
| f. Beach, dune or Barrier Island? (12) | — — |
| g. Major ports of Albany, Buffalo, Ogdensburg, Oswego or New York? (3) | — — |
| h. State, county, or local park? (19, 20) | — — |
| i. Historic resource listed on the National or State Register of Historic Places? (23) | — — |
| 3. Will the proposed activity require any of the following: | YES/NO |
| a. Waterfront site? (2, 21, 22) | — — |
| b. Provision of new public services or infrastructure in undeveloped or sparsely populated sections of the coastal area? (5) | — — |
| c. Construction or reconstruction of a flood or erosion control structure? (13, 14, 16) | — — |
| d. State water quality permit or certification? (30, 38, 40) | — — |
| e. State air quality permit or certification? (41, 43) | — — |
| 4. Will the proposed activity occur within and/or affect an area covered by a State-approved local waterfront revitalization program, or State-approved regional coastal management program? (see policies in program document*) | — — |

D. ADDITIONAL STEPS

1. If all of the questions in Section C are answered "NO", then the applicant or agency shall complete Section E and submit the documentation required by Section F.
2. If any of the questions in Section C are answered "YES", then the applicant or agent is advised to consult the CMP, or where appropriate, the local waterfront revitalization program document*. The proposed activity must be analyzed in more detail with respect to the applicable state or local coastal policies. On a separate page(s), the applicant or agent shall: (a) identify, by their policy numbers, which coastal policies are affected by the activity, (b) briefly assess the effects of the activity upon the policy; and, (c) state how the activity is consistent with each policy. Following the completion of this written assessment, the applicant or agency shall complete Section E and submit the documentation required by Section F.

E. CERTIFICATION

The applicant or agent must certify that the proposed activity is consistent with the State's CMP or the approved local waterfront revitalization program, as appropriate. If this certification cannot be made, the proposed activity shall not be undertaken. If this certification can be made, complete this Section.

"The proposed activity complies with New York State's approved Coastal Management Program, or with the applicable approved local waterfront revitalization program, and will be conducted in a manner consistent with such program."

Applicant/Agent's Name: _____

Address: _____

Telephone: Area Code () _____

Applicant/Agent's Signature: _____  _____ Date: _____

F. SUBMISSION REQUIREMENTS

1. The applicant or agent shall submit the following documents to the **New York State Department of State, Office of Planning and Development, Attn: Consistency Review Unit, One Commerce Plaza-Suite 1010, 99 Washington Avenue, Albany, New York 12231.**

- a. Copy of original signed form.
- b. Copy of the completed federal agency application.
- c. Other available information which would support the certification of consistency.

2. The applicant or agent shall also submit a copy of this completed form along with his/her application to the federal agency.

3. If there are any questions regarding the submission of this form, contact the Department of State at (518) 474-6000.

*These state and local documents are available for inspection at the offices of many federal agencies, Department of environmental Conservation and Department of State regional offices, and the appropriate regional and county planning agencies. Local program documents are also available for inspection at the offices of the appropriate local government.

This document is the addendum to the Federal Consistency Assessment Form (FCAF) for the Bergen Point Wastewater Treatment Plant (WWTP) Outfall Replacement Project. After describing the Proposed Project in more detail, this document analyzes the consistency of the Proposed Project with the State's Coastal Management Plan (CMP), specifically those policies that were identified as potentially applicable to this Project in the FCAF.

PROJECT DESCRIPTION

The Bergen Point Wastewater Treatment Plant), owned and operated by Suffolk County Department of Public Works, treats up to 30.5 million gallons per day (MGD) of wastewater and discharges treated effluent through an ocean outfall that passes beneath the Great South Bay and underneath the barrier island to the Atlantic Ocean (See Figure 1). The 14,200-foot long segment of the outfall that extends from the WWTP to the barrier island, passing underneath Great South Bay, has been determined to be in a failing condition and needs to be replaced. The selected replacement alternative proposes to replace the failing outfall segment with a 10-foot diameter, 14,200-foot long tunnel constructed by means of a tunnel boring machine (TBM). Construction of the tunnel via TBM, as opposed to dredging and trenching, is the preferred alternative to be employed in the construction of the replacement outfall, as it was the alternative with the least impact to the Great South Bay and surrounding environment. The new section of the outfall will be connected to the existing ocean portion of the outfall near the existing sample chamber on the barrier island just north of Ocean Parkway using stainless steel piping. A bypass system with line stops will be installed to ensure that the operation of the tunnel outfall will not be interrupted during the connection process.

Above ground construction includes an access or working shaft at the Bergen Point WWTP site, and an exit or receiving shaft at Gilgo State Park on the barrier island within the existing easement north of Ocean Parkway. The access shafts will be constructed by using ground freezing techniques or secant piles and allow the construction of the replacement outfall tunnel at a depth of approximately 80-100 feet below the existing surface. An estimated 90,000 cubic yards of muck is anticipated to be removed during the construction of the Proposed Action, including both tunnel excavation and shaft construction. It is estimated that the daily muck hauling truck trips to remove this material offsite should be 5 to 8 trucks. The new section of the outfall would be joined to the existing ocean portion of the outfall on the barrier island. Treated effluent would then continue to discharge through the outfall to the Atlantic Ocean as has been the case for over 30 years. No carrier pipes would be installed within the tunnel; the lined tunnel itself would be the replacement outfall.

The staging area at the barrier island would be approximately 2 to 2.5 acres and the staging area at the WWTP would be approximately 2.5-3 acres. Staging areas would be restored after completion. All disturbed area on the barrier island will be revegetated and restored. The footprint of these areas of disturbance and the path of the proposed outfall tunnel are shown in

Bergen Point WWTP Outfall Replacement Project

Figure 1 and Figure 2. Most of the construction would take place well below Great South Bay via the TBM to minimize impacts to the environment.

Funding for the Project will be provided by the Clean Water State Revolving Fund Storm Mitigation Loan Program (SMLP) with support from the HUD CDBG-DR program.

Pursuant to the Disaster Relief Appropriations Act, 2013 (Public Law 113-2) and the Housing and Community Development Act (42 U.S.C. § 5301 et seq.), the Governor's Office of Storm Recovery (GOSR) is acting under the auspices of New York State Homes and Community Renewal's Housing Trust Fund Corporation as a recipient of Community Development Block Grant – Disaster Recovery (“CDBG-DR”) funds from the United States Department of Housing and Urban Development (“HUD”). GOSR is the entity responsible for compliance with the HUD environmental review procedures set forth in 24 CFR Part 58. GOSR processes environmental reviews for projects funded with HUD CDBG-DR on a case-by-case basis.

CONSISTENCY WITH NYS COASTAL MANAGEMENT PLAN

Policy 2: *Facilitate the siting of water dependent uses and facilities on or adjacent to coastal waters.*

Response: The existing WWTP is a water-dependent use as the effluent from the plant must be discharged to the Atlantic Ocean. Therefore, the Proposed Project is consistent with this policy.

Policy 7: *Significant coastal fish and wildlife habitats will be protected, preserved, and where practical, restored so as to maintain their viability as habitats.*

Response: The Proposed Project is not expected to have any significant adverse impact on SCFWH. The new outfall will be designed and operated according to all NYSDEC specifications and permit conditions. The nature of the effluent being discharged will not change as a result of the Proposed Project. The Proposed Project will have beneficial impacts on SCFWH as it will replace the current outfall, which is in a failing condition and could potentially negatively impact species in Great South Bay in the event of catastrophic failure. When the Proposed Project is completed, this risk will be eliminated. Therefore, the Proposed Project is consistent with this policy.

Policy 8: *Protect fish and wildlife resources in the coastal area from the introduction of hazardous wastes and other pollutants which bio-accumulate in the food chain or which cause significant sub-lethal or lethal effect on those resources.*

Response: Please see the response to Policy 7. The Proposed Project will protect fish and wildlife resources from pollutants. Therefore, the Proposed Project is consistent with this policy.

Policy 11: *Buildings and other structures will be sited in the coastal area so as to minimize damage to property and the endangering of human lives caused by flooding and erosion.*

Response: Structures constructed as part of the proposed project include a new outfall tunnel and two access shafts. These structures will be located underground and are designed specifically to withstand coastal subsurface conditions. These structures are not susceptible to flooding or erosion and will not endanger human lives or property in the event of flooding or erosion. Therefore, the Proposed Project is consistent with this policy.

Policy 12: *Activities or development in the coastal area will be undertaken so as to minimize damage to natural resources and property from flooding and erosion by protecting natural protective features including beaches, dunes, barrier islands and bluffs.*

Response: The Proposed Project will install a new outfall tunnel, located entirely subsurface. The tunnel boring method is the least intrusive method of construction and was selected because it would eliminate disturbance to wetlands and the barrier island. Any area on the barrier island disturbed for construction of the access shaft will be restored to its original condition. Therefore, the Proposed Project is consistent with this policy.

Policy 15: *Mining, excavation or dredging in coastal waters shall not significantly interfere with the natural coastal processes which supply beach materials to land adjacent to such waters and shall be undertaken in a manner which will not cause an increase in erosion of such land.*

Response: The excavation of the outfall tunnel in the Proposed Project will be performed entirely by tunnel boring machine, which operates below the surface and does not interfere with natural coastal processes. Any excavation required to construct access shafts will be subject to sediment and erosion control measures and these areas will be fully restored to their original condition following construction. Therefore, the Proposed Project is consistent with this policy.

Policy 17: *Non-structural measures to minimize damage to natural resources and property from flooding and erosion shall be used whenever possible.*

Response: The Proposed Project is located entirely subsurface and is designed such that it is not susceptible to flooding or erosion. Similarly, as all project areas will be restored to original condition following construction, the Proposed Project will not increase the susceptibility to flooding or erosion of surrounding areas. Therefore, the Proposed Project is consistent with this policy.

Policy 19: *Protect, maintain, and increase the level and types of access to public water-related recreation resources and facilities.*

Response: The Proposed Project is located entirely subsurface and will not alter the level or type of access to public water-related recreation resources and facilities in the area. Therefore, the Proposed Project is consistent with this policy.

Bergen Point WWTP Outfall Replacement Project

Policy 20: *Access to the publicly-owned foreshore and to lands immediately adjacent to the foreshore or the water's edge that are publicly-owned shall be provided and it shall be provided in a manner compatible with adjoining uses.*

Response: The Proposed Project is located entirely subsurface and will not alter the level or type of access to publicly-owned foreshore areas. Therefore, the Proposed Project is consistent with this policy.

Policy 21: *Water-dependent and water-enhanced recreation will be encouraged and facilitated, and will be given priority over non-water-related uses along the coast.*

Response: The Proposed Project includes improvements to the existing WWTP, a water-dependent use. The Proposed Project will not result in any changes to recreation areas. Therefore, the Proposed Project is consistent with this policy.

Policy 22: *Development, when located adjacent to the shore, will provide for water-related recreation, whenever such use is compatible with reasonably anticipated demand for such activities, and is compatible with the primary purpose of the development.*

Response: Water-related recreation is not compatible with the primary purpose of the Proposed Project, which is to improve an existing WWTP. The Proposed Project includes no above ground or in-water structures outside of the existing WWTP boundaries that could serve as barriers to existing or future water-related recreation. Therefore, the Proposed Project is consistent with this policy.

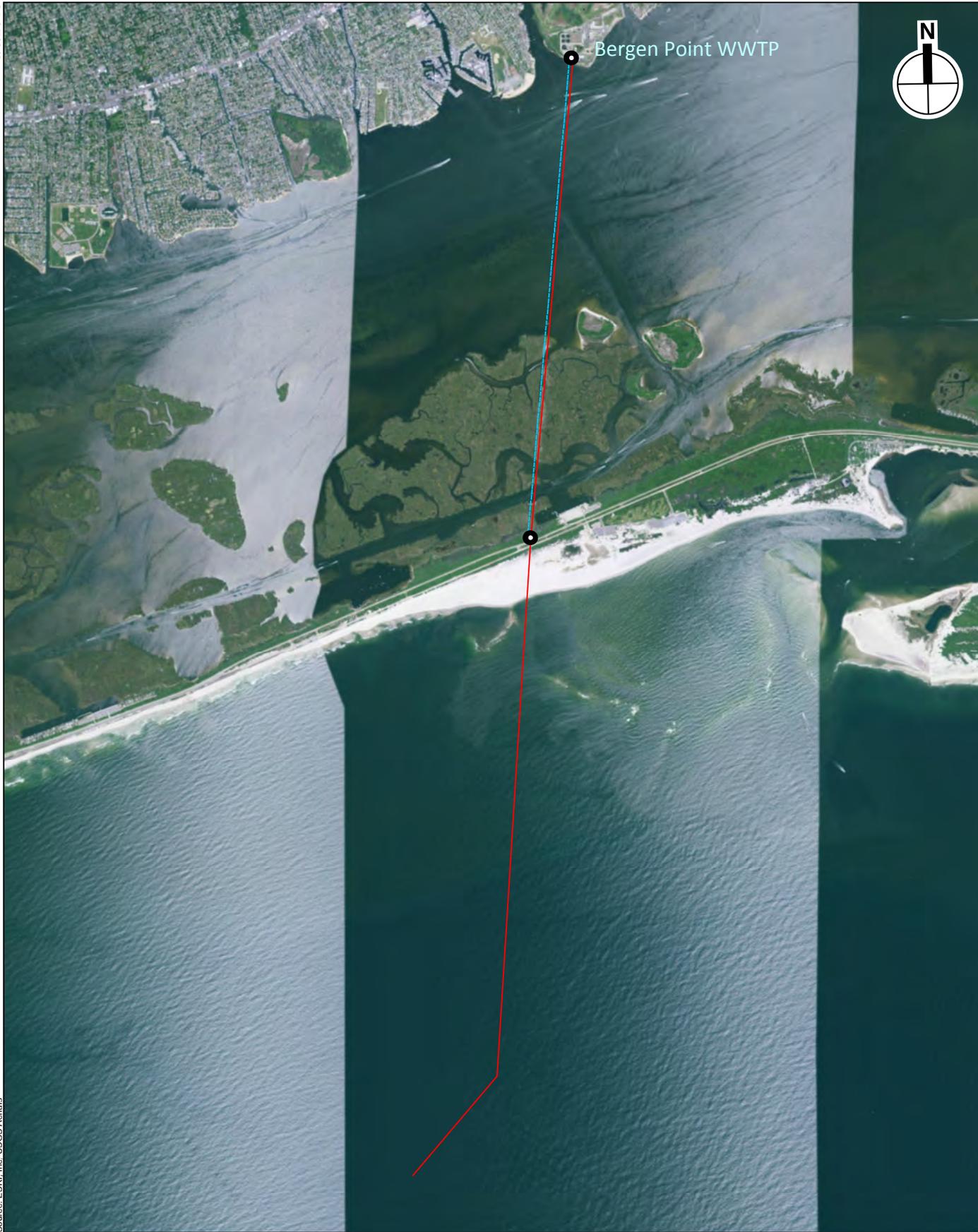
Policy 35: *Dredging and filling in coastal waters and disposal of dredged material will be undertaken in a manner that meets existing State permit requirements, and protects significant fish and wildlife habitats, scenic resources, natural protective features, important agricultural lands, and wetlands.*

Response: The Proposed Project activities do not include dredging or filling of any coastal waters. Material excavated during the construction of the tunnel will be disposed in accordance with all State and local requirements. Therefore, the Proposed Project is consistent with this policy.

Policy 44: *Preserve and protect tidal and freshwater wetlands and preserve the benefits derived from these areas.*

Response: The Proposed Project will install a new outfall tunnel, located entirely subsurface. The method of tunnel construction, tunnel boring machine, was selected in order to eliminate any impacts to tidal and freshwater wetlands associated with construction. The project will eliminate the risk of failure associated with the existing outfall pipe, thereby protecting tidal and freshwater wetland areas from negative environmental impacts. There may be a small area of wetland disturbed on the barrier island in order to accommodate staging areas for the access shaft construction. Any disturbances will be temporary and all disturbed areas will be restored to original condition upon completion of construction. Therefore, the Proposed Project is consistent with this policy.

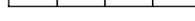
5/6/2015



Source: ESRI, Inc.; USGS Aerials

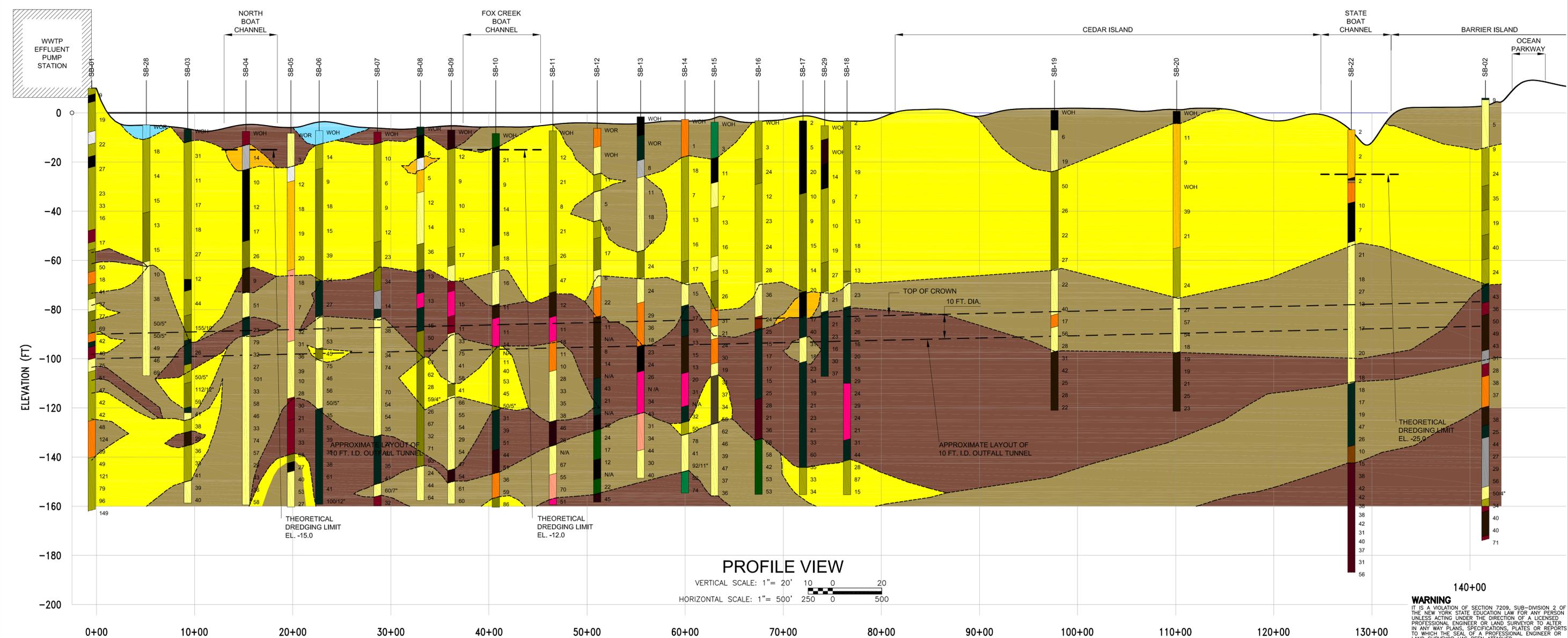
- Existing Outfall
- Access Shafts
- - - Proposed Replacement Outfall Segment

0 4,000 FEET



BERGEN POINT WWTP OUTFALL REPLACEMENT PROJECT

Existing Outfall
Figure 1



| REV. NO. | DATE | DRWN | CHKD | REMARKS |
|----------|------|------|------|---------|
| | | | | |

DESIGNED BY: A. PEREZ
 DRAWN BY: A. PEREZ
 SHEET CHK'D BY: _____
 CROSS CHK'D BY: _____
 APPROVED BY: _____
 DATE: APRIL 2015

CDM Smith
 60 Crossways Park Drive West Suite 340
 Woodbury, NY 11797
 Tel: (516) 496-8400

SUFFOLK COUNTY DEPARTMENT OF PUBLIC WORKS
 SEWER DISTRICT NO. 3 - SOUTHWEST
SUFFOLK COUNTY
OUTFALL REPLACEMENT

Figure 2
INTERPRETIVE PROPOSED TUNNEL PROFILE

| | |
|-------------|------------|
| PROJECT NO. | 5175-39512 |
| FILE NAME: | B001PPPL |
| SHEET NO. | -1 |

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STATE OF NEW YORK
DEPARTMENT OF STATE

ONE COMMERCE PLAZA
99 WASHINGTON AVENUE
ALBANY, NY 12231-0001
WWW.DOS.NY.GOV

ANDREW M. CUOMO
GOVERNOR

CESAR A. PERALES
SECRETARY OF STATE

July 15, 2015

Mr. Thomas King
Certifying Environmental Officer
NYS Governor's Office of Storm Recovery
NYS Office of Homes and Community Renewal
99 Washington Avenue, Suite 1010
Albany, New York 12231

Re: F-2015-0497(FA)
GOSR - Bergen Point WWTP Outfall Replacement Project
Replace the failing outfall segment with a 10' diameter,
14,200' long tunnel constructed by means of a tunnel
boring machine
Town of Babylon (West Babylon), Suffolk County
General Concurrence - No Objection To Funding

Dear Mr. King:

The Department of State received the information you submitted regarding the above matter on 7/15/2015.

The Department of State has determined that this proposal meets the Department's general consistency concurrence criteria. Therefore, the Department of State has no objection to the use of U. S. Housing and Urban Development funds for this financial assistance activity. This concurrence pertains to the financial assistance activity for this project only. If federal permits or other form of federal agency authorization is required for this activity, the Department of State will conduct a separate review for those permit activities. In such a case, please forward a copy of the federal application for authorization, a completed Federal Consistency Assessment Form, and all supporting information to the Department at the same time it is submitted to the federal agency from which the necessary authorization is requested.

When communicating with us regarding this matter, please contact Jeffrey Zappieri at (518) 474-6000 and refer to our file #F-2015-0497(FA).

