Shore Road Waterfront Park
Natural Resiliency Improvements Project
Village of Lindenhurst, Suffolk County, NY
Environmental Review Record

Prepared by Tetra Tech Inc.
1999 Harrison Street, Suite 500
Oakland, CA 94612

New York State Homes and Community Renewal
Governor's Office of Storm Recovery
38-40 State Street
Albany, NY 12207

November 20, 2019

Shore Road Waterfront Park Natural Resiliency Improvements Project Environmental Assessment

November 20, 2019

Project Name:	Shore Road Waterfront Park Natural Resiliency Improvements Project
Project Location:	Shore Road Park 8 Bay Street, Lindenhurst NY 11757
Federal Agency: Responsible Entity:	U.S. Department of Housing and Urban Development New York State Homes and Community Renewal
Responsible Agency's Certifying Officer:	Lori A. Shirley, Governor's Office of Storm Recovery, Certifying Officer
Project Sponsor:	Dormitory Authority of the State of New York (DASNY)
Primary Contact:	Robin Tolud, Project Manager DASNY Phone: (212) 273-5110 (office) Email: rtolud@dasny.org
Project NEPA Classification:	24 CFR 58.36 (Environmental Assessment)
Environmental Finding:	X Finding of No Significant Impact - The project will not result in a significant impact on the quality of the human environment. ☐ Finding of Significant Impact - The project may significantly affect the quality of the human environment.
Certification	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.
Signature	Lori A Shirley Lori A. Shirley, Director, Bureau of Environmental Review and Assessment, GOSR

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CERTIFICATION OF NEPA CLASSIFICATION

It is the finding of the New York State Housing Trust Fund Corporation that the activity(ies) proposed in its 2019 NYS CDBG-DR project, Shore Road Waterfront Park Natural Resiliency Improvements Project 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.

Lori A Shirley	November 20, 2019
Signature of Certifying Officer	Date
Lori A. Shirley	Certifying Officer
Print Name	Title

CERTIFICATION OF SEQRA CLASSIFICATION

It is the finding of the New York State Housing Trust Fund Corporation that the activity(ies) proposed in its 2019 NYS CDBG-DR project, Shore Road Waterfront Park Natural Resiliency Improvements Project, Village of Lindenhurst are:

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

Lori A Shirley	November 20, 2019
Signature of Certifying Officer	Date
Lori A. Shirley	Certifying Officer
Print Name	Title

Description of the Proposed Project [24 CFR 50.12 & 58.32; 40 CFR 1508.25]:
The Village of Lindenhurst proposes to design and implement storm resiliency improvements and public access improvements at the southern end of Shore Road Park (Appendix A, Figures), in the Village of Lindenhurst, Town of Babylon, Suffolk County, NY.

Shore Road Park is a 10.2-acre site located at the southern edge of the Village of Lindenhurst on the shore of the Great South Bay. This area is one of the few remaining natural public sections of bayfront within the Village. The park is owned, operated, and maintained by the Village of Lindenhurst and is utilized for seasonal recreational activities and community events. The entire park is within the 100-year floodplain and within the Nassau-Suffolk Sole Source Aquifer.

The park as well as nearby residential neighborhoods were subject to major flooding from the Great South Bay as well as nearby canals. This flooding resulted in catastrophic damage to hundreds of homes, many of which remain in various states of repair or abandonment. In the aftermath of Superstorm Sandy, the parking lot of this park was the staging area for "Camp Bulldog"—a grassroots disaster recovery and distribution center for residents within the Village.

The sandy beach area contains scattered concrete slabs and debris utilized for purposes of erosion control. The slope from the high tide line seaward for approximately 30' is generally flat (less than 3%). Based upon visual inspection, additional rubble of various sources is present in the water. The project area located landward of the high tide line contains various vegetation of salt tolerant species, however the dominant plant is Phragmites, a highly invasive species.

The Proposed Project would involve approximately 1.1 acres in the southern portion of the park (Appendix A, Figures). In addition, the project area includes two properties to the east of the park, that were previously owned by private parties that were part of the GOSR buyout and acquisition program have been transferred to the Village of Lindenhurst.

The Proposed Project would include storm resiliency improvements, such as natural bank stabilization, landforms, and built structures and features that could reduce waves (Appendix B, Site Plans). The project would likely involve the following:

- Construction of low-tide and a high-tide protective shorefront structures (rock sills) with stone boulders to provide storm and erosion protection during wave action at either tide cycle and prevent recurring flooding and reduce wave action for storm protection;
    - Breaks in the lower rock wall will facilitate water and sand movements throughout the tide cycles and avoid impoundment of water
    - The high tide rock-sill will include a stabilized rock sitting wall
- Replacement of the existing asphalt road at the southern end of South Bay Street with a gravel road with a gated entry for emergency access
- Sand and living shoreline vegetation will be placed between the two rock sills and upland landscaping will be placed above the high tide wall on the west side of the area.
    - A rain garden will be included in the upland landscaping

- Drainage improvements including extension of drainage outlets to between the low- and high-tide rock sills, and the addition of tide check valves as a means of protecting the southern end of Shore Road Park from flooding during major storm events;
    - The eastern drainage will be extended to a new concrete outlet between the low- and high-tide rock walls. Riprap will be placed at the outfall to provide scour protection.
    - The western drainage will be relocated to a new concrete outlet between the low and high tide rock walls. Riprap will be placed at the outfall to provided scour protection.
    - A total of 25 cubic yards of riprap would be placed at the end of the drainage outlets between the high tide and low tide rock walls.
- The top of the existing bulkheads along the shore of the eastern portion of the site (former private residential parcels) will be removed to an elevation of 0.08 feet to serve as the low-tide wave break.
- The properties will be regraded and revegetated. Placement of clean fill where needed; and
- A Phragmites Eradication Plan, approved by the NYSDEC, will be implemented and new native coastal vegetation will be planted.

The southeast corner of the park just north of the planned high-tide structure will be used as a material staging area and job site trailer, if needed. This part of the project area will be returned to park use after construction is completed.

The Village owns the land in the project area, including the two originally privately-owned vacant parcels to the east of the park. The inclusion of these properties in this project would help to provide uniform shoreline protection for this section of bayfront. The existing bulkheads on the west and south side of these parcels would be cut down. The bulkheads on the eastern side along the canal would remain.

Statement of Purpose and Need for the Proposal [40 CFR 1508.9(b)]:
In June 2013, Governor Andrew Cuomo set out to centralize recovery and rebuilding efforts in impacted areas of New York State. The City of New York, including Queens, was impacted by Superstorm Sandy, the catalyst for the allocation of disaster relief funds under the Community Development Block Grant – Disaster Recovery (CDBG-DR) award. The Governor's Office of Storm Recovery (GOSR) was established to administer the award funds, address communities' most urgent needs, and encourage the identification of innovative and enduring solutions to strengthen the State's infrastructure and critical systems. Operating under the umbrella of New York State Homes and Community Renewal (HCR), GOSR uses approximately $3.8 billion in flexible funding made available by the US Department of Housing and Urban Development's (HUD's) CDBG-DR program to concentrate aid to four main areas: housing recovery, small business, community reconstruction, and infrastructure. Paired with additional federal funding that was awarded to other State agencies, the CDBG-DR program is enabling homeowners,

small businesses and entire communities to build back and better prepare for future extreme weather events.

The shoreline protection enhancements would reduce erosion and stabilize the Bayfront as well as protect adjacent property by absorbing wave energy, trapping sediments, and slowing stormwater runoff to moderate the effects of storms and floods. The gaps in the structures would allow water to flow back out after high-tide.

The Project would enhance the natural environment by including the installation of native coastal plantings that are naturally resistant to salt spray and occasional inundation (Figure 4). Plants adapted to this environment will help prevent erosion, filter stormwater pollution, and provide habitat and food for native wildlife. While the natural shoreline at Shore Road Park would be enhanced, this project would also enable safe pedestrian/public access to the waterfront. The protection and enhancement of the community's natural environment is critically important to the ecological health of the Great South Bay.

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

The Project Area contains approximately 520 lineal feet (LF) of exposed sandy shoreline plus an additional 150 LF of collapsing bulkhead. The entire shoreline is located directly on the Great South Bay, approximately 2,300' west of the Village Marina. The portion of the project area containing the collapsing bulkhead is part of two properties previously owned by New York State (NYS) and associated with the GOSR buyout and acquisition program. These properties are now in the ownership of the Village of Lindenhurst and are incorporated into the design as noted above. The sandy beach area contains scattered concrete slabs and debris utilized for purposes of erosion control. The slope from the high tide line seaward for approximately 30' is generally flat (less than 3%). Based upon visual inspection, additional rubble of various sources is present in the water. No vegetation is present in the water, which can generally be categorized as clear/high visibility.

The project area located landward of the high tide line contains various vegetation of salt tolerant species, however the dominant plant is Phragmites, a highly invasive species located almost exclusively in wetland and moist conditions.

A tidal wetland is present with a boundary that coincides with the apparent high-water line, as there are no vegetated tidal wetland plant communities present. There are no vegetated tidal wetlands located along the Great South Bay shoreline due to the erosional and high-energy conditions. Scattered pieces of concrete and asphalt are present on the shoreline and appear to be remnants of past rip-rap placed to reduced erosion of the shoreline. There is a small erosional scarp at the landward edge of the sandy intertidal beach. The eroded scarp indicates that the athletic field and the unvegetated area between the beach and athletic field feature a thin layer of topsoil rather than native soils.

The Park's shoreline has experienced substantial erosion which has accelerated following Superstorm Sandy.

Standard Conditions for All Projects

Any change to the approved scope of work will require re-evaluation by the GOSR Environmental Certifying Officer for compliance with the National Environmental Policy Act (NEPA) and other laws and Executive Orders.

This review does not address all federal, state, and local requirements. Acceptance of federal funding requires the recipient to comply with all federal state and local laws. Failure to obtain all appropriate federal, state and local environmental permits and clearances may jeopardize federal funding.

Funding Information

Estimated Total HUD Funded Amount:
$2,278,806.03
Estimated Total Project Cost
(HUD and non-HUD funds) [24 CFR 58.32(d)]:
$2,278,806.03

Compliance with 24 CFR 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 of approvals. Clearly note citations, dates/names/titles of contacts, and page references. Attach additional documentation as appropriate.

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 ☒	Based on HUD guidance in Fact Sheet #D1, the National Plan of Integrated Airport Systems (NPIAS) was reviewed for civilian, commercial service airports near the Project sites, as projects within 2,500 feet of a civil airport require consultation with the appropriate civil airport operator. There are no civilian airports within 2,500 feet of the Project site, and no military airports are within 15,000 feet of the Project site. No runway clear zones would be affected by the Project. (See Appendix A, Figures) Source: 3, 4
Coastal Barrier Resources Coastal Barrier Resources Act, as amended by the Coastal Barrier Improvement Act of 1990 [16 USC 3501]	Yes ☐ No ☒	According to the Coastal Barrier Resources System (CBRS) Mapper, the Project Site is not in a Coastal Barrier Resources Area as defined by the state's Coastal Zone Management Program. (See Appendix A, Figures) Source: 5
Flood Insurance Flood Disaster Protection Act of 1973 and National Flood Insurance Reform Act of 1994 [42 USC 4001-4128 and 42 USC 5154a]	Yes ☐ No ☒	The entire project area lies within the 100-year Special Flood Hazard Area (SFHA), as indicated on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Community Panel Number 36103C0861H, dated September 25, 2009.

		The Project would not involve financial assistance for construction, rehabilitation, or acquisition of a mobile home, building, or insurable personal property or the purchase of machinery, equipment, fixtures, or furnishings insurable under the NFIP.

STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.5		
Clean Air Clean Air Act, as amended, particularly section 176(c) & (d); 40 CFR Parts 6, 51, 93	Yes ☐ No ☒	The Project site is located within a nonattainment or maintenance areas for the 2015 and 2008 8-hour ozone standards, as defined by the US Environmental Protection Agency (EPA) Green Book Nonattainment Areas for Criteria Pollutants. The Project would not require an NYS Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit. The Project activities would not substantively affect air quality since no sources are proposed. Implementation of standard best management practices (BMP) would control dust and other emissions during construction. Air quality impacts would be short term and localized during construction; there would not be impact from operations as there are no sources of air emissions associated with the proposed boardwalk. Therefore, there would be no significant adverse impacts to air quality. Source: 7
Coastal Zone Management Coastal Zone Management Act, sections 307(c) & (d)	Yes ☐ No ☒	A Federal Consistency Assessment Form, including an addendum analyzing the consistency of the Proposed Action with the relevant policies from the State's Coastal Management Plan, was submitted to the NYS Department of State (NYSDOS), Division of Coastal Resources, Consistency Review Unit on June 6, 2019. On June 13, 2019, the DOS confirmed that the Project meets the Department's general consistency concurrence criteria, so the DOS has no objection to the use of HUD funds for this financial

		assistance activity. (See Appendix C, Coastal Consistency.) Source: 8
Contamination and Toxic Substances 24 CFR Part 50.3(i) & 58.5(i)(2)	Yes ☐ No ☒	The Project area is previously disturbed and consists largely of public access beach with scattered concrete slabs and debris utilized for purposes of erosion control. The Project site was not identified in NYSDEC Remedial or Bulk Storage Site Databases. A search of the NYSDEC Remedial Site Database, containing records of the sites being addressed under one of DER's remedial programs (State Superfund, Brownfield Cleanup, Environmental Restoration and Voluntary Cleanup, the Registry of Inactive Hazardous Waste Disposal Sites, and Institutional and Engineering Controls), identified listings for two facilities (See Appendix A, Figures): • Active Industrial Uniform at 63 West Merrick Road, which is listed as a state superfund program (approximately one mile north of the Project area) and • Bullet Proof Equipment at 71 West Montauk Highway is listed as a state superfund program site (approximately one mile north of the Project area). Neither of these facilities is within 3,000 feet of the Project site. The Active Industrial Uniform Site operated as a dry cleaner and laundry. Dry cleaning operations began in 1970 and ceased in 1987. A site assessment revealed two areas of tetrachloroethene (PCE) soil and groundwater contamination. Water samples from monitoring wells show elevated levels of 1,1,1-trichloroethane, 1,1- dichloroethane, tetrachloroethene and trichloroethene. All of these solvents were also found in the contaminated soil.

		Investigations indicated a plume of groundwater contamination heading southwest toward Little Neck Creek. Contaminated soil was removed in the winter of 2000-2001, the spring of 2010, and the summer of 2011. Operation of the groundwater pump and treat system has been successful in capturing, treating and preventing any further migration of high levels of dry-cleaning compounds within the shallow groundwater. Therefore, this offsite contamination is not expected to affect the environmental conditions of the Project area. (See Appendix F, Contamination and Toxic Substances) The Bullet Proof Equipment Site's final assessment of the property in 2013 determined that no hazardous wastes were disposed on the property and that any contaminated media that exists on the property is likely due to the adjacent Active Industrial Uniform Site. Therefore, this offsite contamination is not expected to affect the environmental conditions of the Project area. (See Appendix F, Contamination and Toxic Substances). A search of the NYSDEC Bulk Storage Program Database identified one petroleum bulk storage facility within one mile of the Project site (See Appendix A, Figures). The three 10,000-gallon underground storage tanks at this site have converted to no regulated use, and the 2,500 aboveground chemical bulk storage tank has been closed and removed. There are no storage tanks at the Project site, nor will any be added as part of the Proposed Project. There would be no increase in sources of toxic contamination due to the project. Source: 10
Endangered Species Endangered Species Act of 1973, particularly section 7; 50 CFR Part 402	Yes ☐ No ☒	Section 7 of the Endangered Species Act requires the action agency (GOSR) to make a determination of effect on any federally listed

		species or designated critical habitat that may occur from an action that is funded, authorized, or carried out by the action agency. GOSR is acting as HUD's designated representative for this program. The New York State Natural Heritage Program (NYSNHP) database search completed on August 15, 2016, had no records of rare or state-listed animals or plants, or significant natural communities at the project site. It indicated that some of the project sites along the shoreline are adjacent to marine eelgrass meadow and marine back-barrier lagoon or in its immediate vicinity. A new updated consultation has been initiated with the NYSNHP to include recent design changes. No eelgrass meadows are adjacent to any of the proposed improvements. The project will be conducted to improve, avoid or minimize impacts, including run-off, to these natural communities or to the surrounding waters. The U.S. Fish and Wildlife Service (USFWS), New York Ecological Services Field Office was contacted through the Information, Planning, and Conservation System (IPaC) regarding the potential presence of species under the jurisdiction of the USFWS within the project area. The attached Official Species List identifies two endangered species (roseate tern [*Sterna dougallii dougallii*] and sandplain gerardia [*Agalinis acuta*]) and four threatened species (northern longeared bat [*Myotis septentrionalis*], piping plover [Charadrius melodus], red knot [*Calidris canutus rufa*], and seabeach amaranth [*Amaranthus pumilus*]) that are potentially associated with the project site. No critical habit for these species was identified in IPaC. The IPaC review also indicated that there are several migratory birds of concern that could potentially be affected by the proposed project. Since the proposed project would not involve the removal of any trees and no critical habitats were

		identified in the official species list within the project area, GOSR determines that this project would have No Effect on critical habitats, the roseate tern, sandplain gerardia, NLEB, piping plover, red knot, or the seabeach amaranth. GOSR has determined that the project would have no significant adverse impact on migratory birds or their habitat, since no trees would be removed, and construction will occur within disturbed areas of existing recreational shoreline. It is anticipated that passerine birds would temporarily leave the area during construction due to noise and disturbance. GOSR submitted a determination letter to and asked for concurrence from the USFWS, Long Island Field Office on May 28, 2019. The USFWS responded on September 25, 2019 that no further coordination or consultation is required. (See Appendix F, USFWS Correspondence). According to New York State Environmental Resource Mapper (ERM), the project area is within a half mile of significant natural communities. GOSR requested that the New York Natural Heritage Program (NYNHP) review its records of concern for any rare or state-listed animals or plants, or significant natural communities, at this site or in its immediate vicinity in a letter dated May 28, 2019. The NYNHP responded June 17, 2019 that they have no records of listed animals or plants communities at the project site or in its immediate vicinity. Along the shoreline of Shore Road Waterfront Park is part of a significant occurrence of the community marine eelgrass meadow, with a significant occurrence of marine backbarrier lagoon a little farther offshore. These occurrences as a whole extend throughout Great South Bay and are in good ecological condition. Given the nature of the proposed work, significant impacts on these marine natural communities are not expected. However, the

		project work should be conducted so as to avoid negative impacts to the inshore waters. (See Appendix F, NYNHP/NYSDEC Correspondence) An Essential Fish Habitat (EFH) Assessment was prepared and GOSR determined that the proposed project would have an adverse effect on EFH that is not substantial. A notice of this determination was sent to the Regional EFH Coordinator on August 6, 2019. On August 28, 2019, GOSR assessed the potential impacts to the five species of sea turtles [Loggerhead Turtle (*Caretta caretta*), Kemp's Ridley Turtle (*Lepidochelys kempii*), Green Turtle (*Chelonia mydas*), Hawksbill Turtle (*Eretmochelys imbricata*), and Leatherback Turtle (*Dermochelys coriacea*)] and one species of fish [Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*)] listed under the Endangered Species Act that have the potential to occur in the vicinity of the Project area. The Project is located along a shoreline that is developed and bulkheaded. The shoreline in the vicinity of the Project area is bulkheaded and developed, and the areas adjacent to the Project area is subject to existing water quality impairment. There is no critical habitat for ESA species under NMFS jurisdiction within the Project area. Based on this analysis, GOSR determined that Project activities would not directly or indirectly affect any ESA species under NMFS jurisdiction. Source: 12
Explosive and Flammable Hazards 24 CFR Part 51 Subpart C	Yes ☐ No ☒	The Project would not introduce new sources of explosive or flammable hazards to the Project area. The existing residents surrounding the park would not be at increased risk due to explosive or flammable hazards. The Project does not constitute a HUD-funded hazardous facility, so 24 CFR part 51 Subpart C does not apply.

		HUD-assisted projects must be at an Acceptable Separation Distance (ASD) from stationary hazardous operations that store, handle, or process chemicals or petrochemicals of an explosive or flammable nature. These tanks include: • Aboveground storage tanks (AST) that store flammable or explosive gasses (such as propane) within a 1,000-foot radius of the Project site; • ASTs exceeding 100 gallons that store flammable or explosive liquids within a 1,000-foot radius of the Project site; or • ASTs that exceed 20,000 gallons and are within 1 mile of the site. The Project would not disturb any existing ASTs nor introduce new ASTs. A search of the NYSDEC Bulk Storage Program Database identified three 10,000-gallon PBS USTs and one 2,500-gallon PBS AST within one mile of the Project site (See Appendix A, Figures). None of these ASTs that exceed 20,000 gallons. No facilities had ASTs exceeding 100 gallons that store flammable or explosive liquids within a 1,000-foot radius of the Project site. This facility would not present a thermal radiation hazard to people during construction or operation of the Project. Source: 9
Farmlands Protection Farmland Protection Policy Act of 1981, particularly sections 1504(b) and 1541; 7 CFR Part 658	Yes ☐ No ☒	The soils at the Project sites are mapped as Fill land, dredged material and Fill land, sandy. none of which are considered Prime Farmland or Farmland of Statewide Importance. According to Part 523.11 E of the Farmland Protection Policy Act (FPPA) Manual, an AD 1006 is not required. The Project areas are not located within any agricultural districts. (See Appendix A, Figures) Source: 13

Floodplain Management Executive Order 11988, particularly section 2(a); 24 CFR Part 55	Yes ☒ No ☐	The entire project area lies within the 100-year Special Flood Hazard Area (SFHA), as indicated on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Community Panel Number 36103C0861H, dated September 25, 2009. An Early Notice of a Proposed Activity in a Floodplain was published on August 14, 2018. No comments were received in response to the Early Notice. An 8-Step Floodplain and Wetland Analysis has been performed in compliance with Executive Order 11988 in accordance with HUD regulations at 24 CFR 55.20. The analysis examined the direct and indirect impacts associated with the development within the floodplain. (See Appendix D, Floodplains and Wetlands) The analysis concluded that the construction of the high- and low-tide rock sills, the sitting wall, and new drainage outlets, and the potential removal of the asphalt road surface would result in long-term changes to the floodplain. Anticipated benefits of the improvements include improved water quality, habitat creation, erosion control, aesthetic improvements, and improved passive recreation accessibility. The improved drainage system with tide check valves will reduce upland flooding during tidal storms. The potential effect on the floodplain from the small decrease in impervious surface would be minor and would be increase the natural and beneficial floodplain values of the floodplain or lives and property, particularly with the respect to the beneficial increase in the community's resiliency. (See Appendix D, Floodplains and Wetlands) Source: 6
Historic Preservation National Historic Preservation Act of 1966, particularly sections 106 and 110; 36 CFR Part 800; Tribal	Yes ☐ No ☒	Consultation with the New York State Historic Preservation Office (SHPO) and the Division for Historic Preservation (DHP) in the Office of Parks,

notification for new ground disturbance.		Recreation and Historic Preservation (OPRHP) in accordance with Section 106 of the National Historic Preservation Act of 1966 was initiated on August 27, 2018. SHPO evaluated the project for potential cultural and historic impacts and in a letter on June 10, 2019, SHPO stated that it is the opinion of SHPO that there will be no historic properties affected by the Project. (See Appendix G, SHPO Correspondence)
Noise Abatement and Control Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978; 24 CFR Part 51 Subpart B	Yes ☐ No ☒	The Project is not a noise sensitive use and the policies of 24 CFR 51.101(a)(3) do not apply to any action or emergency assistance under disaster assistance provisions or appropriations that are provided to save lives and protect public health and safety. The Project would not introduce any new or rehabilitate any existing noise-sensitive uses. Construction activities would abide by all local noise ordnances.
Sole Source Aquifers Safe Drinking Water Act of 1974, as amended, particularly section 1424(e); 40 CFR Part 149	Yes ☒ No ☐	The Project area is located within the Nassau-Suffolk system. A Sole Source Aquifer Review was prepared for the Project and sent to the EPA on September 28, 2018 (see Appendix H, Sole Source Aquifers). There is no water supply or wastewater component proposed. The Project area is not within 0.5-mile of any public water supply well or well field. The existing drainage will not be expanded. The existing drainage features will be modified to increase efficiency. The Project would not have the potential for an adverse effect on the Sole Source Aquifer. (See Appendix H, Sole Source Aquifers) Source: 14
Wetlands Protection Executive Order 11990, particularly sections 2 and 5	Yes ☒ No ☐	The project area includes location is in wetlands that are designated as within NWI estuarine/ marine deep-water. The Project area is outside the NYS-designated tidal-coastal wetlands.

		However, the Project area is within the 300-foot buffer zone of these wetlands. The project's core focus is to protect an eroding shoreline utilizing the techniques associated with living shorelines. The vegetation and soil located along the parks southern edge has been eroded and has therefore associated habitat has been lost. The proposed project seeks to preserve, protect, and restore the sensitive wetlands though the creation of a living shoreline, protective rock sill, and plantings landward of the mean high tide. Anticipated benefits of the improvements include improved water quality, habitat creation, erosion control, aesthetic improvements, and improved passive recreation accessibility. The removal of concrete and asphalt debris, construction of lower rock sill, construction of drainage outlets, and the removal of the top of the existing bulkheads would involve work in the NWI wetlands. The grading of the site onshore of the bulkheads and planting of the site with native vegetation will restore tidal flow and restore the site to more natural conditions. An application for a U.S. Army Corps of Engineers/NYSDEC/NYSDOS Join Permit Application for Section 10 Rivers & Harbors Act (applicable per the bulkhead structures being modified, and the rock sills) and Section 404 Clean Water Act (applicable per the rock sill and the drainage outlets which are considered filling) has been submitted and will be approved before construction may begin. While the project activities will not take place in an NYSDEC wetland, an Article 25, Tidal Wetland Permit is required for projects occurring in lands immediately adjacent, within 300 feet of designated tidal wetlands. A NYSDEC Tidal Wetlands Permit will be obtained prior to construction,

		The overall project site is greater than 1 acre, so prior to construction, the appropriate permit would be obtained in accordance with NYSDEC stormwater discharge from construction activities regulations. A stormwater pollution prevention plan (SWPPP) would be prepared for the Project. It will describe the use of best management practices to control runoff during construction, which would mitigate any temporary effects on the wetland areas. No changes in land use would occur as a result of the Proposed Activity. The restoration of the sensitive wetlands though the creation of a living shoreline, protective rock sill, and plantings between the rock sills and landward of the mean high tide will provide beneficial impacts to the wetland. (See Appendix D, Floodplains and Wetlands) Source: 15, 16, 17
Wild and Scenic Rivers Wild and Scenic Rivers Act of 1968, particularly section 7(b) and (c)	Yes ☐ No ☒	The Project is not located within nor would impact Wild or Scenic Rivers. (See Appendix A, Figures) Source: 18, 19, 20
ENVIRONMENTAL JUSTICE		
Environmental Justice Executive Order 12898	Yes ☐ No ☒	There are no environmental justice areas as defined by NYSDEC based on data from the 2000 U.S. Census located near the Project site. Because of this Project there are no potential for disproportionate adverse impacts. (see Appendix A, Figures) Source: 21

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 action. 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	1	The Project conforms with the plans, land use, and zoning as described in the Village of Lindenhurst NY Rising Community Reconstruction Plan. The Village of Lindenhurst proposes to design and implement storm resiliency improvements and public access improvements at the southern end of Shore Road Park that are compatible with current use and would enhance its currently designed use.
Soil Suitability/ Slope/ Erosion/ Drainage/ Storm Water Runoff	1	This area of the Village experiences frequent and recurring flooding resulting from damage inflicted during Superstorm Sandy resulting in poor drainage and the back flow of water during storm events, high tides, and rainfall events. This project would restore the southern portion of the park and improve the resiliency of the neighboring shorelines. The creation of a living shoreline, protective rock sill, and plantings landward of the mean high tide will provide beneficial impacts to soil sustainability, slope erosion, drainage, or storm water runoff. Prior to construction, the appropriate permits would be obtained in accordance with NYSDEC stormwater

Environmental Assessment Factor	Impact Code	Impact Evaluation
		discharge from construction activities regulations; and Section 401 of the Clean Water Act. An SWPPP would be prepared for the Project, describing the use of BMPs to control runoff during construction that would mitigate Project-related temporary effects.
Hazards and Nuisances including Site Safety and Noise	2	The project site is in a 100-year flood hazard area and in the bounds of the Nassau-Suffolk SSA. The Project is in a coastal zone as defined by the state's Coastal Zone Management Program. No habitable structures are proposed. The Project would not introduce any new or rehabilitate any existing noise-sensitive uses. The Project would generate noise during construction. Noise effects on the surrounding residential community would be short term and limited in scope. Construction activities would abide by all local noise ordnances. Mitigation measures could include but would not be limited to restricting the time and duration of construction activities during the day and week, phasing of construction, perimeter barriers, quieter models of equipment, and use of mufflers or other sound-dissipative devices on construction equipment. The safety of the shoreline at Shore Road Park would be enhanced through removal of debris.
Energy Consumption	2	No habitable structures are proposed. The proposed action is for infrastructure improvements. The Project would not result in additional energy consumption or changes in energy infrastructure. No impacts would occur to existing nearby suppliers.
SOCIOECONOMIC		
Employment and Income Patterns	2	No habitable structures are proposed. The proposed action is for infrastructure improvements. Proposed construction would be small-scale and temporary.
Demographic Character Changes, Displacement	2	No habitable structures are proposed. The proposed action is for infrastructure improvements. There would be a temporary, minor increase in employment during construction. There would be no changes in demographics or population displacement.

Environmental Assessment Factor	Impact Code	Impact Evaluation
COMMUNITY FACILITIES AND SERVICES		
Educational and Cultural Facilities	2	Because the Project involves no changes in population, there would be no impact on demand for educational or cultural facilities.
Commercial Facilities	2	Because the Project involves no changes in population, and there are no commercial facilities in the Project area, there would be no impact on demand for commercial facilities.
Health Care and Social Services	2	Because the Project involves no changes in population, there would be no impact on demand for health care and social services.
Solid Waste Disposal / Recycling	2	Construction may result in a temporary increase in solid waste. Construction debris would be collected on-site and disposed of or recycled as appropriate. There would be no increase in solid waste disposal or recycling from operation of the Project because it would not result in any changes in population. No public waste disposal would be present on the project site.
Waste Water / Sanitary Sewers	2	The proposed Project would not generate wastewater and sewage. No public restrooms are included in the project.
Water Supply	2	This Project would not change the area residents' use of water, and on-site no public drinking water supply is included in the project. No changes to the water supply system are anticipated. There are no drinking water wells within one-half mile of the Project site.
Public Safety - Police, Fire and Emergency Medical	2	The Project would not involve an increase in resident population; therefore, no major increase in police and fire protection or emergency medical services would occur. An increase in visitors to the area as a result of the Project could result in a slight increase in fire and emergency responses but would not be beyond the capacity of existing services to provide.
Parks, Open Space and Recreation	1	The Project Area is part of the Shore Road Park. The Project will restore and improve the public access to the shoreline.

Environmental Assessment Factor	Impact Code	Impact Evaluation
Transportation and Accessibility	3	Temporary effects on transportation within the neighborhood could occur during construction, with an increase in construction traffic. This would be handled through the use of BMPs, such as signage, time of day restrictions, and public notification. A slight increase in traffic would occur as a result of public use of the Project; however, this site was used in the past, and the neighborhood has handled the consequent traffic. It is anticipated that the slight increase in traffic and need for parking would be easily absorbed in the area and handled by BMPs, such as signage.
NATURAL FEATURES		
Unique Natural Features, Water Resources	1	Improvements and enhancements proposed would provide beneficial impacts to the shoreline and natural elements of the Project area.
Vegetation, Wildlife	1	Improvements and enhancements proposed would provide beneficial impacts to the living shoreline benefitting and encouraging wildlife habitat.
Other Factors	2	No additional factors would be impacted by the project, and no additional impacts would occur.

Additional Studies Performed:

- Essential Fish Habitat Assessment, August 6, 2019
- NOAA Marine Fisheries Service ESA impact assessment, August 28, 2019

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

1. New York State. 2013. State of New York Action Plan for Community Development Block Grant Program Disaster Recovery (Action Plan, issued April 25, 2013, amended July 3, 2012) New York State. 2013.
2. New York State. 2014. Village of Lindenhurst NY Rising Community Reconstruction Plan. March 2014.
3. Federal Aviation Administration. Report to Congress – National Plan of Integrated Airport Systems. Internet Website: http://www.faa.gov/airports/planning_capacity/npias/reports/media/ npias-2015-2019-report-appendix-b-part-4.pdf.
4. Federal Aviation Administration. Report to Congress – National Plan of Integrated Airport Systems. Internet Website: http://www.faa.gov/airports/planning_capacity/npias/reports/media/npias-2015-2019-report-narrative.pdf.
5. US Fish and Wildlife Service. 2015. Coastal Barrier Resources Mapper – Beta. Internet Website: http://www.fws.gov/cbra/Maps/Mapper.html.
6. United States Federal Emergency Management Agency. Current FEMA issued Flood Maps. Internet Website: https://msc.fema.gov/portal/advanceSearch.
7. United States Environmental Protection Agency. Green Book Nonattainment Areas. Internet Website: http://www.epa.gov/oaqps001/greenbk/ancl.html.
8. New York State Department of State, Office of Communities and Waterfronts – Coastal Boundary Map. Internet Website: http://appext20.dos.ny.gov/coastal_map_public/map.aspx.
9. New York State Department of Environmental Conservation Bulk Storage Database Search. Internet Website: http://www.dec.ny.gov/cfmx/extapps/derexternal/index.cfm?pageid=4.
10. New York State Department of Environmental Conservation Environmental Site Remediation Database Search. Internet Website: https://www.dec.ny.gov/cfmx/extapps/derexternal/index.cfm?pageid=3.
11. United States Environmental Protection Agency. 2015. NEPAssist Internet Mapping Tool. http://nepassisttool.epa.gov/nepassist/nepamap.aspx?wherestr=195+east+merrick+road%2C+freeport%2C+ny.
12. U.S. Fish and Wildlife Service. 2018. Official Species List. September 17, 2018.

13. United States Department of Agriculture. Natural Resources Conservation Service. Internet Website: http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.
14. U.S. Environmental Protection Agency Region 2. 2007. Sole Source Aquifers for NY and NJ. September 2007. Internet Website: http://www.epa.gov/region02/gis/data/downloads/r2sole_source_aquifer.zip.
15. U.S. Fish and Wildlife Service. 2014. National Wetlands Inventory, New York. Internet Website: https://www.fws.gov/wetlands/Data/State-Downloads.html.
16. New York State Department of Environmental Conservation. Regulatory Freshwater Wetlands – New York State – 2002 GIS data. Internet Website: https://cugir.library.cornell.edu/catalog/cugir-008187?id=111.
17. New York State Department of Environmental Conservation. Tidal Wetlands – NYC and Long Island – 1974. Internet Website: https://gis.ny.gov/gisdata/inventories/details.cfm?DSID=1139
18. National Wild and Scenic Rivers System. Internet Website: http://www.rivers.gov/new-york.php.
19. New York State Department of Environmental Conservation. Wild Scenic and Recreational Rivers. Internet Website: https://www.dec.ny.gov/permits/32739.html.
20. USDA Forest Service – Automated Lands Program. 2015. Wild and Scenic Rivers GIS data. November 30.
21. New York State Department of Environmental Conservation. Potential Environmental Justice Areas in Western Suffolk County, New York. Internet Website: http://www.dec.ny.gov/docs/permits_ej_operations_pdf/suffolkejwest.pdf.
22. Hunt, Guillot, & Associates, LLC. 2017. Application for Funding. Shore Road Waterfront Park Natural Systems Resiliency Improvements. November.
23. Cameron Engineering. 2019. Shore Road Waterfront Park Natural Systems Resiliency [*sic*] Improvements. New York State Department of Conservation Supplemental Narrative. Village of Lindenhurst, Suffolk County, New York. April.

List of Appendices

Appendix A Figures

Appendix B Site Plans

Appendix C Coastal Consistency

Appendix D Floodplains and Wetlands

Appendix E Contamination and Toxic Substances

Appendix F USFWS, NYNHP, and NYSDEC Correspondence

Appendix G SHPO Correspondence

Appendix H Sole Source Aquifers

List of Permits Obtained or Required:

- U.S. Army Corps of Engineers/NYSDEC/NYSDOS Join Permit Application:
    - Section 10 Rivers & Harbors Act: applicable per the bulkhead structures being modified, and the rock sills proposed.
    - Section 404 Clean Water Act: applicable per the rock sill which is considered filling.
- NYSDEC Article 25, Tidal Wetland Permit is required for projects occurring within NYS designated tidal wetlands and in lands immediately adjacent as defined in the Tidal Wetlands Land Use Regulation [6NYCRP Part 661.4(b)]
- NYSDEC State Pollutant Discharge Elimination System (SPDES) Phase II regulations for Stormwater Discharges Associated with Construction Activities for disturbances greater than one acre.

List of Other Approvals Obtained or Required:

- Suffolk County Parks Department (SCPD) Consent: improvements on or directly adjacent to the property owned and maintained by the SCPD requires an acknowledgment and/or consent prior to construction.
- New York State (NYS) Consent: the Village directed the design team to include the two properties currently owned by NYS and previously associated with the GOSR buyout and acquisition program. NYS is currently negotiating with the Village as of April 2019 to transfer ownership of the parcels, along with many others throughout the Village, however until title is transferred, the Village will be required to seek consent from NYS.
- New State Environmental Quality Review Act (SEQR)

Public Outreach [24 CFR 50.23 & 58.43]:
On November 20, 2019, a combined Notice of Finding of No Significant Impact and Intent to Request Release of Funds will be published in *The South Bay Neighbor News*. Any individual, group, or agency may submit written comments on the Environmental Review Record to:

Lori A. Shirley, GOSR, HCR
38-40 State Street
Albany, NY 12207
(518) 474-0755
NYSCDBG_DR_ER@nyshcr.org

Cumulative Impact Analysis [24 CFR 58.32]:
The Project is not expected to trigger cumulative impacts, including the degradation of important natural resources, socioeconomic resources, human health, recreation, quality of life issues, and cultural and historic resources.

Alternatives [24 CFR 58.40(e); 40 CFR 1508.9]:
The Village of Lindenhurst proposes to design and implement storm resiliency improvements and public access improvements at the southern end of Shore Road Park (Appendix A, Figures), in the Village of Lindenhurst, Town of Babylon, Suffolk County, NY. The Proposed Project would involve approximately 1.2 acres in the southern portion of the park (Appendix A, Figures) and would include storm resiliency improvements, such as natural bank stabilization, landforms, and built structures and features that could reduce waves (Appendix B, Site Plans).

No Action Alternative [24 CFR 58.40(e)]:
Not undertaking the Project would not be consistent with the goals and objectives of the Village of Lindenhurst NY Rising Community Reconstruction Plan to provide storm resiliency improvements and public access improvements at the southern end of Shore Road Park.

Summary of Findings and Conclusions:
The proposed Project would not result in a significant impact on the quality of the human environment or result in other direct, indirect, or cumulative impacts. The Project would comply with all relevant regulations listed in 24 CFR subparts 58.5 and 58.6.

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
SPDES Phase II regulations for Stormwater Discharges Associated with Construction Activities for disturbances greater than one acre.	Protection of wetlands and waterways adjacent to the Project area from potential stormwater runoff during construction activities.
Article 25, Tidal Wetland Permit is required for projects. 6NYCRP Part 661.4(b)	Protection of tidal wetlands occurring within NYS designated tidal wetlands and in lands immediately adjacent as defined in the Tidal Wetlands Land Use Regulation
6 NYCRR PART 608	Protection of Waters Program
Section 401 of the Clean Water Act	Protection of wetlands
U.S. Army Corps of Engineers, Section 10 Permit	Protection of wetlands
U.S. Army Corps of Engineers, Section 404 Permit	Protection of wetlands

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.

Clifford J Jarman	November 18, 2019
Preparer Signature	Date
Clifford J. Jarman Senior Environmental Scientist Tetra Tech, Inc.	
Name/Title/Organization	
Lori A Shirley	November 20, 2019
Signature of Certifying Officer	Date
Lori A. Shirley	Certifying Officer
Print Name	Title

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).

APPENDIX A

FIGURES

Path: C:\Projects\Lindenhurst Shore Road Waterfront Park Improvements HUD EA 103P359237\GIS\Lindenhurst Shore Road Waterfront Park Improvements - Project Location.mxd

Project Location

Legend

Project Area

Shore Road Park
Lindenhurst, Suffolk County, New York

Tetra Tech, Inc

Path: C:\Projects\Lindenhurst Shore Road Waterfront Park Improvements HUD EA 103P359237\GIS\Lindenhurst Shore Road Waterfront Park Improvements - Project Area.mxd

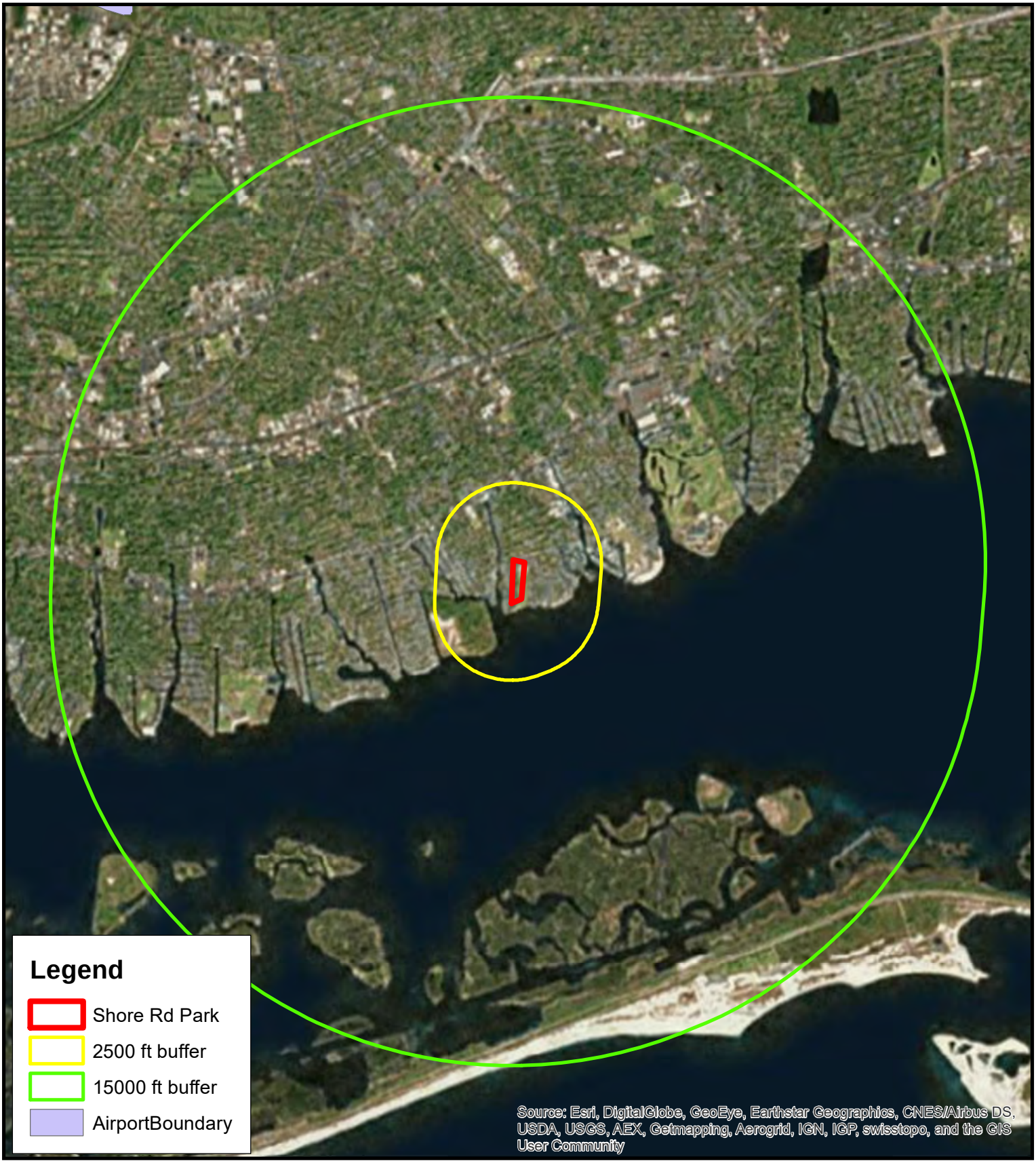
Project Area

Shore Road Park
Lindenhurst, Suffolk County, New York

Legend

Project Area

Tetra Tech, Inc



Shore Road Waterfront Park Natural Systems Resiliency Improvements

Sources of Data: USFWS, FEMA, ESRI, State of NY

0 0.375 0.75 1.5 Miles

Airports

Governor's Office of Storm Recovery

Drawn By: R.Ferres
Version: 1.1
Date: 01/03/17

U.S. Fish and Wildlife Service
Coastal Barrier Resources System

Shore Road Park CBS

August 15, 2019

CBRS Buffer Zone

System Unit

CBRS Units

Otherwise Protected Area

This map is for general reference only. The Coastal Barrier Resources System (CBRS) boundaries depicted on this map are representations of the controlling CBRS boundaries, which are shown on the official maps, accessible at https://www.fws.gov/cbra/maps/index.html. All CBRS related data should be used in accordance with the layer metadata found on the CBRS Mapper website.

The CBRS Buffer Zone represents the area immediately adjacent to the CBRS boundary where users are advised to contact the Service for an official determination (http://www.fws.gov/cbra/Determinations.html) as to whether the property or project site is located "in" or "out" of the CBRS.

CBRS Units normally extend seaward out to the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS mapper.

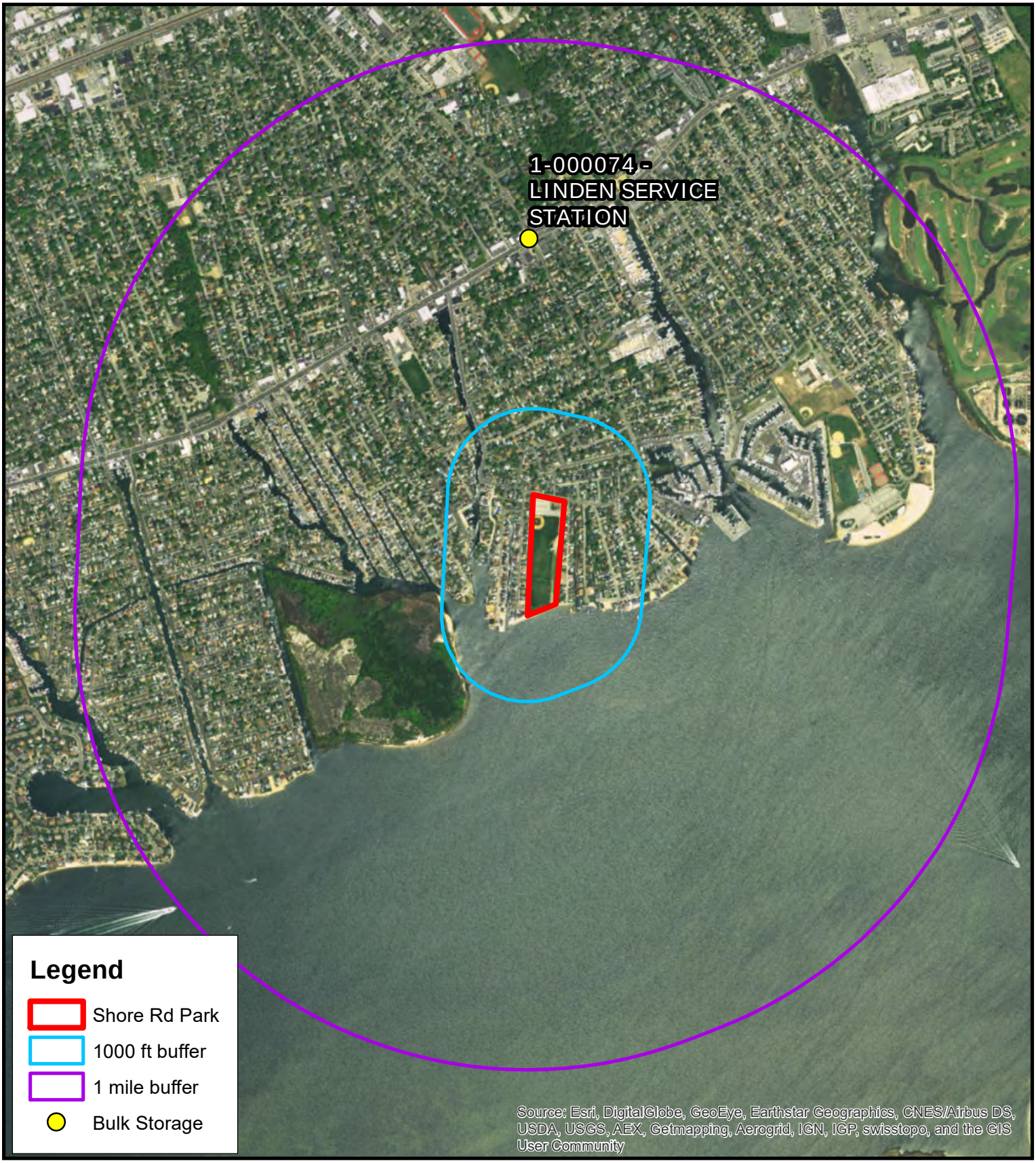
Legend

- Project Area
- One Mile Project Area Buffer
- State Superfund Program

Remediation Sites

Shore Road Park
8 Bay Street, Lindenhurst NY 11757

PARS ENVIRONMENTAL
a Montrose Environmental Group company



Shore Road Waterfront Park Natural Systems Resiliency Improvements

Sources of Data: USFWS, FEMA, ESRI, State of NY

0 0.125 0.25 0.5 Miles

Bulk Storage

Governor's Office of Storm Recovery

Drawn By: R.Ferres
Version: 1.1
Date: 01/03/17

Shore Road Waterfront Park Natural Systems Resiliency Improvements

Sources of Data: USFWS, FEMA, ESRI, State of NY

0 0.02 0.04 0.08 Miles

Agricultural Districts

Governor's Office of Storm Recovery

Drawn By: R.Ferres
Version: 1.1
Date: 01/03/17

Soil Map—Suffolk County, New York
(Ahore Road soils)

Map Scale: 1:1,250 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Suffolk County, New York
Survey Area Data: Version 16, Sep 3, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Oct 5, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Fd	Fill land, dredged material	2.6	46.6%
Fs	Fill land, sandy	1.1	20.0%
Tm	Tidal marsh	0.0	0.3%
W	Water	1.9	33.1%
Totals for Area of Interest		**5.7**	**100.0%**

Legend

- Project Area
- One Mile Project Area Buffer
- Wild and Scenic Rivers

Wild and Scenic Rivers

Shore Road Park
8 Bay Street, Lindenhurst NY 11757

PARS ENVIRONMENTAL
a Montrose Environmental Group company

Shore Road Waterfront Park Natural Systems Resiliency Improvements

Sources of Data: USFWS, FEMA, ESRI, State of NY

0 0.125 0.25 0.5 Miles

Environmental Justice Areas

Governor's Office of Storm Recovery

Drawn By: R.Ferres
Version: 1.1
Date: 01/03/17

APPENDIX B

SITE PLANS

LEGEND (EXISTING)

- PROPERTY LINE
- LOT LINE
- LIMIT OF WORK
- EXISTING CONTOUR
- WETLANDS DELINIATION
- AREA OF REMOVALS
- EXISTING DRAINAGE PIPE
- MHHW — MEAN HIGHER HIGH WATER
- MHW — MEAN HIGH WATER
- MLW — MEAN LOW WATER
- MLLW — MEAN LOWER LOW WATER
- MHWS — MEAN HIGH WATER SPRINGS

BAYVIEW AVE (VILLAGE OF LINDENHURST)

S. BAY STREET (VILLAGE OF LINDENHURST)

SHORE ROAD PARK

EXISTING DRAINAGE SWALE

EXISTING DRAINAGE STRUCTURE TO REMAIN

EXISTING DRAINAGE PIPE TO BE REMOVED

EXISTING FENCE TO REMAIN

EXISTING FENCE TO BE REMOVED

EXISTING VEGETATION TO BE REMOVED. INCLUDES PHRAGMITES REMOVAL. REFER TO INVASIVE SPECIES REMOVAL NOTES.

WETLANDS DELINIATION (TYP.)

EXISTING SINGLE FAMILY HOME

EXISTING DRAINAGE STRUCTURE TO BE REMOVED AND REPLACED

LIMIT OF WORK (TYP.)

EXISTING BULKHEAD TO REMAIN

ALL CONCRETE AND ASPHALT RUBBLE & DEBRIS TO BE REMOVED

REMOVALS SEAWARD OF MHW IS LIMITED TO REMOVAL OF CONCRETE, ASPHALT, AND EXISTING BULKHEAD, AS WELL AS LIMITED SAND TO FACILITATE ELEVATIONS CRITICAL FOR THE ESTABLISHMENT OF THE LIVING SHORELINE. REFER TO GRADING PLAN.

TURF

EXISTING ASPHALT TO BE REMOVED

ALL EXISTING UTILITIES TO REMAIN BENEATH SOUTH BAY STREET.

VACANT PROPERTY OWNER: SUFFOLK COUNTY PARKS DEPARTMENT

VACANT PROPERTY OWNER: NEW YORK STATE

VACANT PROPERTY OWNER: VILLAGE OF LINDENHURST

EXISTING DRAINAGE STRUCTURES TO REMAIN

EXISTING SEWER MANHOLES TO REMAIN

TOP OF EXISTING BULKHEAD TO BE REMOVED TO ELEVATION 0.08. BULKHEAD BELOW ELEVATION ELEVATION 0.08 TO REMAIN.

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

HORIZ. 1 inch = 20 ft.

NO.	DATE	REVISION DESCRIPTION	INT.
1	4/2019	60% ISSUANCE	OC

CAMERON ENGINEERING & ASSOCIATES, LLP
177 Crossways Park Drive, Woodbury, NY 11797 — T: (516) 827-4900
45 West 36th Street, 3rd Floor, New York, NY 10018 — T: (212) 324-4000
303 Tarrytown Road, 1st Floor, White Plains, NY 10603 — T: (914) 721-8300
Corporate Seal Initiated 1996 State of New York
www.Cameronengineering.com

PROJECT NAME: SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION: VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE: EXISTING CONDITIONS & REMOVALS PLAN

DISCIPLINE: CIVIL

PROJECT ENGINEER:	MAD
DESIGNED BY:	MAD
DRAWN BY:	EB
CHECKED BY:	KMM
PROJECT NO.	CE2864
JOB NO.	CE2864
DATE:	08/30/18
SCALE:	AS SHOWN
DRAWING NO.	C-2
DRAWING	2 of 10

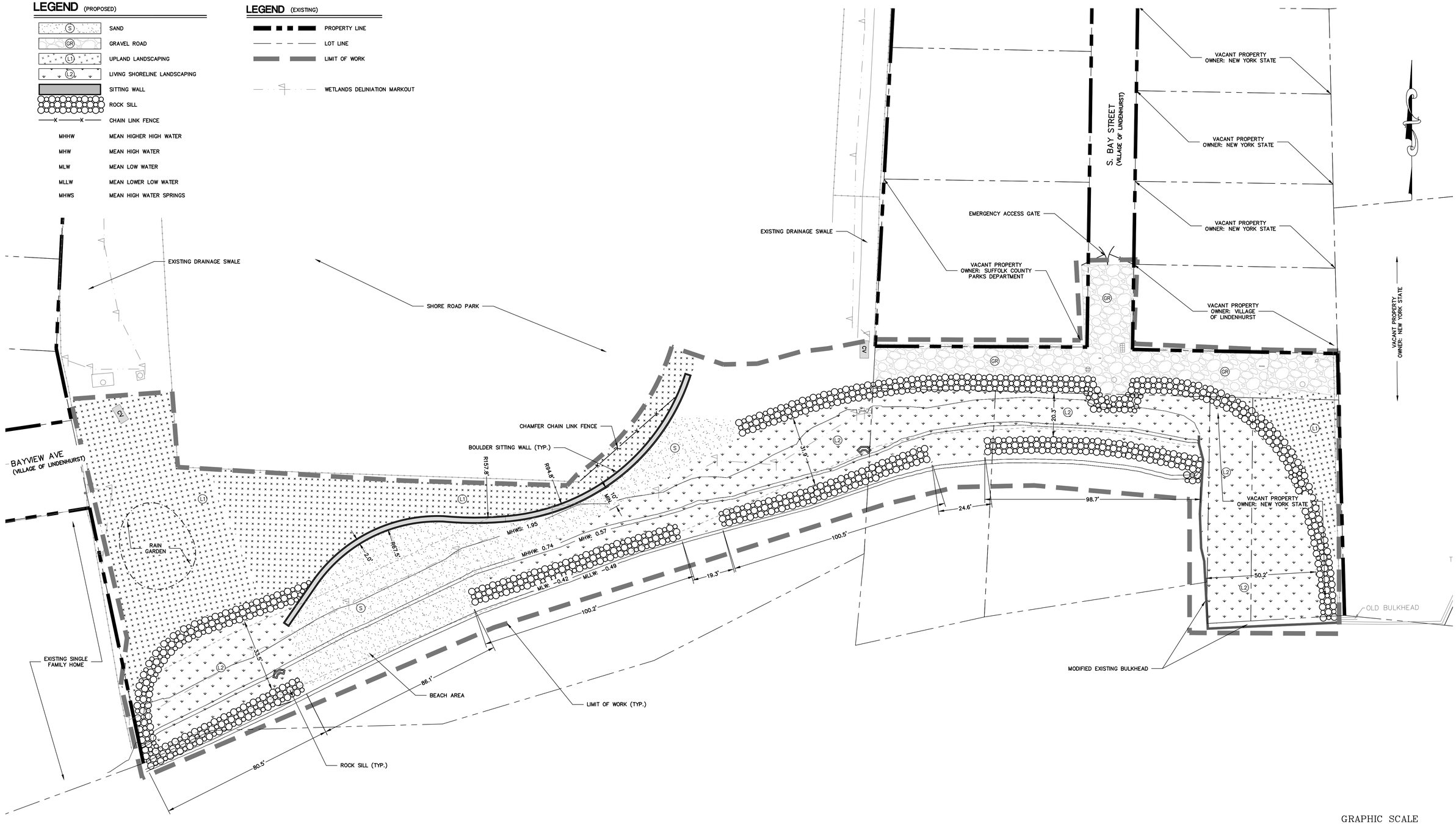
PLOT SCALE: \CE2864 - Shore Road Park\DESIGN\EXISTING CONDITIONS.dwg, Date:May 2, 2019, Pretup=----, Plotted by:Oliver Chen

LEGEND (PROPOSED)

- SAND
- GRAVEL ROAD
- UPLAND LANDSCAPING
- LIVING SHORELINE LANDSCAPING
- SITTING WALL
- ROCK SILL
- CHAIN LINK FENCE
- MHHW — MEAN HIGHER HIGH WATER
- MHW — MEAN HIGH WATER
- MLW — MEAN LOW WATER
- MLLW — MEAN LOWER LOW WATER
- MHWS — MEAN HIGH WATER SPRINGS

LEGEND (EXISTING)

- PROPERTY LINE
- LOT LINE
- LIMIT OF WORK
- WETLANDS DELINIATION MARKOUT



GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

HORIZ. 1 inch = 20 ft.

