

Empire Offshore Wind LLC

Empire Wind 2 Project

Appendix A

Agency Outreach and Correspondence

June 2022

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ACRONYMS AND ABBREVIATIONS

BOEM	Bureau of Ocean Energy Management
BSEE	Bureau of Safety and Environmental Enforcement
COP	Construction and Operations Plan
DEIS	Draft Environmental Impact Statement
EPA	United States Environmental Protection Agency
Empire, the Applicant	Empire Offshore Wind LLC
EW 1	Empire Wind 1
EW 2	Empire Wind 2
FPISC	Federal Permitting Improvement Steering Council
GARFO	Greater Atlantic Regional Fisheries Office
HVAC	high-voltage alternating current
IHA	Incidental Harassment Authorization
km	kilometer
kV	kilovolt
Lease Area	Designated Renewable Energy Lease Area OCS-A 0512
LIPA	Long Island Power Authority
LOA	Letter of Authorization
mi	mile
nm	nautical mile
NEPA	National Environmental Policy Act
NJDEP	New Jersey Department of Environmental Protection
NOAA Fisheries	National Oceanic and Atmospheric Administration National Marine Fisheries Service
NPS	United States National Park Service
NSRA	Navigational Safety Risk Assessment
NY Project	EW 2 Project transmission facilities in New York
NYSDEC	New York State Department of Environmental Conservation
NYSDDS	New York State Department of Public Service
NYSERDA	New York State Energy Research and Development
NYISO	New York Independent System Operator, Inc.
NYSDOS	New York State Department of State
NYSDOT	New York State Department of Transportation
NYSOGS	New York State Office of General Services
NYSPSC or Commission	New York State Public Service Commission
OCS	Outer Continental Shelf
OPRHP	New York State Parks Recreation & Historic Preservation
POI	Point of Interconnection at the Barrett 138-kV Substation
PSL	New York Public Service Law
SAP	Site Assessment Plan

USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
VIA	Visual Impact Assessment

A.1 Introduction

Empire Offshore Wind LLC (Empire or the Applicant) proposes to construct and operate the Empire Wind 2 (EW 2) Project as one of two separate offshore wind projects to be located within the Bureau of Ocean Energy Management (BOEM) designated Renewable Energy Lease Area OCS-A 0512 (Lease Area). The EW 2 Project will require an electric transmission system to connect the offshore wind farm to the point of interconnection (POI) to the New York State Transmission System. An electric transmission line with a design capacity of 125 kilovolts (kV) or more, extending a distance of one mile or more, is subject to review and approval by the New York State Public Service Commission (Commission or NYSPSC) as a major electric transmission facility pursuant to Article VII of the New York Public Service Law (PSL). The EW 2 Project transmission system will extend a total of approximately 12.1 miles (mi) (19.5 kilometers [km]) within the State of New York and includes 230-kV export cable circuits and 345-kV interconnection cable circuits. As such, this application is being submitted to the Commission pursuant to Article VII of the PSL for the portions of the EW 2 Project transmission system that are located within the State of New York (collectively, the NY Project).

The NY Project will interconnect to the New York State Transmission System operated by the New York Independent System Operator, Inc. (NYISO) at the Oceanside POI, located at an expansion of the Barrett 138-kV Substation. The Barrett 138-kV Substation is owned by the Long Island Power Authority (LIPA) and operated by PSEG Long Island (PSEG-LI) and is located in Oceanside in the Town of Hempstead, New York. The NY Project will enter LIPA's substation at 345 kV, where the voltage will be converted to 138 kV within the POI. The onshore portion of the NY Project will be located entirely within Nassau County, New York.

The NY Project includes:

- Three three-core 230-kV high-voltage alternating-current (HVAC) submarine export cables located within an approximately 7.7-nautical mile (nm, 14.2-km)-long submarine export cable corridor from the boundary of New York State waters 3 nm (5.6 km) offshore to the cable landfall;
- A cable landfall in the City of Long Beach, New York;
- Three 230-kV onshore export cable circuits, each with three single-core HVAC onshore export cables within an approximately 1.5-mi (2.4-km)-long onshore export cable corridor from the cable landfall to the onshore substation;
- An onshore substation in the Village of Island Park, within the Town of Hempstead, New York, which will step up the voltage to 345 kV for the onshore interconnection cables; and
- Up to three 345-kV interconnection cable circuits, each with three single-core HVAC interconnection cables within an approximately 1.7-mi (2.8-km)-long interconnection cable corridor from the onshore substation to the POI.

A.2 Agency Outreach and Correspondence

The Applicant is proposing to develop the entire Lease Area in two individual projects, to be known as Empire Wind 1 (EW 1) and EW 2 Projects. The Applicant's EW 2 Project, which was awarded a contract for at least 1,260 megawatts as a result of the New York State's second competitive offshore wind solicitation, is the subject of this Application to the Commission, and will occupy a portion of the Lease Area. In addition to the NY Project under Article VII, the EW 2 Project includes areas outside of New York State and will involve installation of offshore wind turbines, supporting structures and foundations, interarray cables, and one

offshore substation, located within the Lease Area on the Outer Continental Shelf (OCS) in federal waters. For the purposes of this Application, “EW 2 Project” is used to refer to the offshore wind farm and transmission facilities together, inclusive of components in federal waters outside of New York State. “NY Project” is used to refer specifically to the Article VII transmission facilities in New York State that are the subject of this Application.

This Appendix summarizes the Applicant’s agency outreach and correspondence through April 30, 2022. **Table A-1** includes a summary of outreach and meetings held with federal, state and local agencies and Native American tribes. **Attachment A-1** provide biological resource correspondence and **Attachment A-2** provides cultural resource correspondence. Agency meetings and correspondence on the EW 2 Project have been inclusive of EW 2 Project components in federal waters and components within New York State, where appropriate based on the agency’s area of jurisdiction. As the concept of the EW 2 Project has evolved, correspondence may reflect routing that has subsequently been modified. In certain cases, consultation and outreach is also combined with discussion of the EW 1 Project, which is outside of the scope of this Application.¹

¹ Correspondence may also reference Boardwalk Wind and associated facilities that were previously under evaluation in New Jersey, which are also outside of the scope of this Application.

Table A-1 Agency Outreach²

Date	Stakeholder	Topic
April 2017	New York State Energy Research and Development (NYSERDA)	Introduction to the Empire Wind 2 (EW 2) Project
April 2017	New York State Public Service Commission (NYSPSC)/ Dept. of Public Service	Introduction to the EW 2 Project
May 2017	Long Island Power Authority (LIPA)	Introduction to the EW 2 Project
May 2017	City of Long Beach	Introduction to EW 2 Project
May 2017	Town of Hempstead	Introduction to EW 2 Project
May 2017	New York Department of State (NYSDOS)	Introduction to the EW 2 Project
May 2017	Bureau of Ocean Energy Management (BOEM)	Introduction to the EW 2 Project
July 2017	BOEM	General information and updates
August 2017	New York State Department of Environmental Conservation (NYSDEC)	Introduction to the EW 2 Project
August 2017	National Oceanic and Atmospheric Administration- Fisheries (NOAA Fisheries)	General EW 2 Project information and updates
August 2017	BOEM	General EW 2 Project information and updates
September 2017	United States Army Corps of Engineers (USACE)	Introduction to the EW 2 Project
October 2017	United States Coast Guard (USCG)	Introduction to the EW 2 Project and Navigational Safety Risk Assessment discussion.
October 2017	BOEM	Survey coordination and general EW 2 Project updates
November 2017	NOAA Fisheries	Incidental Harassment Authorization (IHA) discussion
November 2017	BOEM	Review of survey plans
December 2017	BOEM, NOAA Fisheries, USCG, United States Fish and Wildlife Service (USFWS), United States Environmental Protection Agency (EPA), United States National Park	EW 2 Project introduction and survey planning

² At this time, agency and stakeholder engagement included in this table is representative of Project efforts through April 30, 2022, and do not reflect efforts completed after that date. Empire Offshore Wind LLC continues to engage with agencies and other stakeholders in support of the Empire Wind 2 Project.

Date	Stakeholder	Topic
	Service (NPS), USACE, United States Department of Homeland Security, NYSDEC, NYSERDA, New York Department of Public Service (NYSDPS), NYSDOS	
December 2017	BOEM	Avian survey planning
December 2017	BOEM	Pre-survey meeting
January 2018	NOAA Fisheries	Survey planning and updates
January 2018	Shinnecock Indian Nation	Pre-survey meeting
February 2018	BOEM	Survey planning
February 2018	USFWS, NYSDEC	Marine mammals discussion
February 2018	BOEM	Marine mammals discussion
February 2018	BOEM	Project updates and survey planning
February 2018	Unkechaug Nation Chief	Introduction to the EW 2 Project
February 2018	Nassau County, New York officials	Introduction to the EW 2 Project
February 2018	NYSERDA	General EW 2 Project information and updates
March 2018	USACE	General EW 2 Project information and preliminary cable routing discussion
March 2018	BOEM	EW 2 Project update and survey review
March 2018	NYSDEC	EW 2 Project update and fisheries discussion
March 2018	NOAA Fisheries	EW 2 Project updates and geotechnical survey planning
March 2018	EPA	EW 2 Project updates and survey planning
March 2018	NYSPSC	EW 2 Project update at public technical conference
May 2018	New York State Parks Long Island	General EW 2 Project information and updates
June 2018	BOEM	Site Assessment Plan (SAP) submittal
June 2018	NYSERDA	EW 2 Project update and survey planning
June 2018	Nassau County, New York officials	General EW 2 Project information and updates
June 2018	Town of Hempstead	General EW 2 Project information and updates

Date	Stakeholder	Topic
July 2018	BOEM	General EW 2 Project information and updates
August 2018	NOAA Fisheries Greater Atlantic Regional Fisheries Office (GARFO)	EW 2 Project updates and IHA discussion
August 2018	NOAA Fisheries Office of Protected Resources	EW 2 Project updates and survey planning
August 2018	USCG	EW 2 Project updates and vessel traffic surveys
August 2018	NPS	EW 2 Project introduction and visual impact assessment
September 2018	BOEM	EW 2 Project update and SAP discussion
September 2018	BOEM	EW 2 Project update and SAP follow up
September 2018	USCG	EW 2 Project update and vessel traffic discussion
September 2018	USCG	EW 2 Project update and layout discussion
September 2018	NYSERDA	EW 2 Project and permitting updates
September 2018	BOEM	EW 2 Project update and vessel traffic discussion
October 2018	Chief Deputy County Executive, Nassau County	General Project information and updates
October 2018	NPS, Fire Island	EW 2 Project overview and visual impact assessment discussion
October 2018	BOEM	EW 2 Project update and 2019 geotechnical survey plan discussion
October 2018	Naval Facilities Engineering Command	EW 2 Project update and export cable routing discussion
November 2018	New York State Department of Transportation (NYSDOT) on Long Island	EW 2 Project overview and interconnection discussions
November 2018	NYSDOT	EW 2 Project introduction and onshore cable routing discussion
November 2018	BOEM	EW 2 Project update and vessel traffic discussion
December 2018	NYSDPS	EW 2 Project introduction and onshore routing discussion

Date	Stakeholder	Topic
December 2018	New York State Parks Recreation & Historic Preservation (OPRHP)	EW 2 Project introduction and onshore routing discussion
December 2018	New York State Parks	EW 2 Project overview and visual impacts discussion
January 2019	NYSDOS	EW 2 Project update and survey planning
January 2019	BOEM	EW 2 Project update and survey planning
January 2019	NOAA Fisheries	Survey planning and IHA renewal
February 2019	BOEM	2019 survey planning and 2018 survey results
March 2019	OPRHP	EW 2 Project update and visual simulations discussion
March 2019	BOEM	Survey update and Construction and Operations Plan (COP) discussion
March 2019	USACE	EW 2 Project update and COP discussion
March 2019	EPA	EW 2 Project update and COP discussion
March 2019	BOEM	Survey planning and visual impact assessment discussion
April 2019	USCG	EW 2 Project update and foundations towing discussion
April 2019	USCG	Navigational Safety Risk Assessment (NSRA) discussion
April 2019	BOEM	Visual impacts assessment discussion
May 2019	USCG	NRSA and operations and maintenance activities discussion
May 2019	BOEM	EW 2 Project updates
May 2019	Shinnecock Indian Nation	Offered EW 2 Project update
June 2019	BOEM	Project updates, survey activities, and NSRA discussion
June 2019	USCG	Vessel traffic and cable landfall discussion