Sincerely,



Jeffrey Zappieri
Supervisor, Consistency Review Unit
Office of Planning and Development

JZ/dc

APPENDIX F

Floodplain Management and Wetland Protection Plan

**EARLY NOTICE AND PUBLIC EXPLANATION OF
A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN and WETLAND**

**BERGEN POINT WASTEWATER TREATMENT PLANT OUTFALL
REPLACEMENT PROJECT
SUFFOLK COUNTY, NY**

Thomas King, Assistant General Counsel and Certifying Officer
Governor's Office of Storm Recovery
99 Washington Avenue, Suite 1224
Albany, NY 12260

NOTIFICATION OF ACTIVITY IN A FLOODPLAIN

To: All interested Agencies, Groups, and Individuals

This is to give notice that the Governor's Office of Storm Recovery (GOSR) is conducting an evaluation as required by Executive Order 11988 and Executive Order 11990 in accordance with U.S. Department of Housing and Urban Renewal (HUD) regulations under 24 CFR 55.20 Subpart C - Procedures for Making Determinations on Floodplain Management and Protection of Wetlands, to determine the potential effects that its activity in the floodplain and wetland would have on the human environment.

The Bergen Point Wastewater Treatment Plant (WWTP) discharges treated effluent to the Atlantic Ocean through an outfall passing under Great South Bay and the barrier island. The section of the existing outfall that runs from the WWTP to the barrier island is in a failing condition. Detailed engineering studies have determined that the operating pressure on the outfall pipe must be minimized to reduce the potential for pipe failure and an alternative means of discharging wastewater must be implemented. High operating pressures, such as those experienced during Superstorm Sandy, further threaten the condition of the outfall pipe.

The proposed project would replace the existing section of outfall between the WWTP and the barrier island with a 10 foot diameter tunnel to convey treated wastewater, which would run 14,200 feet parallel to the existing outfall pipeline and be connected to the existing ocean outfall beneath the barrier island prior to discharge. In order to construct the tunnel by tunnel boring machine, 30 foot diameter access shafts would be excavated at the WWTP and on the barrier island. After construction is complete, treated effluent will continue to flow from the Bergen Point WWTP to ocean discharge and the access shaft areas will be restored.

Funding for the project will be provided by the Clean Water State Revolving Fund Storm Mitigation Loan Program (SMLP) with support from the HUD Community Development Block Grant – Disaster Recovery (CDBG-DR) program for storm recovery activities in New York State.

A floodplains map based on the FEMA Base Flood Elevation Maps and wetlands maps based on the National Wetland Inventory and New York State Department of Environmental Conservation (NYSDEC) data have been prepared for this project and are available for review at <http://www.stormrecovery.ny.gov/environmental-docs>

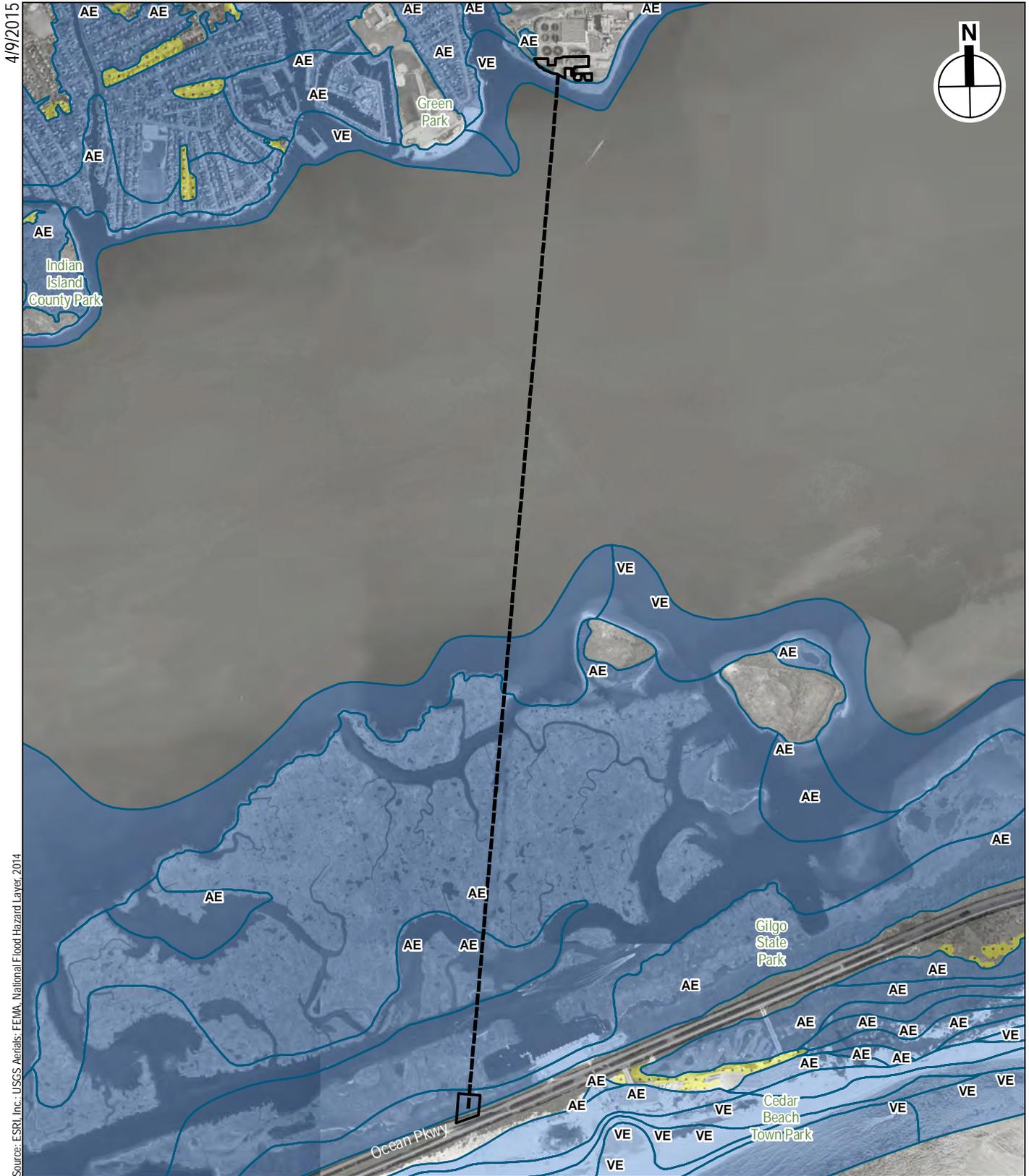
There are three primary purposes for this notice. First, people who may be affected by activities in floodplains or wetlands and those who have an interest in the protection of the natural environment should be given an opportunity to express their concerns and provide information about these areas. Second, adequate public notice is an important public education tool. The dissemination of information about floodplains and wetlands facilitates and enhances Federal efforts to reduce the risks associated with the occupancy and modification of these special areas. Third, as a matter of fairness, when the Federal government determines it will participate in actions taking place in floodplains or wetlands, it must inform those who may be put at greater or continued risk.

PUBLIC COMMENTS

Any individual, group, or agency may submit written comments on the proposed action or a request for further information to Thomas King, Assistant General Counsel and Certifying Officer, Governor's Office of Storm Recovery, 99 Washington Avenue, Suite 1224, Albany, NY 12260; email: NYSCDBG_DR_ER@nyshcr.org. All comments received by **May 8, 2015** will be considered.

Thomas King, Assistant General Counsel and Certifying Officer

April 23, 2015



-  Proposed Staging Areas
-  Proposed Outfall
-  100-Year Floodplain
-  500-Year Floodplain

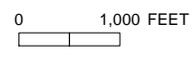
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4/10/2015

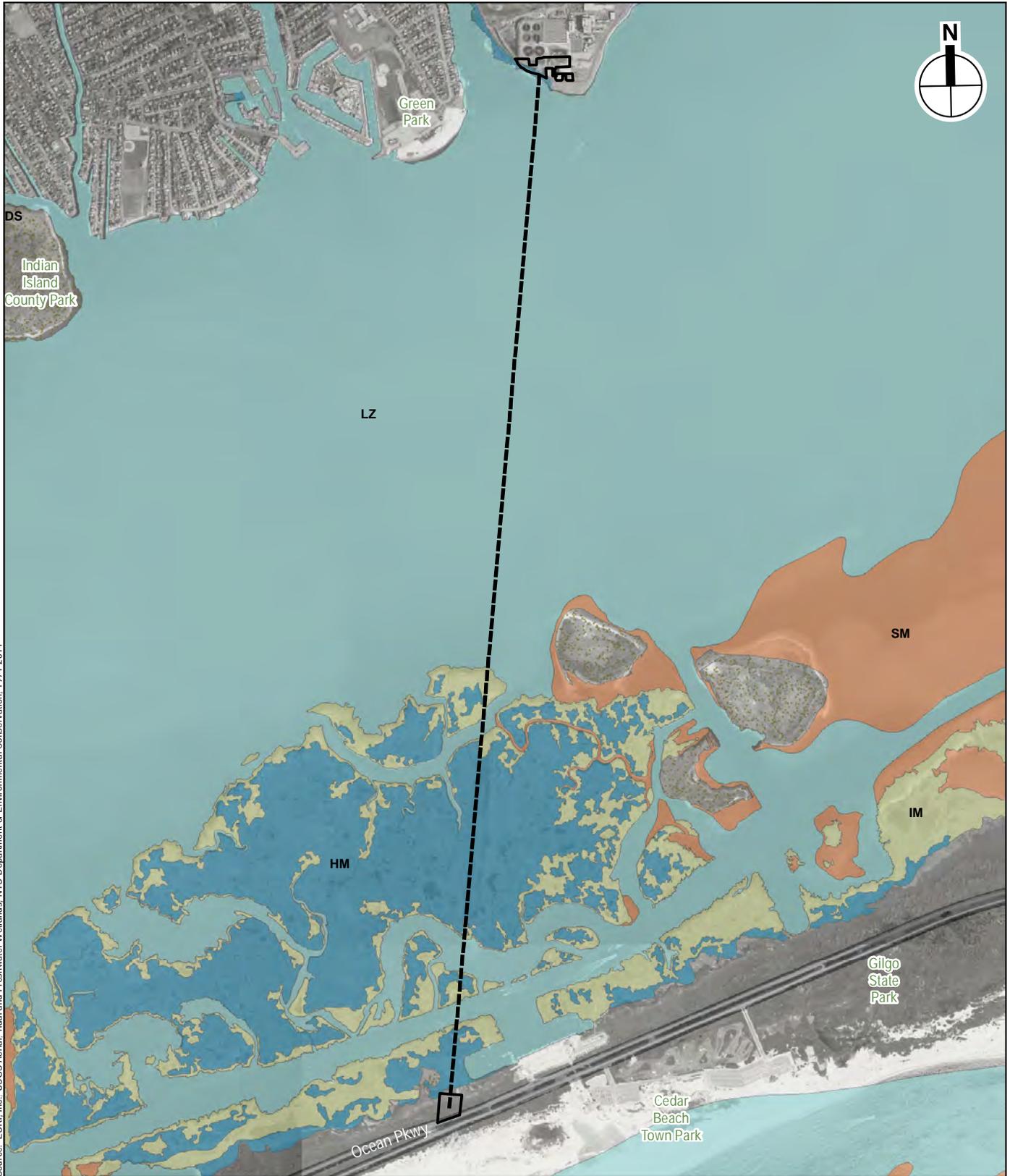


Source: E.SRI, Inc.; USGS Aerials; NWI Mapped Wetlands; USFWS, 2014

- Proposed Staging Areas
- Proposed Outfall
- Freshwater Forested/Shrub Wetland
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Pond
- Estuarine and Marine Deepwater



4/10/2015



Source: ESRI, Inc.; USGS Aerial; Tidal and Freshwater Wetlands, NYS Department of Environmental Conservation, 1974-2014

- Proposed Staging Areas
- Proposed Outfall
- Fresh Marsh
- High Marsh
- Intertidal Marsh
- Littoral Zone
- Coastal Shoals, Bars and Mudflats
- Dredged Spoil
- Formerly Connected Wetlands

0 1,000 FEET

Floodplain Management & Wetland Protection Plan

**Governor's Office of Storm Recovery
U.S. Department of Housing and Urban Development
Community Development Block Grant – Disaster Recovery**

**Bergen Point Wastewater Treatment Plant Outfall Replacement Project
Suffolk County, NY**

Effective Date: August 13, 2015

**Executive Order 11988 – Floodplain Management
Executive Order 11990 – Protection of Wetlands**

**Governor’s Office of Storm Recovery
U.S. Department of Housing and Urban Development
Community Development Block Grant – Disaster Recovery**

**Bergen Point Wastewater Treatment Plant Outfall Replacement Project
Suffolk County, NY**

Effective Date: August 13, 2015

This Floodplain Management and Wetland Protection Plan meets the requirements of 24 CFR Part 55.20 and Executive Order 11988 (Floodplain Management) and Executive Order 11990 (Protection of Wetlands) for the Bergen Point Wastewater Treatment Plant Outfall Replacement Project (the Project) in Suffolk County, NY. This Floodplain Management and Wetland Protection Plan documents the eight-step decision making for the Project and pertains to activities within the Special Flood Hazard Area (SFHA) as defined by the Federal Emergency Management Agency (FEMA), or its successors, pursuant to the National Flood Insurance Program (NFIP), or a successor program, whether advisory, preliminary, or final, as well as within wetland areas.

Description of Proposed Program Activities

The U.S. Department of Housing and Urban Development (HUD) is responsible for administration of the CDBG-DR program pursuant to the Disaster Relief Appropriations Act of 2013. The CDBG-DR program is designed to address the needs of New York State (NYS) communities devastated by Superstorm Sandy. To date, this funding has been disbursed in three allocations. On Tuesday, March 5, 2013, HUD published Federal Register Notice 78 Fed. Reg. 14329, which established the requirements and processes for the first \$1.71 billion in federal CDBG-DR aid appropriated by the United States Congress and allocated to NYS for disaster relief. On November 18, 2013, HUD issued a second allocation of \$2.097 billion to NYS under Federal Register Notice 78 Fed. Reg. 69104. On October 16, 2014, HUD issued the third and final allocation of \$600 million to NYS under Federal Register Notice 79 Fed. Reg. 62194.

The Governor’s Office of Storm Recovery (GOSR) is conducting an evaluation as required by Executive Order 11988 and Executive Order 11990 in accordance with HUD regulations under 24 CFR 55.20 Subpart C - Procedures for Making Determinations on Floodplain Management and Protection of Wetlands, to determine the potential effects that Project activity in the floodplain and in wetland areas would have on the human environment.

Funding for the Project will be provided by the Clean Water State Revolving Fund Storm Mitigation Loan Program (SMLP) with support from the HUD CDBG-DR program.

The Bergen Point Wastewater Treatment Plant (WWTP), owned and operated by Suffolk County Department of Public Works, discharges treated effluent through an ocean outfall that passes beneath the Great South Bay and underneath the barrier island to the Atlantic Ocean. The 14,200- foot long segment of the outfall that extends from the WWTP to the barrier island, passing underneath Great South Bay, has been determined to be in a failing condition and needs to be replaced. The selected replacement alternative proposes to replace the failing outfall

segment with a 14,200-foot long tunnel constructed by means of a tunnel boring machine (TBM). Construction of the tunnel via TBM, as opposed to dredging and trenching, is the preferred alternative to be employed in the construction of the replacement outfall, as it is the alternative with the least impact to the Great South Bay and surrounding environment. The new section of the outfall will be connected to the existing ocean portion of the outfall near the existing sample chamber on the barrier island just north of Ocean Parkway using stainless steel piping. A bypass system with line stops will be installed to ensure that the operation of the tunnel outfall will not be interrupted during the connection process.

Above ground construction includes an access or working shaft at the Bergen Point WWTP site, and an exit or receiving shaft at Gilgo State Park on the barrier island within the existing easement north of Ocean Parkway. The access shafts will be constructed by using ground freezing techniques or secant piles, allowing the construction of the replacement outfall tunnel at a depth of approximately 60 to 80 feet below the existing surface. An estimated 90,000 cubic yards of muck is anticipated to be removed during the construction of the Proposed Action, including both tunnel excavation and shaft construction. It is estimated that the daily muck hauling truck trips to remove this material offsite should be 8 to 10 trucks. The new section of the outfall would be joined to the existing ocean portion of the outfall on the barrier island. Treated effluent would then continue to discharge through the outfall to the Atlantic Ocean as has been the case for over 30 years. No carrier pipes would be installed within the tunnel; the lined tunnel itself would be the replacement outfall.

The staging area at the barrier island would be approximately 2 to 2.5 acres and the staging area at the WWTP would be approximately 2.5 to 3 acres. Staging areas would be restored after completion. All disturbed area on the barrier island will be revegetated and restored. Most of the construction would take place well below Great South Bay via the TBM to minimize impacts to the environment.

Executive Orders 11988 and 11990 & 24 CFR Part 55

Under 24 CFR Part 55.20, an eight-step decision making process must be completed for proposed actions taking place in a floodplain or wetland. 24 CFR Part 55.20 implements Executive Order (EO) 11988 (Floodplain Management) and Executive Order 11990 (Protection of Wetlands).

EO 11988 requires federal agencies (or a state agency implementing a federal funding program) to reduce the loss of life and property caused by floods, minimize impacts of floods on human safety, health, and welfare, and preserve the natural and beneficial functions of floodplains. EO 11990 requires federal agencies (or a state agency implementing a federal funding program) to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. Under these orders, federal agencies should first look at avoiding all actions in or adversely affecting floodplains or wetlands unless no practicable alternatives exist. If no practicable alternatives exist, then federal agencies must evaluate the potential effects of the proposed action.

In addition, federal agencies are required to demonstrate that consideration of all practicable alternatives has resulted in the reduction or elimination of the long- and short-term adverse impacts associated with occupancy and modifications of the floodplain or wetlands. This eight-step process includes assessing all practicable alternatives and incorporating public review.

Projects located within the SFHA are subject to Executive Order 11988. Information on where SFHAs are located is available on Flood Insurance Rate Maps (FIRMs) published by FEMA. FEMA uses engineering studies to determine the delineation of these areas or zones subject to flooding. The relevant data source for the SFHA is the latest issued FEMA data or guidance, which includes advisory data, such as Advisory Base Flood Elevations (ABFEs) or preliminary and final FIRMs.

The SFHA is the area that would be inundated by a 100-year flood: an area that has a one percent or greater chance of experiencing a flood in any single year. SFHAs are shown on FIRMs as shaded areas labeled with the letter “A” or “V”.

- “V” zones are coastal flood hazard zones subject to wave run-up in addition to storm surge.
- “A” zones include all other special flood hazard areas.
- “VE” zones, “AE” zones, “V” zones, or “A” zones followed by a number are areas with specific flood elevations, known as Base Flood Elevations (BFE).
- A zone with the letter “A” or “V” by itself is an appropriately studied flood hazard area without a specific flood elevation.
- Within an “AE” zone or a numbered “A” zone, there may be an area known as the “regulatory floodway,” which is the channel of a river and adjacent land areas which must be reserved to discharge a 100-year flood without causing a rise in flood elevations.

Projects located within, or otherwise modifying wetlands, are subject to EO 11990. As defined in 24 CFR 55.2 (b)(11), wetlands include those areas that are inundated by surface or ground water with a frequency sufficient to support, and under normal circumstances does or would support, a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction.

24 CFR Part 55.1 (c)

Under 24 CFR Part 55.1 (c), except with respect to actions listed in Part 55.12(c), no HUD financial assistance (including mortgage insurance) may be approved after May 23, 1994 with respect to:

- (1) Any action, other than a functionally dependent use, located in a floodway;
- (2) Any critical action located in a coastal high hazard area (V zone) (a “critical action” is an action such as storage of volatile materials, irreplaceable record storage, or construction of a hospital or nursing home); or
- (3) Any non-critical action located in a coastal high hazard area, unless the action is designed for location in a coastal high hazard area or is a functionally dependent use and complies with the construction standards outlined in HUD Regulations 24 CFR Part 55 (c)(3).

24 CFR Parts 55.11 & 55.20

Under 24 CFR Parts 55.11 (including Table 1) and 55.20, non-critical actions are allowed in A or V zones only if the actions are reviewed in accordance with the floodplain management eight-step decision making process (eight-step process) outlined in 24 CFR Part 55.20. The eight-step

process was conducted for the Bergen Point Wastewater Treatment Plant Outfall Replacement Project and is detailed below.

24 CFR Part 55.20 Eight-Step Process

Step One: Determine whether the proposed action is located in a 100-year floodplain (or a 500-year floodplain for a Critical Action) or results in new construction in a wetland.

The geographic scope for the Bergen Point Wastewater Treatment Plant Outfall Replacement Project is in the jurisdictional area of Suffolk County, covering approximately 4 to 6 acres between the WWTP and the barrier island staging locations.

The proposed Project location and activities are:

- Staging area and access shaft at Bergen Point WWTP.
- Staging area and access shaft in existing easement adjacent to the north side of Ocean Parkway on the barrier island.
- Tunnel under Great South Bay between WWTP and the barrier island.

The WWTP staging location is located partially within the FEMA “VE” flood zone and the barrier island is located within the FEMA “AE” flood zone. Portions of the tunnel pass beneath the “VE” and “AE” flood zones, but as that portion of the project is underground, it is not subject to flooding. See **EXHIBIT 1** for a map of the project location and FEMA floodplain.

Portions of the staging area on the barrier island are located within wetlands as determined by the National Wetlands Inventory (NWI) and the New York State Department of Environmental Conservation (NYSDEC) delineation of tidal and freshwater wetlands. The outfall line also passes beneath wetlands listed by both the NWI and NYSDEC, but as this work will be done entirely subsurface it will not affect the wetland areas. See **EXHIBIT 2** for a map of the project location and NWI wetland areas. See **EXHIBIT 3** for a map of the project location and NYSDEC tidal and freshwater wetlands.