NO.	DATE	REVISION DESCRIPTION	INT.
1	4/2019	60% ISSUANCE	OC

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www.Cameronengineering.com

PROJECT NAME:
SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE:
SITE PLAN

DISCIPLINE:
CIVIL

PROJECT ENGINEER:	PROJECT NO.	DRAWING NO.
MAD	CE2864	C-3
DESIGNED BY: MAD	JOB NO. CE2864	
DRAWN BY: EB	DATE: 08/30/18	
CHECKED BY: KMM	SCALE: AS SHOWN	DRAWING 3 of 10

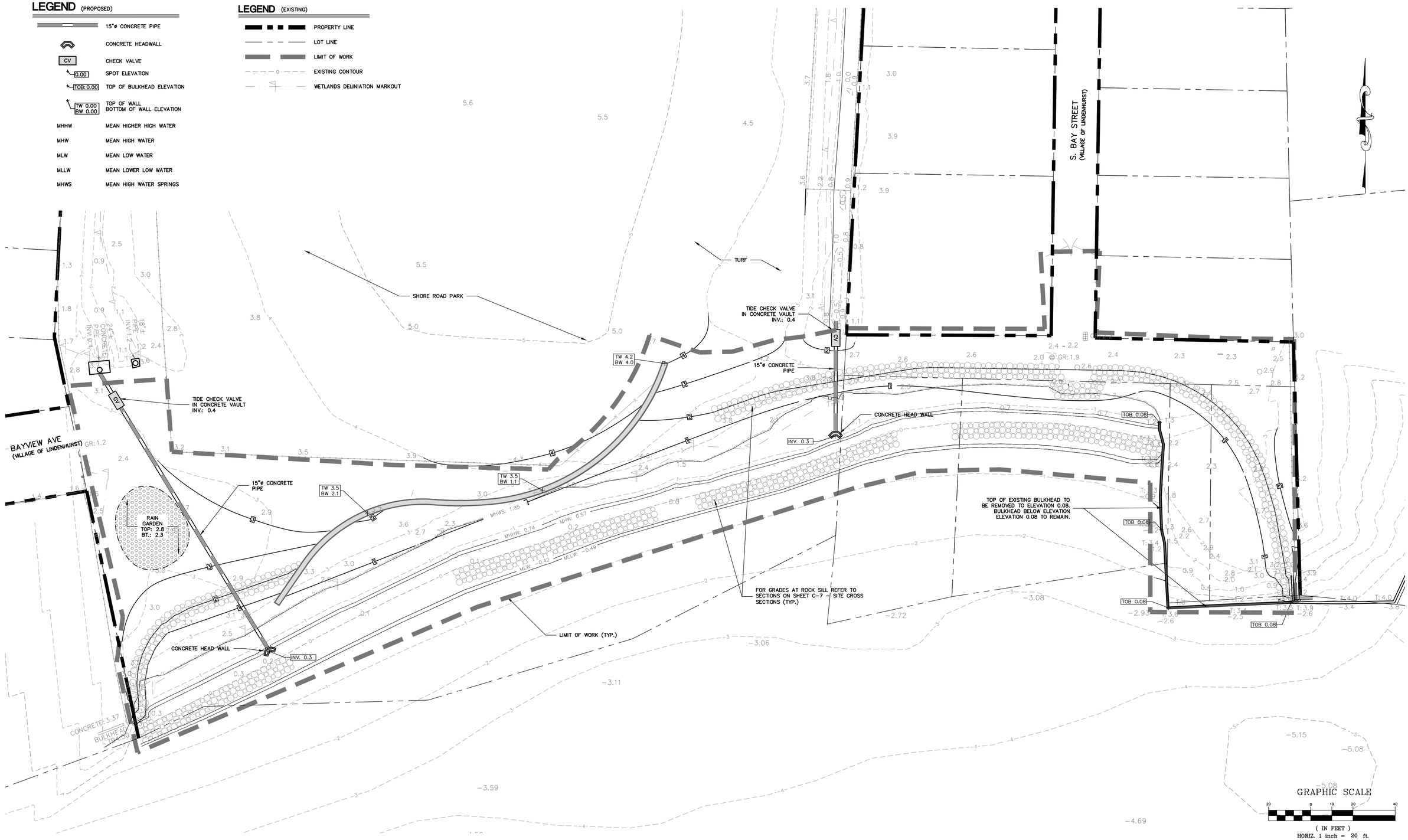
PLOT SCALE=1 \\CE2864 — Shore Road Park\DESIGN\C-3 SITE PLAN.dwg, Date:May 2, 2019, Pastup: ----, Plotted by:Oliver Chen

LEGEND (PROPOSED)

	15"ø CONCRETE PIPE
	CONCRETE HEADWALL
CV	CHECK VALVE
0.00	SPOT ELEVATION
TOB: 0.00	TOP OF BULKHEAD ELEVATION
TW 0.00 / BW 0.00	TOP OF WALL / BOTTOM OF WALL ELEVATION
MHHW	MEAN HIGHER HIGH WATER
MHW	MEAN HIGH WATER
MLW	MEAN LOW WATER
MLLW	MEAN LOWER LOW WATER
MHWS	MEAN HIGH WATER SPRINGS

LEGEND (EXISTING)

	PROPERTY LINE
	LOT LINE
	LIMIT OF WORK
	EXISTING CONTOUR
	WETLANDS DELINIATION MARKOUT



NO.	DATE	REVISION DESCRIPTION	INT.
1	4/2019	60% ISSUANCE	OC

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303 Tarrytown Road, 1st Floor, White Plains, NY 10603 T: (914) 721-8300
Corporate Seal Initiated 1996 State of New York
www.Cameronengineering.com

PROJECT NAME:
SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE:
GRADING & DRAINAGE PLAN

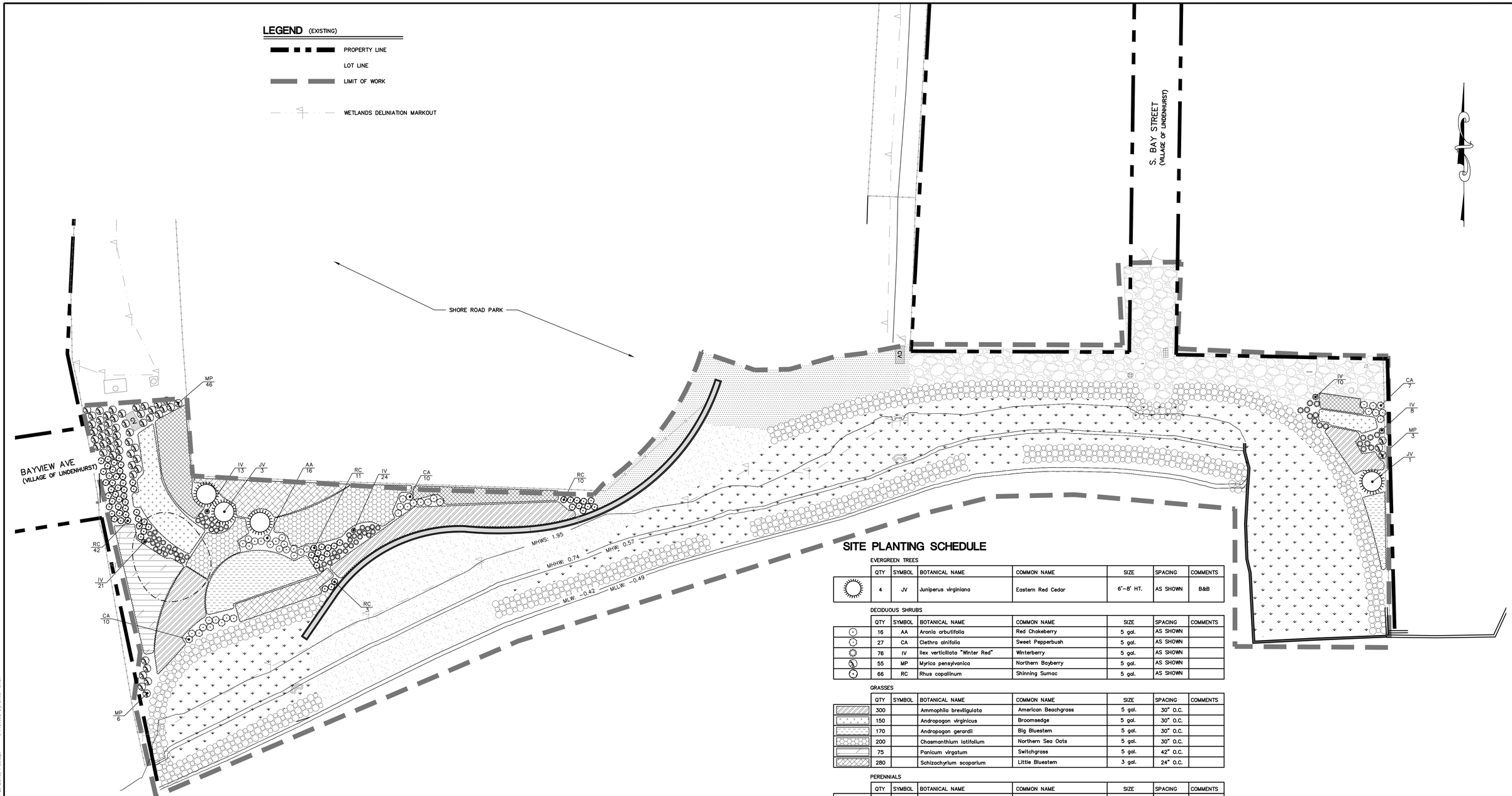
DISCIPLINE:
CIVIL

PROJECT ENGINEER:	MAD
DESIGNED BY:	MAD
DRAWN BY:	EB
CHECKED BY:	KMM
PROJECT NO.	CE2864
JOB NO.	CE2864
DATE:	08/30/18
SCALE:	AS SHOWN
DRAWING NO.	C-4
DRAWING	4 of 10

PLOT SCALE=1 \\CE2864 – Shore Road Park\DESIGN\C-4 GRADING & DRAINAGE PLAN.dwg, Date:May 2, 2019, Pastup: -----, Plotted by:Oliver Chen

LEGEND (EXISTING)

- PROPERTY LINE
- LOT LINE
- LIMIT OF WORK
- WETLANDS DELINIATION MARKOUT



SITE PLANTING SCHEDULE

EVERGREEN TREES

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
4	JV	Juniperus virginiana	Eastern Red Cedar	6'–8' HT.	AS SHOWN	B&B

DECIDUOUS SHRUBS

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
16	AA	Aronia arbutifolia	Red Chokeberry	5 gal.	AS SHOWN	
27	CA	Clethra alnifolia	Sweet Pepperbush	5 gal.	AS SHOWN	
76	IV	Ilex verticillata "Winter Red"	Winterberry	5 gal.	AS SHOWN	
55	MP	Myrica pensylvanica	Northern Bayberry	5 gal.	AS SHOWN	
66	RC	Rhus copallinum	Shinning Sumac	5 gal.	AS SHOWN	

GRASSES

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
300		Ammophila brevilgulata	American Beachgrass	5 gal.	30" O.C.	
150		Andropogon virginicus	Broomsedge	5 gal.	30" O.C.	
170		Andropogon gerardii	Big Bluestem	5 gal.	30" O.C.	
200		Chasmanthium latifolium	Northern Sea Oats	5 gal.	30" O.C.	
75		Panicum virgatum	Switchgrass	5 gal.	42" O.C.	
280		Schizachyrium scoparium	Little Bluestem	3 gal.	24" O.C.	

PERENNIALS

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
280		Asclepias tuberosa	Butterflyweed	2 gal.	24" O.C.	
		Aster ericoides	Heath Aster	1 gal.	18" O.C.	
		Aster novi–belgii	New York Aster	1 gal.	18" O.C.	
		Coreopsis lanceolata	Lance–leaf Coreopsis	2 gal.	24" O.C.	
		Liatris scariosa	Eastern Blazing Star	2 gal.	24" O.C.	
		Monarda punctata	Horsemint	2 gal.	24" O.C.	
		Pensternon hirsutus	Hairy Beardtongue	2 gal.	24" O.C.	
		Solidago sempervirens	Seaside Goldenrod	2 gal.	24" O.C.	

MISCELLANEOUS

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
4000		Spartina alterniflora	Smooth Cordgrass	1 gal.	24" O.C.	*SEE NOTE
		Seeded Lawn				

*NOTE: SMOOTH CORDGRASS SHALL BE STAKED USING 1/4" x 2" x 36" WOOD STAKES.

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
HORIZ. 1 inch = 20 ft.

NO.	DATE	REVISION DESCRIPTION	INT.
1	4/2019	60% ISSUANCE	OC

CAMERON ENGINEERING & ASSOCIATES, LLP

177 Crossways Park Drive, Woodbury, NY 11797 T: (516) 827-4900
45 West 36th Street, 3rd Floor, New York, NY 10018 T: (212) 324-4000
303 Tarrytown Road, 1st Floor, White Plains, NY 10603 T: (914) 721-8300
Corporate Seal Initiated 1996 State of New York
www.Cameronengineering.com

PROJECT NAME:
SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE:
LANDSCAPE PLAN

DISCIPLINE:
CIVIL

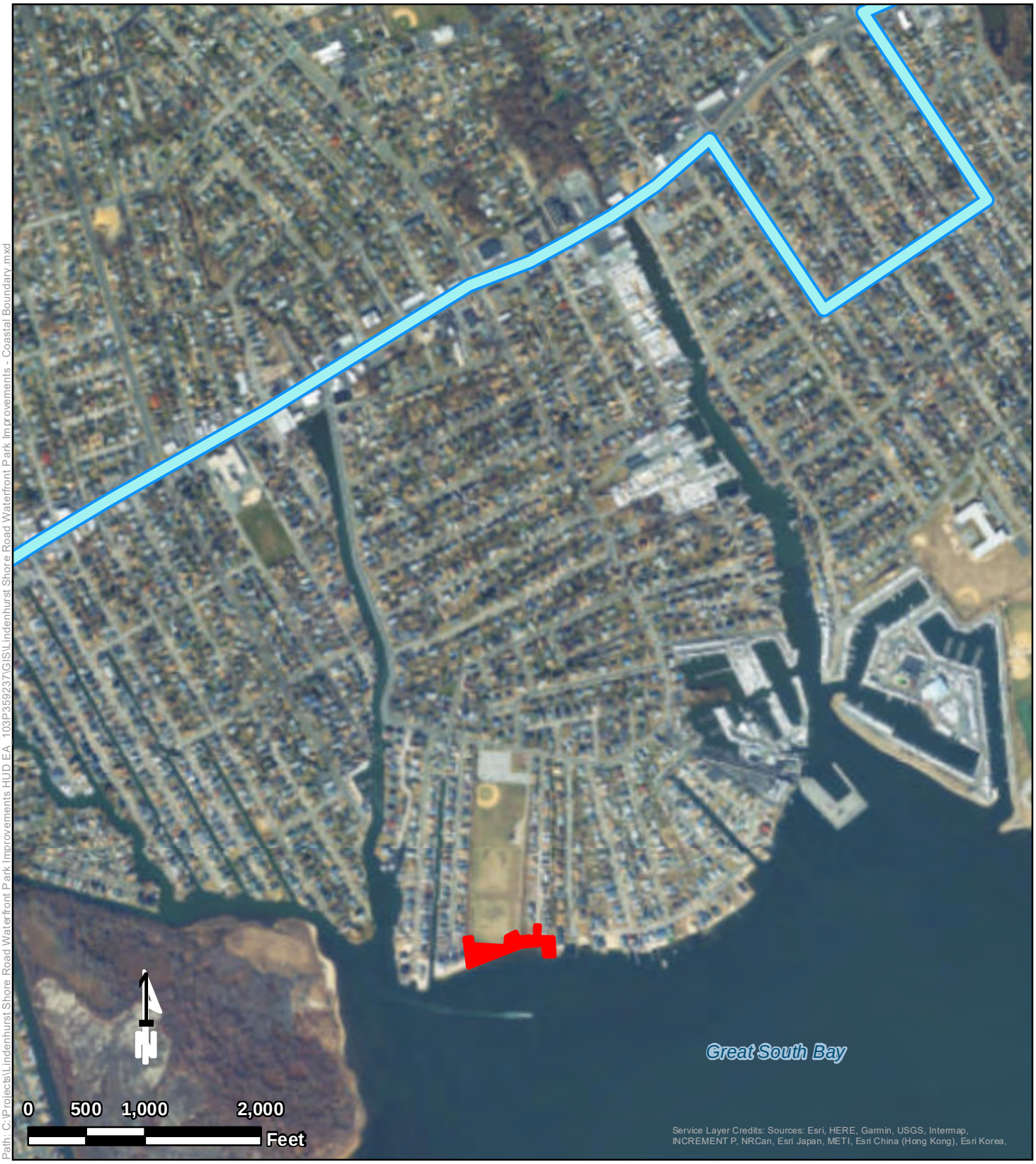
PROJECT ENGINEER:	MAD
DESIGNED BY:	MAD
DRAWN BY:	EB
CHECKED BY:	MAD
PROJECT NO.	CE2864
JOB NO.	CE2864
DATE:	08/30/18
SCALE:	AS SHOWN

DRAWING NO.
C-6
DRAWING 6 of 10

PLOT SCALE: \\CE2864 – Shore Road Park\DESIGN\C-6 LANDSCAPE PLAN.dwg, Date:May 2, 2019, Pastup: ------, Plotted by:Oliver Chen

APPENDIX C

COASTAL CONSISTENCY



Path: C:\Projects\Lindenhurst Shore Road Waterfront Park Improvements HUD EA 103P359237\GIS\Lindenhurst Shore Road Waterfront Park Improvements - Coastal Boundary.mxd

Coastal Boundary

Legend

- Coatal Boundary Landward Extent
- Project Area

Shore Road Park
Lindenhurst, Suffolk County, New York

Tetra Tech, Inc

Path: C:\Projects\Lindenhurst Shore Road Waterfront Park Improvements HUD EA 103P359237\GIS\Lindenhurst Shore Road Waterfront Park Improvements - LWRP Communities.mxd

Legend

- Project Area
- LWRP Communities

LWRP Communities

Shore Road Park
Lindenhurst, Suffolk County, New York

Tetra Tech, Inc

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

ROSSANA ROSADO
SECRETARY OF STATE

June 13, 2019

James McAllister
Bureau of Environmental Review and Assessment
Governor's Office of Storm Recovery
500 Bi-County Boulevard, Suite 300
Farmingdale, NY 11735

Re: **F-2019-0613 (FA)**
Applicant- Governor's Office of Storm Recovery (GOSR)
HUD-CDBG -Federal funding for storm resilience improvements and public access improvements at the southern end of Shore Road Park
Shore Road Park, Village of Lindenhurst, Suffolk County, Great South Bay
General Concurrence - No Objection to Funding

Dear Mr. McAllister:

The Department of State (DOS) received the information you submitted regarding the above proposed federal financial assistance on June 12, 2019 and has completed its review. Based on this review, the Department of State has no objection to the release of the HUD Community Development Block Grant (CDBG) funding in support of the proposed project.

This concurrence pertains to the federal financial assistance activity or activities for this project only. If certain activities require a federal permit or other form of federal agency authorization, the Department of State would conduct separate consistency review(s) of permit activities at the time such application(s) may be made to a federal agency.

When communicating with us regarding this matter, please contact us at (518) 474-6000 and refer to our file # F-2019-0613 (FA).

Sincerely,

Matthew Maraglio
Supervisor, Consistency Review Unit
Office of Planning, Development and Community Infrastructure

MM/rf

Cc: Clifford Jarman, Tetra Tech

Governor's Office of Storm Recovery

ANDREW M. CUOMO
Governor

June 6, 2019

Mr. Matt Maraglio
Supervisor, Consistency Review Unit
Division of Coastal Resources
State of New York Department of State
One Commercial Plaza-Suite 1010
99 Washington Avenue
Albany, NY 12231-0001

Re: General Consistency Concurrence for the Construction of the Shore Road Waterfront Park Natural Systems Resiliency Improvements Project, Village of Lindenhurst, Suffolk County, New York

Dear Mr.Maraglio:

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 review report for the proposed "Construction of the Shore Road Waterfront Park Natural Systems Resiliency Improvements Project," which would include construction of shorefront stabilization, landforms, structures and native plantings to reduce the impacts of waves and improve storm resiliency at the southern end of Shore Road Park in the Village of Lindenhurst, Suffolk County, New York. The Proposed Action is within the New York State Coastal Zone Management Program (See attached addendum Figures 1 through 4). 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 Village of Lindenhurst proposes to design and implement storm resiliency improvements and public access improvements at the southern end of Shore Road Park, in the Village of Lindenhurst, Town of Babylon, Suffolk County, NY.

Proposed Improvements

Shore Road Park is a 10.2 acre site located at the southern edge of the Village of Lindenhurst on the shore of the Great South Bay. This area is one of the few remaining natural public sections of bayfront within the Village. The park is owned, operated, and maintained by the Village of Lindenhurst and is utilized for seasonal recreational activities and

community events. The park as well as nearby residential neighborhoods were subject to major flooding from the Great South Bay as well as nearby canals. This flooding resulted in catastrophic damage to hundreds of homes, many of which remain in various states of repair or abandonment.

The proposed project would involve the southern 1.2 acres of the Park. The project includes:

- Construction of two rock sills along the shore placed at the low and high tide lines to provide protection during wave action at either tide cycle;
  - Breaks in the lower rock wall will facilitate water and sand movements throughout the tide cycles and avoid impoundment of water
- The high tide rock-sill will include a concrete sitting wall
- Construction of a gravel road with a gated entry at the southern end of S. Bay Street for emergency access.
- Sand and living shoreline landscaping will be placed between the two rock sills and upland landscaping will be placed above the high tide wall on the west side of the area.
  - A rain garden will be included in the upland landscaping
- Drainage improvements including extension of drainage outlets as a means of protecting the southern end of Shore Road Park from flooding during major storm events;
  - The eastern drainage outlet will be extended to an outlet between the low and hide tide rock walls
  - The western drainage outlet will be relocated to an outlet between the low and hide tide rock walls.
- The top of the existing bulkheads along the shore of the eastern portion of the site (former private residential parcels) will be removed to a elevation of 0.08 feet.
- Placement of clean fill and riprap where needed; and
- Use of native coastal plantings.

The Proposed Action is within a developed neighborhood. There are residences along both sides of Shoreline Park. The sandy beach area contains scattered concrete slabs and debris utilized for purposes of erosion control. The slope from the high tide line seaward for approximately 30' is generally flat (less than 3%). Based upon visual inspection, additional rubble of various sources is present in the water. The project area located landward of the high tide line contains various vegetation of salt tolerant species, however the dominant plant is Phragmites, a highly invasive species. The Proposed Project would involve approximately 1.1 acres in the southern portions of the park and would include planning, designing and implementing storm resiliency improvements, such as natural bank stabilization, landforms, and built structures and features that could reduce waves.

The Proposed Action would cause no changes to utility services. The southern portions of the project area is within the coastal flood zone with velocity hazard (wave action) and the more inland portion is within the 100-year floodplain. While the Village owns the majority of land in the project area, there are two Suffolk County owned vacant parcels that would be part of this project through an agreement with the county. The inclusion of these properties in this project would help to provide uniform shoreline protection for this section of Bayfront.

Compliance

GOSR is requesting a response letter from DOS that can be included in the environmental review report 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 Action with the relevant policies from the State's Coastal Management Plan. None of the activities are located within a Coastal Barrier Resource System Unit.

If you have questions or require additional information regarding this request, please contact me at (646) 256-9485 or James.McAllister@stormrecovery.ny.gov. Thank you for your time and consideration.

Sincerely,

James P. McAllister
Senior Environmental Project Manager
Bureau of Environmental Review and Assessment
Governor's Office of Storm Recovery
500 Bi-County Boulevard, Suite 300, Farmingdale, NY 11735

Attachments:
Federal Consistency Assessment Form (FCAF)
FCAF Addendum

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: James P. McAllister
2. Address: 500 Bi-County Boulevard, Suite 300, Farmingdale, NY 11735
3. Telephone: Area Code ( ) 646-256-9485

B. **PROPOSED ACTIVITY:**

1. Brief description of activity:

Storm resiliency improvements and public access improvements at the southern end of Shore Road Park (Figure 1), in the Village of Lindenhurst, Town of Babylon, Suffolk County, NY.

2. Purpose of activity:

Reduce erosion and stabilize the Bayfront by absorbing wave energy, trapping sediments, and slowing stormwater runoff

3. Location of activity:

Suffolk	Babylon	Shore Road Park
County	City, Town, or Village	Street or Site Description

4. Type of federal permit/license required: CDBG-DR Funding

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:

New York State Department of Environmental Quality Permits

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: James P. McAllister

Address: 500 Bi-County Boulevard, Suite 300, Farmingdale, NY 11735

Telephone: Area Code ( ) 646-256-9485

Applicant/Agent's Signature:  Date: June 7, 2019

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.

FCAF Addendum Lindenhurst Shore Road Waterfront Park Improvements Project

This document is the addendum to the Federal Consistency Assessment Form (FCAF) for the Lindenhurst Shore Road Waterfront Park Improvements Project. After describing the Proposed Project in more detail, this document analyzes the consistency of the Proposed Project with the State's Costal Management Plan (CMP), specifically those policies that were identified as potentially applicable to this Project in the FCAF.

PROJECT DESCRIPTION

The Village of Lindenhurst proposes to design and implement storm resiliency improvements and public access improvements at the southern end of Shore Road Park, in the Village of Lindenhurst, Town of Babylon, Suffolk County, NY. (**Figures 1 and 2**).

Shore Road Park is a 10.2 acre site located at the southern edge of the Village of Lindenhurst on the shore of the Great South Bay. This area is one of the few remaining natural public sections of bayfront within the Village. The park is owned, operated, and maintained by the Village of Lindenhurst and is utilized for seasonal recreational activities and community events. The entire park is within the 100-year floodplain and within the Nassau-Suffolk Sole Source Aquifer.

The park as well as nearby residential neighborhoods were subject to major flooding from the Great South Bay as well as nearby canals. This flooding resulted in catastrophic damage to hundreds of homes, many of which remain in various states of repair or abandonment. In the aftermath of Superstorm Sandy, the parking lot of this park was the staging area for "Camp Bulldog"—a grassroots disaster recovery and distribution center for residents within the Village.

The shoreline in the park is open, sandy beach, and has been receding/eroding due to wave attack. The shoreline east and west of the park is hardened with continuous bulkhead, causing wave energy to be concentrated on the unprotected park shoreline. Waves generated during storms with high tides attack and erode the beach, and in extreme tidal events, these waves can move upland in the Park and into the communities that are situated adjacent to the park.

Proposed Action

The Proposed Project would involve approximately 1.1 acres in the southern portions of the park (**Figure 2**) and would include planning, designing and implementing storm resiliency improvements, such as natural bank stabilization, landforms, and built structures and features that could reduce waves (**Figure 3**). The project would likely involve the following:

- Construction of a new protective shorefront structure with stone boulders to prevent recurring flooding and reduce wave action for storm protection;
- Construction of a gravel pedestrian path, boulder sitting wall, sand beach area, public boardwalk and lighting as additional features to enhance the recovery of the waterfront for passive recreational use;
- Drainage improvements including extension of drainage outlets as a means of protecting the southern end of Shore Road Park from flooding during major storm events;
    - The eastern drainage outlet will be extended
    - The western drainage outlet will either be extended or diverted to connect to the existing stormwater drainage along Bayview Avenue to the West.

- Placement of clean fill and riprap where needed; and
- Use of native coastal plantings.

The shoreline protection enhancements would reduce erosion and stabilize the Bayfront as well as protect adjacent property by absorbing wave energy, trapping sediments, and slowing stormwater runoff to moderate the effects of storms and floods. While the Village owns the majority of land in the project area, there are two Suffolk County owned vacant parcels that would be part of this project through an agreement with the county. The inclusion of these properties in this project would help to provide uniform shoreline protection for this section of bayfront.

A portion of the project area is within the coastal flood zone with velocity hazard (wave action) and the more inland portion is within the 100-year floodplain.

The Project would enhance the natural environment by including the installation of native coastal plantings that are naturally resistant to salt spray and occasional inundation. Plants adapted to this environment will help prevent erosion, filter stormwater pollution, and provide habitat and food for native wildlife. While the natural shoreline at Shore Road Park would be enhanced, this project would also enable safe pedestrian/public access to the waterfront. The protection and enhancement of the community's natural environment is critically important to the ecological health of the Great South Bay.

Funding for the Project will be provided by 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 THE NYS COASTAL MANAGEMENT PLAN

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

Response: The Proposed Action would facilitate water dependent uses on the shore of the park. The flood and erosion structures (i.e., breakwater) will reduce the erosion and flooding of the park and neighboring residences. A kayak launch area is being included in the design of the breakwater. This will allow use of the park for water related recreation. The Proposed Action 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: The project area is within the coastal flood zone with velocity hazard (wave action) and the more inland portion is within the 100-year floodplain. The Park is within a

developed neighborhood. There are residences along both sides of the park. The Project Area is along the southern shore portion of the park. The Project does not include buildings. The proposed structures include a stone boulder shorefront breakwater, gravel pedestrian path, boulder sitting wall, sand beach area, public boardwalk, lighting, drainage improvements, and native plantings. The purpose of most of these structures is to reduce damage from storms. The Proposed Action 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 Action is designed to reduce storm damage at the Park. The Project includes natural bank stabilization and native coastal plantings to help hold the soil in place. These features along with the built structures will increase the shoreline's resiliency to flooding from storms and wave action. The Proposed Project is consistent with this policy.

Policy 13: *The construction or reconstruction of erosion protection structures shall be undertaken only if they have a reasonable probability of controlling erosion for at least thirty years as demonstrated in design and construction standards and/or assured maintenance or replacement programs.*

Response: The shoreline in the park is open, sandy beach, and has been receding/eroding due to wave attack. The shoreline east and west of the park is hardened with continuous bulkhead, causing wave energy to be concentrated on the unprotected park shoreline. Waves generated during storms with high tides attack and erode the beach, and in extreme tidal events, these waves can move upland in the Park and into the communities that are situated adjacent to the park.

At its core, the project's fundamental component is a living shoreline to mitigate on-going eroding of the shoreline. Upon the preparation of our preliminary documents and technical design report, it was determined that a rock sill or similar structure would greatly increase the viability and longevity of the planted mitigation effort. The plants themselves will provide stability in the form of erosion control; however marine environments are notoriously hostile. Therefore, the per design guidelines and with the input of the New York Department of Conservation, the living shoreline is reinforced with a rock sill designed to dissipate wave energy thereby increasing the longevity of the living shoreline.

The project is designed to reduce the impact of flooding from storm events, related wave action, and shoreline erosion at the Park and fill the gap in the continuous bulkheads to the east and west. This Project will reduce the ongoing erosion at the Park. The Proposed Action is consistent with this policy.

Policy 14: *Activities and development, including the construction or reconstruction of erosion protection structures, shall be undertaken so that there will be no measurable increase in erosion or flooding at the site of such activities or development, or at other locations.*

Response: The purpose and design of the project is to reduce the frequency and impact of flooding from storm events, related wave action, and shoreline erosion at the Park and in the neighborhoods situated to the east and west of the project site. The living shoreline project with its supplementing rock sill is a form of erosion control, however due to the porosity of the rock sill and the breaks in between each length (no more than 100'), will not form an impenetrable barrier. There are existing drainage structures within the project area, however the proposed improvements will permit the flow of stormwater discharges. The use of proposed check-valves will reduce the frequency of daily tide surge back through the existing drainage system which the park currently experiences. The Proposed Project is consistent with this policy.

Policy 16: *Public funds shall only be used for erosion protective structures where necessary to protect human life, and new development which requires a location within or adjacent to an erosion hazard area to be able to function, or existing development; and only where the public benefits outweigh the long term monetary and other costs including the potential for increasing erosion and adverse effects on natural protective features.*

Response: The Proposed Action involves construction of new rock sills along the shoreline of the park to fill the gap in the continuous bulkheads protecting the neighborhoods to the east and west of the Park. The erosion protective structures would stabilize the shoreline at the project site and improve the site's resilience to wave action and erosion from storm events. Public funds will be utilized for the design and construction of the proposed improvements; however, the project serves only to benefit the publicly owned park. As noted in other policy responses, portions of the park have already been lost to coastal erosion, thereby decreasing the value of the park to the public. Rather than attempt to reclaim land already lost, the project seeks to mitigate further erosion though the installation of the living shoreline and associated rock sill. The use of public funds for the Proposed Action 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 purpose and design of the project is to reduce the frequency and impact of flooding from storm events, related wave action, and shoreline erosion at the Park. The core project consists of a living shoreline. The proposed non-structural improvements include native coastal plantings to help secure the soil. Traditional structures such as bulkheads etc., were not earnestly considered due to the natural inherent conflict with the intended goals of the project. The proposal however does contain a rock sill component, but only in the capacity to provide energy dissipation based upon the guidelines followed. Furthermore, s expressed in other segments of this document, the rock sill is not continuous, thereby avoiding the impoundment of stormwater. The Proposed Project is consistent with this policy.

Policy 18: *To safeguard the vital economic, social and environmental interests of the State and of its citizens, proposed major actions in the coastal area must give full*

consideration to those interests, and to the safeguards which the State has established to protect valuable coastal resource areas.

Response: By stabilizing an eroding shoreline utilizing a technique which will address habitat creation, water quality, access to the waterfront and erosion, the goals of the policy are achieved. Although a portion of the rock sill is proposed below the established low water line, its placement is integral to the function it will serve to dissipate wave energy while not impounding water. 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 existing access form the park to the shore is restricted by a collapsing fence. The beach/shore contains debris and fragments of concrete and asphalt. The proposed improvements will allow safer access to the shore and increase access in the previously privately held eastern parcels. Access to the beach area will be primarily internal in an effort to utilize the existing surface parking and other infrastructure already within the park. The Proposed Project is consistent with this policy.

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 park is currently accessible to the public, however access to the waterfront is somewhat limited due to the undeveloped and eroded nature of the actual shoreline. In addition to the living shoreline component is the creation of a defined beach area. The beach area will provide a accessibility intended for passive recreation uses directly adjacent to the Great South Bay. Existing infrastructure will be utilized at the north end of the park, such as parking, to minimize unnecessary duplication and intensification of pavement surfaces. The purpose of the Project is to protect the Park and preserve the public's access to the shore in the neighborhood. The Proposed Project is consistent with this policy.

Policy 33: *Best management practices will be used to ensure the control of stormwater runoff and combined sewer overflows draining into coastal waters.*

Response: There are no sewer flows associated with this project. The existing eastern stormwater drainage outlet will be repaired and would be extended to go through the high-tide stone boulder breakwater. The existing western stormwater drainage outlet would be realigned and extended to go through the high-tide stone boulder breakwater. The location of the outfalls between the low and high-tide breakwaters will allow controlled flow of stormwater to the Bay without erosion. The Proposed Action 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 dredging permit requirements, and protects significant fish and wildlife habitats, scenic resources, natural protective features, important agricultural lands, and wetlands.*

Response: The rock sill component of the project is the only feature which is considered fill material. The horizontal and vertical location of the rock sill is set precisely based upon providing protection of the living shoreline component. Although the living shoreline is a suitable and warranted means of mitigating continued erosion, the plantings themselves can be vulnerable to wave energy during various levels of storm events. It is therefore consistent with published guidelines to supplement living shorelines with a rock sill. However as noted above, the precise location of the rock sill requires placement within the waterway in order to provide the effectiveness warranted. It should be noted that the area where the lower rock sill will be placed contains currently contains fragments of concrete and asphalt, both of which will be removed as part of the proposed improvements. The rock sill will be composed of actual stone, providing a natural material consistent with published guidelines and policies. The Proposed Action is consistent with this policy.

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

Response: The projects core focus is to protect an eroding shoreline utilizing the techniques associated with living shorelines. The vegetation and soil located along the parks southern edge has been eroded and has therefore associated habitat has been lost. The proposed project seeks to preserve, protect, and restore the sensitive wetlands though the creation of a living shoreline, protective rock sill, and plantings landward of the mean high tide. Anticipated benefits of the improvements include improved water quality, habitat creation, erosion control, aesthetic improvements, and improved passive recreation accessibility. The Project area is outside the NYS-designated tidal-coastal wetlands. The Project area is completely within 300 feet of these wetlands. The disturbance of this area would occur during project construction and would cease once construction is completed. An NYSDEC permit will be obtained for disturbance of tidal wetlands, excavation and fill in navigable waters, and discharge into the navigable waters. No long -term disturbance of tidal wetlands would occur, and the benefits and functional values of these areas would be preserved. The Proposed Action is consistent with this policy.

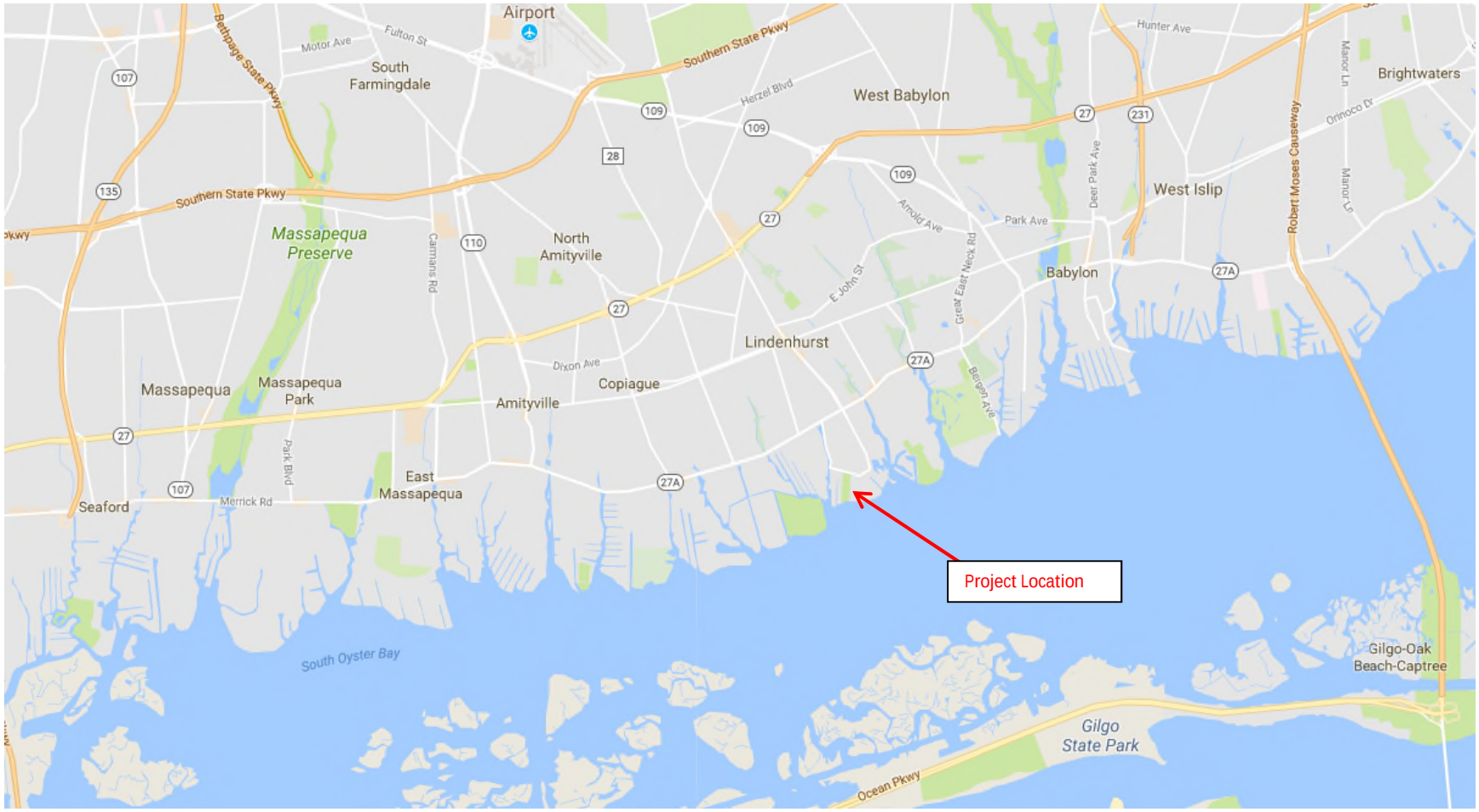


Figure 1. Site Location

Path: C:\projects\Lindenhurst Shore Road Waterfront Park Improvements HUD EA 103P359237\GIS\Lindenhurst Shore Road Waterfront Park Improvements - Project Area2.mxd

Project Area

Shore Road Park
Lindenhurst, Suffolk County, New York

Legend

Project Area

Tetra Tech, Inc

LEGEND (EXISTING)

- PROPERTY LINE
- LOT LINE
- LIMIT OF WORK
- EXISTING CONTOUR
- WETLANDS DELINIATION
- AREA OF REMOVALS
- EXISTING DRAINAGE PIPE
- MHHW — MEAN HIGHER HIGH WATER
- MHW — MEAN HIGH WATER
- MLW — MEAN LOW WATER
- MLLW — MEAN LOWER LOW WATER
- MHWS — MEAN HIGH WATER SPRINGS

BAYVIEW AVE (VILLAGE OF LINDENHURST)

S. BAY STREET (VILLAGE OF LINDENHURST)

SHORE ROAD PARK

EXISTING DRAINAGE SWALE

EXISTING DRAINAGE STRUCTURE TO REMAIN

EXISTING DRAINAGE PIPE TO BE REMOVED

EXISTING FENCE TO REMAIN

EXISTING FENCE TO BE REMOVED

EXISTING VEGETATION TO BE REMOVED. INCLUDES PHRAGMITES REMOVAL. REFER TO INVASIVE SPECIES REMOVAL NOTES.

WETLANDS DELINIATION (TYP.)

EXISTING SINGLE FAMILY HOME

EXISTING DRAINAGE STRUCTURE TO BE REMOVED AND REPLACED

LIMIT OF WORK (TYP.)

EXISTING BULKHEAD TO REMAIN

ALL CONCRETE AND ASPHALT RUBBLE & DEBRIS TO BE REMOVED

REMOVALS SEAWARD OF MHW IS LIMITED TO REMOVAL OF CONCRETE, ASPHALT, AND EXISTING BULKHEAD, AS WELL AS LIMITED SAND TO FACILITATE ELEVATIONS CRITICAL FOR THE ESTABLISHMENT OF THE LIVING SHORELINE. REFER TO GRADING PLAN.

TURF

EXISTING ASPHALT TO BE REMOVED

ALL EXISTING UTILITIES TO REMAIN BENEATH SOUTH BAY STREET.

VACANT PROPERTY OWNER: SUFFOLK COUNTY PARKS DEPARTMENT

VACANT PROPERTY OWNER: NEW YORK STATE

VACANT PROPERTY OWNER: VILLAGE OF LINDENHURST

EXISTING DRAINAGE STRUCTURES TO REMAIN

EXISTING SEWER MANHOLES TO REMAIN

TOP OF EXISTING BULKHEAD TO BE REMOVED TO ELEVATION 0.08. BULKHEAD BELOW ELEVATION ELEVATION 0.08 TO REMAIN.

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

HORIZ. 1 inch = 20 ft.

NO.	DATE	REVISION DESCRIPTION	INT.
1	4/2019	60% ISSUANCE	OC

CAMERON ENGINEERING & ASSOCIATES, LLP
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45 West 36th Street, 3rd Floor, New York, NY 10018 — T: (212) 324-4000
303 Tarrytown Road, 1st Floor, White Plains, NY 10603 — T: (914) 721-8300
Corporate Seal Initiated 1996 State of New York
www.Cameronengineering.com

PROJECT NAME: SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION: VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE: EXISTING CONDITIONS & REMOVALS PLAN

DISCIPLINE: CIVIL

PROJECT ENGINEER:	MAD
DESIGNED BY:	MAD
DRAWN BY:	EB
CHECKED BY:	KMM
PROJECT NO.	CE2864
JOB NO.	CE2864
DATE:	08/30/18
SCALE:	AS SHOWN
DRAWING NO.	C-2
DRAWING	2 of 10

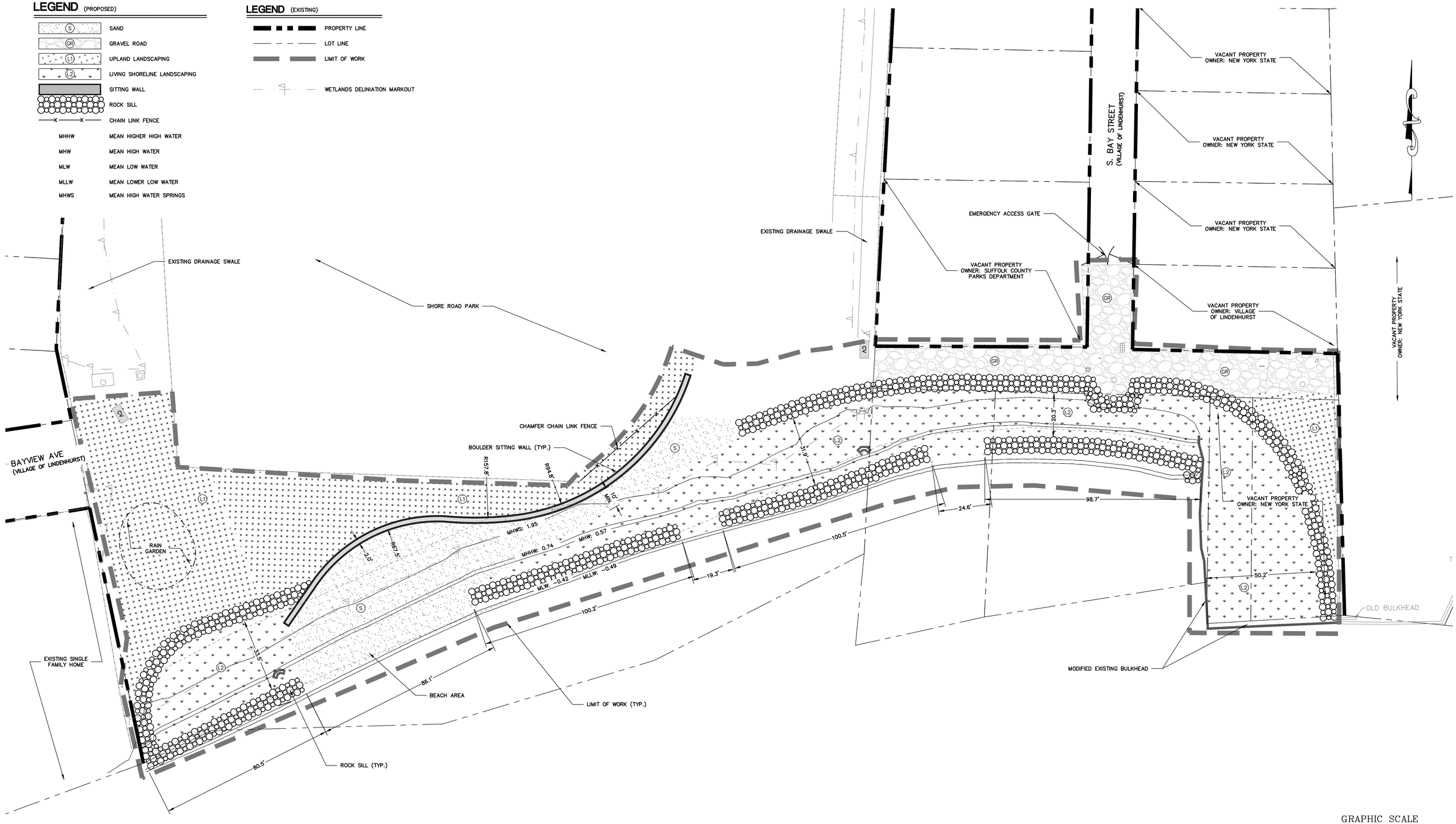
PLOT SCALE: \CE2864 - Shore Road Park\DESIGN\EXISTING CONDITIONS.dwg, Date:May 2, 2019, Pretup=----, Plotted by:Oliver Chen

LEGEND (PROPOSED)

- SAND
- GRAVEL ROAD
- UPLAND LANDSCAPING
- LIVING SHORELINE LANDSCAPING
- SITTING WALL
- ROCK SILL
- CHAIN LINK FENCE
- MHHW — MEAN HIGHER HIGH WATER
- MHW — MEAN HIGH WATER
- MLW — MEAN LOW WATER
- MLLW — MEAN LOWER LOW WATER
- MHWS — MEAN HIGH WATER SPRINGS

LEGEND (EXISTING)

- PROPERTY LINE
- LOT LINE
- LIMIT OF WORK
- WETLANDS DELINIATION MARKOUT



GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

HORIZ. 1 inch = 20 ft.

NO.	DATE	REVISION DESCRIPTION	INT.
1	4/2019	60% ISSUANCE	OC

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www.Cameronengineering.com

PROJECT NAME:
SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE:
SITE PLAN

DISCIPLINE:
CIVIL

PROJECT ENGINEER:	PROJECT NO.	DRAWING NO.
MAD	CE2864	C-3
DESIGNED BY: MAD	JOB NO. CE2864	
DRAWN BY: EB	DATE: 08/30/18	
CHECKED BY: KMM	SCALE: AS SHOWN	DRAWING 3 of 10

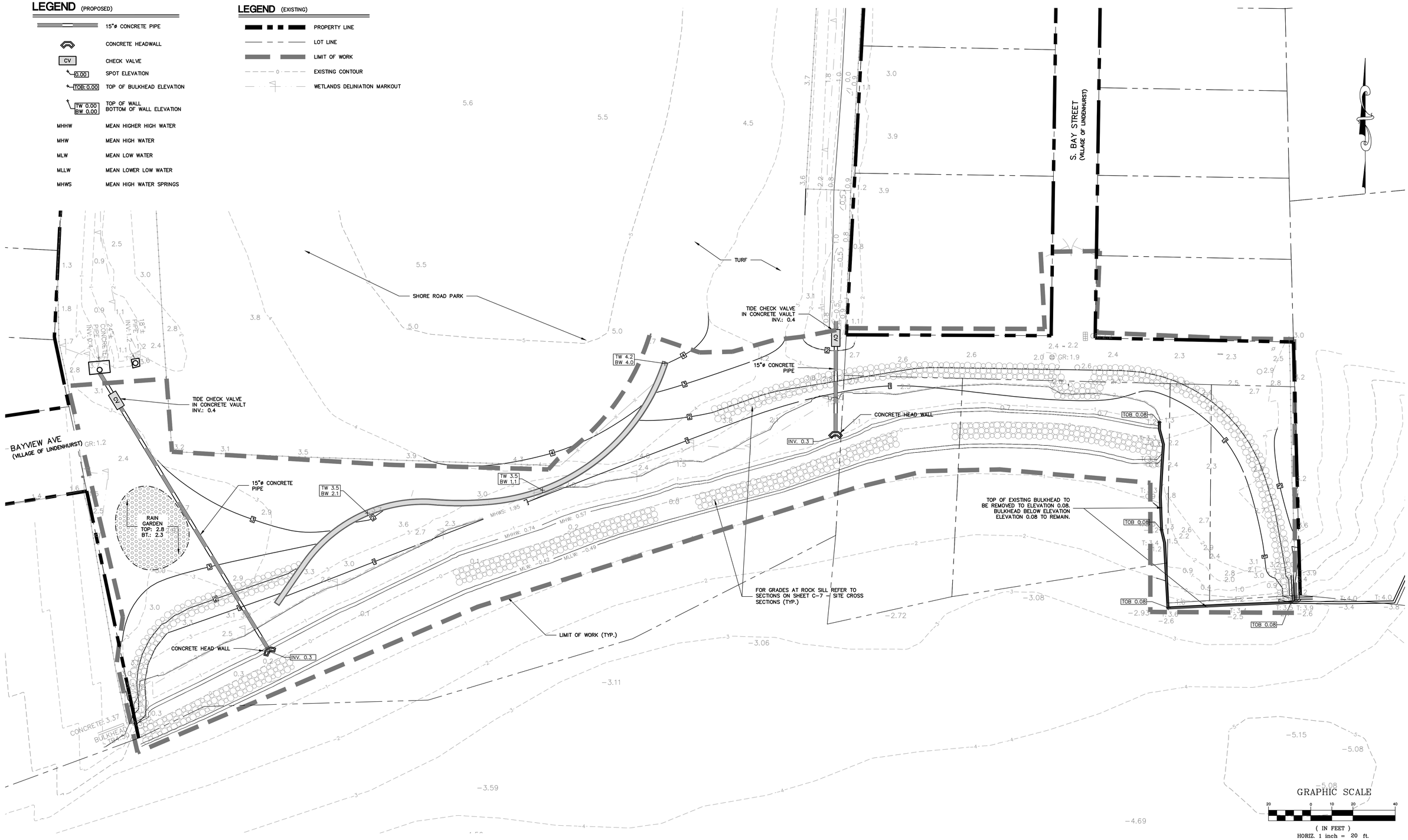
PLOT SCALE=1 \\CE2864 — Shore Road Park\DESIGN\C-3 SITE PLAN.dwg, Date:May 2, 2019, Pastup: ----, Plotted by:Oliver Chen

LEGEND (PROPOSED)

	15"ø CONCRETE PIPE
	CONCRETE HEADWALL
CV	CHECK VALVE
0.00	SPOT ELEVATION
TOB: 0.00	TOP OF BULKHEAD ELEVATION
TW 0.00 / BW 0.00	TOP OF WALL / BOTTOM OF WALL ELEVATION
MHHW	MEAN HIGHER HIGH WATER
MHW	MEAN HIGH WATER
MLW	MEAN LOW WATER
MLLW	MEAN LOWER LOW WATER
MHWS	MEAN HIGH WATER SPRINGS

LEGEND (EXISTING)

	PROPERTY LINE
	LOT LINE
	LIMIT OF WORK
	EXISTING CONTOUR
	WETLANDS DELINIATION MARKOUT



NO.	DATE	REVISION DESCRIPTION	INT.
1	4/2019	60% ISSUANCE	OC

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Corporate Seal Initiated 1996 State of New York
www.Cameronengineering.com

PROJECT NAME:
SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE:
GRADING & DRAINAGE PLAN

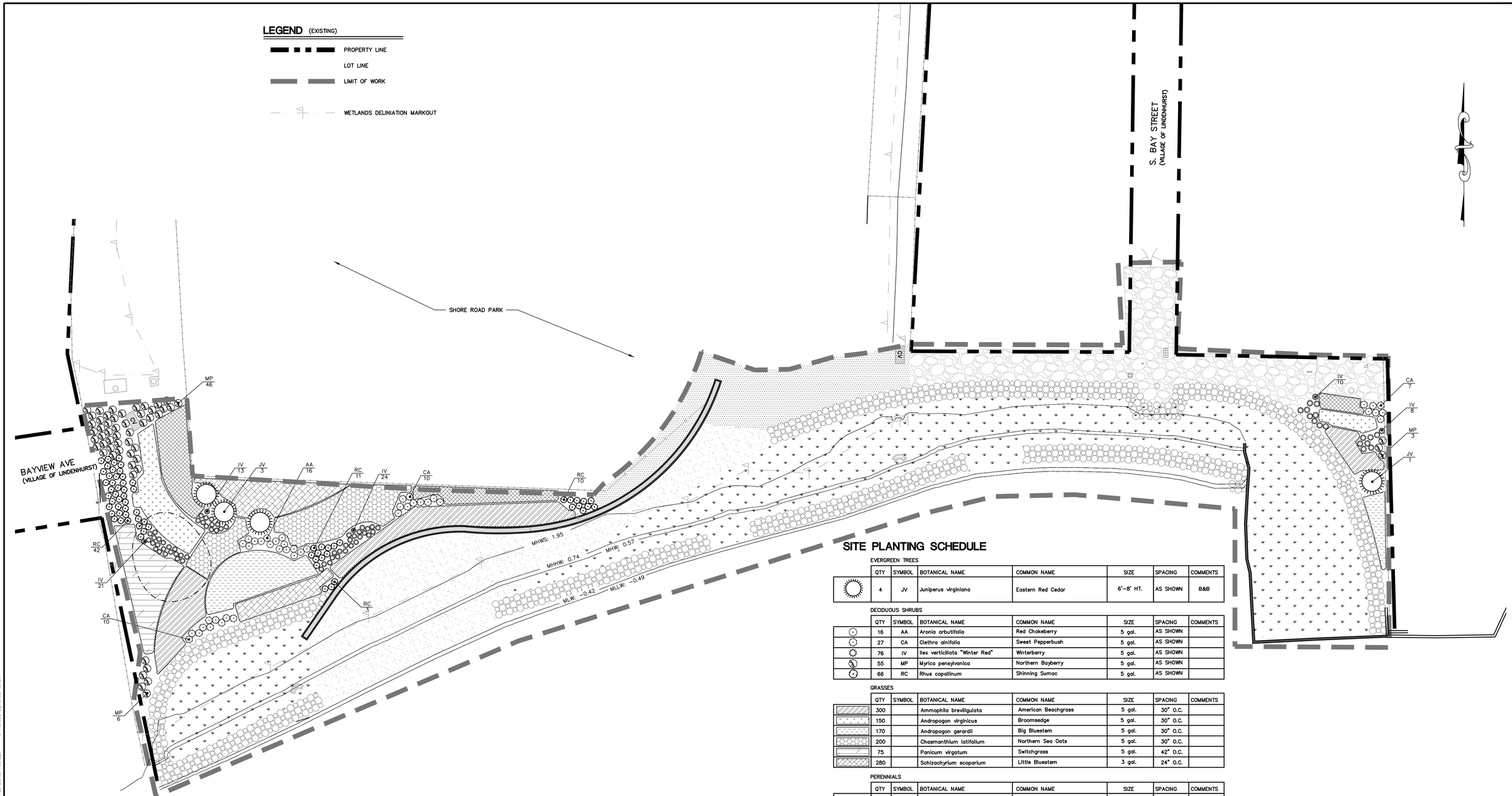
DISCIPLINE:
CIVIL

PROJECT ENGINEER:	MAD
DESIGNED BY:	MAD
DRAWN BY:	EB
CHECKED BY:	KMM
PROJECT NO.	CE2864
JOB NO.	CE2864
DATE:	08/30/18
SCALE:	AS SHOWN
DRAWING NO.	C-4
DRAWING	4 of 10

PLOT SCALE=1 \\CE2864 – Shore Road Park\DESIGN\C-4 GRADING & DRAINAGE PLAN.dwg, Date:May 2, 2019, Pastup: -----, Plotted by:Oliver Chen

LEGEND (EXISTING)

- PROPERTY LINE
- LOT LINE
- LIMIT OF WORK
- WETLANDS DELINIATION MARKOUT



SITE PLANTING SCHEDULE

EVERGREEN TREES

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
4	JV	Juniperus virginiana	Eastern Red Cedar	6'–8' HT.	AS SHOWN	B&B

DECIDUOUS SHRUBS

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
16	AA	Aronia arbutifolia	Red Chokeberry	5 gal.	AS SHOWN	
27	CA	Clethra alnifolia	Sweet Pepperbush	5 gal.	AS SHOWN	
76	IV	Ilex verticillata "Winter Red"	Winterberry	5 gal.	AS SHOWN	
55	MP	Myrica pensylvanica	Northern Bayberry	5 gal.	AS SHOWN	
66	RC	Rhus copallinum	Shinning Sumac	5 gal.	AS SHOWN	

GRASSES

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
300		Ammophila brevilgulata	American Beachgrass	5 gal.	30" O.C.	
150		Andropogon virginicus	Broomsedge	5 gal.	30" O.C.	
170		Andropogon gerardii	Big Bluestem	5 gal.	30" O.C.	
200		Chasmanthium latifolium	Northern Sea Oats	5 gal.	30" O.C.	
75		Panicum virgatum	Switchgrass	5 gal.	42" O.C.	
280		Schizachyrium scoparium	Little Bluestem	3 gal.	24" O.C.	

PERENNIALS

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
280		Asclepias tuberosa	Butterflyweed	2 gal.	24" O.C.	
		Aster ericoides	Heath Aster	1 gal.	18" O.C.	
		Aster novi–belgii	New York Aster	1 gal.	18" O.C.	
		Coreopsis lanceolata	Lance–leaf Coreopsis	2 gal.	24" O.C.	
		Liatris scariosa	Eastern Blazing Star	2 gal.	24" O.C.	
		Monarda punctata	Horsemint	2 gal.	24" O.C.	
		Pensternon hirsutus	Hairy Beardtongue	2 gal.	24" O.C.	
		Solidago sempervirens	Seaside Goldenrod	2 gal.	24" O.C.	

MISCELLANEOUS

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
4000		Spartina alterniflora	Smooth Cordgrass	1 gal.	24" O.C.	*SEE NOTE
		Seeded Lawn				

*NOTE: SMOOTH CORDGRASS SHALL BE STAKED USING 1/4" x 2" x 36" WOOD STAKES.

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
HORIZ. 1 inch = 20 ft.

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PROJECT NAME:
SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE:
LANDSCAPE PLAN

DISCIPLINE:
CIVIL

PROJECT ENGINEER:	MAD
DESIGNED BY:	MAD
DRAWN BY:	EB
CHECKED BY:	MAD
PROJECT NO.	CE2864
JOB NO.	CE2864
DATE:	08/30/18
SCALE:	AS SHOWN

DRAWING NO.
C-6
DRAWING 6 of 10

PLOT SCALE: \\CE2864 – Shore Road Park\DESIGN\C-6 LANDSCAPE PLAN.dwg, Date:May 2, 2019, Pastup: ------, Plotted by:Oliver Chen

U.S. Fish and Wildlife Service
National Wetlands Inventory

Lindenhurst Shore Road Park Shoreline

May 28, 2019

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

APPENDIX D

FLOODPLAINS AND WETLANDS

FLOODPLAIN AND WETLAND 8-STEP PROCESS IN ACCORDANCE WITH EXECUTIVE ORDER 11988: FLOODPLAIN MANAGEMENT AND EXECUTIVE ORDER 11990: WETLANDS
SHORE ROAD WATERFRONT PARK NATURAL SYSTEMS RESILIENCY IMPROVEMENTS PROJECT
VILLAGE OF LINDENHURST
TOWN OF BABYLON, SUFFOLK COUNTY, NEW YORK

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

Introduction & Overview

The purpose of Executive Order (EO) 11988 Floodplain Management is "to avoid to the extent possible the long- and short-term adverse impacts associated with occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative." The purpose of EO 11990 Protection of Wetlands is "to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative." This report contains the analysis prescribed by 24 CFR Part 55 and documents the eight-step decision making process for the Proposed Action 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.

The Governor's Office of Storm Recovery (GOSR), an office of the New York State Housing Trust Fund Corporation (HTFC), has received an application from the Village of Lindenhurst to use Community Development Block Grant – Disaster Recovery (CDBG-DR) funding from the NY Rising Community Reconstruction Program to design and implement the Shore Road Waterfront Park Natural Systems Resiliency Improvements Project (hereinafter "the Proposed Action").

The analysis that follows focuses on floodplain and wetland impacts because the Proposed Activity will result in disturbance within an area identified on the National Wetland Inventory and a 100-year floodplain. Based on an analysis of the Proposed Action described herein, it is concluded that there is a reasonable basis to proceed with funding for this Proposed Action.

Description of Proposed Action

The Village of Lindenhurst proposes to implement storm resiliency and erosion protection improvements at the southern end of Shore Road Park, in the Village of Lindenhurst, Town of Babylon, Suffolk County, NY (**Figure 1**).

The proposed project would involve the southern 1.1 acres of the 10.2-acre Park (**Figure 2**). The project includes:

- Construction of two rock sills along the shore placed at the low and high tide lines to provide storm and erosion protection during wave action at either tide cycle;

    - Breaks in the lower rock wall will facilitate water and sand movements throughout the tide cycles and avoid impoundment of water
- The high tide rock-sill will include a stabilized rock sitting wall
- Construction of a gravel road with a gated entry at the southern end of South Bay Street for emergency access.
- Sand and living shoreline vegetation will be placed between the two rock sills and upland landscaping will be placed above the high tide wall on the west side of the area.
    - A rain garden will be included in the upland landscaping
- Drainage improvements including extension of drainage outlets and the addition of tide check valves as a means of protecting the southern end of Shore Road Park from flooding during major storm events;
    - The eastern drainage outlet will be extended to an outlet between the low and high tide rock walls. Riprap will be placed at the outfall to provide scour protection.
    - The western drainage outlet will be relocated to an outlet between the low and high tide rock walls. Riprap will be placed at the outfall to provided scour protection.
    - A total of 25 cubic yards of riprap would be placed at the end of the drainage outlets between the high tide and low tide rock walls.
- The top of the existing bulkheads along the shore of the eastern portion of the site (former private residential parcels) will be removed to an elevation of 0.08 feet
- The properties will be regraded and revegetated. Placement of clean fill where needed; and
- A Phragmites Eradication Plan, approved by the NYSDEC, will be implemented and new native coastal vegetation will be planted.

Step 1: Determine if the proposed action is in a 100-year floodplain or wetland.

The entire project area lies within the 100-year Special Flood Hazard Area (SFHA), as indicated on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Community Panel Number 36103C0861H, dated September 25, 2009. See the attached **Figure 3**. The Project includes work along the shore of the Great South Bay identified within the USFWS National Wetland Inventory (NWI) as Estuarine and Marine Deepwater wetlands (**Figure 4**). The work will be outside of NYSDEC protected wetlands (**Figure 5**).

Step 2: Notify the public for early review of the proposal and involve the affected and interested public in the decision-making process.

Because the Proposed Action is located within the 100-year floodplain, GOSR published an early notice, that allowed for the public and public agencies to provide input on the decision to provide funding for the Proposed Action. The early public notice and 15-day comment period is complete.

The "Early Notice of Proposed Activity in a 100-Year Floodplain" was published in *The South Bay's Neighbor News* on August 14, 2019 with the 15-day period expiring on September 5, 2019. The notice targeted local residents, including those within the floodplain. (See the attached **Early Notice** and **Affidavit of Publication**). GOSR has not received comments in response to the Early Notice.

Step 3: Identify and evaluate practicable alternatives.

The primary alternative for the current Proposed Action is the "No Action" alternative. This alternative means there would be no work undertaken to alleviate on-going storm related erosion, reduce the flooding, rehabilitate the project area, or enhance the existing conditions of this disturbed shoreline. Not undertaking the Project would be inconsistent with the goals and objectives of the Village of Lindenhurst NY Rising Community Reconstruction Plan to provide storm resiliency improvements at the southern end of Shore Road Park. The No Action alternative would result in continued flooding of the Park and nearby homes. The wave action would continue to erode the shoreline damaging the Village's investment and reducing the area of the Park.

The New York State Rising Community Reconstruction Program is structured to provide eligible subrecipients resources and expertise to implement projects to enhance resiliency and reduce impacts on communities from future storms. The purpose of the Proposed Action is to reduce erosion and stabilize the shoreline as well as protect the adjacent properties by absorbing wave energy, trapping sediments, and moderating the effects of storms and floods as described in the "Description of the Proposed Project" section. Therefore, there are no other alternative locations for the project.

Due to the nature of the Proposed Activity, prohibition of this work within a floodplain is not possible. The protection and enhancement of the waterfront park, a functionally dependent use as defined in *24 CFR Part 55: Floodplain Management and Protection of Wetlands*, can only occur through interventions located in the floodplain. The above identified alternatives will be re-evaluated in response to public comments received.

Step 4: Identify and describe the proposed action's direct and indirect effects associated with occupying or modifying the floodplain or wetland.

The site is within the 100-year floodplain of the Great South Bay. A total of approximately 1.1 acres of previously disturbed floodplain would be affected by the Project. The focus of floodplain evaluation should be on positive and negative impacts to lives and property, and on natural and beneficial floodplain values

According to the FEMA Report - *A Unified National Program for Floodplain Management*, two definitions commonly used in evaluating actions in a floodplain are "structural" and "non-structural" activities. Per the report, structural activity is usually intended to mean adjustments that modify the behavior of floodwaters through the use of measures such as public works dams, levees and channel work. Non-structural is usually intended to include all other adjustments (e.g., regulations, insurance, etc.) in the way society acts when occupying or modifying a floodplain. These definitions are used in describing impacts that may arise in association with potential advancement of the Project.

Surface disturbance in the floodplain associated with the Project includes the entire 1.1 acres of the shoreline (**Figure 2**). The project activities that could affect the floodplain include removal of existing concrete and asphalt debris along the shoreline, construction of the high- and low-tide rock sills, the sitting wall, and new drainage outlets, and the potential removal of the asphalt road surface at the east end of the site.

The area along the shoreline where the lower rock sill will be placed currently contains concrete and asphalt debris, which will be removed as part of the proposed improvements. The project will remove concrete, asphalt and other debris from approximately 500 feet of shoreline from the 0-foot water line out to a depth of approximately 1 foot.

Both rock sills will be constructed in the floodplain. Their construction will involve the excavation of a up to a 24-inch trench, placement of a geotextile, with 8 to 12 inches of crushed 3-inch stone to provide the base for the boulders that will make up the rock sills. The rock sill will be composed of stones which are selected with the input of the regulatory agencies to ensure the appropriate size for the site conditions. The sitting wall will involve the same base/footing as the rock sills but will be made up of large 2 to 3-foot square boulders.

The lower rock sill component of the project and the ends of the drainage outlets are the only features which would involve fill material in the waterway. The lower rock sill wall will involve the placement of 15,168 cubic yards of large rock below the spring high tide line. The precise location of the lower rock sill requires placement within the waterway in order to provide the effectiveness of an engineered living shoreline.

The concrete headwalls at the drainage outlets will each require 34 cubic yards of concrete. These headwalls will be located between the high tide and low tide rock sills. A total of 25 cubic yards of riprap would be placed at the end of the drainage outlets to prevent erosion of the area between the high tide and low tide rock walls.

The existing impermeable surfaces associated with the Project include the south end of South Bay Street and the east end of Bayview Avenue West. These asphalt surfaces are planned to be replaced with gravel road surface resulting in a slight increase in permeability of the site. This would be a positive change in the existing impermeable surface.

The construction of the construction of the high- and low-tide rock sills, the sitting wall, and new drainage outlets, and the potential removal of the asphalt road surface would result in long-term changes to the floodplain. Anticipated benefits of the improvements include improved water quality, habitat creation, erosion control, aesthetic improvements, and improved passive recreation accessibility. The improved drainage system with tide check valves will reduce upland flooding during tidal storms.