Date	Stakeholder	Topic
July 2019	BOEM	EW 2 Project update, fisheries and navigation outreach discussion and COP schedule
August 2019	BOEM	COP discussion
August 2019	BOEM	Pre-COP workshop
September 2019	NYSDEC, NYDPS, NYSDOS	EW 2 Project update and NY State permitting discussion
September 2019	NOAA Fisheries	EW 2 Project update and submarine export cable route discussion
September 2019	EPA, Bureau of Safety and Environmental Enforcement (BSEE), NYSDEC, New Jersey Department of Environmental Protection (NJDEP)	EW 2 Project update and air permitting discussion
September 2019	USACE	EW 2 Project update and permitting discussion
September 2019	OPRHP	EW 2 Project update and visual impact assessment discussion
September 2019	NYSERDA	EW 2 Project updates
October 2019	NOAA Fisheries	EW 2 Project update and Underwater Acoustic Assessment discussion for COP
October 2019	BOEM	EW 2 Project update and preliminary third-party Environmental Impact Statement contractor discussion
November 2019	BOEM	EW 2 Project updates, marine mammal acoustic monitoring, and NYSERDA Open Houses discussion
December 2019	BOEM	EW 2 Project update and discussion of underwater acoustic guidelines
December 2019	USACE	EW 2 Project update and submarine export cable burial and permit discussion
December 2019	BOEM	EW 2 Project and permitting schedule update
January 2020	USCG	EW 2 Project update
January 2020	BOEM	EW 2 Project and outreach updates

Date	Stakeholder	Topic
February 2020	BOEM	EW 2 Project update and 2020 survey campaign and third-party contractor status discussion
February 2020	USCG	EW 2 Project overview on upcoming plans and discussion of the NSRA
March 2020	Shinnecock Indian Nation	Offered EW 2 Project update
March 2020	BOEM	Discussed and coordinated data needs and submission protocol
March 2020	BOEM	EW 2 Project update
April 2020	BOEM	EW 2 Project update
April 2020	BOEM	EW 2 Project updates and agency coordination discussion
April 2020	NOAA Fisheries	EW 2 Project update and survey overview discussion
April 2020	BOEM/BSEE	EW 2 Project schedule overview and discussion of emergency response preparedness approach
April 2020	EPA	EW 2 Project overview and schedule updates and discussion of the air quality modelling protocol
April 2020	BOEM	EW 2 Project update
May 2020	BOEM	Discussion of BOEM comments on the COP
May 2020	BOEM	EW 2 Project and agency coordination updates
May 2020	BOEM	Discussion of BOEM comments on the COP
May 2020	BOEM	EW 2 Project update
June 2020	BOEM/USCG	EW 2 Project, survey, and outreach updates
June 2020	BOEM	2020 survey campaign update and discussion
June 2020	BOEM	Discussion of BOEM comments on the COP
June 2020	NYSDOS	EW 2 Project overview and updates, and discussion of the 2020 survey campaigns
June 2020	BOEM	EW 2 Project update
June 2020	USACE	EW 2 Project and permitting updates

Date	Stakeholder	Topic
June 2020	NOAA Fisheries	EW 2 Project update
June 2020	NYSDEC/NYSDDS	EW 2 Project overview and update
June 2020	BOEM	EW 2 Project updates
July 2020	BOEM	EW 2 Project updates
July 2020	BOEM	Presentation of BOEM comments on the COP
July 2020	BOEM/USCG	EW 2 Project overview, updates, and NSRA Search and Rescue discussion
July 2020	BOEM	EW 2 Project updates
July 2020	BOEM/USCG	Discussion of stakeholder consultations (World Shipping Council, American Waterways Operators, and Chamber of Shipping of America)
August 2020	BOEM	EW 2 Project updates
August 2020	NOAA Fisheries GARFO	Presentation and discussion of benthic habitat characterization surveys
August 2020	BOEM	Discussion of Ground Model and Electronic Data Deliverable
August 2020	BOEM	Discussion of BOEM comments on High Resolution Geophysical/Geotechnical Survey Plan
August 2020	BOEM/BSEE	Review of regulations pertaining to SAP decommissioning
August 2020	BOEM	EW 2 Project updates
August 2020	USACE	Correspondence re permitting schedule and temporary mooring overview
August 2020	BOEM/BSEE	SAP Decommissioning Plan follow-up
August 2020	BOEM	COP overview and updates
September 2020	BOEM	EW 2 Project updates
September 2020	BOEM	EW 2 Project updates
September 2020	USCG	EW 2 Project overview and discussion of NSRA

Date	Stakeholder	Topic
September 2020	BOEM	EW 2 Project updates
October 2020	USCG, NYSDOS	Discussion of Cable Burial Risk Assessment undertaken for Gravesend Bay
October 2020	BOEM	EW 2 Project updates
October 2020	NYSERDA	Overview of Project design updates, EW 2 Project activities, and New York State comments on initial COP submittal
October 2020	BOEM	EW 2 Project updates
November 2020	BOEM, BSEE, EPA, Federal Permitting Improvement Steering Council (FPISC), USFWS, NOAA Fisheries, NPS, USACE, NYSDEC, NYSDPS, NYSDOS, NJDEP, New Jersey Board of Public Utilities, USCG	EW 2 Project update and overview
November 2020	USCG	Discussion of potential ports to support EW 2 Project construction
November 2020	BOEM	EW 2 Project updates
December 2020	BOEM	EW 2 Project updates
December 2020	NYSDEC, NYSDOS, NYSDPS, NYSDOT, NYSERDA, OPRHP	EW 2 Project overview and updates
December 2020	NOAA Fisheries, BOEM	Discussion of Benthic Habitat Characterization Mapping
January 2021	BOEM	EW 2 Project updates
January 2021	EPA	Discussion on the air dispersion modeling protocol for the Outer Continental Shelf air permit application
January 2021	BOEM	Project design update and discussion of Marine Minerals Program sand borrow areas and requirements
January 2021	NYSDEC, NYSDOS, NYSDPS, NYSDOT, NYSERDA, OPRHP	Discussion of submarine export cable installation methodologies, routing, vessel types, and time-of-year restrictions

Date	Stakeholder	Topic
January 2021	BOEM	Discussion of the new Section 106/National Environmental Policy Act (NEPA) Integration process
January 2021	BOEM	Pre-survey meeting
January 2021	NOAA Fisheries	EW 2 Project update and discussion of IHA timeline
February 2021	BOEM	EW 2 Project updates
February 2021	NYSDEC, NYSDOS, USACE	Discussion of proposed Sediment Sampling Campaign
February 2021	EPA, NYSDEC	EW 2 Project updates and discussion of permitting for multi-phase Project
February 2021	BOEM	Discussion of information needs to support Endangered Species Act and Section 7 consultation
February 2021	NYSDEC, NYSDOS, NYSDPS, NYSDOT, NYSERDA, New York State Office of General Services (NYSOGS)	Discussion of proposed landfall methodologies, dredging needs, and time-of-year restrictions
February 2021	BOEM	EW 2 Project updates
February 2021	Shinnecock Indian Nation, Mohegan Tribe of Connecticut, Mashantucket Western Pequot Tribal Nation, Delaware Tribe of Indians	Offered pre-survey meeting and EW 2 Project update
March 2021	City of Long Beach, New York	Discussion of proposed survey work
March 2021	BOEM	EW 2 Project updates
March 2021	City of Long Beach, New York	EW 2 Project updates; discussion of proposed survey work
March 2021	NYSDEC, NYSDOS, NYSDPS, NYSDOT, NYSERDA, NYSOGS, OPRHP	Discussion of proposed export cable landfall methodologies
March 2021	BOEM	EW 2 Project updates
March 2021	Long Island Rail Road	Discussion with Long Island Rail Road on data needs
March 2021	USACE	EW 2 Project update, discussion of sand borrow areas and overview of potential cable crossing methodologies

Date	Stakeholder	Topic
March 2021	Town of Hempstead, New York	Discussion of project components planned in Hempstead and EW 2 Project schedule
March 2021	NOAA Fisheries	Discussion on upcoming survey activities
March 2021	NYSDPS	Discussion of in-air noise assessment activities
March 2021	BOEM	EW 2 Project updates
April 2021	BOEM	Discussion of EW 2 Project and permitting schedule, inter-agency coordination, and high-level COP discussion
April 2021	NYSDEC, NYSDOS, NYSDPS, NYSDOT, NYSERDA, NYSOGS, OPRHP	Discussion of cable routing considerations and cable installation methodology along each portion of the submarine export cable route
April 2021	NPS	Discussion of visual impact methodology and Analysis of Visual Effects on Historic Properties
April 2021	NPS	Follow up discussion of visual impact methodology and Analysis of Visual Effects on Historic Properties
April 2021	EPA	Discussion of permitting strategy
April 2021	NOAA Fisheries, BOEM	EW 2 Project update, discussion of timeline, and alignment among agencies
April 2021	BOEM	EW 2 Project updates
April 2021	EPA, BOEM	Discussion on Outer Continental Shelf (OCS) Air Permit application timing
May 2021	NYSDOS	Project overview and coastal consistency
May 2021	BOEM	Discuss Section 106 and survey activities
May 2021	BOEM, FPISC, BSEE, Department of Defense, U.S. Navy, EPA, USFWS, NOAA Fisheries GARFO, NPS, USACE, NYSDDEC, NYSDPS, NYSDOS, NYSERDA, NJDEP, New Jersey Board of Public Utilities, USCG, Advisory Council on Historic Preservation	Interagency meeting
June 2021	OPRHP	Discussion of OPRHP historic and architectural properties

Date	Stakeholder	Topic
June 2021	BOEM	Pre-Notice of Intent (NOI) meeting
June 2021	Delaware Tribe of Indians	EW 2 Project overview and discussion on historic properties
June 2021	EPA	Timing of OCS Air Permit application submittal
June 2021	NOAA Fisheries	EW 2 Project updates and Letter of Authorization (LOA) timeline
June 2021	OPRHP	Visual effects to historic properties and potential impacts to New York State Parks, Recreation, & Historic Preservation properties
June 2021	BOEM	EW 2 Project updates
June 2021	Delaware Tribe of Indians	Project overview and feedback on potential mitigation measures
June 2021	EPA	Discussion of the OCS Air Permit application submittal
June 2021	BOEM, NYSDOS, Public	Overview of lease area history, NEPA process, NYSDOS Coastal Zone Management Process, and Project Overview
June 2021	NOAA Fisheries, BOEM	Project update and discussion of timeline for the IHA
July 2021	BOEM	Discussion of the Marine Site Investigation Report
July 2021	NOAA Fisheries	Discussion of the methodology for animal movement modeling
July 2021	BOEM	EW 2 Project updates
July 2021	USACE	EW 2 Project and schedule update
July 2021	BOEM	Feedback from Final Scoping Meetings and next steps
July 2021	USACE	EW 2 Project and schedule update and discussion of the USACE and BOEM sand borrow areas
August 2021	BOEM	EW 2 Project updates

Date	Stakeholder	Topic
August 2021	BOEM	Discussion of the Section 106 NEPA Substitution process
August 2021	NYSDEC; NYSDOS; NYSDPS; NYSDOT; NYSERDA; NYSOGS; OPRHP	Discussion of 2021 geotechnical Joint Permit Application and sediment surveys, EW 2 Project geotechnical Joint Permit Application submittal, and the considerations of submarine export cable routing and landfall at EW 2
August 2021	USCG, BOEM	Discussion of project design envelope updates and re-model of the NSRA
September 2021	BOEM	EW 2 Project updates
September 2021	NOAA	Discussion of potential impacts on high frequency radar systems
September 2021	EPA, NYSDEC	Discussion of schedule and proposed new modeling procedures for construction emissions
September 2021	BOEM	Response to questions from BOEM regarding alternatives to be evaluated in the Draft Environmental Impact Statement (DEIS)
September 2021	NYSDEC, NYSDOS, NYSDPS, NYSDOT, NYSERDA, NYSOGS, OPRHP, USACE	Discussion of routing options for the EW 2 submarine export cable in the vicinity of the sand resource area identified near the landfall on Long Beach Island
September 2021	NYSDEC, NYSDOS, NYSDPS	Discussion of sediment transport modeling
September 2021	NYSDEC, EPA	Discuss of dispersion modeling in support of the OCS Air Permit application
October 2021	BOEM	EW 2 Project updates
October 2021	BOEM	Discussion of cumulative effects visual simulations
October 2021	USACE, USCG	Discussion of anchor spread in New York State waters
October 2021	NYSDEC, NYSDOS, NYSDPS, NYSDOT, NYSERDA, NYSOGS, USCG	Discussion of anchor spread in New York State waters
November 2021	NOAA Fisheries	Discussion of the timing and process for the LOA