Step Two: Notify the public at the earliest possible time of a proposal to consider an action in a floodplain (or in the 500-year floodplain for a Critical Action) or wetland, and involve the affected and interested public in the decision making process.

Because a portion of the Project activities would be located in the floodplain and would involve construction in or adjacent to a wetland, GOSR must publish an early notice that allows the public an opportunity to provide input into the decision to provide funding for the Project activities in this area.

Once the early public notice and comment period is complete, GOSR will assess, consider, and respond to the comments received individually and collectively for the project file, then proceed to Step Three.

A 15-day “Early Notice and Public Explanation of a Proposed Activity in a 100-Year Floodplain and Wetland” was published in The Babylon Beacon on April 23, 2015. The 15-day period expired on May 8, 2015. The notice targeted local residents, including those in the floodplain. The notice was also sent to the following state and federal agencies on April 23, 2015: U.S. Department of the Interior (DOI), U.S. Environmental Protection Agency (EPA), U.S. Department of Homeland Security (DHS), U.S. Fish and Wildlife Service (FWS); National Park

Service (NPS); National Oceanic and Atmospheric Administration (NOAA); NOAA National Marine Fisheries Service (NMFS); U.S. Army Corps of Engineers (USACE); NYS Department Environmental Conservation; the NYS Office of Parks, Recreation and Historic Preservation; NYS Department of Transportation; and the NYS Division of Homeland Security and Emergency Services. The notice was also sent to the Town of Babylon, the Village of Babylon, the Village of Lindenhurst, the office of the Suffolk County Executive and the office of the Suffolk County Clerk (see **EXHIBIT 4** for the notice).

GOSR received 0 public comments on this notice.

Step Three: Identify and evaluate practicable alternatives to locating the proposed action in a floodplain (or the 500-year floodplain for a Critical Action) or wetland.

After a consideration of the following alternatives, the Suffolk County Department of Public Works and GOSR have determined the best practicable alternative is the Proposed Action. The alternative actions considered are as follows: No Action, Replace Outfall with Carrier Pipes Installed within a Tunnel, Replace Outfall with Tunnel, Construct Replacement Outfall by Open Cut, Construct New Outfall Discharging to Great South Bay, Line Existing Outfall (with Temporary Outfall Discharging to Great South Bay), and Replace Existing Outfall with Upland Recharge. Descriptions of each alternative considered are as follows:

No Action Alternative

Because of the potential consequences of existing outfall failure (e.g., release of treated effluent directly to Great South Bay), the no action alternative was not considered to be a viable option for the Suffolk County Department of Public Works.

Alternative 1 – Replace Outfall with Carrier Pipes Installed within a Tunnel

This alternative would replace the section of the existing outfall extending from the Bergen Point WWTP south beneath Great South Bay to the barrier island by tunneling. On the barrier island, the new outfall section beneath the Bay would be connected to the existing ocean outfall to convey treated effluent to discharge. Most of the construction associated with this alternative would take place underground to avoid impacts to Great South Bay and to the environment. Above ground construction includes an access or working shaft at the Bergen Point WWTP site, and an exit or receiving shaft on the barrier island within the existing easement north of Ocean Parkway.

Tunnel implementation would begin with construction of an approximately 35-foot diameter access or working shaft at the Bergen Point WWTP site, with ground freezing recommended to reduce impacts to the surrounding area. A TBM would be lowered into the approximately 70 foot deep shaft, and it would then advance southward towards the barrier island. A concrete liner system would be installed as the TBM was advanced. An exit or receiving shaft would be constructed within the existing easement north of Ocean Parkway on the barrier island, where the TBM would be retrieved from the tunnel. It is estimated that approximately three acres at the Bergen Point WWTP site would be disturbed for construction equipment and materials storage, shaft construction, and spoils storage. Up to three acres would also be disturbed within the existing easement on the barrier island for receiving/exit shaft construction, equipment storage, and connection to the existing outfall. After the tunnel is constructed, two 54-inch diameter steel carrier pipes would be installed within the tunnel. Five hundred and eighty 25-foot long pipe sections would be lowered into the tunnel. The pipes would be joined with lap joints, welded from the inside of the pipes, and the pipes would be grouted in place.

The new section of the outfall would be joined to the existing ocean portion of the outfall within the existing easement north of Ocean Parkway on the barrier island. Treated effluent would then continue to discharge through the outfall to the Atlantic Ocean.

When the construction is complete, the disturbed area at the Bergen Point WWTP would be restored and the disturbed area on the barrier island would be revegetated and restored. This alternative would also require work within the floodplain and wetland.

Alternative 2 – Construct Replacement Outfall by Open Cut

This alternative would replace the existing deteriorated section of the outfall crossing Great South Bay by excavating an approximately 16 foot deep trench approximately 75 feet to the west of the existing outfall, within the existing easement. For redundancy, two 54-inch diameter ductile iron pipes would be positioned within the trench, and mechanically joined underwater.

Hydraulic dredging would be used to excavate the trench for the replacement outfall pipes, causing the least disturbance to the work area and removing the sands and silts that exist within this alignment twice as quickly as with mechanical dredging. The fluidized materials removed by the hydraulic dredge would be pumped to hopper barges while the pipes are being installed. Due to the shallow nature of the Bay in the area, the barges could only be partially filled to avoid disturbing the bottom. Silt curtains would be required for sediment control.

The section of the outfall passing between Cedar Island, the State Boat Channel and the barrier island would be constructed using a mechanical excavator mounted on a jack-up barge or a low draft barge; steel sheeting would be installed to isolate the work area. Construction of the replacement outfall by open cut requires significant work within Great South Bay, and a much greater potential for environmental impact than the other tunnel alternatives. This alternative would also require work within the floodplain and wetland.

Alternative 3 – Construct New Outfall Discharging to Great South Bay

This alternative, construction of a new outfall discharging directly to Great South Bay, was determined to be infeasible from a regulatory perspective.

The existing Bergen Point WWTP outfall discharges to the Atlantic Ocean, which provides significant dilution of the constituents that are found in effluent from a wastewater treatment facility. In contrast, Great South Bay is a much smaller and shallower water body that would not be expected to assimilate the effluent without unacceptable water quality impacts. Consequently it is anticipated that the existing WWTP would have to be upgraded to provide a higher level of treatment, including seven additional aeration tanks and two additional final clarifiers, as well as denitrification filters or membranes. It would be a challenge to fit all of the additional tankage and processes onto the existing Bergen Point WWTP site.

Along the existing easement following the alignment of the existing outfall, the Bay is very shallow, primarily between one and five feet deep. Several approaches to discharging the treated effluent to the Bay were explored. One option would site a network of diffusers along the Bay bottom to the east of the easement where the water is somewhat deeper; another would carry the treated effluent to the State Boat Channel where additional dilution would be provided. Based on the preliminary dimensions of the diffusers required to discharge the treated effluent, approximately 30 acres of Bay bottom would be disturbed during construction.

In addition to the short term construction-related impacts associated with implementation of this alternative, the potential long-term impacts associated with implementation are significant. They include addition of a significant fresh water flow to the Bay (which would alter local salinity and the distribution of benthic organisms and finfish, and could significantly affect the local ecosystem), closure of shellfish beds and closure of parts of the Bay to recreational users. This alternative would also require work within the floodplain and wetland.

Alternative 4 – Line Existing Outfall Pipe (with Temporary Outfall Discharging to Great South Bay)

This alternative would slip line the existing outfall pipe crossing beneath the bottom of Great South Bay by assembling new pipe segments on land or on barges, and then either pushing or pulling the assembled liner pipe through the existing outfall pipe. The ends of the liner pipe would be joined with the existing pipeline using adapters, tested, and put into service. During installation of the slip liner, the existing outfall could not be utilized so treated effluent from the Bergen Point WWTP would need to be redirected for over two years while the slip-lining was being performed. Three slip liner materials (centrifugally cast fiberglass pipe, ductile iron pipe and steel) and four options for bypass of the outfall (on-site storage, removal from the site via tanker truck, temporary outfall discharging to the Atlantic Ocean and temporary outfall discharging to Great South Bay) were considered.

Several challenges associated with implementation of the slip-lining alternative were identified. The existing outfall pipe would need to be removed from service, dewatered and cleaned prior to installing the 68-inch diameter liner pipe. Based on the information available, it is not known whether the external water pressure would cause the existing outfall to collapse when it was dewatered. If the existing outfall were to collapse, it would have to be replaced by one of the other five alternatives and treated effluent would have to be discharged elsewhere for an extended design and construction period. Due to the limits in pulling or pushing a liner pipe, at least 15 sheeted access points would be required to access the outfall. This would require disturbance of the bottom of the Great South Bay.

Given the uncertainty concerning the condition of the existing outfall and the ability to safely dewater it for cleaning and lining, as well as the difficulties associated with temporarily disposing of the treated wastewater, this alternative would be challenging, if not impossible, to implement. This alternative would also require work within the floodplain and wetland.

Alternative 5 – Replace Existing Outfall with Upland Recharge

This alternative would replace the existing ocean outfall in its entirety with a new upland effluent force main. Treated effluent would be pumped to discharge via a network of recharge basins and/or injection wells located throughout the Southwest Sewer District, to the north of the Bergen Point WWTP.

This alternative would require:

- Upgrade of the Bergen Point WWTP to provide the higher level of treatment required to achieve groundwater (drinking water) standards,
- Booster pump stations (in addition to the upgraded effluent pump station) to convey the treated wastewater to the distribution network,
- A piping/distribution network to convey the treated effluent to the recharge/injection locations,
- A network of recharge basins/injection wells to recharge the treated effluent to the groundwater system,

- Instrumentation and SCADA system to monitor water levels at the recharge facilities and turn the pumps on/off at specific locations, and
- Network of monitoring wells for routine testing of groundwater downgradient of the recharge locations.

The necessary upgrades to the Bergen Point WWTP would require significant additional tankage and process equipment, which would be a challenge to fit onto the existing Bergen Point WWTP site.

The final effluent pump station would be renovated for each of the alternatives. For this alternative, the new pumps in the renovated pump station would need to be sized for the head conditions associated with pumping the treated effluent to the higher elevations found upgradient of the plant. It is also anticipated that booster pump stations would be required at each recharge site, as well as dual force mains, located within the Long Island Expressway right-of-way, to convey wastewater between pump stations.

Based on the preliminary estimate of the number of leaching pools that would be required to recharge over 90 MGD, it was determined that the use of leaching pools would be eliminated from further consideration and recharge via open recharge basins and/or injection wells would be evaluated. A total of 10 parcels large enough to recharge a minimum of 1 MGD via recharge basins were identified, and approximately 79 parcels were identified as potential sites for injection wells.

The recharge piping network would be equipped with flow meters and flow control valves at key distribution points to distribute flow to the appropriate recharge facilities. In addition, it is anticipated that a minimum of one upgradient and one downgradient monitoring well would be required at each recharge location; these wells would be monitored on a quarterly basis.

This alternative would also require work within the floodplain and wetland.

These alternatives will be re-evaluated in light of any public comments received.

Step Four: Identify the potential direct and indirect impacts associated with the occupancy or modification of the floodplain (or 500-year floodplain for a Critical Action) or wetland.

GOSR has evaluated the alternatives to the proposed Project activities in the floodplain and wetland, and has determined that the proposed activities must take place in the floodplain and wetland.

Given that the proposed Project components located within the floodplain and wetland will be located entirely underground and are not susceptible to damage from flooding, there are no direct or indirect impacts anticipated as a result of the Project activities. The work proposed to take place in wetland areas has been specifically designed to avoid any long-term impacts to wetland areas.

Construction activities within the floodplain and wetlands will include site preparation, shaft construction, tunnel construction, and connection to existing outfall activities. However, a majority of the work will take place underground, inside the proposed tunnel where there will be minimal disturbance and work within the floodplain or wetland. Potential impacts from

construction activities would be temporary (approximately three years) and mitigated as appropriate (see Step Five).

The 2000-2005 New York State Breeding Bird Atlas documented 50 species of birds as confirmed or possibly/probably breeding in the census block in which the proposed staging area on the barrier island is located (Block 6349A). All but two (2) of these species are considered migratory birds and are protected under the Migratory Bird Treaty Act (MBTA). As such, clearing of the staging area during breeding periods could disrupt active nests or other direct impacts to the bird species. Any potential impacts to migratory bird species will be mitigated appropriately (see Step Five).

Work proposed as part of the Project will not disturb or modify the floodplain or wetland and appropriate state and federal permits will be obtained.

The proposed Project will have a beneficial outcome for the wetland areas in Great South Bay, as it averts the risk of environmental damage associated with catastrophic failure of the existing outfall pipe.

Step Five: Where practicable, design or modify the proposed action to minimize the potential adverse impacts within the floodplain (including the 500-year floodplain for a Critical Action) or wetland and to restore and preserve their natural and beneficial values.

As proposed, the Project activities within floodplain and wetland areas employ minimally invasive technologies, including use of a TBM and ground freezing, in order to minimize the potential adverse impacts to these areas.

Strict requirements for the disposal of waste material generated during construction will be in place to prevent, to the extent possible, negative impacts to floodplain and wetland areas. The handling and disposal of excavated soil, control of stormwater runoff, and mitigation of air quality and noise impacts resulting from Project work would be in accordance with all local and State regulations.

The Project would also implement and maintain erosion and sedimentation control measures to prevent deposition of sediment and eroded soil in on-site and off-site wetlands and waters. Soil compaction would be controlled by minimizing activities in vegetated areas, including lawns. Best management practices (BMPs), such as silt fence and erosion prevention, may be implemented if required by permits or agency discretion. Work in soil areas with high wind erosion potential may have to occur only during calm weather conditions or include additional watering and other dust suppression mitigation measures. Thorough planning, engineering review, and design, through the local permitting process, would minimize soil erosion and damage to the floodplain that could result from Project construction activities.

Clearing of the staging area on the barrier island would be conducted between October 31 and February 1 in order to eliminate the potential to impact active migratory bird nests or other direct impacts to the species under the MBTA. Following construction activity, the staging area would be restored and the composition of the breeding bird community within and adjacent to the site would be expected to return to its current state.

Step Six: Reevaluate the proposed action to determine: (1) Whether it is still practicable in light of its exposure to flood hazards in the floodplain or wetlands, the extent to which it

will aggravate the current hazards to other floodplains or wetlands, and its potential to disrupt floodplain or wetland values; and (2) Whether alternatives preliminarily rejected at Step Three are practicable in light of the information gained in Steps Four and Five.

GOSR has reevaluated the proposed action and determined that the Bergen Point Wastewater Treatment Plant Outfall Replacement Project is still practicable in light of its exposure to floodplain hazards and its small potential disturbance to wetlands. The proposed Project is not expected to have a significant adverse impact on floodplain or wetland functions, as described above.

The project team will take the following steps to mitigate the effects of the Project on the floodplain and wetlands and to preserve their natural and beneficial properties:

- 1) Excavation and installation of the replacement outfall tunnel by TBM;
- 2) Use of ground freezing technology or secant piles for shaft excavation;
- 3) Implementation of site-specific hazard mitigation measures, including BMPs to reduce erosion and sedimentation, and proper disposal of excavated soil and construction waste; and
- 4) Restrict clearing of the staging area on the barrier island to the months between October 31 and February 1.

GOSR has also reconsidered the alternatives discussed in Step Three and determined the best practicable alternative is the proposed Project. The alternatives considered are as follows: No Action, Replace Outfall with Carrier Pipes Installed within a Tunnel, Replace Outfall with Tunnel, Construct Replacement Outfall by Open Cut, Construct New Outfall Discharging to Great South Bay, Line Existing Outfall (with Temporary Outfall Discharging to Great South Bay), and Replace Existing Outfall with Upland Recharge. Though some of these alternatives would meet the project goal of eliminating the risk of failure of the existing outfall pipe, they do not all meet the objectives of doing so with minimal environmental impacts and cost. Furthermore, all evaluated alternatives also require work in the floodplain and in wetland areas; therefore there is no practicable alternative to locating the proposed action in the floodplain or wetland.

Step Seven: If the reevaluation results in a determination that there is no practicable alternative to locating the proposal in the floodplain (or the 500-year floodplain for a Critical Action) or wetland, publish a final notice.

It is GOSR's determination that the preferred alternative is the proposed Bergen Point Wastewater Treatment Plant Outfall Replacement Project. The benefits of the Project would be to reduce the potential for failure of the existing outfall pipe, improving the resiliency of wastewater treatment in Suffolk County and eliminating a significant environmental risk to Great South Bay.

A 7-day "Final Notice and Public Explanation of a Proposed Activity in a 100-Year Floodplain and Wetland" was published in The Babylon Beacon on August 6, 2015. The 7-day period expires on August 13, 2015. The notice targeted local residents, including those in the floodplain. The notice was also sent to the following state and federal agencies on May 25, 2015: U.S. Department of the Interior (DOI), U.S. Environmental Protection Agency (EPA), U.S. Department of Homeland Security (DHS), U.S. Fish and Wildlife Service (FWS); National Park Service (NPS); National Oceanic and Atmospheric Administration (NOAA); NOAA National Marine Fisheries Service (NMFS); U.S. Army Corps of Engineers (USACE); NYS Department

Environmental Conservation; the NYS Office of Parks, Recreation and Historic Preservation; NYS Department of Transportation; and the NYS Division of Homeland Security and Emergency Services. The notice was also sent to the Town of Babylon, the Village of Babylon, the Village of Lindenhurst, the office of the Suffolk County Executive and the office of the Suffolk County Clerk (see **EXHIBIT 5** for the notice).

GOSR received **0** public comments on this notice.

Step Eight: Implement the Action

Step eight is implementation of the proposed action. GOSR will ensure that construction and project activities adhere to all mitigation measures prescribed in the steps above. Also, prior to project implementation, GOSR will conduct a National Environmental Policy Act (NEPA) review in accordance with 24 CFR Part 58 and a New York State Environmental Quality Review Act (SEQR) review in accordance with 6 NYCRR Part 617.

EXHIBIT 1 Project Location Floodplain Map

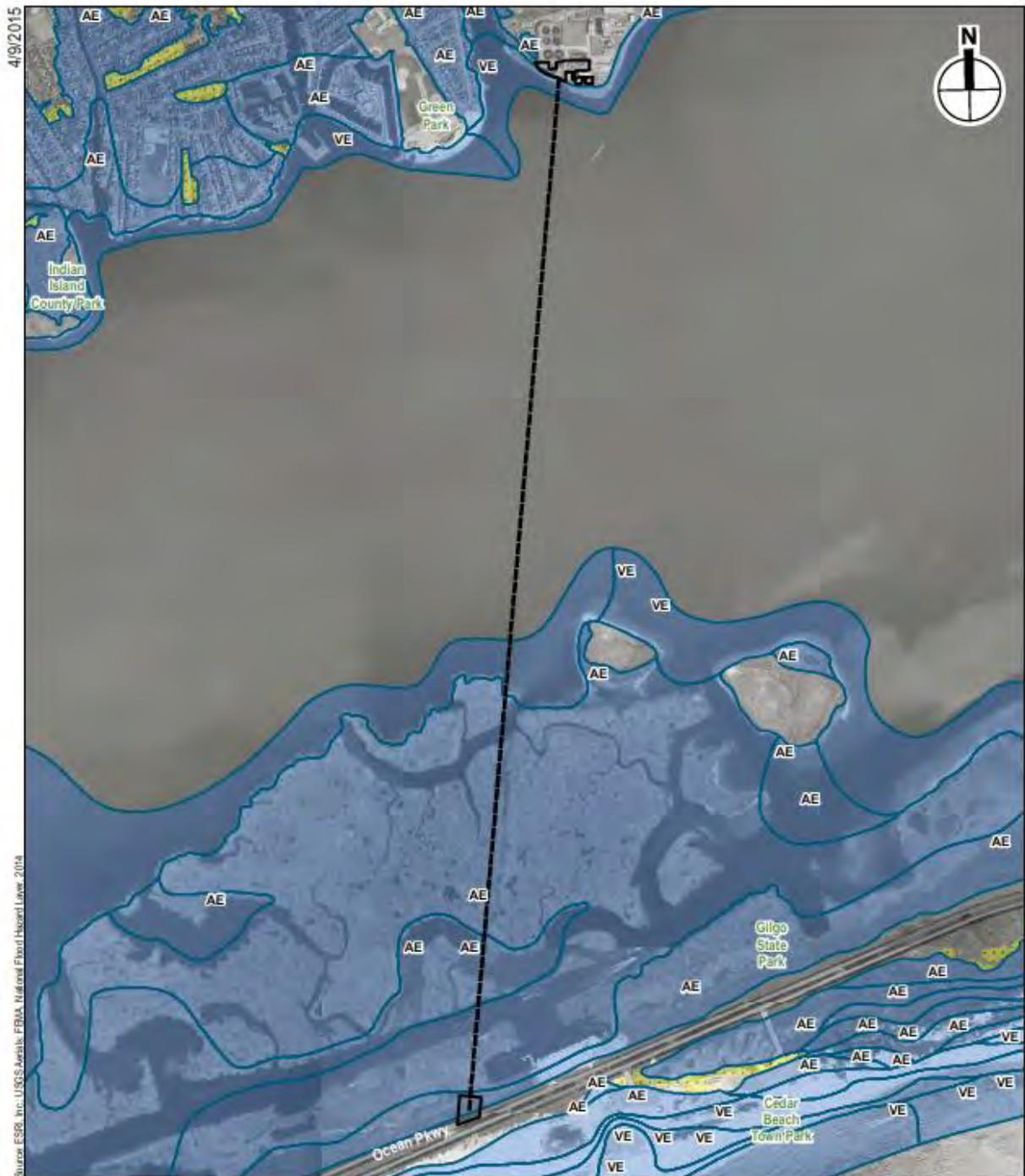
EXHIBIT 2 Project Location National Wetlands Inventory Map