The project location is in wetlands that are designated as within estuarine/ marine deep-water (USFWS) and within the 300-foot buffer zone of tidal wetlands (NYSDEC). These tidal wetlands and deep-water estuarine wetlands along the coast can serve to absorb the force of storm waters and tidal erosion. These areas help protect upland soil and freshwater resources. The purpose of wetland evaluation is to consider factors relevant to a proposal's effect on the survival and quality of the wetland. These factors should include public health, maintenance of natural systems, cost increases attributed to construction in wetlands, and other uses of wetlands in the public interest.

South of the ballfields the Proposed Activity seeks to preserve, protect, and restore the sensitive wetlands though the creation of a living shoreline, protective rock sill, and plantings landward of the mean high tide. The vegetation and soil located along the parks southern edge has been eroded and the turf ballfield and fence have been damaged. The Proposed Activity has been designed to mitigate erosion to an existing Village waterfront park, enhance the community's ability to withstand and rebound quickly from coastal storm events, and prevent the continuation of the loss of developed park property.

The removal of the top of the existing bulkheads along the shore of the eastern portion of the site will occur in the area designated as NWI Intertidal Marsh (IM). While some of the work will take place in the wetland area, the disturbance will be temporary, and the long-term effects will include returning the overall area to a more natural state.

The Proposed Activity will mechanically remove existing invasive plants, Phragmites, and plant Spartina alterniflora in the intertidal marsh seaward of mean high water and plant Spartina patens in the high marsh environment landward of mean high water in accordance with a NYSDEC approved planting plan as requested by the NYSDEC in their June 27, 2019 and October 28, 2019 correspondence. This will improve the natural habitat within the floodplain and wetlands providing improved functionality of these valuable assets.

The disturbance of this area would occur during project construction and would cease once construction is completed. An NYSDEC permit will be obtained for disturbance of tidal wetlands, excavation and fill in navigable waters, and discharge into the navigable waters. No long -term disturbance of tidal wetlands would occur, and the benefits and functional values of these areas would be enhanced.

Surface disturbance associated with the Project includes the entire 1.1 acres of the shoreline. The area of disturbance would not adversely affect the beneficial values of the floodplain, wetland or lives and property.

The occupancy and development of this floodplain occurred over 50 years ago, and the area remains a suburban community today. Considering the context of the area, this action represents an activity at one area that is located within contiguous floodplain. Thus, funding this project/ activity does constitute indirect continued support of floodplain occupancy and development.

Step 5: Identify methods to minimize the potential adverse impacts within a floodplain and wetland and to restore and preserve the natural and beneficial values.

The purpose of the Proposed Activity is to restore and preserve the natural and beneficial functions and values of the floodplain and wetlands at Shore Road Park and prevent further erosion and damage to the adjacent properties. During the planning phase the residents of Lindenhurst public meetings were held to identify areas where future storm damage is a concern and known flooding locations and to address concerns of residents. This project was identified through those meetings as a location where interventions were needed to minimize flooding and reduce flood damage while limiting future repair costs and risks. Improved flood management and resilience at Shore Road Park will improve the protection of community assets, including public infrastructure, open spaces, and adjacent homes. By reducing the risk of flooding to these assets, future costs of reconstruction and recovery can be reduced. The proposed resilient design standards will enable the Village and community homeowners and businesses to reduce maintenance and flood repair costs.

Reduced flood risk will also increase the overall attractiveness of the park as both a passive and active recreational asset in the community. This will encourage more social interaction as well as community understanding of the value of parks and open spaces.

The project will mechanically remove existing invasive plants, Phragmites, and create sections of living shoreline with stone and native high marsh and low marsh plant species, in accordance with a NYSDEC approved planting plan (see the Phragmites Eradication Plan in Appendix B, Site Plans). This will improve the natural habitat within the floodplain and wetlands providing improved functionality of these valuable assets.

Because the Park's shoreline that would be disturbed is already in the floodplain and the Park must remain there to provide public recreation, open space, and access to the shore, the Project site must

be located in the floodplain. The Project is designed to minimize permanent disturbance of the floodplain, but the rock sills, sitting wall, and drainage outlets will be a long-term change to the current floodplain. The purpose of the is to mitigate the current flooding and erosion that result from storms. This purpose cannot be achieved without long-term changes to the current conditions. The removal of concrete and asphalt debris from the shore and the replacement of a small amount of paved road with gravel road would be result in positive long-term effects on the floodplain.

The Project would not disturb the NYS-designated tidal-coastal wetlands but is within 300 feet of these wetlands. The project location is in NWI wetlands that are designated as within estuarine/ marine deep-water. The removal of concrete and asphalt debris, construction of lower rock sill, construction of drainage outlets, and the removal of the top of the existing bulkheads would involve work in the NWI wetlands. The grading of the site onshore of the bulkheads and planting of the site with native vegetation will restore tidal flow and restore the site to more natural conditions.

An application for a U.S. Army Corps of Engineers/NYSDEC/NYSDOS Join Permit Application for Section 10 Rivers & Harbors Act (applicable per the bulkhead structures being modified, and the rock sills) and Section 404 Clean Water Act (applicable per the rock sill and the drainage outlets which are considered filling) has been submitted and will be approved before construction may begin. Permit conditions include actions protective of floodplains, wetlands and nature.

While the project activities will not take place in an NYSDEC wetland, an Article 25, Tidal Wetland Permit is required for projects occurring in lands immediately adjacent, within 300 feet of designated tidal wetlands. A NYSDEC Tidal Wetlands Permit will be obtained prior to construction.

The overall project site is greater than 1 acre, so prior to construction, the appropriate permit would be obtained in accordance with NYSDEC stormwater discharge from construction activities regulations. A stormwater pollution prevention plan (SWPPP) would be prepared for the Project. It will describe the use of best management practices to control runoff during construction, which would mitigate any temporary effects on the wetland areas.

No changes in land use would occur as a result of the Proposed Activity. The restoration of the sensitive wetlands though the creation of a living shoreline, protective rock sill, and plantings between the rock sills and landward of the mean high tide will provide beneficial impacts to the wetland.

Step 6: Reevaluate the proposed action to determine if it is still practicable given its floodplain effects.

No changes in land use would occur as a result of the Project. Removal of the concrete and asphalt debris, construction of the low-tide sill wall, and the removal of the top of the existing bulkheads would involve temporary impacts in the in the floodplain and NWI wetlands.

The removal of concrete and asphalt debris from the shore and the replacement of a small amount of paved road with gravel road would be result in positive long-term effects on the floodplain. The installation of the rock sills, sitting wall, and drainage outlets will be a long-term change to the current floodplain. Along with the planting of native vegetation these log-term changes will mitigate the current flooding and erosion that result from storms and restore and preserve the natural and beneficial functions and values of the floodplain and wetlands at Shore Road Park.

The Project will increase the natural and beneficial floodplain values of the floodplain or lives and property, particularly with the respect to the beneficial increase in the community's resiliency. As

a result, the proposed action is still practicable.

As noted in response to Step 3, due to the nature of the Proposed Activity, prohibition of this work within a floodplain is not possible. The protection and enhancement of the waterfront park, a functionally dependent use as defined in *24 CFR Part 55: Floodplain Management and Protection of Wetlands*, can only occur through interventions located in the floodplain. The Proposed Action is an enhancement over existing conditions.

Step 7: Determination of No Practicable Alternative

It is the finding of this report that there is no practicable alternative to locating the Proposed Action in the floodplain. The location within floodplain cannot be avoided to provide flooding and wave action protection to the Shore Road Park shoreline.

A combined Notice of Intent to Release Funds (NOIRROF)/final public notice was published in *The South Bay's Neighbor News* newspaper by the Governor's Office of Storm Recovery on November 20, 2019, in compliance with Executive Order 11988 and 24 CFR Part 55. The final notice details the reasons why the project must be located in wetlands, a list of alternatives considered, and all mitigation measures taken to minimize adverse impacts and preserve natural and beneficial values of the wetlands. All comments received during the comment period will be addressed prior to funds being committed to the proposed project. The comment period started with the Notice of Intent to Release Funds (NOIRROF)/final public notice on November 20, 2019. The comment period for the Final Notice is 7 days, which expires at 5pm on December 5, 2019.

Step 8: The proposed action can be implemented after the above steps have been completed.

GOSR, operating under the auspices of the New York State Homes and Community Renewal's (NYSHCR) Housing Trust Fund Corporation, is the responsible entity. GOSR will ensure that the Proposed Action, as described above, is executed and necessary language will be included in all agreements with participating parties. Implementation of the proposed action may require additional local and state permits, which could place additional design modifications or mitigation requirements on the Project. It is acknowledged there is a continuing responsibility by the responsible entity to ensure, to the extent feasible and necessary, compliance with Steps 5 through 7.

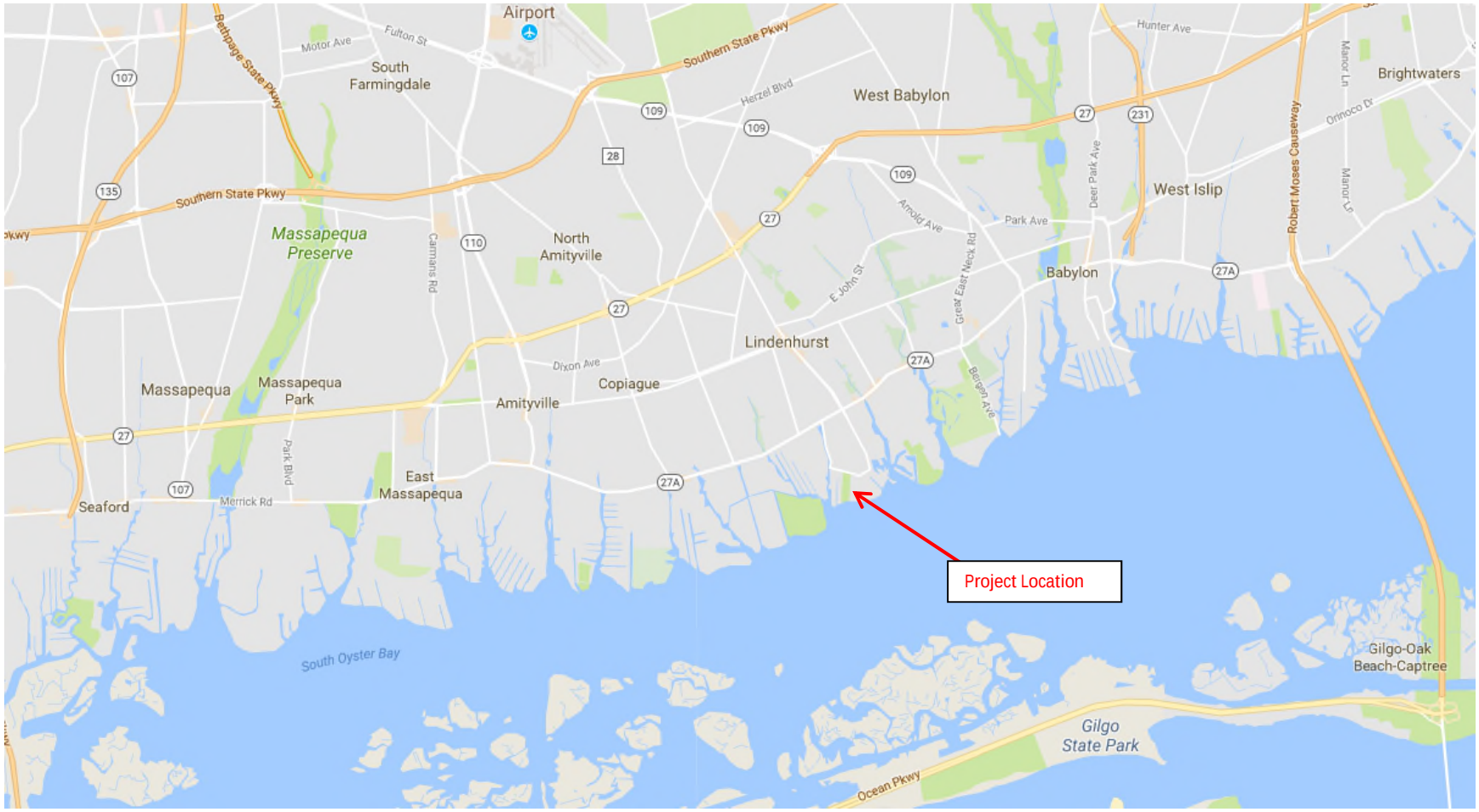


Figure 1. Site Location

Path: C:\projects\Lindenhurst Shore Road Waterfront Park Improvements HUD EA 103P359237\GIS\Lindenhurst Shore Road Waterfront Park Improvements - Project Area2.mxd

Project Area

Shore Road Park
Lindenhurst, Suffolk County, New York

Legend

Project Area

Tetra Tech, Inc

National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000

FEET

METER

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0861H

FIRM

FLOOD INSURANCE RATE MAP

for SUFFOLK COUNTY, NEW YORK
(ALL JURISDICTIONS)

CONTAINS:

COMMUNITY	NUMBER
BABYLON, TOWN OF	360790
LINDENHURST, VILLAGE OF	360798

PANEL 861 OF 1026
MAP SUFFIX: H
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
36103C0861H

MAP REVISED
SEPTEMBER 25, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Path: C:\Projects\Lindenhurst Shore Road Waterfront Park Improvements HUD EA 103P359237\GIS\Lindenhurst Shore Road Waterfront Park Improvements - Flood Zones.mxd

Flood Zones

Shore Road Park
Lindenhurst, Suffolk County, New York

Legend

- Project
- Zone AE- within the 1% annual chance
- Zone VE- within the 1% annual chance flood: coastal flood zone with velocity hazard
- Open Water

Tetra Tech, Inc

Shore Road Waterfront Park Natural Systems Resiliency Improvements

Floodplain and CBRS

0 0.02 0.04 0.08 Miles

Sources of Data: USFWS, FEMA, ESRI, State of NY

Governor's Office of Storm Recovery
Drawn By: R.Ferres
Version: 1.1
Date: 05/16/2017

Path: C:\Projects\Lindenhurst Shore Road Waterfront Park Improvements HUD EA 103P359237\GIS\Lindenhurst Shore Road Waterfront Park Improvements - NYS Freshwater and NWI Wetlands.mxd

Legend

- Project Area
- NYS Freshwater Wetlands
- NYS Freshwater Wetlands Buffer

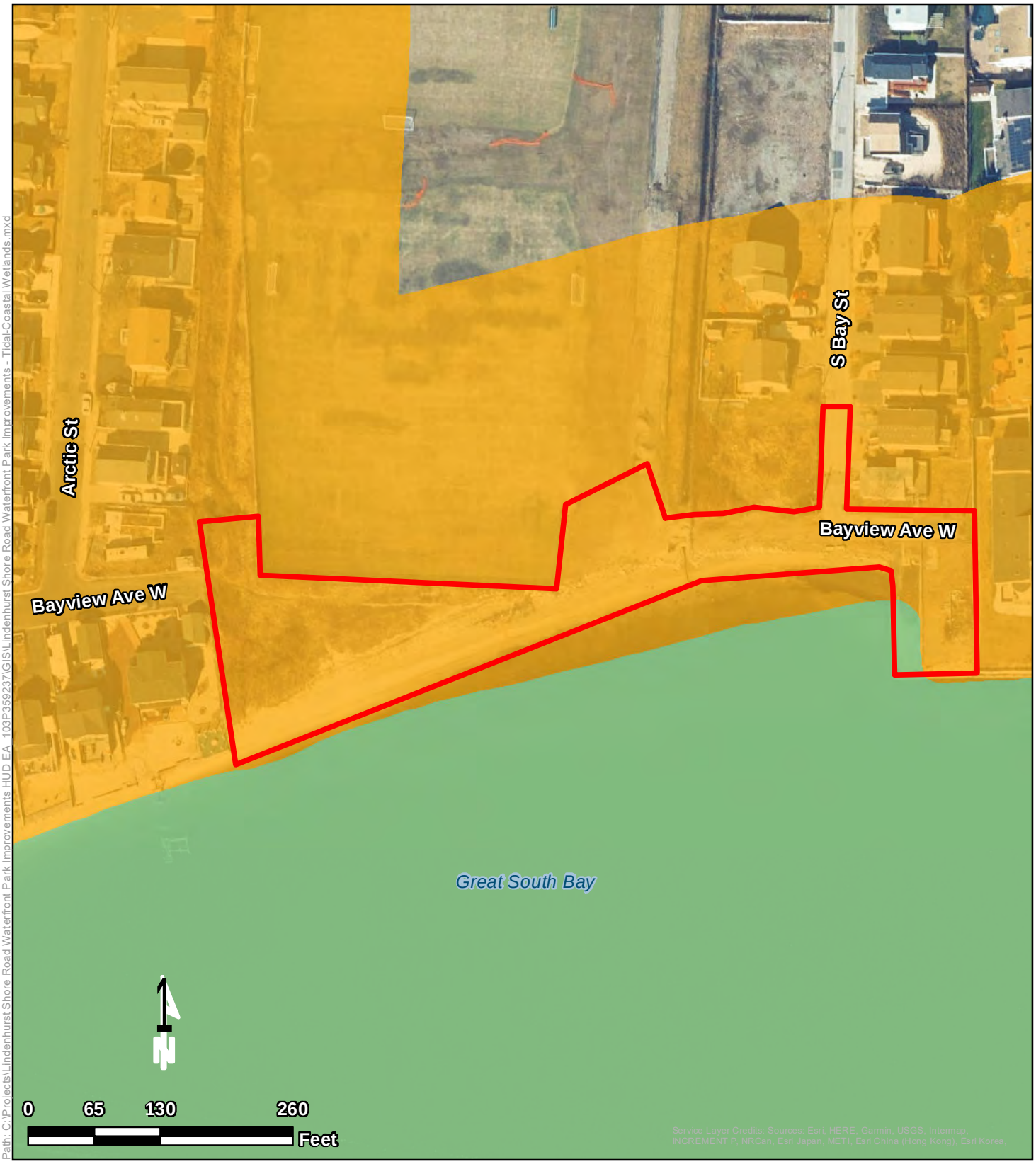
NWI Wetlands

- Estuarine and Marine Deepwater

NYS Freshwater and NWI Wetlands

Shore Road Park
Lindenhurst, Suffolk County, New York

Tetra Tech, Inc



Path: C:\Projects\Lindenhurst Shore Road Waterfront Park Improvements HUD EA 103P359237\GIS\Lindenhurst Shore Road Waterfront Park Improvements - Tidal-Coastal Wetlands.mxd

Legend

- Project Area
- Tidal - Coastal Wetlands
- Tidal - Coastal Wetlands 300ft Buffer

Tidal-Coastal Wetlands

Shore Road Park
Lindenhurst, Suffolk County, New York

Tetra Tech, Inc

Shore Road Waterfront Park Natural Systems Resiliency Improvements

Wetlands

0 0.0275 0.055 0.11 Miles

Sources of Data: USFWS, FEMA, ESRI, State of NY

Governor's Office of Storm Recovery
Drawn By: R.Ferres
Version: 1.1
Date: 05/16/2017

Shore Road Waterfront Park Natural Systems Resiliency Improvements

Sources of Data: USFWS, FEMA, ESRI, State of NY

0 0.0225 0.045 0.09 Miles

State Protected Waterbodies

Governor's Office of Storm Recovery

Drawn By: R.Ferres
Version: 1.1
Date: 01/03/17

EARLY NOTICE OF A PROPOSED ACTIVITY
IN A 100-YEAR FLOODPLAIN

SHORE ROAD WATERFRONT PARK
NATURAL RESILIENCY IMPROVEMENTS PROJECT
VILLAGE OF LINDENHURST, SUFFOLK COUNTY, NEW YORK
August 14, 2019

To: All interested Agencies, Groups, and Individuals

This is to give notice that the Governor's Office of Storm Recovery (GOSR), an office of the New York State Housing Trust Fund Corporation (HTFC), has received an application from the Village of Lindenhurst to implement storm resiliency improvements and public access improvements at the southern end of Shore Road Park (hereinafter, the "Proposed Activity") and 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 (24 CFR Part 55). There are three primary purposes for this notice. First, to provide the public an opportunity to express their concerns and share information about the Proposed Activity. Second, adequate public notice is an important public education tool. The dissemination of information about floodplains facilitates and enhances governmental efforts to reduce the risks associated with the occupancy and modification of these special areas. Third, as a matter of fairness, when the government determines it will participate in actions taking place in floodplains, it must inform those who may be put at greater or continued risk. Funding for the Proposed Activity will be provided by the HUD Community Development Block Grant – Disaster Recovery (CDBG-DR) program for storm recovery activities in New York State.

The Village of Lindenhurst proposes to design and implement storm resiliency improvements and public access improvements at the southern end of Shore Road Park, in the Village of Lindenhurst, Town of Babylon, Suffolk County, NY. The entire project area lies within the 100-year Special Flood Hazard Area (SFHA), as indicated on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Community Panel Number 36103C0861H, dated September 25, 2009.

The Proposed Activity project would involve the southern 1.2 acres of the 10.2-acre Park and would include; construction of two rock sills along the shore placed at the low and high tide lines to provide protection during wave action at either tide cycle, a concrete sitting wall as part of the high tide rock sill, a gravel road with a gated entry at the southern end of S. Bay Street, living shoreline landscaping, a rain garden, extension of drainage outlets, removal of the top of the existing bulkheads along the shore of the eastern portion of the site (former private residential parcels), and placement of clean fill and riprap where needed.

A total of approximately 1.2 acres of previously disturbed floodplain would be disturbed by the Project. There would be a positive change in the existing impermeable surface, which would be the only long-term effect on the floodplain. The floodplain area in the Project site is previously disturbed by the existing road, two previously residential parcels, and the previous development of the park. The disturbance of this area would occur during project construction and would cease once construction is completed. A small portion of the adjacent park (0.1-acre) may be temporarily used for material storage and site office trailer. An NYSDEC permit will be obtained for disturbance of tidal wetlands, excavation and fill in navigable waters, and discharge into the navigable waters. No long -term disturbance of tidal wetlands would occur, and the benefits and functional values of

these areas would be preserved.

Floodplain maps 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 and are available for review with additional information at http://www.stormrecovery.ny.gov/environmental-docs.

Any individual, group, or agency may submit written comments on the Proposed Activity or request further information by contacting Lori A. Shirley, Certifying Officer, Governor's Office of Storm Recovery, 99 Washington Avenue, Suite 1224, Albany, NY 12260; email: NYSCDBG_DR_ER@nyshcr.org. Standard office hours are 9:00 AM to 5:00 PM Monday through Friday. For more information call 518-474-0755. All comments received by August 22, 2019 will be considered.

Governor's Office of Storm Recovery

ANDREW M. CUOMO
Governor

PUBLIC NOTICE

COMBINED FINAL NOTICE AND PUBLIC REVIEW OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN, NOTICE OF FINDING OF NO SIGNIFICANT IMPACT, AND NOTICE OF INTENT TO REQUEST RELEASE OF FUNDS

Shore Road Waterfront Park Natural Resiliency Improvements Project

November 20, 2019

Name of Responsible Entity and Recipient: New York State Homes and Community Renewal (HCR), 38-40 State Street, Hampton Plaza, Albany, NY 12207, in cooperation with the New York State Housing Trust Fund Corporation (HTFC), of the same address. Contact: Lori A. Shirley (518) 474-0755.

Pursuant to 24 CFR Section 58.43, this combined Final Notice and Public Review of a Proposed Activity in a 100-year Floodplain and Wetland, Notice of Finding of No Significant Impact and Notice of Intent to Request Release of Funds (FONSI/NOIRROF) satisfies three separate procedural requirements for project activities proposed to be undertaken by HCR.

Project Description: The Governor's Office of Storm Recovery (GOSR), an office of HCR's HTFC, is responsible for the direct administration of the United States Department of Housing and Urban Development (HUD) Community Development Block Grant – Disaster Recovery (CDBG-DR) program in New York State. GOSR proposes to provide CDBG-DR funding to the Village of Lindenhurst proposes to design and implement storm resiliency improvements and public access improvements at the southern end of Shore Road Park, in the Village of Lindenhurst, Town of Babylon, Suffolk County, NY (the "Proposed Project"). The proposed project will provide shoreline protection enhancements that will reduce erosion and stabilize the Bayfront as well as protect adjacent property by absorbing wave energy, trapping sediments, and slowing stormwater runoff to moderate the effects of storms and floods.

Shore Road Park is a 10.2-acre site located at the southern edge of the Village of Lindenhurst on the shore of the Great South Bay. This area is one of the few remaining natural public sections of bayfront within the Village. The park is owned, operated, and maintained by the Village of Lindenhurst and is utilized for seasonal recreational activities and community events. The entire park is within the 100-year floodplain.

The park as well as nearby residential neighborhoods were subject to major flooding from the Great South Bay as well as nearby canals. This flooding resulted in catastrophic damage to hundreds of homes, many of which remain in various states of repair or abandonment.

The proposed project would involve the southern 1.1 acres of the 10.2-acre Park. The project includes:

- Construction of two rock sills along the shore placed at the low and high tide lines with the high-tide sill including a stabilized rock sitting wall;

- Construction of a gravel road with a gated entry at the southern end of South Bay Street for emergency access;
- Sand and living shoreline vegetation will be placed between the two rock sills and upland landscaping will be placed above the high tide wall;
- Extension of existing drainage outlets and the addition of tide check valves and riprap at the outfall;
- Removal of the top of the existing bulkheads along the former private residential parcels;
- Regrading and revegetation of the former private residential parcels; and
- Implementation of a NYSDEC approved Phragmites Eradication Plan.

Approximately 1.1 acres will be disturbed. The estimated project cost is $2,278,806.

PUBLIC EXPLANATION OF A PROPOSED ACTIVITY IN A 100-YEAR FLOODPLAIN AND WETLAND

This work will be located in 100-year floodplain (SHFA Zone AE). Since the action will include new construction in a floodplain, Executive Order 11988 requires that the project not be supported if there are practicable alternatives to development in floodplain and new construction in wetlands.

The disturbance of this area would occur during project construction and would cease once construction is completed. The Proposed Activity will result in permanent impacts to approximately 1.1 acres of 100-Year Floodplain. The project activities that could affect the floodplain include removal of existing concrete and asphalt debris along the shoreline, construction of the high- and low-tide rock sills, the sitting wall, and new drainage outlets, and the potential removal of the asphalt road surface at the east end of the site. The construction of the construction of the high- and low-tide rock sills, the sitting wall, and new drainage outlets, and the potential removal of the asphalt road surface would result in long-term changes to the floodplain. Anticipated benefits of the improvements include improved water quality, habitat creation, erosion control, aesthetic improvements, and improved passive recreation accessibility. The improved drainage system with tide check valves will reduce upland flooding during tidal storms.

The project location is in wetlands that are designated as within estuarine/ marine deep-water (USFWS) and within the 300-foot buffer zone of tidal wetlands (NYSDEC). The removal of the top of the existing bulkheads along the shore of the eastern portion of the site will occur in the area designated as NWI Intertidal Marsh (IM). While some of the work will take place in the wetland area, the disturbance will be temporary, and the long-term effects will include returning the overall area to a more natural state. The Proposed Activity will mechanically remove existing invasive plants, Phragmites, and plant Spartina alterniflora in the intertidal marsh seaward of mean high water and plant Spartina patens in the high marsh environment landward of mean high water in accordance with a NYSDEC approved planting plan. This will improve the natural habitat within the floodplain and wetlands providing improved functionality of these valuable assets.

The disturbance of this area would occur during project construction and would cease once construction is completed. An NYSDEC permit will be obtained for disturbance of tidal wetlands, excavation and fill in navigable waters, and discharge into the navigable waters. No long -term disturbance of tidal wetlands would occur, and the benefits and functional values of these areas would be enhanced.

Surface disturbance associated with the Project includes the entire 1.1 acres of the shoreline. The area of disturbance would not adversely affect the beneficial values of the floodplain, wetland or lives and property.

There are three primary purposes for this notice. First, people who may be affected by activities in floodplains and those who have an interest in the protection of the natural environment have 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 and request for public comment about floodplains/ wetlands can facilitate and enhance 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/ wetlands, it must inform those who may be put at greater or continued risk.

FINDING OF NO SIGNIFICANT IMPACT

An Environmental Assessment (EA) for the Proposed Project has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) and HUD environmental review regulations at 24 CFR Part 58. The EA is incorporated by reference into this FONSI. Subject to public comments, no further review of the Proposed Project is anticipated. HCR has determined that the EA for the project identified herein complies with the requirements of HUD environmental review regulations at 24 CFR Part 58. HCR has determined that the Proposed Project will have no significant impact on the human environment and therefore does not require the preparation of an environmental impact statement under NEPA.

Public Review: Public viewing of the EA and Floodplain Management & Protection of Wetlands Determination Documents is available online at http://stormrecovery.ny.gov/environmental-docs and is also available in person Monday – Friday, 9:00 AM – 5:00 PM at the following address: Governor's Office of Storm Recovery, 500 Bi-County Boulevard, Suite 300, Farmingdale, NY 11735. Contact: James P. McAllister: (631) 465-9677.

Further information may be requested by writing to the above address, emailing NYSCDBG_DR_ER@nyshcr.org or by calling (518) 474-0755. This combined notice is being sent to individuals and groups known to be interested in these activities, local news media, appropriate local, state and federal agencies, the regional office of the U.S. Environmental Protection Agency having jurisdiction, and to the HUD Field Office, and is being published in a newspaper of general circulation in the affected community.

Public Comments on the Proposed Activity within a Floodplain and/or NOIRROF: Any individual, group or agency may submit written comments on the Proposed Project. The public is hereby advised to specify in their comments which "notice" their comments address. Comments should be submitted via email, in the proper format, on or before December 5, 2019 at NYSCDBG_DR_ER@nyshcr.org. Written comments may also be submitted at the following address, or by mail, in the proper format, to be received on or before December 5, 2019: Governor's Office of Storm Recovery, 38-40 State Street, Albany, New York 12207. All comments must be received on or before 5pm on December 5, 2019 or they will not be considered. If modifications result from public comment, these will be made prior to proceeding with the expenditure of funds.

REQUEST FOR RELEASE OF FUNDS AND CERTIFICATION

On or about December 6, 2019, the HCR certifying officer will submit a request and certification to HUD for the release of CDBG-DR funds as authorized by related laws and policies for the purpose of implementing this part of the New York CDBG-DR program.

HCR certifies to HUD that Lori A. Shirley, in her capacity as Certifying Officer, consents to accept the jurisdiction of the U.S. federal courts if an action is brought to enforce responsibilities in relation to the environmental review process and that these responsibilities have been satisfied. HUD's approval of the certification satisfies its responsibilities under NEPA and related laws and authorities and allows GOSR to use CDBG-DR program funds.

Objection to Release of Funds: HUD will accept objections to its release of funds and GOSR's certification for a period of fifteen days following the anticipated submission date or its actual receipt of the request (whichever is later). Potential objectors may contact HUD or the GOSR Certifying Officer to verify the actual last day of the objection period.

The only permissible grounds for objections claiming a responsible entity's non-compliance with 24 CFR Part 58 are: (a) Certification was not executed by HCR's Certifying Officer; (b) the responsible entity has omitted a step or failed to make a decision or finding required by HUD regulations at 24 CFR Part 58; (c) the responsible entity has committed funds or incurred costs not authorized by 24 CFR Part 58 before release of funds and approval of environmental certification; or (d) another Federal agency acting pursuant to 40 CFR Part 1504 has submitted a written finding that the project is unsatisfactory from the standpoint of environmental quality.

Objections must be prepared and submitted in accordance with the required procedures (24 CFR Part 58) and shall be addressed to Tennille Smith Parker, Director, Disaster Recovery and Special Issues Division, Office of Block Grant Assistance, U.S. Department of Housing & Urban Development, 451 7th Street SW, Washington, DC 20410, Phone: (202) 402-4649.

Lori A. Shirley
Certifying Officer
November 20, 2019

APPENDIX E

CONTAMINATION AND TOXIC SUBSTANCES

Legend

- Project Area
- One Mile Project Area Buffer
- State Superfund Program

Remediation Sites

Shore Road Park
8 Bay Street, Lindenhurst NY 11757

PARS ENVIRONMENTAL
a Montrose Environmental Group company

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Environmental Site Remediation Database Search Details

Site Record

Administrative Information

Site Name: Active Industrial Uniform
Site Code: 152125
Program: State Superfund Program
Classification: 02
EPA ID Number:

Location

DEC Region: 1
Address: 63 West Merrick Road
City: Lindenhurst Zip: 11757
County: Suffolk
Latitude: 40.67739953
Longitude: -73.36536814
Site Type: STRUCTURE
Estimated Size: 1 Acres

Institutional And Engineering Controls

Control Type:
Decision Document

Control Elements:
Groundwater Treatment System
Soil Management Plan
Groundwater Containment
Fencing/Access Control
Monitoring Plan
Site Management Plan
O&M Plan

Site Owner(s) and Operator(s)

Current Owner Name: AmeriPride Services, Inc.
Current Owner(s) Address: 650 Industrial Blvd NE
Minneapolis,MN, 55413
Current On-Site Operator: AMERICAN LINEN SUPPLY
Stated Operator(s) Address: 63 W. MERRICK ROAD
LINDENHURST,NY 11757

Hazardous Waste Disposal Period

From: 1975 **To:** 1987

Site Description

Location: The Active Industrial Uniform site is situated on a one-half acre parcel of land at 63 West Merrick Road (a.k.a. West Montauk Highway, or State Route 27A) in a suburban area. The site is approximately 100 yards west of South Wellwood Avenue. Little Neck Creek is approximately 800 feet to the southwest of the site. Site Features: The site is comprised of a 35'x35' treatment shed with associated air stripping towers and carbon vessels; the remnants of two concrete floor slabs (east, northwest) where one-story concrete block buildings were formerly located (both buildings were demolished in February 1995); and a macadam parking area with driveway access from the south (Tompkins Lane). The site has been hydroseeded and planted. A fence with locked gate completely surrounds the property. Current Zoning and Land Use: The site is located in a heavily urbanized mixed use commercial/residential area of Lindenhurst. Land use to the east, west and north (across West Merrick Road) is predominantly commercial, and to the south is predominantly residential. The majority of the Active Industrial Uniform property (3 parcels) is zoned business. There is no current industrial or residential use of the site other than the automated operation of the groundwater extraction and treatment system. Past Use of the Site: This facility operated as a dry cleaner and laundry. Dry cleaning operations began in 1970 and ceased in 1987. The history of this site shows that there were two dry cleaning solvent storage areas: an underground solvent storage tank located on the northwest corner of the property that was removed in 1985, and two above ground solvent storage tanks that were located on a concrete pad near the southwest corner of the property and were removed in October of 1987. A site assessment revealed two areas of tetrachloroethene (PCE) soil and groundwater contamination. Water samples from monitoring wells show elevated levels of 1,1,1-trichloroethane at 5300 ppb, 1,1- dichloroethane at 9700 ppb, tetrachloroethene at 18,000 ppb and trichloroethene at 3600 ppb. All of these solvents were also found in the contaminated soil. Operable Units(s): The site consists of two operable units. An operable unit (OU) represents a portion of a remedial program for a site that for technical or administrative reasons can be addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination. Operable Unit 1 (OU1) addresses the removal of contaminated soil on the site through the excavation of drywells and surrounding material. It also included ex-situ treatment of groundwater underlying the site and any plume offsite. Operable Unit 2 (OU2) includes a sub-slab depressurization system for soil vapor mitigation at one residence. Site Geology and Hydrogeology: Depth to groundwater was approximately 7 feet below ground surface, as measured during a November 2007 sampling event. Based on historical borings logs and observations from shallow hand auger soil vapor points installed during the 2007/2008 soil vapor evaluation, the upper ten feet of overburden in the vicinity of the site is typified by loose medium to coarse sand. The ground surface and uppermost overburden varies from disturbed native sand to topsoil, silty sand, or asphalt. The groundwater flow is southwest towards Little Neck Creek.

Contaminants of Concern (Including Materials Disposed)

Contaminant Name/Type
tetrachloroethene (PCE)
1,1-dichloroethane
1,1 dichloroethene
methylene chloride
1,1,1-TRICHLOROETHANE (TCA)
TRICHLOROETHYLENE (TCE)

Site Environmental Assessment

The primary contaminant of concern at the site is tetrachloroethene. Investigations indicated a plume of groundwater contamination heading southwest toward Little Neck Creek. Exceedances of standards, criteria and guidance include tetrachloroethene in groundwater and soil guidance values. Contaminated soil was removed in the winter of 2000-2001, the spring of 2010, and the summer of 2011. Operation of the groundwater pump and treat system has been successful in capturing, treating and preventing any further migration of high levels of dry cleaning compounds within the shallow groundwater. Analysis of deeper groundwater samples taken from MW-4D (screened 60'-70' bgs) in June and July 2012 indicated PCE contamination in the groundwater at 110,000 and 89,000 ug/L and TCE contamination at 8,900 and 7,500 ug/L, respectively. Sampling of the same MW-4D well on September 27, 2012 indicated a PCE contamination in the groundwater at 110,000 ug/L and TCE contamination at 9,700 ug/L. A Remedial System Optimization was performed that included groundwater and soil sampling downgradient of the site. The first round of sampling took place between February and March 2013. Soil samples just above a Gardiner's Clay confining unit (68-70' bgs) exhibited conentrations of PCE at 14,000 mg/kg and TCE at 12 mg/kg. A second round of sampling utilizing a Membrane Interface Probe (MIP) tool-string (June-July 2014) identified a localized area of remaining contamination just above the Gardiner's Clay formation immediately south of the site. On February 4, 2005 the site was identified for further investigation pertaining to soil vapor. Soil vapor intrusion evaluations were initiated in April 2006. A soil vapor intrusion evaluation was completed on July 29, 2008. The evaluation indicated that a Sub-Slab Depressurization System (SSDS) be installed at 2 locations. One residence opted for installation, that system was installed in June 2009. The second property owner refused installation. When operational, the Groundwater Extraction & Treatment System (GWE&TS) onsite extracts and treats approximately 50 - 100 gpm of shallow groundwater (screened 10'-35' bgs)in the vicinity of the site. Onsite shallow groundwater monitoring indicates remaining contamination in the range of 0.32 to 49 ug/L (April 2017). The area is serviced by public drinking water from the Suffolk County Water Authority (SCWA), which obtains its water from wells located approximately one mile north of the site. As the flow across the site is generally southwest there is no impact expected at the SCWA well field.

Site Health Assessment

Contaminated groundwater and soil gas have migrated to residential areas. No public drinking water supply wells exist downgradient of the site. Public water has served the area since the 1950's. A residential information survey found one well used for irrigation, but this use has been discontinued due to contamination detected. Some downgradient residences contain basements that flood intermittently. A few basements contain living space (i.e., bedroom, family room, exercise room). A soil gas study in the residential area found low vapor levels. NYSDOH and NYSDEC will evaluate the need to conduct additional investigations to determine the potential for soil vapor intrusion into structures on or near the site.

For more Information: E-mail Us

Refine This Search

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Environmental Site Remediation Database Search Details

Site Record

Administrative Information

Site Name: Bullet Proof Equipment
Site Code: 152240
Program: State Superfund Program
Classification: N *
EPA ID Number:

Location

DEC Region: 1
Address: 71 W. Montauk Highway
City: Lindenhurst Zip: 11757
County: Suffolk
Latitude: 40.677415867
Longitude: -73.365807812
Site Type:
Estimated Size: 0.07 Acres

Site Owner(s) and Operator(s)

Current Owner Name: Espos Auto Body
Current Owner(s) Address: 269 Cortland St
Lindenhurst,NY, 11757
Current Owner Name: Robs Towing Service, Inc.
Current Owner(s) Address: 417 4th St
Lindenhurst,NY, 11757
Current On-Site Operator: Otto Williams Bullet Proof Equipment
Stated Operator(s) Address:
,NY

Site Description

Location: The Bullet Proof Equipment site is situated on a 0.07 acre parcel of land at 71 West Merrick Road (a.k.a. West Montauk Highway, or State Route 27A) in the Village of Lindenhurst, Suffolk County, New York. The site is approximately 200 yards west of South Wellwood Avenue. The Great South Bay is approximately 4,000 feet to the south, and Little Neck Creek is approximately 700 feet to the southwest of the site. Site Features: The Site is approximately 3,050 square feet in area, of which approximately one half is occupied by the Site building. The rectangular, one-story building is

constructed with concrete block with a steel extension attached to the southern end of the building. A sea container is located immediately south of the steel building for additional storage, and has been modified to be directly accessible from the building interior. The limited open space outside the building is utilized for storage and parking. The surface is relatively flat and paved with concrete and asphalt. Two storm water catch basins with earthen bottoms are present to the east side of the main building. A chain-link fence with a locked gate surrounds the property to the east and south. The northern and western property boundaries are bounded by the northern and western building walls and a small portion of chain link fence. Current Use(s): The site is located in a heavily urbanized mixed use commercial/residential area of Lindenhurst. Land use to the east, west and north (across West Merrick Road) is predominantly commercial, and to the south is predominantly residential. The property that is the site is zoned commercial. The current real property class of the parcel is ¿484 - Commercial Multi-Use/Purpose (1-story building).¿ The use of the site appears to be commercial including material and equipment storage. Historic Use(s): This facility is listed as ¿Otto Williams Bullet Proof Equipment Corp.,¿ formed September 13, 1983 and dissolved on January 16, 2003. This site and associated structure may be a storage location/warehouse as it does not appear that retail sales have occurred at the property. A 2010 excavation at an adjacent site removed a concrete slab to gain access to an underground drainage network of dry wells and piping. During this excavation a portion of a UST or sewer basin (unidentifiable) belonging to the site was discovered at the eastern property boundary in the immediate area of Active Industrial Uniform (Site# 152125) groundwater observation well MW-104. No sampling was performed at that time. A June 2011 excavation at an adjacent site revealed piping (bitumenized fiber pipe, a.k.a. ¿orangeburg pipe¿ - approximate 2¿ ID) stemming from the site onto the adjacent property. Analysis of soil samples taken from the inside of the conduit indicated PCE contamination. The historical records do not indicate that any hazardous wastes were generated or disposed at the Site, nor do they indicate any previous sampling or remedial actions have been completed at the Site. In addition, the Site is not listed in any of the database records provided by EDR. Operable Units(s): The site consists of one operable unit. An operable unit (OU) represents a portion of a remedial program for a site that for technical or administrative reasons can be addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination. Operable Unit 1 (OU1) addresses the site in its entirety. Site Geology and Hydrogeology: Depth to groundwater, as determined from groundwater observation wells at the adjacent property (February 2013) is approximately 7.25 feet below ground surface. Based on recent soil borings (February 2013) attributed to the adjacent site, the overburden is a light brown to brown, fine to medium sand and is homogenous until the Gardiners Clay. The Gardiners Clay formation begins at 63' below ground surface (bgs) as identified by a shift in sand color from light brown/brown to a dark grey and the presence of white Foraminifera shell remnants. The surface of a confining clay layer was identified at 69.5' bgs. Borings were terminated at 72' bgs. Shallow groundwater flow is to the southwest towards Little Neck Creek.

Site Environmental Assessment

All site characterization field activities were completed in October 2013. On October 16 and 17, 2013, three soil borings (BPSB-01, BPSB-02, BPSB-03) were advanced in order to investigate the presence of any on-site contamination sources. On October 16, 2013, one soil boring was advanced in each of the two on-site storm water catch basins (BPSW-01, BPSW-02) in order to investigate the presence of contamination due to discharges to the basins. Two soil vapor sample probes (BPSV-01 and BPSV-02) were completed to the east of the Site building in order to characterize soil vapor quality at the Site. A number of metals, including lead (86.9 to 113 mg/kg), copper (55.1 to 61.1 mg/kg) and zinc (136 to 181 mg/kg), and one pesticide (P,P-DDT at 25 ug/kg) were detected at concentrations slightly to marginally above the Unrestricted Use SCOs, primarily in subsurface soil and sediment samples collected from just below grade or at the bottom of the two storm water catch basins. Sediment collected from the northernmost catch basin also exhibited concentrations of xylenes (850 to 2,100 ug/kg), PCE (1,400 ug/kg) and mercury (0.53 mg/kg) slightly above Unrestricted Use SCOs, likely related to storm water runoff into the catch basin. The observed soil and sediment contamination was generally minor and isolated to shallow depths less than 2 feet below the base of the catch basins, and does not suggest the presence of a significant source of on-site contamination. Sampling of the two soil vapor sample probes indicated significant concentrations of PCE in soil gas (320,000 ug/m3 to 650,000 ug/m3). The source of the soil gas PCE is most likely from contamination stemming from the historic disposal of PCE that had occurred on the adjacent property (Active Industrial Uniform, Site# 152125) and is not attributable to this site. Historically: A 2010 excavation event at an adjacent property (Active Industrial Uniform #152125); identified a UST at the property boundary, in the vicinity of a groundwater observation well that has repeatedly indicated PCE concentrations above groundwater standards. A 2011 excavation event at the same adjacent property revealed a piping system that appears to originate from a yard sewer drain on the site and travels onto the ¿Active¿ site. The piping is an orangeberg-style pipe (black tar pitch/layered paper) with numerous perforations, seemingly constructed to allow for drainage of liquid waste. Analysis of the soil contents of the drain pipe at the property boundary between the two sites indicated concentrations of PCE at 25,000 ug/kg. Final assessment of the Bullet Proof property has determined that no hazardous wastes were disposed on the property and that any contaminated media that exists on the property is likely due to the adjacent Active Industrial Hazardous Waste site and any such media will be addressed as part of the Active Industrial site remedial work.

Site Health Assessment

Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. There is a potential for soil vapor contamination originating at the neighboring Active Industrial Laundry site (#152125) to impact the indoor air of the on-site building.

This potential will be evaluated as part of the on-going remedial activities at the Active Industrial Laundry site.

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* **Class N Sites:** "DEC offers this information with the caution that the amount of information provided for Class N sites is highly variable, not necessarily based on any DEC investigation, sometimes of unknown origin, and sometimes is many years old. Due to the preliminary nature of this information, significant conclusions or decisions should not be based solely upon this summary."

For more Information: E-mail Us

Refine This Search

APPENDIX F

USFWS, NYNHP, AND NYSDEC CORRESPONDENCE

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Long Island Field Office
340 Smith Road
Shirley, NY 11967
Phone: (631) 286-0485 Fax: (631) 286-4003
http://www.fws.gov/northeast/nyfo

To: Alicia Schultz Date: 9/25/2019

USFWS File No:

Regarding your: ☒ letter ☐ FAX ☒ E-mail dated: 5/28/2019

For project: Lindenhurst Shore Rd Waterfront Park

Located:

In Town/County: Lindenhurst / Suffolk

Pursuant to the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*), the U.S. Fish and Wildlife Service:

☒ Acknowledges receipt of your "no effect" determination. No further ESA coordination or consultation is required.

☐ Acknowledges receipt of your determination. Please provide copy of your determination and supporting materials to any involved Federal agency for their final ESA determination.

☐ Is taking no action pursuant to ESA or any other legislation at this time but would like to be kept informed of project developments.

As a reminder, until the proposed project is complete, we recommend that you check our website (http://www.fws.gov/northeast/nyfo/es/section7.htm) 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.

Pursuant to the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*),

☐ Requests additional time for review.

☐ Is providing FWCA comments (see attached).

☐ Will provide FWCA comments separately.

☐ Is taking no action pursuant to FWCA due to lack of funding.

☐ Has no objection pursuant to the FWCA.

☐ Is taking no action pursuant to the FWCA at this time but would like to be kept informed of project developments.

USFWS Contact(s): [signature] Date 9/25/2019

Supervisor: Date

Governor's Office of Storm Recovery

ANDREW M. CUOMO
Governor

Via Electronic Mail

May 28, 2019

Mr. Steve Papa
U.S. Fish and Wildlife Service
Long Island Field Office
340 Smith Road
Shirley, NY 11967

Re: Section 7 Project Review - ESA/MBTA/BGEPA Consultation for the Shore Road Waterfront Park Natural Resiliency Improvements Project in the Village of Lindenhurst, Town of Babylon, Suffolk County, New York.

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 Department of Housing & Urban Development (HUD), is conducting an environmental review under HUD's environmental review regulations (24 CFR Part 58) and New York State's Environmental Quality Review Act (SEQRA) for construction of Shore Road Waterfront Park Natural Resiliency Improvements Project in the Village of Lindenhurst, Town of Babylon, Suffolk County, New York. (see **Figure 1)**.

The purpose of this letter is to provide the U.S. Fish and Wildlife Service – New York Field Office (USFWS) notice of the proposed project and to document compliance with Section 7 of the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), as well as the Migratory Bird Treaty Act of 1918 (MBTA) (40 Stat. 755, as amended; 16 U.S.C. 703-712), and the Bald and Golden Eagle Protection Act of 1940 (BGEPA) (54 Stat. 240, as amended; 16 U.S.C. 668-668c).

Program Overview: The Village of Lindenhurst, Suffolk County, New York is proposing to implement a project to improve resistance to storm related flooding and wave action erosion at the southern end (Great South Bay shoreline) of Shore Road Waterfront Park. The Park is one of the few remaining natural public sections of bayfront within the Village. The Park as well as nearby residential neighborhoods were subject to major flooding from the Great South Bay as well as nearby canals.

Area of Potential Effect: The Village of Lindenhurst, Suffolk County, New York is proposing to implement a project to improve storm and wave-action resiliency at Shore Road Waterfront Park. The Village of Lindenhurst is part of the Town of Babylon, Suffolk County, New York. The Park consist of a paved parking lot and grassy

open areas with athletic fields. The Park is bounded by the Great South Bay to the south, residences to the east and west, and parking and Shore Road to the north.

Proposed Project Description: The project involves implementing shoreline protection enhancements, including the following:

- Removal of existing rubble along the shoreline
- Construction of low-tide and a high-tide living shoreline consisting of protective shorefront structures with stone boulders to prevent recurring flooding and reduce wave action for storm protection;
- Cutting down the existing failing bulkheads on the west and south side of the acquired parcels to the east of the park, to an elevation 0.8 feet to serve as the low-tide wave break, and re-grading the properties to the toe of the living shoreline/rock revetment;
- Construction of a gravel pedestrian path, boulder sitting wall, sand beach area for lounging;
- Drainage improvements including extension of drainage outlets to between the low- and high- tide structures, as a means of protecting the southern end of Shore Road Park from flooding during major storm events;
    - The eastern drainage outlet will be extended
    - The western drainage outlet will be realigned slightly to the southeast and extended
- Placement of clean fill and riprap where needed; and
- Use of living shoreline native plantings between the low- and high- tide structures, and upland landscaping on the shoreward side of the high-tide structure.

The environmental review is being prepared under a single review of all activities. The Project will include grading of the project area, excavation along the drainage outlet pipelines, and construction of the living shoreline (rock wave-break structures). The disturbance will be limited to the southern portion of the Park and the two acquired parcels, former residences destroyed by Superstorm Sandy, to the east of the park along the shore of the Great South Bay.

Wetlands: The project includes work along the shore of the Great South Bay identified within the USFWS National Wetland Inventory (NWI) as Estuarine and Marine Deepwater wetlands. See the attached wetland map, **Figure 2**.

ESA, Migratory Bird Treaty Act, And Bald and Golden Eagle Protection Act Species: The New York State Natural Heritage Program (NYSNHP) database search completed on August 15, 2016, had no records of rare or state-listed animals or plants, or significant natural communities at the project site. It indicated that some of the project sites along the shoreline are adjacent to marine eelgrass meadow and marine back-barrier lagoon or in its immediate vicinity. (See attached **New York Natural Heritage Program Review (August 15, 2016)**.) A new updated consultation has been initiated with the NYSNHP to include recent design changes. No eelgrass meadows are adjacent to any of the proposed improvements. The project will be conducted to improve, avoid or minimize impacts, including run-off, to these natural communities or to the surrounding waters.

The USFWS, New York Ecological Services Field Office was contacted through the Information, Planning, and Conservation System (IPaC) regarding the potential presence of species under the jurisdiction of the USFWS within the project area. The attached Official Species List identifies two endangered species (roseate tern [*Sterna dougallii dougallii*] and sandplain gerardia [*Agalinis acuta*]) and four threatened species (northern long-eared bat [*Myotis septentrionalis*], piping plover [*Charadrius melodus*], red knot [*Calidris canutus rufa*], and

seabeach amaranth [*Amaranthus pumilus*]) that are potentially associated with the project site. No critical habit for these species was identified in IPaC. The IPaC review also indicated that there are several migratory birds of concern that could potentially be affected by the proposed project. Below is a determination of potential effects of the project on each of threatened and endangered species.

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 one or two breeding pairs in variable locations along the south shore of eastern Long Island (Mitra 2008). During the most recent Breeding Bird Atlas, roseate terns were not documented anywhere west of Suffolk County (Mitra 2008). The potential for roseate terns to occur on the project sites is considered extremely low and limited to migrants moving through the area in route to nesting sites elsewhere in the region or to wintering grounds in the southern hemisphere. No critical habitats were identified by USFWS for this species, and migratory birds may temporarily avoid the area during construction due to noise and disturbance. Therefore, GOSR determines that this project would have **no effect on the roseate tern**.

Sandplain gerardia. The sandplain gerardia is a hemiparasitic, annual herb from 5.0 cm to 30.0 cm tall, that occurs on sites where there is a lack of competition from other species. This condition commonly results from extremely harsh habitat in soils at all sites are extremely nutrient poor and experiences regular or sporadic disturbance. The sandplain gerardia is known to occur at six sites on Long Island, ranging from small vulnerable populations to large and robust supporting nearly 2000 plants. The known locations on Long Island undergo at least occasional mowing and have experienced herbicide use, small fires, topsoil scarification, and other forms of human activity. They have been found on golf courses, near well-worn trails, grassy areas along roadsides, the Hempstead Plains grasslands, and the sandy moraine on the ocean shore. Residential, commercial and recreational development has encroached on the species community, and agricultural development and sand and gravel mining have destroyed large amounts of potential habitat (US Fish and Wildlife Service 1989). There are no known occurrences of sandplain gerardia on the project site, but it is within the current species range. No critical habitats were identified by USFWS for this species; and the project sites are in highly developed areas and construction will occur within existing rights-of-way and drainage systems. Therefore, GOSR determines that this project would have **no effect on the sandplain gerardia**.

Northern Long-eared Bat (NLEB). The NLEB is a temperate, insectivorous bat whose life cycle can be coarsely divided into two primary phases - reproduction and hibernation. NLEB 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 NLEB generally includes upland and riparian forest within heavily forested landscapes. The NLEB is sensitive to fragmentation and urbanization and requires interior forest for both foraging and breeding. Roost trees are usually in intact forest, close to the core and away from large clearings, roads, or other sharp edges. The major concern for this species in relation to this project would be the destruction of potential swarming and/or staging habitat and potential roosts through tree clearing (http://www.dec.ny.gov/animals/106090.html, https://ecos.fws.gov/ecp0/profile/speciesProfile?sId=9045). No trees will be removed by the project, and GOSR determines that this project would have **no effect on the NLEB**.

Piping Plover. The piping plover is a migratory shorebird that nests on sandy beaches along the Atlantic coast and around the Great Lakes. Steep population declines, primarily due to extensive coastal development, beach

engineering activities that alter natural coastal processes (e.g., jetty construction, nourishment), and disturbance from human recreational use of nesting beaches, led to the species' listing under the federal Endangered Species Act in 1986. Intensive management actions, such as closures of nesting areas to recreation, trapping and removal of nest predators, and control of vegetation have had success, and population sizes have since more than doubled (Elliot-Smith and Haig 2004, Hecht and Melvin 2009).

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 (Houghton 2005, Boretti et al. 2007, Wasilco 2008, Seavey 2009) and currently represent approximately 24 percent of the total Atlantic Coast population (Hecht and Melvin 2009).

The project site does not contain sandy beaches or dunes that are associated with piping plover breeding habitat. It is therefore unlikely that individuals or breeding pairs would be present within the project site during the breeding season (generally from March 31 to July 31[Elliot-smith and Haig 2004, Sommers 2008] within New York). Any piping plovers on the project sites at other times of the year would occur only as transient individuals. Therefore, GOSR determines that this project would have **no effect on the piping plover**.

Red Knot. The rufa subspecies of the red knot 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 migration staging area for rufa red knots, which time their springtime arrival in the bay to coincide with the peak horseshoe crab spawning period (Baker et al. 2004, Niles et al. 2009). Delaware Bay is the only place in the Western Hemisphere where horseshoe crabs spawn in numbers that enable red knots to almost double their body mass and fuel the remaining leg of their migration to the high arctic (Niles 1999).

Although migrating red knots are known to occur along Long Island (e.g., Jamaica Bay [Tanacredi and Badger 1995:104, Fowle and Kerlinger 2001:81]), 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). Red knots are highly sensitive to human disturbance at staging sites (Burger et al. 2004, 2007).

The project area does not support the dense horseshoe crab spawning are required for red knot staging areas. Therefore, it is unlikely that red knots would utilize the project site. Any individuals present during construction would be transient and would avoid areas under construction. GOSR determines that this project would have **no effect on the red knot**.

Seabeach Amaranth. The Seabeach amaranth is a federally and state-listed threatened annual herbaceous plant that was thought to be extinct in New York State until it was rediscovered in 1990. It grows along sandy beaches of the Atlantic coast in areas of accreting shoreline, upper beach, foredune, or overwash flat, as well as beach nourishment sites. Suitable sandy beach and dune habitat for seabeach amaranth does not occur within the project area. Therefore, seabeach amaranth does not have the potential to occur on the project sites. GOSR determines that this project would have **no effect on the seabeach amaranth**.

Migratory Bird Treaty Act. According to the USFWS IPaC resource review, there are 24 migratory birds of conservation concern or with potential susceptibilities in offshore areas from certain types of development or activities, including the bald eagle, that could potentially be affected by the proposed project. The bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) were not identified as birds of conservation concern for this area; they warrant attention because of the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act or for potential susceptibilities in offshore areas to certain types of development or activities. As with other migratory birds, foraging bald eagles may temporarily avoid the area during construction due to noise and disturbance. If USFWS has documentation of the presence of the bald or golden eagle or other migratory birds in this area, GOSR requests that this documentation be provided to GOSR for review.

Summary and Compliance

Since the proposed project would not involve the removal of any trees and no critical habitats were identified in the official species list within the project area, GOSR determines that this project would have **No Effect** on critical habitats, the roseate tern, sandplain gerardia, NLEB, piping plover, red knot, or the seabeach amaranth. GOSR has determined that the project would have no significant adverse impact on migratory birds or their habitat, since no trees would be removed, and construction will occur within disturbed areas of existing recreational shoreline. It is anticipated that passerine birds would temporarily leave the area during construction due to noise and disturbance.

If you have questions or require additional information regarding this request, please contact me at (646) 256-9485 or James.McAllister@stormrecovery.ny.gov. Thank you for your time and consideration.

Sincerely,

James P. McAllister
Senior Environmental Project Manager
Bureau of Environmental Review and Assessment
Governor's Office of Storm Recovery
500 Bi-County Boulevard, Suite 300
Farmingdale, NY 11735

Attachments:
Figure 1 - Project Area
Figure 2 - NWI Wetlands
Site Plans
NYSDEC Review, August 15, 2016
USFWS Species List - Long Island Ecological Services Field Office

Path: C:\projects\Lindenhurst Shore Road Waterfront Park Improvements HUD EA 103P359237\GIS\Lindenhurst Shore Road Waterfront Park Improvements - Project Area2.mxd

Project Area

Shore Road Park
Lindenhurst, Suffolk County, New York

Legend

Project Area

Tetra Tech, Inc

U.S. Fish and Wildlife Service
National Wetlands Inventory

Lindenhurst Shore Road Park Shoreline

May 28, 2019

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

LEGEND (EXISTING)

- PROPERTY LINE
- LOT LINE
- LIMIT OF WORK
- EXISTING CONTOUR
- WETLANDS DELINIATION
- AREA OF REMOVALS
- EXISTING DRAINAGE PIPE
- MHHW — MEAN HIGHER HIGH WATER
- MHW — MEAN HIGH WATER
- MLW — MEAN LOW WATER
- MLLW — MEAN LOWER LOW WATER
- MHWS — MEAN HIGH WATER SPRINGS

BAYVIEW AVE (VILLAGE OF LINDENHURST)

S. BAY STREET (VILLAGE OF LINDENHURST)

SHORE ROAD PARK

EXISTING DRAINAGE SWALE

EXISTING DRAINAGE STRUCTURE TO REMAIN

EXISTING DRAINAGE PIPE TO BE REMOVED

EXISTING FENCE TO REMAIN

EXISTING FENCE TO BE REMOVED

EXISTING VEGETATION TO BE REMOVED. INCLUDES PHRAGMITES REMOVAL. REFER TO INVASIVE SPECIES REMOVAL NOTES.

WETLANDS DELINIATION (TYP.)

EXISTING SINGLE FAMILY HOME

EXISTING DRAINAGE STRUCTURE TO BE REMOVED AND REPLACED

LIMIT OF WORK (TYP.)

EXISTING BULKHEAD TO REMAIN

ALL CONCRETE AND ASPHALT RUBBLE & DEBRIS TO BE REMOVED

REMOVALS SEAWARD OF MHW IS LIMITED TO REMOVAL OF CONCRETE, ASPHALT, AND EXISTING BULKHEAD, AS WELL AS LIMITED SAND TO FACILITATE ELEVATIONS CRITICAL FOR THE ESTABLISHMENT OF THE LIVING SHORELINE. REFER TO GRADING PLAN.

TURF

EXISTING ASPHALT TO BE REMOVED

ALL EXISTING UTILITIES TO REMAIN BENEATH SOUTH BAY STREET.

VACANT PROPERTY OWNER: SUFFOLK COUNTY PARKS DEPARTMENT

VACANT PROPERTY OWNER: NEW YORK STATE

VACANT PROPERTY OWNER: VILLAGE OF LINDENHURST

EXISTING DRAINAGE STRUCTURES TO REMAIN

EXISTING SEWER MANHOLES TO REMAIN

TOP OF EXISTING BULKHEAD TO BE REMOVED TO ELEVATION 0.08. BULKHEAD BELOW ELEVATION ELEVATION 0.08 TO REMAIN.

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

HORIZ. 1 inch = 20 ft.