Date	Stakeholder	Topic
November 2021	New York Harbor Operations Steering Committee, USACE, USCG	Feedback on anchor spread in New York State waters
November 2021	BOEM	EW 2 Project updates
November 2021	BOEM	Discussion of cumulative effects visual simulations methodology
November 2021	EPA	Feedback on alternative modeling methodologies
November 2021	U.S. Department of Defense	Discussion of mitigation for the ARSR-4 radar
November 2021	New York Harbor Operations Steering Committee, USACE, USCG, Port Authority of New York and New Jersey	Feedback on anchor spread in New York State waters
November 2021	NPS, BOEM	EW 2 Project updates and review of visual simulations developed for key observation points from NPS sites
December 2021	BOEM	Review of comments and feedback on the Visual Impact Assessment (VIA)
December 2021	USCG	Discussion of marking and lighting scheme for the Project
December 2021	BOEM	Discussion of the layout alternatives proposed for the DEIS
December 2021	BOEM	Continued discussion of comments and feedback on the VIA and cumulative effects simulations
December 2021	NOAA Fisheries	Overview of the rulemaking and process for the LOA application
December 2021	BOEM, Department of the Interior	Discussion of DEIS alternatives
December 2021	BOEM	EW 2 Project updates
December 2021	BOEM	Discussion of EW 2 Project design updates
January 2022	BOEM	EW 2 Project updates
January 2022	NOAA Fisheries	Discussion of LOA application
January 2022	BOEM	Discussion of DEIS, VIA, and Project design updates
January 2022	BOEM	Discussion of Section 106 process

Date	Stakeholder	Topic
January 2022	NOAA Fisheries	Discussion of LOA application
January 2022	BOEM, Department of the Interior	Discussion of DEIS status, alternatives, Project design updates, Marine Site Investigation Report, and BOEM requests for information
January 2022	NYSDPS, NYSDEC, NYSDOS	EW 2 Project Article VII Application submittal overview
January 2022	BOEM, USACE, NYSDEC, NYSDOS, NYSDOT, NYSERDA, and New York City Economic Development Corporation	Discussion of the environmental review process and South Brooklyn Marine Terminal port upgrade projects
January 2022	BOEM, USACE, and FPISC	Discussion of Section 10 and Section 404 milestone dates
February 2022	USACE	Pre-application submittal meeting
February 2022	BOEM	EW 2 Project updates
February 2022	BOEM	Milestone date changes and status updates
March 2022	BOEM	EW 2 Project updates
March 2022	Shinnecock Indian Nation, Delaware Tribes of Indians, and Delaware Nation	EW 2 Project updates and overview of Marine Archaeological Resources Assessment development
March 2022	USACE	Continued discussion on the use of USACE sand borrow areas
March 2022	NOAA Fisheries	Discussion of acoustic and animal movement modeling methodologies
March 2022	NOAA, BOEM	Discussion of the NEPA schedule
March 2022	NJDEP, New Jersey Board of Public Utilities, NYSERDA, BOEM, NOAA, Clean Ocean Action, National Wildlife Federation	EW 2 Project update and overview
April 2022	EPA	EW 2 update on the proposed air modeling protocol
April 2022	NYSDEC, NYDPS, NYSDOS	Discussion of time-of-year restrictions and sequencing of EW 2 Project export cable landfall
April 2022	BOEM	EW 2 Project updates

Date	Stakeholder	Topic
April 2022	BOEM	Discussion on the Section 106 process
April 2022	BOEM	EW 2 Project updates
April 2022	BOEM	EW 2 Project updates
April 2022	BOEM	EW 2 Project updates
April 2022	BOEM	EW 2 Project updates

Attachment A-1
Biological Resource Correspondence



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:
Project Code: 2022-0015347
Project Name: Empire Wind (EW 2)

March 03, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location 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>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

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 Code 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

Project Code: 2022-0015347

Event Code: None

Project Name: Empire Wind (EW 2)

Project Type: Power Gen - Wind - Offshore

Project Description: Empire is currently developing the federal and state permit applications that will support construction, operation, and decommissioning of the proposed offshore wind project. The first phase, the Empire Wind 1 (EW 1) Project (previously referred to as the Empire Wind Gowanus Project), will deliver up to 816 MW of energy to the Gowanus Point of Interconnection (POI), Brooklyn, Kings County, New York. The second phase, the Empire Wind 2 (EW 2) Project (previously referred to as the Empire Wind Barrett Project), will deliver up to 1,260 MW of energy to the Oceanside POI, Town of Hempstead, Nassau County, New York.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@40.3873153,-73.34753118098853,14z>



Counties: Nassau County, New York

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 Fisheries¹, 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 <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Piping Plover <i>Charadrius melodus</i> 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. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot <i>Calidris canutus rufa</i> There is proposed critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Roseate Tern <i>Sterna dougallii dougallii</i> Population: Northeast U.S. nesting population No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2083	Endangered

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Seabeach Amaranth <i>Amaranthus pumilus</i> 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.

IPaC User Contact Information

Agency: Tetra Tech
Name: Stephen Ryan
Address: One Oxford Valley
City: Langhorne
State: PA
Zip: 19047
Email: steve.ryan@tetrattech.com
Phone: 2156662017



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:
Consultation Code: 05E1LI00-2020-SLI-0739
Event Code: 05E1LI00-2020-E-01720
Project Name: Empire Wind - EW2

September 11, 2020

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: 05E1LI00-2020-SLI-0739

Event Code: 05E1LI00-2020-E-01720

Project Name: Empire Wind - EW2

Project Type: POWER GENERATION

Project Description: Equinor Wind US LLC (Equinor Wind) proposes to construct and operate the Project located in the designated Renewable Energy Lease Area OCS-A 0512 (Lease Area). The Lease Area covers approximately 79,350 acres (ac; 32,112 hectares [ha]) and is located approximately 14 statute miles (mi) (22 kilometers [km]) south of Long Island, New York and 19.5 mi (31.4 km) east of Long Branch, New Jersey. Equinor Wind proposes to develop the entire Lease Area in what could be from one to up to a maximum of three individual phases, known as Empire Wind 1 (EW 1), Boardwalk Wind 1 (BW 1), and EW 2. The individual phases within the Lease Area will be electrically isolated and independent from each other. Each phase of development will, independently of one another, connect via offshore substations to Points of Interconnection (POIs) at onshore locations by way of export cable routes and onshore substations.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/40.40716411076186N73.37210629320042W>



Counties: Nassau, 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 Fisheries¹, 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 <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Piping Plover <i>Charadrius melodus</i> 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 <i>Calidris canutus rufa</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Roseate Tern <i>Sterna dougallii dougallii</i> Population: Northeast U.S. nesting population 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 <i>Agalinis acuta</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8128	Endangered
Seabeach Amaranth <i>Amaranthus pumilus</i> 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.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program
625 Broadway, Fifth Floor, Albany, NY 12233-4757
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www.dec.ny.gov

June 3, 2021

Stephen Ryan
Tetra Tech, Inc.
One Oxford Valley, Suite 200
Langhorne, PA 19047

Re: Empire Wind Project -- Equinor Wind US -- Lease Area OCS-A 0512 Offshore
Wind Project -- 2021 Revised Route
County: Kings, Nassau Town/City: City Of Long Beach, City Of New York, Hempstead

Dear Stephen Ryan:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur within the project area or in the vicinity of the project facilities and cable routes.

For the offshore portion of this project, the New York Natural Heritage Program database does not include full information on the rare and listed species occurring in New York's offshore marine waters. For information on the presence of rare and listed whales and other marine species in the vicinity of your project, on potential impacts and permit considerations regarding these species, and on other marine natural resources, please contact the NYSDEC Division of Marine Resources at (631) 444-0462, marineprotectedresources@dec.ny.gov.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to 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.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please consult with NYSDEC.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program

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www.dec.ny.gov

Sincerely,



Nicholas Conrad

Information Resources Coordinator
New York Natural Heritage Program

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Department of
Environmental
Conservation



The following state-listed animals have been documented within the project area or in the vicinity of the project facilities and cable routes.

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed. This page also includes other rare animals that occur with these listed species; while unlisted by NYS, these other species are rare in the state and of conservation concern.

For information about any permit considerations for the project, and for information on the presence of rare and listed whales and other marine species in offshore waters, contact the NYSDEC.

The following animal species have been documented at EW2 Landfall C - Lido Beach West, EW2 Landfall D - Lido Beach East, and the EW2 Barrett Construction Limits at Lido Beach.

COMMON NAME	SCIENTIFIC NAME	NY STATE LISTING	FEDERAL LISTING
Piping Plover <i>Breeding</i>	<i>Charadrius melodus</i>	Threatened	Threatened
Common Tern <i>Breeding</i>	<i>Sterna hirundo</i>	Threatened	
Least Tern <i>Breeding</i>	<i>Sterna antillarum</i>	Threatened	
Black Skimmer <i>Breeding</i>	<i>Rynchops niger</i>	Special Concern	

The following state-listed animal has been documented along the EW1 export cable route.

The following species has been documented nesting on the Verrazano-Narrows Bridge, under which the proposed cable route passes.

COMMON NAME	SCIENTIFIC NAME	NY STATE LISTING	FEDERAL LISTING
Peregrine Falcon <i>Breeding</i>	<i>Falco peregrinus</i>	Endangered	

The following state-listed and other rare animals have been documented near the EW2 onshore export cable route.

The following species have been documented at Garrett Marsh, a salt marsh about 1/3 mile east of the proposed cable route in Island Park.

COMMON NAME	SCIENTIFIC NAME	NY STATE LISTING	FEDERAL LISTING
Common Tern <i>Breeding</i>	<i>Sterna hirundo</i>	Threatened	
Forster's Tern <i>Breeding</i>	<i>Sterna forsteri</i>	Unlisted	
Gull-billed Tern <i>Breeding</i>	<i>Gelochelidon nilotica</i>	Unlisted	



**The following rare plants, rare animals, and significant natural communities
have been documented within the project area or in the vicinity
of the project facilities and cable routes.**

**The following state-listed plant and significant natural communities have been documented at
EW2 Landfall C - Lido Beach West, EW2 Landfall D - Lido Beach East,
and the EW2 Barrett Construction Limits at Lido Beach.**

COMMON NAME	SCIENTIFIC NAME	NY STATE LISTING	HERITAGE CONSERVATION STATUS
Seabeach Amaranth	<i>Amaranthus pumilus</i>	Threatened and Federally Listed as Threatened	Imperiled in NYS and Globally Rare

Long Beach Island Lido Beach, 2019-summer: A barrier island and maritime beach with a sand to pebble and shell substrate. The beach is very wide with distant dunes throughout most of the site.

Marine Intertidal Gravel/Sand Beach

Long Beach Island: This is a large beach in fair to poor condition (with numerous bisecting jetties), but with portions in good condition in protected natural areas, set between a densely developed terrestrial landscape and the Atlantic Ocean.

Maritime Beach

Rare Community Type

Long Beach Island: This is a very large beach in fair to poor condition (with numerous bisecting jetties), but with portions in good condition in protected natural areas, set between a densely developed terrestrial landscape and the Atlantic Ocean.

**The following rare animal has been documented in the waters crossed by all four EW2 offshore
export cables, just offshore of all four EW2 landfalls.**

While not listed by New York State as Endangered or Threatened, this species is rare in New York and of conservation concern.

COMMON NAME	SCIENTIFIC NAME	NY STATE LISTING	HERITAGE CONSERVATION STATUS
Harlequin Duck <i>Nonbreeding</i>	<i>Histrionicus histrionicus</i>	Unlisted	Critically Imperiled in NYS

Regularly observed wintering from Long Beach Island at Long Beach east to Jones Beach Island at Tobay Beach, and in Jones Inlet.

The following significant communities have been documented in the salt marshes and channels of Hempstead Bay; patches of these communities are near the EW2 onshore export cable route to the west and east, and are closest to the proposed route at its north end in the channels south, west, and east of both EW2 onshore substations. One small patch is adjacent to the east side of EW2 substation B.

COMMON NAME

HERITAGE CONSERVATION STATUS

Low Salt Marsh

High Quality Occurrence of Uncommon Community Type

High Salt Marsh

High Quality Occurrence of Uncommon Community Type

Salt Panne

High Quality Occurrence of Uncommon Community Type

Hempstead Bay Wetlands: A complex system of salt marshes in tidal bays with variable tidal range.

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. 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

The natural communities in this report are considered significant from a statewide perspective by the NY Natural Heritage Program. Each community is either an example of a community type that is rare in the state, or a high-quality example of an uncommon community type. By meeting specific, documented criteria, the NY Natural Heritage Program considers these community occurrences to have high ecological and conservation value.