EXHIBIT 3 Project Location NYSDEC Tidal and Freshwater Wetlands Map

EXHIBIT 4 Copy of Notice Transmitting Notice of Early Public Review and Proof of Publication

EXHIBIT 5 Copy of Notice Transmitting Notice of Final Public Review and Proof of Publication

EXHIBIT 1 Project Location Floodplain Map



Source: ESRI, Inc., USGS, Aerials; FEMA, National Flood Hazard Layer, 2014

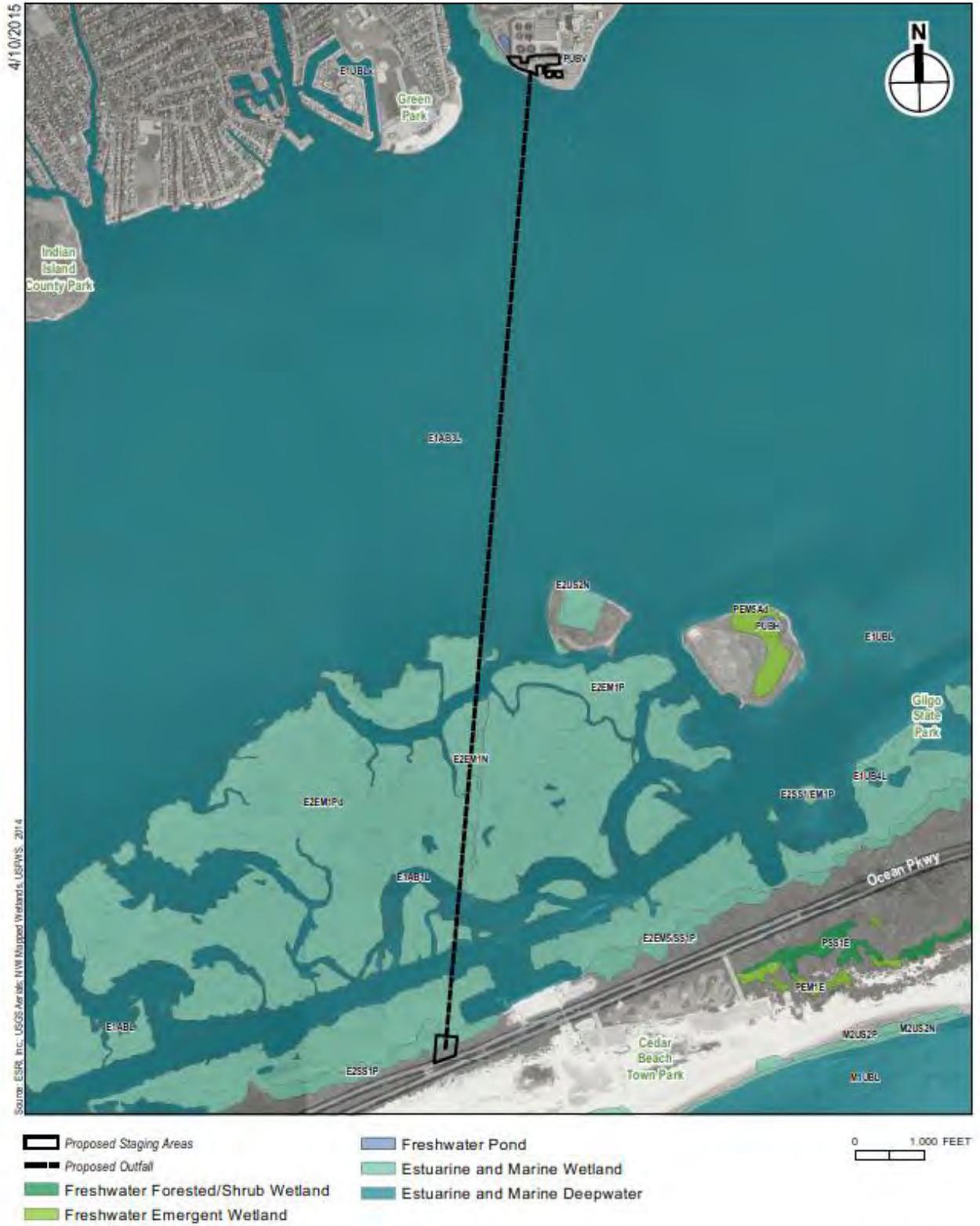
- Proposed Staging Areas
- Proposed Outfall
- 100-Year Floodplain
- 500-Year Floodplain

0 1,000 FEET

BERGEN POINT WWTP OUTFALL REPLACEMENT PROJECT

FEMA Floodplain

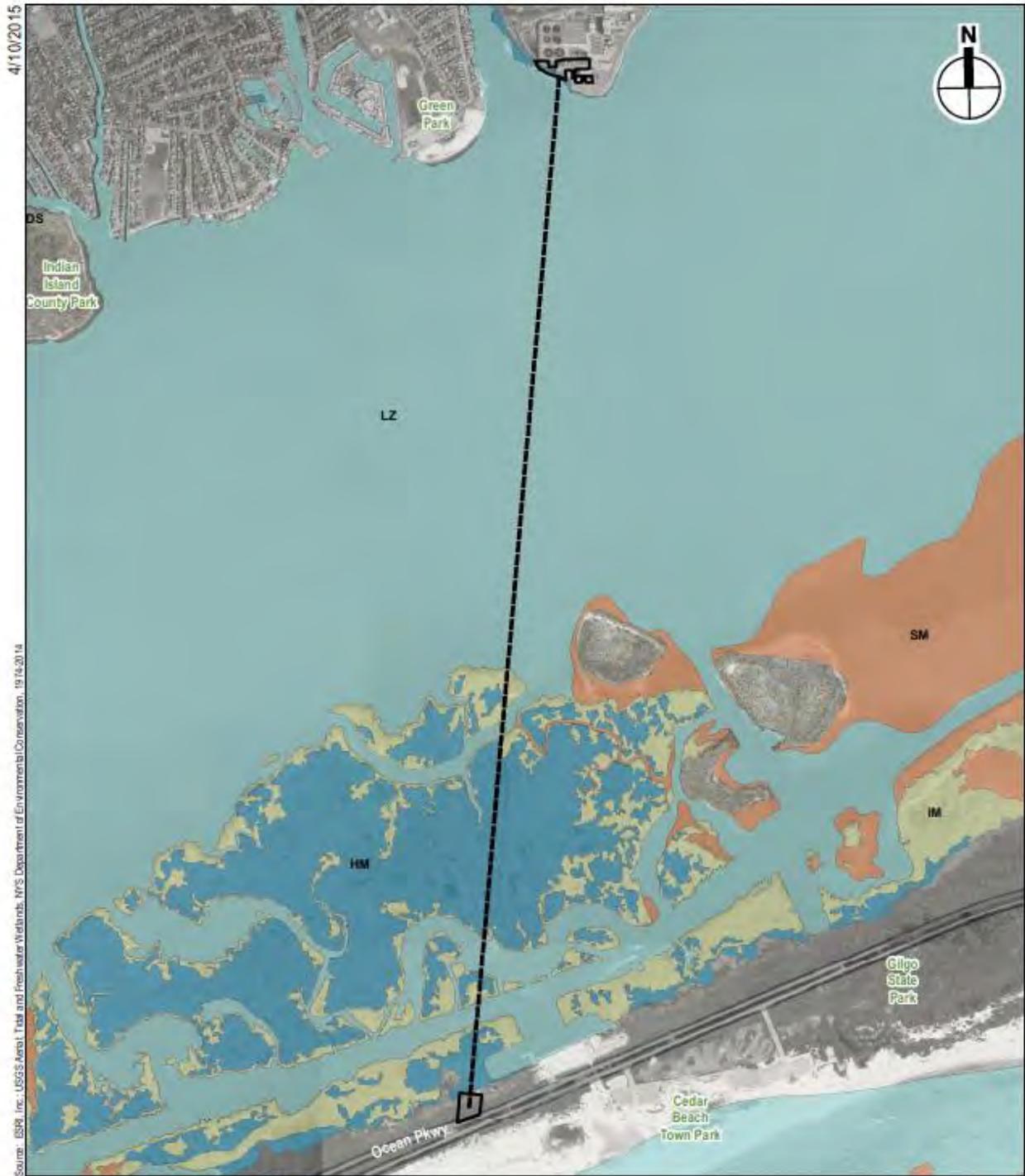
EXHIBIT 2 Project Location National Wetlands Inventory Map



BERGEN POINT WWTW OUTFALL REPLACEMENT PROJECT

NWI Wetlands

EXHIBIT 3 Project Location NYSDEC Tidal and Freshwater Wetlands Map



- Proposed Staging Areas
- Proposed Outfall
- Fresh Marsh
- High Marsh
- Intertidal Marsh
- Littoral Zone
- Coastal Shoals, Bars and Mudflats
- Dredged Spoil
- Formerly Connected Wetlands

0 1,000 FEET

NYSDEC Tidal and Freshwater Wetlands

BERGEN POINT WWTP OUTFALL REPLACEMENT PROJECT

**EXHIBIT 4 Copy of Notice Transmitting Notice of Early Public Review
and Proof of Publication**

**EARLY NOTICE AND PUBLIC EXPLANATION OF
A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN and WETLAND**

**BERGEN POINT WASTEWATER TREATMENT PLANT OUTFALL REPLACEMENT
PROJECT
SUFFOLK COUNTY, NY**

Thomas King, Assistant General Counsel and Certifying Officer
Governor's Office of Storm Recovery
99 Washington Avenue, Suite 1224
Albany, NY 12260

NOTIFICATION OF ACTIVITY IN A FLOODPLAIN

To: All interested Agencies, Groups, and Individuals

This is to give notice that the Governor's Office of Storm Recovery (GOSR) is conducting an evaluation as required by Executive Order 11988 and Executive Order 11990 in accordance with U.S. Department of Housing and Urban Renewal (HUD) regulations under 24 CFR 55.20 Subpart C - Procedures for Making Determinations on Floodplain Management and Protection of Wetlands, to determine the potential effects that its activity in the floodplain and wetland would have on the human environment.

The Bergen Point Wastewater Treatment Plant (WWTP) discharges treated effluent to the Atlantic Ocean through an outfall passing under Great South Bay and the barrier island. The section of the existing outfall that runs from the WWTP to the barrier island is in a failing condition. Detailed engineering studies have determined that the operating pressure on the outfall pipe must be minimized to reduce the potential for pipe failure and an alternative means of discharging wastewater must be implemented. High operating pressures, such as those experienced during Superstorm Sandy, further threaten the condition of the outfall pipe.

The proposed project would replace the existing section of outfall between the WWTP and the barrier island with a 10 foot diameter tunnel to convey treated wastewater, which would run 14,200 feet parallel to the existing outfall pipeline and be connected to the existing ocean outfall beneath the barrier island prior to discharge. In order to construct the tunnel by tunnel boring machine, 30 foot diameter access shafts would be excavated at the WWTP and on the barrier island. After construction is complete, treated effluent will continue to flow from the Bergen Point WWTP to ocean discharge and the access shaft areas will be restored.

Funding for the project will be provided by the Clean Water State Revolving Fund Storm Mitigation Loan Program (SMLP) with support from the HUD Community Development Block Grant – Disaster Recovery (CDBG-DR) program for storm recovery activities in New York State.

A floodplains map based on the FEMA Base Flood Elevation Maps and wetlands maps based on the National Wetland Inventory and New York State Department of Environmental Conservation

(NYSDEC) data have been prepared for this project and are available for review at <http://www.stormrecovery.ny.gov/environmental-docs>

There are three primary purposes for this notice. First, people who may be affected by activities in floodplains or wetlands and those who have an interest in the protection of the natural environment should be given an opportunity to express their concerns and provide information about these areas. Second, adequate public notice is an important public education tool. The dissemination of information about floodplains and wetlands facilitates and enhances Federal efforts to reduce the risks associated with the occupancy and modification of these special areas. Third, as a matter of fairness, when the Federal government determines it will participate in actions taking place in floodplains or wetlands, it must inform those who may be put at greater or continued risk.

PUBLIC COMMENTS

Any individual, group, or agency may submit written comments on the proposed action or a request for further information to Thomas King, Assistant General Counsel and Certifying Officer, Governor's Office of Storm Recovery, 99 Washington Avenue, Suite 1224, Albany, NY 12260; email: NYSCDBG_DR_ER@nyshcr.org. All comments received by **May 8, 2015** will be considered.

Thomas King, Assistant General Counsel and Certifying Officer

April 23, 2015



Newspapers

65 Deer Park Avenue
Babylon, NY 11702
Phone : (631) 587-5612
Fax: (631) 587-0198
email: beaconnews@rcn.com

Affidavit of Publication

County of Suffolk

State of New York

Carolyn James, being duly sworn, deposes and says that she is the office clerk of The Beacon, a weekly newspaper published at Babylon in the County of Suffolk Staete of New York, and that a notice, a printed copy of which is hereto annexed has been published in said newspaper once in each week for

week(s) **one (1)**

April 23, 2015

VIZ:

Sworn to me before this 23rd day of April, 2015.

Notary Public, Suffolk County

Donna M. Consola
NOTARY PUBLIC State of New York
No. 01C0507719
Qualified in Suffolk County
Commission Expires March 25, 2018

Groups, and Individuals

This is to give notice that the Governor's Office of Storm Recovery (GOSR) is conducting an evaluation as required by Executive Order 11988 and Executive Order 11990 in accordance with U.S. Department of Housing and Urban Renewal (HUD) regulations under 24 CFR 55.20 Subpart C - Procedures for Making Determinations on Floodplain Management and Protection of Wetlands, to determine the potential effects that its activity in the floodplain and wetland would have on the human environment.

The Bergen Point Wastewater Treatment Plant (WWTP) discharges treated effluent to the Atlantic Ocean through an outfall passing under Great South Bay and the barrier island. The section of the existing outfall that runs from the WWTP to the barrier island is in a failing condition. Detailed engineering studies have determined that the operating pressure on the outfall pipe must be minimized to reduce the potential for pipe failure and an alternative means of discharging wastewater must be implemented. High operating pressures, such as those experienced during Superstorm Sandy, further threaten the condition of the outfall pipe.

The proposed project would replace the existing section of outfall between the WWTP and the barrier island with a 10 foot diameter tunnel to convey treated wastewater, which would run 14,200 feet parallel to the existing outfall pipeline and be connected to the existing ocean outfall beneath the barrier island prior to discharge. In order to construct the tunnel by tunnel boring machine, 30 foot diameter access shafts would be excavated at the WWTP and on the barrier island. After construction is complete, treated effluent will continue to flow from the Bergen Point WWTP to ocean discharge and the access shaft areas will be restored.

Funding for the project will be provided by the Clean Water State Revolving Fund Storm Mitigation Loan Program (SMLP) with support from the HUD Community Development Block Grant - Disaster Recovery (CDBG-DR) program for

storm recovery activities in New York State.

A floodplains map based on the FEMA Base Flood Elevation Maps and wetlands maps based on the National Wetland Inventory and New York State Department of Environmental Conservation (NYSDEC) data have been prepared for this project and are available for review at <http://www.stormrecovery.ny.gov/environmental-docs>

There are three primary purposes for this notice. First, people who may be affected by activities in floodplains or wetlands and those who have an interest in the protection of the natural environment should be given an opportunity to express their concerns and provide information about these areas. Second, adequate public notice is an important public education tool. The dissemination of information about floodplains and wetlands facilitates and enhances Federal efforts to reduce the risks associated with the occupancy and modification of these special areas. Third, as a matter of fairness, when the Federal government determines it will participate in actions taking place in floodplains or wetlands, it must inform those who may be put at greater or continued risk.

PUBLIC COMMENTS

Any individual, group, or agency may submit written comments on the proposed action or a request for further information to Thomas King, Assistant General Counsel and Certifying Officer, Governor's Office of Storm Recovery, 99 Washington Avenue, Suite 1224, Albany, NY 12260; email: NYSCDBG_DR_ER@nyshcr.org. All comments received by May 8, 2015 will be considered.

Thomas King, Assistant General Counsel and Certifying Officer
April 23, 2015
15-361 4/23

EARLY NOTICE AND PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN and WETLAND

BERGEN POINT WASTEWATER TREATMENT PLANT OUTFALL REPLACEMENT PROJECT SUFFOLK COUNTY, NY

Thomas King, Assistant General Counsel and Certifying Officer
Governor's Office of Storm Recovery
99 Washington Avenue, Suite 1224
Albany, NY 12260

NOTIFICATION OF ACTIVITY IN A FLOODPLAIN

To: All interested Agencies,

**EXHIBIT 5 Copy of Notice Transmitting Notice of Final Public Review
and Proof of Publication**

**FINAL NOTICE AND PUBLIC EXPLANATION OF
A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND**

**BERGEN POINT WASTEWATER TREATMENT PLANT
OUTFALL REPLACEMENT PROJECT
SUFFOLK COUNTY, NY**

Thomas King, Assistant General Counsel and Certifying Officer
Governor's Office of Storm Recovery
99 Washington Avenue, Suite 1224
Albany, NY 12260

NOTIFICATION OF ACTIVITY IN A FLOODPLAIN AND WETLAND

To: All interested Agencies, Groups, and Individuals

This is to give notice that the Governor's Office of Storm Recovery (GOSR) has conducted an evaluation as required by Executive Order 11988 and Executive Order 11990 in accordance with U.S. Department of Housing and Urban Renewal (HUD) regulations under 24 CFR 55.20 Subpart C - Procedures for Making Determinations on Floodplain Management and Protection of Wetlands, to determine the potential effects that its activity in the floodplain would have on the human environment.

Pursuant to the CDBG-DR Program and Federal Register Notices 78 Fed. Reg. 14329, 78 Fed. Reg. 69104, and 79 Fed. Reg. 62194 (Notices), published March 5, 2013, November 18, 2013, and October 16, 2014, respectively, NYS has been allocated approximately \$4.4 billion of CDBG-DR funds for storm recovery activities. Funding for the Bergen Point Wastewater Treatment Plant Outfall Replacement Project (the Project) will be provided by the Clean Water State Revolving Fund Storm Mitigation Loan Program (SMLP) with support from the CDBG-DR program.

The Bergen Point Wastewater Treatment Plant (WWTP), owned and operated by Suffolk County Department of Public Works, discharges treated effluent through an ocean outfall that passes beneath the Great South Bay and underneath the barrier island to the Atlantic Ocean. The 14,200-foot long segment of the outfall that extends from the WWTP to the barrier island, passing underneath Great South Bay, has been determined to be in a failing condition and needs to be replaced. The selected replacement alternative proposes to replace the failing outfall segment with a 14,200-foot long tunnel constructed by means of a tunnel boring machine (TBM). Construction of the tunnel via TBM, as opposed to dredging and trenching, is the preferred alternative to be employed in the construction of the replacement outfall, as it is the alternative with the least impact to the Great South Bay and surrounding environment. The new section of the outfall will be connected to the existing ocean portion of the outfall near the existing sample chamber on the barrier island just north of Ocean Parkway using stainless steel piping. A bypass system with line stops will be installed to ensure that the operation of the tunnel outfall will not be interrupted during the connection process.

Above ground construction includes an access or working shaft at the Bergen Point WWTP site, and an exit or receiving shaft at Gilgo State Park on the barrier island within the existing Floodplain Management and Wetland Protection Plan
Bergen Point Wastewater Treatment Plant Outfall Replacement Project
Suffolk County, NY

easement north of Ocean Parkway. The access shafts will be constructed by using ground freezing techniques or secant piles, allowing the construction of the replacement outfall tunnel at a depth of approximately 60 to 80 feet below the existing surface. An estimated 90,000 cubic yards of muck is anticipated to be removed during the construction of the Proposed Action, including both tunnel excavation and shaft construction. It is estimated that the daily muck hauling truck trips to remove this material offsite should be 8 to 10 trucks. The new section of the outfall would be joined to the existing ocean portion of the outfall on the barrier island. Treated effluent would then continue to discharge through the outfall to the Atlantic Ocean as has been the case for over 30 years. No carrier pipes would be installed within the tunnel; the lined tunnel itself would be the replacement outfall.

The staging area at the barrier island would be approximately 2-2.5 acres and the staging area at the WWTP would be approximately 2.5-3 acres. Staging areas would be restored after completion. All disturbed area on the barrier island will be revegetated and restored. Most of the construction would take place well below Great South Bay via the TBM to minimize impacts to the environment.

This Notice pertains to the portion of the Project that is located within the Federal Emergency Management Agency (FEMA) flood hazard area and mapped wetlands. A floodplains map based on the FEMA Base Flood Elevation Maps and wetlands maps based on the National Wetland Inventory and NYSDEC data have been prepared for this project and are available for review at: <http://www.stormrecovery.ny.gov/environmental-docs>

There are three primary purposes for this notice. First, people who may be affected by activities in floodplains or wetlands and those who have an interest in the protection of the natural environment should be given an opportunity to express their concerns and provide information about these areas. Second, adequate public notice is an important public education tool. The dissemination of information about floodplains and wetlands facilitates and enhances Federal efforts to reduce the risks associated with the occupancy and modification of these special areas. Third, as a matter of fairness, when the Federal government determines it will participate in actions taking place in floodplains or wetlands, it must inform those who may be put at greater or continued risk.

FLOODPLAIN MANAGEMENT PLAN

GOSR has reevaluated the alternatives to Project activities in the floodplain and wetlands and has determined that there is no practicable alternative. A full copy of the Floodplain Management Plan (8-step process) documenting compliance with Executive Order 11988 and Executive Order 11990 can be viewed online at <http://www.stormrecovery.ny.gov/environmental-docs>.

PUBLIC COMMENTS

Any individual, group, or agency may submit written comments on the proposed action or a request for further information to Thomas King, Assistant General Counsel and Certifying Officer, Governor's Office of Storm Recovery, 99 Washington Avenue, Suite 1224, Albany, NY 12260; email: NYSCDBG_DR_ER@nyshcr.org. All comments received by **August 13, 2015** will be considered.