NO.	DATE	REVISION DESCRIPTION	INT.
1	4/2019	60% ISSUANCE	OC

CAMERON ENGINEERING & ASSOCIATES, LLP
177 Crossways Park Drive, Woodbury, NY 11797 — T: (516) 827-4900
45 West 36th Street, 3rd Floor, New York, NY 10018 — T: (212) 324-4000
303 Tarrytown Road, 1st Floor, White Plains, NY 10603 — T: (914) 721-8300
Corporate Seal Initiated 1996 State of New York
www.Cameronengineering.com

PROJECT NAME: SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION: VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE: EXISTING CONDITIONS & REMOVALS PLAN

DISCIPLINE: CIVIL

PROJECT ENGINEER:	MAD
DESIGNED BY:	MAD
DRAWN BY:	EB
CHECKED BY:	KMM
PROJECT NO.	CE2864
JOB NO.	CE2864
DATE:	08/30/18
SCALE:	AS SHOWN
DRAWING NO.	C-2
DRAWING	2 of 10

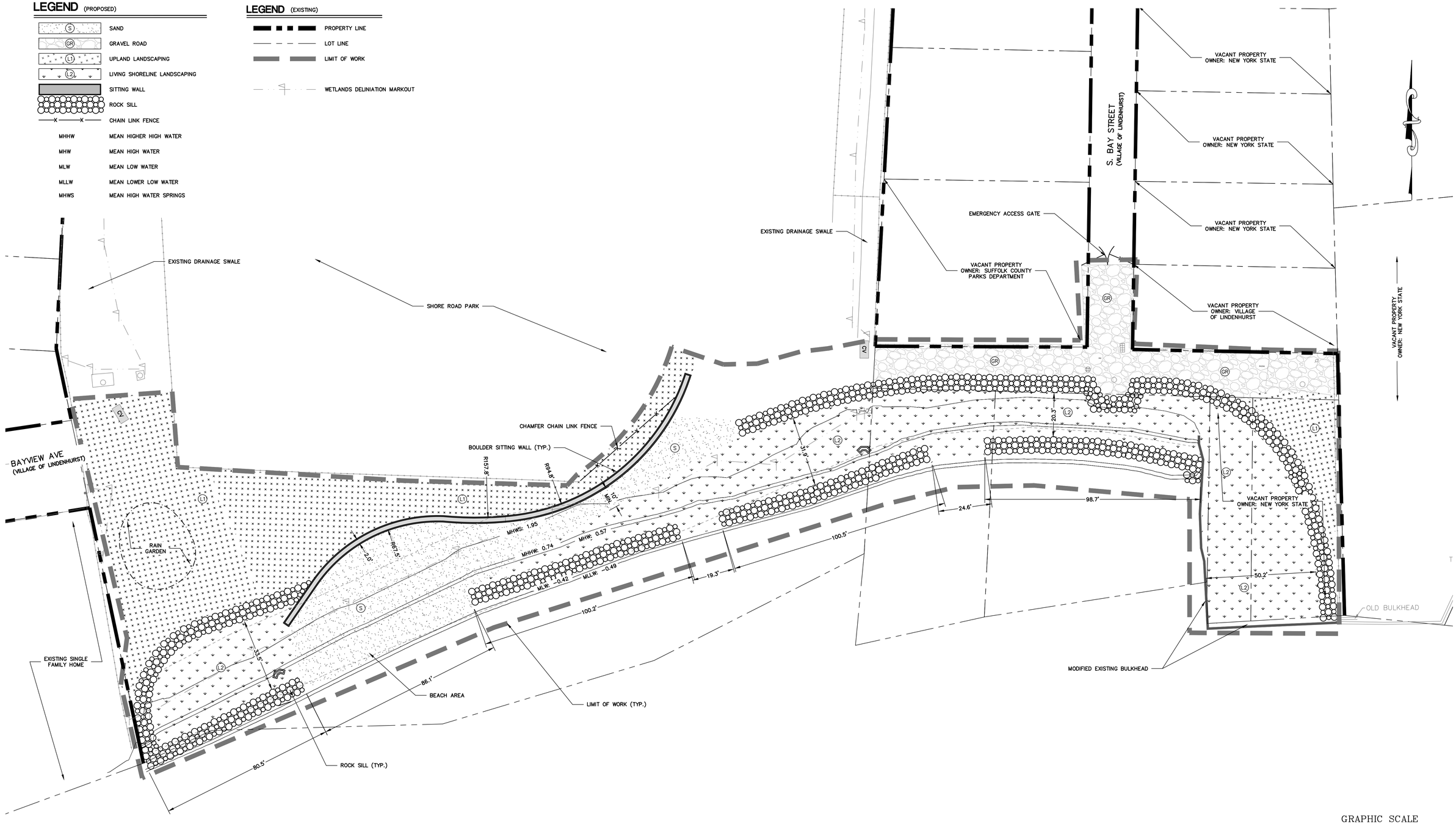
PLOT SCALE: \CE2864 - Shore Road Park\DESIGN\EXISTING CONDITIONS.dwg, Date:May 2, 2019, Pretup=----, Plotted by:Oliver Chen

LEGEND (PROPOSED)

- SAND
- GRAVEL ROAD
- UPLAND LANDSCAPING
- LIVING SHORELINE LANDSCAPING
- SITTING WALL
- ROCK SILL
- CHAIN LINK FENCE
- MHHW — MEAN HIGHER HIGH WATER
- MHW — MEAN HIGH WATER
- MLW — MEAN LOW WATER
- MLLW — MEAN LOWER LOW WATER
- MHWS — MEAN HIGH WATER SPRINGS

LEGEND (EXISTING)

- PROPERTY LINE
- LOT LINE
- LIMIT OF WORK
- WETLANDS DELINIATION MARKOUT



GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

HORIZ. 1 inch = 20 ft.

NO.	DATE	REVISION DESCRIPTION	INT.
1	4/2019	60% ISSUANCE	OC

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Corporate Seal Initiated 1996 State of New York
www.Cameronengineering.com

PROJECT NAME:
SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE:
SITE PLAN

DISCIPLINE:
CIVIL

PROJECT ENGINEER:	PROJECT NO.	DRAWING NO.
MAD	CE2864	C-3
DESIGNED BY: MAD	JOB NO. CE2864	
DRAWN BY: EB	DATE: 08/30/18	
CHECKED BY: KMM	SCALE: AS SHOWN	DRAWING 3 of 10

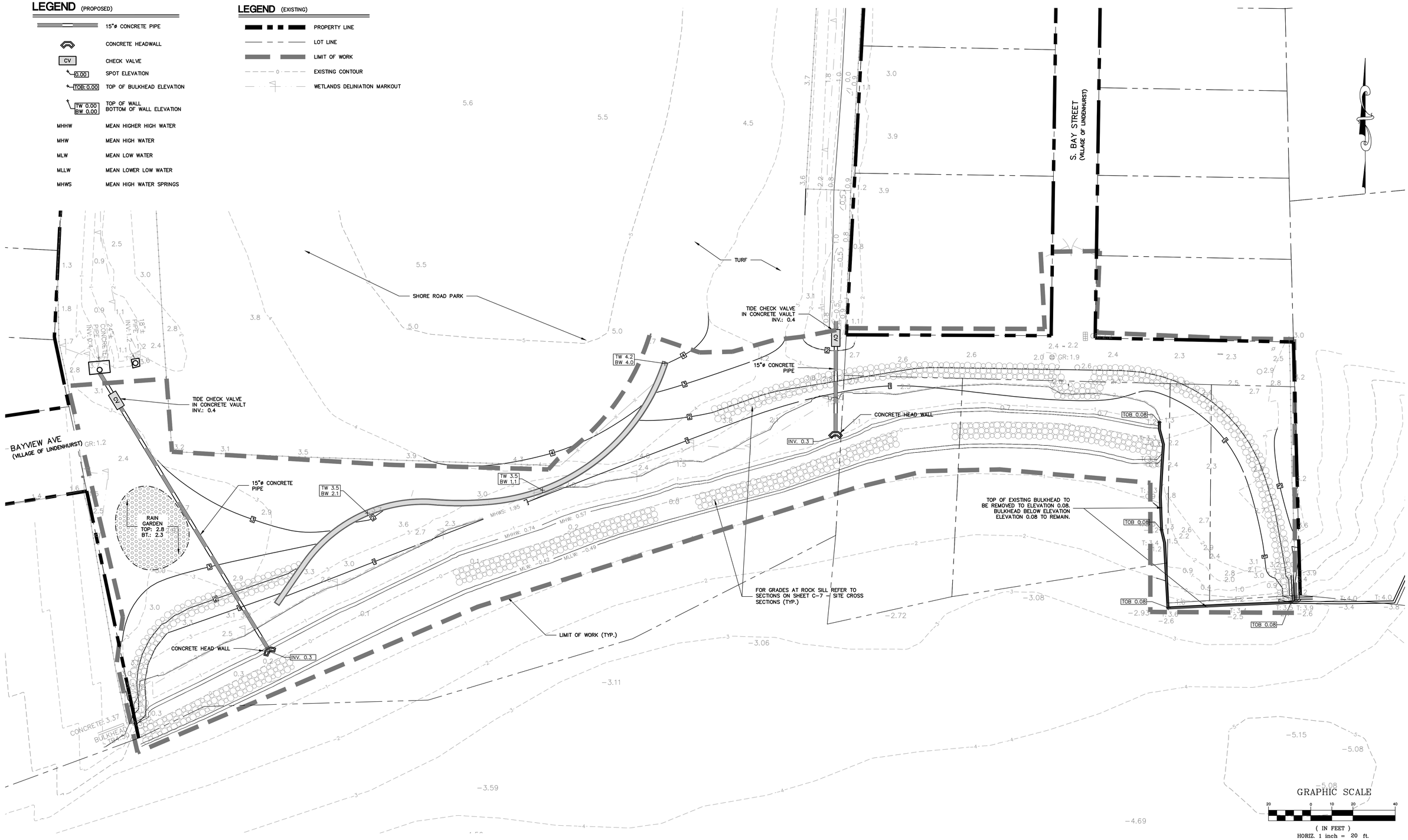
PLOT SCALE=1 \\CE2864 — Shore Road Park\DESIGN\C-3 SITE PLAN.dwg, Date:May 2, 2019, Pastup: ----, Plotted by:Oliver Chen

LEGEND (PROPOSED)

	15"ø CONCRETE PIPE
	CONCRETE HEADWALL
CV	CHECK VALVE
0.00	SPOT ELEVATION
TOB: 0.00	TOP OF BULKHEAD ELEVATION
TW 0.00 / BW 0.00	TOP OF WALL / BOTTOM OF WALL ELEVATION
MHHW	MEAN HIGHER HIGH WATER
MHW	MEAN HIGH WATER
MLW	MEAN LOW WATER
MLLW	MEAN LOWER LOW WATER
MHWS	MEAN HIGH WATER SPRINGS

LEGEND (EXISTING)

	PROPERTY LINE
	LOT LINE
	LIMIT OF WORK
	EXISTING CONTOUR
	WETLANDS DELINIATION MARKOUT



NO.	DATE	REVISION DESCRIPTION	INT.
1	4/2019	60% ISSUANCE	OC

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303 Tarrytown Road, 1st Floor, White Plains, NY 10603 T: (914) 721-8300
Corporate Seal Initiated 1996 State of New York
www.Cameronengineering.com

PROJECT NAME:
SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE:
GRADING & DRAINAGE PLAN

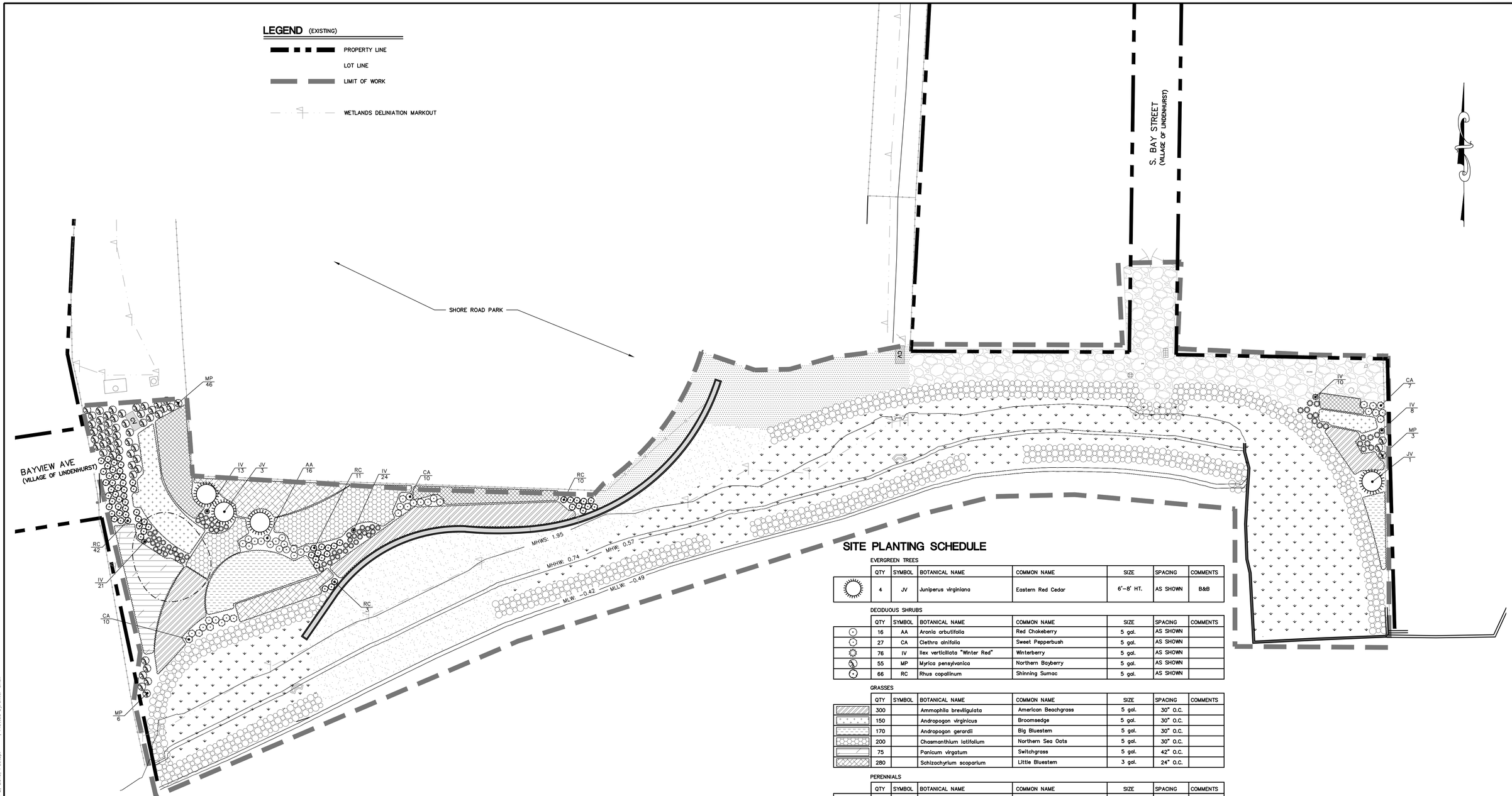
DISCIPLINE:
CIVIL

PROJECT ENGINEER:	MAD
DESIGNED BY:	MAD
DRAWN BY:	EB
CHECKED BY:	KMM
PROJECT NO.	CE2864
JOB NO.	CE2864
DATE:	08/30/18
SCALE:	AS SHOWN
DRAWING NO.	C-4
DRAWING	4 of 10

PLOT SCALE=1 \\CE2864 – Shore Road Park\DESIGN\C-4 GRADING & DRAINAGE PLAN.dwg, Date:May 2, 2019, Pastup: -----, Plotted by:Oliver Chen

LEGEND (EXISTING)

- PROPERTY LINE
- LOT LINE
- LIMIT OF WORK
- WETLANDS DELINIATION MARKOUT



SITE PLANTING SCHEDULE

EVERGREEN TREES

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
4	JV	Juniperus virginiana	Eastern Red Cedar	6'–8' HT.	AS SHOWN	B&B

DECIDUOUS SHRUBS

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
16	AA	Aronia arbutifolia	Red Chokeberry	5 gal.	AS SHOWN	
27	CA	Clethra alnifolia	Sweet Pepperbush	5 gal.	AS SHOWN	
76	IV	Ilex verticillata "Winter Red"	Winterberry	5 gal.	AS SHOWN	
55	MP	Myrica pensylvanica	Northern Bayberry	5 gal.	AS SHOWN	
66	RC	Rhus copallinum	Shinning Sumac	5 gal.	AS SHOWN	

GRASSES

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
300		Ammophila brevilgulata	American Beachgrass	5 gal.	30" O.C.	
150		Andropogon virginicus	Broomsedge	5 gal.	30" O.C.	
170		Andropogon gerardii	Big Bluestem	5 gal.	30" O.C.	
200		Chasmanthium latifolium	Northern Sea Oats	5 gal.	30" O.C.	
75		Panicum virgatum	Switchgrass	5 gal.	42" O.C.	
280		Schizachyrium scoparium	Little Bluestem	3 gal.	24" O.C.	

PERENNIALS

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
280		Asclepias tuberosa	Butterflyweed	2 gal.	24" O.C.	
		Aster ericoides	Heath Aster	1 gal.	18" O.C.	
		Aster novi–belgii	New York Aster	1 gal.	18" O.C.	
		Coreopsis lanceolata	Lance–leaf Coreopsis	2 gal.	24" O.C.	
		Liatris scariosa	Eastern Blazing Star	2 gal.	24" O.C.	
		Monarda punctata	Horsemint	2 gal.	24" O.C.	
		Pensternon hirsutus	Hairy Beardtongue	2 gal.	24" O.C.	
		Solidago sempervirens	Seaside Goldenrod	2 gal.	24" O.C.	

MISCELLANEOUS

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
4000		Spartina alterniflora	Smooth Cordgrass	1 gal.	24" O.C.	*SEE NOTE
		Seeded Lawn				

*NOTE: SMOOTH CORDGRASS SHALL BE STAKED USING 1/4" x 2" x 36" WOOD STAKES.

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
HORIZ. 1 inch = 20 ft.

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Corporate Seal Initiated 1996 State of New York
www.Cameronengineering.com

PROJECT NAME:
SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE:
LANDSCAPE PLAN

DISCIPLINE:
CIVIL

PROJECT ENGINEER:	MAD
DESIGNED BY:	MAD
DRAWN BY:	EB
CHECKED BY:	MAD
PROJECT NO.	CE2864
JOB NO.	CE2864
DATE:	08/30/18
SCALE:	AS SHOWN

DRAWING NO.
C-6
DRAWING 6 of 10

PLOT SCALE: \\CE2864 – Shore Road Park\DESIGN\C-6 LANDSCAPE PLAN.dwg, Date:May 2, 2019, Pastup: ------, Plotted by:Oliver Chen

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits & Pollution Prevention
625 Broadway, 4th Floor, Albany, New York 12233-1750
P: (518) 402-9167 | F: (518) 402-9168 | deppermitting@dec.ny.gov
www.dec.ny.gov

August 15, 2016

Mr. Thomas J. King
Governor's Office of Storm Recovery
99 Washington Avenue
Suite 1224
Albany, NY 12260

RE: Shore Road Waterfront Park Natural Systems Resiliency Improvements
Town of Babylon, Suffolk County

Dear Mr. King:

We received your jurisdictional inquiry request for Shore Road Waterfront Park Natural Systems Resiliency Improvements located at Shore Road Park 8 Bay Street, Lindenhurst in the Town of Babylon, Suffolk County. It is our understanding that the project includes design investigation and construction of new protective shorefront structures and improving public access to the waterfront. Such improvements are intended to reduce wave action and erosion at the southern end of Shore Road Park and may include a public boardwalk and lighting. The project includes a shoreline protection system to prevent recurring flooding and reduce wave action for storm protection; drainage improvements; overall improved public access to the waterfront and new passive recreational amenities. The project would likely involve the construction of a new protective shorefront structures, native plants, riprap and the extension of drainage outlets. Based on our understanding of the project and review of the NY Rising Pre Application dated April 2016, we have the following comments on the project:

TIDAL WETLANDS

Your project is located within the adjacent Tidal Wetland area. An Article 25, Tidal Wetland Permit is required for projects occurring within NYS designated tidal wetlands and in lands immediately adjacent as defined in the Tidal Wetlands Land Use Regulation [6NYCRP Part 661.4(b)]. You may wish to refer to the Use Guidelines in Part 661.5 to determine which activities are subject to the permit requirements of Part 661. Note that although some activities in the tidal wetland or adjacent area do not require a Tidal Wetlands permit, the Development Restriction of Part 661.6 still apply.

Please note that **any project undertaken shall not result in the degradation or contravening of water quality standards of the stream**. Activities resulting in

sedimentation and/or turbid waters may constitute a violation of water quality standards and the Environmental Conservation Law (ECL). Care needs to be taken to stabilize the disturbed areas promptly after construction, and all necessary precautions be taken to prevent contamination of the stream by silt, sediment, fuels, solvents, lubricants, or any other pollutant associated with the project.

Stormwater Permit: If your project will disturb more than one acre of land, you must comply with the State Pollutant Discharge Elimination System (SPDES) Phase II regulations for Stormwater Discharges Associated with Construction Activities. Information regarding the SPDES General Permit for Stormwater Discharges can be found on the Department's website at: http://www.dec.ny.gov/chemical/8468.html.

STATE-LISTED SPECIES

We have reviewed the available information in the New York Natural Heritage Program database on known occurrences of rare or state-listed animals and plants, significant communities and other significant habitats. No records of ***known*** occurrences were found in the (immediate) vicinity of the project/site. However, please be advised that the project site appears to be located within five miles of a Northern Long-eared Bat hibernaculum. If tree cutting is proposed, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

All threatened or endangered species are subject to regulation under Article 11, Title 5 of the Environmental Conservation Law and a permit is required for a taking of that species pursuant to 6 NYCRR Part 182. Besides death of individuals, taking includes harassment, interference with essential behaviors, and adverse modification of habitat. Additional information on the proposal will be required for a determination on the need for a permit.

The absence of data does not necessarily mean that any other rare or state-listed species, natural communities or other significant habitats do not exist on or adjacent to the proposed site. Rather, our files currently do not contain information which indicates their presence. For most sites, comprehensive field surveys have not been conducted. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

OTHER

For construction permits, if this site is within an MS4 area (Municipal Separate Storm Sewer System), the stormwater plan must be reviewed and accepted by the municipality and the MS-4 Acceptance Form must be submitted to the Department. If

the site is not within an MS4 area and other DEC permits are required, please contact the regional Division of Environmental Permits.

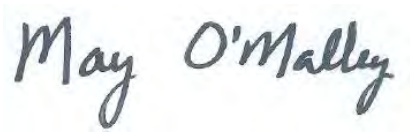
Please note that this letter only addresses the requirements for the following permits from the Department:

Tidal Wetlands

Other permits from this Department or other agencies may be required for projects conducted on this property now or in the future. Also, regulations applicable to the location subject to this determination occasionally are revised and you should, therefore, verify the need for permits if your project is delayed or postponed. This determination regarding the need for permits will remain effective for a maximum of one year unless you are otherwise notified. Applications may be downloaded from our website at www.dec.ny.gov under “Programs” then “Division of Environmental Permits.”

Please contact this office if you have questions regarding the above information. Thank you.

Sincerely,



May O’Malley
Division of Environmental Permits
may.omalley@dec.ny.gov
518-402-9154

Cc: NYSDEC Region 1 Environmental Permits

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Long Island Ecological Services Field Office
340 Smith Road
Shirley, NY 11967-2258
Phone: (631) 286-0485 Fax: (631) 286-4003

In Reply Refer To: May 28, 2019
Consultation Code: 05E1LI00-2019-SLI-0498
Event Code: 05E1LI00-2019-E-01127
Project Name: Lindenhurst Shore Road Park Shoreline

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Long Island Ecological Services Field Office
340 Smith Road
Shirley, NY 11967-2258
(631) 286-0485

Project Summary

Consultation Code: 05E1LI00-2019-SLI-0498

Event Code: 05E1LI00-2019-E-01127

Project Name: Lindenhurst Shore Road Park Shoreline

Project Type: SHORELINE / BEACH PROTECTION / RENOURISHMENT

Project Description: Southern end of Shore Road Park along shore of Great South Bay. Project is to improve resistance to storm related flooding and wave action erosion by removal of existing rubble, constructing low- and high-tide rock walls, and planting native living shoreline vegetation.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/40.66645704421626N73.36342406548854W

Counties: Suffolk, NY

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this 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 fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat Myotis septentrionalis No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Piping Plover Charadrius melodus Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot Calidris canutus rufa No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Roseate Tern Sterna dougallii dougallii Population: northeast U.S. nesting pop. No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2083	Endangered

Flowering Plants

NAME	STATUS
Sandplain Gerardia Agalinis acuta No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8128	Endangered
Seabeach Amaranth Amaranthus pumilus No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8549	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Governor's Office of Storm Recovery

ANDREW M. CUOMO
Governor

Via Electronic Mail

May 28, 2019

Nicholas Conrad
New York State Department of Environmental Conservation
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program – Information Services
625 Broadway, 5th Floor
Albany, New York 12233-4757

Re: Natural Heritage Compliance Process for the Shore Road Waterfront Park Natural Resiliency Improvements Project in the Village of Lindenhurst, Town of Babylon, Suffolk County, New York.

Dear Mr. Conrad:

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 Department of Housing & Urban Development (HUD), is conducting an environmental review under HUD's environmental review regulations (24 CFR Part 58) and New York State's Environmental Quality Review Act (SEQRA) for the Construction of Shore Road Waterfront Park Natural Resiliency Improvements Project in the Village of Lindenhurst, Town of Babylon, Suffolk County, New York. (see **Figure 1)**.

The purpose of this letter is to request a search of the files of the New York Natural Heritage Program for records of the occurrence of any rare animals, plants, and natural communities and/or significant wildlife habitats in the vicinity of this project. The information we receive will be used in NEPA and SEQRA documentation and/or any permit applications. We will retain the confidentiality, as needed, of any information received.

Program Overview: The Village of Lindenhurst, Suffolk County, New York is proposing to implement a project to improve resistance to storm related flooding and wave action erosion at the southern end (Great South Bay shoreline) of Shore Road Waterfront Park. The Park is one of the few remaining natural public sections of bayfront within the Village. The Park as well as nearby residential neighborhoods were subject to major flooding from the Great South Bay as well as nearby canals.

Area of Potential Effect: The Village of Lindenhurst, Suffolk County, New York is proposing to implement a project to improve storm and wave-action resiliency at Shore Road Waterfront Park. The Village of Lindenhurst is part of the Town of Babylon, Suffolk County, New York. The Park consist of a paved parking lot and grassy open areas with athletic fields. The Park is bounded by the Great South Bay to the south, residences to the east and west, and parking and Shore Road to the north.

Proposed Project Description: The project involves implementing shoreline protection enhancements, including the following:

- Removal of existing rubble along the shoreline
- Construction of low-tide and a high-tide living shoreline consisting of protective shorefront structures with stone boulders to prevent recurring flooding and reduce wave action for storm protection;
- Cutting down the existing failing bulkheads on the west and south side of the acquired parcels to the east of the park, to an elevation 0.8 feet to serve as the low-tide wave break, and re-grading the properties to the toe of the living shoreline/rock revetment;
- Construction of a gravel pedestrian path, boulder sitting wall, sand beach area for lounging;
- Drainage improvements including extension of drainage outlets to between the low- and high- tide structures, as a means of protecting the southern end of Shore Road Park from flooding during major storm events;
    - The eastern drainage outlet will be extended
    - The western drainage outlet will be realigned slightly to the southeast and extended
- Placement of clean fill and riprap where needed; and
- Use of living shoreline native plantings between the low- and high- tide structures, and upland landscaping on the shoreward side of the high-tide structure.

The environmental review is being prepared under a single review of all activities. The Project will include grading of the project area, excavation along the drainage outlet pipelines, and construction of the living shoreline (rock wave-break structures). The disturbance will be limited to the southern portion of the Park and the two acquired parcels, former residences destroyed by Superstorm Sandy, to the east of the park along the shore of the Great South Bay.

Compliance: According to information reviewed from the New York State Environmental Resource Mapper (ERM), the project area is within a half mile of significant natural communities (see attached **Figures 2 and 3**). GOSR respectfully requests that the New York Natural Heritage Program review its records of concern for any rare or state-listed animals or plants, or significant natural communities, at this site or in its immediate vicinity.

If you have questions or require additional information regarding this request, please contact me at 646-256-9485 or James.McAllister@stormrecovery.ny.gov. Thank you for your time and consideration.

Regards,
James McAllister
Senior Environmental Project Manager
Governor's Office of Storm Recovery
Bureau of Environmental Review and Assessment

Attachments:
Project Description
Figure 1 Project Location
Figure 2 Shore Road Waterfront Park – Rare Plants or Animals
Figure 3 Shore Road Waterfront Park – Significant Natural Communities
Site Plans

Path: C:\projects\Lindenhurst Shore Road Waterfront Park Improvements HUD EA 103P359237\GIS\Lindenhurst Shore Road Waterfront Park Improvements - Project Area2.mxd

Project Area

Shore Road Park
Lindenhurst, Suffolk County, New York

Legend

Project Area

Tetra Tech, Inc

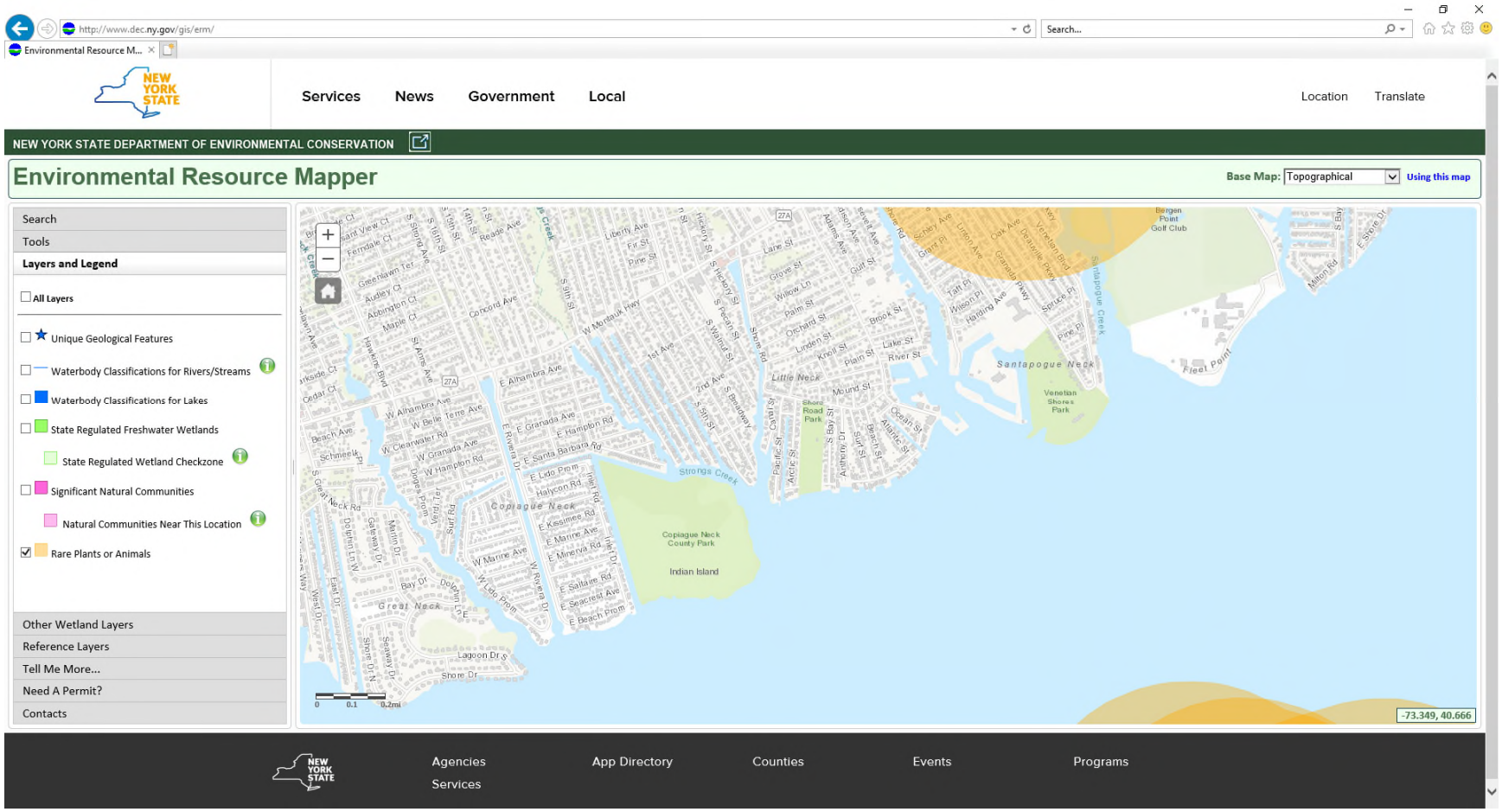


Figure 2. Shore Road Waterfront Park Rare Plants or Animals

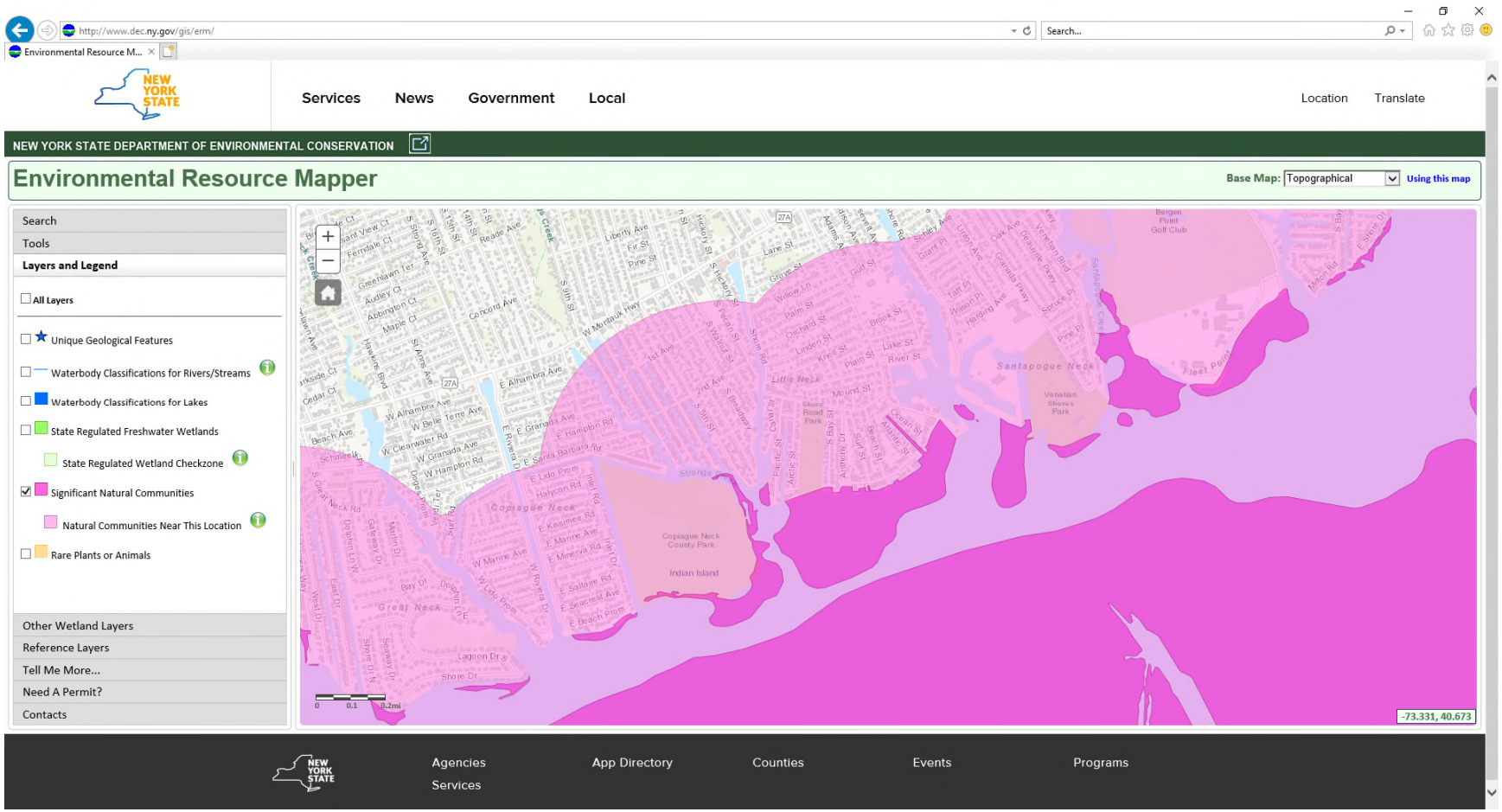


Figure 3. Shore Road Waterfront Park Significant Natural Communities

LEGEND (EXISTING)

- PROPERTY LINE
- LOT LINE
- LIMIT OF WORK
- EXISTING CONTOUR
- WETLANDS DELINIATION
- AREA OF REMOVALS
- EXISTING DRAINAGE PIPE
- MHHW — MEAN HIGHER HIGH WATER
- MHW — MEAN HIGH WATER
- MLW — MEAN LOW WATER
- MLLW — MEAN LOWER LOW WATER
- MHWS — MEAN HIGH WATER SPRINGS

BAYVIEW AVE (VILLAGE OF LINDENHURST)

S. BAY STREET (VILLAGE OF LINDENHURST)

SHORE ROAD PARK

EXISTING DRAINAGE SWALE

EXISTING DRAINAGE STRUCTURE TO REMAIN

EXISTING DRAINAGE PIPE TO BE REMOVED

EXISTING FENCE TO REMAIN

EXISTING FENCE TO BE REMOVED

EXISTING VEGETATION TO BE REMOVED. INCLUDES PHRAGMITES REMOVAL. REFER TO INVASIVE SPECIES REMOVAL NOTES.

WETLANDS DELINIATION (TYP.)

EXISTING SINGLE FAMILY HOME

EXISTING DRAINAGE STRUCTURE TO BE REMOVED AND REPLACED

LIMIT OF WORK (TYP.)

EXISTING BULKHEAD TO REMAIN

ALL CONCRETE AND ASPHALT RUBBLE & DEBRIS TO BE REMOVED

REMOVALS SEAWARD OF MHW IS LIMITED TO REMOVAL OF CONCRETE, ASPHALT, AND EXISTING BULKHEAD, AS WELL AS LIMITED SAND TO FACILITATE ELEVATIONS CRITICAL FOR THE ESTABLISHMENT OF THE LIVING SHORELINE. REFER TO GRADING PLAN.

TURF

EXISTING ASPHALT TO BE REMOVED

ALL EXISTING UTILITIES TO REMAIN BENEATH SOUTH BAY STREET.

VACANT PROPERTY OWNER: SUFFOLK COUNTY PARKS DEPARTMENT

VACANT PROPERTY OWNER: NEW YORK STATE

VACANT PROPERTY OWNER: VILLAGE OF LINDENHURST

EXISTING DRAINAGE STRUCTURES TO REMAIN

EXISTING SEWER MANHOLES TO REMAIN

TOP OF EXISTING BULKHEAD TO BE REMOVED TO ELEVATION 0.08. BULKHEAD BELOW ELEVATION ELEVATION 0.08 TO REMAIN.

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

HORIZ. 1 inch = 20 ft.

NO.	DATE	REVISION DESCRIPTION	INT.
1	4/2019	60% ISSUANCE	OC

CAMERON ENGINEERING & ASSOCIATES, LLP
177 Crossways Park Drive, Woodbury, NY 11797 — T: (516) 827-4900
45 West 36th Street, 3rd Floor, New York, NY 10018 — T: (212) 324-4000
303 Tarrytown Road, 1st Floor, White Plains, NY 10603 — T: (914) 721-8300
Corporate Seal Initiated 1996 State of New York
www.Cameronengineering.com

PROJECT NAME: SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION: VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE: EXISTING CONDITIONS & REMOVALS PLAN

DISCIPLINE: CIVIL

PROJECT ENGINEER:	MAD
DESIGNED BY:	MAD
DRAWN BY:	EB
CHECKED BY:	KMM
PROJECT NO.	CE2864
JOB NO.	CE2864
DATE:	08/30/18
SCALE:	AS SHOWN
DRAWING NO.	C-2
DRAWING	2 of 10

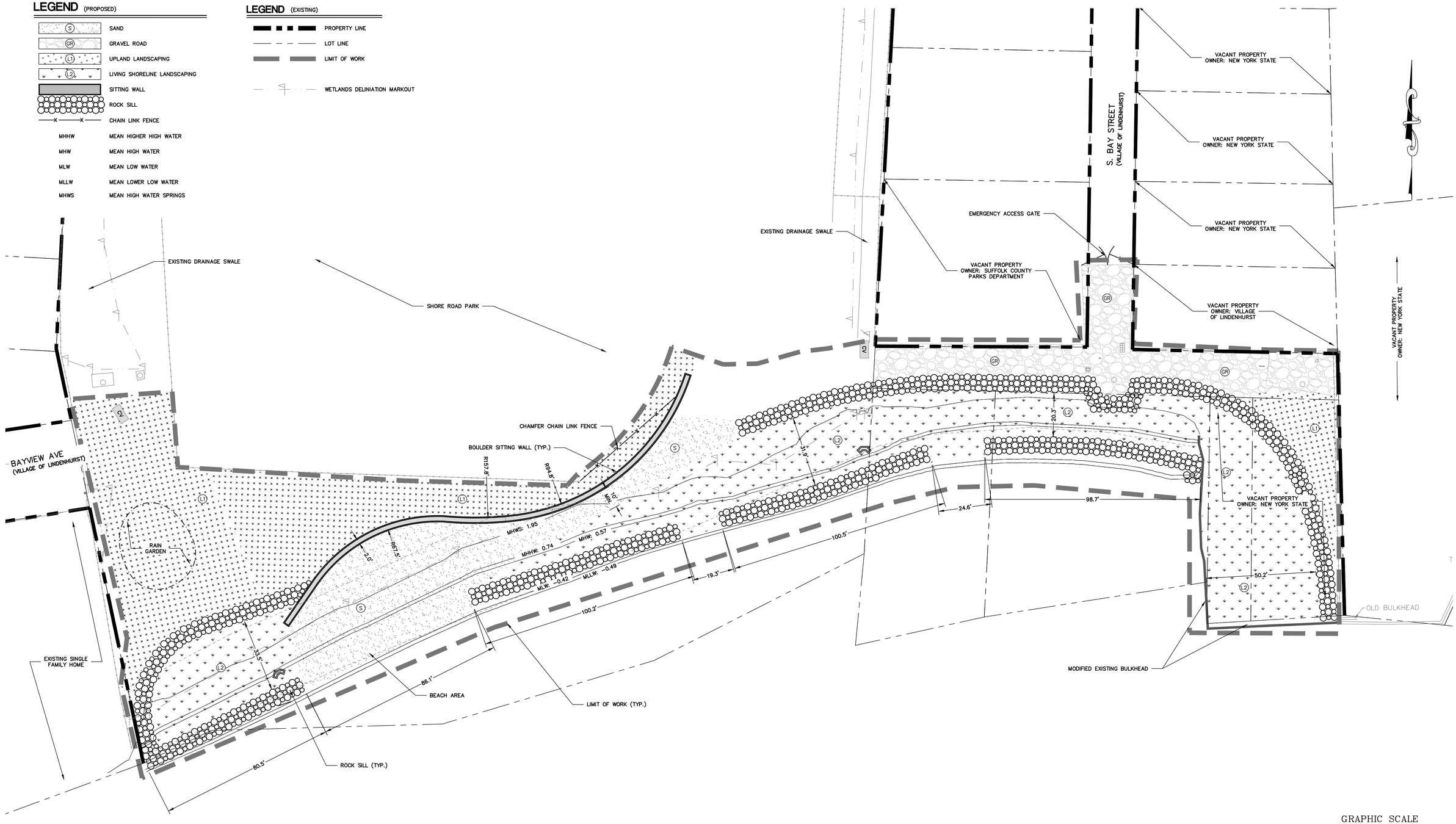
PLOT SCALE: \CE2864 - Shore Road Park\DESIGN\EXISTING CONDITIONS.dwg, Date:May 2, 2019, Pretup=----, Plotted by:Oliver Chen

LEGEND (PROPOSED)

- SAND
- GRAVEL ROAD
- UPLAND LANDSCAPING
- LIVING SHORELINE LANDSCAPING
- SITTING WALL
- ROCK SILL
- CHAIN LINK FENCE
- MHHW — MEAN HIGHER HIGH WATER
- MHW — MEAN HIGH WATER
- MLW — MEAN LOW WATER
- MLLW — MEAN LOWER LOW WATER
- MHWS — MEAN HIGH WATER SPRINGS

LEGEND (EXISTING)

- PROPERTY LINE
- LOT LINE
- LIMIT OF WORK
- WETLANDS DELINIATION MARKOUT



GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

HORIZ. 1 inch = 20 ft.

NO.	DATE	REVISION DESCRIPTION	INT.
1	4/2019	60% ISSUANCE	OC

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www.Cameronengineering.com

PROJECT NAME:
SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE:
SITE PLAN

DISCIPLINE:
CIVIL

PROJECT ENGINEER:	PROJECT NO.	DRAWING NO.
MAD	CE2864	C-3
DESIGNED BY: MAD	JOB NO. CE2864	
DRAWN BY: EB	DATE: 08/30/18	
CHECKED BY: KMM	SCALE: AS SHOWN	DRAWING 3 of 10

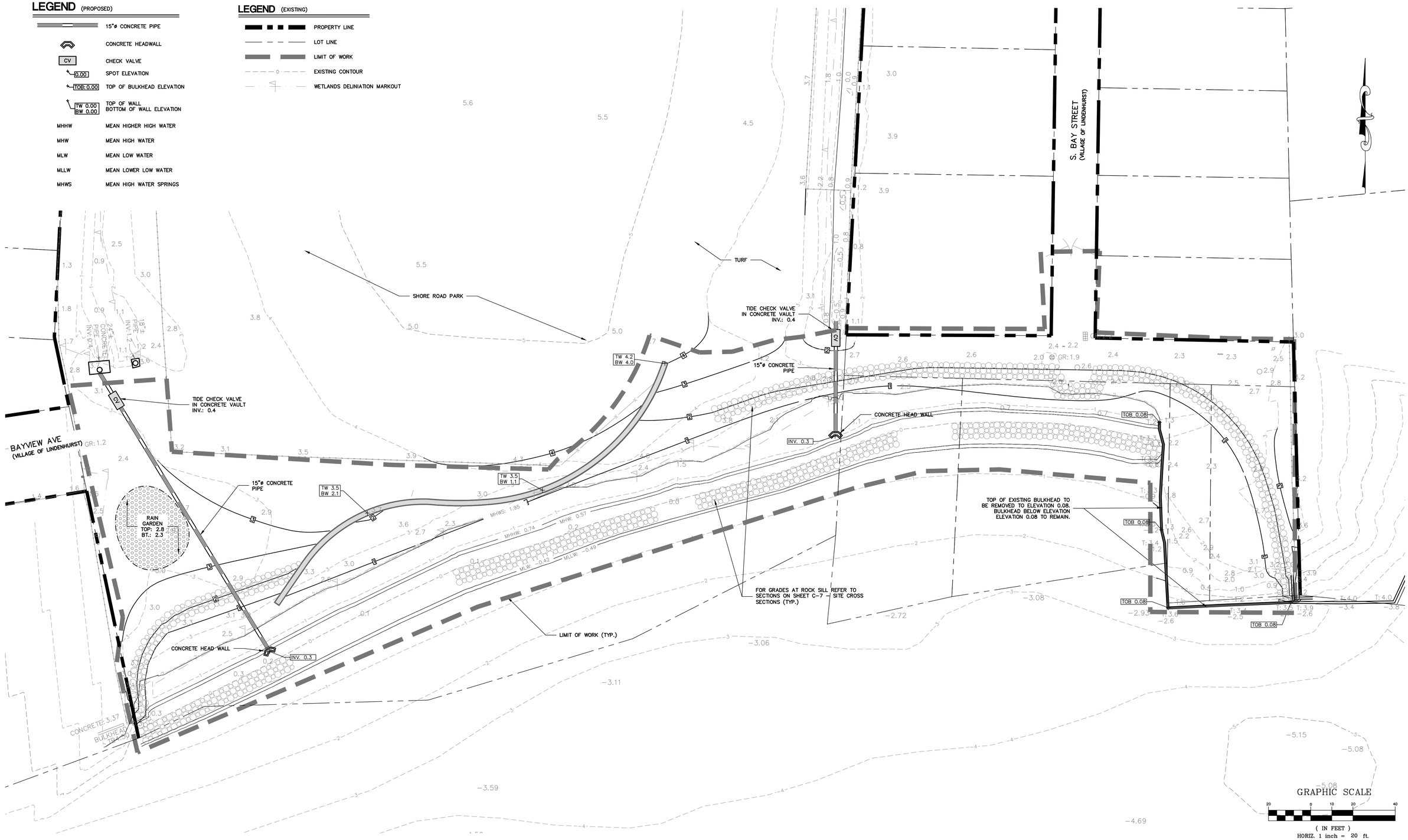
PLOT SCALE=1 \\CE2864 — Shore Road Park\DESIGN\C-3 SITE PLAN.dwg, Date:May 2, 2019, Pastup: ----, Plotted by:Oliver Chen

LEGEND (PROPOSED)

	15"ø CONCRETE PIPE
	CONCRETE HEADWALL
CV	CHECK VALVE
0.00	SPOT ELEVATION
TOB: 0.00	TOP OF BULKHEAD ELEVATION
TW 0.00 / BW 0.00	TOP OF WALL / BOTTOM OF WALL ELEVATION
MHHW	MEAN HIGHER HIGH WATER
MHW	MEAN HIGH WATER
MLW	MEAN LOW WATER
MLLW	MEAN LOWER LOW WATER
MHWS	MEAN HIGH WATER SPRINGS

LEGEND (EXISTING)

	PROPERTY LINE
	LOT LINE
	LIMIT OF WORK
	EXISTING CONTOUR
	WETLANDS DELINIATION MARKOUT



NO.	DATE	REVISION DESCRIPTION	INT.
1	4/2019	60% ISSUANCE	OC

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303 Tarrytown Road, 1st Floor, White Plains, NY 10603 T: (914) 721-8300
Corporate Seal Initiated 1996 State of New York
www.Cameronengineering.com

PROJECT NAME:
SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE:
GRADING & DRAINAGE PLAN

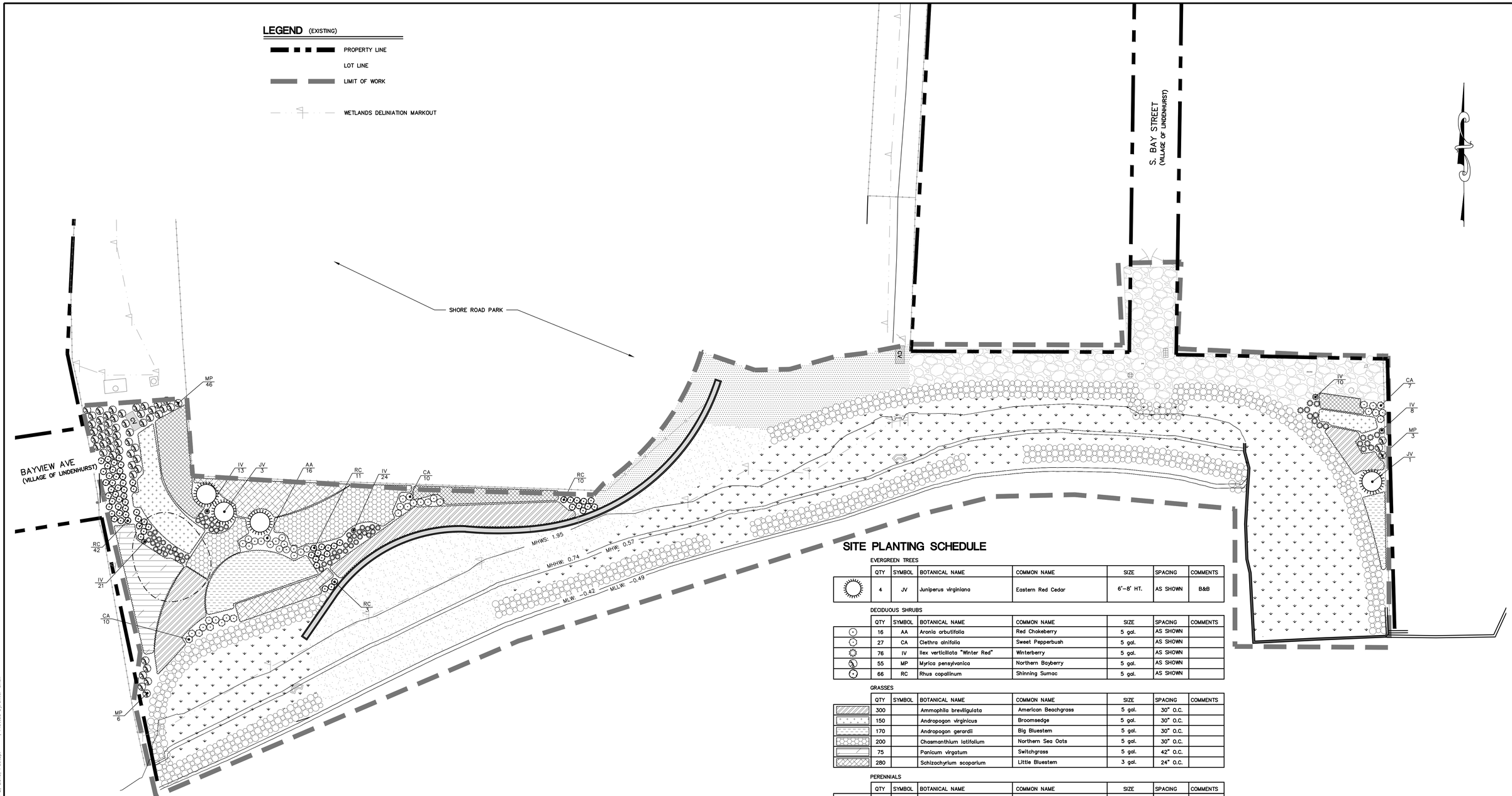
DISCIPLINE:
CIVIL

PROJECT ENGINEER:	MAD
DESIGNED BY:	MAD
DRAWN BY:	EB
CHECKED BY:	KMM
PROJECT NO.	CE2864
JOB NO.	CE2864
DATE:	08/30/18
SCALE:	AS SHOWN
DRAWING NO.	C-4
DRAWING	4 of 10

PLOT SCALE=1 \\CE2864 – Shore Road Park\DESIGN\C-4 GRADING & DRAINAGE PLAN.dwg, Date:May 2, 2019, Pastup: -----, Plotted by:Oliver Chen

LEGEND (EXISTING)

- PROPERTY LINE
- LOT LINE
- LIMIT OF WORK
- WETLANDS DELINIATION MARKOUT



SITE PLANTING SCHEDULE

EVERGREEN TREES

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
4	JV	Juniperus virginiana	Eastern Red Cedar	6'–8' HT.	AS SHOWN	B&B

DECIDUOUS SHRUBS

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
16	AA	Aronia arbutifolia	Red Chokeberry	5 gal.	AS SHOWN	
27	CA	Clethra alnifolia	Sweet Pepperbush	5 gal.	AS SHOWN	
76	IV	Ilex verticillata "Winter Red"	Winterberry	5 gal.	AS SHOWN	
55	MP	Myrica pensylvanica	Northern Bayberry	5 gal.	AS SHOWN	
66	RC	Rhus copallinum	Shinning Sumac	5 gal.	AS SHOWN	

GRASSES

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
300		Ammophila brevilgulata	American Beachgrass	5 gal.	30" O.C.	
150		Andropogon virginicus	Broomsedge	5 gal.	30" O.C.	
170		Andropogon gerardii	Big Bluestem	5 gal.	30" O.C.	
200		Chasmanthium latifolium	Northern Sea Oats	5 gal.	30" O.C.	
75		Panicum virgatum	Switchgrass	5 gal.	42" O.C.	
280		Schizachyrium scoparium	Little Bluestem	3 gal.	24" O.C.	

PERENNIALS

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
280		Asclepias tuberosa	Butterflyweed	2 gal.	24" O.C.	
		Aster ericoides	Heath Aster	1 gal.	18" O.C.	
		Aster novi–belgii	New York Aster	1 gal.	18" O.C.	
		Coreopsis lanceolata	Lance–leaf Coreopsis	2 gal.	24" O.C.	
		Liatris scariosa	Eastern Blazing Star	2 gal.	24" O.C.	
		Monarda punctata	Horsemint	2 gal.	24" O.C.	
		Pensternon hirsutus	Hairy Beardtongue	2 gal.	24" O.C.	
		Solidago sempervirens	Seaside Goldenrod	2 gal.	24" O.C.	

MISCELLANEOUS

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
4000		Spartina alterniflora	Smooth Cordgrass	1 gal.	24" O.C.	*SEE NOTE
		Seeded Lawn				

*NOTE: SMOOTH CORDGRASS SHALL BE STAKED USING 1/4" x 2" x 36" WOOD STAKES.

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)
HORIZ. 1 inch = 20 ft.

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1	4/2019	60% ISSUANCE	OC

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Corporate Seal Initiated 1996 State of New York
www.Cameronengineering.com

PROJECT NAME:
SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE:
LANDSCAPE PLAN

DISCIPLINE:
CIVIL

PROJECT ENGINEER:	MAD
DESIGNED BY:	MAD
DRAWN BY:	EB
CHECKED BY:	MAD
PROJECT NO.	CE2864
JOB NO.	CE2864
DATE:	08/30/18
SCALE:	AS SHOWN

DRAWING NO.
C-6
DRAWING 6 of 10

PLOT SCALE: \\CE2864 – Shore Road Park\DESIGN\C-6 LANDSCAPE PLAN.dwg, Date:May 2, 2019, Pastup: ------, Plotted by:Oliver Chen

Jarman, Clifford

From: Shultz, Alicia (NYSHCR) <Alicia.Shultz@nyshcr.org>
Sent: Wednesday, November 6, 2019 1:33 PM
To: Jarman, Clifford
Subject: FW: Lead Agency designation - Shore Road Waterfront Park, Village of Lindenhurst, Suffolk Co., NY

Alicia Shultz
Senior Environmental Scientist
New York State Homes & Community Renewal
Governor's Office of Storm Recovery
38-40 State St.,408N, Hampton Plaza, Albany, NY 12207
(518) 474-0647 | cell (917) 376-9003 Alicia.Shultz@nyshcr.org |

From: McAllister, James (STORMRECOVERY) <James.McAllister@stormrecovery.ny.gov>
Sent: Friday, September 20, 2019 11:48 AM
To: Shultz, Alicia (NYSHCR) <Alicia.Shultz@nyshcr.org>
Subject: FW: Lead Agency designation - Shore Road Waterfront Park, Village of Lindenhurst, Suffolk Co., NY

Regards,
James

James P. McAllister
Senior Environmental Project Manager
Bureau of Environmental Review and Assessment
Governor's Office of Storm Recovery
500 Bi-County Boulevard, Suite 300, Farmingdale, NY 11735
O: (631) 465-9677 I C: (646)256-9485 I F: (212) 480-2393 I
James.McAllister@stormrecovery.ny.gov
www.stormrecovery.ny.gov

From: Karen Greene - NOAA Federal <karen.greene@noaa.gov>
Sent: Thursday, September 5, 2019 2:32 PM
To: McAllister, James (STORMRECOVERY) <James.McAllister@stormrecovery.ny.gov>
Subject: Lead Agency designation - Shore Road Waterfront Park, Village of Lindenhurst, Suffolk Co., NY

Hello James,

Reference is made to your August 15, 2019 letter regarding the lead agency designation for the environmental review of the Shore Road Waterfront Park Natural Systems resiliency Improvements Project, Village of Lindenhurst, Suffolk Co., NY. Our EFH regulations allow a lead federal agency to designate a non-federal representative for the purposes of the essential fish habitat (EFH) consultation under the Magnuson Stevens Fishery Conservation and Management Act. All that is needed is for us to be notified by the lead agency in writing. Our consent is not required. The lead federal agency remains responsible for ensuring compliance with the MSA consultation requirements and addressing any EFH conservation recommendations we may have.

I also recommend that you reach out to the New York District US Army Corps of Engineers to determine if the project can be authorized under their Nationwide Permit Program. If it can, we have already consulted with them on a programmatic level for all of the nationwide permits.

Please let me know if you'd like the form signed anyway, or if you have any questions.

Karen

Karen Greene
Mid-Atlantic Field Offices Supervisor
NOAA/National Marine Fisheries Service
Greater Atlantic Regional Fisheries Office
Habitat Conservation Division
James J. Howard Marine Sciences Laboratory
74 Magruder Rd.
Highlands, NJ 07732
732 872-3023 (office)

Governor's Office of Storm Recovery

ANDREW M. CUOMO
Governor

August 6, 2019

Karen Greene
Mid-Atlantic Field Office Supervisor
Regulatory Program – Mid Atlantic
Regional EFH Coordinator
Sandy Hook (NJ) Field Office
James J. Howard Marine Sciences Laboratory
74 Magruder Road
Highlands, NJ 07732

Via e-mail: Karen.Greene@noaa.gov

Subject: Shore Road Waterfront Park Natural Systems Resiliency Improvements Project, Village of Lindenhurst, Suffolk County, New York - Essential Fish Habitat Assessment

Dear Ms. Greene:

The Governor's Office of Storm Recovery (GOSR), an office of the New York State Homes and Community Renewal's (NYSHCR) Housing Trust Fund Corporation, was established to aid the statewide recovery of disaster-affected communities in New York State. GOSR is administering a U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant for Disaster Recovery (CDBG-DR), including the New York Rising Community Reconstruction (NYRCR) Program. The environmental review for projects funded under the NYRCR Program are processed on a case-by-case basis. Federal agencies are required to consult with National Marine Fisheries Service (NMFS) (using existing consultation processes for the National Environmental Policy Act (NEPA), the Endangered Species Act, or the Fish and Wildlife Coordination Act) on any action that they authorize, fund or undertake that may adversely impact Essential Fish Habitat (EFH).

The purpose of this letter is to request for an **abbreviated EFH consultation** including the attached EFH Assessment Form (Attachment 1) and an EFH habitat assessment (Attachment 2). GOSR determined that the proposed project will have **an adverse effect on EFH that is not substantial**. This means that the adverse effects are either no more than minimal, temporary, or that they can be alleviated with minor project modifications or conservation recommendations.

Adverse effects to EFH, as defined in 50 CFR 600.910(A) include any impact that reduces the quality and/or quantity of EFH. Adverse effects may include:

- direct impacts such as physical disruption or the release of contaminants;
- indirect impacts such as the loss of prey, reduction in the fecundity (number of offspring produced) of a managed species; and

- site-specific or habitat wide impacts that may include individual, cumulative or synergetic consequences of a Federal action.

The proposed actions may have direct impacts such as physical disruption because the actions include in-water work.

Project Overview and Location

The Village of Lindenhurst proposes to design and implement storm resiliency improvements and public access improvements at the southern end of Shore Road Park, in the Village of Lindenhurst, Town of Babylon, Suffolk County, NY. The project is located on shore frontage on the Great South Bay and flanked on both sides by properties hardened with existing bulkheads (See Attachment 3, figures).

Proposed Improvements

Shore Road Park is a 10.2 acre site located at the southern edge of the Village of Lindenhurst on the shore of the Great South Bay. This area is one of the few remaining public sections of bayfront within the Village. The Park is owned, operated, and maintained by the Village of Lindenhurst and is utilized for seasonal recreational activities and community events. The southern end of the Park is severly eroded and is vulnerable to future storm damage. The Park serves as a buffer for the residential community north of the property. The Park as well as the nearby residential neighborhoods were subject to major flooding from the Great South Bay as well as nearby canals. This flooding resulted in catastrophic damage to hundreds of homes, many of which have since been acquired and razed by the state and the properties turned over to the Village to remain as open space on perpetuity.

The proposed project would involve the southern 1.2 acres of the Park. Elements of the proposed design focus on reducing flood damage and prevention of erosion primarily though the inclusion of a living shoreline and associated stone stabilization measures (See Attachment 4, design plans). The project includes:

- Construction of two rock sills along the shore placed at the low and high tide lines to provide protection during wave action at either tide cycle. Breaks in the lower rock wall will facilitate water and sand movements throughout the tide cycles and avoid impoundment of water.
- Approximately 164 truck loads, based on 16 tons per truckload, of armour stone will be brought to project area for the creation of the living shoreline.
- The high tide rock-sill will include a concrete sitting wall.
- Construction of a gravel road with a gated entry at the southern end of S. Bay Street for emergency access.
- Sand and living shoreline landscaping will be placed between the two rock sills and upland landscaping will be placed above the high tide wall on the west side of the area. A rain garden will be included in the upland landscaping.
- Drainage improvements including extension of existing drainage outlets as a means of protecting the southern end of Shore Road Park from flooding during major storm events. The existing eastern drainage outlet will be extended to an outlet between the low and high tide rock walls. The western drainage outlet will be relocated to an outlet between the low and high tide rock walls.
- The top of the existing bulkheads along the shore of the eastern portion of the site (former private residential parcels) will be removed to an elevation of 0.08 feet and the upland area graded and stabilized.
- Placement of clean fill as needed for grading and stabilizing.

- Use of NYSDEC approved native coastal plantings.
- Permitting with various State and Federal agencies will be required. The three primary agencies with which submissions have already been made are the NYSDOS, NYSDEC and USACOE.

The Proposed Action is within a developed neighborhood. There are residences along both sides of Shoreline Park. The current sandy 'beach' area contains scattered concrete slabs and debris utilized for purposes of erosion control. This material will be removed as part of this project.The slope from the high tide line seaward for approximately 30' is generally flat (less than 3%). Based upon visual inspection, additional rubble of various sources is present in the water. The project area located landward of the high tide line contains various vegetation of salt tolerant species, however the dominant plant is Phragmites, a highly invasive species. The Phragmites will be removed per the NYSDEC's directive.

Existing Conditions

The Project Area contains approximately 520 lineal feet (LF) of exposed sandy shoreline plus an additional 150 LF of collapsing bulkhead. The entire shoreline is located directly on the Great South Bay, approximately 2,300' west of the Village Marina. The portion of the project area containing the collapsing bulkhead is part of two properties previously owned by New York State (NYS) and associated with the GOSR buyout and acquisition program. These properties are now in the ownership of the Village of Lindenhurst and are incorporated into the design as noted above. The sandy beach area contains scattered concrete slabs and debris utilized for purposes of erosion control. The slope from the high tide line seaward for approximately 30' is generally flat (less than 3%). Based upon visual inspection, additional rubble of various sources is present in the water. **No vegetation is present in the water, which can generally be categorized as clear/high visibility.**

The project area located landward of the high tide line contains various vegetation of salt tolerant species, however the dominant plant is Phragmites, a highly invasive species located almost exclusively in wetland and moist conditions. Based upon a November 2018 pre-application meeting with the NYSDEC Permit Administrator and Biologist, it was determined that the existing vegetation in this area will be removed as part of the proposed action.

Based upon historical imagery, Village input, and visual inspection, the Park's shoreline has experienced substantial erosion which has accelerated following Superstorm Sandy. The most visual example is the southeast corner of the soccer field which has eroded landward of the existing chain-link fencing.