Information about many of the rare animals and plants in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, from NatureServe Explorer at www.natureserve.org/explorer, and from USDA's Plants Database at <http://plants.usda.gov/index.html> (for plants).

Information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org. For descriptions of all community types, go to www.dec.ny.gov/animals/97703.html for Ecological Communities of New York State.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program
625 Broadway, Fifth Floor, Albany, NY 12233-4757
P: (518) 402-8935 | F: (518) 402-8925
www.dec.ny.gov

August 21, 2020

Stephen Ryan
Tetra Tech, Inc.
One Oxford Valley, Suite 200
Langhorne, PA 19047

Re: Empire Wind Project -- Equinor Wind US -- Lease Area OCS-A 0512 Offshore
Wind Project -- Revised Route
County: Kings, Nassau Town/City: City Of Long Beach, City Of New York, Hempstead

Dear Mr. Ryan:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur at or in the vicinity of the project site and routes. Note that New York Natural Heritage has limited information on the biological resources of the offshore waters of the New York Bight; NYSDEC's Division of Marine Resources, Region 1, may have more information.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to 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.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities, please contact the NYS DEC.

Sincerely,



Nicholas Conrad
Information Resources Coordinator
New York Natural Heritage Program



This page includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed. This page also includes other rare animals that occur with these species; while unlisted by NYS, these other species are rare in the state and of conservation concern.

For information about any permit considerations for the project, contact NYSDEC.

The following state-listed animals have been documented within the offshore lease area and along all proposed export cable routes of the Empire Wind Project.

The following species have been documented regularly within the New York Bight and the offshore waters south of Long Island.

<i>COMMON NAME</i>	<i>SCIENTIFIC NAME</i>	<i>NY STATE LISTING</i>	<i>FEDERAL LISTING</i>
Humpback Whale	<i>Megaptera novaeangliae</i>	Endangered	Endangered
Fin Whale	<i>Balaenoptera physalus</i>	Endangered	Endangered

The following state-listed animal has been documented along the proposed Empire Wind Gowanus export cable route.

The following species has been documented nesting on the Verrazano-Narrows Bridge, under which the proposed cable route passes.

<i>COMMON NAME</i>	<i>SCIENTIFIC NAME</i>	<i>NY STATE LISTING</i>	<i>FEDERAL LISTING</i>
Peregrine Falcon <i>Breeding</i>	<i>Falco peregrinus</i>	Endangered	

The following state-listed and other rare animals have been documented near the Empire Wind Barrett onshore cable route.

The following species have been documented at Garrett Marsh, a salt marsh about 1/3 mile east of the proposed route in Island Park.

<i>COMMON NAME</i>	<i>SCIENTIFIC NAME</i>	<i>NY STATE LISTING</i>	<i>FEDERAL LISTING</i>
Common Tern <i>Breeding</i>	<i>Sterna hirundo</i>	Threatened	
Forster's Tern <i>Breeding</i>	<i>Sterna forsteri</i>	Unlisted	
Gull-billed Tern <i>Breeding</i>	<i>Gelochelidon nilotica</i>	Unlisted	



The following rare animal has been documented in the waters offshore of both proposed Empire Wind Barrett landfalls, and along both the east and west Barrett export cable routes.

This animal, while not listed by New York State as Endangered or Threatened, is rare in New York and of conservation concern.

Harlequin Duck	<i>Histrionicus histrionicus</i>	Unlisted	Critically Imperiled in NYS
<i>Nonbreeding</i>			
Regularly observed wintering from Long Beach Island at Long Beach east to Jones Beach Island at Tobay Beach, and in Jones Inlet.			

The following significant communities have been documented in the salt marshes and channels of Hempstead Bay; patches of these communities are near the Empire Wind Barrett onshore cable route to the west and east, and are closest to the proposed route at its north end in the channels south, west, and east of the Barrett substation.

These natural communities are considered significant from a statewide perspective by the NY Natural Heritage Program. Each community is a high-quality example of an uncommon community type. The NY Natural Heritage Program considers these community occurrences to have high ecological and conservation value.

COMMON NAME

HERITAGE CONSERVATION STATUS

Low Salt Marsh

High Quality Occurrence of Uncommon Community Type

High Salt Marsh

High Quality Occurrence of Uncommon Community Type

Salt Panne

High Quality Occurrence of Uncommon Community Type

Hempstead Bay Wetlands: A complex system of salt marshes in tidal bays with variable tidal range.

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. 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.

Information about many of the rare animals and plants in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org.

Information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org. For descriptions of all community types, go to www.dec.ny.gov/animals/97703.html for Ecological Communities of New York State.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program

625 Broadway, Fifth Floor, Albany, NY 12233-4757

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www.dec.ny.gov

September 20, 2019

Stephen Ryan
Tetra Tech, Inc.
One Oxford Valley, Suite 200
Langhorne, PA 19047

Re: Revised Empire Wind Project -- Equinor Wind US -- Lease Area OCS-A 0512 Offshore
Wind Project -- Barrett Substation Route
County: Nassau Town/City: Hempstead, City of Long Beach

Dear Mr. Ryan:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur on or in the vicinity of the Empire Wind Barrett onshore cable route, export cable route, offshore wind lease area, and Barrett substation.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to 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.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the NYS DEC.

Sincerely,



Nicholas Conrad
Information Resources Coordinator
New York Natural Heritage Program

1051



The following state-listed and other rare animals have been documented near the onshore Barrett Substation Route.

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed or are candidates for federal listing. The list also includes other rare animals that occur with these species; while unlisted by NYS, these other species are rare in the state and of conservation concern.

The following species have been documented at Garrett Marsh, a salt marsh about 1/3 mile east of the proposed route in Island Park.

<i>COMMON NAME</i>	<i>SCIENTIFIC NAME</i>	<i>NY STATE LISTING</i>	<i>FEDERAL LISTING</i>
Common Tern <i>Breeding</i>	<i>Sterna hirundo</i>	Threatened	
Forster's Tern <i>Breeding</i>	<i>Sterna forsteri</i>	Unlisted	
Gull-billed Tern <i>Breeding</i>	<i>Gelochelidon nilotica</i>	Unlisted	

The following significant communities have been documented in the salt marshes and channels of Hempstead Bay; patches of these communities are closest to the proposed route at the north end of the proposed route in the channels south, west, and east of the Barrett substation.

These natural communities are considered significant from a statewide perspective by the NY Natural Heritage Program. Each community is either an example of a community type that is rare in the state, and/or a high-quality example of a community type. The NY Natural Heritage Program considers these community occurrences to have high ecological and conservation value.

<i>COMMON NAME</i>	<i>HERITAGE CONSERVATION STATUS</i>
Low Salt Marsh	High Quality Occurrence of Uncommon Community Type
High Salt Marsh	High Quality Occurrence of Uncommon Community Type
Salt Panne	High Quality Occurrence of Uncommon Community Type

Hempstead Bay Wetlands: A complex system of salt marshes in tidal bays with variable tidal range.



The following state-listed animals have been documented within the offshore lease area and proposed export cable routes of the Empire Wind Project.

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed or are candidates for federal listing.

The following species have been documented regularly within the New York Bight and the offshore waters south of Long Island.

COMMON NAME	SCIENTIFIC NAME	NY STATE LISTING	FEDERAL LISTING
Humpback Whale <i>Nonbreeding</i>	<i>Megaptera novaeangliae</i>	Endangered	Endangered
Fin Whale	<i>Balaenoptera physalus</i>	Endangered	Endangered

The following rare animal has been documented in the waters offshore of the proposed landfall of the Barrett Substation Route.

This animal, while not listed by New York State as Endangered or Threatened, is rare in New York and of conservation concern.

Harlequin Duck <i>Nonbreeding</i>	<i>Histrionicus histrionicus</i>	Unlisted	Critically Imperiled in NYS
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Jones Beach Island West and Long Beach Island, 2018-03-31: Regularly observed wintering from Long Beach Island at Long Beach east to Jones Beach Island at Tobay Beach, and in Jones Inlet.

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. 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.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the rare animals and plants in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org.

Information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org. For descriptions of all community types, go to www.dec.ny.gov/animals/97703.html for Ecological Communities of New York State.

May 9, 2022

Division of Fish and Wildlife
New York State Department of Environmental Conservation
Natural Heritage Program
625 Broadway, 5th Floor Albany, NY 12233-4757

**Subject: Empire Offshore Wind LLC – Lease Area OCS-A 0512 Offshore Wind Project
Nassau and Kings Counties, NY.
Request for all documented occurrences of rare or listed species or significant natural
communities**

Greetings:

Tetra Tech, Inc. is currently under contract to Empire Offshore Wind LLC¹ (Empire; previously Equinor Wind US LLC) to assist with the siting and permitting of a proposed offshore wind energy project associated with the Bureau of Ocean Energy Management's (BOEM's) Lease Area OCS-A-0512 (the Project). The Project is planned for an area of approximately 80,000 acres in federal waters, located an average of 20 miles south of Long Island, east of the Rockaways (Figure 1).

Empire is currently developing the federal and state permit applications that will support construction, operation, and decommissioning of the proposed offshore wind project. The first phase, the Empire Wind 1 (EW 1) Project (previously referred to as the Empire Wind Gowanus Project), will deliver up to 816 MW of energy to the Gowanus Point of Interconnection (POI), Brooklyn, Kings County, New York.² The second phase, the Empire Wind 2 (EW 2) Project (previously referred to as the Empire Wind Barrett Project), will deliver up to 1,260 MW of energy to the Oceanside POI, Town of Hempstead, Nassau County, New York.³

¹ Equinor Wind US LLC (Equinor Wind) assigned the Lease to Empire Offshore Wind LLC (Empire) on January 27, 2021. Previous correspondence refers to Equinor Wind as the Lease holder.

² On July 18, 2019, New York's Governor announced Empire and its 816 MW EW 1 Project as a winning bidder in the State's competitive solicitation for Offshore Wind Renewable Energy Credits.

³ On January 13, 2021, New York's Governor announced Empire and its 1,260 MW EW 2 Project as a winning bidder in the State's competitive solicitation for Offshore Wind Renewable Energy Credits.

Previous design alternatives were subject to prior consultation to NYSDEC NHP (dated January 16, 2019, June 26, 2019, August 28, 2019, July 10, 2020, and April 20, 2021; with responses received February 14, 2019 and July 30, 2019, September 20, 2019, August 21, 2020, and June 3, 2021, respectively). Since this prior consultation, the potential landfall locations, onshore substation locations, and offshore export cable, onshore export cable, and interconnection cable routes to the point of interconnections have gone through review and were subsequently refined. Therefore, in order to satisfy BOEM requirements related to biological resources, including threatened and endangered species, the most recent potential landfall locations, offshore export cable, onshore export cable, interconnection cable routes, and onshore substation locations are submitted for review.

To assist in completing the associated effort, figures showing the most recent potential landfall locations, offshore export cable routes, onshore export cable and interconnection cable routes, and onshore substations for EW 1 and EW 2 are enclosed (Figure 2 and Figure 3, respectively). Please note that the routes remain under review and are subject to further change. Please provide any information you may have regarding the presence of rare or listed species or significant natural communities that may be present on or in the immediate vicinity of the proposed Project to my attention at:

Tetra Tech, Inc.
One Oxford Valley, Suite 200 Langhorne, PA, 19047
Email: Steve.Ryan@tetrattech.com

Included with this request are GIS shape files illustrating the locations of the proposed offshore facilities and the onshore development for EW 1 and EW 2, including proposed route options, to facilitate your review. If you have any questions regarding this request, please contact me by telephone at (215) 702-4048 or email at steve.ryan@tetrattech.com. Thank you for your assistance in obtaining this information.

Very truly yours,

A handwritten signature in black ink, appearing to read "Steve S. Ryan", with a stylized flourish at the end.