Thomas King, Assistant General Counsel and Certifying Officer

August 6, 2015



Newspapers

65 Deer Park Avenue
Babylon, NY 11702
Phone : (631) 587-5612
Fax: (631) 587-0198
email: beaconnews@rcn.com

Affidavit of Publication

County of Suffolk

State of New York

Carolyn James, being duly sworn, deposes and says that she is the office clerk of The Beacon, a weekly newspaper published at Babylon in the County of Suffolk Staete of New York, and that a notice, a printed copy of which is hereto annexed has been published in said newspaper once in each week for

week(s) one (1)

August 6, 2015

VIZ:

Sworn to me before this 6th day of August, 2015.

Notary Public, Suffolk County

Donna M. Consola
NOTARY PUBLIC State of New York
No. 01C0507719
Qualified in Suffolk County
Commission Expires March 25, 2018



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Rabbi Janise Poticha

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 For Hebrew School Info Call 516-308-7475



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**FINAL NOTICE AND PUBLIC EXPLANATION OF
A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND
BERGEN POINT WASTEWATER TREATMENT PLANT
OUTFALL REPLACEMENT PROJECT
SUFFOLK COUNTY, NY**

Thomas King, Assistant General Counsel and Certifying Officer
 Governor's Office of Storm Recovery
 99 Washington Avenue, Suite 1224
 Albany, NY 12260

NOTIFICATION OF ACTIVITY IN A FLOODPLAIN AND WETLAND

To: All interested Agencies, Groups, and Individuals

This is to give notice that the Governor's Office of Storm Recovery (GOSR) has conducted an evaluation as required by Executive Order 11988 and Executive Order 11990 in accordance with U.S. Department of Housing and Urban Renewal (HUD) regulations under 24 CFR 55.20 Subpart C - Procedures for Making Determinations on Floodplain Management and Protection of Wetlands, to determine the potential effects that its activity in the floodplain would have on the human environment.

Pursuant to the CDBG-DR Program and Federal Register Notices 78 Fed. Reg. 14329, 78 Fed. Reg. 69104, and 79 Fed. Reg. 62194 (Notices), published March 5, 2013, November 18, 2013, and October 16, 2014, respectively, NYS has been allocated approximately \$4.4 billion of CDBG-DR funds for storm recovery activities. Funding for the Bergen Point Wastewater Treatment Plant Outfall Replacement Project (the Project) will be provided by the Clean Water State Revolving Fund Storm Mitigation Loan Program (SMLP) with support from the CDBG-DR program.

The Bergen Point Wastewater Treatment Plant (WWTP), owned and operated by Suffolk County Department of Public Works, discharges treated effluent through an ocean outfall that passes beneath the Great South Bay and underneath the barrier island to the Atlantic Ocean. The 14,200-foot long segment of the outfall that extends from the WWTP to the barrier island, passing underneath Great South Bay, has been determined to be in a failing condition and needs to be replaced. The selected replacement alternative proposes to replace the failing outfall segment with a 14,200-foot long tunnel constructed by means of a tunnel boring machine (TBM). Construction of the tunnel via TBM, as opposed to dredging and trenching, is the preferred alternative to be employed in the construction of the replacement outfall, as it is the alternative with the least impact to the Great South Bay and surrounding environment. The new section of the outfall will be connected to the existing ocean portion of the outfall near the existing sample chamber on the barrier island just north of Ocean Parkway using stainless steel piping. A bypass system with line stops will be installed to ensure that the operation of the tunnel outfall will not be interrupted during the connection process.

Above ground construction includes an access or working shaft at the Bergen Point WWTP site, and an exit or receiving shaft at Gilgo State Park on the barrier island within the existing easement north of Ocean Parkway. The access shafts will be constructed by using ground freezing techniques or secant piles, allowing the construction of the replacement outfall tunnel at a depth of approximately 60 to 80 feet below the existing surface. An estimated 90,000 cubic yards of muck is anticipated to be removed during the construction of the Proposed Action, including both tunnel excavation and shaft construction. It is estimated that the daily muck hauling truck trips to remove this material offsite should be 8 to 10 trucks. The new section of the outfall would be joined to the existing ocean portion of the outfall on the barrier island. Treated effluent would then continue to discharge through the outfall to the Atlantic Ocean as has been the case for over 30 years. No carrier pipes would be installed within the tunnel; the lined tunnel itself would be the replacement outfall.

The staging area at the barrier island would be approximately 2-2.5 acres and the staging area at the WWTP would be approximately 2.5-3 acres. Staging areas would be restored after completion. All disturbed area on the barrier island will be revegetated and restored. Most of the construction would take place well below Great South Bay via the TBM to minimize impacts to the environment.

This Notice pertains to the portion of the Project that is located within the Federal Emergency Management Agency (FEMA) flood hazard area and mapped wetlands. A floodplains map based on the FEMA Base Flood Elevation Maps and wetlands maps based on the National Wetland Inventory and NYSDEC data have been prepared for this project and are available for review at: <http://www.stormrecovery.ny.gov/environmental-docs>

There are three primary purposes for this notice. First, people who may be affected by activities in floodplains or wetlands and those who have an interest in the protection of the natural environment should be given an opportunity to express their concerns and provide information about these areas. Second, adequate public notice is an important public education tool. The dissemination of information about floodplains and wetlands facilitates and enhances Federal efforts to reduce the risks associated with the occupancy and modification of these special areas. Third, as a matter of fairness, when the Federal government determines it will participate in actions taking place in floodplains or wetlands, it must inform those who may be put at greater or continued risk.

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PUBLIC COMMENTS

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Thomas King, Assistant General Counsel and Certifying Officer

August 6, 2015

APPENDIX G

Historic Preservation

**New York State Office of Parks,
Recreation and Historic Preservation**

Division for Historic Preservation
P.O. Box 189, Waterford, New York 12188-0189
518-237-8643

Andrew M. Cuomo
Governor

Rose Harvey
Commissioner

December 06, 2013

John Donovan
Suffolk County Department of Public Works
335 Yaphank Ave
Yaphank, New York 11980

Re: SEQRA
Sewer Project - West Babylon Outfall
Replacement - Rehabilitation of the Final
Effluent Pump Station
Bergen Point Wasterwater Treatment Plant
site/BABYLON, Suffolk County
13PR05219

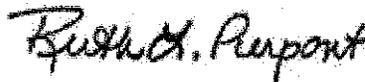
Dear Mr. Donovan:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

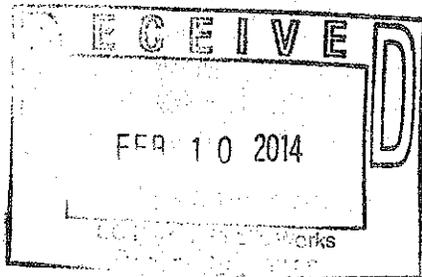
Based upon this review, it is the SHPO's opinion that your project will have No Effect upon cultural resources in or eligible for inclusion in the National Registers of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,



Ruth L. Pierpont
Deputy Commissioner for Historic Preservation



COUNTY OF SUFFOLK



STEVEN BELLONE
SUFFOLK COUNTY EXECUTIVE

DEPARTMENT OF PUBLIC WORKS

VINCENT FALKOWSKI, P.E.
CHIEF DEPUTY COMMISSIONER

GILBERT ANDERSON, P.E.
COMMISSIONER

PHILIP A. BERDOLT
DEPUTY COMMISSIONER

October 28, 2013

Daniel McEneny, National Register Unit
New York State Division for Historic Preservation
New York State Office of Parks, Recreation & Historic Preservation
Pebbles Island State Park
P.O. Box 189
Waterford, NY 12188-0189

RE: **Suffolk County Department of Public Works Sewer Project, West Babylon/Outfall Replacement, Suffolk County, NY**

Dear Mr. McEneny:

On behalf of the Suffolk County Department of Public Works, the Department respectfully requests review of the herein described project by the New York State Office of Historic Preservation Office (SHPO). The Suffolk County Department of Public Works is proposing the rehabilitation of the Final Effluent Pump Station and replacement of the outfall beneath the Great South Bay which composes the extent of the project. As indicated on the attached drawings, the Final Effluent Pump Station is on the Bergen Point Wastewater Treatment Plant site and the replacement outfall which will be 10 foot internal diameter and constructed 60-80 feet beneath an existing easement which has been disturbed with construction of the original 72 inch outfall, will terminate at Gilgo State Park.

There will be shafts constructed on both the Bergen Point Treatment Plant site and barrier beach along with staging areas. The shafts will be constructed by using ground freezing techniques and allow the construction of the replacement outfall to be at a depth of approximately 60-80 feet below the existing surface underneath the existing 150 foot easement. Disturbance will only take place on the surface at the treatment plant site and barrier beach as indicated on the attached figure titled 'Tunnel Working and Existing Shaft Locations'. The rehabilitation of the Final Effluent Pump Station which is an integral part of the outfall system involves electrical controls, piping, and new pumps, all which will be performed internal to the existing building.

Based on our review of the New York State Historic Preservation office's website and GIS data, there are no historic properties in the vicinity of the Bergen Point Wastewater Treatment Facility, beneath the Great South Bay at the depths for which the tunnel will be installed, or at the project

SUFFOLK COUNTY IS AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER

termination at Gilgo State Park. The project was also reviewed to determine whether any portions are within an archeological sensitive area. The project sites are not located within an archeological sensitive area. Based on the review of the referenced data, there is no potential impact anticipated.

We appreciate your review of the attached information. Should you have any questions or require any additional information, please feel free to contact me at 631-852-4184.

Sincerely,



Ben Wright, P.E.
Principal Civil Engineer

BW:ni

Attachment

cc: Gilbert Anderson, P.E., Commissioner
John Donovan, P.E., Chief Engineer
Janice McGovern, P.E., Principal Civil Engineer
Keith Kelly, P.E., CDM

bw10-28-13 SHPO/West Babylon-Outfall Replacement

The Historic Preservation Review Process in New York State

In order to insure that historic preservation is carefully considered in publicly-funded or permitted undertakings*, there are laws at each level of government that require projects to be reviewed for their potential impact/effect on historic properties. At the federal level, Section 106 of the National Historic Preservation Act of 1966 (NHPA) directs the review of federally funded, licensed or permitted projects. At the state level, Section 14.09 of the New York State Parks, Recreation and Historic Preservation Law of 1980 performs a comparable function. Local environmental review for municipalities is carried out under the State Environmental Quality Review Act (SEQRA) of 1978.

regulations on line at:

<http://nysparks.state.ny.us> then select HISTORIC PRESERVATION then select Environmental Review

Project review is conducted in two stages. First, the Field Services Bureau assesses affected properties to determine whether or not they are listed or eligible for listing in the New York State or National Registers of Historic Places. If so, it is deemed "historic" and worthy of protection and the second stage of review is undertaken. The project is reviewed to evaluate its impact on the properties significant materials and character. Where adverse effects are identified, alternatives are explored to avoid, or reduce project impacts; where this is unsuccessful, mitigation measures are developed and formal agreement documents are prepared stipulating these measures.

ALL PROJECTS SUBMITTED FOR REVIEW SHOULD INCLUDE THE FOLLOWING MATERIAL(S).

Project Description

Attach a full description of the nature and extent of the work to be undertaken as part of this project. Relevant portions of the project applications or environmental statements may be submitted.

Maps Locating Project

Include a map locating the project in the community. The map must clearly show street and road names surrounding the project area as well as the location of all portions of the project. Appropriate maps include tax maps, Sanborn Insurance maps, and/or USGS quadrangle maps.

Photographs

Photographs may be black and white prints, color prints, or color laser/photo copies; standard (black and white) photocopies are NOT acceptable.

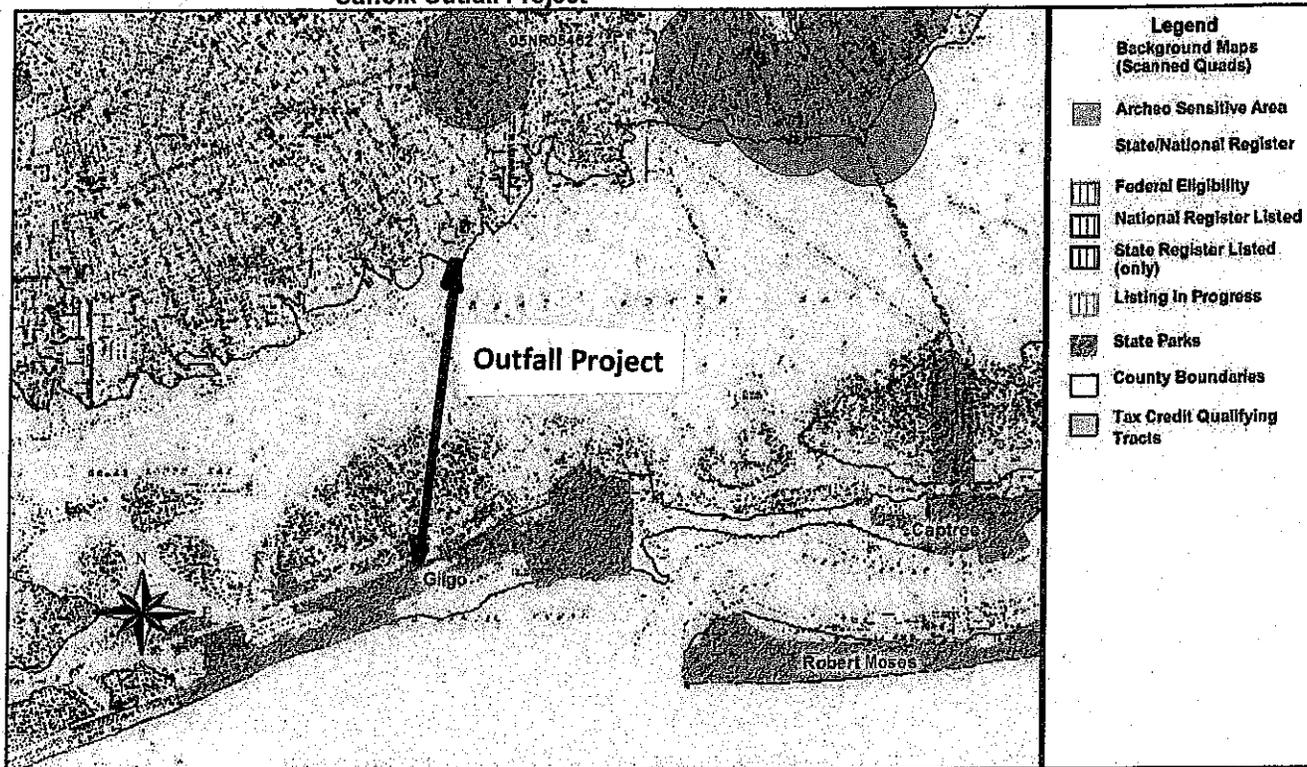
-If the project involves rehabilitation, include photographs of the building(s) involved. Label each exterior view to a site map and label all interior views.

-If the project involves new construction, include photographs of the surrounding area looking out from the project site. Include photographs of any buildings (more than 50 years old) that are located on the project property or on adjoining property.

NOTE: Projects submissions will not be accepted via facsimile or e-mail.

***Undertaking** is defined as an agency's purchase, lease or sale of a property, assistance through grants, loans or guarantees, issuing of licenses, permits or approvals, and work performed pursuant to delegation or mandate.

Suffolk Outfall Project



October 28, 2013

Disclaimer: This map was prepared by the New York State Parks, Recreation and Historic Preservation National Register Listing Internet Application. The information was compiled using the most current data available. It is deemed accurate, but is not guaranteed.

Historic Properties
&
Archeological Sensitive Areas

Table 3-3

Potential Permits and Approvals for Alternative 2, Construct Replacement Outfall by Tunneling

| PERMIT/ APPROVAL | REGULATORY AGENCY | JURISDICTIONAL BASIS | REGULATED ACTIVITIES | KEY CONTACT |
|---|---|--|---|--|
| FEDERAL | | | | |
| Section 10 Permit - Nationwide/General/ Individual | U.S. Army Corps of Engineers - NY District | Section 10, Rivers and Harbors Act of 1899 | Required for construction activities within navigable waters of the U.S. Nationwide Permit 7 covers the construction/repair of an outfall while NWP 12 covers the installation of utility lines. Pre-construction notification is required to obtain coverage under these existing permits. | Frank Verga (KAS table) (917) 790-8212 |
| Approval | U.S. Coast Guard Coast Guard Sector Long Island Sound | N.A. | Construction activities within navigable waters may require a consultation and/or review, but typically no formal permit | Lt. Douglas J. Miller Chief, Waterways Management Division 203-468-4596 |
| Consultation &/or Essential Fish Habitat Assessment | National Marine Fisheries Service (NOAA)- Habitat Conservation Division | Code of Federal Regulations, Title 50, Part 600, 1996 amendments to the Magnuson-Stevens Fishery Conservation & Mgt Act Section 305(b)(2) Act (Essential Fish Habitat), Endangered Species Act | Required for all activities impacting Essential Fish Habitat Areas | Peter Colosi Assistant Regional Administrator 978-282-9332 |
| Consultation &/or Jeopardy/ No Jeopardy Determination | U.S. Fish & Wildlife Service - Division of Endangered Species | Code of Federal Regulations, Title 50, Part 17 - Section 7(a)(2) of the Endangered Species Act | Required for proposed activities that may have an effect upon threatened and/or endangered species | Long Island Field Office 631-776-1401 (KAS table) |

Table 3-3

Potential Permits and Approvals for Alternative 2, Construct Replacement Outfall by Tunneling

| PERMIT/ APPROVAL | REGULATORY AGENCY | JURISDICTIONAL BASIS | REGULATED ACTIVITIES | KEY CONTACT |
|---|---|---|---|---|
| STATE | | | | |
| Section 401 Water Quality Certification | NYS Department of Environmental Conservation - Region 1 | ECL Article 15, Title 15 - NYCRR Title 6, Part 608.9 - Federal Water Pollution Control Act, Section 401 | Project includes placement of fill or activities that result in a discharge to jurisdictional waters. NYSDEC has issued/agreed to standard conditions associated with many of the NWP issued by ACOE. | Roger Evans, Regional Permit Administrator 631-444-0361 |
| SPDES General Permit for Stormwater Discharges from Construction Activities (GP-0-08-001) | NYS Department of Environmental Conservation | Article 17, Titles 7,8 and Article 70 of the ECL - NYCRR Title 6, Parts 750-757 | Required for construction projects that require 1 acre of disturbance or more. | Division of Water 625 Broadway, 4 th Floor Albany, NY 12233-3505 |
| Coastal Zone Consistency Assessment | NYS Department of State - Division of Coastal Resources | 15 CFR Part 930 and State Approved Coastal Zone Management Plan | Activities that would occur within the state designated coastal zone boundary require consistency assessment approval | NYSDOS One Commerce Plaza 99 Washington Ave, Suite 1010 Albany, NY 12231 Jeff Zappieri, Supervisor of Consistency Review 518-474-6000 |
| Air Registration | NYS Department of Environmental Conservation | Environmental Conservation Law Article 19 New York Code of Rules and Regulations Title 6, Part 200-203 | Contractor maybe required to obtain permit for onsite generators required for ground freezing event on barrier island. | Roger Evans, Regional Permit Administrator 631-444-0361 |
| Approval | NYS Parks - LI State | N.A. | Regulates access of parkland, including use | Scott Fish 631-669-1000 |

Table 3-3

Potential Permits and Approvals for Alternative 2, Construct Replacement Outfall by Tunneling

| PERMIT/ APPROVAL | REGULATORY AGENCY | JURISDICTIONAL BASIS | REGULATED ACTIVITIES | KEY CONTACT |
|--|--------------------|--|--|---|
| | Park Region | | of commercial vehicles. | Michelle Somma Land Management and Regulatory Affairs Coordinator 631-321-3580 |
| Divisible Load Permit Highway Work Permit for Utility Work | NYSDOT - Region 10 | NYCRR Title 17, Part 126 - NYS Vehicle & Traffic Law Section 385 NY Highway Law Article 52 | NYSDOT regulates the use of NYS roadways. Permit required by vehicles that exceed the road weight. Permit required to work within a NYS ROW &/or install MPTs | Gene Smith, Regional HWP Contact 631-952-6028 |
| LOCAL | | | | |
| Consultation | SCDPW | | Approval of Plans and Specifications | John Donovan, Acting Chief Engineer 631-852-4204 |
| Review and comment | SCDHS | | | Walter Hilbert, Chief, Office of Wastewater Management 631-852-5700 Walter Dawydiak, Chief Engineer Division of Environmental Quality 631-852-5800 |
| Consultation | Town of Babylon | | The Department of Environmental Control enforces provisions of the Town Code as it pertains to Environmental Protection, including actions within the Great South Bay. | Vicky Russell, Commissioner Environmental Control 631-422-7640 |



Governor's Office of Storm Recovery



Andrew M. Cuomo
Governor

Lisa Bova-Hiatt
Interim Executive Director

July 22, 2015

Bryan Polite, Chairman
Shinnecock Nation
P.O. Box 5006
Southampton, NY 11969

Re: Section 106 Consultation: Bergen Point Wastewater Treatment Plant Outfall Replacement Project – Suffolk County, NY

Dear Mr. Collins,

This letter invites you to participate as a consulting party for review of the proposed Bergen Point Wastewater Treatment Outfall Replacement Project (collectively, the “Proposed Actions”) pursuant to Section 106 of the National Historic Preservation Act (NHPA).

Pursuant to the Disaster Relief Appropriations Act, 2013 (Public Law 113-2) and the Housing and Community Development Act (42 U.S.C. § 5301 et seq.), the Governor's Office of Storm Recovery (GOSR) is acting under the auspices of New York State Homes and Community Renewal's Housing Trust Fund Corporation as a recipient of Community Development Block Grant – Disaster Recovery (“CDBG-DR”) funds from the United States Department of Housing and Urban Development (“HUD”). GOSR is the entity responsible for compliance with the HUD environmental review procedures set forth in 24 CFR Part 58. GOSR is acting as lead agency on behalf of HUD in providing the enclosed project information and inviting this discussion with your Nation to respond with any concerns or comments pursuant to Section 106.