The average tide change (1'-8" approximately) provides a narrow opportunity for the incorporation of living shoreline components. The minimum slope however provides an opportunity to provide the width necessary for establishment of the vegetative component of a living shoreline. The existing fetch across the Great South Bay is a key consideration to factor regarding protection of the vegetation from wave action. As such the addition of breakwater structures can provide protection in the form of wave energy dissipation.

Sea level rise has been reviewed, considering various documented sources from NOAA, USACOE, and NYSDEC. The NYSDEC projections provide for various time intervals ranging from 2020 to 2100 were used for the design. For the Long Island region, estimations vary considerable between the low and high projections throughout the time intervals provided. For the purpose of this project, the medium projection for 2050 project was utilized, which predicts approximately 16 inches of sea level rise.

Although sea level rise is a critical consideration, tidal plantings themselves have a limited threshold for habitation. Therefore the design and elevation where the vegetative component of the living shoreline will

be specified must be based on current tide ranges. Future sea level rise can be addressed utilizing the upper tier of the breakwater, or even a third level of protection closer to the field and dead end of South Bay Street.

Vegetation

Selection of the plant species is generally categorized by two zones, intertidal and landward. The intertidal zone is a particularly sensitive area with very few species capable of establishing successfully. The tide fluctuations vary considerably at different locations. At the project site, 1'-8" is the greatest vertical tide fluctuation. Spartina alterniflora (Smooth Cordgrass) is the recommended species for the intertidal area between breakwaters. Smooth Cordgrass has been reported as an effective soil stabilizer in intertidal applications, and has been documented to absorb wave energy itself. Smooth Cordgrass also enables habitat establishment of marsh birds and mammals by providing food and cover. Smooth Cordgrass is available in a variety of sizes (bare root, plugs, gallons), gallon size established plants are recommended in areas where wave action is a factor. To further provide the transplanted plants with anchorage in a tidal environment subject to wave action, it is further recommended to provide each plant with an anchor devise to minimize losses in the event of high winds or storms during the establishment period. For best establishment results, April 1 through September 30 is the recommended planting date range for Smooth Cordgrass.

Benefits of intertidal zone vegetation include:
- Habitat / Cover
- Soil Stabilizer
- Absorb Wave Energy
- Source of Food

Wetland

A tidal wetland is located on Shore Road Park (Village of Lindenhurst), as shown in the attached wetland delineation map. The tidal wetland boundary associated with the Great South Bay at Shore Road Park coincides with the apparent high water line, as there are no vegetated tidal wetland plant communities present. The wetland boundaries are labelled as follows, "Landward limits of tidal wetlands as delineated by WP Bowman PhD (Land Use) on June 5, 2018".

There are no vegetated tidal wetlands located along the Great South Bay shoreline due to the erosional and high-energy conditions. The shoreline appears to be too high-energy to support tidal wetlands vegetation seaward of the spring high water line without installation of a rock sill or similar structure to reduce wave energy. Scattered pieces of concrete and asphalt are present on the shoreline and appear to be remnants of past rip-rap placed to reduced erosion of the shoreline. There is a small erosional scarp at the landward edge of the sandy intertidal beach. The eroded scarp indicates that the athletic field and the unvegetated area between the beach and athletic field feature a thin layer of topsoil rather than native soils.

The western wetland area consists of a marshy swale or ditch dominated by common reed (*Phragmites australis*). Native tidal wetland plants such as black grass (*Juncus gerardii*), three-square rush (*Scirpus americanus*), marsh elder (Iva *frutescens*), and smooth cordgrass (*Spartina alterniflora*) are present at low densities within this swale. The eastern swale features similar species along with marsh mallow (*Hibiscus mosheutos*). Both swales are man-made features. The eastern swale features a concrete sluicepad. A concrete sluicepad may be present within the western swale but could be obscured by accumulated vegetated and detritus.

Geotechnical

Soil borings were collected on the land, none in the water. The soils encountered in the exploratory borings were nearly uniform with little differentiation between the boring locations. Brown sand deposits of medium-dense compaction were found underlying the topsoil down to 4' bgs (Below Grade Surface). A layer of soft, compressible peat and organics was found from 4' bgs to 10' bgs. Beneath the peat, deposits of light brown sand with little gravel of medium-dense compaction were encountered until termination of the soil borings.

The project area is mostly comprised of sandy beach; however the westerly portion contains a dense area of vegetation, mostly consisting of Phragmites, a highly invasive species. Broken concrete slabs are scattered throughout the project area having been placed as rip-rap material.

Nature and Duration of Activities

General construction and planting is anticipated to take approximately four months during the months of April, May, June and July. Pending conditions applicable to sensitivity of habitat, migration, or breeding, the NYSDEC may request modification of the anticipated schedule.

Mobilization & staging (2 weeks): Mobilization of a job trailer, installation of erosion control measures, site protection. Most work would utilize vehicles to tow job trailer and erosion control products. A small bobcat or backhoe loader may be utilized to install the construction tracking pad. Silt fence and inlet protection would be installed manually.

Site Preparation (2 weeks): Clear project area of existing vegetation and deleterious items and rough grading. Work would include clearing, utilizing a bobcat or backhoe loader to clear the vegetation and grade the project area. Deleterious and other items to be removed from the site would be placed into a portable 10-20 cubic yard dumpster and hauled/disposed of in accordance with local/Town/County/State regulations.

Installation of the Lower & Upper Sills (1 month): Natural rock delivered to the site would be placed using an excavator. Work would begin with the lower sill, allowing the contractor to progress operations landward. This stage of construction would include modification to the remains of the existing timber bulkhead and replacement of the stormwater piping, check valves and headwalls. Following the lower sill, the contractor would progress to the upper sill and required grading in-between the sills.

Sitting wall, gravel road terminus, and fine grading (1 month): The excavator would be utilized to install the sitting wall boulders. Utilizing a bobcat or backhoe loader, the gravel road would be installed. The bobcat or backhoe loader would be utilized to perform the fine grading in preparation of planting.

Rain garden and planting (1 month): Planting would be installed primarily utilizing manual forces. A bobcat or backhoe loader would be utilized to install any larger plant material where applicable or for dispersing material on-site. No machinery would be utilized to install the plantings (Spartina) between the sills.

Shore Road Waterfront Park

Summary

This EFH habitat assessment has been prepared to demonstrate that the project follows the requirements of 50 CFR §660.920 implementing the Magnuson-Stevens Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267).

Under a separate consultation, GOSR will make a determination of affects for the proposed action pursuant to Section 7 of the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and the Marine Mammal Protection Act (MMPA) in accordance with the Greater Atlantic Region Section 7 Program Guidance. The determination will be provided to National Oceanic and Atmospheric Administration (NOAA) – NMFS Greater Atlantic Region.

No significant loss of habitat will occur as a result of the proposed action. Additionally, there are no submerged aquatic vegetation (eel grass) beds located within the construction area although SAV are mapped adjacent to project site.

If you have questions or require additional information regarding this request, please contact me at (518) 474-0647 or alicia.shultz@stormrecovery.ny.gov. Thank you for your time and consideration.

Sincerely,

Alicia Shultz

Alicia Shultz
Senior Environmental Scientist
New York State Homes and Community Renewal
38-40 State Street, Hampton Plaza
Albany NY 12207

Enclosures:

Attachment 1: EFH Assessment Form and Mapper Results
Attachment 2: EFH Habitat Assessment Worksheet Supplement
Attachment 3: Figures
Attachment 4: Design Plans
Attachment 5: Wetland Delineation Map
Attachment 6: Design Report

Attachment 1: EFH Assessment Form and Mapper Results

EFH Data Notice: Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional Fishery Management Councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

Greater Atlantic Regional Office
Atlantic Highly Migratory Species Management Division

Query Results

Degrees, Minutes, Seconds: Latitude = 40°39'57" N, Longitude = 74°38'9" W
Decimal Degrees: Latitude = 40.67, Longitude = -73.36

The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

*** W A R N I N G ***

Please note under "Life Stage(s) Found at Location" the category "ALL" indicates that all life stages of that species share the same map and are designated at the queried location.

EFH

Show	Link	Data Caveats	Species / Management Unit	Lifestage(s) Found at Location	Management Council	FMP
			Winter Flounder	Eggs Juvenile Larvae/Adult	New England	Amendment 14 to the Northeast Multispecies FMP
			Little Skate	Juvenile Adult	New England	Amendment 2 to the Northeast Skate Complex FMP
			Ocean Pout	Adult Eggs	New England	Amendment 14 to the Northeast Multispecies FMP
			Atlantic Herring	Juvenile Adult	New England	Amendment 3 to the Atlantic Herring

Show	Link	Data Caveats	Species / Management Unit	Lifestage(s) Found at Location	Management Council	FMP
			Atlantic Cod	Larvae Eggs	New England	Amendment 14 to the Northeast Multispecies FMP
			Pollock	Juvenile Eggs	New England	Amendment 14 to the Northeast Multispecies FMP
			Red Hake	Adult	New England	Amendment 14 to the Northeast Multispecies FMP
			Monkfish	Eggs/Larvae	New England	Amendment 4 to the Monkfish FMP
			Windowpane Flounder	Adult Larvae Eggs Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
			Winter Skate	Adult Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
			White Hake	Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
			Bluefin Tuna	Juvenile	Secretarial	Amendment 10 to the 2006 Consolidated HMS FMP: EFH
			Sandbar Shark	Adult Juvenile	Secretarial	Amendment 10 to the 2006 Consolidated HMS FMP: EFH

Show	Link	Data Caveats	Species / Management Unit	Lifestage(s) Found at Location	Management Council	FMP
			Skipjack Tuna	Adult	Secretarial	Amendment 10 to the 2006 Consolidated HMS FMP: EFH
			Smoothhound Shark Complex (Atlantic Stock)	ALL	Secretarial	Amendment 10 to the 2006 Consolidated HMS FMP: EFH
			Sand Tiger Shark	Neonate/Juvenile	Secretarial	Amendment 10 to the 2006 Consolidated HMS FMP: EFH
			Longfin Inshore Squid	Juvenile Eggs	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11
			Atlantic Mackerel	Eggs Larvae Juvenile Adult	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11
			Bluefish	Adult Juvenile	Mid-Atlantic	Bluefish
			Atlantic Surfclam	Juvenile Adult	Mid-Atlantic	Surfclam and Ocean Quahog
			Scup	Juvenile Adult	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass
			Summer Flounder	Juvenile Adult	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass

Show	Link	Data Caveats	Species / Management Unit	Lifestage(s) Found at Location	Management Council	FMP
			Black Sea Bass	Adult	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass

HAPCs

No Habitat Areas of Particular Concern (HAPC) were identified at the report location.

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.

****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**

Mid-Atlantic Council HAPCs,
No spatial data for summer flounder SAV HAPC.

NOAA FISHERIES
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
Essential Fish Habitat (EFH) Consultation Guidance
EFH ASSESSMENT WORKSHEET

Introduction:

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) mandates that federal agencies conduct an essential fish habitat (EFH) consultation with NOAA Fisheries regarding any of their actions authorized, funded, or undertaken that may adversely affect EFH. An adverse effect means any impact that reduces the quality and/or quantity of EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components. Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

This worksheet has been designed to assist in determining whether a consultation is necessary and in preparing EFH assessments. This worksheet should be used as your EFH assessment or as a guideline for the development of your EFH assessment. At a minimum, all the information required to complete this worksheet should be included in your EFH assessment. If the answers in the worksheet do not fully evaluate the adverse effects to EFH, we may request additional information in order to complete the consultation.

An expanded EFH assessment may be required for more complex projects in order to fully characterize the effects of the project and the avoidance and minimization of impacts to EFH. While the EFH worksheet may be used for larger projects, the format may not be sufficient to incorporate the extent of detail required, and a separate EFH assessment may be developed. However, regardless of format, the analysis outlined in this worksheet should be included for an expanded EFH assessment, along with additional information that may be necessary. This additional information includes:

- the results of on-site inspections to evaluate the habitat and site-specific effects
- the views of recognized experts on the habitat or the species that may be affected
- a review of pertinent literature and related information
- an analysis of alternatives to the action that could avoid or minimize the adverse effects on EFH.

Your analysis of adverse effects to EFH under the MSA should focus on impacts to the habitat for all life stages of species with designated EFH, rather than individual responses of fish species. Fish habitat includes the substrate and benthic resources (e.g., submerged aquatic vegetation, shellfish beds, salt marsh wetlands), as well as the water column and prey species.

Consultation with us may also be necessary if a proposed action results in adverse impacts to other NOAA-trust resources. Part 6 of the worksheet is designed to help assess the effects of the action on other NOAA-trust resources. This helps maintain efficiency in our interagency coordination process. In addition, further consultation may be required if a proposed action impacts marine mammals or threatened and endangered species for which we are responsible. Staff from our Greater Atlantic Regional Fisheries Office, Protected Resources Division should be contacted regarding potential impacts to marine mammals or threatened and endangered species.

Instructions for Use:

Federal agencies must submit an EFH assessment to NOAA Fisheries as part of the EFH consultation. Your EFH assessment must include:

1) A description of the proposed action.
2) An analysis of the potential adverse effects of the action on EFH, and the managed species.
3) The federal agency's conclusions regarding the effects of the action on EFH.
4) Proposed mitigation if applicable.

In order for this worksheet to be considered as your EFH assessment, you must answer the questions in this worksheet fully and with as much detail as available. Give brief explanations for each answer.

Federal action agencies or the non-federal designated lead agency should submit the completed worksheet to NOAA Fisheries Greater Atlantic Regional Fisheries Office, Habitat Conservation Division (HCD) with the public notice or project application. Include project plans showing existing and proposed conditions, all waters of the U.S. on the project site, with mean low water (MLW), mean high water (MHW), high tide line (HTL), and water depths clearly marked and sensitive habitats mapped, including special aquatic sites (submerged aquatic vegetation, saltmarsh, mudflats, riffles and pools, coral reefs, and sanctuaries and refuges), hard bottom habitat areas and shellfish beds, as well as any available site photographs.

For most consultations, NOAA Fisheries has 30 days to provide EFH conservation recommendations once we receive a complete EFH assessment. Submitting all necessary information at once minimizes delays in review and keeps review timelines consistent. Delays in providing a complete EFH assessment can result in our consultation review period extending beyond the public comment period for a particular project.

The information contained on the HCD Consultation website and NOAA's EFH Mapper will assist you in completing this worksheet. Please note that the Mapper is currently being up-dated with new designations and EFH maps and text descriptions for many species are temporarily missing. When you open the Mapper, read the WARNING that pops up when you click on the Greater Atlantic Region. It will direct you to a document with maps and text descriptions for each of the missing New England Species and to the Mapper's Data Inventory where a data layer for all the missing species is available for downloading into GIS software. Once the Mapper is up-dated, you can do a Location Query for your project location, but until then, the only way to easily generate a list of the missing species and life stages is to use your own GIS software. Before you fill out the worksheet, we recommend that you check with the appropriate HCD staff member to ensure that your list is complete and accurate. They will be able to answer any questions that you have.

Also note that a number of new Habitat Areas of Particular Concern (HAPCs) have been designated in the Greater Atlantic Region. HAPC maps will also be added to the Mapper the next time it is up-dated. Currently, they can be viewed by following the instructions on the warning page for the region. We expect the Mapper to be fully up-dated and functional later this spring.

EFH ASSESSMENT WORKSHEET FOR FEDERAL AGENCIES (modified 3/2016)

PROJECT NAME:

DATE:

PROJECT NO.:

LOCATION (Water body, county, physical address):

PREPARER:

Step 1: Use NOAA's EFH Mapper to generate the list of designated EFH for federally-managed species and life stages for the geographic area of interest. Use this list as part of the initial screening process to determine if EFH for those species occurs in the vicinity of the proposed action. The list can be included as an attachment to the worksheet. Make a preliminary determination on the need to conduct an EFH consultation.

1. INITIAL CONSIDERATIONS		
EFH Designations	**Yes**	**No**
Is the action located in or adjacent to EFH designated for eggs? **List the species:**		
Is the action located in or adjacent to EFH designated for larvae? **List the species:**		
Is the action located in or adjacent to EFH designated for juveniles? **List the species:**		

Is the action located in or adjacent to EFH designated for adults or spawning adults? List the species:		

If you answered 'no' to all questions above, then an EFH consultation is not required - go to Section 5.

If you answered 'yes' to any of the above questions, proceed to Section 2 and complete the remainder of the worksheet.

Step 2: In order to assess impacts, it is critical to know the habitat characteristics of the site before the activity is undertaken. Use existing information, to the extent possible, in answering these questions. Identify the sources of the information provided and provide as much description as available. These should not be yes or no answers. Please note that there may be circumstances in which new information must be collected to appropriately characterize the site and assess impacts. Project plans that show the location and extent of sensitive habitats, as well as water depths, the HTL, MHW and MLW should be provided.

2. SITE CHARACTERISTICS

Site Characteristics	Description
Is the site intertidal, sub-tidal, or water column?	
What are the sediment characteristics?	
Is there submerged aquatic vegetation (SAV) at or adjacent to project site? If so describe the SAV species and spatial extent.	
Are there wetlands present on or adjacent to the site? If so, describe the spatial extent and vegetation types.	

Is there shellfish present at or adjacent to the project site? If so, please describe the spatial extent and species present.	
Are there mudflats present at or adjacent to the project site? If so please describe the spatial extent.	
Is there rocky or cobble bottom habitat present at or adjacent to the project site? If so, please describe the spatial extent.	
Is Habitat Area of Particular Concern (HAPC) designated at or near the site? If so for which species, what type habitat type, size, characteristics?	
What is the typical salinity, depth and water temperature regime/range?	
What is the normal frequency of site disturbance, both natural and man-made?	
What is the area of proposed impact (work footprint & far afield)?	

Step 3: This section is used to describe the anticipated impacts from the proposed action on the physical/chemical/biological environment at the project site and areas adjacent to the site that may be affected.

3. DESCRIPTION OF IMPACTS

Impacts	Y	N	Description
Nature and duration of activity(s). Clearly describe the activities proposed and the duration of any disturbances.			
Will the benthic community be disturbed? If no, why not? If yes, describe in detail how the benthos will be impacted.			
Will SAV be impacted? If no, why not? If yes, describe in detail how the SAV will be impacted. Consider both direct and indirect impacts. Provide details of any SAV survey conducted at the site.			
Will salt marsh habitat be impacted? If no, why not? If yes, describe in detail how wetlands will be impacted. What is the aerial extent of the impacts? Are the effects temporary or permanent?			

Will mudflat habitat be impacted? If no, why not? If yes, describe in detail how mudflats will be impacted. What is the aerial extent of the impacts? Are the effects temporary or permanent?			
Will shellfish habitat be impacted? If so, provide in detail how the shellfish habitat will be impacted. What is the aerial extent of the impact? Provide details of any shellfish survey conducted at the site.			
Will hard bottom (rocky, cobble, gravel) habitat be impacted at the site? If so, provide in detail how the hard bottom will be impacted. What is the aerial extent of the impact?			
Will sediments be altered and/or sedimentation rates change? If no, why not? If yes, describe how.			
Will turbidity increase? If no, why not? If yes, describe the causes, the extent of the effects, and the duration.			

Will water depth change? What are the current and proposed depths?			
Will contaminants be released into sediments or water column? If yes, describe the nature of the contaminants and the extent of the effects.			
Will tidal flow, currents, or wave patterns be altered? If no, why not? If yes, describe in detail how.			
Will water quality be altered? If no, why not? If yes, describe in detail how. If the effects are temporary, describe the duration of the impact.			
Will ambient noise levels change? If no, why not? If yes, describe in detail how. If the effects are temporary, describe the duration and degree of impact.			
Does the action have the potential to impact prey species of federally managed fish with EFH designations?			

Step 4: This section is used to evaluate the consequences of the proposed action on the functions and values of EFH as well as the vulnerability of the EFH species and their life stages. Identify which species (from the list generated in Step 1) will be adversely impacted from the action. Assessment of EFH impacts should be based upon the site characteristics identified in Step 2 and the nature of the impacts described within Step 3. NOAA's EFH Mapper should be used during this assessment to determine the ecological parameters/ preferences associated with each species listed and the potential impact to those parameters.

4. EFH ASSESSMENT			
Functions and Values	**Y**	**N**	**Describe habitat type, species and life stages to be adversely impacted**
Will functions and values of EFH be impacted for:			
Spawning **If yes, describe in detail how, and for which species. Describe how adverse effects will be avoided and minimized.**			
Nursery **If yes, describe in detail how and for which species. Describe how adverse effects will be avoided and minimized.**			
Forage **If yes, describe in detail how and for which species. Describe how adverse effects will be avoided and minimized.**			
Shelter **If yes, describe in detail how and for which species. Describe how adverse effects will be avoided and minimized.**			

Will impacts be temporary or permanent? Please indicate in description box and describe the duration of the impacts.			
Will compensatory mitigation be used? If no, why not? Describe plans for mitigation and how this will offset impacts to EFH. Include a conceptual compensatory mitigation plan, if applicable.			

Step 5: This section provides the federal agency's determination on the degree of impact to EFH from the proposed action. The EFH determination also dictates the type of EFH consultation that will be required with NOAA Fisheries.

Please note: if information provided in the worksheet is insufficient to allow NOAA Fisheries to complete the EFH consultation additional information will be requested.

5. DETERMINATION OF IMPACT

Federal Agency's EFH Determination

Overall degree of adverse effects on EFH (not including compensatory mitigation) will be: **(check the appropriate statement)**		**There is no adverse effect on EFH or no EFH is designated at the project site.** **EFH Consultation is not required.** **The adverse effect on EFH is not substantial. This means that the adverse effects are either no more than minimal, temporary, or that they can be alleviated with minor project modifications or conservation recommendations.** **This is a request for an abbreviated EFH consultation. The adverse effect on EFH is substantial.** **This is a request for an expanded EFH consultation.**

Step 6: Consultation with NOAA Fisheries may also be required if the proposed action results in adverse impacts to other NOAA-trust resources, such as anadromous fish, shellfish, crustaceans, or their habitats as part of the Fish and Wildlife Coordination Act Some examples of other NOAA-trust resources are listed below. Inquiries regarding potential impacts to marine mammals or threatened/endangered species should be directed to NOAA Fisheries' Protected Resources Division.

6. OTHER NOAA-TRUST RESOURCES IMPACT ASSESSMENT	
Species known to occur at site (list others that may apply)	**Describe habitat impact type (i.e., physical, chemical, or biological disruption of spawning and/or egg development habitat, juvenile nursery and/or adult feeding or migration habitat). Please note, impacts to federally listed species of fish, sea turtles, and marine mammals must be coordinated with the GARFO Protected Resources Division.**
alewife	
American eel	
American shad	
Atlantic menhaden	
blue crab	
blue mussel	
blueback herring	

Eastern oyster	
horseshoe crab	
quahog	
soft-shell clams	
striped bass	
other species:	

Attachment 2: EFH Habitat Assessment Worksheet Supplement

4. EFH ASSESSMENT – ATTACHMENT

Spawning If yes, describe in detail how, and for which species. Describe how adverse effects will be avoided and minimized.

Atlantic Cod

Cod spawn near the ocean floor from winter to early spring. Atlantic cod is a broadcast spawning fish that releases buoyant eggs into the water column where they are fertilized and undergo development (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3517460/). Due to temporary nature of construction and the benefits that the rock sill will provide, the proposed project is not anticipated to have negative effects on the Cod. Cod are expected to leave the area during construction.

Atlantic mackerel

There are two major spawning groups of Atlantic mackerel in the western Atlantic: The southern group spawns primarily in the Mid-Atlantic Bight from April to May. The northern group spawns in the Gulf of St. Lawrence in June and July. Both groups typically spawn 10 to 30 miles off shore. Depending on their size, females can have between 285,000 and almost 2 million eggs. They release their eggs in batches, between five and seven times throughout the spawning season. Eggs generally float in the surface water and hatch in 4 to 7 $^{1}/_{2}$ days, depending on water temperature.

The action area may result in mackerel to leave the area and spawn in other areas of Great South Bay not under construction in response to sound and turbidity. No adverse effect is anticipated. Since the eggs float, no adverse effects to eggs is expected. Also, in-water work will be avoided from January 15 - May 31.

Longfin Inshore Squid

Longfin Inshore Squid spawn year-round, with peak production in winter and summer. The male cements bundles of spermatophores into the mantle cavity of the female and/or deposits them in a pouch located near her mouth. The spermatophores penetrate the ova, or sperm is stored for later use. The female lays fertilized egg capsules that contain about 150 to 200 eggs each in clusters attached to the ocean bottom, with a typical female laying a total of 3,000 to 6,000 eggs. Eggs hatch between 11 and 26 days later, depending on water temperature (https://www.fisheries.noaa.gov/species/longfin-squid). Most eggs are spawned in May and hatching occurs in July. Egg masses are commonly found attached to rocks and small boulders on sandy/muddy bottom and on aquatic vegetation (https://www.nefsc.noaa.gov/publications/tm/tm193/tm193.pdf).

The action area may result in spawning Longfin Inshore Squid to leave the area and spawn in other areas so Great South Bay not under construction in response to sound and turbidity. The project area itself does not provide habitat for egg masses. No adverse effect is anticipated. Also, in-water work will be avoided from January 15 - May 31.

Monkfish

Monkfish spawn from February to October. Females release large egg veils that can contain more than 1 million eggs. These egg veils float near the surface along with the prevailing currents for 1 to 3 weeks (depending on temperature) until the veil disintegrates and the larvae hatch. Monkfish migrate seasonally to spawn and feed (https://www.fisheries.noaa.gov/species/monkfish).

The action area may result in Monkfish to leave the area and spawn in other areas of Great South Bay not under construction in response to sound and turbidity. No adverse effect is anticipated. Since the eggs float, no adverse effects to eggs is expected.

Ocean Pout

Eggs are laid in gelatinous masses, generally in sheltered nests, holes, or rocky crevices. Essential fish habitat for ocean pout eggs occurs in depths less than 100 meters on rocky bottom habitats. Therefore, the project area does not provide habitat for eggs. The action area may result in Ocean Pout to leave the area and spawn in other areas of Great South Bay not under construction in response to sound and turbidity. No adverse effect is anticipated. Since the egg masses are generally laid in sheltered nests, holes, or rocky crevices, the project area does not provide habitat for eggs and no adverse effects to eggs is expected.

Pollock

The egg stage for Great South Bay is not identified as a Pollock EFH designation for estuaries and embayments (https://www.habitat.noaa.gov/application/efhmapper/oa2_efh_hapc.pdf#page=26). However, the essential fish habitat mapper identifies the Pollock as having an egg stage within the project area. Considering the temporary nature of construction and the small impact of the project and the benefits, the proposed project is unlikely to have any effect of spawning of the Pollock. Fish are likely to leave the area during construction to other areas in South Great Bay.

Smoothhound Shark Complex

These sharks reside on continental shelves and upper slopes, usually between 16.4 to164 ft [5 to 50 m] deep but are often found in intertidal zones to at least 1148.3 ft [350 m]. Prey is primarily crustaceans, but also cephalopods and bony fishes. Reproduction is viviparous, yolk-sac placenta, with 4-15 pups per litter after a 10-11 month gestation. They prefer swimming near the bottom, but sometimes can be found in mid-water. (https://www.sharks.org/smoothhound-mustelus-mustelus). The work area does not provide habitat for the shark eggs and it is anticipated that the shark would leave the area during construction and spawn in other areas of Great South Bay. After construction, the project may benefit the shark by providing shelter for pups.

Winter Flounder

Winter Flounder spawn during the winter and spring in shallow inshore waters, often returning to the same areas where they were born to spawn. Females usually produce between 500,000 and 1.5 million eggs. They deposit their eggs on sandy bottoms and algal mats at night, usually about 40 times every spawning season. Winter Flounder in Long Island Sound and Rhode Island spawn in shallow coastal water. Sub-tidal estuarine and coastal benthic habitats from mean low water to 5

meters from Cape Cod to Absecon Inlet (39° 22' N), and as deep as 70 meters on Georges Bank and in the Gulf of Maine, including mixed and high salinity zones in the bays and estuaries. The eggs are adhesive and deposited in clusters on the bottom. Essential habitats for winter flounder eggs include mud, muddy sand, sand, gravel, macroalgae, and submerged aquatic vegetation. Bottom habitats are unsuitable if exposed to excessive sedimentation which can reduce hatching success. The closest estuary for the flounder from the project location is Long Island Sound. Great South Bay is identified as an estuary of the flounder in NOAA documentation (https://www.habitat.noaa.gov/application/efhmapper/oa2_efh_hapc.pdf#page=41).

Potential short-term impacts to winter flounder EFH related to this work include temporary disruption of spawning habitat and habitat for early life-stage development (i.e., larval settlement) through increased turbidity and burying of substrate (0.12 acre of substrate lose from rock sills) and associated loss of demersal eggs and larvae. Impacts are considered marginal because the area of the rock sills is small relative to the area of Great South Bay. Additionally, in-water work will be avoided from January 15 - May 31 to protect winter flounder early life stages and EFH.

Windowpane Flounder

Spawning occurs throughout most of year, beginning in February or March in inner shelf waters, peaking in Middle Atlantic Bight in May, extending onto Georges Bank during summer, and continuing into autumn in southern portions of the range. Species apparently has a split spawning season in the Middle Atlantic Bight with peaks in spring and autumn. Some spawning may occur in high salinity portions of estuaries in Middle Atlantic Bight and in coastal habitats of North and South Carolina. Spawning occurs in the evening or at night on or near the bottom at temperatures ranging from 6 to 21 C. Eggs are buoyant and spherical, 0.9 to 1.4 mm in diameter, with a single oil globule (0.2 to 0.3 mm in diameter) (https://www.vims.edu/research/departments/fisheries/programs/multispecies_fisheries_research/species_data/windowpane_flounder/index.php).

Potential direct short-term impacts to all windowpane flounder EFH include temporary disruption of bottom habitat during construction with the associated increased turbidity and disturbance of water column habitat. Potential impacts to spawning adult and egg would likely be limited due to relatively small area of impacts. Potential impacts would be seasonal, primarily in April and May when spawning adults and eggs are most likely to be found in the South Great Bay. Since windowpane flounder eggs are pelagic, impacts would be limited to disturbances within the water column and in the immediate construction area. The installation will not result in significant adverse effects to spawning as there are other areas in South Great Bay that can be used for spawning. Additionally, in-water work will be avoided from January 15 - May 31 to protect winter flounder early life stages and EFH.

Nursery If yes, describe in detail how and for which species. Describe how adverse effects will be avoided and minimized.

The following species have larvae and juvenile species habitat within the project area: Atlantic Mackerel, Bluefish, Atlantic surfclam, Black Sea Bass, Longfin Inshore Squid, Sandbar Shark,

Sand Tiger Shark, Winter Flounder, Little Skate, Atlantic Herring, Pollock, Monkfish, Windowpane Flounder, White Hake, and Winter Skate.

Because Juvenile fish are mobile, it is expected that they will avoid the areas of disturbance and they will not be impacted. The area of EFH disturbance is relatively small scale (0.12 acre) compared to other suitable habitat available in South Great Bay for the above species. The new rock sill may provide new areas of refuse for nursery fish. Additionally, in-water work will be avoided from January 15 - May 31 to protect early life stages and EFH.

Source: https://www.habitat.noaa.gov/application/efhmapper/oa2 efh hapc.pdf

Other Sources:

Jones, C.R. and J.R. Schubel. 1978. Distribution of surficial sediments and eelgrass in New York's South Shore Bays: an assessment from the literature. Special report 13, reference 78-1, Marine Sciences Research Center, State University of New York, Stony Brook, NY.

Jones, C.R. and J.R. Schubel. 1980. Distributions of surficial sediment and eelgrass in Great South Bay, New York (from Smith Point west to Wantagh State Parkway). Special report 39, reference 80-6, Marine Sciences Research Center, State University of New York, Stony Brook, NY.

Attachment 3: Figures

Shore Road Waterfront Park Natural Systems Resiliency Improvements

Floodplain and CBRS

0 0.02 0.04 0.08 Miles

Sources of Data: USFWS, FEMA, ESRI, State of NY

Governor's Office of Storm Recovery
Drawn By: R.Ferres
Version: 1.1
Date: 05/16/2017

Shore Road Waterfront Park Natural Systems Resiliency Improvements

Wetlands

0 0.0275 0.055 0.11 Miles

Sources of Data: USFWS, FEMA, ESRI, State of NY

Governor's Office of Storm Recovery
Drawn By: R.Ferres
Version: 1.1
Date: 05/16/2017

Shellfish

	Approved		Conditionally Restricted		Prohibited
	Conditionally Approved		Conditionally Restricted for Relay		Restricted

NEW YORK STATE OF OPPORTUNITY. Department of State


Lindenhurst Shore Road
Submerged Aquatic Vegetation
Legend
Shore Road Park
E Hoffman Ave
John St
New York Ave
Lindenhurst
W Hoffman Ave
S Broadway
S Strong Ave
S Delaware Ave
Park Ave
Little East Neck Rd S
Wellwood Ave
Shore Rd
Shore Road Park
Indian Island
47
3
96
Google Earth
© 2018 Google
N
1 mi

Attachment 4: Design Plans

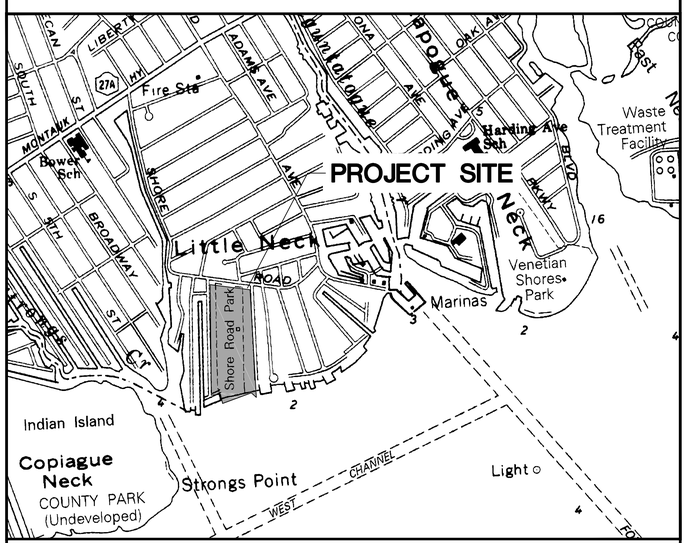
INCORPORATED VILLAGE OF LINDENHURST

SHORE ROAD WATERFRONT PARK NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

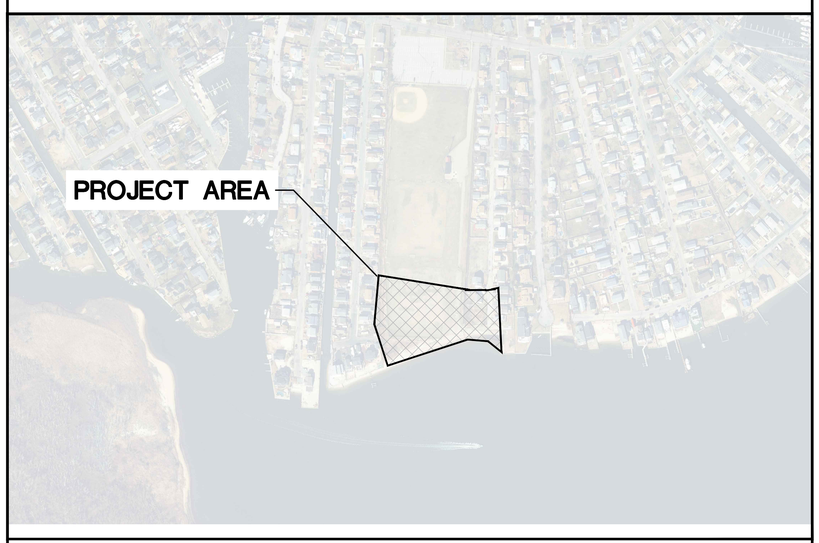
CONTRACT BID NUMBER: XXXXX

VILLAGE OF LINDENHURST, SUFFOLK COUNTY, NY 11757

LIST OF DRAWINGS



VICINITY MAP (Scale: 1" = 1000')



KEY MAP (Scale: 1" = 300')

PREPARED BY:

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REMOVALS NOTES

1. ANY EXCAVATION RESULTING FROM DEMOLITION SHALL BE PROPERLY BACKFILLED WHERE APPLICABLE WITH CLEAN, GRANULAR MATERIAL, COMPACTED TO 95% PROCTOR DENSITY AND BACKFILLED TO MEET EXISTING ADJACENT GRADES. BACKFILL MATERIAL SHALL BE PLACED WITH MAXIMUM 9" LOOSE LIFTS. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPACTION TESTING AND SHALL SUBMIT SUCH REPORTS AND VERIFICATION TO THE ENGINEER.
2. DAILY, DURING DEMOLITION AND DURING THE CONSTRUCTION PERIOD, THE CONTRACTOR SHALL REMOVE ALL RUBBISH AND EXCESS MATERIAL ACCUMULATED AS A RESULT OF HIS OPERATIONS AND/OR THE OPERATIONS OF HIS SUBCONTRACTORS. THE CONTRACTOR IS RESPONSIBLE FOR FINAL AND THOROUGH CLEANING OF ALL SURFACES, FINISHES AND EQUIPMENT BEFORE FINAL ACCEPTANCE BY THE OWNER.
3. RECOVERED TOPSOIL MATERIAL SHALL BE DELIVERED TO THE OWNER. THE EXACT LOCATION TO BE DETERMINED. THE CONTRACTOR SHALL CREATE NEAT PILES OF STORED MATERIAL. THE STORED TOPSOIL STOCK PILES SHALL BE STABILIZED WITH HYDRO-SEED AND SILT FENCE PROTECTION IN ACCORDANCE WITH THE EROSION CONTROL DETAIL FOR MATERIAL STOCK PILES. ALL WORK ASSOCIATED WITH RECOVERED AND RELOCATED TOPSOIL SHALL BE INCLUDED IN THE CONTRACTORS BASE BID PRICE.
4. ALL CONSTRUCTION DEBRIS, ETC. SHALL NOT BE BURIED ON THE SUBJECT SITE. ALL UNSUITABLE MATERIAL SHALL BE PROPERLY REMOVED & DISPOSED OF LEGALLY OFF-SITE IN ACCORDANCE WITH ALL LOCAL, TOWN, COUNTY, STATE AND FEDERAL CODES, ORDINANCES & LAWS.
5. THE CONTRACTOR SHALL TAKE PRECAUTIONS AGAINST DAMAGING OR DISRUPTING FACILITY SYSTEMS, UTILITIES AND/OR OPERATIONS. ANY DAMAGE TO THESE ITEMS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S COST WITHIN THE CONTRACT PERIOD FOR SUBSTANTIAL COMPLETION.
6. NO MATERIAL IS PERMITTED TO BE STORED OUTSIDE OF THE SUBJECT SITE PERIMETER.
7. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE STATE OF NEW YORK DEPARTMENT OF LABOR, BOARD OF STANDARDS AND APPEALS INDUSTRIAL CODE RULE 53 – "CONSTRUCTION, EXCAVATION AND DEMOLITION OPERATIONS AT OR NEAR UNDERGROUND FACILITIES", EFFECTIVE APRIL 1, 1975. THE CONTRACTOR WILL BE REQUIRED TO COMPLY WITH ALL APPLICABLE REQUIREMENTS OF INDUSTRIAL CODE RULE 53.
8. ON SITE, THE DEMOLITION CONTRACTOR SHALL RETAIN A PRIVATE MARK-OUT SERVICES COMPANY. ANY DISCREPANCIES BETWEEN THE FIELD LOCATIONS AND THE PLANS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY. THE DEMOLITION CONTRACTOR IS ADVISED THAT UTILITY INFORMATION MUST BE CONFIRMED ACCORDINGLY. THE DEMOLITION CONTRACTOR IS ALSO ADVISED THAT ALL SUCH UTILITIES DISTURBED DURING CONSTRUCTION MUST BE REPAIRED OR REPLACED AT THE DEMOLITION CONTRACTOR'S EXPENSE.
9. THE CONTRACTOR SHALL REPAIR AND/OR REPLACE ANY ITEMS DAMAGED BY HIS WORK SHOWN OR NOT SHOWN ON PLANS, WHICH WERE SCHEDULED TO REMAIN OR NOT PART OF THIS CONTRACT.
10. THE CONTRACTOR IS TO EXERCISE EXTREME CARE WHEN PERFORMING ANY WORK ACTIVITIES ADJACENT TO STRUCTURES TO REMAIN. DEMOLITION CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING THE APPROPRIATE MEASURES AS NECESSARY TO ENSURE THE STRUCTURAL STABILITY OF STRUCTURES TO REMAIN AND PROVIDE A SAFE WORK AREA.
11. REMOVAL SHALL INCLUDE ALL FOOTINGS, SLABS, FOUNDATIONS, UNDERGROUND PIPING AND STRUCTURES, UNLESS OTHERWISE NOTED.
12. REFER TO SITE PLAN FOR ADDITIONAL INFORMATION CONCERNING CURRENT IMPROVEMENTS, GRADES, ETC.
13. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO PROTECT PEDESTRIANS DURING DEMOLITION.
14. THE CONTRACTOR SHALL REFER TO SOIL BORING TO OBTAIN GROUNDWATER AND GEOTECHNICAL INFORMATION PRIOR TO COMMENCEMENT OF DEMOLITION.
15. THE CONTRACTOR SHALL NOTIFY APPROPRIATE UTILITIES 48 HOURS BEFORE EXCAVATING, CUTTING, REMOVING OR TAPPING INTO ANY EXISTING UTILITY SERVICE.
16. CONSTRUCTION SITE RUNOFF IS TO BE CONTAINED ON SITE THROUGH PROPOSED DRAINAGE SYSTEM, WHICH SHALL BE PROTECTED BY EROSION CONTROL MEASURES SEE EROSION CONTROL PLAN.
17. GENERAL CONTRACTOR IS RESPONSIBLE TO CLEAR, STRIP AND GRADE AREAS WITHIN PROJECT LIMIT LINES TO FACILITATE CONSTRUCTION AS SHOWN ON DRAWINGS.

GENERAL SITE PLAN NOTES

1. THIS PLAN REFERENCES A TOPOGRAPHIC SURVEY PREPARED BY HURLEY LAND SURVEYING, PLLC, 166 BROADWAY, AMITYVILLE, NY 11701, DATED JUNE 12, 2018.
2. BEFORE SUBMITTING A BID, THE GENERAL CONTRACTOR SHALL VISIT THE PREMISES OF THE PROPOSED WORK AND SHALL CAREFULLY EXAMINE THE ENGINEERING DRAWINGS, EXISTING CONDITIONS AND LIMITATIONS THEREOF. VERIFICATION SHALL BE MADE AS TO THE ACTUAL LOCATIONS WHERE NEW EQUIPMENT AND STRUCTURES WILL BE LOCATED, COORDINATING WITH NEW AND EXISTING WORK AND PROVIDING CLEARANCES WITH STRUCTURAL MEMBERS. THE GENERAL CONTRACTOR SHALL INCLUDE ALL COSTS OF ANY KIND WHATSOEVER WHICH ARE INCURRED THROUGH LIMITATIONS OF THE EXISTING AND NEW CONDITIONS. LATER CLAIMS FOR EXTRA LABOR, EQUIPMENT AND MATERIALS REQUIRED DUE TO DIFFICULTIES WHICH COULD HAVE BEEN FORESEEN WILL NOT BE CONSIDERED AS EXTRA WORK.
3. ALL WORK SHALL COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES, AND ALL REGULATORY AGENCIES.
4. ALL WORK, WHETHER SHOWN OR INFERRED, UNLESS SPECIFICALLY QUESTIONED, SHALL BE CONSIDERED FULLY UNDERSTOOD IN ALL RESPECTS BY THE GENERAL CONTRACTOR, AND THE GENERAL CONTRACTOR SHALL THEREBY BE RESPONSIBLE FOR ANY INTERPRETATIONS OR CONSEQUENCES THEREOF FOR ALL WORK ON ALL DRAWINGS.
5. THE OWNER'S REPRESENTATIVE SHALL BE NOTIFIED OF ANY DISCREPANCIES OR OMISSIONS WHICH COULD INTERFERE WITH THE SATISFACTORY COMPLETION OF THE WORK, PRIOR TO THE START OF ANY AND ALL WORK.
6. THE GENERAL CONTRACTOR SHALL IN ALL RESPECTS COMPLY WITH ALL REQUIREMENTS OF THE OWNER. IT SHALL BE THE GENERAL CONTRACTOR'S RESPONSIBILITY TO OBTAIN SUCH REQUIREMENTS FROM THE OWNER. IN THE EVENT OF CONFLICT BETWEEN REGULATIONS AND OTHER CONTRACT DOCUMENTS, THE OWNER'S REPRESENTATIVE AND OWNER SHALL BE CONSULTED PRIOR TO THE START OF ANY AND ALL WORK.
7. THE OWNER RESERVES THE RIGHT TO LET OTHER CONTRACTS IN CONNECTION WITH THE WORK OF THIS PROJECT. THE GENERAL CONTRACTOR SHALL COOPERATE WITH OTHER GENERAL CONTRACTORS AS REQUIRED TO CONFORM TO THE GENERAL CONSTRUCTION SCHEDULE AND SHALL AFFORD OTHER GENERAL CONTRACTORS REASONABLE OPPORTUNITY FOR THE INTRODUCTION AND STORAGE OF THEIR MATERIALS AND EQUIPMENT AND THE EXECUTION OF THEIR WORK.
8. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING ALL DRAWINGS AND SPECIFICATIONS, AND NOTING ALL APPLICABLE WORK AS SHOWN OR INFERRED. ALL WORK AS SHOWN OR INFERRED SHALL BE INCLUDED IN THE COSTS.
9. THE GENERAL CONTRACTOR SHALL FIRST COORDINATE AND THEN SUBMIT ALL SUB-CONTRACTORS' SHOP DRAWINGS TO THE OWNER'S REPRESENTATIVE FOR REVIEW PRIOR TO WORK BEING PERFORMED.
10. ALL WORK SHALL CONFORM TO THE DRAWINGS AND SPECIFICATIONS AND SHALL BE OF NEW AND BEST QUALITY. NO MATERIAL SUBSTITUTIONS SHALL BE MADE, EXCEPT BY WRITTEN APPROVAL OF THE OWNER'S REPRESENTATIVE IN RESPONSE TO THE GENERAL CONTRACTOR'S WRITTEN REQUEST.
11. ALL MANUFACTURED ARTICLES, MATERIALS AND EQUIPMENT SHALL BE SUPPLIED, INSTALLED, CONNECTED, ERECTED, USED, CLEANED AND CONDITIONED AS DIRECTED BY THE MANUFACTURERS, UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS.
12. THE GENERAL CONTRACTOR SHALL REPAIR AND RESTORE TO ORIGINAL CONDITION ANY EXISTING EQUIPMENT OR MATERIALS DAMAGED IN THE PROCESS OF INSTALLATION, AND DEMOLITION TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AND AT NO ADDITIONAL COST TO THE OWNER.
13. THE GENERAL CONTRACTOR SHALL MAKE REPAIRS USING THE SAME MATERIALS, AT THE GENERAL CONTRACTOR'S COST.
14. THE GENERAL CONTRACTOR SHALL INCUR ALL COSTS AND BURDENS ASSOCIATED WITH LOST, STOLEN OR DAMAGED EQUIPMENT AND MATERIALS.
15. THE UTILITIES AND SERVICES IN THE CONSTRUCTION AREA, AS SHOWN ON THE CONTRACT DRAWINGS ARE AT THE APPROXIMATE LOCATIONS FURNISHED BY THE VARIOUS UTILITIES CONCERNED AND/OR AS SHOWN ON RECORD DESIGN DOCUMENTS. WHENEVER EXISTING IMPROVEMENT INFORMATION IS EITHER INDICATED ON THE DRAWINGS OR SUPPLIED TO THE GENERAL CONTRACTOR AT A LATER DATE, IT IS UNDERSTOOD THAT SUCH INFORMATION IS FURNISHED IN GOOD FAITH FOR THE GENERAL CONTRACTOR'S CONVENIENCE. THE GENERAL CONTRACTOR MUST INTERPRET THIS INFORMATION ACCORDING TO HIS OWN JUDGMENT, AND MUST MAKE HIS OWN DETERMINATIONS REGARDING THE LOCATION OF ALL IMPROVEMENTS. NO CLAIM WILL BE ALLOWED BECAUSE OF INCORRECT, INCOMPLETE OR OMITTED EXISTING IMPROVEMENTS INFORMATION.
16. ALL WORK, MATERIALS, SPECIFICATIONS, REGULATIONS, RULES, PERMITS, ETC., OF ALL STATE, COUNTY AND LOCAL GOVERNMENTS AND ALL UTILITY AGENCIES SHALL BE FOLLOWED BY THE GENERAL CONTRACTOR.
17. UTILITY FORCES, GENERAL CONTRACTORS, OR OTHER PARTIES MAY BE EXPECTED TO BE WORKING WITHIN THE CONTRACT AREA DURING THE CONTRACT. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE HIS WORK UNDER THIS CONTRACT WITH THE WORK BEING DONE BY OTHERS IN ORDER THAT THE CONSTRUCTION MAY PROCEED IN AN EFFICIENT AND LOGICAL MANNER.
18. THE GENERAL CONTRACTOR'S ATTENTION IS DIRECTED TO THE STATE OF NEW YORK DEPARTMENT OF LABOR, BOARD OF STANDARDS AND APPEALS INDUSTRIAL CODE RULE 53 – "CONSTRUCTION, EXCAVATION AND DEMOLITION OPERATIONS AT OR NEAR UNDERGROUND FACILITIES", EFFECTIVE APRIL 1, 1975. THE GENERAL CONTRACTOR WILL BE REQUIRED TO COMPLY WITH ALL APPLICABLE REQUIREMENTS OF INDUSTRIAL CODE RULE 53.
19. GENERAL CONTRACTOR IS CAUTIONED TO AVOID DISTURBING ANY FENCES, SHRUBS, TREES, ETC., THAT ARE ADJACENT TO HIS CONSTRUCTION WITHOUT WRITTEN PERMISSION FROM THE ENGINEER. AS ORDERED BY THE ENGINEER, THE COST OF REPAIRING OR ADJUSTING ANY SUCH DISTURBED AREAS WILL BE AT THE GENERAL CONTRACTOR'S OWN EXPENSE. IN THE EVENT THAT TREES ARE ENDANGERED, THE GENERAL CONTRACTOR WILL TAKE ALL PRECAUTIONS TO PROTECT THEM, AS DIRECTED BY THE ENGINEER. PAYMENT FOR ANY NECESSARY WORK SHALL BE INCLUDED IN THE VARIOUS CONTRACT ITEMS.
20. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE THE ACTIVITIES OF ANY SUB-CONTRACTORS, OWNER CONTRACTED TRADESMAN, MUNICIPAL EMPLOYEES, UTILITIES, ETC., INVOLVED IN THE OVERALL SCOPE OF THE PROJECT, AT NO COST TO THE OWNER. THE GENERAL CONTRACTOR WILL PREPARE A PROJECT SCHEDULE INCLUDING THE WORK OF ALL SUB-CONTRACTORS.
21. BECAUSE THE PROPOSED IMPROVEMENTS ARE TO ENHANCE THE ASPECTS OF THE SITES, THE GENERAL CONTRACTOR IS NOTIFIED THAT THE GENERAL PUBLIC, SOME OF WHOM MAY BE POTENTIAL VANDALS, WILL BE IN THE AREA AT ANY HOUR. GENERAL CONTRACTOR SHALL PROTECT, AT ALL TIMES, THE PUBLIC AND HIS WORK FROM HARM. GENERAL CONTRACTOR SHALL BEAR ALL RESPONSIBILITY FOR HARM TO THE PUBLIC AND DAMAGE TO HIS EQUIPMENT, TOOLS AND MATERIALS.
22. DEBRIS SHALL NOT BE BURIED ON SITE. GENERAL CONTRACTOR SHALL DISPOSE OF ALL UNSUITABLE MATERIALS AND DEBRIS IN FULL ACCORDANCE WITH APPLICABLE LOCAL, TOWN, COUNTY, STATE AND FEDERAL REQUIREMENTS.
23. ALL EXCAVATION SHALL BE PROPERLY BACKFILLED WITH CLEAN EARTH AND COMPACTED TO 95% PROCTOR. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ASSISTING COMPACTION TESTING.
24. GENERAL CONTRACTOR IS TO EXERCISE EXTREME CARE WHEN PERFORMING ANY WORK ACTIVITIES ADJACENT TO BUILDING WALLS/STRUCTURES TO REMAIN. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING THE APPROPRIATE MEASURES AS NECESSARY TO ENSURE THE STRUCTURAL STABILITY OF FOUNDATIONS/WALLS/ FOOTINGS, SIDEWALKS, ETC. TO REMAIN. THE GENERAL CONTRACTOR SHALL REPAIR AND/OR REPLACE ANY DISTURBED EXISTING FEATURES TO A CONDITION EQUAL TO OR BETTER THAN CURRENTLY EXISTED.
25. THE IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH PLANS APPROVED BY THE LOCAL MUNICIPALITY, TOWN, COUNTY AND/OR STATE. A COPY OF THE APPROVED PLANS MUST BE KEPT AT THE CONSTRUCTION SITE AT ALL TIMES.
26. GENERAL CONTRACTOR TO ENSURE ADA COMPLIANT GRADES. SEE GRADING PLAN FOR DETAILS.
27. THE GENERAL CONTRACTOR SHALL PROVIDE ALL BARRICADES, SIGNS, LIGHTS, ETC., FOR MAINTENANCE AND PROTECTION OF TRAFFIC FOR THE DURATION OF THIS CONTRACT, ALL IN ACCORDANCE WITH THE LATEST NYSDOT MANUAL OF TRAFFIC CONTROL DEVICES.
28. THE GENERAL CONTRACTOR SHALL COMPLY WITH ALL RULES, REGULATIONS AND DIRECTIVES OF THE LOCAL POLICE DEPARTMENT.
29. THE GENERAL CONTRACTOR SHALL COMPLY WITH THE LATEST OSHA CONFINED SPACE ENTRY REQUIREMENTS (29 CFR PART 1910) & SHEETING REQUIREMENTS (29 CFR PART 1926.650, 651, 652).

GRADING NOTES

1. ELEVATIONS SHOWN HEREON REFER TO THE NAVD88 DATUM. THE GENERAL CONTRACTOR SHALL VERIFY ALL EXISTING AND PROPOSED ELEVATIONS IN THE FIELD.
2. THE GENERAL CONTRACTOR'S ATTENTION IS DIRECTED TO THE STATE OF NEW YORK DEPARTMENT OF LABOR, BOARD OF STANDARDS AND APPEALS INDUSTRIAL CODE RULE 53 – "CONSTRUCTION, EXCAVATION AND DEMOLITION OPERATIONS AT OR NEAR UNDERGROUND FACILITIES", EFFECTIVE APRIL 1, 1975. THE GENERAL SUB-CONTRACTOR WILL BE REQUIRED TO COMPLY WITH ALL APPLICABLE REQUIREMENTS OF INDUSTRIAL CODE RULE 53.
3. THE GENERAL CONTRACTOR SHALL COMPLY WITH THE LATEST OSHA CONFINED SPACE ENTRY REQUIREMENTS (29 CFR PART 1910).
4. THE GENERAL CONTRACTOR SHALL COMPLY WITH THE LATEST REVISED OSHA SHEETING REQUIREMENTS (29 CFR PART 1926.650, 651, 652).
5. MASS GRADING FILL AREAS SHALL BE FIRST STRIPPED OF TOPSOIL AND MASS GRADING FILL SHALL BE GENERATED IN 6 INCH LIFTS, COMPACTED TO 95% STANDARD PROCTOR DENSITY.
6. GENERAL CONTRACTOR RESPONSIBLE TO CONFORM WITH NYS DEC SPDES GP-0-15-001 GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITY.
7. GENERAL CONTRACTOR IS RESPONSIBLE TO STRIP AND STOCKPILE TOPSOIL & SUBSOIL. SOILS ARE TO BE STOCKPILED ON SITE AS DIRECTED BY OWNER.
8. GRADES SHOWN REFLECT FINISHED ELEVATIONS.
9. GENERAL CONTRACTOR IS RESPONSIBLE TO PROVIDE ANY ADDITIONAL SOIL (FILL) AS NECESSARY TO FACILITATE CONSTRUCTION AS INDICATED ON DRAWINGS.

INVASIVE SPECIES REMOVAL NOTES

1. SCOPE
   a. EXOTIC AND INVASIVE SPECIES CAN ALTER ECOSYSTEMS AND RENDER THEM A MONOCULTURE BY EXCLUDING OTHER SPECIES. THE THICK GROWTH OF ROOT RHIZOMES AND THE ACCUMULATION OF DETRITUS AFTER WINTER DIE-BACK CAN PREVENT NATIVE PLANT SPECIES FROM BECOMING ESTABLISHED. MECHANICAL AND CHEMICAL METHODS ARE DESCRIBED TO ERADICATE EXOTIC AND INVASIVE PLANT SPECIES. THE PRIMARY INVASIVE SPECIES FOUND WITHIN THE PROJECT AREA IS PHRAGMITES.
2. SUBMITTALS
   a. SUBMIT TO OWNER'S REPRESENTATIVE, SHOP DRAWINGS AND PRODUCT DATA FOR REVIEW.
   b. SUBMIT MANUFACTURER'S INSTRUCTIONS FOR USAGE AND MAINTENANCE.
3. DELIVERY, STORAGE AND HANDLING
   a. MATERIALS SHALL BE PROTECTED DURING LOADING, TRANSPORTING AND UNLOADING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
4. PRODUCTS
   a. HERBICIDES SHALL INCLUDE; RODEO®, OR APPROVED EQUAL SYSTEMIC, GLYPHOSATE-BASED HERBICIDE CONTAINING A SURFACTANT THAT IS NOT TOXIC TO AQUATIC ORGANISMS.
5. EXCAVATION AND DISPOSAL
   a. PLANTS SHALL BE REMOVED TO A DEPTH OF AT LEAST 24 INCHES TO INCLUDE THE ENTIRE ROOT MASS. EXCAVATED MATERIAL SHALL BE REMOVED, BUNDLED AND TRANSPORTED TO AN APPROPRIATE LINED OFF-SITE DISPOSAL AREA.
6. CHEMICAL TREATMENT
   a. HERBICIDES SHALL BE APPLIED IN STRICT CONFORMANCE WITH MANUFACTURER RECOMMENDATIONS, TO PROTECT AQUATIC ORGANISMS.
   b. TIME OF APPLICATION SHALL BE MADE ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS SPECIFIC TO THE SPECIES TARGETED.
   c. APPLICATION METHODOLOGY – HERBICIDE SHALL BE MIXED AT THE CONCENTRATION RECOMMENDED BY THE MANUFACTURER.
   d. FOLLOW-UP TREATMENT – APPLICATION SHALL BE REPEATED AS RECOMMENDED BY THE MANUFACTURER.
   e. POST-APPLICATION DETRITUS REMOVAL – LEAF AND STEM LITTER SHALL BE REMOVED FROM THE SITE AFTER THE PLANTS HAVE DIED FROM THE CHEMICAL TREATMENT OR WINTER DIE-BACK.
   f. POST-APPLICATION PLANT INSTALLATION – AREAS THAT RECEIVE CHEMICAL TREATMENT SHALL NOT BE PLANTED WITH SEED MIX OR OTHER PLANTING UNTIL 95% ERADICATION OF INVASIVE SPECIES HAS BEEN CONFIRMED BY OWNER'S REPRESENTATIVE, ALSO IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
7. GUARANTEE
   a. THE CONTRACTORS BID PRICE SHALL INCLUDE THE COST OF GUARANTEEING FOR TWO YEARS FROM THE DATE FOLLOWING THE FIRST TREATMENT, THE ERADICATION OF EXOTIC AND INVASIVE PLANTS FROM 95% OF THE AREA INITIALLY COVERED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
8. PERMIT CONDITIONS
   a. THE CONTRACTOR SHALL BE AWARE THAT A NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION (NYSDEC) PERMIT APPLIES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH AND FOLLOW ALL CONDITIONS OF THE PERMIT.

SPARTINA ALTERNIFLORA NOTE

THE NEAREST APPLICABLE AND ACCESSIBLE LOCATION OF EXISTING SPARTINA ALTERNIFLORA WAS LOCATED ACROSS THE GREAT SOUTH BAY AT CEDAR BEACH PARK (TOWN OF BABYLON), IN FEBRUARY 2019. HURLEY LAND SURVEYING, PLLC VERIFIED THE ELEVATION AT 1.1.

PLANTING NOTES

1. ALL PLANT MATERIAL SUPPLIED AND INSTALLED SHALL BE IN ACCORDANCE WITH CURRENT A.A.N. (AMERICAN ASSOCIATION OF NURSERYMEN), AND ACCEPTED INDUSTRY STANDARDS.
2. BACKFILL ALL PLANT PITS WITH A BACKFILL MIXTURE OF 50% TOPSOIL TO 50% ORIGINAL SOIL EXCAVATED FROM THE PLANTING HOLE.
3. CULTIVATE AND RAKE OVER FINISHED PLANTING AREA AND LEAVE IN AN ORDERLY CONDITION.
4. FORM A SHALLOW BASIN AROUND EACH PLANT SO AS TO HOLD WATER AND MULCH.
5. ALL TREE AND SHRUB AREAS TO BE MULCHED WITH A MINIMUM OF 3" SHREDDED BARK MULCH.
6. REMOVE FROM ALL PLANT MATERIAL, BROKEN OR BRUISED BRANCHES WITH A CLEAN CUT.
7. AT THE TIME OF PLANTING, THE SOIL AROUND EACH PLANT SHALL BE THOROUGHLY SATURATED WITH WATER AND AS MANY TIMES LATER AS SEASON CONDITIONS REQUIRE.
8. PLANTING AREAS UPLAND OF UPPER ROCK SILL/ROCK WALL TO BE TOPSOILED WITH A MINIMUM OF 6" TOPSOIL.
9. ALL PROPOSED LANDSCAPING SHALL BE IRRIGATED FOR A PERIOD OF ONE YEAR. GENERAL CONTRACTOR SHALL INCLUDE THE COST AND LOGISTICS TO PROVIDE THE TEMPORARY IRRIGATION.

SOIL EROSION & SEDIMENT CONTROL NOTES

1. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED. CONTRACTOR SHALL COMPLY WITH ALL PHASE II STORM WATER REQUIREMENTS.
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN THE STATE OF NEW YORK. THE CONTRACTOR SHALL SUBMIT AN EROSION CONTROL PLAN TO THE OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO CONSTRUCTION.
3. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (i.e., STEEP SLOPES AND GRAVEL EMBANKMENTS) SHALL RECEIVE A TEMPORARY COVER OF STRAW MULCH OR A SUITABLE EQUIVALENT, AT A RATE OF TWO (2) TONS PER ACRE, ACCORDING TO STATE STANDARDS.
4. AT THE TIME WHEN THE SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS GOING TO BE ACCOMPLISHED, ANY SOIL THAT WILL NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROUND COVER, SHALL BE REMOVED OR TREATED IN SUCH A WAY THAT WILL PERMANENTLY ADJUST THE SOIL CONDITIONS AND RENDER IT SUITABLE FOR VEGETATIVE COVER.
5. THE CONTRACTOR SHALL TAKE NECESSARY MEASURES TO MAINTAIN DUST CONTROL. VEHICLES SHALL BE CLEANED, AS NECESSARY, PRIOR TO USING PUBLIC STREETS. PAVED ROADS SHALL BE SPRINKLED WITH WATER. ALL CONSTRUCTION AND INSPECTION VEHICLES WILL ENTER AND EXIT THE PROJECT SITE AT THE CONSTRUCTION ENTRANCE.
6. ALL SOIL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE LOCATED IN THE FIELD AS REQUIRED OR AT THE DIRECTION OF THE OWNER'S REPRESENTATIVE OR AT THE DIRECTION OF THE MS-4. THE CONTRACT DRAWINGS ARE NOT INTENDED TO SHOW THE LOCATION AND DETAILS FOR ALL SUCH DEVICES BUT ARE TO BE USED AS A REASONABLE GUIDE.
7. ANY CHANGES TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN SHALL REQUIRE THE SUBMISSION OF A REVISED SOIL EROSION AND SEDIMENT CONTROL PLAN TO THE MS-4 AND THE STATE DEC FOR THE RE-CERTIFICATION. THE REVISED PLANS MUST MEET ALL CURRENT STATE SOIL EROSION AND SEDIMENT CONTROL PRACTICES.
8. CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS.
9. UPON COMPLETION OF CONSTRUCTION WORK AND AFTER FINAL GRADING AND WHEN PERMANENT STABILIZATION HAS BEEN ESTABLISHED, THE STRAW BALES SHALL BE REMOVED BY THE CONTRACTOR.
10. ALL EXCESS EXCAVATED MATERIAL, EXCEPT FOR TOPSOIL, SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
11. ALL UTILITIES AND CATCH BASIN INLETS MUST BE PROTECTED PRIOR TO START OF CONSTRUCTION.
12. THE CONTRACTOR SHALL PROVIDE A DETAILED SEQUENCE OF CONSTRUCTION OPERATIONS FOR REVIEW AND SUBMITTAL TO THE OWNER'S REPRESENTATIVE PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.
13. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE IN PLACE WHERE POSSIBLE PRIOR TO, OR IMMEDIATELY FOLLOWING SITE AND ACCESS CLEARING.
14. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE LEFT IN PLACE AND MAINTAINED; INCLUDING SILT AND SEDIMENT REMOVAL, UNTIL CONSTRUCTION IS COMPLETED, AREA IS STABILIZED AND THE OWNER'S REPRESENTATIVE SO DIRECTS.
15. THE CONTRACTOR SHALL CONFINE SOIL DISTURBANCE ACTIVITY TO THE AREAS CONTAINED WITHIN THE LIMITS OF THE PROJECT SITE.
16. THE PROJECT MUST BE COMPLETED WITHIN THE TIME ALLOTTED AS SPECIFICALLY DESCRIBED IN THE CONTRACT DOCUMENTS.
17. SOIL STABILIZATION METHODS SHALL BE UNDERTAKEN COINCIDENTALLY WITH ALL MAJOR SITE IMPROVEMENTS AND CONTINUE DURING THE ENTIRE CONSTRUCTION ACTIVITY PERIOD.