Stephen Ryan
Biologist

cc: Eva Land (Empire)
Katherine Miller (Tetra Tech)
Sam Guffey (Tetra Tech)

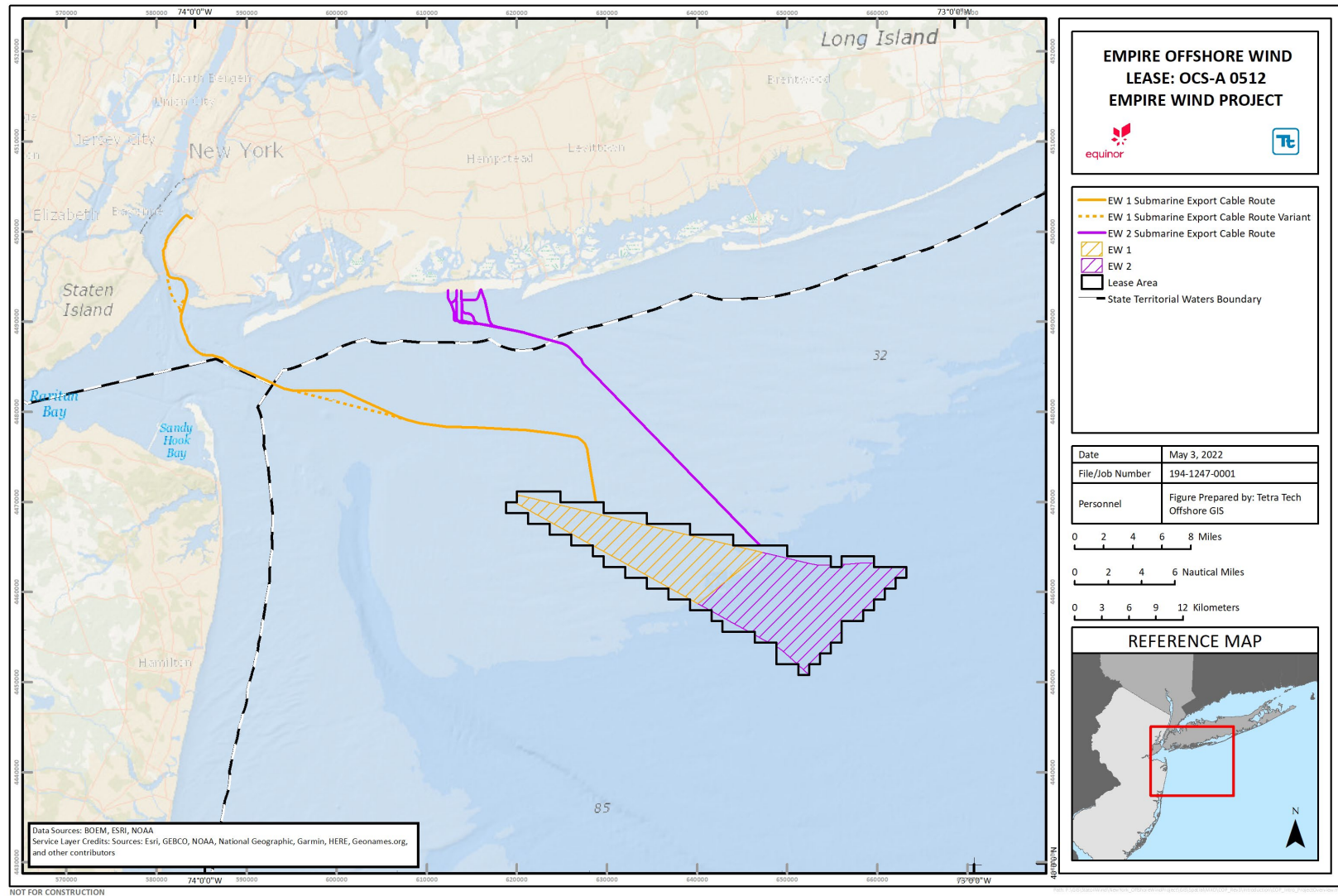


Figure 1 Project Overview

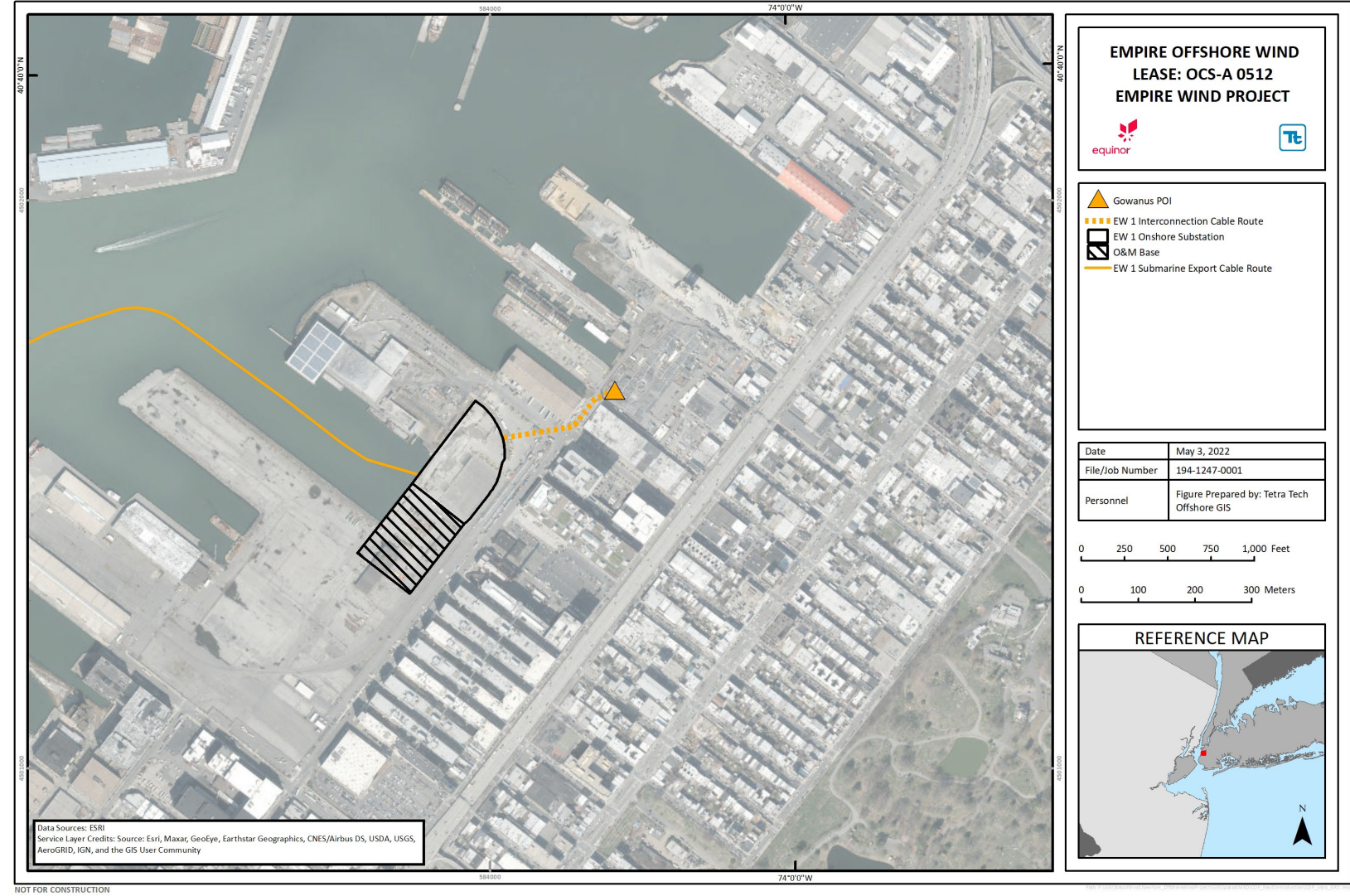


Figure 2 EW 1 Onshore Overview

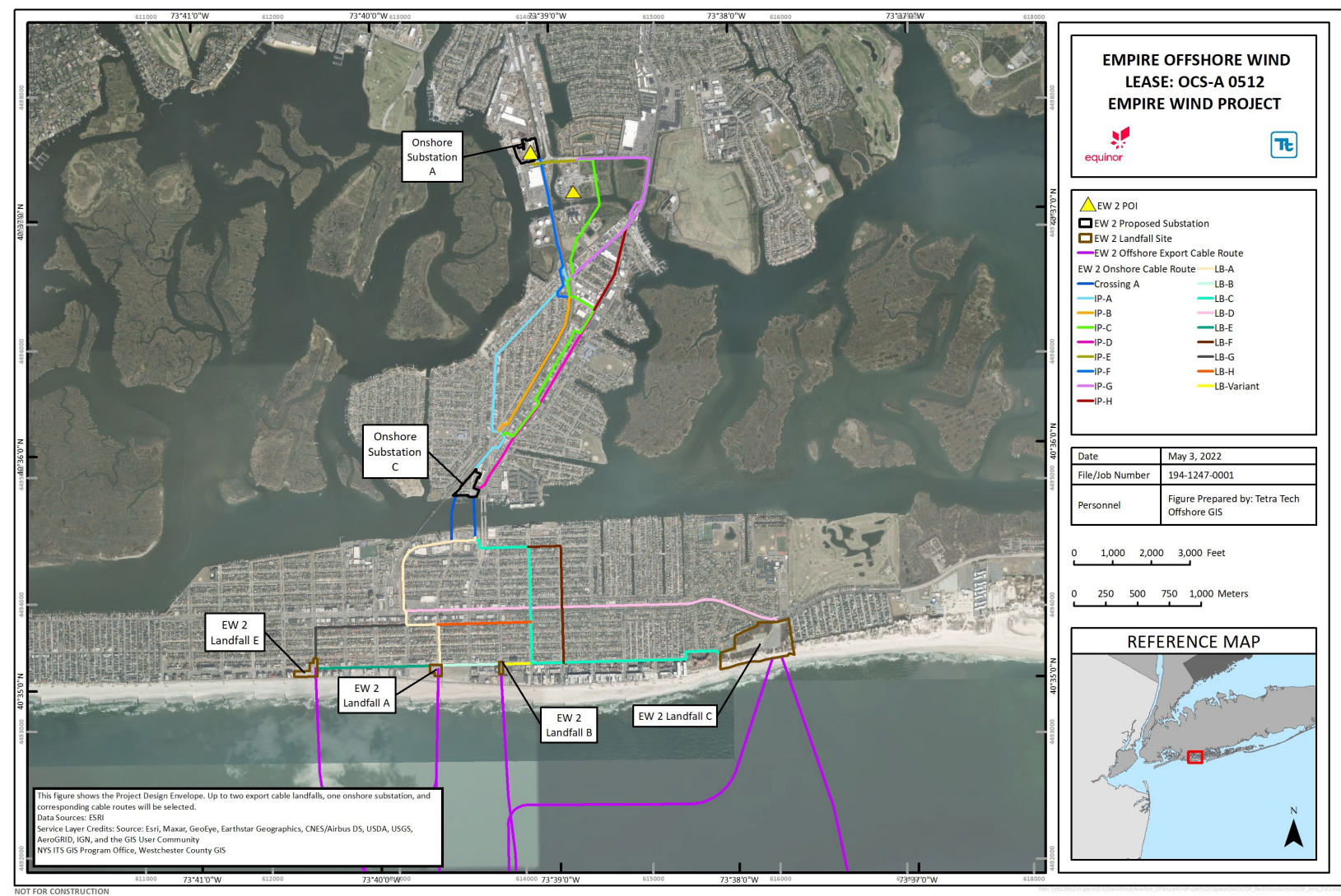


Figure 3 EW 2 Onshore Overview

April 20, 2021

Division of Fish and Wildlife
New York State Department of Environmental Conservation
Natural Heritage Program
625 Broadway, 5th Floor Albany, NY 12233-4757

**Subject: Empire Offshore Wind LLC – Lease Area OCS-A 0512 Offshore Wind Project
Nassau and Kings Counties, NY.
Request for all documented occurrences of rare or listed species or significant natural
communities**

Greetings:

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Previous design alternatives were subject to prior consultation to NYSDEC NHP (dated January 16, 2019, June 26, 2019, August 28, 2019, and July 10, 2020) with responses received February 14, 2019 and July 30, 2019, September 20, 2019, and August 21, 2020, respectively). Since this prior consultation, the potential landfall locations and onshore export cable and interconnection cable routes to the point of interconnections have gone through review and were subsequently refined. Therefore, in order to satisfy BOEM requirements related to biological resources, including threatened and endangered species, the most recent potential landfall locations, onshore export cable and interconnection cable routes, and onshore substation locations are submitted for review.