GOSR processes environmental reviews for projects funded with HUD CDBG-DR on a case-by-case basis. A consultation request for the project described herein has also been sent to the State Historic Preservation Office (SHPO). SHPO has reviewed the project location and Proposed Actions and has determined that there will be no impacts. The response letter from SHPO detailing this determination is enclosed with this letter. In accordance with Section 101(d)(6)(B) of the National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S.C. 470a), and its implementing regulations, 36 Code of Federal Regulations (CFR) Part 800, this letter serves as notification of the proposed action.

Project Location: GOSR proposes to fund the application to construct a new 14,200 foot long segment of wastewater treatment plant outfall beneath Great South Bay in West Babylon, Suffolk County, NY. A map



Governor's Office of Storm Recovery



Andrew M. Cuomo
Governor

Lisa Bova-Hiatt
Interim Executive Director

depicting the location of the proposed project is enclosed with this letter.

Proposed Project Description: The Bergen Point Wastewater Treatment Plant (WWTP), owned and operated by Suffolk County Department of Public Works, discharges treated effluent through an ocean outfall that passes beneath the Great South Bay and underneath the barrier island to the Atlantic Ocean. The 14,200- foot long segment of the outfall that extends from the WWTP to the barrier island, passing underneath Great South Bay, has been determined to be in a failing condition and needs to be replaced. The selected replacement alternative proposes to replace the failing outfall segment with a 10-foot diameter, 14,200-foot long tunnel constructed by means of a tunnel boring machine (TBM). Construction of the tunnel via TBM, as opposed to dredging and trenching, is the preferred alternative to be employed in the construction of the replacement outfall, as it is the alternative with the least impact to Great South Bay and the surrounding environment. The new section of the outfall will be connected to the existing ocean portion of the outfall near the existing sample chamber on the barrier island just north of Ocean Parkway using stainless steel piping. A bypass system with line stops will be installed to ensure that the operation of the tunnel outfall will not be interrupted during the connection process.

Above-ground construction includes an access or working shaft at the Bergen Point WWTP site, and an exit or receiving shaft at Gilgo State Park on the barrier island within the existing easement north of Ocean Parkway. The access shafts will be constructed by using ground freezing techniques or secant piles, allowing the construction of the replacement outfall tunnel at a depth of approximately 80 to 100 feet below the existing surface. An estimated 90,000 cubic yards of muck is anticipated to be removed during the construction of the Proposed Project, including both tunnel excavation and shaft construction. It is estimated that the daily muck hauling truck trips to remove this material offsite should be 5 to 8 trucks. The new section of the outfall would be joined to the existing ocean portion of the outfall on the barrier island. Treated effluent would then continue to discharge through the outfall to the Atlantic Ocean as has been the case for over 30 years. No carrier pipes would be installed within the tunnel; the lined tunnel itself would be the replacement outfall.

The staging area at the barrier island would be approximately 2 to 2.5 acres and the staging area at the WWTP would be approximately 2.5 to 3 acres. Staging areas would be restored after completion. All disturbed area on the barrier island will be revegetated and restored. Most of the construction would take place well below Great South Bay via the TBM to minimize impacts to the environment.

With this letter, GOSR respectfully requests your review of the proposed project described herein. If the project location encompasses historic properties of religious or cultural significance to your Nation, please respond within 15 days or sooner. Additionally, please indicate if there are other sources of information or other parties, Nations, Tribes, or members of the public you believe should be included in the consultation process. Please respond by email or in writing to the address listed below.



Governor's Office of Storm Recovery



Andrew M. Cuomo
Governor

Lisa Bova-Hiatt
Interim Executive Director

Mr. Thomas King
Certifying Environmental Officer
Governor's Office of Storm Recovery
99 Washington Avenue, Suite 1224
Albany, New York 12260

I am available to answer any questions that you may have regarding this action. If you have any questions, please feel free to contact me at (646) 417-4660 or via email at Thomas.King@stormrecovery.ny.gov.

Sincerely,

Thomas J. King
Assistant General Counsel and Certifying Officer

Enclosures:
SHPO Consultation Letter
Project Location Map

Mailed letter sent to:
Bryan Polite, Chairman
Shinnecock Nation
P.O. Box 5006
Southampton, NY 11969

Electronic letter sent to:
Tohanash Tarrant
Shinnecock Nation
P.O. Box 5006
Southampton, NY 11969
tohanash.tarrant@shinnecock.org

**New York State Office of Parks,
Recreation and Historic Preservation**

Division for Historic Preservation
P.O. Box 189, Waterford, New York 12188-0189
518-237-8643

Andrew M. Cuomo
Governor

Rose Harvey
Commissioner

December 06, 2013

John Donovan
Suffolk County Department of Public Works
335 Yaphank Ave
Yaphank, New York 11980

Re: SEQRA
Sewer Project - West Babylon Outfall
Replacement - Rehabilitation of the Final
Effluent Pump Station
Bergen Point Wasterwater Treatment Plant
site/BABYLON, Suffolk County
13PR05219

Dear Mr. Donovan:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

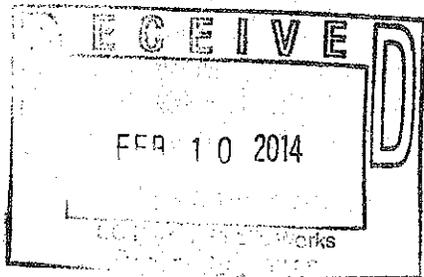
Based upon this review, it is the SHPO's opinion that your project will have No Effect upon cultural resources in or eligible for inclusion in the National Registers of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,



Ruth L. Pierpont
Deputy Commissioner for Historic Preservation



4/9/2015



Source: ESRI, Inc. USGS Aerials

-  Proposed Staging Areas
-  Proposed Outfall

0 1,000 FEET



Governor's Office of Storm Recovery



Andrew M. Cuomo
Governor

Lisa Bova-Hiatt
Interim Executive Director

July 22, 2015

Harry B. Wallace, Chief
Unkechaug Nation
207 Poospansk Lane
Mastic, NY 11950

Re: Section 106 Consultation: Bergen Point Wastewater Treatment Plant Outfall Replacement Project – Suffolk County, NY

Dear Mr. Wallace,

This letter invites you to participate as a consulting party for review of the proposed Bergen Point Wastewater Treatment Outfall Replacement Project (collectively, the “Proposed Actions”) pursuant to Section 106 of the National Historic Preservation Act (NHPA).

Pursuant to the Disaster Relief Appropriations Act, 2013 (Public Law 113-2) and the Housing and Community Development Act (42 U.S.C. § 5301 et seq.), the Governor's Office of Storm Recovery (GOSR) is acting under the auspices of New York State Homes and Community Renewal's Housing Trust Fund Corporation as a recipient of Community Development Block Grant – Disaster Recovery (“CDBG-DR”) funds from the United States Department of Housing and Urban Development (“HUD”). GOSR is the entity responsible for compliance with the HUD environmental review procedures set forth in 24 CFR Part 58. GOSR is acting as lead agency on behalf of HUD in providing the enclosed project information and inviting this discussion with your Nation to respond with any concerns or comments pursuant to Section 106.

GOSR processes environmental reviews for projects funded with HUD CDBG-DR on a case-by-case basis. A consultation request for the project described herein has also been sent to the State Historic Preservation Office (SHPO). SHPO has reviewed the project location and Proposed Actions and has determined that there will be no impacts. The response letter from SHPO detailing this determination is enclosed with this letter. In accordance with Section 101(d)(6)(B) of the National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S.C. 470a), and its implementing regulations, 36 Code of Federal Regulations (CFR) Part 800, this letter serves as notification of the proposed action.

Project Location: GOSR proposes to fund the application to construct a new 14,200 foot long segment of wastewater treatment plant outfall beneath Great South Bay in West Babylon, Suffolk County, NY. A map



Governor's Office of Storm Recovery



Andrew M. Cuomo
Governor

Lisa Bova-Hiatt
Interim Executive Director

depicting the location of the proposed project is enclosed with this letter.

Proposed Project Description: The Bergen Point Wastewater Treatment Plant (WWTP), owned and operated by Suffolk County Department of Public Works, discharges treated effluent through an ocean outfall that passes beneath the Great South Bay and underneath the barrier island to the Atlantic Ocean. The 14,200-foot long segment of the outfall that extends from the WWTP to the barrier island, passing underneath Great South Bay, has been determined to be in a failing condition and needs to be replaced. The selected replacement alternative proposes to replace the failing outfall segment with a 10-foot diameter, 14,200-foot long tunnel constructed by means of a tunnel boring machine (TBM). Construction of the tunnel via TBM, as opposed to dredging and trenching, is the preferred alternative to be employed in the construction of the replacement outfall, as it is the alternative with the least impact to Great South Bay and the surrounding environment. The new section of the outfall will be connected to the existing ocean portion of the outfall near the existing sample chamber on the barrier island just north of Ocean Parkway using stainless steel piping. A bypass system with line stops will be installed to ensure that the operation of the tunnel outfall will not be interrupted during the connection process.

Above-ground construction includes an access or working shaft at the Bergen Point WWTP site, and an exit or receiving shaft at Gilgo State Park on the barrier island within the existing easement north of Ocean Parkway. The access shafts will be constructed by using ground freezing techniques or secant piles, allowing the construction of the replacement outfall tunnel at a depth of approximately 80 to 100 feet below the existing surface. An estimated 90,000 cubic yards of muck is anticipated to be removed during the construction of the Proposed Project, including both tunnel excavation and shaft construction. It is estimated that the daily muck hauling truck trips to remove this material offsite should be 5 to 8 trucks. The new section of the outfall would be joined to the existing ocean portion of the outfall on the barrier island. Treated effluent would then continue to discharge through the outfall to the Atlantic Ocean as has been the case for over 30 years. No carrier pipes would be installed within the tunnel; the lined tunnel itself would be the replacement outfall.

The staging area at the barrier island would be approximately 2 to 2.5 acres and the staging area at the WWTP would be approximately 2.5 to 3 acres. Staging areas would be restored after completion. All disturbed area on the barrier island will be revegetated and restored. Most of the construction would take place well below Great South Bay via the TBM to minimize impacts to the environment.

With this letter, GOSR respectfully requests your review of the proposed project described herein. If the project location encompasses historic properties of religious or cultural significance to your Nation, please respond within 15 days or sooner. Additionally, please indicate if there are other sources of information or other parties, Nations, Tribes, or members of the public you believe should be included in the consultation process. Please respond by email or in writing to the address listed below.



Governor's Office of Storm Recovery



Andrew M. Cuomo
Governor

Lisa Bova-Hiatt
Interim Executive Director

Mr. Thomas King
Certifying Environmental Officer
Governor's Office of Storm Recovery
99 Washington Avenue, Suite 1224
Albany, New York 12260

I am available to answer any questions that you may have regarding this action. If you have any questions, please feel free to contact me at (646) 417-4660 or via email at Thomas.King@stormrecovery.ny.gov.

Sincerely,

Thomas J. King
Assistant General Counsel and Certifying Officer

Enclosures:
SHPO Consultation Letter
Project Location Map

Mailed and electronic letter sent to:

Harry B. Wallace, Chief
Unkechaug Nation
207 Poospansk Lane
Mastic, NY 11950
hwall@aol.com

**New York State Office of Parks,
Recreation and Historic Preservation**

Division for Historic Preservation
P.O. Box 189, Waterford, New York 12188-0189
518-237-8643

Andrew M. Cuomo
Governor

Rose Harvey
Commissioner

December 06, 2013

John Donovan
Suffolk County Department of Public Works
335 Yaphank Ave
Yaphank, New York 11980

Re: SEQRA
Sewer Project - West Babylon Outfall
Replacement - Rehabilitation of the Final
Effluent Pump Station
Bergen Point Wasterwater Treatment Plant
site/BABYLON, Suffolk County
13PR05219

Dear Mr. Donovan:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

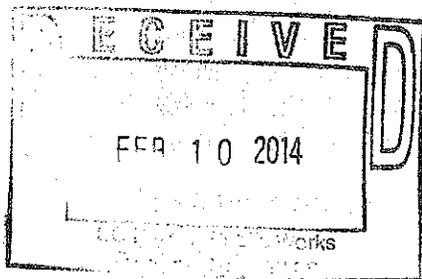
Based upon this review, it is the SHPO's opinion that your project will have No Effect upon cultural resources in or eligible for inclusion in the National Registers of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont

Ruth L. Pierpont
Deputy Commissioner for Historic Preservation



4/9/2015



Source: ESRI, Inc. USGS Aerials

-  Proposed Staging Areas
-  Proposed Outfall

0 1,000 FEET

APPENDIX H

Sole Source Aquifer



GOVERNOR'S OFFICE OF STORM RECOVERY

Andrew M. Cuomo
Governor

James Rubin
Executive Director



April 13, 2015

Ms. Grace Musemeci
Chief, Environmental Impacts Branch
U.S. Environmental Protection Agency
Region II Main Regional Office
290 Broadway, 25th Floor
New York, NY 10007

RE: CDBG-DR Funding Application, Bergen Point Wastewater Treatment Plant Outfall Replacement Project

Dear Ms. Musemeci:

The New York State Governor's Office of Storm Recovery (GOSR) received a funding application for the Bergen Point Wastewater Treatment Plant Outfall Replacement Project, located in West Babylon, Suffolk County, New York. The project would include the construction of a new segment of outfall line by tunnel boring machine beneath Great South Bay.

Pursuant to the Disaster Relief Appropriations Act, 2013 (Public Law 113-2) and the Housing and Community Development Act (42 U.S.C. § 5301 et seq.), GOSR is acting under the auspices of New York State Homes and Community Renewal's Housing Trust Fund Corporation as a recipient of Community Development Block Grant - Disaster Recovery ("CDBG-DR") funds from the United States Department of Housing and Urban Development ("HUD") and is the entity responsible for compliance with the HUD NEPA environmental review procedures set forth in 24 C.F.R. Part 58. 24 C.F.R. Part 58 requires GOSR to review projects for conformance with the Safe Drinking Water Act of 1974 (42 U.S.C. 201, 300(f) et seq., and 21 U.S.C. 349) as amended, and Environmental Protection Agency (EPA) regulations pertaining to Sole Source Aquifers found at 40 C.F.R. Part 149.

In accordance with the Memorandum of Understanding ("MOU") between EPA and HUD dated August 24, 1990, GOSR hereby requests an Initial Screen/Preliminary Review for the Bergen Point Wastewater Treatment Plant Outfall Replacement Project. Please review the attached documentation, including Attachment 2.A and 3 to the MOU. Responses can be sent to me via email at Thomas.King@stormrecovery.ny.gov. In accordance with the MOU, a non-response within fifteen days shall constitute a favorable review of the project/activity. If you have any questions, please call me at (518) 473-0015.

Sincerely,

Thomas J. King
Assistant General Counsel and Certifying Officer

Enclosures

ATTACHMENT 2.A

NON-HOUSING PROJECT/ACTIVITY INITIAL SCREEN CRITERIA (For projects in a designated Sole Source Aquifer area)

The following list of criteria questions are to be used as an initial screen to determine which non-housing projects/activities should be forwarded to the Environmental Protection Agency (EPA) for Preliminary Sole Source Aquifer (SSA) Review. (For housing projects/activities see Attachment 2.B) If any of the questions are answered affirmatively, Attachment 3, SSA Preliminary Review Requirements, should also be completed. The application/final statement, this Attachment, Attachment 3, and any other pertinent information should then be forwarded to EPA at the address below.

Any project/activity not meeting the criteria in this Attachment, but suspected of having a potential adverse effect on the Sole Source Aquifer should also be forwarded. Contact EPA if you have any questions.

Chief, Environmental Impacts Branch
USEPA Region II
26 Federal Plaza, Room 500
New York, New York 10278
(212) 264-1840

CRITERIA QUESTIONS

YES NO N/A

- | | |
|---|------------|
| 1. Is the project/activity located within a currently designated or proposed groundwater sensitive area such as a special Ground Water Protection Area, Critical Supply Area, Wellhead Protection Area, etc.? (This information can be obtained from the County or Regional planning board, the local health department, the State health department, or the State environmental agency.) | <u>NO</u> |
| 2. Is the project/activity located within a one half mile radius (2640 feet) of a current or proposed public water supply well or wellfield? (This information can be obtained from the local health department, the State health department or the State environmental agency.) | <u>YES</u> |
| 3. Will the project/activity include or directly cause: (check appropriate items) | |
| - construction or expansion of solid waste disposal, recycling or conversion facilities | <u>NO</u> |
| - construction or expansion or closure of landfills | <u>NO</u> |
| - construction or expansion of water supply facilities (i.e. treatment plant, pump house, etc.) | <u>NO</u> |
| - construction or expansion of on-site wastewater treatment plants or sewage trunk lines, greater than 1/4 mile | <u>YES</u> |
| - construction or expansion of gas or petroleum trunk lines, greater than 1200 feet | <u>NO</u> |
| - construction or expansion of railroad spurs or similar extensions | <u>NO</u> |
| - construction or expansion of municipal sewage treatment plants | <u>NO</u> |

4. Will the project/activity include storage or handling of any hazardous constituents as listed in Attachment 4, Hazardous Constituents?
If these constituents are used during the construction phase of the project, then an assurance statement must be provided indicating that chemicals will be used in a safe and proper manner and that they will be promptly removed after construction is completed.
- NO
5. Will the project/activity include bulk storage of petroleum in underground or above ground tanks in excess of 1100 gallons?
- YES
During
construction only
(generator tank
capacity TBD)
6. Will the project/activity require a federal or state discharge elimination permit or modification of an existing permit?
- NO

This attachment was completed by:

Name: Thomas King

Title: Assistant General Counsel and Certifying Officer
Governor's Office of Storm Recovery

Address: 99 Washington Avenue
Suite 1224
Albany, NY 12260

Telephone number: (518) 473-0015

Date: April 13, 2015

ATTACHMENT 3

SSA PRELIMINARY REVIEW INFORMATION REQUIREMENTS

Where currently available, the information in this Attachment should be provided to the Environmental Protection Agency (see address below) along with the application/final statement; Attachment 2.A, Non-Housing Initial Screen Criteria or Attachment 2.B, Housing Initial Screen Criteria; and any other information which may be pertinent to a Sole Source Aquifer review. Where applicable, indicate the source of your information.

Chief, Environmental Impacts Branch
USEPA Region II
26 Federal Plaza, Room 500
New York, New York 10278
(212) 264-1840

I. Project/Activity Location

ENCLOSED

YES NO

1. Provide the geographic location and total acreage of the project/activity site. Include a site location map which identifies the site in relation to the surrounding area. (Examples of maps which can be used include: 1:24,000 or 1:25,000 U.S. Geological Survey quadrangle sheet, Hagstroms Street Map)

YES

2. If applicable, identify which groundwater sensitive areas (special Ground Water Protection Area, Critical Supply Area, Wellhead Protection Area, etc.) the project/activity is located in or adjacent to. (This information can be obtained from the County or Regional planning board, the local health department, the State health department, or the State environmental agency.)

NO
Project is not in
or adjacent to any
of these areas

II. Nature of Project/Activity

3. Provide a general narrative describing the project/activity including but not limited to: type of facility; type of activities to be conducted; number and type of units; number of residents, etc. Provide the general layout of the project/activity site and a site-plan if available.

YES

III. Public Water Supply

4. Provide a description of plans to provide water supply.
5. Provide the location of nearby existing or proposed public water supply wells or wellfields within a one half mile radius (2640 feet) of the project/activity. Provide the name of the supplier(s) of those wells or wellfields. This information should be available from the local health department, State health department, or the State environmental agency. If private wells are to be used, then information necessary to obtain a well drilling permit should be provided.

YES

YES

IV. Wastewater and Sewage Disposal

6. Provide a description of plans to handle wastewater and sewage disposal. If the project/activity is to be served by existing public sanitary sewers provide the name of the sewer district. YES
7. Provide a description of plans to handle storm water runoff. YES
8. Identify the location, design, size, of any on-site recharge basins, dry wells, leaching fields, retention ponds, etc. NO
No such structures to be used

V. Use, Storage, Transport of Hazardous or Toxic Materials
(Applies only to non-housing projects/activities)

9. Identify any products listed in Attachment 4, Hazardous Constituents, of the Housing and Urban Development-Environmental Protection Agency Memorandum of Understanding which may be used, stored, transported, or released as a result of the construction activity. NO
No hazardous constituents to be used
10. Identify the number and capacity of underground storage tanks at the project/activity site. Identify the products and volume to be stored, and the location on the site. NO
No underground storage tanks to be used
11. Identify the number and capacity of above ground storage tanks at the project/activity site. Identify the products and volume to be stored, and the location on the site. YES

Project Description

The Bergen Point Wastewater Treatment Plant (WWTP) treats up to 30.5 million gallons per day (MGD) of wastewater and discharges treated effluent to the Atlantic Ocean through an outfall passing under Great South Bay and the barrier island. The existing outfall, constructed in 1977, is in a failing condition. In particular, the section of the outfall that runs from the WWTP to the barrier island, which is constructed of pre-stressed concrete cylinder pipe (PCCP), is in poor condition. Detailed engineering studies have determined that the operating pressure on the outfall pipe must be minimized to reduce the potential for pipe failure and an alternative means of discharging wastewater must be implemented.

Treated effluent currently discharges by gravity when flow and tidal conditions allow, resulting in moderate internal pressures within the outfall pipe. During storm conditions, when the plant must discharge at a rate of 90 MGD or more, these internal pressures increase dramatically. During Superstorm Sandy, plant flows exceeded 110 MGD, with an associated spike in internal outfall pressure. Given the poor condition of the PCCP segment of the pipe, high pressures during storm flow could result in pipe failure.