NO.	DATE	REVISION DESCRIPTION	INT.
1	4/2019	60% ISSUANCE	OC

CAMERON ENGINEERING & ASSOCIATES, LLP
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303 Tarrytown Road, 1st Floor, White Plains, NY 10603 T: (914) 721-8300
Corporate Seal Initiated 1996 State of New York
www.Cameroneng.com

PROJECT NAME: SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS
PROJECT LOCATION: VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE: GENERAL NOTES
DISCIPLINE: CIVIL

PROJECT ENGINEER:	MAD
DESIGNED BY:	MAD
DRAWN BY:	EB
CHECKED BY:	KMM
PROJECT NO.	CE2864
JOB NO.	CE2864
DATE:	08/30/18
SCALE:	AS SHOWN
DRAWING NO.	C-1
	DRAWING 1 of 10

PLOT SCALE: \CE2864 - Shore Road Park\DESIGN\C-1 GENERAL NOTES.dwg, Date:May 2, 2019, Pastup:-----, Plotted by:Oliver Chen

LEGEND (EXISTING)

- PROPERTY LINE
- LOT LINE
- LIMIT OF WORK
- EXISTING CONTOUR
- WETLANDS DELINIATION
- AREA OF REMOVALS
- EXISTING DRAINAGE PIPE
- MHHW — MEAN HIGHER HIGH WATER
- MHW — MEAN HIGH WATER
- MLW — MEAN LOW WATER
- MLLW — MEAN LOWER LOW WATER
- MHWS — MEAN HIGH WATER SPRINGS

BAYVIEW AVE (VILLAGE OF LINDENHURST)

S. BAY STREET (VILLAGE OF LINDENHURST)

SHORE ROAD PARK

EXISTING DRAINAGE SWALE

EXISTING DRAINAGE STRUCTURE TO REMAIN

EXISTING DRAINAGE PIPE TO BE REMOVED

EXISTING FENCE TO REMAIN

EXISTING FENCE TO BE REMOVED

EXISTING VEGETATION TO BE REMOVED. INCLUDES PHRAGMITES REMOVAL. REFER TO INVASIVE SPECIES REMOVAL NOTES.

WETLANDS DELINIATION (TYP.)

EXISTING SINGLE FAMILY HOME

EXISTING DRAINAGE STRUCTURE TO BE REMOVED AND REPLACED

LIMIT OF WORK (TYP.)

EXISTING BULKHEAD TO REMAIN

ALL CONCRETE AND ASPHALT RUBBLE & DEBRIS TO BE REMOVED

REMOVALS SEAWARD OF MHW IS LIMITED TO REMOVAL OF CONCRETE, ASPHALT, AND EXISTING BULKHEAD, AS WELL AS LIMITED SAND TO FACILITATE ELEVATIONS CRITICAL FOR THE ESTABLISHMENT OF THE LIVING SHORELINE. REFER TO GRADING PLAN.

TURF

EXISTING ASPHALT TO BE REMOVED

ALL EXISTING UTILITIES TO REMAIN BENEATH SOUTH BAY STREET.

VACANT PROPERTY OWNER: SUFFOLK COUNTY PARKS DEPARTMENT

VACANT PROPERTY OWNER: NEW YORK STATE

VACANT PROPERTY OWNER: VILLAGE OF LINDENHURST

EXISTING DRAINAGE STRUCTURES TO REMAIN

EXISTING SEWER MANHOLES TO REMAIN

TOP OF EXISTING BULKHEAD TO BE REMOVED TO ELEVATION 0.08. BULKHEAD BELOW ELEVATION ELEVATION 0.08 TO REMAIN.

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

HORIZ. 1 inch = 20 ft.

PLOT SCALE: \CE2864 - Shore Road Park\DESIGN\EXISTING CONDITIONS.dwg, Date:May 2, 2019, Pretup----, Plotted by:Oliver Chen

NO.	DATE	REVISION DESCRIPTION	INT.
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PROJECT NAME:
SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE:
EXISTING CONDITIONS & REMOVALS PLAN

DISCIPLINE:
CIVIL

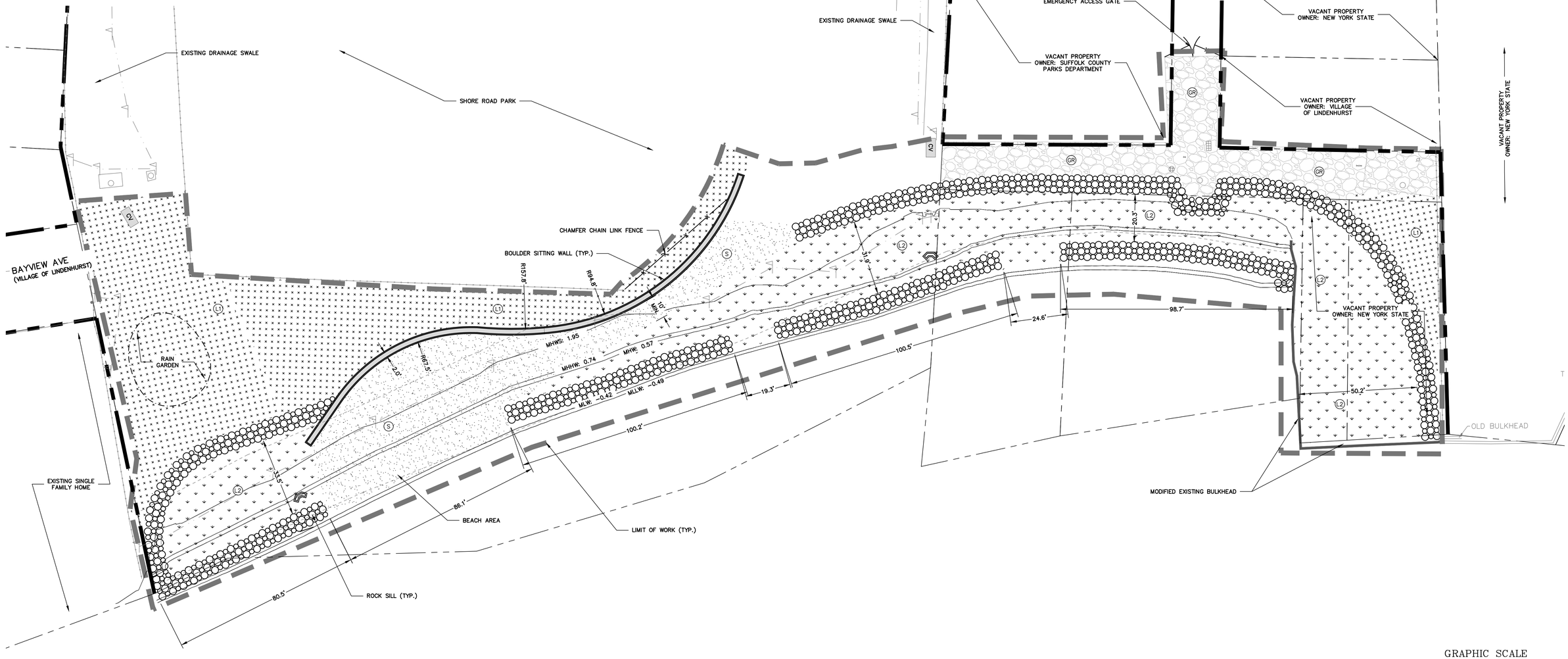
PROJECT ENGINEER:	PROJECT NO.	DRAWING NO.
MAD	CE2864	C-2
DESIGNED BY: MAD	JOB NO. CE2864	DRAWING 2 of 10
DRAWN BY: EB	DATE: 08/30/18	
CHECKED BY: KMM	SCALE: AS SHOWN	

LEGEND (PROPOSED)

S	SAND
GR	GRAVEL ROAD
L1	UPLAND LANDSCAPING
L2	LIVING SHORELINE LANDSCAPING
	SITTING WALL
	ROCK SILL
X X	CHAIN LINK FENCE
MHHW	MEAN HIGHER HIGH WATER
MHW	MEAN HIGH WATER
MLW	MEAN LOW WATER
MLLW	MEAN LOWER LOW WATER
MHWS	MEAN HIGH WATER SPRINGS

LEGEND (EXISTING)

- PROPERTY LINE
- LOT LINE
- LIMIT OF WORK
- WETLANDS DELINIATION MARKOUT



GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

HORIZ. 1 inch = 20 ft.

NO.	DATE	REVISION DESCRIPTION	INT.
1	4/2019	60% ISSUANCE	OC

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PROJECT NAME:
SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE:
SITE PLAN

DISCIPLINE:
CIVIL

PROJECT ENGINEER:	PROJECT NO.	DRAWING NO.
MAD	CE2864	C-3
DESIGNED BY: MAD	JOB NO. CE2864	
DRAWN BY: EB	DATE: 08/30/18	
CHECKED BY: KMM	SCALE: AS SHOWN	DRAWING 3 of 10

PLOT SCALE=1 \\CE2864 — Shore Road Park\DESIGN\C-3 SITE PLAN.dwg, Date:May 2, 2019, Pastup: ----, Plotted by:Oliver Chen

LEGEND (PROPOSED)

- 15"ø CONCRETE PIPE
- CONCRETE HEADWALL
- CV — CHECK VALVE
- 0.00 — SPOT ELEVATION
- TOB: 0.00 — TOP OF BULKHEAD ELEVATION
- TW 0.00 / BW 0.00 — TOP OF WALL / BOTTOM OF WALL ELEVATION
- MHHW — MEAN HIGHER HIGH WATER
- MHW — MEAN HIGH WATER
- MLW — MEAN LOW WATER
- MLLW — MEAN LOWER LOW WATER
- MHWS — MEAN HIGH WATER SPRINGS

LEGEND (EXISTING)

- PROPERTY LINE
- LOT LINE
- LIMIT OF WORK
- EXISTING CONTOUR
- WETLANDS DELINIATION MARKOUT

BAYVIEW AVE (VILLAGE OF LINDENHURST) GR:1.2

SHORE ROAD PARK

S. BAY STREET (VILLAGE OF LINDENHURST)

TURF

TIDE CHECK VALVE IN CONCRETE VAULT INV.: 0.4

18"± PIPE INV.:1.2

24" CONCRETE PIPE INV.:0.7±

15"ø CONCRETE PIPE

TW 4.2 BW 4.0

TW 3.5 BW 2.1

TW 3.5 BW 1.1

RAIN GARDEN TOP: 2.8 BT.: 2.3

CONCRETE HEAD WALL

INV. 0.3

CONCRETE: 3.37 BULKHEAD: 3.07

MHWS: 1.95 MHW: 0.57 MHHW: 0.74 MLW: -0.42 MLLW: -0.49

LIMIT OF WORK (TYP.)

FOR GRADES AT ROCK SILL REFER TO SECTIONS ON SHEET C-7 – SITE CROSS SECTIONS (TYP.)

TOP OF EXISTING BULKHEAD TO BE REMOVED TO ELEVATION 0.08. BULKHEAD BELOW ELEVATION ELEVATION 0.08 TO REMAIN.

TOB 0.08

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

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PROJECT NAME:
SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE:
GRADING & DRAINAGE PLAN

DISCIPLINE:
CIVIL

PROJECT ENGINEER:	PROJECT NO.	DRAWING NO.
MAD	CE2864	C-4
DESIGNED BY: MAD	JOB NO. CE2864	DRAWING 4 of 10
DRAWN BY: EB	DATE: 08/30/18	
CHECKED BY: KMM	SCALE: AS SHOWN	

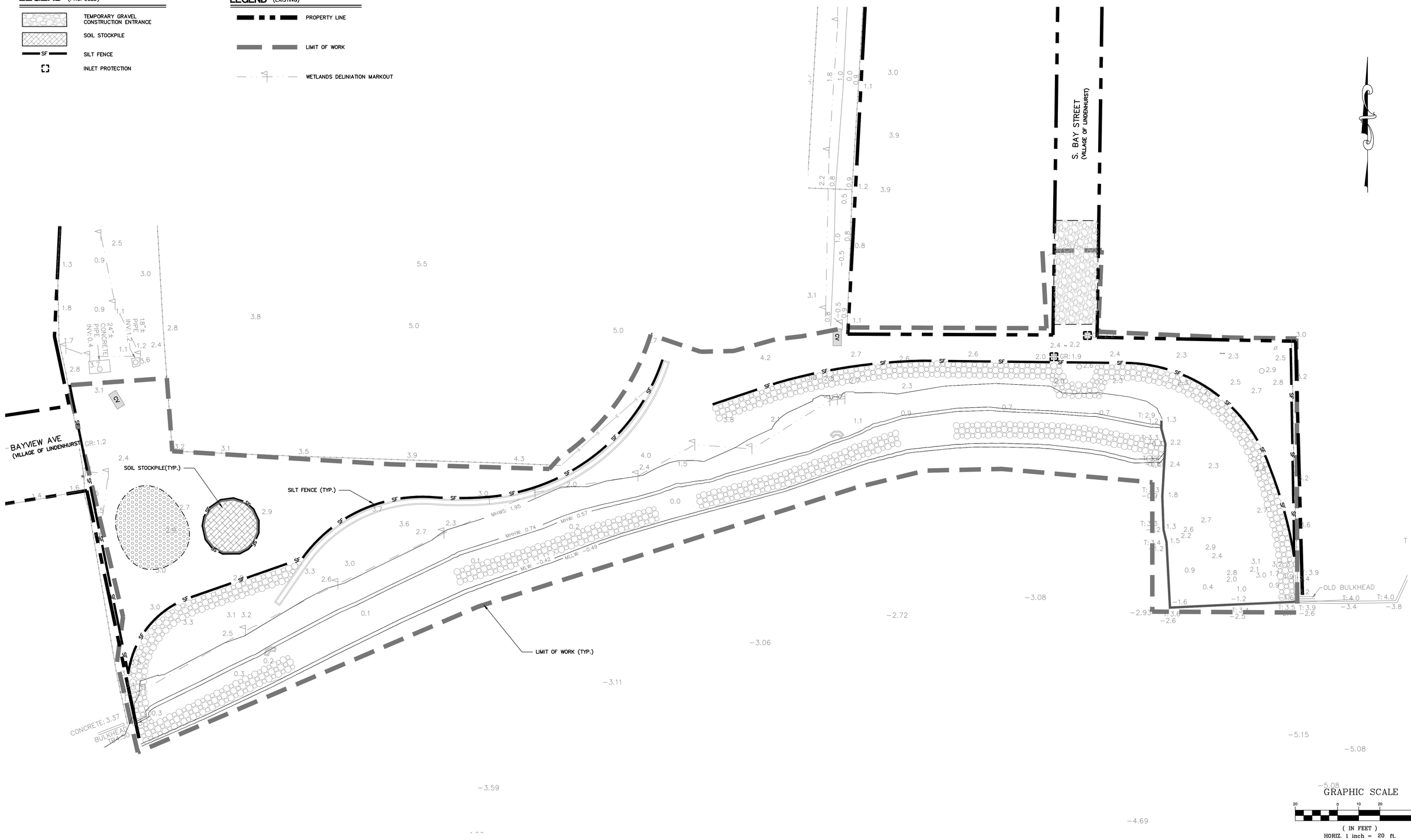
PLOT SCALE=1 \\CE2864 – Shore Road Park\DESIGN\C-4 GRADING & DRAINAGE PLAN.dwg, Date:May 2, 2019, Pastup: -----, Plotted by:Oliver Chen

LEGEND (PROPOSED)

- TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
- SOIL STOCKPILE
- SF — SILT FENCE
- INLET PROTECTION

LEGEND (EXISTING)

- PROPERTY LINE
- LIMIT OF WORK
- WETLANDS DELINIATION MARKOUT



GRAPHIC SCALE

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(IN FEET)

HORIZ. 1 inch = 20 ft.

NO.	DATE	REVISION DESCRIPTION	INT.
1	4/2019	60% ISSUANCE	OC

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PROJECT NAME:
SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE:
EROSION CONTROL PLAN

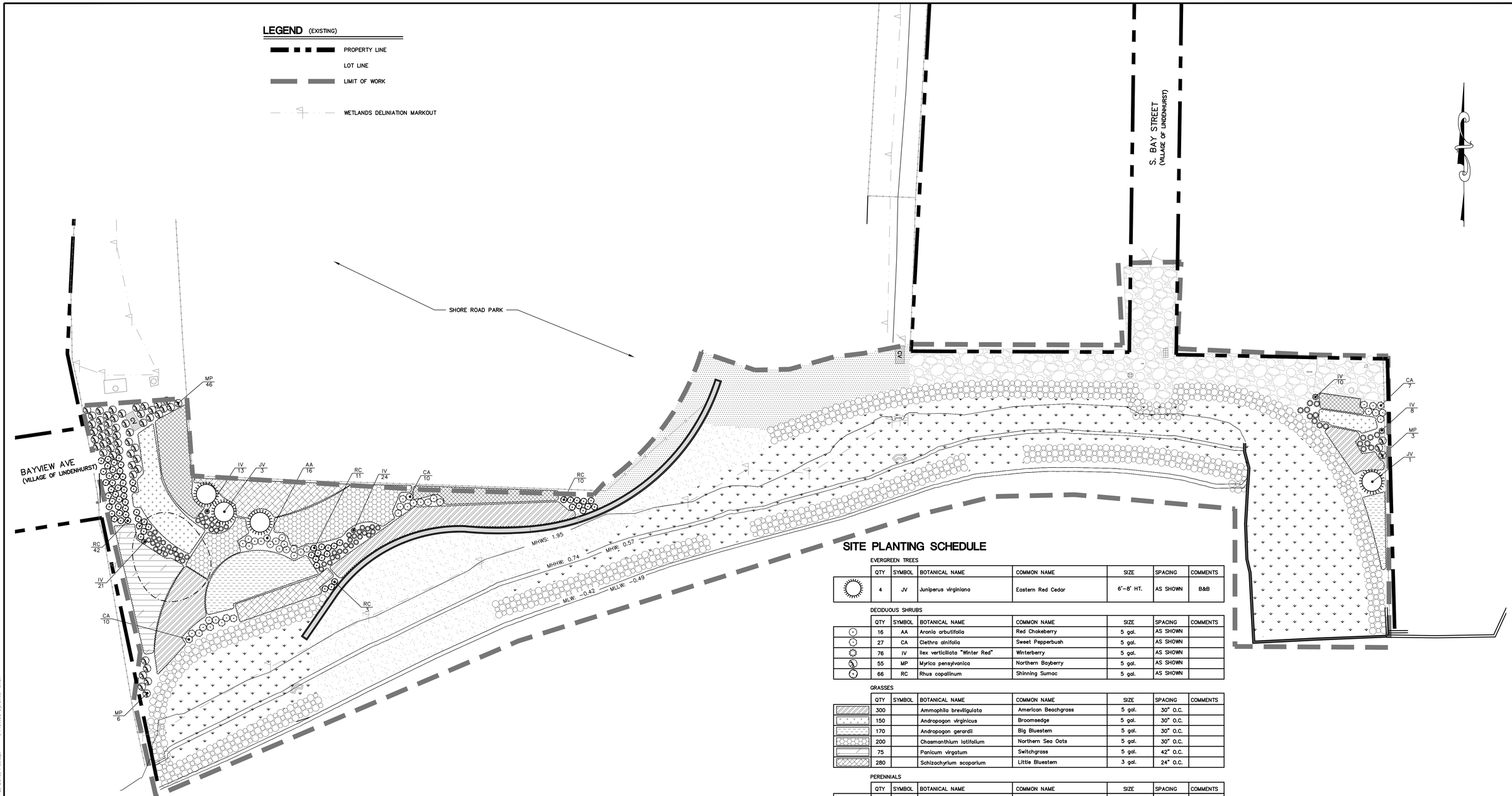
DISCIPLINE:
CIVIL

PROJECT ENGINEER:	PROJECT NO.	DRAWING NO.
MAD	CE2864	C-5
DESIGNED BY: MAD	JOB NO. CE2864	
DRAWN BY: EB	DATE: 08/30/18	DRAWING 5 of 10
CHECKED BY: KMM	SCALE: AS SHOWN	

PLOT SCALE=1 \\CE2864 — Shore Road Park\DESIGN\C-5 EROSION CONTROL PLAN.dwg, Date:May 2, 2019, Paetup: ------, Plotted by:Oliver Chen

LEGEND (EXISTING)

- PROPERTY LINE
- LOT LINE
- LIMIT OF WORK
- WETLANDS DELINIATION MARKOUT



SITE PLANTING SCHEDULE

EVERGREEN TREES

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
4	JV	Juniperus virginiana	Eastern Red Cedar	6'–8' HT.	AS SHOWN	B&B

DECIDUOUS SHRUBS

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
16	AA	Aronia arbutifolia	Red Chokeberry	5 gal.	AS SHOWN	
27	CA	Clethra alnifolia	Sweet Pepperbush	5 gal.	AS SHOWN	
76	IV	Ilex verticillata "Winter Red"	Winterberry	5 gal.	AS SHOWN	
55	MP	Myrica pensylvanica	Northern Bayberry	5 gal.	AS SHOWN	
66	RC	Rhus copallinum	Shinning Sumac	5 gal.	AS SHOWN	

GRASSES

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
300		Ammophila brevilgulata	American Beachgrass	5 gal.	30" O.C.	
150		Andropogon virginicus	Broomsedge	5 gal.	30" O.C.	
170		Andropogon gerardii	Big Bluestem	5 gal.	30" O.C.	
200		Chasmanthium latifolium	Northern Sea Oats	5 gal.	30" O.C.	
75		Panicum virgatum	Switchgrass	5 gal.	42" O.C.	
280		Schizachyrium scoparium	Little Bluestem	3 gal.	24" O.C.	

PERENNIALS

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
280		Asclepias tuberosa	Butterflyweed	2 gal.	24" O.C.	
		Aster ericoides	Heath Aster	1 gal.	18" O.C.	
		Aster novi–belgii	New York Aster	1 gal.	18" O.C.	
		Coreopsis lanceolata	Lance–leaf Coreopsis	2 gal.	24" O.C.	
		Liatris scariosa	Eastern Blazing Star	2 gal.	24" O.C.	
		Monarda punctata	Horsemint	2 gal.	24" O.C.	
		Pensternon hirsutus	Hairy Beardtongue	2 gal.	24" O.C.	
		Solidago sempervirens	Seaside Goldenrod	2 gal.	24" O.C.	

MISCELLANEOUS

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	COMMENTS
4000		Spartina alterniflora	Smooth Cordgrass	1 gal.	24" O.C.	*SEE NOTE
		Seeded Lawn				

*NOTE: SMOOTH CORDGRASS SHALL BE STAKED USING 1/4" x 2" x 36" WOOD STAKES.

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

HORIZ. 1 inch = 20 ft.

NO.	DATE	REVISION DESCRIPTION	INT.
1	4/2019	60% ISSUANCE	OC

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PROJECT NAME:
SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

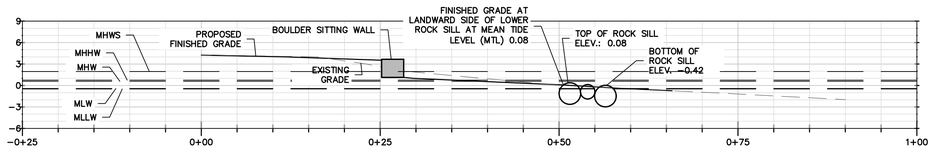
TITLE:
LANDSCAPE PLAN

DISCIPLINE:
CIVIL

PROJECT ENGINEER:	MAD
DESIGNED BY:	MAD
DRAWN BY:	EB
CHECKED BY:	MAD
PROJECT NO.	CE2864
JOB NO.	CE2864
DATE:	08/30/18
SCALE:	AS SHOWN

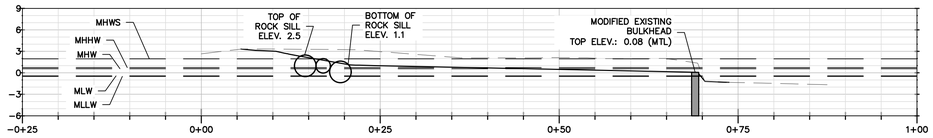
DRAWING NO.
C-6
DRAWING 6 of 10

PLOT SCALE: \\CE2864 – Shore Road Park\DESIGN\C-6 LANDSCAPE PLAN.dwg, Date:May 2, 2019, Pastup: ------, Plotted by:Oliver Chen



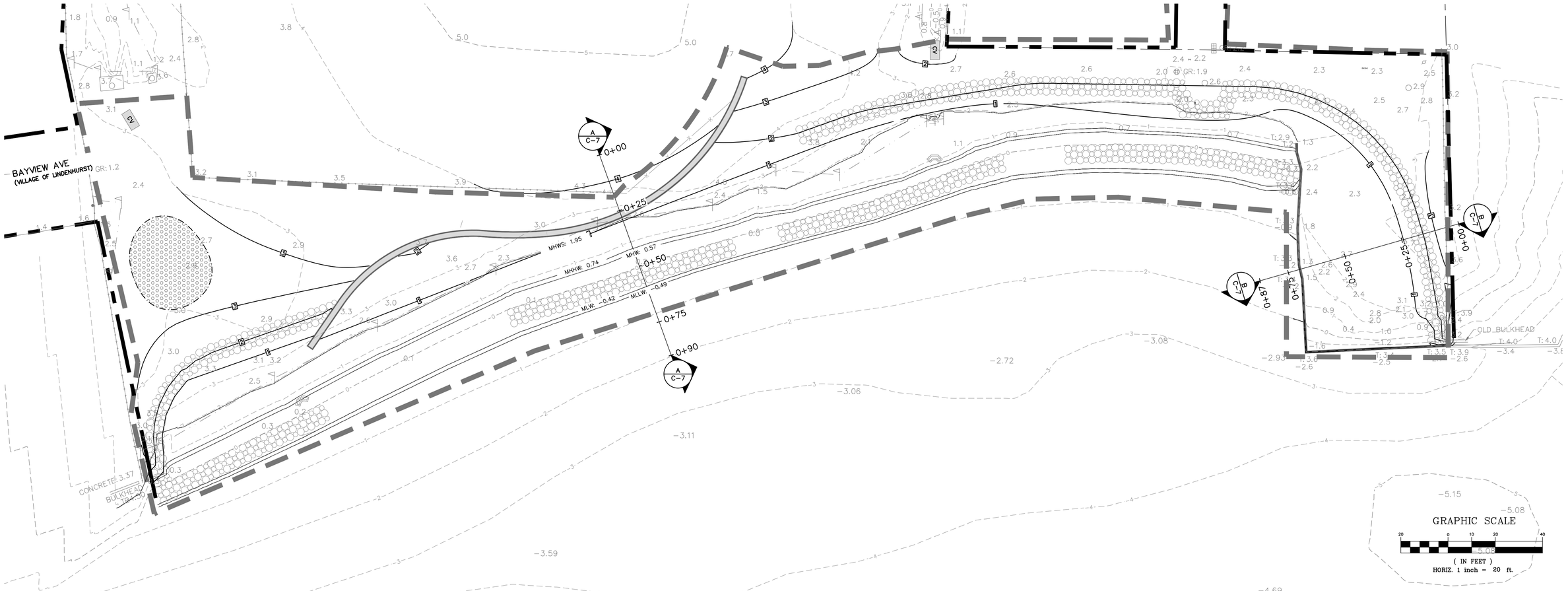
SECTION A-A

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 10'



SECTION B-B

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 10'



NO.	DATE	REVISION DESCRIPTION	INT.
1	4/2019	60% ISSUANCE	OC

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PROJECT NAME:
SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

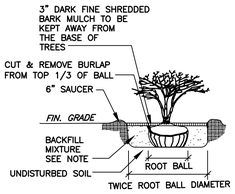
PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE:
SITE CROSS SECTIONS

DISCIPLINE:
CIVIL

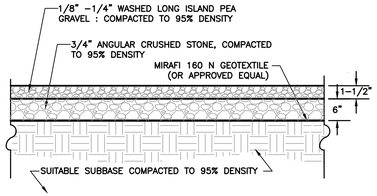
PROJECT ENGINEER:	PROJECT NO.	DRAWING NO.
MAD	CE2864	C-7
DESIGNED BY: MAD	JOB NO. CE2864	
DRAWN BY: EB	DATE: 08/30/18	DRAWING 7 of 10
CHECKED BY: KMM	SCALE: AS SHOWN	

PLOT SCALE: \\CE2864 — Shore Road Park\DESIGN\CROSS SECTIONS.dwg, Date:May 2, 2019, Pietup:------, Plotted by:Oliver Chen



SHRUB PLANTING DETAIL

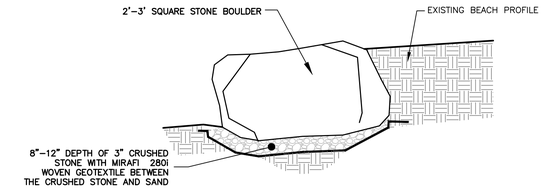
SCALE: NTS



NOTES:
1) CONTRACTOR TO SUBMIT SAMPLES FOR APPROVAL BY OWNERS REPRESENTATIVE.

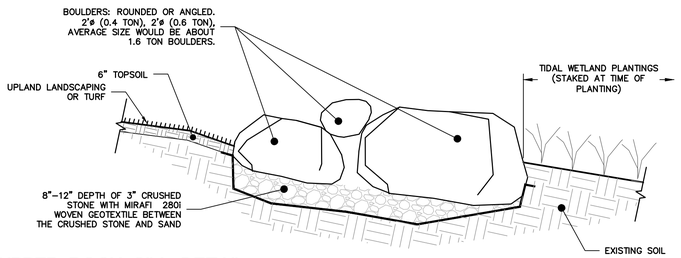
GRAVEL ACCESS ROAD DETAIL

SCALE: N.T.S.



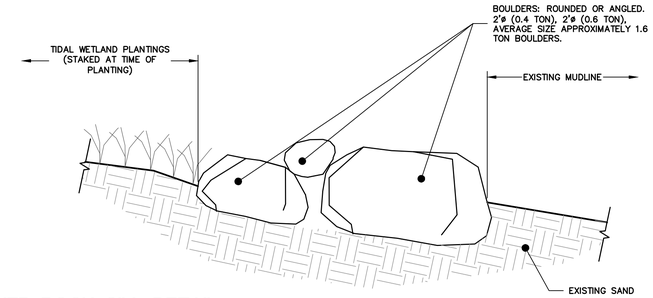
SITTING WALL DETAIL

SCALE: NTS



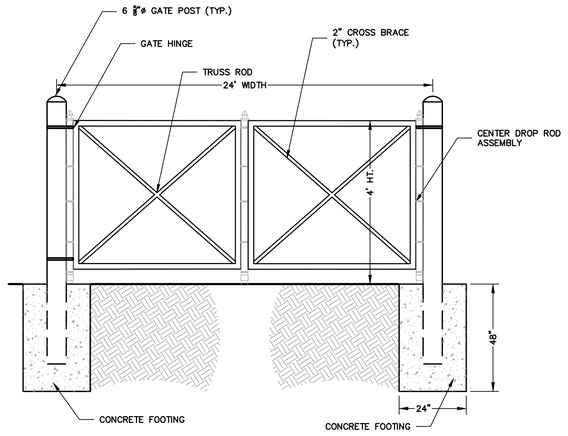
UPPER ROCK SILL DETAIL

SCALE: NTS



LOWER ROCK SILL DETAIL

SCALE: NTS



SWING CHAIN LINK GATE DETAIL

SCALE: N.T.S.

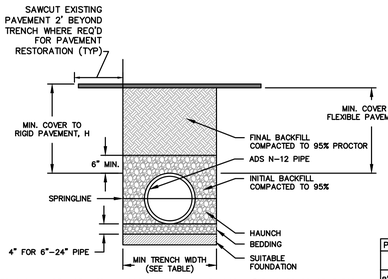


TABLE 1, RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN TRENCH WIDTH
6"	23"
8"	26"
10"	28"
12"	30"

TABLE 2, MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

PIPE DIAM.	H-25
4" - 48"	12" (300mm)

TABLE 3, MAXIMUM COVER FOR ADS N-12 HP PIPE, ft

	CLASS I	CLASS II
PIPE DIA	COMPACTED	95%
6"	44	29
8" OR 10"	40	27
12"	43	29

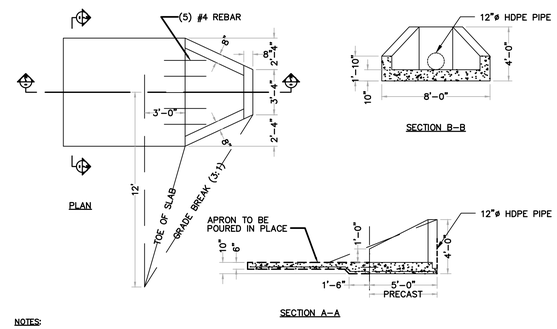
FILL HEIGHT TABLE GENERATED USING AASHTO SECTION 12, LOAD RESISTANCE FACTOR DESIGN (LRFD) PROCEDURE WITH THE FOLLOWING ASSUMPTIONS:
HEIGHT OF WATER (hw) = CROWN +1'.
UNIT WEIGHT OF SOIL (γ_s) = 120 PCF

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, OR II. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm).
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12", MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.
7. IF DEPTH OF TRENCH EXCEEDS 5', THE CONTRACTOR MUST PROVIDE SHEETING AND BRACING OR A SHEETING BOX IN ACCORDANCE WITH OSHA REGULATIONS. AS AN ALTERNATIVE, IF PERMITTED BY THE ENGINEER, THE TRENCH WALLS MAY BE CUT BACK TO A 1:1 SLOPE OR THE NATURAL ANGLE OF REPOSE FOR THE SOIL, WHICHEVER IS GREATER.

N12 PIPE (HDPE) TRENCH DETAIL

SCALE: NTS



NOTES:

1. CONCRETE 4,000 PSI @ 28 DAYS
2. REBAR TO BE ASTM A-615 GRADE 60
3. WELDED WIRE FABRIC ASTM A-185

PRE-CAST CONCRETE HEAD WALL DETAIL

SCALE: NTS

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1	4/2019	60% ISSUANCE	OC

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PROJECT NAME:
SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE:
SITE DETAILS PLAN (1)

DISCIPLINE:
CIVIL

PROJECT ENGINEER:	MAD
DESIGNED BY:	MAD
DRAWN BY:	EB
CHECKED BY:	KMM
PROJECT NO.	CE2864
JOB NO.	CE2864
DATE:	08/30/18
SCALE:	AS SHOWN

DRAWING NO.
C-8
DRAWING 8 of 10

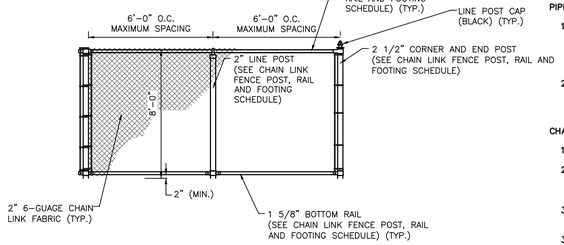
PLOT SCALE: \CE2864 - Shore Road Park\DESIGN\C-8 SITE DETAILS PLAN (1).dwg, Date:May 2, 2019, Pset:ue----, Plotted by:Oliver Chen

CHAIN LINK FENCE POST, RAIL AND FOOTING SCHEDULE

FENCE HEIGHT	LINE POST DIA.	MAX. POST SPACING	END/CORN POST	TOP RAIL	MID RAIL	BOTTOM RAIL	DIAGONAL TRUSS	POST EMBEDMENT IN MOWSTRIP / FENCE FOOTING	
								LINE POST	END/CORNER/GATE POST
8'-0"	2.0" O.D.	6' O.C.	2.5" O.D.	1-5/8" O.D.	N/A	1-5/8" O.D.	1/2" DIA.	1'-8"	1'-8"

PIPE SCHEDULE

NOMINAL O.D.	ACTUAL I.D.	ACTUAL O.D.	WEIGHT (LBS/FT)
1-5/8"	.145	1.9	2.27
2"	.154	2.375	2.72
2-1/2"	2.03	2.875	3.65



CHAIN LINK FENCE

GENERAL NOTES:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW AND FINAL APPROVAL PRIOR TO FABRICATION OF CHAIN LINK FENCE COMPONENTS.
2. CONTRACTOR SHALL REFER TO CHAIN LINK FENCE POST, RAIL AND FOOTING SCHEDULE FOR ALL FENCE COMPONENT SIZING.

PIPE AND RAIL NOTES:

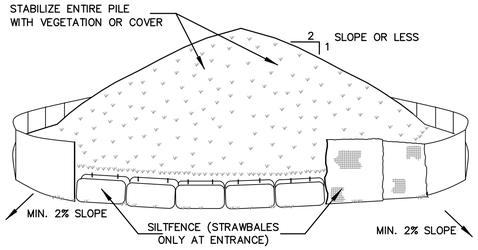
1. ALL POST, SLEEVES AND BRACING SHALL BE POLYOLEFIN COATED STANDARD WEIGHT SCHEDULE 40 GALVANIZED STEEL PIPE IN ACCORDANCE WITH ATSM F 1083 AND THE CHAIN LINK FENCE POST, RAIL AND FOOTING SCHEDULE. ALL CHAIN LINK POST, SLEEVES AND BRACING SHALL HAVE A MINIMUM YIELD STRENGTH OF 30,000 PSI PER EACH SIZE AS INDICATED.
2. ALL CHAIN LINK FENCE FITTING SHALL BE HIGH QUALITY MALLEABLE IRON CASTINGS AND SHALL BE GALVANIZED IN ACCORDANCE WITH THE ASTM SPECIFICATIONS A338, WROUGHT IRON FORGINGS OR PRESSED STEEL AND SHALL BE GALVANIZED IN ACCORDANCE WITH THE ASTM SPECIFICATIONS A123.

CHAIN LINK FABRIC & HARDWARE NOTES:

1. THE CONTRACTOR SHALL PEEN END OF ALL BOLTS.
2. ALL HARDWARE INSTALLED 6'-0" OR LESS ABOVE GRADE SHALL NOT PROTRUDE MORE THAN 1/4" BEYOND THE NUT AFTER TIGHTENING. ALL ROUGH AND JAGGED EDGES SHALL BE FILED SMOOTH.
3. 1"-SQ. CHAIN LINK FABRIC SHALL BE 9-GUAGE HOT DIPPED GALVANIZED AND POLYOLEFIN COATED FENCE FABRIC.
3. 2" SQ. CHAIN LINK FABRIC SHALL BE 6-GUAGE HOT DIPPED GALVANIZED AND POLYOLEFIN COATED FENCE FABRIC.
4. CHAIN LINK FABRIC TO BE KNUCKLED AT THE TOP AND BOTTOM RAILS OF ALL FENCES.
5. CHAIN LINK FABRIC SHALL BE INSTALLED ON THE OUTSIDE OF THE FENCE POSTS.
6. TIE WIRES SHALL BE USE AT THE TOP, MID AND BOTTOM RAILS 18" O.C.
7. ALL GATE HARDWARE SHALL BE GALVANIZED IRON PAINTED BLACK

8' HIGH CHAIN LINK FENCE DETAIL

SCALE: N.T.S.

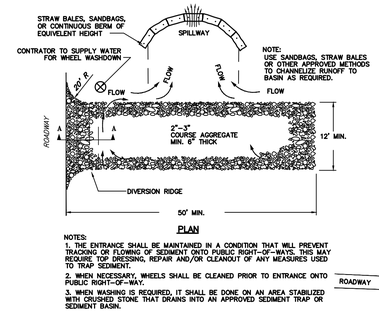


NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1:2.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH SILT FENCING, THEN STABILIZED WITH VEGETATION OR COVERED.
4. SEE DETAIL FOR INSTALLATION OF SILT FENCE.

MATERIAL STOCKPILE

SCALE: N.T.S.



PLAN

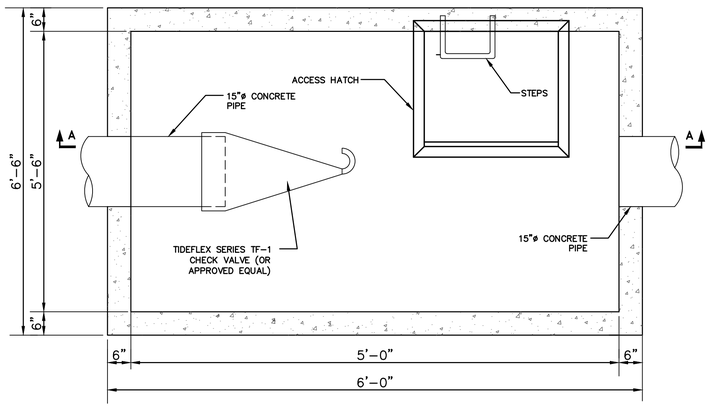
NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

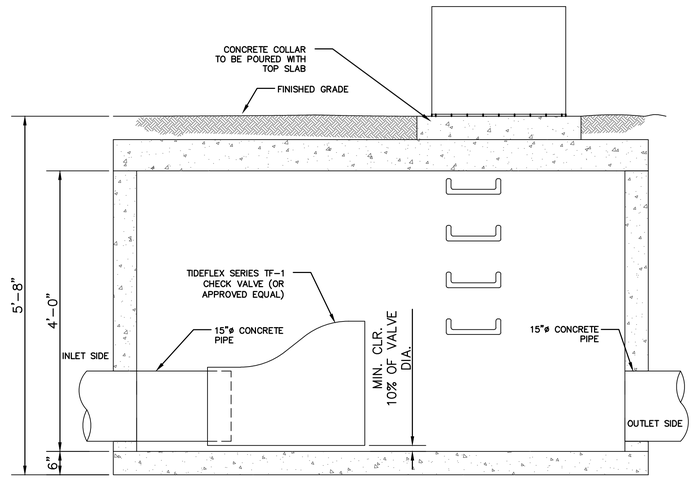
SECTION A-A

EXISTING TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT DETAIL (CONTRACTOR TO MAINTAIN)

SCALE: NTS



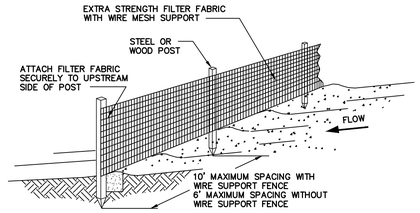
PLAN

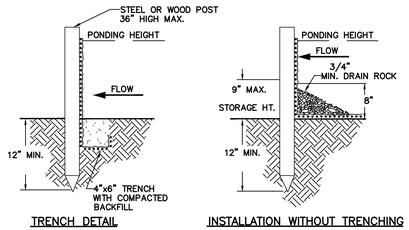


SECTION A-A

TIDE CHECK VALVE VAULT DETAIL

SCALE: N.T.S.





TRENCH DETAIL

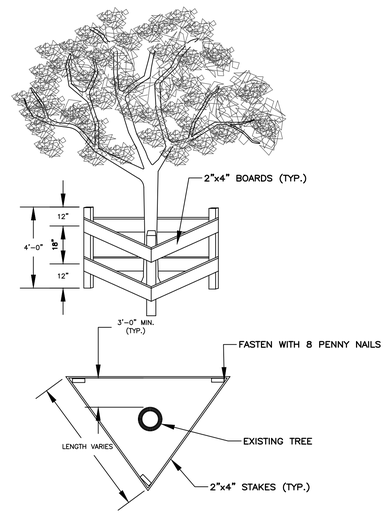
INSTALLATION WITHOUT TRENCHING

NOTES:

1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" MAXIMUM RECOMMENDED STORAGE HEIGHT.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

SILT FENCE DETAIL

SCALE: NTS



TREE PROTECTION

SCALE: NTS

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PROJECT NAME:
SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

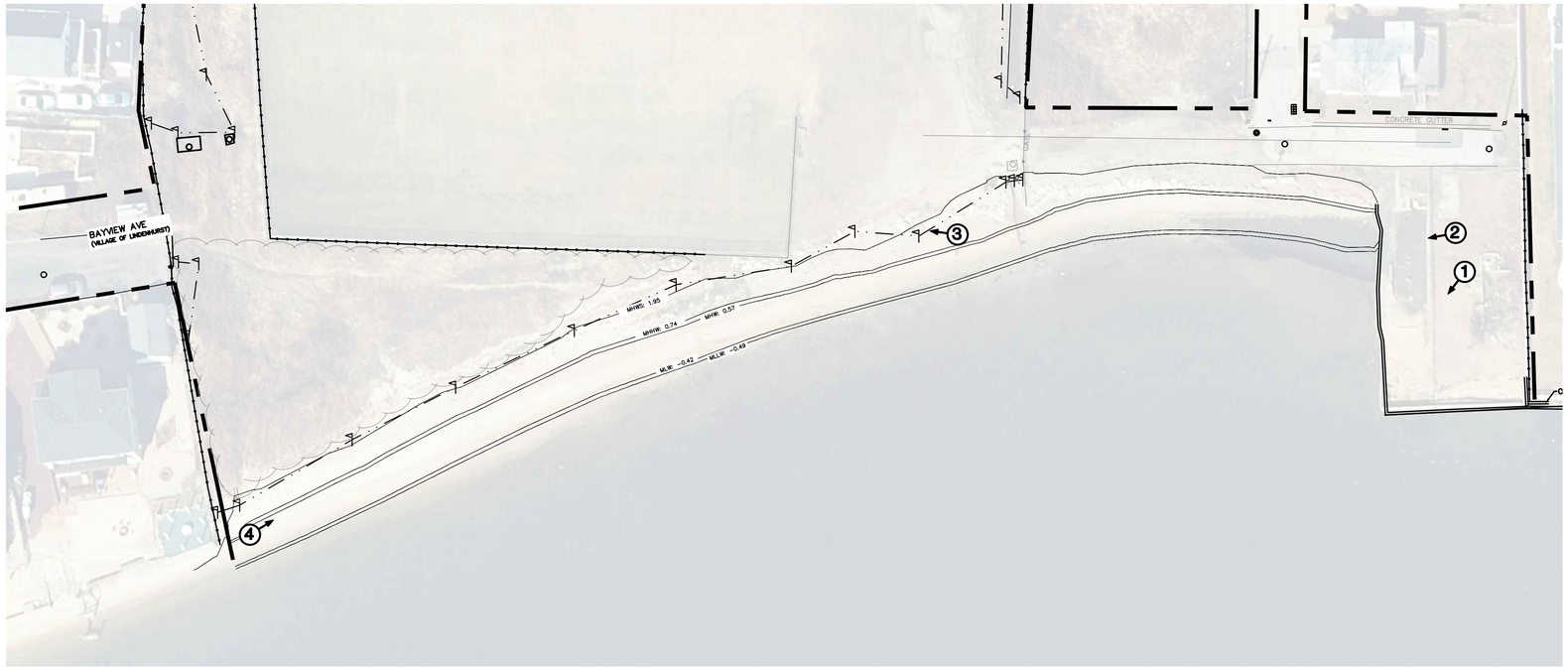
PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE:
SITE DETAILS PLAN (2)

DISCIPLINE:
CIVIL

PROJECT ENGINEER:	PROJECT NO.	DRAWING NO.
MAD	CE2864	C-9
DESIGNED BY:	JOB NO.	
MAD	CE2864	
DRAWN BY:	DATE:	
EB	08/30/18	
CHECKED BY:	SCALE:	DRAWING
KMM	AS SHOWN	9 of 10

PLOT SCALE: \CE2864 - Shore Road Park\DESIGN\C-8 SITE DETAILS PLAN (1).dwg, Date:May 2, 2019, Pastup: ------, Plotted by:Oliver Chen



NOTE: ALL PHOTOS TAKEN NOVEMBER 15, 2017

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NATURAL SYSTEMS RESILIENCY IMPROVEMENTS

PROJECT LOCATION:
VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE:
PHOTO EXHIBIT

DISCIPLINE:
CIVIL

PROJECT ENGINEER:	PROJECT NO.	DRAWING NO.
MAD	CE2864	C-10
DESIGNED BY: MAD	JOB NO. CE2864	
DRAWN BY: EB	DATE: 08/30/18	DRAWING 10 of 10
CHECKED BY: MAD	SCALE: AS SHOWN	

Attachment 5: Wetland Delineation Map

NOTES:

1. Tidal wetland boundary delineated by W.P. Bowman, PhD, Land Use Ecological Services, Inc. on 6/5/2018.
2. 2016 orthoimage from NYS GIS Clearinghouse (gis.ny.gov).

1 in = 80 ft

0 20 40 80 Feet

Land Use Ecological Services, Inc.

Prepared By: Land Use Ecological Services, Inc.
570 Expressway Drive South, Suite 2F Medford, NY 11763
Drawn By: K. Risotto

Project: Shore Road Park Wetland Delineation
For: Cameron Engineering
At: Shore Road Park, Lindenhurst, NY

Date: 6/8/2018	Revised:	Scale: As Noted	Sheet: TWL

Attachment 6: Design Report

NEW YORK STATE GOVERNOR'S OFFICE OF STORM RECOVERY (GOSR)

SHORE ROAD WATERFRONT PARK NATURAL SYSTEMS RESILIANCY IMPROVEMENTS

SCHEMATIC DESIGN REPORT

VILLAGE OF LINDENHURST

SUFFOLK COUNTY, NEW YORK

PREPARED BY

CAMERON ENGINEERING

AUGUST 2018

SHORE ROAD WATERFRONT PARK NATURAL SYSTEMS RESILIANCY IMPROVEMENTS

August 2018

TABLE OF CONTENTS

SHORE ROAD WATERFRONT PARK NATURAL SYSTEMS RESILIANCY IMPROVEMENTS

August 2018

FIGURES

TABLES

PHOTOS

APPENDICES

(Appendices are found at the end of the document)

1. Executive Summary

1.1. Background and Introduction

In 2014, the Governor's Office of Storm Recovery (GOSR) oversaw the development and issuance of the New York Rising Community Reconstruction Plan (NYRCRP) for the Village of Lindenhurst, one of eight NYRCRP Communities in Suffolk County. The NYRCRP yielded a number of priority projects to address post-storm resiliency that could be funded through the Community Development Block Grant Disaster Relief (CDBG-DR) program.

One of the Proposed Priority Projects identified in the Village of Lindenhurst NYRCRP is "Shore Road Waterfront Park Natural Systems Resiliency Improvements and Preliminary Plan for Acquisition of Adjoining Properties." This project was developed with the local NYRCRP Committee to address the on-going erosion that was exacerbated during Superstorm Sandy (October 2012) as well as provide overall improved access to the waterfront.

This Design Report was prepared at the request of the Village of Lindenhurst (Village), the sub-recipient overseeing the planning of this resiliency project. The report was completed in accordance with task authorization issued under Cameron Engineering's agreement with the Village.

The study is intended as a Schematic Design (SD) Report that includes Schematic Design Plans and Schematic Construction Budget Estimate. This report investigates the existing conditions observed, the methodology behind the schematic engineering design, the design options that were evaluated, schematic design plans, and the anticipated construction costs.

1.2. Existing Conditions

The Project Area contains approximately 520 lineal feet (LF) of exposed sandy shoreline plus an additional 150' LF of collapsing bulkhead. The entire shoreline is located directly on the Great South Bay, approximately 2,300' west of the Village Marina. The portion of the project area containing the collapsing bulkhead is part of two properties currently owned by New York State (NYS) associated with the GOSR buyout and acquisition program. It should be noted that although title of the two properties containing bulkhead has not yet been transferred to the Village, both tax lots have been incorporated into the project at the direction of the Village Board of Trustees (BOT).

The sandy beach area contains scattered concrete slabs and debris utilized for purposes of erosion control. The slope from the high tide line seaward for approximately 30' is generally flat (less than 3%). Based upon visual inspection, additional rubble of various sources is present in the water. No vegetation is present in the water, which can generally be categorized as clear/high visibility.

The project area located landward of the high tide line contains various vegetation of salt tolerant species, however the dominant plant is Phragmites, a highly invasive species located almost exclusively in wetland and moist conditions. Native tidal wetland plants such as black grass (Juncus gerardii), three-square rush (Scirpus americanus), marsh elder (Iva frutescens), and smooth cordgrass (Spartina alterniflora) are present at lower densities. Based upon a pre-application meeting with the NYSDEC Permit Administrator and Biologist, the presence of the native species forming a tidal wetland will prohibit disturbance in this area.

Based upon historical imagery, Village input, and visual inspection, the parks shoreline has experienced substantial erosion which has accelerated following Superstorm Sandy. The most visual example is the southeast corner of the soccer field which has eroded landward of the existing chain-link fencing.

The existing conditions were investigated on multiple fronts to ensure a complete and fully accurate representation:

- Cameron Engineering conducted a number of field investigations during high tide, low tide, and immediately following a nor'easter event to observe the extents and relative conditions
- Cameron Engineering reviewed estimated sea level rise calculations from multiple sources including the National Oceanic and Atmospheric Administration (NOAA), New York State Department of Conservation (NYSDEC), and the United States Army Corps of Engineers (USACOE)
- Cameron Engineering reviewed and incorporated approximately five years of historical daily tide fluctuations to establish accurate tide data. Data was secured from the United States Geological Service (USGS) tide station located at the Villages marina.
- Land, Air, Water Environmental Services Inc, a geotechnical subconsultant to Cameron Engineering, performed soil borings, one month's monitoring of groundwater conditions, and infiltration testing.
- Hurley & Welsh, a land surveyor subconsultant to Cameron Engineering, is in the process of completing a topographic survey of the project area and bathymetric survey of the water adjacent to the project area.

1.3. Design Options and Considerations

The proposed Schematic Design was developed based on a number of considerations pertaining to addressing persistent erosion, assessing existing site features, working within the limits of the project area, and minimizing impacts to adjacent properties.

Elements of the proposed design focus on prevention of erosion primarily though the inclusion of a living shoreline and associated stone stabilization measures.

Key design considerations and technical resources guiding the design solution included:

- Maintain stormwater flow from the existing open air swales
- Public access for passive and active uses. The Village communicated a keen interest in providing access for the community. Concept/options discussed included beach access for swimming purposes, provision of a beach for passive enjoyment without access to the water, kayak launch, pedestrian access from adjacent streets and park.
- The average tide change (1'-8" approximately) provides a narrow opportunity for the incorporation of living shoreline components. The minimum slope however provides an opportunity to provide the width necessary for establishment of the vegetative component of a living shoreline.
- The existing fetch across the Great South Bay is a key consideration to factor regarding protection of the vegetation from wave action. As such the addition of breakwater structures can provide protection in the form of wave energy dissipation. Consideration of one or two breakwaters has been studied.
- Sea level rise has been reviewed, considering various documented sources from NOAA, USACOE, and NYSDEC. For purposes of this report, projections from the NYSDEC have been utilized. Appropriately, the NYSDEC projections provide for various time intervals ranging from 2020 to 2100. For the Long Island region, estimations vary considerable between the low and high projections throughout the time intervals provided. For the purpose of this project, the medium projection for 2050 project was utilized, which predicts approximately 16 inches of sea level rise.
- Although sea level rise is a critical consideration, tidal plantings themselves have a limited threshold for habitation. Therefore the design and elevation where the vegetative component of the living shoreline will be specified must be based on current tide ranges. Future sea level rise can be addressed utilizing the upper tier of the breakwater, or even a third level of protection closer to the field and dead end of S Bay Street.
- Permitting with various State and Federal agencies will be required. The two primary agencies will be the NYSDEC and USACOE.

1.4. Recommendations

Factoring the above design considerations, technical data and input from the Village, and pre-application meeting with the NYSDEC, the design solution recommends incorporating stone breakwaters at key elevations flanking the seaward and landward extents of the vegetative portion of the living shoreline. In addition, the project can incorporate a beach kayak launch. To provide the kayak launch while minimizing interruption of the parallel breakwaters, it is recommended offsetting the access which will not permit perpendicular kayak launching, however angled launching is still permissible. The vegetative portion of the living shoreline will be established based upon current conditions, however stone boulders placed landward of the living shoreline

can be placed at an elevation which accounts for the more severe storms and sea level rise.

1.5. Budgetary Costs

The project is funded by a $2.1 million budget to cover hard and soft costs[1]. Cameron Engineering provided a fee proposal in the amount of $224,820.

Therefore the construction budget available for this project is $1,875,180

2. Existing Conditions

2.1. Project Locations

The project is located on the south end of Shore Road Park with beach frontage on the Great South Bay. Flanked on both sides by properties hardened with existing bulkheads.

[1] Hard costs include the furnishing and installation of pavement, utilities, grading, landscaping, and all other materials; maintenance and protection of traffic; mobilization; contractor overhead and profit; and contingencies. For GOSR projects, URA costs are also included in hard costs. Soft costs include engineering design; permitting; insurance; and construction management.

SHORE ROAD WATERFRONT PARK NATURAL SYSTEMS RESILIANCY IMPROVEMENTS

August 2018

Photo 1 - Shore Road Park Location

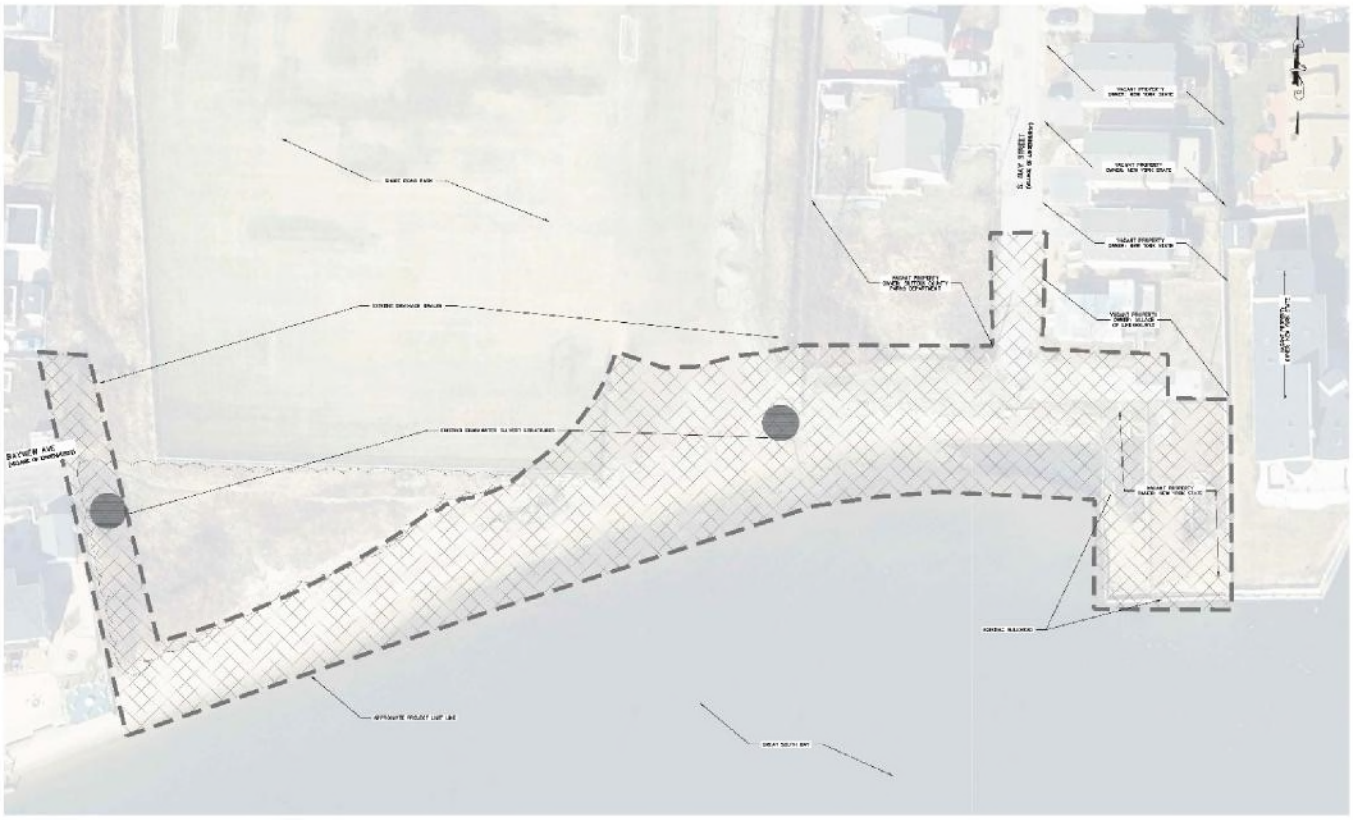

Photo 2 - Approximate Project Area

2.2. Site Visits and Field Investigations

Cameron Engineering conducted frequent site visits throughout the duration of this Study:

1. Separate site visits were conducted during low / high tides events and following a nor'easter event. Additional site visits were conducted at various times to conduct field meetings and or verify field conditions.

Photo 3 – South end of South Bay Street looking west

Photo 4 – End of Bay View Avenue West looking east

Photo 5 – Existing drainage structure at west swale

Photo 6 – Existing drainage structure at east side

Photo 7 – Beach area at west side of project area looking east

Photo 8 – View looking south

Photo 9 – Existing bulkhead at east end of project area

Photo 10 – Existing conditions at east side of project area looking north

Photo 11 – Southeast corner of athletic field

Photo 12 – View of wave action looking east following nor'easter

2.3. Tidal Information

To better understand the local tidal conditions, Cameron Engineering utilized five years of historical and current data from the USGS tide station located at the Lindenhurst Village Marina. The USGS tide gauge is located approximately 2,000' from Shore Road Park.

The tide gauge records data at each tide change daily. Cameron Engineering extracted the data from the last 5 years, converted it into NAVD 1988 datum, and further distilled the information to a monthly summary.

For the purpose of this report, the data recorded from 2013 through 2018 was used to determine the elevations utilized.

Photo 13 – USGS tide gauge located at Lindenhurst Village Marina

Monthly Averages

Date	Tidal High (daily)	Tidal Low-High (daily)	Tidal High-Low (daily)	Tidal-Low (daily)
January	0.75	0.25	-0.65	-0.91
February	0.70	0.28	-0.71	-0.95
March	0.74	0.33	-0.70	-0.87
April	0.98	0.55	-0.51	-0.67
May	1.01	0.58	-0.50	-0.61
June	1.16	0.70	-0.36	-0.48
July	1.21	0.73	-0.33	-0.41
August	1.20	0.79	-0.32	-0.38
September	1.31	0.89	-0.20	-0.26
October	1.32	0.88	-0.17	-0.29
November	0.95	0.48	-0.53	-0.68
December	0.85	0.38	-0.60	-0.82
Total Average	1.02	0.57	-0.46	-0.61

Figure 1 – Summary of monthly tidal elevation averages 2013 - 2018

2.4. Erosion

The project area has experienced significant erosion due to various influences such as adjacent bulkheaded/hardened properties, sea level rise, and unprotected nature of the beach.

The fetch calculation utilized for the purposes of this report is 3 miles with estimated wave heights ranging between 12” and 40”. Section 3.7 provides additional detail regarding fetch and estimated wave heights.

The following historical imagery from Google Earth presents a timeline of erosion since 1994.

Figure 2 – Aerial: 1994

Figure 3 – Aerial: April 2001

Figure 4 – Aerial: April 2004

Figure 5 – Aerial: March 2007

Figure 6 – Aerial: September 2010

Figure 7 – Aerial: September 2013 (11 months following Superstorm Sandy)

Figure 8 – Aerial: October 2017

2.5. Geotechnical Investigation

A geotechnical investigation, including percolation testing and groundwater monitoring well (1 month), was performed. The purpose of this investigation was two-fold:

- To define the character and nature of the subgrade, and
- To define design parameters necessary to facilitate the development of the options for reconstruction

The Geotechnical Report (included in the Appendix) yielded very important information that guided the design approach for this project. A general description can be summarized as follows:

The soils encountered in the exploratory borings were nearly uniform with little differentiation between the boring locations. Brown sand deposits of medium-dense compaction were found underlying the topsoil down to 4' bgs (Below Grade Surface). A layer of soft, compressible peat and organics was found from 4' bgs to 10' bgs. Beneath the peat, deposits of light brown sand with little gravel of medium-dense compaction were encountered until termination of the soil borings.