To assist us in completing the associated effort, figures showing the most recent potential onshore export cable and interconnection cable routes and onshore substations for EW 1 and EW 2 are enclosed (Figure 2 and Figure 3, respectively). Please note that the routes remain under review and are subject to further change. Please provide any information you may have regarding the presence of rare or listed species or significant natural communities that may be present on or within the immediate vicinity of the proposed Project to my attention at:

Tetra Tech, Inc.
One Oxford Valley, Suite 200 Langhorne, PA, 19047
Email: Steve.Ryan@tetrattech.com

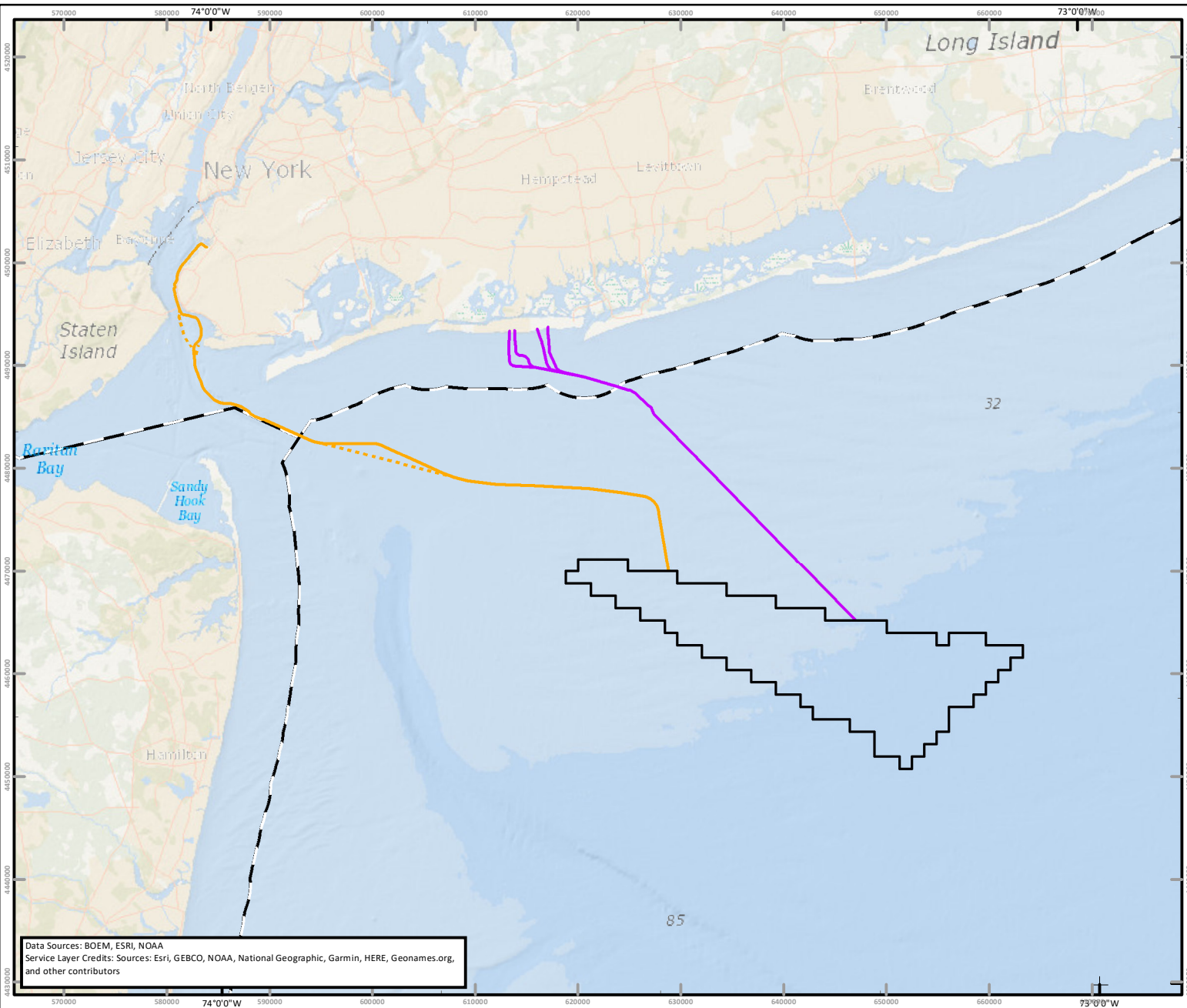
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Very truly yours,

A handwritten signature in black ink, appearing to read "Steve S. Ryan".

Stephen Ryan
Biologist

cc: Laura Morales (Empire)
Laura Sliker (Empire)
Nathalie Schils (Tetra Tech)
Katherine Miller (Tetra Tech)



Data Sources: BOEM, ESRI, NOAA
Service Layer Credits: Sources: Esri, GEBCO, NOAA, National Geographic, Garmin, HERE, Geonames.org, and other contributors

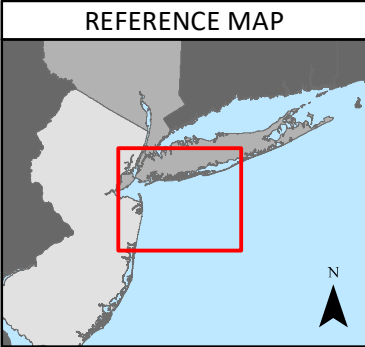
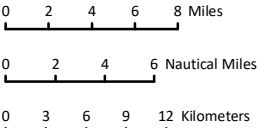
**EMPIRE OFFSHORE WIND
LEASE: OCS-A 0512
EMPIRE WIND PROJECT**

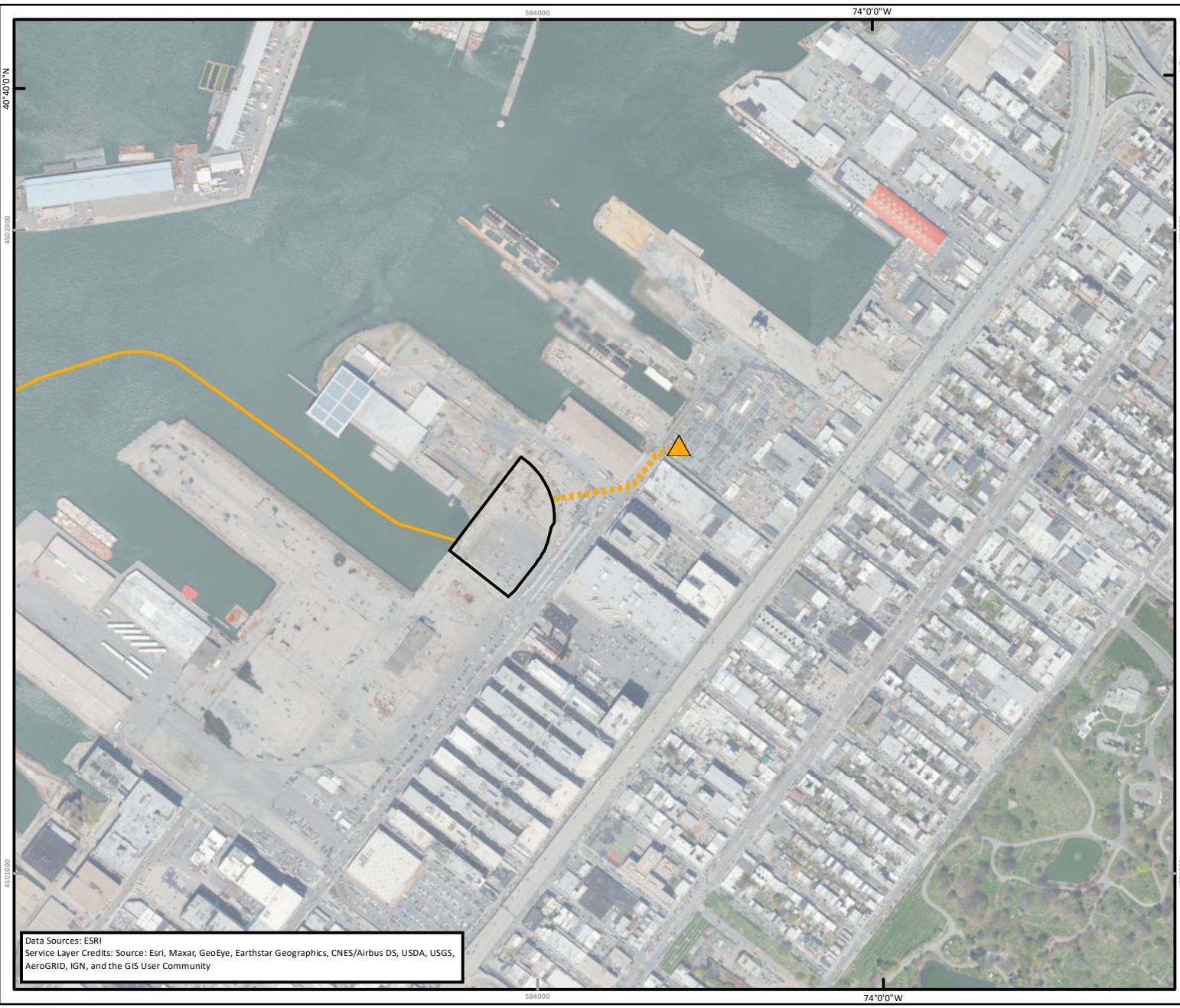


- EW 1 Submarine Export Cable Route
- EW 1 Submarine Export Cable Route Variant
- EW 2 Submarine Export Cable Route
- Lease Area
- State Territorial Waters Boundary

Up to two landfalls will be selected for the EW 2 Project

Date	March 31, 2021
File/Job Number	194-1247-0001
Personnel	Figure Prepared by: Tetra Tech Offshore GIS








Data Sources: ESRI
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community


EMPIRE OFFSHORE WIND


LEASE: OCS-A 0512


EMPIRE WIND PROJECT



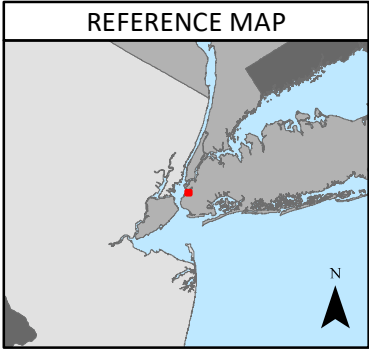
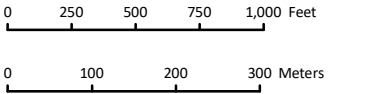
 Gowanus POI

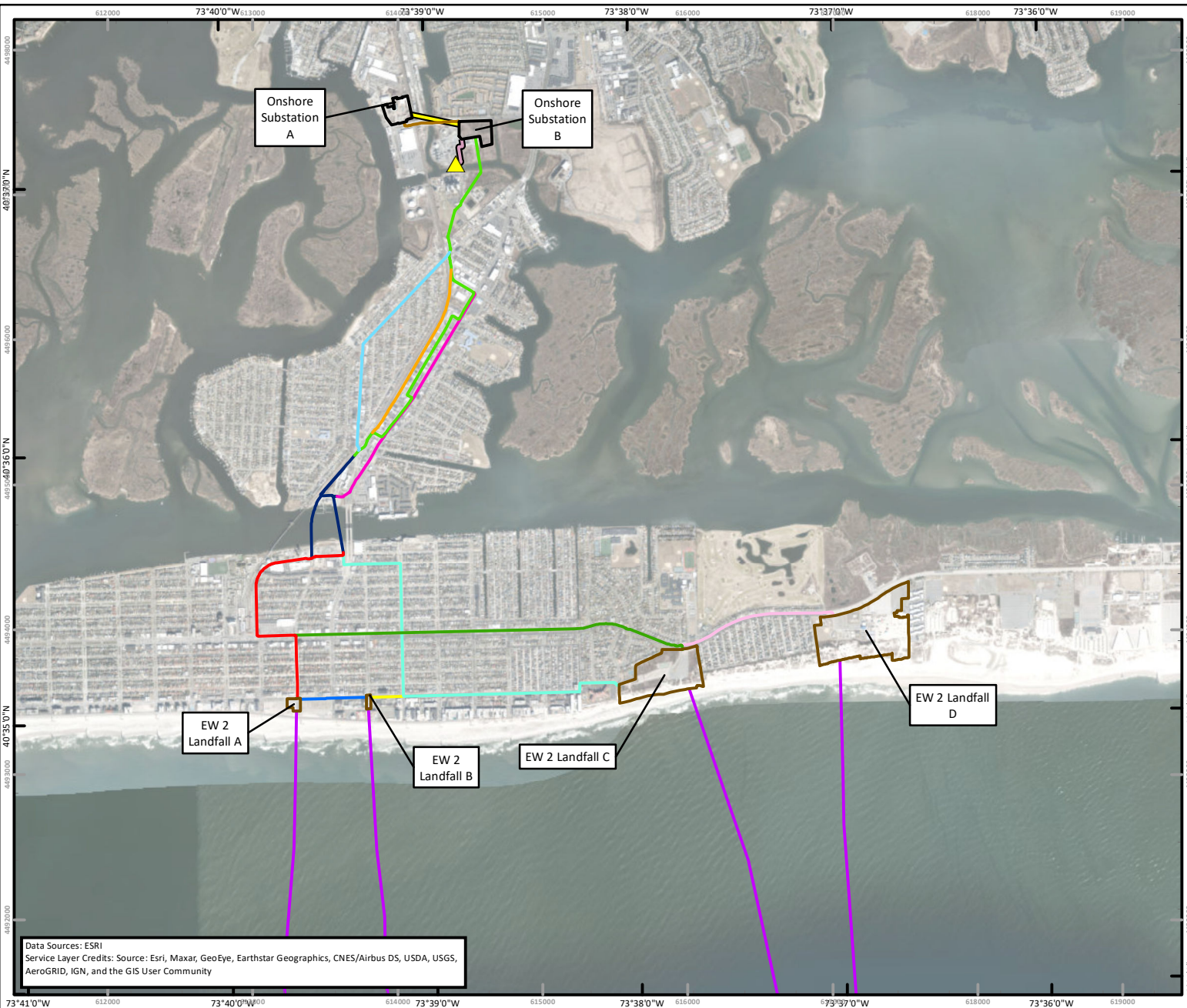
 EW 1 Interconnection Cable Route

 EW 1 Onshore Substation

 EW 1 Submarine Export Cable Route

Date	March 31, 2021
File/Job Number	194-1247-0001
Personnel	Figure Prepared by: Tetra Tech Offshore GIS