The Project proposes to replace the existing section of outfall between the WWTP and the barrier island with a tunnel to convey treated wastewater. The tunnel would run parallel to the existing outfall pipeline and be connected to the existing ocean outfall beneath the barrier island. The tunnel, which would be constructed by Tunnel Boring Machine (TBM), would be 10 feet in diameter and run 14,200 linear feet beneath Great South Bay. In order to construct the tunnel by TBM, 30 foot diameter access shafts would be excavated at the WWTP and on the barrier island. After construction is complete, treated effluent will continue to flow from the Bergen Point WWTP to ocean discharge and the access shaft areas will be restored.

Figure 1 provides an overview of the project location and Figure 2 provides a plan of the outfall tunnel alignment.

Water Supply

Operation of the new outfall tunnel will not generate any additional demand for water.

Project construction activities will require cooling water for the TBM and water for mixing concrete. It is estimated that 25,000 gallons of water will be required for cooling the TBM. This volume of water would only be required once, as the water would be stored on-site and recirculated. It is anticipated that the daily water requirement for other water uses will be less than 20,000 gallons per day. Water required for construction may either be supplied by the Suffolk County Water Authority or may be supplied by water trucks in lieu of using the public water supply. No private wells will be used.

There are two (2) public water supply wells located within a one half mile radius of the project location. Both of these wells are located east of the proposed staging area on the barrier island.

Wastewater Disposal

The proposed project will not generate additional wastewater once completed, but will rather facilitate safe conveyance and disposal of treated wastewater.

Construction of the proposed project will generate a small amount of wastewater, as water may be generated from dewatering during connection of the new outfall to the effluent pump station and existing ocean outfall. Additionally, the 25,000 gallons of water used for cooling the TBM will ultimately require treatment prior to discharge. Wastewater generated during construction will be collected and treated at the Bergen Point WWTP.

Stormwater Run-off

The project will not result in a change in impervious surface and thus will not affect stormwater run-off.

Great South Bay is between the work areas at the WWTP and the barrier island. Tunneling work will proceed beneath the bay bottom to avoid impacts to the Bay.

During construction, soil erosion and sediment control best practices will be implemented to ensure that runoff from the construction site is properly managed and does not transport sediment or other materials from the site. As project design is finalized, detailed soil erosion and sediment control plans will be developed. Soil erosion and sediment control measures will adhere to all State and local requirements.

Above Ground Storage Tanks

There will be no permanent storage tanks constructed as part of the project.

During construction activities, two small generators (one operating and one for back-up) will be used at the barrier island staging site. The size of generators and associated fuel storage tanks will be determined as the project design is finalized. Project design documents will require that fuel storage facilities be designed and constructed in accordance with Suffolk County Sanitary Code Article 12 requirements and all New York State Petroleum Bulk Storage (PBS) requirements.

4/9/2015



Source: ESRI, Inc. USGS Aerials

 Proposed Staging Areas

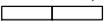
 Proposed Outfall

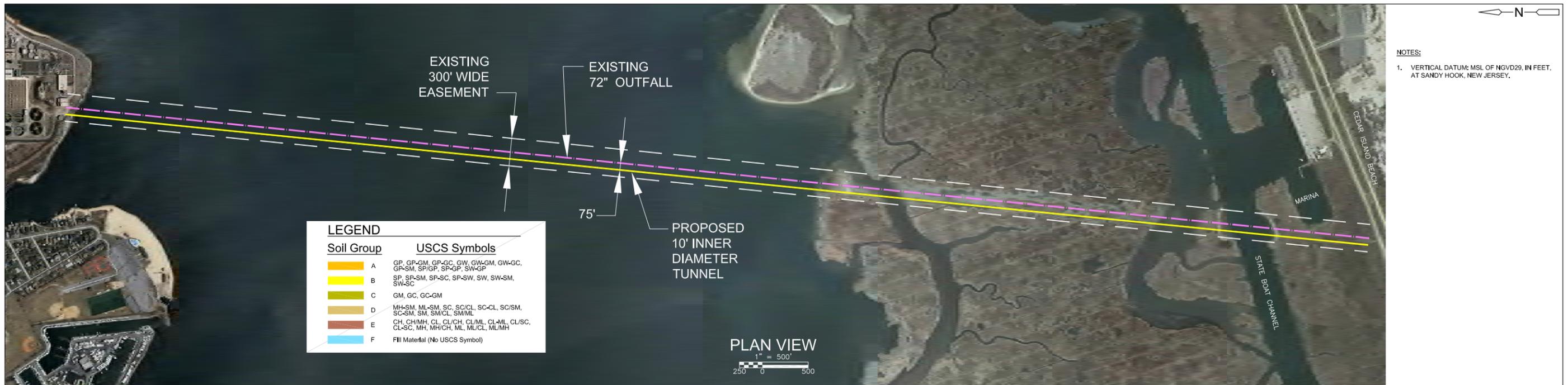
Project area:

Staging area at WWTP: 3 acres

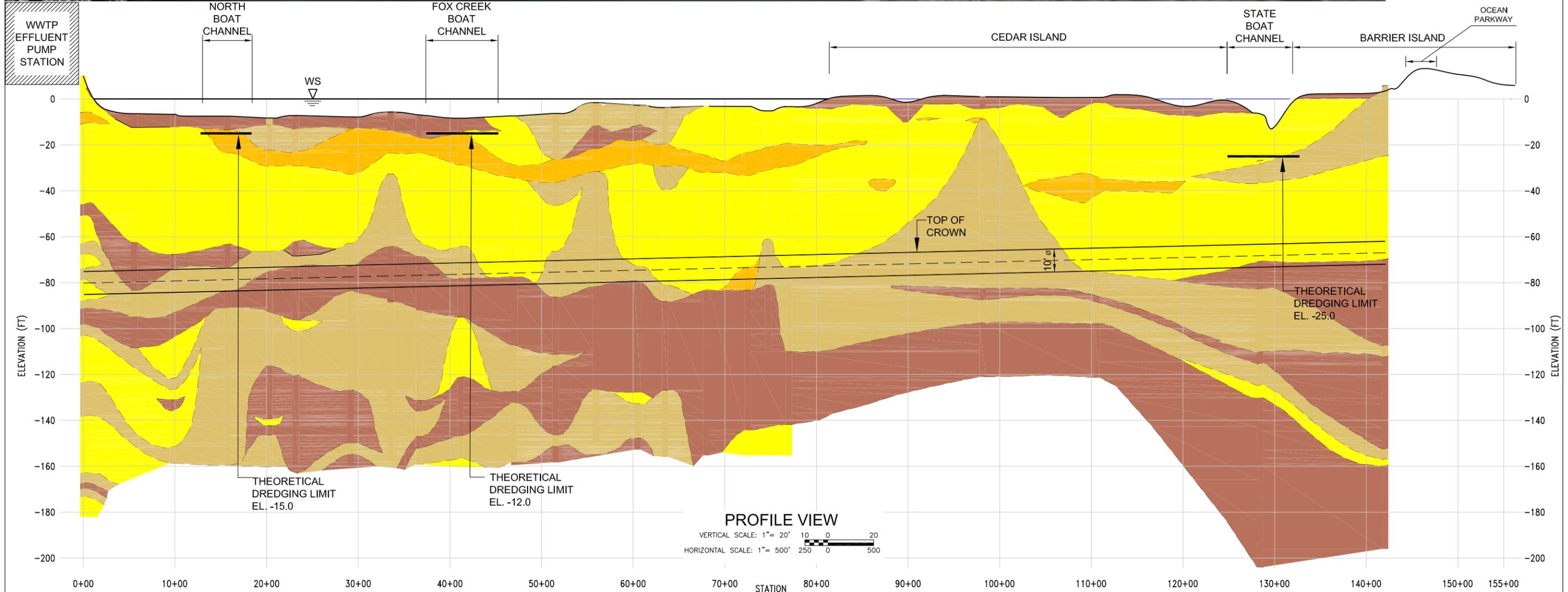
Staging area on barrier island: 1-3 acres

Tunneling: 14,200 feet long, 300 feet wide easement

0 1,000 FEET




NOTES:
1. VERTICAL DATUM: MSL OF NGVD29, IN FEET, AT SANDY HOOK, NEW JERSEY.



U:\S175\39512\ FIG 5-3 05/26/11 10:19 gomeydl



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

AUG 3 1 2015

Thomas J. King, Esq.
Certifying Officer
Governor's Office of Storm Recovery
99 Washington Avenue, Suite 1010
Albany, NY 12231

Dear Mr. King:

This is in response to your e-mail dated August 15, 2015 requesting a Sole Source Aquifer review of the proposed "Bergen Point Wastewater Treatment Plant Outfall Replacement Project," located in West Babylon, Suffolk County, New York. The project involves the construction of a new segment of outfall line by a tunnel boring machine beneath Great South Bay. The project is to receive funding from the U.S. Department of Housing and Urban Development's (HUD) Community Development Block Grant-Disaster Recovery program. The proposed project is located in the Long Island Nassau/Suffolk Aquifer System, designated by the EPA as a Sole Source Aquifer on June 21, 1978 (citation 43 FR 26611). Therefore, our review has been conducted in accordance with Section 1424(e) of the Safe Drinking Water Act (SDWA).

We have reviewed the information provided which includes Attachments 2A and 3 from EPA's Memorandum of Understanding with HUD, as well as the Environmental Assessment for this project dated August 14, 2015, and prepared for the New York Governor's Office of Storm Recovery. Based on the information provided, we understand that the proposed project involves the following. A tunnel will replace the deteriorating concrete pipe that is almost 40 years old and that is currently conveying treated wastewater under the Great South Bay and then under a barrier island, before discharging to the Atlantic Ocean. The piping beneath the barrier island was made by a different manufacturer than the one under the bay and is not in the same deteriorating state. The tunnel will be constructed using a Tunnel Boring Machine, and will be lined with concrete segments that can withstand external pressure. The tunnel will be 10 feet in diameter and a length of 14,200 feet under Great South Bay. It will run parallel to the existing pipeline, 60 to 80 feet below the bed of the Bay, and will reconnect with the existing ocean outfall beneath the barrier island. The connection will be made, on the barrier island, within a subsurface chamber north of Ocean Parkway.

We understand that the shafts at both ends of the tunnel will extend to a depth of approximately 60 to 80 feet below the ground surface, and will create disturbed areas of from 2 to 3 acres that will be re-vegetated and otherwise restored to pre-construction conditions. The vertical shaft at the plant site, through which the tunnel boring machine will begin tunneling, will be grouted, as will the shaft at the barrier island end, avoiding any avenue for contamination of the aquifer

during construction. The shafts will also be protected from flooding of the tunneling equipment during storms. We recommend the planting of native vegetation to the extent feasible upon project completion.

We note that during construction, soil erosion and sediment control best management practices consistent with state and local requirements will be adhered to, and that sediment and other material will not migrate off site. We also note that temporary fuel storage tanks will be used on the barrier island end of the tunnel and will adhere to state and county codes and requirements.

Based on the information provided, the project satisfies the requirements of Section 1424(e) of the SDWA. Please be advised that this review does not constitute a review under Section 309 of the Clean Air Act.

If you have any questions concerning this matter or would like additional information, please feel free to contact Rajini Ramakrishnan of my staff at (212) 637-3731.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Grace Musumeci". The signature is fluid and cursive, with a long horizontal stroke at the end.

Grace Musumeci, Chief
Environmental Review Section

RESPONSE TO COMMENTS

Comments

New York State Office of Parks, Recreation and Historic Preservation

Response to Comments

Governor's Office of Storm Recovery

Comments

New York State Department of Environmental Conservation

Response to Comments

Governor's Office of Storm Recovery

Comments

New York State Department of Environmental Conservation



Memo

Environmental Management
Bureau
625 Broadway 2nd Floor
T (518) 474-0409
F (518) 474-7013

To: Tom King, Director, Bureau of Environmental Review and
Environmental Management Bureau

From: Ron Rausch, Director, Environmental Management Bureau

Re: NYS OPRHP-Environmental Management Bureau, Bergen Point
WWTP Outfall Comments

Date: October 6, 2015

Thank you for the opportunity to review the ESA Section 7 documentation for the Bergen Point Wastewater treatment Plant outfall replacement project. As described there is an exit shaft at Gilgo State Park which requires a 2.33 ac staging area to be revegetated and restored upon completion. In addition, muck will be removed during the project construction. The existing easement for the outfall pipe is in an area that is naturally vegetated and mostly undisturbed. The non-native invasive Phragmites (*Phragmites australis*) is present and there are some large patches of it.

OPRHP-EMB consulted with staff from the New York Natural Heritage Program to assist us with providing comments on this work. The impacts on federally listed and migratory bird species that may be breeding in the vicinity appear to be fully addressed by the USFWS and the MBTA (migratory bird treaty act) memos you provided. However, there are other state-listed or tracked elements which occur in the vicinity of this project. The Heritage Elements present are:

Northern Harrier (*Circus cyaneus*), Short-eared Owl (*Asio flammeus*), Chuck-will's-widow (*Antrostomus carolinensis*), and Seaside Sparrow (*Ammodramus maritimus*), and the significant natural communities Salt Panne, Maritime Shrubland, and High Salt Marsh.

The following comments address our concerns and provide measures to mitigate potential impacts.

General

All equipment should be cleaned to the extent possible prior to arrival on and exit from the project site to prevent movement of non-native invasive species.

Restoration Following Disturbance of Significant Natural Communities:

1. Restoration of the disturbed areas on Jones Island should follow OPRHP's Native Plant guidelines (attached), using species native to the site and as locally sourced as

possible. OPRHP would like to review the planting list to ensure consistency with that plan. The NYNHP Conservation guides online can provide initial guidance on characteristic species.

2. OPRHP-EMB request that if there is an option to save native plants and/or seed from the site for re-planting at a suitable time, that should be done. There may be nurseries available to do this type of work and there are people on Long Island with the expertise in collecting and storing seed so including them to do the work or train other consultants to do that work is recommended. OPRHP-EMB can assist in identifying those resources.

3. Rare plant species may occur in the salt marsh and salt pannes (see NYNHP conservation guides for potential species). Ideally any areas not dominated by Phragmites or other invasives should be surveyed in the field season prior to site disturbance. No federally listed species are expected, but occurrences of a number of species tracked by NYNHP are possible.

4. Restoration Success - Monitoring of the restoration site should be done during the project and for at least 3 years following the project to assess results, remove invasives, and ensure that the restoration was successful. Identifying some target measures at the outset can help to provide benchmarks for what will be deemed a success (such as presence of native species, over xx % vegetated cover, less than 1% invasive species, etc).

Protection of Non-breeding Birds

The reviews address shorebirds and breeding birds, but fail to address the presence of 2 state-listed species that have been documented in the vicinity year-round and should be monitored during the project activity. Short-eared owls and northern harriers, both federally protected under the migratory bird treaty act, use dunes, marshes, and shrublands year round for feeding and resting.

Surveys should be done to assess whether either of these species are using the area during the project implementation and if so, take measures to minimize disturbance. (see NYNHP conservation guides for more information)

CC: Tom Alworth, Deputy Commissioner
Scott Fish, Regional Capital Facilities Manager
Wayne Horsley, Regional Director, Long Island
George Gorman, Assistant Regional Director, Long Island
Nicole Garofolo, Environmental Analyst, Long Island
Diana Carter, Director, Resource & Facility Planning

| | |
|---|--|
|  <p>NEW YORK STATE OF OPPORTUNITY.</p> <p>Parks, Recreation and Historic Preservation</p> <p>Section: Natural Resources</p> | <p>Policy Title: Native Plants in State Parks and Historic Sites</p> <p>Directive: NR-POL-004</p> <p>Effective Date: 06/29/2015</p> |
|---|--|

Summary

The New York State Parks System harbors an extraordinary diversity of plants, animals, and ecological communities that make a unique contribution to the biodiversity of New York State. This policy provides a framework for the protection of one component of this biodiversity—native plants—by offering guidelines for native plant conservation, management, and restoration within State parks and historic sites.

Policy

Definition(s)

- “Native plants” means any plant species (including shrubs and trees) that has evolved and naturally occurs in New York State. In some instances, plants are native (indigenous) to only certain regions of the state. The Environmental Management Bureau (EMB) can assist agency staff in determining whether a specific plant is considered “native” for the purposes of this policy.
- “Invasive species” is a species that: (a) is non-native to the ecosystem under consideration; (b) aggressively spreads and displaces or degrades native species and habitats; and (c) whose introduction causes or is likely to cause economic or environmental harm or harm to human health.
- “Locally sourced plants and seeds” are plants and seeds derived from plants that occur within the state and ideally from the ecoregion (i.e., a relatively homogenous ecological area defined by similarity of climate, landform, soil, potential natural vegetation, hydrology, or other ecologically relevant variables (EPA Biocriteria, 2009)).
- “Non-native species,” also referred to as an “alien,” “exotic,” or “non-indigenous” species, are species introduced from another region of North America or another continent as a direct or indirect result of human activity. Some non-native species are “invasive,” meaning they aggressively spread in the landscape; others cannot

reproduce in New York or have naturalized in to the landscape at levels that do not appear to substantially threaten native species or ecological communities.

As part of its mission, § 3.09(15) of the Parks, Recreation and Historic Preservation Law (PRHPL) directs the Office of Parks, Recreation and Historic Preservation (OPRHP) to:

“Enhance the natural resources within the State park, recreation and historic site system by providing habitat for various wildlife species, including endangered and threatened species of fauna through practices such as ecological restoration, wetland conservation and the planting of trees, shrubs and herbaceous plants indigenous to the area which act as food and protective cover for fauna. Selection of plant species or communities of species shall take into consideration the natural, ecological, historic, archeological, aesthetic, and public use resources in the immediate areas as well as the management goals of the park or site.”

In addition, § 9-1705 of the Environmental Conservation Law establishes the New York Invasive Species Council to, among other responsibilities, coordinate State actions to phase-out uses of invasive species and expand the use of native species as alternatives to non-native species. OPRHP is a member of the council.

OPRHP will promote the protection and restoration of native plants and ecological communities throughout the State park and historic site system by implementing the following goals and actions:

1. Identify and maintain native plant populations and natural communities, improving the overall quality of habitat and biodiversity within State parks and historic sites.
2. Control the introduction and spread of invasive species to reduce competitive displacement and loss of habitat, focusing on invasive species that pose the greatest ecological and operational concerns within specific parks, sites, and regions of the state. Subject to the availability of funding and effective control strategies, implement invasive plant removal projects in priority locations.
3. To the extent feasible, utilize native plants in all landscaping, re-vegetation, erosions control, and habitat restoration projects. The planting or introduction of invasive plant or tree species is prohibited. OPRHP relies on the lists established under 6 NYCRR Part 575, Prohibited and Regulated Invasive Species, for identification of prohibited species. As a matter of policy, plant species identified in the regulation as regulated invasive species are also prohibited from being planted in New York State OPRHP facilities. No parts of such plants can be introduced to OPRHP facilities.

4. To the extent feasible, landscaping and restoration projects should utilize native plants and seeds that are derived from NY State and ideally from that ecoregion within the state.
5. Develop partnerships and stewardship projects to increase OPRHP's capacity to prevent the introduction and spread of invasive plants and reduce their impacts on native plants.
6. Conserve populations and habitats of endangered, threatened, and rare plants and plant communities located within State parks and historic sites by reducing threat from invasive species.
7. Implement education, research, and monitoring projects that support native plant conservation and restoration.

Policy Exception

OPRHP recognizes that non-native plants, including exotic trees and flowers, are important cultural landscape elements in certain State parks, State historic sites, and State arboretums. In such locations, OPRHP may utilize non-native plants to maintain and restore significant cultural landscapes. In addition, OPRHP may utilize ornamental flowers, shrubs, and trees when landscaping park entrances and high-use areas, provided that pursuant to policy action #3 above, the agency will not plant or introduce invasive species. This policy recognizes that only some non-native species invasively spread in the landscape (planting of non-native species is limited to non-invasive plants).

Sources and Selection of Native Plants and Seeds

There is growing demand by public and private entities that purchase plant materials for landscaping and restoration projects to purchase native plants, native seeds, and plant materials grown from local seed sources. Procuring native plants and seeds from sources that are local to the planting site, when undertaken with knowledge of the plant species and ecology of the site, protects biological diversity and the genetic suitability of local populations. OPRHP will encourage the use of local plant material through its purchasing practices. The EMB, in consultation with regional staff, will compile and periodically update a regional list of nurseries and other sources where native plants and seeds may be obtained. A list of native plants information sources will also be developed to provide resources to staff in developing site and species plans for planting and restoration projects.

Forms

No applicable forms

Other Related Information

Native plants are the primary food source and a key structural component of our natural systems which provide many ecosystem services including aesthetics, flood control, carbon sequestration, and others. They are critical sources of food, shelter, and habitat for many animal species. Many plants also have historical and cultural significance and maintaining communities of native species is an important aspect of preserving our heritage. For restoration and landscaping, native plants often have high survivorship and vigor because they are well adapted to local conditions and have greater ecological value than non-native alternatives. Planting native plants also helps to reduce the threat of invasive species from encroaching on native species and habitats and supports the continued existence and enhancement of existing populations of native plants within State parks. Rare species (Young 2010) should not be planted or collected in State Parks without an OPRHP Research permit (and a U.S. Fish and Wildlife Service permit in the case of federally-listed plant species) as this can alter the genetic integrity of the original populations.

New York Flora Atlas <http://newyork.plantatlas.usf.edu/> is the authority for determining if a plant species is native to New York State.

6 NYCRR Part 575 Prohibited and Regulated Invasive Species.

<http://www.dec.ny.gov/regulations/93848.html>

9 NYCRR Part 377.1(i) Regulated Activities

Young, S. M. 2010. New York rare plant status list. New York Natural Heritage Program, Albany, NY. http://www.dec.ny.gov/docs/fish_marine_pdf/2010rareplantstatus.pdf

History

- 09/27/2010 This policy is effective immediately and replaces all previous OPRHP policies regarding the conservation and management of native plants within State parks and historic sites under the agency's jurisdiction.
- 06/29/2015 The 2010 policy was reviewed and reissued with formatting changes and updated regulatory information.