With the exception of the peat, the in-situ soils were found to be well-draining as confirmed by the percolation testing.

Groundwater was found to be approximately 3' to 4' bgs in the soil borings. Groundwater was measured to be 2'10" bgs in the observation well MW-1 on 7/5/18 at 10:30 AM. From the data logger installed in the observation well, groundwater levels were found to be tidally influenced.

1. Surface conditions: The project area is mostly comprised of sandy beach, however the westerly portion contains a dense area of vegetation, mostly consisting of Phragmites, a highly invasive species. Broken concrete slabs are scattered throughout the project area having been placed as rip-rap material.
2. Settlement and underlying material: Peat was present in each of the boring samples. Peat is soft, organic material, and the compression of underlying peat could cause settlement. Due to site logistics, the borings were performed slightly landward of were the boulders are proposed. Based on visual examination, peat is not expected to be encountered, however we will include specifications to remove and replace the unsuitable soil if encountered.
3. Depth to groundwater: Groundwater was encountered in both borings at approximately 4' below grade surface. Due to the site's proximity to Great South Bay, groundwater levels are most likely tidally influenced.

   The USGS online Long Island Depth to Water Viewer estimates that groundwater ranges between exposed surface and 11' below ground surface (bgs) at the subject property. Groundwater levels may fluctuate slightly with seasonal climatic variations and tidal periods.

Accurate measurements of the groundwater table elevation can be taken from the observation well installed near SB-003. This is utilized in determining groundwater fluctuations due to seasonal and tidal events. A groundwater reading from the observation well was performed on 7/5/18. The depth to groundwater was found to be 2.8' bgs.

The geotechnical report provides soil design criteria to be utilized in the design & engineering.

Stratum	Approximate Depth to Bottom of Stratum (feet)	Allowable Bearing Capacity (tsf)	Unit Weight, Dry (pcf)	Soil Friction Angle, (degrees)	Cohesion (psf)	Active Earth Coefficient	Passive Earth Coefficient
Stratum 1: Brown Sand & Topsoil	4'	2.0	105	32	0	0.307	3.257
Stratum 2: Peat	10'	0.00	90	N/A	230	1.0	1.0
Stratum 3: Light Brown, Medium to Coarse Grained Sand	26'+	1.0	110	30	0	0.333	3.0

Figure 9 – Existing Soil Design Criteria

The geotechnical report also established average infiltration rates between 84 and 100 inches per hour, indicative of highly permeable soils.

2.6. Wetlands Delineation and Flagging

Land Use Ecological Services, Inc, (Land Use) conducted wetlands delineation and flagging in June 2018. The resulting mapping and results are provided in the Appendix.

As per the Land Use analysis and field reconnaissance, the wetland is generally identical and parallel with the high tide line. It also extends upwards into the parks drainage swales.

Delineated wetlands within the project area are under the jurisdiction of the New York State Department of Environmental Conservation (NYSDEC). Since improvements extend seaward of the mean high water (MHW), the project is subject to United States Army Corps of Engineers (USACOE) permitting. NYSDEC also regulates activities in any area adjacent to wetlands: up to 300 feet inland from the tidal wetland boundary, except where bulkheads or paved streets over one hundred feet long are present.

For further information about the wetlands delineation permitting, refer to Section 5.

2.7. Existing Utilities

There no existing utilizes located within the project area itself. Adjacent to the project area at the end of South Bay Street is a sewer manhole / sewer main and domestic water main which used to service the homes now removed as part of the GOSR buyout and acquisition program. The sewer is owned and operated by Suffolk County Department of Public Works, and connected to the Bergen Point (Southwest Sewer District). The water main is owned and maintained by Suffolk County Water Authority. There are existing catch basins on South Bay Street that are connected to the east swale. The Village of Lindenhurst owns and maintains the stormwater collection system.

Photo 14 – Suffolk County Department of Public Works Sewer Manhole

Photo 15 – Village of Lindenhurst Catch Basin

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Photo 16 – Existing Stormwater Outflow at East Side

Photo 17 – Existing Stormwater Outflow at West Side

3. Design Options and Considerations

This section describes the various design features that were considered and the methodology behind their selection and use.

3.1. Design Option 1: Living Shoreline without Stone Breakwater

The design team originally considered the option of installing the living shoreline without any stone breakwater protection. Our office conducted interviews with Village officials regarding their experience and observations during periodic storm events as well as performing wave height calculations at various wind speeds generated during storm events.

Not installing the stone boulders would provide various pros & cons, such as: Pros include -

- Save considerable construction costs
- Reduce the schedule of construction (approximately 1-2 months)
- Reduce impact of construction (noise, truck traffic, disruption in tidal wetlands)

Cons include -

- Newly planted vegetation is vulnerable to existing currents and wave action

- Shoreline landward of the living shoreline will continue to erode, albeit at a slightly slower rate from wave action and existing movement of water, particularly considering the number of adjacent properties already hardened with bulkheads. It should be noted that the currents generally quicken more along properties with bulkheads due to the limited friction/smooth texture, thereby accelerating erosion along non bulkheaded or hardened properties.
- The Village would have to allocate budget for future maintenance including replanting on account of continued erosion

3.2. Design Option 2: Living Shoreline with Stone Breakwater in Open Water

An alternate option was considered where the living shoreline would be protected by a single larger stone breakwater placed in open water. The option was considered partially because of the simplicity of installing a single structure and partially since the structure would dissipate wave action further away from the vegetated shoreline.

Installing a single larger breakwater in open water would provide various pros & cons, such as:

Pros include -

- The structure would dissipate wave action further away from the vegetated shoreline, thereby reducing energy closer to shore
- A single structure would require less maintenance
- With the structure further away from shore, it would allow a more natural interaction of water to the planted vegetation

Cons include -

- Increase the construction budget, as this would require barge mounted equipment and transfer of materials
- The viability of permitting would have a greater degree of uncertainty, and likely take longer to pursue, as it would affect navigability of recreational boats and personal watercraft
- A single breakwater may still leave the shoreline vulnerable to erosion during higher wave action events as compared to the option recommended which provides a second tier at a higher elevation.

3.3. Design Option 3: Living Shoreline with Two (2) Stone Breakwaters

Based upon our comprehensive evaluation of the existing conditions and considerations, Option 3 studied the addition of breakwaters directly adjacent to the shoreline. The approach relies on two (2) breakwaters placed nearby the low and high tide lines to provide protection during wave action at either tide cycle.

Installing two breakwater along the shore would provide various pros & cons, such as:

Pros include -

- Dissipate wave energy during both low & high tide cycles
- Provide resiliency from waves generated during storm events encountered at a higher elevation
- Boulders will slow water movement as opposed to smooth bulkhead hardening

Cons include -

- Additional cost relative to Option 1
- Longer construction duration as a result of boulder placement
- Structure may limit physical access to the water

3.4. Geotechnical / Soil Properties

As noted within figure 10 (existing soil design criteria) the geotechnical report indicates the soil bearing capacity of the sandy soils to be a minimum of 1 ton per square foot, well in excess of the required amount to facilitate incorporation of boulders ranging in size from 2' diameter (0.4 ton), 3' diameter (1.25 ton), up to 4'diameter (3 ton). Average size would about 1.6 ton boulders.

Site preparation will require removal of debris both visible on the surface and that which may be encountered during the course of excavation. Debris includes concrete fragments used previously to provide shoreline protection, and to a lesser degree, small asphalt fragments which are visible on the surface.

Protection of existing soils is a consideration during construction. It is anticipated that all construction will be facilitated from land. As such, heavy machinery in the form of an excavator and various trucks will require access and staging on soils identified as containing layers of peat. Heavy traffic atop these soils can cause compaction and/or rutting. This can be mitigated with a designated compact staging and mobilization area, requirement to provide temporary surface protection, and/or surface remediation prior to project close-out.

3.5. Stormwater Discharge from Adjacent Swales

The proposed improvements include connection and extension of the existing swale system through the breakwater structures. In addition, check valves are proposed at each end point, allowing the stormwater to flow as per existing conditions, however these devises will mitigate tidal backflow through the system onto Shore Road.

Independent from this project, the Village through separate application with the NYSDEC is seeking funding for stormwater quality & quantity controls. The NYSDEC Water Quality Improvement Program (WQIP), is coordinated separately by the Village directly with the NYSDEC. Although the proposed living shoreline improvements include a provision to provide a direct extension/connection and are directly adjacent to the WQIP project area, they do not conflict with the separate application.

3.6. Vegetation – Intertidal Zone

Selection of the plant species is generally categorized by two zones, intertidal and landward. The intertidal zone is a particularly sensitive area with very few species capable of establishing successfully. The tide fluctuations vary considerably at different locations. At the project site, 1'-8" is the greatest vertical tide fluctuation. Spartina alterniflora (Smooth Cordgrass) is the recommended species for the intertidal area between breakwaters. Smooth Cordgrass has been reported as an effective soil stabilizer in intertidal applications, and has been documented to absorb wave energy itself. Smooth Cordgrass also enables habitat establishment of marsh birds and mammals by providing food and cover. Smooth Cordgrass is available in a variety of sizes (bare root, plugs, gallons), gallon size established plants are recommended in areas where wave action is a factor. To further provide the transplanted plants with anchorage in a tidal environment subject to wave action, it is further recommended to provide each plant with an anchor devise to minimize losses in the event of high winds or storms during the establishment period. For best establishment results, April 1 through September 30 is the recommended planting date range for Smooth Cordgrass.

Photo 18 & Photo 19 – Smooth Cordgrass Established and 1 Gallon Size

Benefits of intertidal zone vegetation include:

- Habitat / Cover
- Soil Stabilizer
- Absorb Wave Energy
- Source of Food

3.7. Vegetation – Landward of Upper Breakwater

The proposed improvement plans include vegetative stabilization of the areas directly landward of the upper breakwater structure. Although the area is not expected to receive daily inundation of saltwater, the species selected here must be capable of tolerating salt spray and periodic inundation of its root system with saltwater during storm events.

It is anticipated that a variety of species will be selected including grasses, and shrubs. The addition of these plants will act to support the front line of the intertidal zone by further stabilizing the soil, and providing habitat to both marsh birds and mammals, similar to that of the Smooth Cordgrass above. Whereas selection of plants within the

intertidal zone is very limited, there is a greater variety of species to select from, upland of this zone.

Shrub species include:

- Rosa rugosa, *Rugosa Rose*
- Myrica pensylvanica, *Northern Bayberry*
- Cytisus scoparius, *Broom*
- Hydrangea macrophylla, *Bigleaf Hydrangea*
- Juniperous conferta, *Shore Juniper*

Photo 20 & Photo 21 – Bayberry & Rugosa Rosa

Grass species include:

- Ammophila breviligulata, *American Beachgrass*
- Achizachyrium scoparium, *Little Bluestem*
- Spartina patens, *Saltmeadow Cordgrass*
- Spartina pectinata, *Prairie Cord Grass*

Benefits of vegetation landward of breakwater include:

- Habitat / Cover
- Soil Stabilizer
- Source of Food
- Aesthetics

3.8. Stone Boulders

The use of stone boulders is recommended primarily to dissipate wave energy during times of high winds and storm events. Boulder size is primarily based upon weight measured in tons. Recommended weights are based primarily upon fetch and wave

energy and established using USGS calculator for determining estimated significant wave heights.

The fetch distance as measured to the nearest portion of the barrier islands is approximately 3 miles. The distance was calculated with a conservative value on the diagonal across the Great South Bay to Ocean Parkway.

The wave energy values were calculated at various storm events including winds at 20 MPH, 50 MPH, and 100 MPH (threshold between category one and two hurricanes).

Estimated significant wave height results vary between 12" and 40".

Based upon the fetch and estimated significant wave heights, the recommended boulder size is approximately 1 ton. The boulder sizes incorporated into the Schematic Design documents include boulders ranging in size from 2' diameter (0.4 ton), 3' diameter (1.25 ton), up to 4'diameter (3 ton). Average size would about 1.6 ton boulders.

Benefits of stone boulders used to form the breakwater include:

- Natural Material
- Dense Weight
- Dissipate Wave Energy
- Habitat

3.9. NYSDEC Pre-Application Meeting

On August 1, 2018, GOSR facilitated a meeting between NYSDEC representatives and consultants from various Engineering firms to introduce and discuss projects. Significant input/comments includes:

- Disturbance of the existing vegetation located on the west side of the project area will not likely be permitted due to the presence of tidal wetland species.
- The concept of a living shoreline supplemented/protected using a double parallel row of boulders was acknowledged as a permitable approach.
- The inclusion of a beach accessed kayak launch was also acknowledged as a permitable approach.
- The NYSDEC will not permit the filling in of area where the existing beach terminates into the west side of the existing bulkhead. The NYSDEC instead suggested cutting the existing bulkhead down to an elevation matching that of the top of proposed lower boulders. The lower boulder breakwater would then terminate into the side of the cut/trimmed bulkhead. The upper breakwater would continue offset from the lower, allowing the living shoreline to continue across.

3.10. Village Input and Direction

Cameron Engineering presented and met with the Village BOT and officials on multiple occasions during the development of this report. Key points of direction include:

- Initially, the Village requested incorporation of a sandy beach for passive use in the western corner of the project area. Upon further clarification from the NYSDEC regarding the unlikelihood of permitting displacement of existing tidal wetlands, the Village provided subsequent direction to eliminate the beach feature at this time. Alternate locations of the beach feature further to the east were discussed however due to the close proximity to existing residences, the alternative locations were not selected.
- Area to facilitate beach kayak launching
- Extend upper boulder wall to greatest extent possible to mitigate wave action and associated flooding during large storm events
- Provide provision to facilitate maintenance vehicles up to the stormwater discharge points

3.11. Summary

Various key considerations were incorporated in the development of this report and Schematic Design documents.

Multiple design options were factored, as were geotechnical, stormwater, vegetative, boulder sizing & placement and input/direction from the Village.

4. Schematic Design

4.1. Description of Scope of Work

The proposed Schematic Design improvement plans factor many of the considerations into the design. Also incorporated is input and direction from the Village at our various public and informal meetings. The proposed plans & details include construction budget considerations.

The living shoreline approach provides many advantages as compared to traditional hardening approaches, particularly in the form of bulk heading. Living shorelines provide the duel benefit of shoreline stabilization and habitat creation. Integral to creation of habitat is establishment of vegetation in the inter-tidal zone. Some of the many attributes of Saltmeadow Cordgrass include food and cover for a variety of wildlife, both aquatic and terrestrial in form of cover, habitat, and food. Additionally, Saltmeadow Cordgrass is fast spreading and is a native species used for soil stabilization.

As compared with hardened approaches, living shorelines decelerate the speed of water along the shoreline, reducing erosion on adjacent properties. This is evidenced by the erosion within the project area partially caused by the adjacent properties hardened with bulkheads. It is particularly acute where the current moving in a westerly direction

around the peninsula of hardened properties at the east of the project area, creates a swirl effect accelerating erosion at the dead end of South Bay Street.

In development of the proposed Schematic Design documents developed as part of this report, our office weighed the pros and cons of the two other options considered. The Schematic Design documents propose the incorporation of a living shoreline across the entire project area, interrupted only to facilitate beach access kayak launching, providing accessibility to the waterfront.

In acknowledgment of the precedent wave action, and previous erosion encountered, the living shoreline is reinforced with parallel rows of stone bounders used to dissipate wave energy. These natural stone structures allow the vegetative portion to establish in a more protected environment, while allowing the tides to function as they do today. The stone boulders further protect the landward soil by dissipating wave action during high tide or storm events, providing long-term resiliency and accounting for sea level rise.

4.2. Budgetary Cost Estimates

This report includes a schematic design conceptual construction cost budget estimate for the project area. The estimate is based on AutoCAD-generated quantities and unit pricing in 2019 dollars.

The overall anticipated construction cost budget is shown in the Table below:

Village of Lindenhurst

SHORE ROAD WATERFRONT PARK NATURAL SYSTEMS RESILIANCY IMPROVEMENTS
Schematic Design Project Budget Estimate
Cameron Engineering & Associates, LLP.
August 1, 2018

Item		Project Scope Cost
Base Project		
General Conditions (10%)		
Mobilization, staging, temporary utilities & facilities		
	Sub-Total	**$117,000**
Site Preparation		
General Site Preperation & Fine Grading		
	Sub-Total	**$131,300**
On-Site Improvements		
Stone Breakwaters, Beach, Gravel Pavement		
	Sub-Total	**$853,000**
Site Plantings		
Intertidal and Upland Planting		
	Sub-Total	**$178,000**
Sub-Total		**$1,280,000**
30% Contingency		**$384,000**
5% Bonding & Insurance		**$84,000**
Project Total		**$1,748,000**

Notes:
* Cost estimate based on Schematic Design Documents by Cameron Engineering & Associates, LLP

Table 1 – Cost Estimate

Estimate includes:

- Demolition, removals, and general site preparation
- Partial removal of existing bulkhead

- Boulder walls
- Inter tidal and upland planting
- Kayak launch area, including movable mat
- Replace dead end road with gravel
- Extension of drainage pipe and check valves
- Turf restoration
- Dewatering
- Contingencies

Contingencies: The estimates reflect a construction contingency percentage of 30%. The percentage is suitable for the schematic design phase, and is expected to be reduced as additional existing information is obtained and as the design progresses.

5. Permitting / Approvals

Permitting and approval efforts are outlined below by jurisdiction.

5.1. Suffolk County Parks Department (SCPD) Consent

Based upon correspondence with the Village, improvements on or directly adjacent to the property owned and maintained by the SCPD requires an acknowledgment and/or consent prior to construction. Based upon the limited improvements proposed adjacent to the Park property, this item is not considered significant to the schedule, however contact with the SCPD will be required to ensure no issues further into the design.

5.2. New York State (NYS) Consent

The Village had directed our team to include the two properties currently owned by NYS and previously associated with the GOSR buyout and acquisition program. NYS is currently negotiating with the Village to transfer ownership of the parcels, along with many others throughout the Village, however until title is transferred, the Village will be required to seek consent from NYS.

5.3. Federal Approval

Based on the schematic design, there will be impacts to areas within delineated wetlands. Therefore, a USACOE-NYSDEC-NYSDOS Joint Permit Application will need to be prepared. A copy of the Joint Application and Instructions are provided in the Appendix.

There are two anticipated USACOE permits to be requested via the Joint Permit Application.

- Section 10 Rivers & Harbors Act: Applicable per the bulkhead structures being removed, and the boulder structures proposed.
- Section 404 Clean Water Act: Applicable per the sand fill necessary at the curvature of the living shoreline.

5.4. State Approval

NYSDEC: NYSDEC permitting is required for any scope of work (i.e., fill, drainage infrastructure) that would fall within or adjacent to the area of a regulated tidal wetland. Locations where construction is within 300 feet of designated tidal wetlands will require a Tidal Wetlands Permit from the NYSDEC.

In a meeting with the Village & GOSR, NYSDEC was initially made aware of this project in a meeting that took place on October 4, 2017. During this meeting, the DEC was given a general introduction of the project's background, scope, and goals. The NYSDEC participated via phone during the project kick-off meeting on May 22, 2018. As discussed in Section 3.9, a pre-application meeting was coordinated by GOSR, where a draft of the drawings and report was discussed in detail.

For future permitting purposes, DEC would require an internal review of the project improvement plans and wetland delineation as part of its review process.

There are two anticipated NYSDEC permits to be requested via the Joint Permit Application.

- Tidal Wetlands: Applicable per the improvements proposed within and seaward of the of the wetland demarcation performed.
- Excavation and Fill in Navigable Waters: Applicable per the sand fill necessary at the curvature of the living shoreline.

A NYS ECL Article 15 Protection of Waters permit may also be required for work proposed below mean high water. If necessary, this permit is filed separately but concurrently with the Joint Permit Application.

Additionally, the land disturbance may exceed one acre, which would require coverage under the SPDES General Permit for Stormwater Discharges Associated with Construction Activities (GP-0-15-002). The area of disturbance will be calculated during the future design phase; if disturbance will exceed one acre, a Stormwater Pollution Prevention Plan (SWPPP) and Notice of Intent (NOI) Form will be prepared and submitted to NYSDEC.

New York State Department of State (NYSDOS): Separate from the NYSDEC permit, NYSDOS Coastal Consistency Concurrence is required. The submission is made concurrently as part of the Joint Permit Application.

5.5. SEQRA

This project is subject to SEQRA (the State Environmental Quality Review Act) based on its funding, and GOSR will prepare an Environmental Assessment Form (EAF). As of the writing of this report, it is expected that GOSR will assume Lead Agency status.

6. Other Influencing Factors

6.1. Coordination with Other Projects

The Village is independently seeking funding from the NYSDEC for stormwater improvements (stormwater quality & quantity controls) associated with the two swales flanking the Park.

The NYSDEC Water Quality Improvement Program (WQIP), is coordinated separately by the Village directly with the NYSDEC. Although the proposed living shoreline improvements include a provision to provide a direct extension/connection and are directly adjacent to the WQIP project area, they do not conflict with the separate application.

6.2. Sea Level Rise

Sea-level rise can pose a significant risk to the project area's people, resources, and economy. If sea levels rise rapidly, communities and individuals need science-based projections to evaluate the risks and to plan for adaptation.

On September 22, 2014, Governor Cuomo signed into law the Community Risk and Resiliency Act, Chapter 355 of the Laws of 2014 (CRRA). CRRA is intended to ensure that decisions regarding certain State permits and expenditures consider climate risk and sea-level rise. Among other things, CRRA requires the NYSDEC to adopt regulations establishing science-based statewide sea-level rise projections, upon which the DEC proposed a new 6 NYCRR Part 490 (Projected Sea-level Rise). Part 490 establishes projections of sea-level rise in three specified geographic regions over various time intervals, but does not impose any requirements on any entity.

Table 2– Projected Sea Level Rise for the Long Island Region

The Long Island Region is the marine coast of Nassau and Suffolk Counties

Projected Sea-level Rise for Long Island Region (Inches relative to 2000-2004 baseline)						
	Descriptor	**Low**	**Low-Medium**	**Medium**	**High-Medium**	**High**
Time Interval	2020s	2	4	6	8	10
	2050s	8	11	16	21	30
	2080s	13	18	29	39	58
	2100	15	21	34	47	72
Note: Projected Sea-level Rise shown based on 6 NYCRR Part 490.						

Table 3 – Definition of Descriptors for 6 NYCRR Part 490

Descriptor	**Definition**
ClimAID model outputs	Projections based on global climate model outputs downscaled to New York, and additional information to account for anticipated changes in the rates of ice melt that cannot yet be more rigorously included in quantitative models.
Low	The sea-level rise that is consistent with historical rates of sea-level rise and is very likely (the 10th percentile of ClimAID outputs) to be exceeded by the

	specified time interval.
Low-Medium	The sea-level rise that is likely to be exceeded by the specified time interval (the 25th percentile of ClimAID outputs).
Medium	The sea-level rise that is about as likely as not to be exceeded by the specified time interval (mean of 25th and 75th percentiles of ClimAID outputs).
High-Medium	The amount of sea-level rise that is unlikely to be exceeded by the specified time interval (the 75th percentile of ClimAID outputs).
High	The amount of sea-level rise that is associated with high rates of melt of land-based ice and is very unlikely to be exceeded by the specified time interval (the 90th percentile of ClimAID outputs).

The Regional Plan Association (or RPA) is an urban research and advocacy organization that works to improve the prosperity, infrastructure, sustainability, and quality of life of the New York-New Jersey-Connecticut metropolitan region. The RPA predicts that the region could see at least one foot of sea level rise by 2050, possibly as soon as the 2030s; three feet by the end of the century possibly as soon as the 2080s; and six feet early in the next century[2].

If, for example, a 1-foot sea level rise was to occur in the upcoming decades, the high tide level would increase from elevation 1 to elevation 2.

As noted in section 1.3, sea level rise is a critical consideration, however tidal plantings have a limited threshold for habitation. Therefore the design and elevation where the vegetative component of the living shoreline will be specified must be based on current tide ranges. The proposed improvements address sea level rise in the horizontal and vertical placement of the second tier of stone boulders as well as that of the partial third tier of stone wall wrapping the landward side of the beach.

7. Conclusions and Next Steps

Of the three options considered (refer to section 3), option three is recommended. Our recommendation is based upon the criteria required to construct and sustain a living shoreline. This includes realistic course for permitting, area for establishment of vegetation, protection of both the plant species and land from further erosion and storm events. Additionally our Preliminary Engineers cost estimate indicates the improvements can be constructed within the stated budget.

[2] These predictions of sea level rise refer to measurements of sea levels above a 1991-2009 baseline and the probable timing is based on RPA's interpretations of research carried out by the New York Panel on Climate Change (NPPC), New York State and the New Jersey Climate Adaptation Alliance, which are based on Kopp et, al (2014). Cameron Engineering & Associates, LLP

1. Next Steps – Village of Lindenhurst

- Upon receipt of this report, the Village is required to determine project feasibility by September 1, 2018.

2. Next Steps – Cameron Engineering

- Upon confirmation from the Village regarding feasibility, Cameron Engineering will progress with the established milestones including:
  - 60% Design Documents
  - 90% Design Documents
  - 100% Design Documents
  - Bid
  - Construction
  - Project Closeout

3. Next Steps – Permitting

- Joint Permit Application
  - NYSDEC
  - USACOE
  - NYSDOS
- NYS ECL Article 15 Protection of Waters permit (requires verification)
- Stormwater Pollution Prevention Plan (SWPPP)

Next Steps – GOSR

- GOSR will be required to prepare an Environmental Assessment Form (EAF).
- GOSR will assist the Village in ensuring that this project retains its eligibility for funding through GOSR.

Appendices

Appendix A – Tide Gauge Data

Appendix B – Geotechnical Report

Appendix C – Wetlands Delineation Exhibit

Appendix D – Joint Permit Application

Appendix E – Schematic Design Plans

Appendix A – Tide Gauge Data

Monthly Averages

Date	Tidal High (daily)	Tidal Low-High (daily)	Tidal High-Low (daily)	Tidal-Low (daily)
Jan-13	0.49	0.03	-0.81	-1.05
Feb-13	0.67	0.23	-0.69	-0.97
Mar-13	1.11	0.70	-0.28	-0.45
Apr-13	0.86	0.41	-0.62	-0.76
May-13	0.85	0.46	-0.64	-0.75
Jun-13	1.07	0.66	-0.39	-0.54
Jul-13	1.16	0.66	-0.38	-0.45
Aug-13	1.13	0.72	-0.36	-0.44
Sep-13	1.12	0.75	-0.35	-0.42
Oct-13	1.31	0.92	-0.21	-0.29
Nov-13	0.79	0.33	-0.72	-0.85
Dec-13	0.88	0.35	-0.65	-0.86
Jan-14	0.83	0.32	-0.71	-0.93
Feb-14	0.67	0.17	-0.83	-1.06
Mar-14	0.85	0.43	-0.68	-0.85
Apr-14	1.12	0.67	-0.42	-0.65
May-14	1.20	0.69	-0.37	-0.49
Jun-14	1.28	0.85	-0.32	-0.42
Jul-14	1.16	0.64	-0.44	-0.51
Aug-14	1.32	0.90	-0.24	-0.29
Sep-14	1.32	0.88	-0.27	-0.33
Oct-14	1.42	0.99	-0.17	-0.24
Nov-14	1.00	0.52	-0.53	-0.69
Dec-14	1.11	0.63	-0.45	-0.61
Jan-15	0.63	0.11	-0.66	-0.99
Feb-15	0.66	0.25	-0.77	-0.99
Mar-15	0.34	0.01	-1.10	-1.21
Apr-15	0.75	0.35	-0.75	-0.93
May-15	0.62	0.26	-0.84	-0.97
Jun-15	1.09	0.41	-0.46	-0.58
Jul-15	1.23	0.75	-0.33	-0.40
Aug-15	1.19	0.82	-0.42	-0.50
Sep-15	1.29	0.80	-0.25	-0.31
Oct-15	1.35	0.86	-0.21	-0.32
Nov-15	0.94	0.47	-0.58	-0.67
Dec-15	0.95	0.48	-0.47	-0.74
Jan-16	0.92	0.43	-0.51	-0.78
Feb-16	0.82	0.38	-0.60	-0.84
Mar-16	0.91	0.50	-0.49	-0.68
Apr-16	1.10	0.68	-0.39	-0.55
May-16	1.05	0.63	-0.45	-0.58
Jun-16	1.14	0.69	-0.40	-0.52
Jul-16	1.16	0.73	-0.35	-0.45
Aug-16	1.13	0.69	-0.38	-0.43
Sep-16	1.43	1.04	-0.07	-0.13
Oct-16	1.23	0.80	-0.21	-0.35
Nov-16	0.89	0.42	-0.52	-0.72
Dec-16	0.68	0.25	-0.70	-0.92
Jan-17	0.85	0.36	-0.56	-0.77
Feb-17	0.70	0.36	-0.64	-0.88
Mar-17	0.48	0.00	-0.94	-1.16
Apr-17	1.09	0.63	-0.38	-0.46
May-17	1.33	0.85	-0.20	-0.26
Jun-17	1.23	0.88	-0.25	-0.35
Jul-17	1.31	0.88	-0.14	-0.24
Aug-17	1.23	0.84	-0.23	-0.25
Sep-17	1.39	0.99	-0.05	-0.13
Oct-17	1.29	0.85	-0.04	-0.26
Nov-17	1.15	0.68	-0.32	-0.45
Dec-17	0.64	0.17	-0.71	-0.97
Jan-18	0.67	0.17	-1.04	-1.18
Total Average	1.01	0.56	-0.47	-0.62

Note: Elevations provided in NAVD 1988 Datum
Source: USGS Tide Guage #01309225 (Great South Bay at Lindenhurst NY)
Duration: 2013 Through 2018

Appendix B – Geotechnical Report

GEOTECHNICAL SUBSURFACE INVESTIGATION REPORT

SHORE ROAD PARK AT
SOUTH BAY STREET
LINDENHURST, NY

July 6th, 2018

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PWGC
Strategic Environmental Engineering Solutions

TABLE OF CONTENTS

LIST OF TABLES

1.0 Executive Summary

1.1 Purpose

This report presents the results of a Geotechnical Subsurface Investigation prepared by P.W. Grosser Consulting (PWGC) for the proposed improvements to the public park at Shore Road in Lindenhurst NY. The planned improvements are part of the Government Office for Storm Recovery (GOSR) state-wide program for enhancing infrastructure resiliency. The purpose of this report is to provide geotechnical-related recommendations on various design and construction aspects of the proposed construction.

1.2 Scope of Services

PWGC's scope of work includes the following:

- Review of available data pertinent to the site.
- Conduct a subsurface investigation.
- Perform a geotechnical engineering analysis regarding the proposed construction, using the information obtained from the subsurface investigation.
- Prepare this report of with conclusions and recommendations for the geotechnical engineering aspects of the proposed construction.

1.3 Summary of Findings

The soils encountered in the exploratory borings were nearly uniform with little differentiation between the boring locations. Brown sand deposits of medium-dense compaction were found underlying the topsoil down to 4' bgs (Below Grade Surface). A layer of soft, compressible peat and organics was found from 4' bgs to 10' bgs. Beneath the peat, deposits of light brown sand with little gravel of medium-dense compaction were encountered until termination of the soil borings.

With the exception of the peat, the in-situ soils were found to be well-draining as confirmed by the percolation testing.

Groundwater was found to be approximately 3' to 4' bgs in the soil borings. Groundwater was measured to be 2'10" bgs in the observation well MW-1 on 7/5/18 at 10:30 AM. From the data logger installed in the observation well, groundwater levels were found to be tidally influenced.

1.4 Standard of Care

The services performed by PWGC were conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the geotechnical profession practicing contemporaneously under similar conditions in the locality of the project. No other warranty, expressed or implied, is made.

This report has been prepared for the exclusive use of Cameron Engineering P.C. with specific application to the proposed project.

2.0 Project Description

2.1 Proposed Development

According to the Engineer of Record, Cameron Engineering P.C., the scope of the proposed development will consist of improving the park's coastline with shoreline stabilization measures,

such as revetments and living shorelines. Additionally, drainage swales or other drainage strutures may be incorporated into the design to enhance stormwater recharge at the site. PWGC understands that the project scope is in the preliminary design phase, and therefore, specific details such as construction materials, structural loads and layouts are not well defined at the time of writing this report.

Discussions with the Engineer of Record, concerning the proposed improvements took place in 6/6/18. If in the event the proposed construction differs from the previously referred to discussions, PWGC should be notified so that the changes can be reviewed to determine if the recommendations presented in this report are still applicable.

2.2 Site Description

Shore Road Park is a public park owned and operated by the Village of Lindenhurst. The site is developed with several sports fields, single story accessory structures and other sports-related appurtenances (fences, sheds etc). The property is approximately 11.73 acres in area and is relatively flat with a gentle slope that descends towards Great South Bay at the southern boundary of the site.

The beach overlooking Great South Bay appears to have been a past dumping site for construction debris, particularly concrete. Infrequent masses of concrete were found spread throughout the beach, particularly to the east of the subject property. It is possible that this was done deliberately to repurpose construction debris for use as shoreline armoring.

Photo 1: Concrete Debris on Beach, Looking West

Photo 2: Access Road East of Subject Site, Concrete Debris on Beach, Looking West

A vicinity map of the surrounding area can be found in Appendix A.

3.0 Investigation and Testing

3.1 Subsurface Investigation Procedure

The field investigation to determine the engineering characteristics of the subsurface materials included a reconnaissance of the project site, drilling of soil borings, performing standard penetration tests (SPT), obtaining disturbed split-spoon samples, classifying materials, and recording the depth to water.

Test Borings

The drilling consisted of two (2) test borings performed on 6/7/2017 at the locations depicted on the site plan in Appendix B. Both soil borings were completed to a depth of 25'. A 2" diameter PVC monitoring well was installed designated as MW-1. The drilling was conducted using a truck-mounted Geoprobe unit equipped with a DH-100 Auto Drop Hammer pneumatic hammer with a split-spoon sampling unit contracted from Land Air Water Environmental Services (LAWES) Center Moriches, New York.

Soil boring samples were characterized using the Unified Soil Classification System (ASTM D-2487-69). Disturbed soil samples were obtained in general accordance with ASTM D-1586 Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils. All samples were identified according to project number, boring number and depth, and preserved in mason jars or zip lock bags to protect against moisture loss.

During the sampling, SPTs were performed in the borings in conjunction with the split-barrel sampling. The standard penetration value (N) is defined as the number of blows of a 140-pound hammer, falling thirty inches, required to advance the split-spoon sampler one foot into the soil (ASTM D-1586). The sampler is lowered to the bottom of the drill hole and the number of blows is recorded for each of the four successive increments of six inches of penetration. The "N" value is the sum of the number of blows required to advance the sampler through the second and third six-

inch increment. The results of the Standard Penetration Test (SPT) indicate the relative density and comparative consistency of the soils and thereby provide a basis for estimating the relative strength and compressibility of the soil profile components.

A field log was prepared for each soil boring. The log contains information concerning the boring method, samples attempted and recovered, and indications of the presence of various materials such as clay, silt, sand, or gravel, as well as observations of groundwater. The finalized boring logs are included in Appendix C.

Upon completion of the boreholes, they were backfilled with native material and packed gravel.

Percolation Tests

Two (2) Percolation tests (SB-001 and SB-002) were performed according to the New York State Stormwater Management Design Manual, Appendix D: Infiltration Testing Requirements. Both percolation tests were conducted at 24" below grade surface due to shallow groundwater conditions.

The percolation test pits were conducted by advancing 6 5/8" diameter augers to the designated depths. A solid 4" PVC casing was then installed in the borehole. The casing was filled with clean water to a depth of 24" and allowed to pre-soak for 24 hours. The following day, the casing was refilled with 24" of water. PWGC field staff monitored the water level and measured the drop from the top of the casing after 1 hour. This procedure was repeated three (3) additional times for a total of four (4) observations. The results from each observation can be found in Section 4.2.1. The final field rate is reported as the as the average of the four (4) observation times.

The soils encountered in the digging of the percolation test pits were consistent with findings from the geotechnical boreholes (SB-003 and SB-004).

Observation Well and Data Logger

A 2" diameter PVC groundwater observation well, designated as MW-001, was installed using a truck-mounted Geoprobe unit down to 11 feet bgs. From inspecting the auger cuttings, the subsurface soils at the well location were found to consist of brown to dark brown sand with little gravel. Groundwater levels are anticipated to be tidally influenced due to the site's proximity to the coastline.

A Level Troll 700 data logger was installed by PWGC inside the well casing. The data logger recorded fluctuations in groundwater levels for 28 days by recording the depth of water above the instrument. Data was submitted in the form of a .CSV file to the engineer of record.

3.1 LABORATORY TESTING

Laboratory testing was performed by a reputable, accredited laboratory in accordance with relevant ASTM standards to assess the engineering properties of the in-situ soils. The following tests were conducted:

- Grain and particle size analysis using sieve and/or hydrometer, to assist in USCS soil classification and to estimate soil permeability. ASTM D422.
- Moisture content to determine the percentage of existing water in a given soil sample in accordance with ASTM D-2216.

The samples collected will be stored for 180 days from the date of issue of this report, and then disposed of unless otherwise instructed in writing by the client.

See Appendix D for laboratory test reports.

4.0 Subsurface Conditions

4.1 Stratigraphy

The soil types observed as part of the soil test borings were mostly uniform with minimal differences. The subsurface soils were found to consist predominantly of light brown, coarse to fine grained sands with trace amounts of gravel. A 6' thick layer of soft, peat and organics was found in both borings. A typical stratigraphy profile can be found below in Table 1. Detailed description of the type of soil layers encountered during drilling is given in the borehole logs (Appendix C).

Table 1 – Generalized Stratigraphy

Stratum	Approximate Depth to Bottom of Stratum (feet)	Soil Encountered	Consistency/Density
Stratum 1: Brown Sand & Topsoil	4'	Dark brown sand, topsoil	Medium-dense compaction
Stratum 2: Peat	10'	Black peat, organics, roots, little to trace amounts of gray sand	Very Soft
Stratum 3: Light Brown, Medium to Coarse Grained Sand	26'+	Light brown, medium to coarse grained sand with gravel	Medium-dense compaction, wet due to presence of groundwater

4.2 Groundwater

Groundwater was encountered in both borings at approximately 4' below grade surface. Due to the site's proximity to Great South Bay, groundwater levels are most likely tidally influenced.

The USGS online Long Island Depth to Water Viewer estimates that groundwater typically exists 0'-11' bgs at the subject property. Groundwater levels may fluctuate slightly with seasonal climatic variations and tidal periods.

Accurate measurements of the groundwater table elevation can be taken from the observation well installed near SB-003. This can be helpful in determining groundwater fluctuations due to seasonal and tidal events. PWGC took a groundwater reading from the observation well on 7/5/18. The depth to groundwater was found to be 2.8' bgs.

4.2.1 Percolation Test Results

Test results for the percolation tests can be found in Table 2 below. The trial times recorded represent the amount of time a 24" column of water completely infiltrated through the subsurface soils. PWGC recommends using the infiltration rate recorded from the 4th trial as the representative rate (in bold).

Table 2 – Percolation Test Results

Trial	SB-001	SB-002
Trial #1	4 minutes, 19 seconds	16 minutes, 51 seconds
Trial #2	4 minutes, 54 seconds	17 minutes, 12 seconds
Trial #3	5 minutes, 8 seconds	16 minutes, 35 seconds
Trial #4	**5 minutes, 12 seconds**	**17 minutes, 12 seconds**
Infiltration Rate	**100+ In/hr**	**84 In/hr**

4.2.2 NOAA Tidal Information

The National Oceanic and Atmosphere Administration (NOAA) maintains a free tool called VDatum that combines NOAA's bathymetric data with topographic data from the United States Geological Survey (USGS). This tool can be used be find site specific tidal information, such as Mean High Water (MHW), Mean Low Water (MLW) etc based on geographic coordinates and can convert between different vertical datums. For the proposed site, tidal information was found based on MLLW datum and NAVD88.

Table 3 – Tidal Data

	Datum: NAVD 88
Mean Low Low Water (MLLW)	-0.836'
Mean Low Water (MLW)	-0.751'
Mean High Water (MHW)	0.516
Mean High High Water (MHHW)	0.690

5.0 Recommendations

The geotechnical recommendations presented in this report are based on the information available regarding the proposed construction, the results obtained from the soil test borings, and PWGC's experience with similar projects. Because the soil test borings represent a very small statistical sampling of subsurface conditions, it is possible that conditions encountered during construction can be substantially different from those indicated by the soil test borings. If unexpected conditions are discovered, adjustments to the design and construction may be necessary.

This geotechnical report is based on the project information provided to PWGC and the assumptions stated in this report. Changes in the proposed location or design of the structures can have significant effects on the conclusions and recommendations of the geotechnical report. PWGC should be contacted in the event of such changes.

5.1 Soil Design Parameters

Table 4 below summarizes engineering design parameters for the generalized soil layers described in Table 1. These parameters were evaluated based on a combination of the field exploration results, soil testing, calculations and engineering judgement. PWGC's

recommendations on soil design parameters represent the lowest representative value from the soils encountered in the field study. Values for the neighboring strata vary slightly, but not significantly.

The given active and passive lateral earth pressure coefficients are based on Rankine's theory. Peat and organic soils are considered to have zero shear strength for the purpose of the lateral earth pressure coefficient recommendation.

Table 4 – Summary of Estimated Soil Properties

Stratum	Approximate Depth to Bottom of Stratum (feet)	Allowable Bearing Capacity (tsf)	Unit Weight, Dry (pcf)	Soil Friction Angle, (degrees)	Cohesion (psf)	Active Earth Coefficient	Passive Earth Coefficient
Stratum 1: Brown Sand & Topsoil	4'	2.0	105	32	0	0.307	3.257
Stratum 2: Peat	10'	0.00	90	N/A	230	1.0	1.0
Stratum 3: Light Brown, Medium to Coarse Grained Sand	26'+	1.0	110	30	0	0.333	3.0

5.1.1 Bearing Capacity

The bearing capacity of the soil encountered during the geotechnical exploration is calculated using the results of the SPT. The blow counts recorded in the boring log were corrected based on the effective overburden pressure of the soil strata and the driving energy of the drill rig equipment.

PWGC's recommendation on the allowable bearing capacity represents the lowest bearing capacity of soils encountered in the field study. Values for the neighboring strata vary slightly, but not significantly.

There is a possibility that some soils at the site will have an allowable soil bearing pressure less than the recommended design value. Therefore, foundation-bearing surface evaluations should be performed if soils which differ from the conditions reported in the boring analysis, particularly if clays or loose wet sands are observed.

The recommended soil bearing capacity includes a factor of safety of at least two (2) against shear failure.

5.1.2 Drainage

PWGC estimates the drainage properties of the brown sands (Stratum 1) beneath the topsoil to be very well-draining. This determination comes from visual observation of the soil encountered and the results of the percolation tests. The sieve analysis included in Appendix D corroborate the drainage ability of these sandy soils with results of low fines content.

Peats and organic soils, such as those found at Stratum 2 between 4' and 10' bgs, are considered to have a very slow infiltration rate or are nearly impermeable.

PWGC recommends that drainage structures/improvements be designed with consideration of the shallow groundwater table. Groundwater levels will fluctuate regularly with tidal cycles, as shown in the data logger readings.

5.1.3 Liquefaction

Evaluation for the potential for liquefaction of soils was assessed based on SPT results and shallow groundwater conditions. The apparent shear strength of the in-situ, medium-dense sands are deemed unlikely to liquify in case of a major seismic event based on their apparent shear strength (SPT 'N' >10 blows per foot).

5.1.4 Seismic Site Class

Based on the properties of the soils encountered in the test borings and PWGC's knowledge of geologic conditions in the area of the site, a site class of 'E' ("soft soil" profile) is considered appropriate as determined from Table 1613.5.5 of International Building code (IBC).

According to the USGS Seismic Design Maps Tool, ASCE 7-10 and Chapter 16 of the NYS Building Code, the suggested ground motion parameters for the project area are presented in Table 5 below:

Table 5 – Ground Motion Parameters for Site Class D

Site Class D:

PARAMETER	S_S	S_1	S_{MS}	S_{M1}	S_{DS}	S_{D1}
VALUE	0.211g	0.062g	0.529g	0.218g	0.352g	0.146g

5.2 Recommendations for Construction and Earthwork Specification

5.2.1 Structural Fills

PWGC recommends that structural fills be constructed as controlled, well-compacted engineered fills. Structural engineered fill should be inorganic, clean sands with less than 10% fines (silts and clays) content. Gravel-heavy fill mixes may be recommended to act as a capillary break in shallow groundwater situations. If found at the base of an excavation, the peaty/organic soils should be excavated out and replaced with imported fill.

Any existing soils with a high organic or high fines (greater than 10%) content are suitable for reuse as fill in landscaping areas only as common fill. The intent of these recommendations is to reduce the potential for consolidation and settlement of new fills. Gradation requirements for structural and common fills are listed below in Table 6.

Table 6 – Structural and Common Fill Gradation Guidelines

Sieve Size	Structural Fill (Percent Passing by Weight)	Common Fill (Percent Passing by Weight)
6 Inches	100	100
3 Inches	100	80-100
$^1/_2$ Inch	50-100	-
No. 4	35-100	20-100
No. 16	20-90	-
No. 50	5-40	-
No. 200 (Fines)	0-10	0-20

Laboratory testing should be performed on the fill materials to determine the appropriate moisture-density relationship of the fill being placed. Adjustments to the soil moisture by wetting or drying should be made as needed during fill placement.

Suitable fill material should be placed in thin lifts (lift thickness depends on type of compaction equipment, but in general, lifts of 6 inches loose measurements are recommended). The soil should be compacted by the necessary compaction equipment to meet the specified compaction recommendations. Granular (sands and gravels with less than 10% fines) structural fill material should be compacted with smooth-drum vibratory compactors.

Within small excavations, such as in utility trenches (less than 24 inches in width), around manholes or behind retaining walls, PWGC recommends the use of mechanical tampers, "Rammax" compactors or vibrating plate compactors to achieve the specified compaction. Loose lift thickness of 4 inches are recommended in small area fills.

PWGC recommends that structural fill and backfill be compacted in accordance with the criteria stated in Table 7. A qualified field representative should periodically observe fill placement operations and perform field density tests at various locations throughout each lift, including trench backfill, to indicate if the specified compaction is being achieved.

Table 7 – Structural Fill Placement Guidelines

AREAS OF FILL PLACEMENT	COMPACTION RECOMMENDATIONS (ASTM D698 – STANDARD PROCTOR)	MOISTURE CONTENT (PERCENT OF OPTIMUM)
STRUCTURAL FILL SUPPORTING FOUNDATION	98%	0 TO MINUS 5%
STRUCTURAL FILL PLACED WITHIN 5 FEET BEYOND THE PERIMETER OF FOUNDATION	95%	0 TO MINUS 5%
UTILITY TRENCHES	95%	0 TO MINUS 5%
STRUCTURAL FILL OVER FOOTINGS	98%	0 TO MINUS 5%
COMMON, NON-STRUCTURAL FILLS	90%	0 TO MINUS 5%

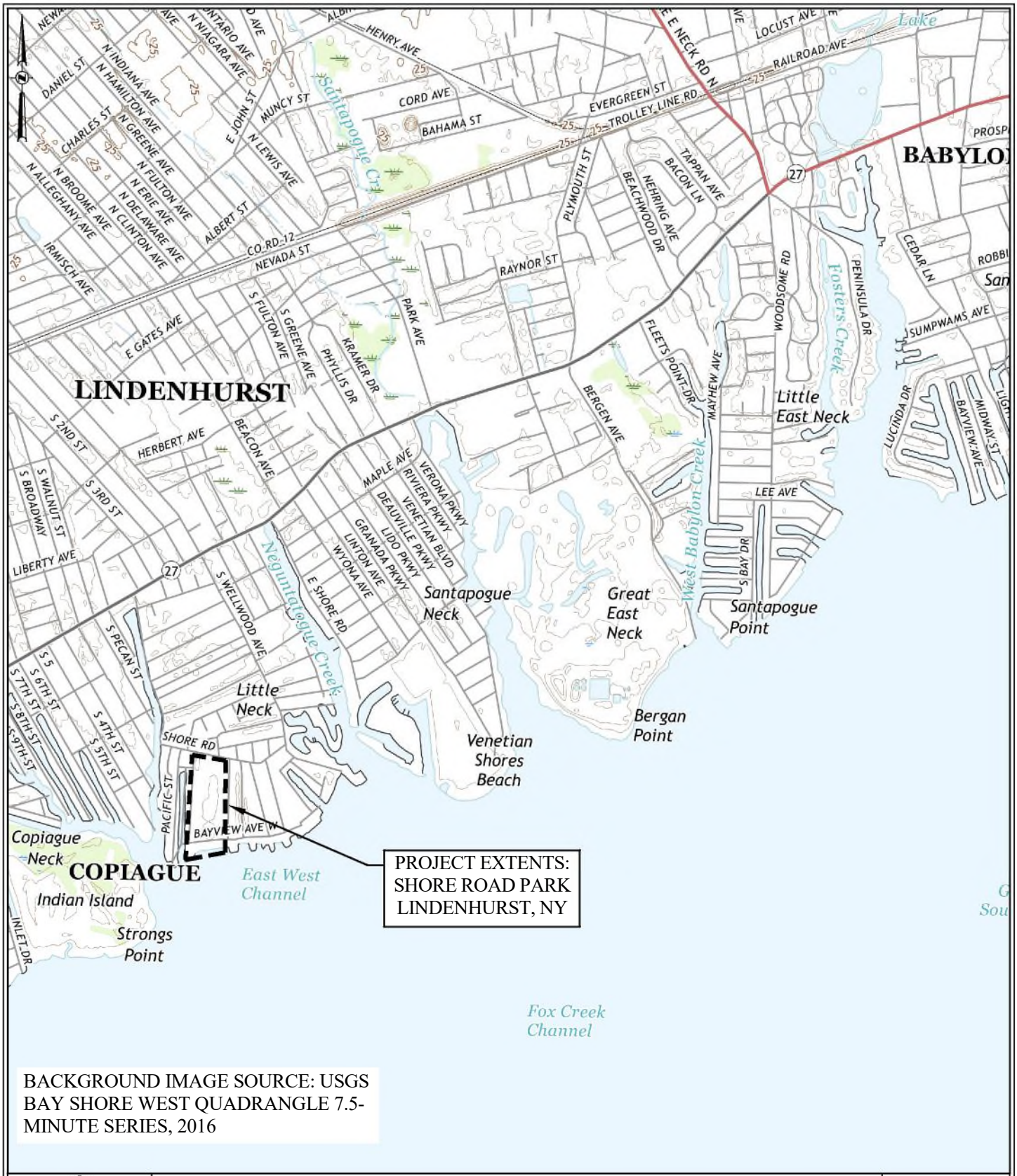
Compaction of any fill by flooding is not considered acceptable. This method will generally not achieve the desired compaction and the large quantities of water will tend to soften the foundation soils. During compaction, any areas exhibiting pumping, excessive rutting, bleeding or other signs of soft or wet soils should be removed and replaced with compacted structural fill as discussed below.

5.3 Site Preparation

Any debris observed during site preparation including demolition debris, new fill and excavation areas, vegetation, topsoil, roots, and other deleterious materials that are deemed unsuitable shall be removed from the proposed construction areas and replaced with controlled fill. Site clearing, grubbing and stripping will need to be performed during dry weather conditions. Operation of heavy equipment on the site during wet conditions could result in excessive rutting and mixing of organic debris with the underlying soils.

6.0 CLOSURE

6.1 APPENDIX A SITE LOCATION MAP



BACKGROUND IMAGE SOURCE: USGS BAY SHORE WEST QUADRANGLE 7.5-MINUTE SERIES, 2016

LOCATION MAP

SCALE: 1" = 2000'

SHORE ROAD PARK, LINDENHURST, NY
SOIL BORINGS AND GEOTECHNICAL REPORT

PWGC
Strategic Environmental and Engineering Solutions
P.W. GROSSER CONSULTING, INC.
630 Johnson Avenue, • Suite 7
Bohemia • NY • 11716-2618
Phone: (631) 589-6353 • Fax: (631) 589-8705
E-mail: INFO@PWGROSSER.COM

Project:	LAW1801
Designed by:	BCH
Approved by:	BCH
Drawn by:	BCH
Date:	6/25/18
Figure No:	APP. A

6.2 APPENDIX B BORING LOCATIONS PLAN

NOTE: GROUNDWATER MEASURED TO BE 2' 10" BELOW GRADE SURFACE IN MW-1, BY PWGC ON 7/5/18, 10:30 AM

SITE AERIAL
SOURCE: NY STATE ORTHOIMAGERY
DATED 2016

BOREHOLE DEPTHS:
SB-001: PERCOLATION TEST DEPTH: 24"
SB-2: PERCOLATION TEST DEPTH: 24"
SB-3: SOIL BORING DEPTH: 26'
SB-4: SOIL BORING DEPTH: 26'
MW-001: MONITORING WELL DEPTH: 10'

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BORING LOCATION PLAN

SCALE 1:100

SHORE ROAD PARK, LINDENHURST, NY
SOIL BORINGS AND GEOTECHNICAL REPORT

Project:	LAW1801
Designed by:	BCH
Approved by:	BCH
Drawn by:	SMR
Date:	06/26/2018
Figure No:	APP. B

6.3 APPENDIX C BORING LOGS

P.W. GROSSER CONSULTING

Boring Designation:	SB-003	**Logged By:**	JC
Boring Location:	*See Attached Site Plan*	**Project Manager:**	BCH
Project Name:	Shore Road Waterfront Park, Lindenhurst NY	**Project Number:**	LAW1801
Drilling Contractor:	Land, Air, Water Environmental Services	**Drilling Method:**	Direct Push
Driller Name:	Ernesto Santiago	**Sampling Method:**	Split Spoon
Borehole Diameter:	4"	**Borehole Depth:**	26'
Start Time:	8:30 AM	**Completion Time:**	10:10 AM
Start Date:	6/7/2018	**Completion Date:**	6/7/2018

Intermediate Depths		Graphic Log	Elevation		Standard Penetration Test (SPT) Blow Counts				Blows Per Foot (N)	Soil Description	USCS Code	Notes
Start	Finish											
0.0	2.0				2	6	10	10	16	DARK BROWN FINE TO MEDIUM SANDY TOPSOIL, LITTLE GRAVEL	SM	
2.0	4.0				10	10	12	10	22	WET LIGHT BROWN MEDIUM TO FINE SAND, TRACE SILT, LITTLE GRAVEL	SP	Groundwater encountered at 3' bgs
4.0	6.0				1	P	P	P	0	BLACK PEAT AND ORGANICS, TRACE GRAY SAND	Pt	
6.0	8.0				W	W	W	1	0	BLACK PEAT AND ORGANICS, TRACE GRAVEL	Pt	
8.0	10.0				1	2	4	7	6	BLACK PEAT AND ORGANICS, TRACE GRAVEL	Pt	
10.0	12.0				7	8	10	12	18	BROWN FINE TO MEDIUM SAND, TRACE GRAVEL	SP	
12.0	14.0				10	9	12	14	21	BROWN FINE TO MEDIUM SAND, SOME GRAVEL	SP	
14.0	16.0				13	8	6	6	14	BROWN FINE TO MEDIUM SAND, SOME SILT, LITTLE GRAVEL	SP	
16.0	18.0				3	3	5	5	8	LIGHT BROWN MEDIUM TO COARSE SAND, SOME GRAVEL	SP	
18.0	20.0				3	3	4	4	7	LIGHT BROWN MEDIUM TO COARSE SAND, SOME GRAVEL	SP	
20.0	22.0				4	5	7	7	12	LIGHT BROWN MEDIUM TO COARSE SAND, SOME GRAVEL	SP	
22.0	24.0				4	6	8	7	14	LIGHT BROWN MEDIUM TO FINE SAND, TRACE GRAVEL	SP	
24.0	26.0				4	7	7	9	14	LIGHT BROWN MEDIUM TO FINE SAND, TRACE GRAVEL	SP	

Graphic Log Key:

GW, GP, GM, GC		Gravelly Soils
SW, SP, SM, SC		Sandy Soils
ML, CL, OL		Low Plasticity Clays and Silts
MH, CH, OH		High Plasticity Clays and Silts
Pt		Peat and Highly Organic Soils

Remarks:

W: WEIGHT OF HAMMER

P: PUSH

Groundwater Encountered at 3' bgs (below grade surface)

P.W. GROSSER CONSULTING

Boring Designation: SB-004 | **Logged By:** JC

Boring Location: *See Attached Site Plan* | **Project Manager:** BCH

Project Name: Shore Road Waterfront Park, Lindenhurst NY | **Project Number:** LAW1801

Drilling Contractor: Land, Air, Water Environmental Services | **Drilling Method:** Direct Push

Driller Name: Ernesto Santiago | **Sampling Method:** Split Spoon

Borehole Diameter: 4" | **Borehole Depth:** 26'

Start Time: 10:30 AM | **Completion Time:** 1:00 PM

Start Date: 6/7/2018 | **Completion Date:** 6/7/2018

Intermediate Depths		Graphic Log	Elevation	Standard Penetration Test (SPT) Blow Counts				Blows Per Foot (N)	Soil Description	USCS Code	Notes
Start	Finish										
0.0	2.0			3	5	7	8	12	DARK BROWN FINE TO MEDIUM SANDY TOPSOIL, TRACE GRAVEL	SM	
2.0	4.0			7	8	8	9	16	DARK BROWN FINE TO MEDIUM SANDY TOPSOIL, LITTLE GRAVEL	SM	
4.0	6.0			5	1	P	P	1	4'-5': WET GRAY MEDIUM SAND, TRACE GRAVEL 5'-6': PEAT, ORGANICS	SP	Groundwater encountered at 4' bgs
6.0	8.0			W	W	W	W	0	PEAT, ORGANICS, SOME GRAY MEDIUM TO FINE SILTY SAND, LITTLE GRAVEL	Pt	
8.0	10.0			W	1	2	6	3	BLACK PEAT, ORGANICS, TRACE GRAVEL	Pt	
10.0	12.0			6	8	8	12	16	LIGHT BROWN, FINE TO COARSE SAND WITH SOME GRAVEL AND TRACE SILT	SP	
12.0	14.0			24	18	25	24	43	LIGHT BROWN, FINE TO COARSE SAND WITH SOME GRAVEL AND TRACE SILT	SP	
14.0	16.0			31	19	16	12	35	LIGHT BROWN, FINE TO COARSE SAND WITH SOME GRAVEL AND TRACE SILT	SP	
16.0	18.0			6	7	7	6	14	LIGHT BROWN, FINE TO COARSE SAND WITH SOME GRAVEL AND TRACE SILT	SP	
18.0	20.0			5	5	6	6	11	LIGHT BROWN, FINE TO COARSE SAND WITH SOME GRAVEL AND TRACE SILT	SP	
20.0	22.0			2	4	3	4	7	LIGHT BROWN, FINE TO COARSE SAND WITH SOME GRAVEL AND TRACE SILT	SP	
22.0	24.0			1	2	2	5	4	LIGHT BROWN, FINE TO COARSE SAND WITH SOME GRAVEL AND TRACE SILT	SP	
24.0	26.0			4	6	8	8	14	LIGHT BROWN, FINE TO COARSE SAND WITH SOME GRAVEL AND TRACE SILT	SP	

Graphic Log Key:

GW, GP, GM, GC	Gravelly Soils
SW, SP, SM, SC	Sandy Soils
ML. CL. OL	Low Plasticity Clays and Silts
MH, CH, OH	High Plasticity Clays and Silts
Pt	Peat and Highly Organic Soils

Remarks:

W: WEIGHT OF HAMMER

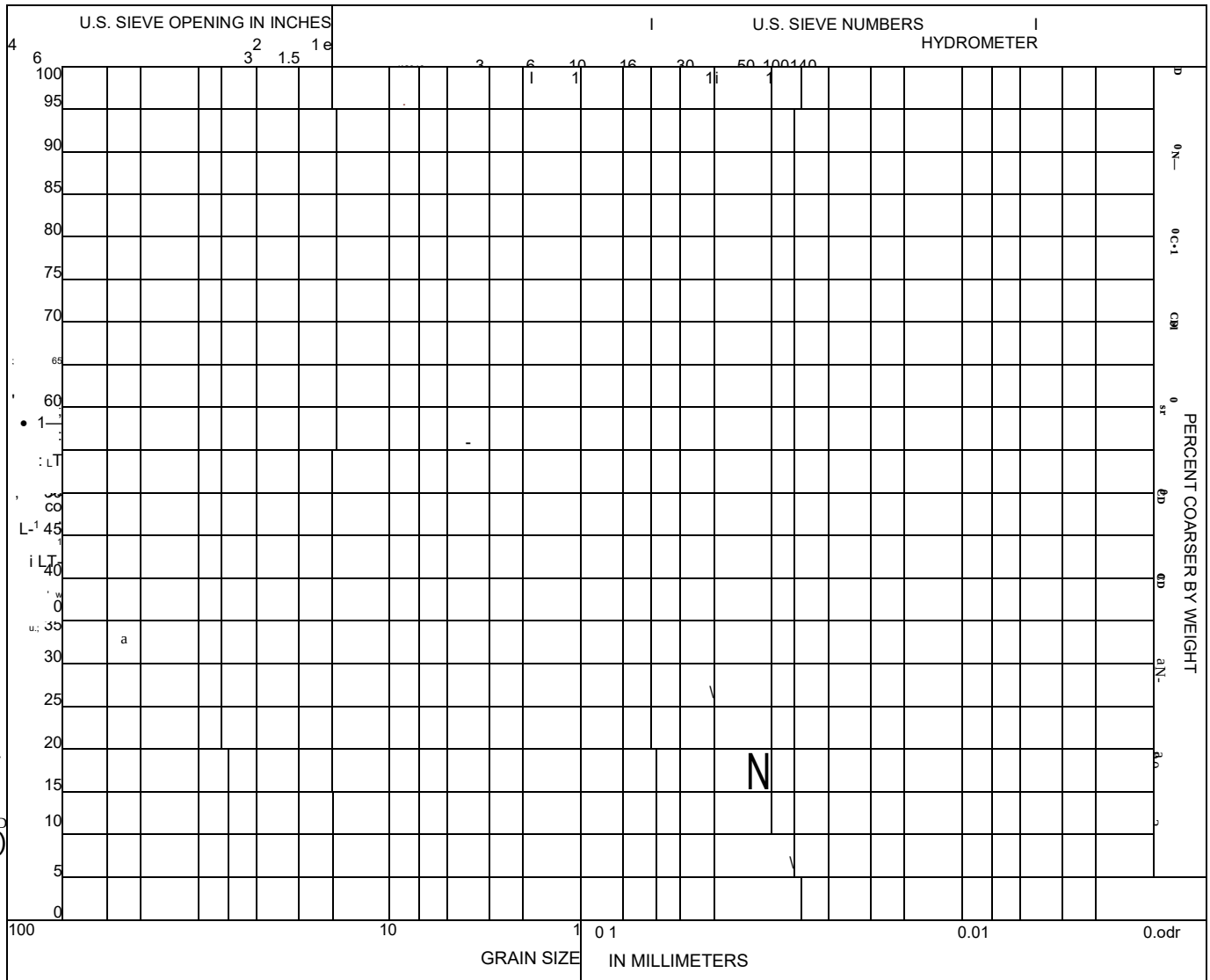
P: PUSH

Groundwater Encountered at 4' bgs (below grade surface)

6.4 APPENDIX D LABORATORY TEST RESULTS

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND		SILT OR CLAY
	coarse	fine	coarse	medium	

	BORING ID	DEPTH	% COBBLES	% GRAVEL	% SAND	% SILT	% FINES	% CLAY	USCS
C	**6.13.18 (SB-003)**	**2 - 4**	**0.0**	**16.9**	**80.9**		**2.2**		**SP**
X	**6.13.18 (SB-003)**	**8 - 10**	**0.0**	**8.5**	**77.4**		**14.0**		

GRAIN SIZE			
	r		
D60	**1.164**	**0.824**	
D_{10}	**0.114**		
COEFFICIENTS			
C_c	**0.83**		
C_u	**10.23**		

Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
3/4"	100.0	3/4"			100.0
1/2"	97.45	1/2"	98.99		
3/8"	92.58	3/8"	96.65		
#4	83.14	#4	91.47		
#10	73.61	#10	83.59		
#40	34.68	#40	42.36		

SOIL DESCRIPTION

t POORLY GRADED SAND with GRAVEL (SP)

REMARKS

6 Moisture Content - 12.9%

I Moisture Content - 15.0%

PROJECT: In House Laboratory Testing Services

SITE: Multiple Locations

lierracon

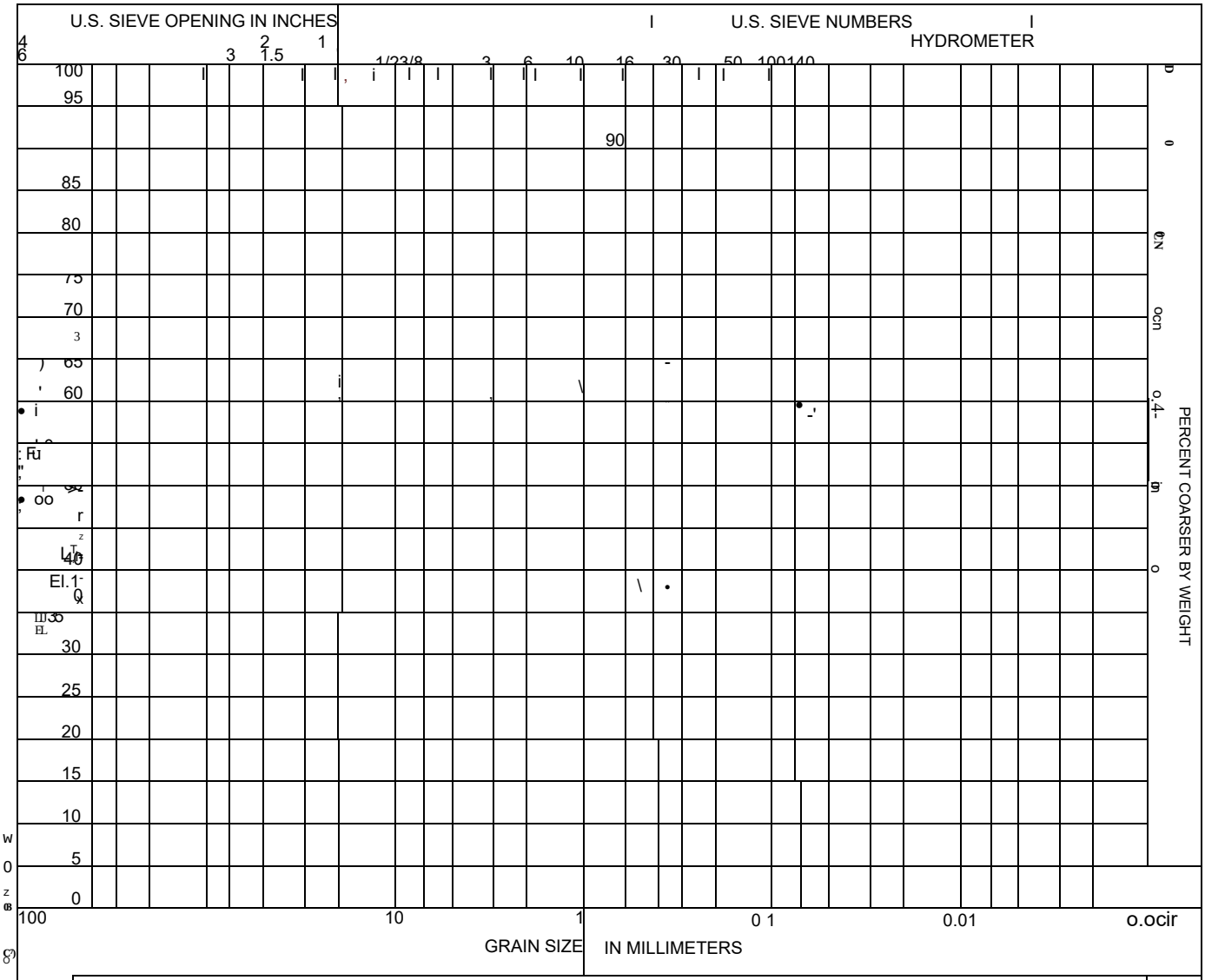
4701 N Stiles Ave
Oklahoma City, OK

PROJECT NUMBER: 03161118

CLIENT: P.W. Grosser Consulting, Inc.
630 Johnson Avenue, Suite 7

GRAIN SIZE DISTRIBUTION

ASTM D422 I ASTM C136



GRAVEL		SAND			SILT OR CLAY
COBBLES	coarse	fine	coarse	medium	fine

	BORING ID	DEPTH	% COBBLES	% GRAVEL	% SAND	% SILT	% FINES	% CLAY	USCS
0	6.13.18 (SB-004)	2 - 4	0.0	19.7	68.4		11.9		
1	6.13.18 (SB-004)	10 - 12	0.0	10.5	83.2		6.3		

				Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
	GRAIN SIZE			3/4"	100.0	3/4"	100.0		
				1/2"	92.91	1/2"	96.51		
	c			3/8"	88.97	3/8"	95.81		
D_{60}	1.186	1		#4	80.26	#4	89.49		
				#10	71.21	#10	82.94		
	0.25	0.378		#40	38.0	#40	31.7		
D_{10}		0.096							
	COEFFICIENTS								
C_c	0.80	1.48							
C_u	17.90	10.37							

SOIL DESCRIPTION

ff

1

REMARKS

C Moisture Content - 9.7%

X Moisture Content - 18.9%

PROJECT: In House Laboratory Testing Services

SITE: Multiple Locations

lierraccin

4701 N Stiles Ave
Oklahoma City, OK

PROJECT NUMBER: 03161118

CLIENT: P.W. Grosser Consulting, Inc.
630 Johnson Avenue, Suite 7

Appendix C – Wetlands Delineation

To: Cameron Engineering & Associates
177 Crossways Park Drive
Woodbury, NY 11797
attn: Michael DiGiglio
From: William Bowman, PhD
Date: June 8, 2018
RE: Wetland Delineation at Shore Road Waterfront Park Natural Systems Resiliency Improvements
Village of Lindenhurst

Wetland Delineation:
The tidal wetlands at Shore Road Park (Village of Lindenhurst) were delineated by William Bowman of Land Use Ecological Services on June 5, 2018, as shown on the provided wetland delineation map. The tidal wetland boundary associated with the Great South Bay at Shore Road Park coincides with the apparent high water line, as there are no vegetated tidal wetland plant communities present. The tidal wetland boundary was delineated with eleven (11) pin flags labelled TW0-TW10. Along the eastern and western margins of Shore Road Park are drainage ditches or swales that discharge to outfall pipes with concrete headwalls located in the vicinity of flags TW1 and TW10. The western swale was delineated with flags labelled A-N and AA-AC. The eastern swale was delineated with flags labelled BA-BF. These flags and wetland boundaries must be shown on any site plans submitted to environmental regulatory agencies. The wetland boundaries should be labelled as follows, "Landward limits of tidal wetlands as delineated by WP Bowman PhD (Land Use) on June 5, 2018". In addition to showing the tidal wetland boundary, Cameron Engineering should also locate and identify the following features on site plans for used for obtaining environmental permits:

- Mean High Water and Mean Low Water Lines along the Great South Bay shoreline (and the elevation of these features). Ordinary Water Level in the eastern and western swales for any site plans submitted to the US Army Corps of Engineers.
- The concrete drainage swale located within and to the north of the eastern wetland should be located and shown on site plans.
- All concrete headwalls and culvert ends should be located and identified on the site plans.