Data Sources: ESRI
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

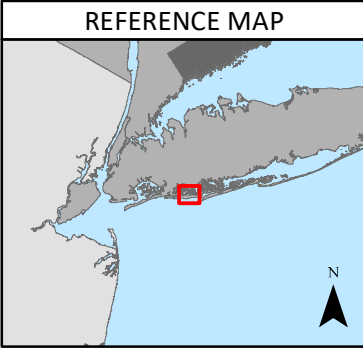
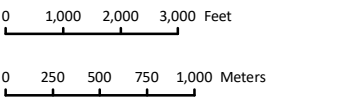
**EMPIRE OFFSHORE WIND
LEASE: OCS-A 0512
EMPIRE WIND PROJECT**



- ▲ EW 2 POI
- EW 2 Interconnection Cable Route
 - IC-A
 - IC-A/B
- EW 2 Proposed Substation
- EW 2 Landfall Site
- EW 2 Offshore Export Cable Route
- EW 2 Onshore Export Cable Route
- Reynolds Channel Crossing Feature
- LB-Variant
- IP-A
- IP-B
- IP-C
- IP-D
- IP-E
- LB-A
- LB-B
- LB-C
- LB-D
- LB-E

Up to two landfalls and onshore export cable routes will be selected.

Date	April 8, 2021
File/Job Number	194-1247-0001
Personnel	Figure Prepared by: Tetra Tech Offshore GIS



July 10, 2020

Division of Fish and Wildlife
New York State Department of Environmental Conservation
Natural Heritage Program
625 Broadway, 5th Floor Albany, NY 12233-4757

**Subject: Equinor Wind US – Lease Area OCS-A 0512 Offshore Wind Project
Nassau and Kings Counties, NY.
Request for all documented occurrences of rare or listed species or significant natural
communities**

Greetings:

As described in a letter dated January 16, 2019, Equinor Wind US LLC (Equinor Wind) proposes to construct and operate the Project located in the designated Renewable Energy Lease Area OCS-A 0512 (Lease Area). The Lease Area covers approximately 79,350 acres (ac; 32,112 hectares [ha]) and is located approximately 14 statute miles (mi) (22 kilometers [km]) south of Long Island, New York and 19.5 mi (31.4 km) east of Long Branch, New Jersey. The Project Area is shown in Figure 1.

Equinor Wind proposes to develop the entire Lease Area in what could be from one to up to a maximum of three individual phases, known as Empire Wind 1 (EW 1), Boardwalk Wind 1 (BW 1), and EW 2 (collectively referred to hereafter as the Project). The individual phases within the Lease Area will be electrically isolated and independent from each other. Each phase of development will, independently of one another, connect via offshore substations to Points of Interconnection (POIs) at onshore locations by way of export cable routes and onshore substations.

Equinor Wind is currently developing the federal and state permit applications that will support construction, operation, and decommissioning of the proposed Project. The first phase, the EW 1 Project (formerly referred to as the Empire Wind Gowanus Project), will deliver up to 816 MW of energy to the Gowanus Generating Station, Brooklyn, Kings County, New York¹. Additional phases could also transmit

¹ On July 18, 2019, New York's Governor Cuomo announced Equinor Wind and its 816 MW EW 1 Project as a winning bidder in the State's competitive solicitation for Offshore Wind Renewable Energy Credits.

energy, with the EW 2 Project (formerly referred to as the Empire Wind Barrett Project) also under consideration.

Previous design alternatives were subject to prior consultation to NYSDEC NHP (dated January 16, 2019, June 26, 2019, and August 28, 2019 with responses received February 14, 2019 and July 30, 2019, and September 20, 2019, respectively). Since this prior consultation, the potential routes for underwater transmission lines, landfall locations, and upland transmission for the EW 1 and EW 2 Projects have gone through review and were subsequently refined. Therefore, in order to satisfy BOEM requirements related to biological resources, including threatened and endangered species, the most recent potential offshore transmission, landfall locations, upland transmission, and onshore substation locations are submitted for review.

To assist us in completing the associated effort, a figure showing the most recent potential upland transmission routes for EW 1 and EW 2 are enclosed (Figure 2 and Figure 3, respectively). Please note that the routes remain under review and are subject to further change. Please provide any information you may have regarding the presence of rare or listed species or significant natural communities that may be present on or within the immediate vicinity of the proposed Project to my attention at:

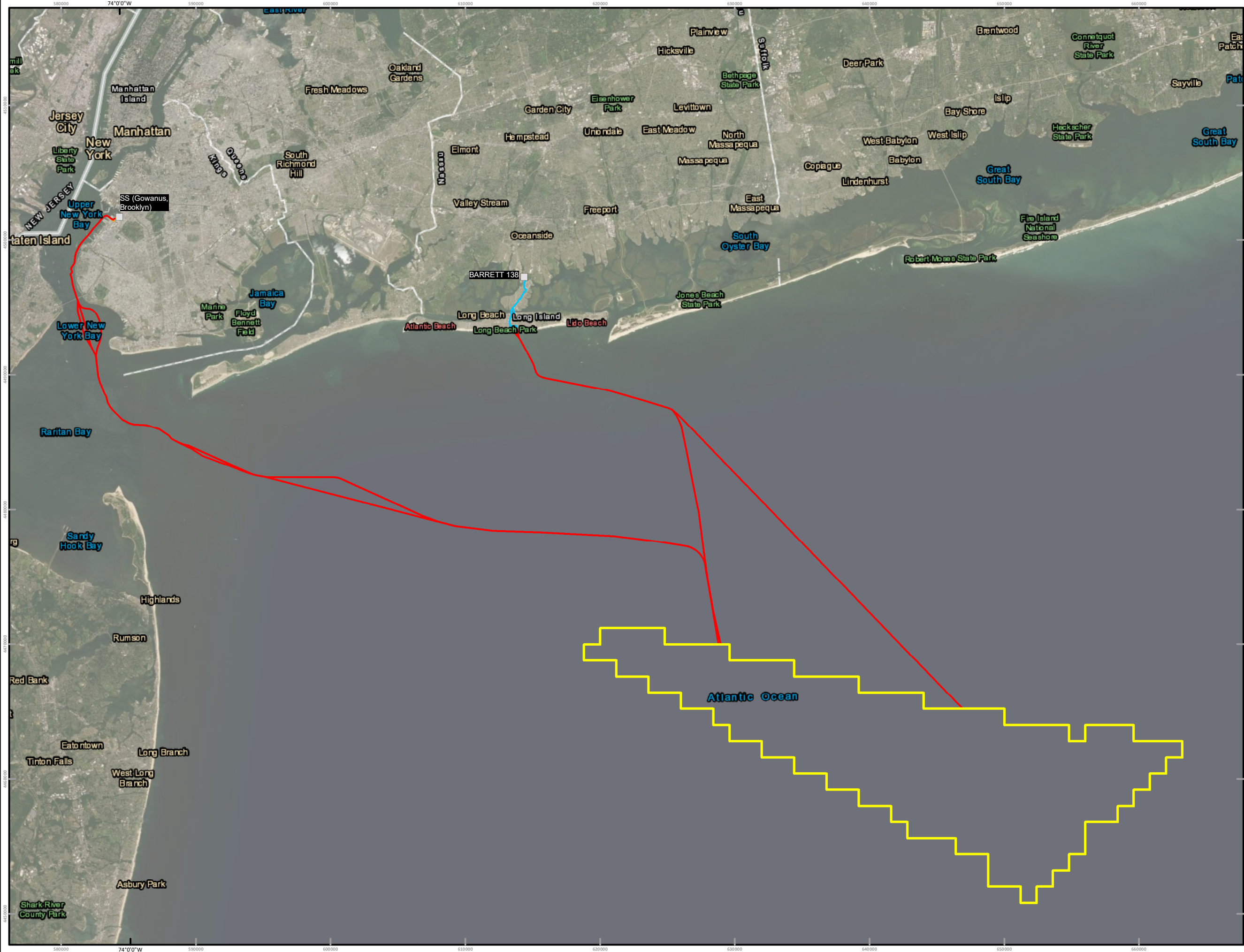
Tetra Tech, Inc.
One Oxford Valley, Suite 200 Langhorne, PA, 19047
Email: Steve.Ryan@tetrattech.com

Included with this request is a GIS shape file, illustrating the location of the proposed offshore facilities and the onshore portion of development within New York, including both preferred and alternative routes, to facilitate your review. If you have any questions regarding this request, please contact me by telephone at (215) 702-4048 or email at steve.ryan@tetrattech.com. Thank you for your assistance in obtaining this information.

Very truly yours,

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Stephen Ryan
Biologist



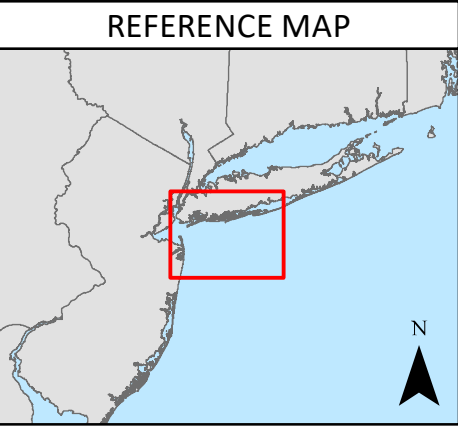
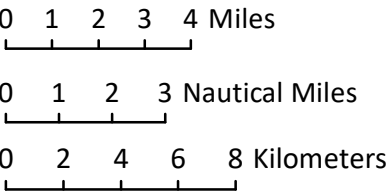
Empire Wind

Figure 1 PROJECT OVERVIEW



- Substation
- Potential Onshore Route (EW 1)
- Potential Onshore Route (EW 2)
- Approximate Offshore Cable Route Corridor (500 ft wide)
- Lease Area

Date	7/2/2020
File/Job Number	
Personnel	Figure Prepared by:





Empire Wind 1

Figure 2

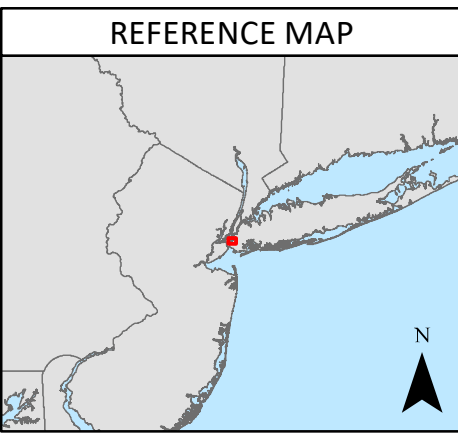
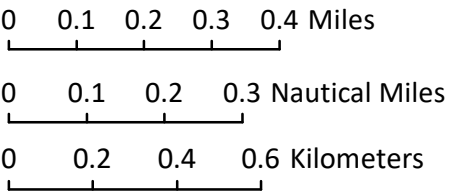
EW 1 Route