Governor's Office of Storm Recovery



Andrew M. Cuomo
Governor

Lisa Bova-Hiatt
Executive Director

November 25, 2015

Mr. Ron Rausch, Director
Environmental Management Bureau
Office of Parks, Recreation and Historic Preservation
625 Broadway, 2nd Floor
Albany, New York 12238

RE: OPRHP Comments on Environmental Assessment for Bergen Point WWTF Outfall Replacement Project

Dear Mr. Rausch:

On October 6, 2015, the Governor's Office of Storm Recovery (GOSR), an office of New York State Homes and Community Renewal's Housing Trust Fund Corporation as responsible entity for direct administration of the HUD Community Development Block Grant – Disaster Recovery (CDBG-DR) program in New York State, received your letter providing the New York State Office of Parks, Recreation and Historic Preservation's (OPRHP) on a draft Environmental Assessment related to the above-mentioned project. Thank you kindly for your helpful comments.

In all instances GOSR has responded and revised the EA accordingly, as follows:

- (1) OPRHP States: "All equipment should be cleaned to the extent possible prior to arrival on and exit from the project site to prevent movement of non-native invasive species."
 - a. GOSR Response: This comment has been incorporated on pages 20 and 29.
- (2) OPRHP States: "Restoration of the disturbed areas on Jones Island should follow OPRHP's Native Plant guidelines (attached), using species native to the site and as locally sourced as possible. OPRHP would like to review the planting list to ensure consistency with that plan. The NYNHP Conservation guides online can provide initial guidance on characteristic species."
 - a. GOSR Response: This comment has been incorporated on pages 20 and 29.
- (3) OPRHP States: OPRHP-EMB request that if there is an option to save native plants and/or seed from the site for re-planting at a suitable time, that should be done. There may be nurseries available to do this type of work and there are people on Long Island with the expertise in collecting and storing seed so including them to do the work or train other consultants to do that work is recommended. OPRHP-EMB can assist in identifying those resources.
 - a. GOSR Response: GOSR would like to thank OPRHP-EMB for this comment; and will take steps to see that OPRHP-EMB is notified of such opportunities.

(4) OPRHP States: “Rare plant species may occur in the salt marsh and salt pannes (see NYNHP conservation guides for potential species). Ideally any areas not dominated by Phragmites or other invasives should be surveyed in the field season prior to site disturbance. No federally listed species are expected, but occurrences of a number of species tracked by NYNHP are possible.”

a. GOSR Response: This comment has been incorporated on pages 20 and 29.

(5) OPRHP States: “Monitoring of the restoration site should be done during the project and for at least 3 years following the project to assess results, remove invasives, and ensure that the restoration was successful. Identifying some target measures at the outset can help to provide benchmarks for what will be deemed a success (such as presence of native species, over xx % vegetated cover, less than 1% invasive species, etc).”

a. GOSR Response: This comment has been incorporated on pages 20 and 29.

(6) OPRHP States: “The reviews address shorebirds and breeding birds, but fail to address the presence of 2 state-listed species that have been documented in the vicinity year-round and should be monitored during the project activity. Short-eared owls and northern harriers, both federally protected under the migratory bird treaty act, use dunes, marshes, and shrublands year round for feeding and resting. Surveys should be done to assess whether either of these species are using the area during the project implementation and if so, take measures to minimize disturbance. (see NYNHP conservation guides for more information).”

a. GOSR Response: This comment has been incorporated on pages 20 and 29.

We trust that this will satisfy OPRHP’s October 6, 2015 comments related to the above-mentioned EA. If you or your staff have any questions please do not hesitate to contact me via email at Thomas.King@stormrecovery.ny.gov or by phone at (518) 473-0015.

Sincerely,



Thomas J. King
Assistant General Counsel and Certifying Officer

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 1
SUNY @ Stony Brook, 50 Circle Road, Stony Brook, NY 11790
P: (631) 444-0365 | F: (631) 444-0360
www.dec.ny.gov

Thomas King
Assistant General Counsel
Governor's Office of Storm Recovery
99 Washington Ave. – Suite 1224
Albany, NY 12260

November 2, 2015

Re: DEC Comments on Environmental Assessment for Bergen Point WWTF Outfall Replacement Project

Dear Mr. King:

The Department of Environmental Conservation has completed its review of the National Environmental Policy Act Environmental Assessment (NEPA EA) prepared for Suffolk County's proposal to replace the outfall of the Bergen Point Wastewater Treatment Facility. The project involves the use of a tunnel boring machine to construct of 10-foot wide by 14,200-foot long tunnel underneath Great South Bay extending from the treatment plant to Jones Island, where it will connect with the existing outfall pipe which discharges to the ocean. The action also includes the excavation of entrance and exit shafts at the ends of the tunnel and a temporary bypass pipeline near the south end of the tunnel to allow the connection of the tunnel with the existing ocean outfall.

While we found that, overall, the EA is thorough and effectively identifies most environmental and regulatory issues associated with the project, there are a number of programmatic concerns linked to the various New York State Environmental Conservation Law regulations which are applicable to this action going forward.

1. EA Page 12: In the compliance table, under the Sole Source Aquifer entry, it should note that a Long Island Well dewatering permit will be required. This permit is also missing from the list of permits required for the project which appears on page 21.
2. Pages 17 & 193: Listed under the "Solid Waste Disposal / Recycling" environmental assessment factor, the soil or sediment material removed by the boring operation (muck) is expected to be beneficially reused, but the specific use is yet to be determined. "The specific uses would vary depending on demand, suitability, contractor preference and contamination test results." Considering that 90,000 cubic yards of material equates roughly with a 15-foot high pile over a four acre area, the reuse plan should specific, detailed, and agreed upon by all involved agencies before the tunneling begins.

2. (continued): Also, please note that DEC's Division of Materials Management (DMM) has jurisdiction over the upland disposal / management of excavated soil where such disposal / management is not authorized under a permit issued pursuant to Article 15, 24, 25 or 34 of the Environmental Conservation Law or a Water Quality Certification issued under section 401 of the Federal Water Pollution Control Act. Any material which will be removed from either the Bergen Point facility or the site of the exit pit on Jones Island must be considered a solid waste subject to regulation under 6 NYCRR Part 360: Solid Waste Management Facilities Regulations. Part 360 regulations will require disposal of such soil at an authorized solid waste management facility, if necessary. As an alternative to disposal in a landfill, under certain circumstances, excavated soil can be managed in accordance with a generic or case-specific Beneficial Use Determination (BUD). The collection of a representative number of samples of the excavated material for analysis by a state certified laboratory is required.

Sediment Sampling & Analysis Plan Required

Prior to carrying out any sampling, a soil sampling and analysis plan should be submitted to DMM for review and approval. Sampling cannot be performed without a sampling plan approved by the Department. DMM recommends that at least thirty (30) grab / discrete samples and thirty (30) composite samples be taken for the estimated 90,000 cubic yards of excavated soil. One five-point composite sample would be necessary for each 3,000 cubic yards of soil. The composite sample must consist of core samples collected through the depth of each 3,000 cubic yard pile and be composited. Grab / discrete samples must be analyzed individually for volatile organic compound (VOC) analysis, if necessary. No compositing of VOCs is allowed. The sampling plan must include drawings of the stockpile area and should indicate the size of each individual pile of material in the stockpile area.

Analyses to be Performed

a. Grain Size Distribution

Grain size distribution of each sample can be determined by a sieve analysis performed in accordance with ASTM C136-95.

b. Total Organic Carbon

The Total Organic Carbon (TOC) of each sample can be determined in accordance with EPA Method 415.1.

Thomas King, Esq.
November 2, 2015
Page 3

c. Testing Sequence

Any excavated soil that is represented by sample exhibiting at least 90% sand / gravel (less than 10% of the material passing through the No. 200 sieve) and less than 0.5% TOC is approved for upland use/storage disposition without any restriction.

If any sample fails the grain size and TOC testing, such sample should be immediately analyzed for volatile organic compounds (EPA 8260B), semi-volatile organic compounds (EPA 8270C), pesticides (EPA 8081A), PCBs (EPA 8082), and metals (EPA6010B) as listed in 6NYCRR Part 375-6.8. Any excavated soil that is represented by a sample which passes the "unrestricted use" Soil Cleanup Objectives (SCOs) threshold of Part 375-6.8 for all listed analytes is approved for any upland use / storage disposition.

Material which fails the unrestricted SCOs, but passes the lower of Residential and Protection of Groundwater SCOs of Part 375-6.8(b), may still be eligible for beneficial use, which requires the applicant to obtain a case-specific BUD issued by the Department in accordance with 6 NYCRR Part 360-1.15(d). In either case, it is necessary to sample the excavated soil, perform chemical analysis and submit the results of analysis to DMM for review. In order for DMM to make definitive determination of analytical results, it is imperative that the lab performing the analysis achieve limits of detection (or reporting limit) below the "unrestricted use" threshold of Part 375-6.8(a).

3. Pages 17 & 193: The "Waste Water / Sanitary Sewers" environmental assessment factor does not consider the dewatering of slurry material (muck) removed from the tunnel. How will this water be treated and where will it be discharged?

4. Page 17 & 193: The "Water Supply" environmental assessment factor does not seem to account for the water needed to transport the slurry material (muck) away from the TBM boring head.

5. The landward edge of the tidal wetland (wetland boundary) at the sites of the entrance and exit pits should be delineated by a qualified individual and shown on the project drawings.

6. Please provide additional information on the fluid to be used in the ground freezing operation at the entrance pit. What are the constituents of the fluid (MSDS available?), is it toxic to marine or aquatic life? How is the ground freezing system designed, installed and operated, and how is the fluid handled? Is there a potential for leaks or inadvertent discharge to the environment?

I can be reached at (631) 444-0371 or george.hammarth@dec.ny.gov if you have any questions about DEC's comments. We apologize for the delay in submitting the comments and thank you for your continued cooperation.

Thomas King, Esq.
November 2, 2015
Page 4

Sincerely,

A handwritten signature in blue ink, appearing to read "George W. Hammarth". The signature is fluid and cursive, with a prominent initial "G" and a long, sweeping tail.

George W. Hammarth
Deputy Regional Permit
Administrator

cc: Debra Barnes
Charles deQuillfeldt
Roger Evans
Gina Fanelli
Carrie Meek-Gallagher
Cathy Haas
Benazir Khan
Rob Marsh
Dawn McReynolds
Jennifer Pilewski
Daniel Rozell
Ajay Shah



Governor's Office of Storm Recovery



Andrew M. Cuomo
Governor

Lisa Bova-Hiatt
Executive Director

November 23, 2015

Mr. George W. Hammarth
Deputy Regional Permit Administrator
New York State Department of Environmental Conservation
Division of Environmental Permits, Region 1
SUNY @ Stony Brook, 50 Circle Road
Stony Brook, NY 11790

RE: DEC Comments on Environmental Assessment for Bergen Point WWTF Outfall Replacement Project

Dear Mr. Hammarth:

On November 2nd, 2015, the Governor's Office of Storm Recovery (GOSR), an office of New York State Homes and Community Renewal's Housing Trust Fund Corporation as responsible entity for direct administration of the HUD Community Development Block Grant – Disaster Recovery (CDBG-DR) program in New York State, received your letter providing the New York Department of Environmental Conservation's (DEC) on a draft Environmental Assessment related to the above-mentioned project. Thank you kindly for your helpful comments and follow up phone calls concerning this matter.

In all instances GOSR has responded and revised the EA accordingly, as follows:

- (1) **DEC STATES:** "EA Page 12: In the compliance table, under the Sole Source Aquifer entry, it should note that a Long Island Well dewatering permit will be required. This permit is also missing from the list of permits required for the project which appears on page 21."
GOSR RESPONSE: This permit is understood to apply to temporary dewatering in excess of 45 gallons per minute (or 64,800 gallons per day). We have modified the EA as suggested by DEC to incorporate this requirement should dewatering be expected to meet or exceed this threshold.
- (2) **DEC STATES:** "Pages 17 & 193: Listed under the "Solid Waste Disposal & Recycling" environmental assessment factor, the soil or sediment material removed by the boring operation (muck) is expected to be beneficially reused, but the specific use is yet to be determined. "The specific uses would vary depending on demand, suitability, contractor preference and contamination test results." Considering that 90,000 cubic yards of material equates roughly with a 15-foot high pile over a four acre area, the reuse plan should specific, detailed, and agreed upon by all involved agencies before the tunneling begins. Also, please note that DEC's Division of Materials Management (DMM) has jurisdiction over the upland disposal & management of excavated soil where such disposal & management is not authorized under a permit issued pursuant to Article 15, 24, 25 or 34 of the Environmental Conservation Law or a Water Quality Certification issued under section 401 of the Federal Water Pollution Control Act. Any material which will be removed from either the Bergen Point facility or the site of the exit pit on Jones Island must be considered a solid waste subject to regulation under 6 NYCRR Part 360: Solid Waste Management Facilities Regulations. Part 360 regulations will require disposal of such soil at an authorized solid waste management facility, if necessary. As an alternative to disposal in a landfill, under certain circumstances, excavated soil can be managed in accordance with a generic or case-specific Beneficial Use Determination (BUD). The collection of a number of samples of the excavated material for analysis by a certified laboratory is required.

Sediment Sampling & Analysis Plan Required

Prior to carrying out any sampling, a soil sampling and analysis plan should be submitted to DMM for review and approval. Sampling cannot be performed without a sampling plan approved by the Department. DMM recommends that at least thirty (30) grab I discrete samples and thirty (30) composite samples be taken for the estimated 90,000 cubic yards of excavated soil. One five-point composite sample would be necessary for each 3,000 cubic yards of soil. The composite sample must consist of core samples collected through the depth of each 3,000 cubic yard pile and be composited. Grab I discrete samples must be analyzed individually for volatile organic compound (VOC) analysis, if necessary. No compositing of VOCs is allowed. The sampling plan must include drawings of the stockpile area and should indicate the size of each individual pile of material in the stockpile area.

Analyses to be Performed

- a. Grain Size Distribution: Grain size distribution of each sample can be determined by a sieve analysis performed in accordance with ASTM C136-95.
- b. Total Organic Carbon: The Total Organic Carbon (TOC) of each sample can be determined in accordance with EPA Method 415 .1.
- c. Testing Sequence: Any excavated soil that is represented by sample exhibiting at least 90% sand & gravel (less than 10% of the material passing through the No. 200 sieve) and less than 0.5% TOC is approved for upland use/storage disposition without any restriction.

If any sample fails the grain size and TOC testing, such sample should be immediately analyzed for volatile organic compounds (EPA 82608), semi-volatile organic compounds (EPA 8270C), pesticides (EPA 8081A), PCBs (EPA 8082) , and metals (EPA6010B) as listed in 6NYCRR Part 375-6.8 . Any excavated soil that is represented by a sample which passes the "unrestricted use" Soil Cleanup Objectives (SCOs) threshold of Part 375-6.8 for all listed analytes is approved for any upland use & storage disposition.

Material which fails the unrestricted SCOs, but passes the lower of Residential and Protection of Groundwater SCOs of Part 375-6.8(b), may still be eligible for beneficial use, which requires the applicant to obtain a case-specific BUD issued by the Department in accordance with 6 NYCRR Part 360-1.15(d). In either case, it is necessary to sample the excavated soil, perform chemical analysis and submit the results of analysis to DMM for review. In order for DMM to make definitive determination of analytical results, it is imperative that the lab performing the analysis achieve limits of detection (or reporting limit) below the "unrestricted use" threshold of Part 375-6.8(a).

GOSR Response: This comment appears to be predicated on DEC's understanding that the produced material (muck) is dredge material. As we have discussed in the past weeks, the material is not anticipated to contain the above-mentioned contaminants nor is it considered dredge material. The material will be removed from approximately 80-100 feet below ground in previously undisturbed soils. Although plans and specifications for this project are still in development, project engineers have drafted a specification that requires shaft and tunneling subcontractors to submit a "Material Management Plan(s)" to the Engineer or Construction Manager prior to the start of excavation for approval by Suffolk County, GOSR and EFC. If the Materials Management Plan(s) includes actions subject to DEC jurisdiction it will be submitted to DEC and other relevant agencies for review and approval. This clarification has been added to page 17 of the EA.

- (3) DEC states: “Pages 17 & 193: The "Waste Water & Sanitary Sewers" environmental assessment factor does not consider the dewatering of slurry material (muck) removed from the tunnel. How will this water be treated and where will it be discharged?”

GOSR Response: It is anticipated that muck and excavated material will be dewatered above ground on site in a drying area. Soil conditioners (which must be non-toxic and biodegradable) and produced water will be reused or treated in the Bergen Point Facility. If the contractor selected for the construction effort proposes a different strategy for produced waters and conditioner reuse, the potential for significant adverse impacts will be evaluated for the proposed strategy. This clarification has been added to page 16 of the EA.

- (4) DEC states: “Page 17 & 193: The "Water Supply" environmental assessment factor does not seem to account for the water needed to transport the slurry material (muck) away from the TBM boring head.”

GOSR Response: The exact amount of water required for the transporting muck away from the TBM boring head depends on the method of tunneling proposed by the contractor. There is both a cart method in which very little water is used for this purpose and a slurry method in which more water is used. It is anticipated that the cart method will be used; however, the exact amount of water to be used in this process will be dependent on this factor as well as the soil characteristics in any given interval of tunneling. Should the slurry method be proposed and selected, the potential for significant adverse impacts will be evaluated for this method in coordination with EPA and DEC. We have added contingency language to address this potential variable on page 17 of the EA.

- (5) DEC states: “The landward edge of the tidal wetland (wetland boundary) at the sites of the entrance and exit pits should be delineated by a qualified individual and shown on the project drawings.”

GOSR Response: Wetlands delineation will be prepared and will be shown on project drawings. Any encroachment into state or federal wetlands will require appropriate permits. This clarification has been added to pages 13-14 and 19 of the EA.

- (6) DEC states: “Please provide additional information on the fluid to be used in the ground freezing operation at the entrance pit. What are the constituents of the fluid (MSDS available?), is it toxic to marine or aquatic life? How is the ground freezing system designed, installed and operated, and how is the fluid handled? Is there a potential for leaks or inadvertent discharge to the environment?”

GOSR Response: The ground freezing operation will use a series of vertical “freeze pipes” that will circulate a brine solution in a closed system; the freeze pipes will be constructed of Schedule 40 steel; the coolant will be a calcium chloride solution with a rust inhibitor. The freeze pipes are comprised of two concentric pipes, so that the system is closed. The chilled brine is circulated below ground through the outer freeze pipe, returned back aboveground via the inner pipe to the chiller plant, and then back down into the aquifer, etc. until the ground is frozen. The specification associated with this operation requires that the distribution system be pressure tested before the brine salt is added. This specification also requires the brine circulation system to have an automatic shut-off control when there is a sudden drop in brine pressure to limit brine loss if a leak were to develop. Each series of freeze pipes has its own isolation control valve. Monitoring instrumentation is required to be automated so that distribution pressure and flow data is available on an hourly basis at a minimum. This clarification has been added to page 13 of the EA.

We trust that this will satisfy DEC's November 2, 2015 comments related to the above-mentioned EA. If you or your staff have any questions please do not hesitate to contact me via email at Thomas.King@stormrecovery.ny.gov or by phone at (518) 473-0015.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas J. King". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Thomas J. King
Assistant General Counsel and Certifying Officer

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 1

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www.dec.ny.gov

Thomas King
Assistant General Counsel
Governor's Office of Storm Recovery
99 Washington Ave. – Suite 1224
Albany, NY 12260

December 2, 2015

Re: Clarification of DEC Comments on Environmental Assessment for Bergen Point
WWTF Outfall Replacement Project

Dear Mr. King:

This letter is to clarify the Department of Environmental Conservation's November 2, 2015 comments on the National Environmental Policy Act Environmental Assessment (NEPA EA) prepared for Suffolk County's proposal to replace the outfall of the Bergen Point Wastewater Treatment Facility.

As discussed during our recent telephone conversations, and as suggested in your November 25, 2015 letter to the undersigned, DEC has reconsidered the position articulated on pages 1- 3 of our November 2, 2015 letter regarding the regulatory status of the soil removed by the tunnel boring machine (muck) pursuant to 6 NYCRR Part 360, the Solid Waste Management Facilities Regulations.

We understand that:

- The soils removed by the boring machine will be coming from strata far below the bottom surface of the Great South Bay and therefore cannot be considered material produced by a dredging process IE: dredged material.
- The boring material will be removed from undisturbed soil layers well below any area of human activity. The Department therefore considers this soil to be virgin material.
- The tunnel boring process described to date involves no introduction of drilling fluid or similar chemical compounds which will come into contact with soil to be removed.

Accordingly, since the material to be removed by the tunnel boring process will clearly not meet the Part 360 definition of dredged material, and it will be virgin soil unadulterated with chemical compounds by the boring process, there will be no Part 360-related restrictions on its management or reuse. For the same reasons, there will no requirement by DEC for the material to be sampled and tested for contaminants as part of its stockpiling or management at the Bergen Point site.

Thomas King, Esq.
December 2, 2015
Page 2

Please disregard the comment in my November 2 letter identifying the boring soils as dredged material and describing a required sequence of sampling followed by physical and chemical analysis.

If the proposed action changes so that one or more of the factors listed above which form the basis of this determination no longer apply, please contact the undersigned so that DEC's position can be reassessed.

I apologize for any confusion our original comment may have caused. Please contact me at (631) 444-0371 or george.hammarth@dec.ny.gov if you have any questions or need to discuss this issue further.

Sincerely,



George W. Hammarth
Deputy Regional Permit
Administrator

cc: Debra Barnes
Charles deQuillfeldt
Roger Evans
Gina Fanelli
Carrie Meek-Gallagher
Cathy Haas
Benazir Khan
Rob Marsh
Dawn McReynolds
Jennifer Pilewski
Daniel Rozell
Ajay Shah