Of course, additional environmental site information may be necessary depending on the final design for the recommended shoreline improvements.

Wetland and Site Conditions:
There are no vegetated tidal wetlands located along the Great South Bay shoreline due to the erosional and high-energy conditions. The shoreline appears to be too high-energy to support tidal wetlands vegetation seaward of the spring high water line without installation of a rock sill or similar structure to reduce wave energy. Scattered pieces of concrete and asphalt are present on the shoreline and appear to be remnants of past rip-rap placed to reduced erosion of the shoreline. There is a small erosional scarp at the landward edge of the sandy intertidal beach. The eroded scarp indicates that the athletic field and the unvegetated area between the

beach and athletic field feature a thin layer of topsoil rather than native soils. The unvegetated area between the beach and athletic field would be an ideal site for establishing a native coastal plant community. This area is currently dominated by weeds and invasive plants including mugwort (*Artemesia vulgaris*) and narrowleaf plantain (*Plantago lanceolate*). Some native beach plants, such as seaside goldenrod (*Solidago sempervirens*) and beach rocket (*Cakile edentula*), are present on the upper beach and along the top of the eroded scarp. The existing topsoil layer is rich in organic material and weed seeds; accordingly, this topsoil layer will continue to be prone to infestation by weeds and invasive plants and may need to be removed to establish a native coastal plant community adapted to Long Island's sandy and low-nutrient soils.

The western wetland area consists of a marshy swale or ditch dominated by common reed (*Phragmites australis*). Native tidal wetland plants such as black grass (*Juncus gerardii*), three-square rush (*Scirpus americanus*), marsh elder (*Iva frutescens*), and smooth cordgrass (*Spartina alterniflora*) are present at low densities within this swale. The eastern swale features similar species along with marsh mallow (*Hibiscus mosheutos*). Both swales are man-made features. The eastern swale features a concrete sluicepad. A concrete sluicepad may be present within the western swale but could be obscured by accumulated vegetated and detritus. The outfall culverts that drain these swales do not appear to function properly, as the swales do not appear to drain efficiently or completely.

Wetland Permitting:
Any proposed shoreline improvements and any clearing, grading, and/or ground disturbance proposed within 300 feet of the Great South Bay shoreline (or seaward of the Elevation 10 NGVD 1929 contour, whichever is further seaward) would require an Article 25 (Tidal Wetlands) permit from the NYSDEC. Any excavation, filling, or construction within the identified wetland boundaries would also be regulated by the US Army Corps of Engineers. Due to the man-made nature of the western and eastern wetland ditches/swales, it is unlikely (in my opinion) that the NYSDEC would not regulate these areas equivalently to a natural wetland or the Great South Bay shoreline. However, because these wetlands are hydrologically connected to the Great South Bay and feature wetland vegetation, it should be assumed that these areas will also be regulated by both the NYSDEC and the US Army Corps of Engineers. It is recommended that any proposed improvements to these western and eastern swales aim to improve their ecological habitat quality and hydrological function. It should be assumed that any proposed improvements resulting in the loss of the wetland areas should be mitigated by construction of compensatory wetland areas on-site.

NOTES:

1. Tidal wetland boundary delineated by W.P. Bowman, PhD, Land Use Ecological Services, Inc. on 6/5/2018.
2. 2016 orthoimage from NYS GIS Clearinghouse (gis.ny.gov).

1 in = 80 ft

0 20 40 80 Feet

Land Use Ecological Services, Inc.

Prepared By: Land Use Ecological Services, Inc.
570 Expressway Drive South, Suite 2F Medford, NY 11763
Drawn By: K. Risotto

Project: Shore Road Park Wetland Delineation
For: Cameron Engineering
At: Shore Road Park, Lindenhurst, NY

Date: 6/8/2018	Revised:	Scale: As Noted	Sheet: TWL

Appendix D – Joint Permit Application

NEW YORK STATE | Department of Environmental Conservation | Office of General Services | Department of State

US Army Corps of Engineers

JOINT APPLICATION FORM

For Permits for activities activities affecting streams, waterways, waterbodies, wetlands, coastal areas, sources of water, and endangered and threatened species.

You must separately apply for and obtain Permits from each involved agency before starting work. Please read all instructions.

1. **Applications To:**

>NYS Department of Environmental Conservation Check here to confirm you sent this form to NYSDEC.

Check all permits that apply:

Stream Disturbance	Dams and Impoundment Structures	Tidal Wetlands	Water Withdrawal
Excavation and Fill in Navigable Waters	401 Water Quality Certification	Wild, Scenic and Recreational Rivers	Long Island Well Incidental Take of Endangered / Threatened Species
Docks, Moorings or Platforms	Freshwater Wetlands	Coastal Erosion Management	

>US Army Corps of Engineers Check here to confirm you sent this form to USACE.

Check all permits that apply: ___ Section 404 Clean Water Act _____ Section 10 Rivers and Harbors Act

Is the project Federally funded? Yes No

If yes, name of Federal Agency:

General Permit Type(s), if known:

Preconstruction Notification: _____ Yes ____ No

>NYS Office of General Services Check here to confirm you sent this form to NYSOGS.

Check all permits that apply:

State Owned Lands Under Water

Utility Easement (pipelines, conduits, cables, etc.) Docks, Moorings or Platforms

>NYS Department of State Check here to confirm you sent this form to NYSDOS.

Check if this applies: Coastal Consistency Concurrence

2. Name of Applicant Taxpayer ID (if applicant is NOT an individual)

Mailing Address | Post Office / City | State | Zip

Telephone | Email

Applicant Must be (check all that apply): Owner Operator Lessee

0. Name of Property Owner (if different than Applicant)

Mailing Address | Post Office / City | State Zip

Telephone | Email

For Agency Use Only	Agency Application Number:

4. Name of Contact / Agent

Mailing Address | Post Office / City | State | Zip

Telephone | Email

5. Project / Facility Name | Property Tax Map Section / Block / Lot Number:

Project Street Address, if applicable | Post Office / City | State NY | Zip

Provide directions and distances to roads, intersections, bridges and bodies of water

☐ Town ☐ Village ☐ City | County | Stream/Waterbody Name

Project Location Coordinates: Enter Latitude and Longitude in degrees, minutes, seconds:

Latitude: ° ' " Longitude: ° ' "

6. Project Description: Provide the following information about your project. Continue each response and provide any additional information on other pages. **Attach plans on separate pages.**

a. Purpose of the proposed project:

. Description of current site conditions:

a. Proposed site changes:

b. Type of structures and fill materials to be installed, and quantity of materials to be used (e.g., square feet of coverage, cubic yards of fill material, structures below ordinary/mean high water, etc.):

c. Area of excavation or dredging, volume of material to be removed, location of dredged material placement:

d. Is tree cutting or clearing proposed? ☐ Yes If Yes, explain below. ☐ No

Timing of the proposed cutting or clearing (month/year):

Number of trees to be cut: Acreage of trees to be cleared:

g. Work methods and type of equipment to be used:

h. Describe the planned sequence of activities:

i. Pollution control methods and other actions proposed to mitigate environmental impacts:

j. Erosion and silt control methods that will be used to prevent water quality impacts:

k. Alternatives considered to avoid regulated areas. If no feasible alternatives exist, explain how the project will minimize impacts:

l. Proposed use: Private Public Commercial

m. Proposed Start Date: Estimated Completion Date:

n. Has work begun on project? ____ Yes If Yes, explain below. No

o. Will project occupy Federal, State, or Municipal Land? _____ Yes If Yes, explain below. No

p. List any previous DEC, USACE, OGS or DOS Permit / Application numbers for activities at this location:

q. Will this project require additional Federal, State, or Local authorizations, including zoning changes?
Yes If Yes, list below. No

7. **Signatures.**
Applicant and Owner (If different) must sign the application.
Append additional pages of this Signature section if there are multiple Applicants, Owners or Contact/Agents.

I hereby affirm that information provided on this form and all attachments submitted herewith is true to the best of my knowledge and belief.

Permission to Inspect - I hereby consent to Agency inspection of the project site and adjacent property areas. Agency staff may enter the property without notice between 7:00 am and 7:00 pm, Monday - Friday. Inspection may occur without the owner, applicant or agent present. If the property is posted with "keep out" signs or fenced with an unlocked gate, Agency staff may still enter the property. Agency staff may take measurements, analyze site physical characteristics, take soil and vegetation samples, sketch and photograph the site. I understand that failure to give this consent may result in denial of the permit(s) sought by this application.

False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the NYS Penal Law. Further, the applicant accepts full responsibility for all damage, direct or indirect, of whatever nature, and by whomever suffered, arising out of the project described herein and agrees to indemnify and save harmless the State from suits, actions, damages and costs of every name and description resulting from said project. In addition, Federal Law, 18 U.S.C., Section 1001 provides for a fine of not more than $10,000 or imprisonment for not more than 5 years, or both where an applicant knowingly and willingly falsifies, conceals, or covers up a material fact; or knowingly makes or uses a false, fictitious or fraudulent statement.

Signature of Applicant Date

Applicant Must be (check all that apply): Owner Operator Lessee

Printed Name Title

Signature of Owner (if different than Applicant) Date

Printed Name Title

Signature of Contact / Agent Date

Printed Name Title

For Agency Use Only **DETERMINATION OF NO PERMIT REQUIRED**

Agency Application Number

(Agency Name) has determined that No Permit is required from this Agency for the project described in this application.

Agency Representative:

Printed Name Title

Signature Date

Appendix E – Schematic Design Plans

Shore Road Waterfront Park Natural Systems Resiliency Improvements Project, Village of Lindenhurst, Suffolk County, New York
NMFS No Effect Determination

MEMORANDUM FOR THE RECORD

August 28, 2019

RE: NMFS No Effect Determination
Shore Road Waterfront Park Natural Systems Resiliency Improvements Project, Village of Lindenhurst, Suffolk County, New York

Prepared by: Alicia Shultz

The Governor's Office of Storm Recovery (GOSR), operating under the auspices of the New York State Homes and Community Renewal's (NYSHCR) Housing Trust Fund Corporation, was established to aid the statewide recovery of disaster-affected communities in New York State. GOSR is administering a U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant for Disaster Recovery (CDBG-DR). This Memorandum serves to document the review of species protected by the National Oceanic and Atmospheric Administration – National Marine Fisheries Service (NMFS) for a single project proposed to receive CDBG-DR assistance, pursuant to section 7 of the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and the Marine Mammal Protection Act (MMPA). Our supporting analysis is provided below.

Project Description

The Village of Lindenhurst proposes to design and implement storm resiliency improvements and public access improvements at the southern end of Shore Road Park, in the Village of Lindenhurst, Town of Babylon, Suffolk County, NY. The project is located on beach frontage on the Great South Bay and flanked on both sides by properties hardened with existing bulkheads.

Proposed Improvements Shore Road Park is a 10.2-acre site located at the southern edge of the Village of Lindenhurst on the shore of the Great South Bay. This area is one of the few remaining natural public sections of bayfront within the Village. The park is owned, operated, and maintained by the Village of Lindenhurst and is utilized for seasonal recreational activities and community events. The park as well as nearby residential neighborhoods were subject to major flooding from the Great South Bay as well as nearby canals. This flooding resulted in catastrophic damage to hundreds of homes, many of which remain in various states of repair or abandonment.

The proposed project would involve the southern 1.2 acres of the Park. Elements of the proposed design focus on reducing flood damage and prevention of erosion primarily though the inclusion of a living shoreline and associated stone stabilization measures. The project includes:

- Construction of two rock sills along the shore placed at the low and high tide lines to provide protection during wave action at either tide cycle. Breaks in the lower rock wall will facilitate water and sand movements throughout the tide cycles and avoid impoundment of water.

- Approximately 164 truckloads, based on 16 tons per truckload, of armor stone will be brought to project area for the creation of the living shoreline
- The high tide rock-sill will include a concrete sitting wall
- Construction of a gravel road with a gated entry at the southern end of S. Bay Street for emergency access.
- Sand and living shoreline landscaping will be placed between the two rock sills and upland landscaping will be placed above the high tide wall on the west side of the area. A rain garden will be included in the upland landscaping;
- Drainage improvements including extension of existing drainage outlets as a means of protecting the southern end of Shore Road Park from flooding during major storm events. The existing eastern drainage outlet will be extended to an outlet between the low and high tide rock walls. The western drainage outlet will be relocated to an outlet between the low and high tide rock walls.
- The top of the existing bulkheads along the shore of the eastern portion of the site (former private residential parcels) will be removed to an elevation of 0.08 feet and the upland area graded and stabilized.
- Placement of clean fill as needed for grading and stabilizing; and
- Use of NYSDEC approved native coastal plantings.

Project activities could be accomplished under United States Army Corps of Engineers (USACE) Nationwide Permit 3 – MAINTENANCE – "(a) [t]he repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure, or fill, or of any currently serviceable structure of fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modifications, " and/or Nationwide Permit 3 – BANK STABILIZATION – [b]ank stabilization activities necessary for erosion control or prevention, such as vegetative stabilization, bioengineering, sills, rip rap, revetment, gabion baskets, stream barbs, and bulkheads, or combinations of bank stabilization techniques." New York State Department of Environmental Conservation (NYSDEC) permit authorizations will be required, including: Tidal Wetlands – Under Article 25, Excavation and Fill in Navigable Waters – Under Article 15, Title 5, Water Quality Certification – Under Section 401 – Clean Water Act.

NMFS Species Protected Under the Endangered Species Act

There are five species of sea turtles and one species of fish listed under the Endangered Species Act that have the potential to occur in the vicinity of the Project area. ESA species include:

Sea Turtles

Loggerhead Turtle (*Caretta caretta*) (76 FR 58868; Recovery plan: NMFS & USFWS 2008)
Kemp's Ridley Turtle (*Lepidochelys kempii*) (35 FR 18319; Recovery plan: NMFS et al. 2011)
Green Turtle (*Chelonia mydas*) (81 FR 20057; Recovery plan: NMFS & USFWS 1991)
Hawksbill Turtle (*Eretmochelys imbricata*) (35 FR 8491; Recovery plan: NMFS & USFWS

1993) Leatherback Turtle (*Dermochelys coriacea*) (35 FR 849; Recovery plan: NMFS & USFWS 1992)

Fish

Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*) (77 FR 5880 and 77 FR 5914)

Analysis

The Project is located in an area characterized by residential and commercial development along the shoreline of Great South Bay (see aerial map in Attachment 1). The shoreline in the vicinity of the Project area is predominantly bulkheaded and subject to existing water quality impairment. There is frequent boating activity in the immediate vicinity of the Project area, as evidenced by the presence of residential properties and marinas with boats docked along bulkheads on aerial imagery.

There is no critical habitat for any ESA species within the Project and no submerged aquatic vegetation (SAV) was observed in the project area during site inspections. The Project is located adjacent to underwater lands mapped as uncertified for shellfishing (NYSDEC Shellfish Closure Area) due to existing water quality impairment (Attachment 1). The nearest underwater land designated as certified for shellfishing is over 0.6 miles from the Project.

As depicted on the Map of Estimated Range of Sea Turtles (Attachment 2), the Project is located within the estimated range of green, Kemp's ridley, leatherback, hawksbill, and loggerhead sea turtles. These sea turtles are not year-round residents in New York waters and there is no nesting activity in the region. They may occur seasonally in the coastal waters of Long Island; however, their presence in shallow waters of the Project area is unlikely. Occurrence in these shallow waters would be rare and tied to the presence of suitable foraging habitat.

Leatherback sea turtles feed almost exclusively on jellyfish in offshore marine environments, whereas green sea turtles tend to frequent seagrass beds. Loggerhead and Kemp's ridley sea turtles feed on mollusks and crustaceans. Hawksbill turtles rarely occur in New York as their preferred habitat consists of warm, coastal shoal waters with abundant SAV. The Project is not located within documented occurrences of SAV. The proposed Project will involve the construction of a rock sill and living shoreline and BMPs will be implemented to prevent impacts to surface water. If a sea turtle were to be present in the waterways adjacent to the Project, it would be a transient presence with a limited temporal duration and the individual would not be expected to travel to the Project area. Sea turtles are found in the northeast during the summer and fall months (May - November) with the highest concentrations of turtles occurring from June through October. The waterways located adjacent to the Project are subject to frequent boating and human activity during the time seasonal transients would be in the region.

As depicted on the Map of Estimated Range of Atlantic Sturgeon Distinct Population Segments (Attachment 3), the Project area is are located within an area mapped as accessible habitat for

Atlantic sturgeon, which is defined as in-water habitat located in marine or estuarine areas below the high tide line. Since the Project is located in saline, tidally influenced waters, eggs, larvae, or juvenile Atlantic sturgeon would not be present. Sub-adult and adult Atlantic sturgeon are found seasonally in the coastal waters of Long Island but are not likely to be present in the intertidal and shallow water depths adjacent to the Project area. Occurrence in these shallow waters would be tied to the presence of suitable benthic resources for foraging. As discussed above, the Project is not located in an area of documented SAV. Since the Project is located along a highly developed shoreline subject to frequent boating activity and the Project area has no SAV, use of the area by sturgeon would be limited to transient individuals that are passing through. The Project area does not contain any known overwintering areas; thus, sub-adult and adult Atlantic sturgeon are most likely to be present in the region from April through November. If a sturgeon were to enter the waterways adjacent to the Project area, the individual would not be expected to enter the Project area. If present in the vicinity of the Project area, seasonal transients are highly mobile and could easily avoid the Project area during construction activity.

The Project involves the placement of a rock sill within the mean high and low water mark so there would be no loss of potential habitat for ESA species or their prey. The rock sill may provide habitat for sturgeon prey species. The Project will not result in a significant increase in vessel traffic. Any noise or sediment disturbance during construction would be negligible relative to existing water quality impairment and frequent disturbance from boating activity in waterways adjacent to the Project area.

The Project would be completed in accordance with federal and state permit conditions. Best Management Practices (BMPs) would minimize sediment disturbance and reduce potential impacts from noise or turbidity during construction. The Project involves shoreline stabilization and does not involve siting a facility that would generate hazardous waste that could cause pollution to the waterway.

Conclusion

The Project is located along a shoreline that is developed and bulkheaded. The shoreline in the vicinity of the Project area is bulkheaded and developed, and the areas adjacent to the Project area is subject to existing water quality impairment. There is no critical habitat for ESA species under NMFS jurisdiction within the Project area.

Atlantic sturgeon and sea turtles are found seasonally in the coastal waters of Long Island. However, their presence at the Project area is unlikely. The waterways adjacent to the Project area are subject to frequent boating and human activity during the time seasonal transients would occur in the region. Therefore, sea turtles and sturgeon are not expected to travel to the Project area. If such a species were present, it would be a transient presence with a limited temporal duration, and these highly mobile life stages could easily relocate to avoid temporary construction disturbance. Additionally, Atlantic sturgeon and sea turtles are not year-round residents and are only expected to occur within the coastal waters of Long Island from May to November.

The Project involves the construction of rock sill, so there would be no loss of potential habitat for ESA species or their prey. Any noise or sediment disturbance during construction would be negligible relative to existing water quality impairment and frequent disturbance from boating activity in waterways adjacent to the Project area and permit specified BMPs would minimize the potential for such impacts.

Based on this analysis, Project activities would not directly or indirectly affect any ESA species under NMFS jurisdiction. The Project would not introduce stressors on listed species, such as: sound disturbance; changes in water depth or substrate characteristics; exposure to pollutants or changes in water quality; changes in the abundance, availability, accessibility or quality of prey; or loss of submerged aquatic vegetation (SAV) or shellfish beds. Pursuant to the NMFS Greater Atlantic Region Endangered Species Act Section 7 Program, a No Effect Determination has been made for the Project. We certify that we have used the best scientific data available to complete this analysis.

Attachments:
Attachment 1 – Project Location Maps, Submerged Aquatic Vegetation (SAV) and NYSDEC Shellfish Closure Areas Map
Attachment 2 – Map of Estimated Range of Sea Turtles
Attachment 3 – Map of Estimated Range of Atlantic Sturgeon Distinct Population Segments (DPSs)

Attachment 1

Shore Road Waterfront Park Natural Systems Resiliency Improvements

Wetlands

0 0.0275 0.055 0.11 Miles

Sources of Data: USFWS, FEMA, ESRI, State of NY

Governor's Office of Storm Recovery
Drawn By: R.Ferres
Version: 1.1
Date: 05/16/2017

Shellfish

Approved

Conditionally Approved

Conditionally Restricted

Conditionally Restricted for Relay

Prohibited

Restricted

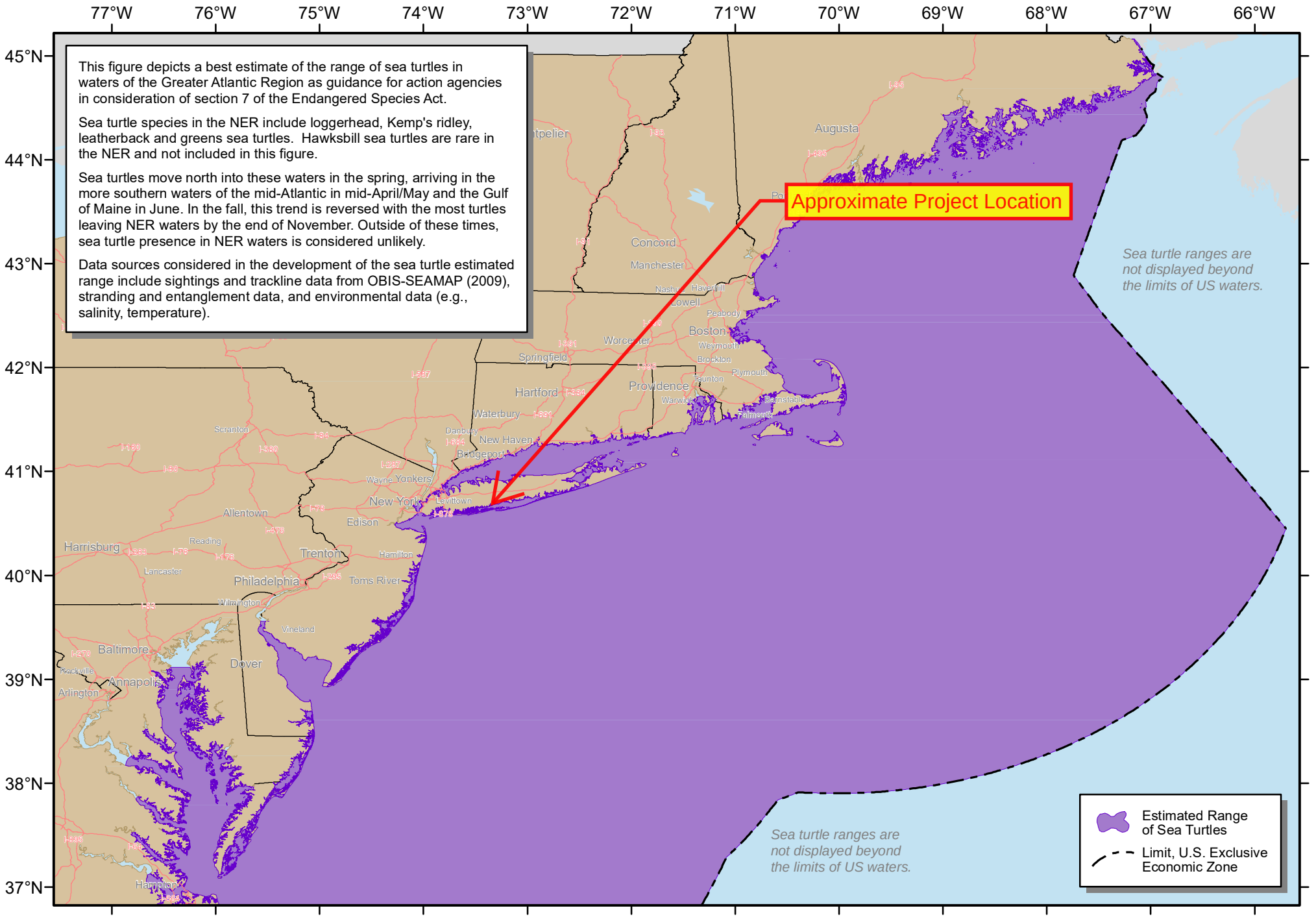
NEW YORK STATE OF OPPORTUNITY. Department of State


Lindenhurst Shore Road
Submerged Aquatic Vegetation
Legend
Shore Road Park
E Hoffman Ave
John St
New York Ave
Lindenhurst
W Hoffman Ave
S Broadway
S Strong Ave
S Delaware Ave
Park Ave
Little East Neck Rd S
Wellwood Ave
Shore Rd
Shore Road Park
Indian Island
47
3
96
Google Earth
© 2018 Google
N
1 mi


Lindenhurst Shore Road
Submerged Aquatic Vegetation
Legend
Shore Road Park
E Hoffman Ave
John St
New York Ave
W Hoffman Ave
Lindenhurst
S Delaware Ave
Park Ave
Little East Neck Rd S
Ocean Ave
S Broadway
S Strong Ave
S Wellwood Ave
Shore Rd
Shore Road Park
Indian Island
96
3
47
Note: No SAV was observed during the site inspection.
Google Earth
© 2018 Google
N
1 mi

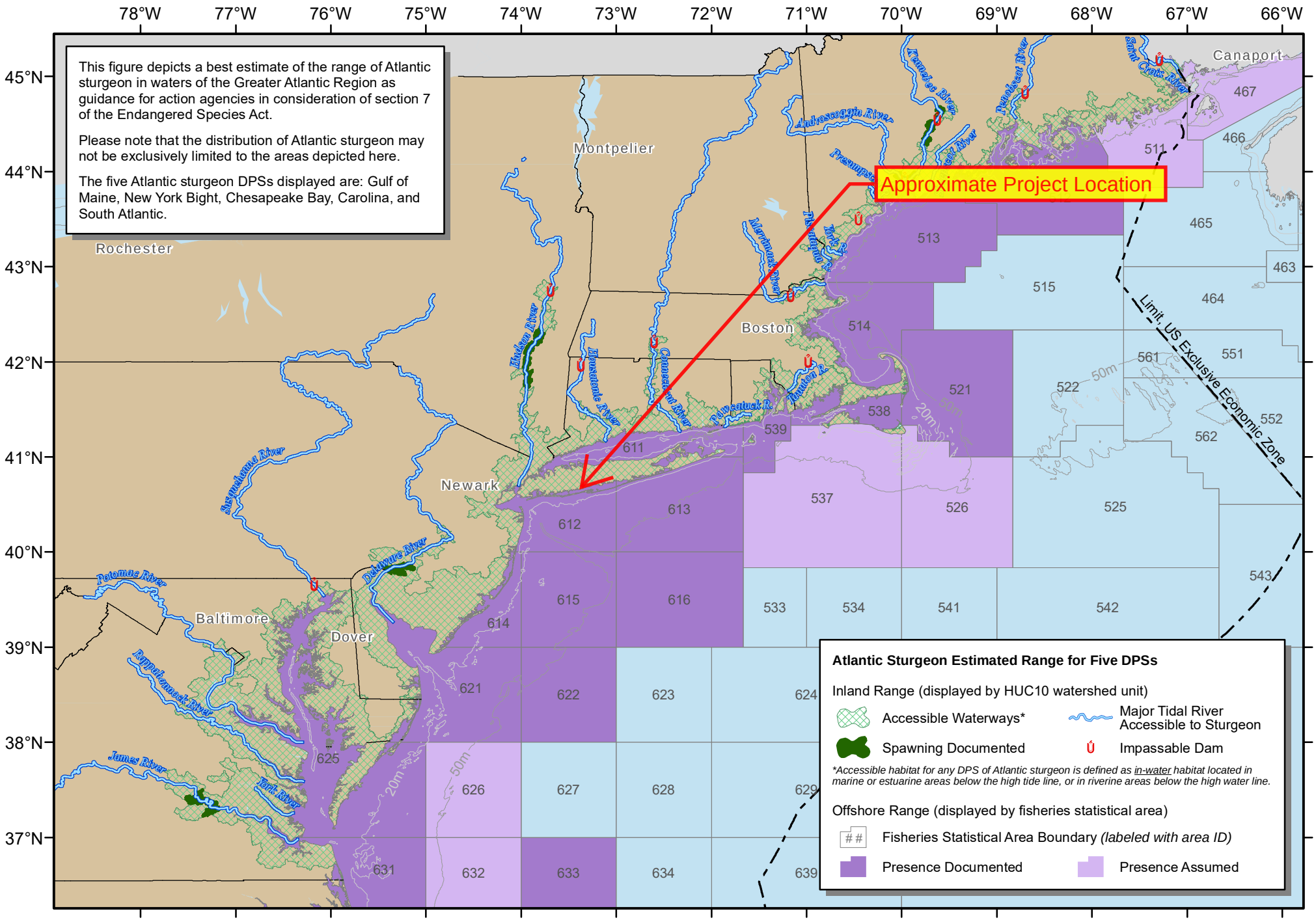
Attachment 2

Estimated Range of Sea Turtles



Attachment 3

Estimated Range of Atlantic Sturgeon Distinct Population Segments (DPSs)



Living Shoreline Monitoring Plan: Responsibility of the Village of Lindenhurst

Frequency of Reporting: Annually submitted to the New York State Department of Conservation.

Duration of Reporting: Five (5) years following final completion of the project.

Scope of Reporting: Structural stability, sand elevations, vegetative growth.

Minimum Report Contents:

1. Representative photographs of the project improvements taken from a fixed point and a site plan or sketch that indicates the location and direction from which each picture was taken.
2. Assessment of any plants established
    a. Species and number of plants
    b. Percent of plant survival and number of dead plants (coverage success)
    c. Number of plants replaced
    d. Evidence of herbivory (the state or condition of feeding on plants)
3. Any action taken with respect to invasive species removal
4. Monitoring of any sediment erosion or deposition in vicinity of project.
5. What, if any, structural maintenance has occurred.
6. Other site conditions necessary to assess effectiveness of the project (storm damage, adjacent site activities etc.).

Phragmites Eradication Plan

Initial Control Application: Responsibility of the General Contractor

1) Contractor shall identify and differentiate Phragmites on-site.
2) In addition to permit conditions, Contractor shall familiarize themselves with the specified herbicide (Rodeo, by Dow Agro Sciences) and associated precautions and terms of application.
3) Herbicide must be applied by a licensed applicator
4) Contractor shall monitor wind conditions closely and is responsible for damage to adjacent plantings on or off site caused by drift or overspray at no additional cost to the owner.
5) Minimum application must include coverage of the top half of the Phragmites.
6) Allow 7 days or more after application before removing dead plant material.
7) Apply second application if necessary and allow the necessary 7 minimum days prior to removal.

During Construction: Responsibility of the General Contractor

1) Contractor shall monitor the project area monthly for areas exhibiting re-growth.
2) If encountered, contractor shall physically remove the stem as well as the Rhizome and/or Stolons.
3) Removed material is highly invasive and must be disposed of in accordance with local and State regulations.

Post Construction: The General Contractor is responsible for the first 12 months following final acceptance. The Village of Lindenhurst (Village) is encouraged to provide monitoring for the re-emergence of the Phragmites beyond the first year. This may be performed internally by trained staff of the Village or by a third party retained separately by the Village.

1) For the first 12 months, monitor the project area quarterly (every 3 months) for areas exhibiting re-growth.
2) If encountered, Phragmites shall be mitigated using the clip and drip method to minimize impact to adjacent plantings. The clip and drip method: stems are cut and removed and Rodeo, by Dow Agro Sciences is applied immediately to the hollow stem with a drip bottle.
3) Alternatively, the traditional hand-held spray applicator may be utilized; however extreme care must be taken to avoid contact with adjacent plantings, particularly those installed as part of the living shoreline improvement project.
4) Allow 7 days or more after application before removing dead plant material.
5) Apply second application if necessary and allow the necessary 7 minimum days prior to removal.
6) Removed material is highly invasive and must be disposed of in accordance with local and State regulations.
7) Beyond the initial 12 months, the Village shall utilize the same approach as noted above if a reemergence of Phragmites is encountered.

APPENDIX G

SHPO CORRESPONDENCE

NEW YORK STATE OF OPPORTUNITY.
Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

June 10, 2019

Mr. James McAllister
Bureau of Environmental Review and Assessment, Governor's Office for Storm Recovery
500 Bi-County Blvd
Suite 300
Farmingdale, NY 11735

Re: GOSR
Shore Road Waterfront Park Natural Systems Resiliency Improvements
Village of Lindenhurst, Suffolk County, NY
19PR03856

Dear Mr. McAllister:

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, the New York SHPO has determined that no historic properties will be affected by this undertaking.

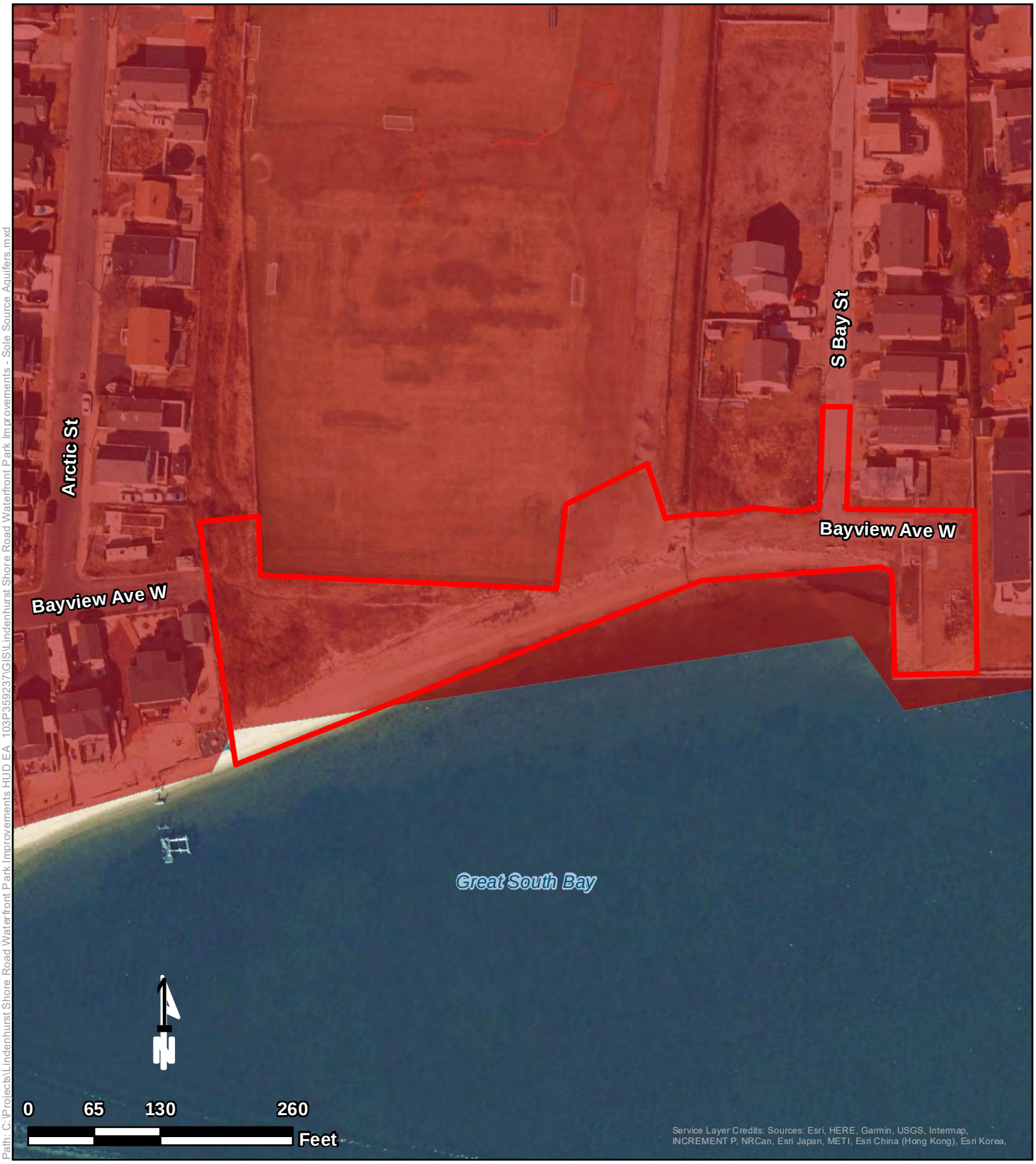
If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Michael F. Lynch, P.E., AIA
Director, Division for Historic Preservation

APPENDIX H

SOLE SOURCE AQUIFERS



Path: C:\Projects\Lindenhurst Shore Road Waterfront Park Improvements HUD EA 103P359237\GIS\Lindenhurst Shore Road Waterfront Park Improvements - Sole Source Aquifers.mxd

Sole Source Aquifers

Shore Road Park
Lindenhurst, Suffolk County, New York

Legend

- Project Area
- Nassau-Suffolk SSA

Tetra Tech, Inc

Governor's Office of
Storm Recovery

ANDREW M. CUOMO
Governor

September 28, 2018

Ms. Grace Musemeci
Chief of the Environmental Review Section
U.S. Environmental Protection Agency
Region 2 Main Regional Office
290 Broadway
New York, NY 10007-1866

RE: CDBG-DR Funding Application for the Construction of the Lindenhurst Shore Road Waterfront Park Improvements Project

Ms. Musemeci:

The New York State Governor's Office of Storm Recovery (GOSR) received a funding application to remove existing damaged bulkheads and debris and construct bank stabilization structures and landforms to increase storm resiliency the southern edge of Shore Road Park in the Village of Lindenhurst, Suffolk County, NY. The Project site is within the boundaries of the Nassau-Suffolk Aquifer System.

The Project site encompasses the southern edge of Shore Road Park and portions of residential parcels that were acquired by the state through the acquisitions of damaged homes program. The old residential parcels have damaged bulkheads in place and the sandy beach area of the park contains scattered concrete slabs and debris utilized for purposes of erosion control. The slope from the high tide line seaward for approximately 30' is generally flat (less than 3%).

The proposed project includes:

- Construction of a new protective shorefront structure with stone boulders to prevent recurring flooding and reduce wave action for storm protection;
- Construction of a gravel pedestrian path, boulder sitting wall, sand beach area, public boardwalk and lighting as additional features to enhance the recovery of the waterfront for passive recreational use;
- Drainage improvements including extension of drainage outlets as a means of protecting the southern end of Shore Road Park from flooding during major storm events;
    - The eastern drainage outlet will be extended
    - The western drainage outlet will either be extended or diverted to connect to the existing stormwater drainage along Bayview Avenue to the West.
- Placement of clean fill and riprap where needed; and

- Use of native coastal plantings.

The project area is approximately 1.0 acres, of which approximately 5 percent of which (0.05 acres) is impervious asphalt. The proposed Project would disturb the entire project site. When completed, the impervious asphalt will have been removed and no new impervious surface will be constructed.

For additional information, please see the enclosures.

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. The 24 C.F.R. Part 58 environmental review procedure 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 Lindenhurst Shore Road Waterfront Park Improvements Project Please review the attached documentation, including Attachment 2.B and 3 to the MOU. Responses can be sent to me via email at JamesMcAllister@stormrecovery.ny.com. 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 (626) 256-9485.

Sincerely,

James McAllister
Senior Environmental Project Manager
Bureau of Environmental Review and Assessment
Governor's Office of Storm Recovery
NYS Homes and Community Renewal

Enclosures

Attachment 2.A – Non-Housing/Project Activity Initial Screening Criteria

Attachment 3 – SSA Preliminary Review Information Requirements

Project Description

Public Well Location Map

ATTACHMENT 2.A

NON-HOUSING/PROJECT ACTIVITY INITIAL SCREEN CRITERIA

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 than 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.

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.? The project location is within the boundaries of the Nassau-Suffolk Aquifer System.	☐	☒	☐
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? The project is not within ½ mile of any public water supply well or well field.	☐	☒	☐

3. Will the project/activity include or directly cause (check appropriate items):

	YES	NO	N/A
construction or expansion of solid waste disposal, recycling or conversion facilities	☐	☒	☐
construction or expansion or closure of landfills	☐	☒	☐
construction or expansion of water supply facilities	☐	☒	☐
construction or expansion of on-site wastewater treatment plants or sewage trunk lines	☐	☒	☐
construction or expansion of gas or petroleum trunk lines greater than 1320 feet	☐	☒	☐
construction or expansion of railroad spurs or similar extensions	☐	☒	☐
construction or expansion of municipal sewage treatment plants	☐	☒	☐

4. Will the project/activity include storage or handling of any hazardous constituents as listed in Attachment 4, Hazardous Constituents	☐	☒	☐
5. Will the project/activity include bulk storage of petroleum in underground or above ground tanks in excess of 1100 gallons? (Please give what assurance they are done in a proper manner.)	☐	☒	☐
6. Will the project/activity require a federal or state discharge elimination permit or modification of an existing permit?	☐	☒	☐

This attachment was completed by:

Name:	Clifford Jarman
Title:	Sr. Env. Scientist
Address:	1401 Lime Rock Drive
	Round Rock, TX 78681
Telephone number:	512-244-2192
Date:	09/27/18

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.

I. Project/Activity Location	**Enclosed?**	
	Yes	No
1. Provide the geographic location and total acreage of the project/activity site. Include a site 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.] Maps are attached: Project Area – ~1.0 acres	☒	☐
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 within or adjacent to. The project location is within the boundaries of the Nassau-Suffolk System.	☒	☐

II. Nature of Project/Activity	**Enclosed?**	
	Yes	No
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 site-plan if available. See attached	☒	☐

III. Public Water Supply	**Enclosed?**	
	Yes	No
4. Provide a description of plans to provide water supply. There is no water supply component to this project.	☐	☒

5. Provide the location of nearby existing or proposed public water supply wells or wellfields within 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. The project is not within ½ mile of any public water supply well or well field.	☒	☐

IV. Wastewater and Sewage Disposal	**Enclosed?**	
	Yes	No
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. There would be no water and wastewater component to this project.	☐	☒
7. Provide a description of plans to handle storm water runoff. The existing drainage will not be expanded. The existing drainage features will be modified to increase efficiency.	☒	☐
8. Identify the location, design, size of any on-site recharge basins, dry wells, leaching fields, retention ponds, etc. See attached.	☒	☐

V. Use, Storage, Transport of Hazardous or Toxic Materials *(Applies only to non-housing projects/activities)*	**Enclosed?**	
	Yes	No
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 project not related to construction There are no hazardous materials in the proposed project.	☐	☒
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. There are no current underground storage tanks (USTs) at these facilities. No USTs are proposed	☐	☒
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 There are no current aboveground storage tanks (ASTs) at these facilities. No ASTs are proposed		

This form was completed by:

Name: Clifford Jarman

Title: Sr. Env. Scientist

Address: 1401 Lime Rock Drive

Round Rock, TX 78681

Telephone number: 512-244-2192

Date: 09/27/18

Description of the Proposed Project

The Village of Lindenhurst proposes to design and implement storm resiliency improvements and public access improvements at the southern end of Shore Road Park (Figure 1), in the Village of Lindenhurst, Town of Babylon, Suffolk County, NY.

Shore Road Park is a 10.2 acre site located at the southern edge of the Village of Lindenhurst on the shore of the Great South Bay. This area is one of the few remaining natural public sections of bayfront within the Village. The park is owned, operated, and maintained by the Village of Lindenhurst and is utilized for seasonal recreational activities and community events. The entire park is within the 100-year floodplain and within the Nassau-Suffolk Sole Source Aquifer.

The park as well as nearby residential neighborhoods were subject to major flooding from the Great South Bay as well as nearby canals. This flooding resulted in catastrophic damage to hundreds of homes, many of which remain in various states of repair or abandonment. In the aftermath of Superstorm Sandy, the parking lot of this park was the staging area for "Camp Bulldog"—a grassroots disaster recovery and distribution center for residents within the Village.

The sandy beach area contains scattered concrete slabs and debris utilized for purposes of erosion control. The slope from the high tide line seaward for approximately 30' is generally flat (less than 3%). Based upon visual inspection, additional rubble of various sources is present in the water. The project area located landward of the high tide line contains various vegetation of salt tolerant species, however the dominant plant is Phragmites, a highly invasive species.

The Proposed Project would involve approximately 1.0 acres in the southern portions of the park (Figure 2) and would include planning, designing and implementing storm resiliency improvements, such as natural bank stabilization, landforms, and built structures and features that could reduce waves (Figure 3). The project would likely involve the following:

- Construction of a new protective shorefront structure with stone boulders to prevent recurring flooding and reduce wave action for storm protection;
- Construction of a gravel pedestrian path, boulder sitting wall, sand beach area, public boardwalk and lighting as additional features to enhance the recovery of the waterfront for passive recreational use;
- Drainage improvements including extension of drainage outlets as a means of protecting the southern end of Shore Road Park from flooding during major storm events;
    - The eastern drainage outlet will be extended
    - The western drainage outlet will either be extended or diverted to connect to the existing stormwater drainage along Bayview Avenue to the West.
- Placement of clean fill and riprap where needed; and
- Use of native coastal plantings.

The shoreline protection enhancements would reduce erosion and stabilize the Bayfront as well as protect adjacent property by absorbing wave energy, trapping sediments, and slowing stormwater runoff to moderate the effects of storms and floods. While the Village owns the majority of land in the project area, there are two Suffolk County owned vacant parcels that would be part of this project through an

agreement with the county. The inclusion of these properties in this project would help to provide uniform shoreline protection for this section of bayfront.

The Project would enhance the natural environment by including the installation of native coastal plantings that are naturally resistant to salt spray and occasional inundation. Plants adapted to this environment will help prevent erosion, filter stormwater pollution, and provide habitat and food for native wildlife. While the natural shoreline at Shore Road Park would be enhanced, this project would also enable safe pedestrian/public access to the waterfront. The protection and enhancement of the community's natural environment is critically important to the ecological health of the Great South Bay.

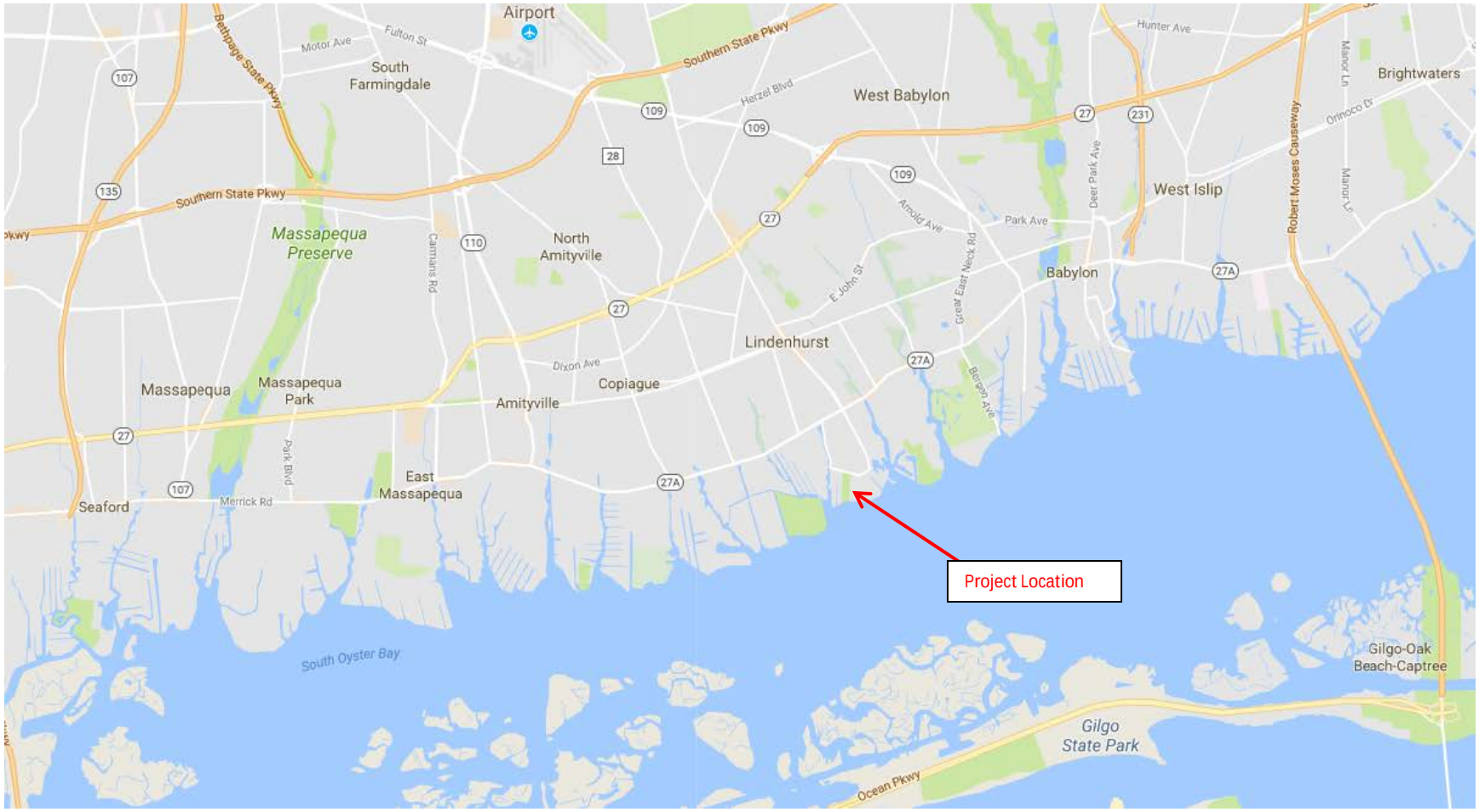
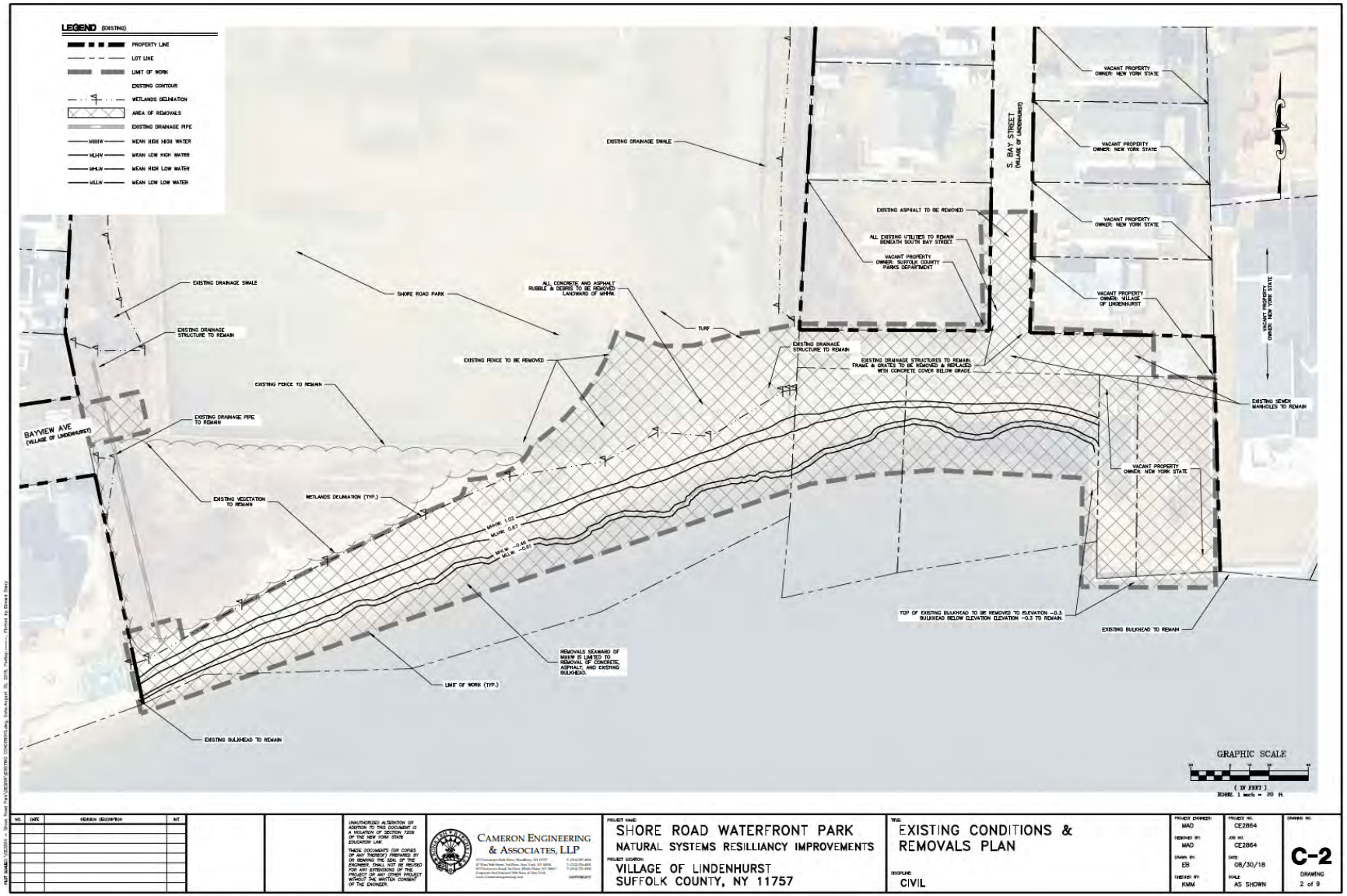


Figure 1. Site Location

Figure 2. Project Area



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PROJECT NAME: SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILLIANCY IMPROVEMENTS

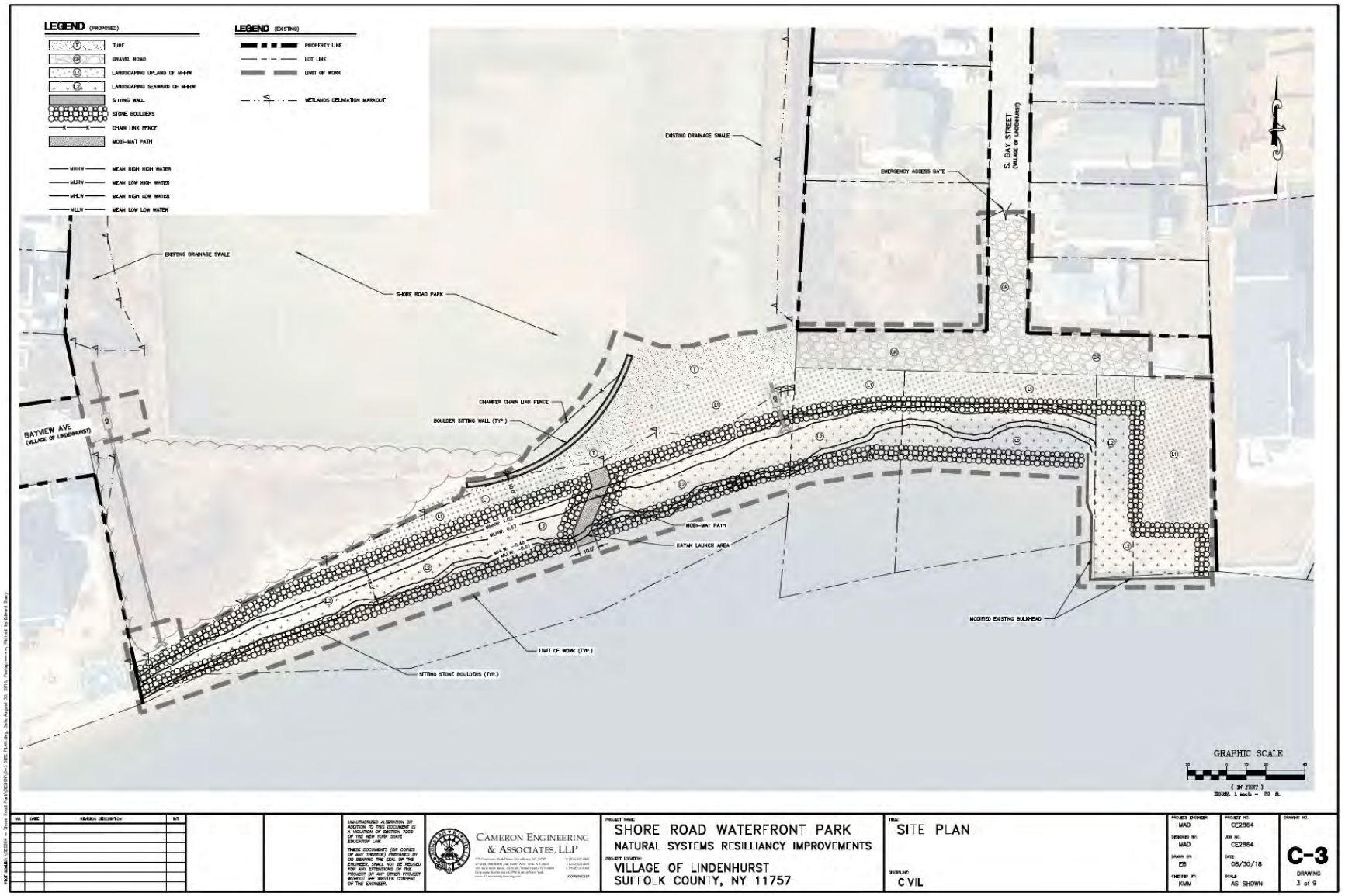
PROJECT LOCATION: VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE: EXISTING CONDITIONS & REMOVALS PLAN

DISCIPLINE: CIVIL

PROJECT OWNER:	MAD
DESIGNED BY:	MAD
DRAWN BY:	EB
CHECKED BY:	KMM
PROJECT NO.	CE2864
JOB NO.	CE2864
DATE	08/30/18
SCALE	AS SHOWN
DRAWING NO.	C-2
	DRAWING 2 of 9

Figure 4. Existing Site Plan



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PROJECT NAME: SHORE ROAD WATERFRONT PARK
NATURAL SYSTEMS RESILLIANCY IMPROVEMENTS
PROJECT LOCATION: VILLAGE OF LINDENHURST
SUFFOLK COUNTY, NY 11757

TITLE: SITE PLAN

DISCIPLINE: CIVIL

PROJECT ENGINEER	MAD
DESIGNED BY	MAD
DRAWN BY	EB
CHECKED BY	KMM
PROJECT NO.	CE2864
JOB NO.	CE2864
DATE	08/30/18
SCALE	AS SHOWN
DRAWING NO.	C-3
DRAWING	3 of 9

Figure 4. Proposed Site Plan