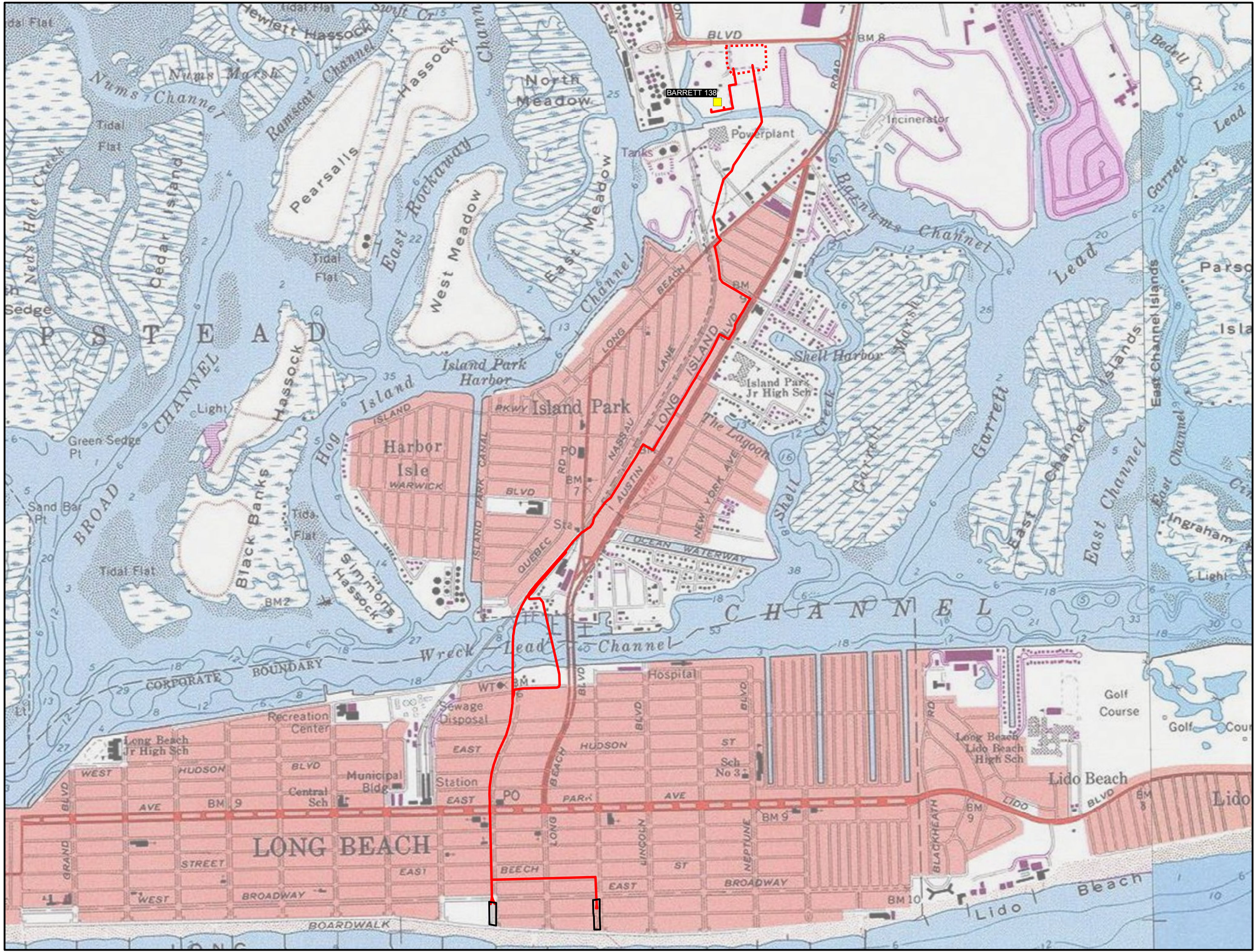


- Substation
- Substation Parcel
- Potential Route
- Onshore Substation Parcel

PRELIMINARY – SUBJECT TO CHANGE

Date	7/2/2020
File/Job Number	
Personnel	Figure Prepared by:





Empire Wind 2

Figure 3

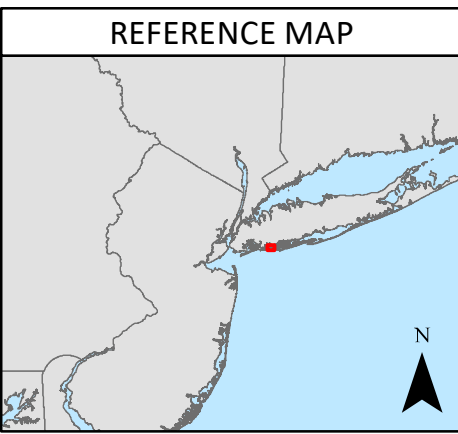
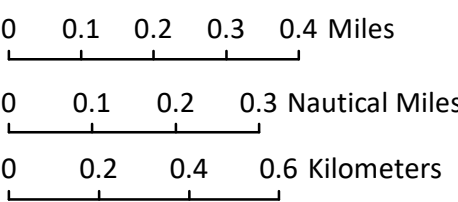
EW 2 Route



- Substation
- Landfall Area
- Potential Route
- Onshore Substation Parcel

PRELIMINARY – SUBJECT TO CHANGE

Date	6/17/2020
File/Job Number	
Personnel	Figure Prepared by:



August 22, 2019

Division of Fish and Wildlife
New York State Department of Environmental Conservation
Natural Heritage Program
625 Broadway, 5th Floor
Albany, NY 12233-4757

**Subject: Equinor Wind US – Lease Area OCS-A 0512 Offshore Wind Project
Nassau County, NY
Request for all documented occurrences of rare or listed species or significant natural communities**

Greetings:

Tetra Tech is currently under contract to Equinor Wind US (Equinor) to assist with the siting and permitting of a proposed offshore wind energy project associated with the Bureau of Ocean Energy Management's (BOEM's) Lease Area OCS-A-0512 (the Project). The Project is planned for an area of approximately 80,000 acres in federal waters, located an average of 20 miles south of Long Island, east of the Rockaways (Figure 1). The Project could have the capacity to produce up to approximately 2,100 megawatts (MW) of electricity, enough to power one million homes. Equinor is currently developing the federal and state permit applications that will support construction, operation, and decommissioning of the proposed offshore wind farm(s) on the lease site where development occurs.

The energy produced by the offshore facilities could be transmitted to as many as three substations, with the Barrett substation, located in Hempstead, Nassau County, New York, currently under consideration. Additional substations in both New York and New Jersey are also under consideration which were subject to a prior consultation to NYSDEC NHP (dated January 16, 2019 and June 26, 2019 with response received February 14, 2019 and July 30, 2019, respectively). Multiple potential routes for underwater transmission lines, landfall locations, and upland transmission to the Gowanus substation are currently under review. The lead federal agency for the Project is BOEM. Among many studies that are currently planned or in progress to satisfy BOEM requirements are investigations related to biological resources, including threatened and endangered species.

To assist us in completing the associated effort, a figure showing the potential upland transmission route to the Barrett Substation is enclosed (Figure 2). Please note that this route is preliminary and subject to change. Please provide any information you may have regarding the presence of rare or listed species or

Tetra Tech, Inc.

One Oxford Valley, Langhorne, PA, 19047
Tel 215-702-4000 Fax 215-702-4042 www.tetratech.com

significant natural communities that may be present on or within the immediate vicinity of the proposed Project to my attention at:

Tetra Tech, Inc.
One Oxford Valley, Suite 200
Langhorne, PA, 19047
Email: Steve.Ryan@tetrattech.com

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Very truly yours,

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Stephen Ryan
Biologist



Empire Wind Project

Figure 2

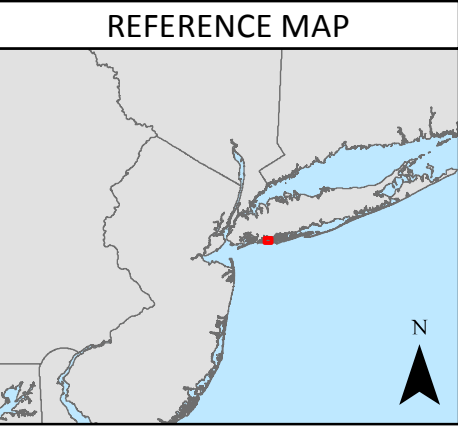
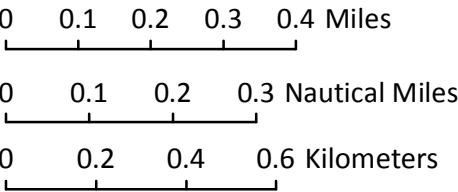
Barrett Route



- Substation
- Potential Route
- - - Onshore Substation Parcel

PRELIMINARY – SUBJECT TO CHANGE

Date	8/22/2019
File/Job Number	
Personnel	Figure Prepared by:



Attachment A-2
Cultural Resource Correspondence



Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ROSE HARVEY
Commissioner

December 19, 2018

Dr. Sydne Marshall
Cultural Resources Discipline Lead
Tetra Tech
6 Century Drive, Suite 300
Parsippany, NJ 07054

Re: BOEM
Empire Wind Offshore Wind Farm Project
18PR07274

Dear Dr. Marshall:

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO). We have reviewed the submitted materials 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 other 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 State Environmental Conservation Law Article 8).

We have reviewed your letter dated December 13, 2018, describing your overall approach to cultural resources surveys of terrestrial archaeology, underwater archaeology, and historic architecture. We find the approach detailed in your letter to be acceptable.

On Page 2 you state, "Tetra Tech will perform background research within a study area that extends approximately one mile around potential land cable routes." SHPO will accept a reduction of the background research study area to one-quarter mile on each side of the proposed land cable routes, making a total study area width of one-half mile straddling the cable route.

If further correspondence is required regarding this project, please refer to the SHPO Project Review (PR) number noted above. If you have any questions I can be reached at 518-268-2186.

Sincerely,

Tim Lloyd, Ph.D., RPA
Scientist - Archaeology
timothy.lloyd@parks.ny.gov

via e-mail only

Division for Historic Preservation

P.O. Box 189, Waterford, New York 12188-0189 • (518) 237-8643 • www.nysparks.com

View and/or Address a Response

Project 18PR07274: Empire Wind Offshore Wind Farm Project (G7V1SILNVYAF)

Please accept the following information below as the consolidated response from NYS SHPO for the above referenced submission.

Review Responses

Reviewer Review Type Response

Tim Lloyd	Archaeology	Sydney, I have reviewed your letter dated August 22, 2019, regarding the updates to the project plans and the status of the ongoing cultural resource surveys. I concur with your recommendations regarding archaeological investigations of the Gowanus and Barrett Onshore Cable Routes. I have no comments or questions at this time and look forward to continued consultation.
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Information Requests

Process Status Reviewer Review Type Request Type Request Entity Request Item Request Description

No Request Records

Attachments

Attachment Reviewer Review Type Type Name Description

No Attachment Records



Cultural Resource Information System

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View and/or Address a Response

Project 18PR07274: Empire Wind Offshore Wind Farm Project/Equinor (8RY1DI3LPIIV)

[View Project](#)

Please accept the following information below as the consolidated response from NYS SHPO for the above referenced submission.

Review Responses

Reviewer		Review Type
Tim Lloyd	Archaeology	Sydne, thank you for the updated project information. SHPO has no questions or c

Information Requests

Process	Status	Reviewer	Review Type	Request Type	Request Entity
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No Request Records

Attachments

Attachment	Reviewer	Review Type	Type
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No Attachment Records

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Version 1.2.10, July 31st, 2020

View and/or Address a Response

Project 18PR07274: Empire Offshore Wind Project (1QW4CTON9OIT)

View Project

Please accept the following information below as the consolidated response from NYS SHPO for the above referenced submission.

Review Responses

Reviewer	Review Type	Response
Tim Lloyd	Archaeology	Dear Dr. Marshall: Thank you for your letter dated May 9, 2022, describing the modifications to the potential landfill locations, onshore substation locations, and onshore and offshore cable routes for the Empire Wind 2 Project. We anticipate receipt of reports assessing the potential for the Empire Wind 2 Project's components to impact historic cultural resources, which will assist OPRHP to provide comments to the NYS Department of Public Service.

Information Requests

Process	Status	Reviewer	Review Type	Request Type	Request Entity	Request Item	Request Description
No Request Records							

Attachments

Attachment	Reviewer	Review Type	Type	Name	Description
No Attachment Records					



May 9, 2022

Tim Lloyd, Ph.D.
Archaeology Unit
New York State Division for Historic Preservation
Peebles Island Resource Center
Delaware Avenue
Cohoes, NY 12047

**Subject: Empire Offshore Wind LLC – Lease Area OCS-A 0512 Offshore Wind Project, Nassau and Kings Counties, NY
Update #4 Regarding Empire Wind Project Upland Archaeology APE
SHPO No. 18PR07274**

Dear Dr. Lloyd:

As previously described, Tetra Tech, Inc. is currently under contract to Empire Offshore Wind LLC (Empire; previously Equinor Wind US LLC¹) to assist with the siting and permitting of a proposed offshore wind energy project associated with the Bureau of Ocean Energy Management's (BOEM's) Lease Area OCS-A-0512 (the Project). The Project is planned for an area of approximately 80,000 acres in federal waters, located an average of 20 miles south of Long Island, east of the Rockaways (Figure 1).

The first phase, the Empire Wind 1 (EW 1) Project (previously referred to as the Empire Wind Gowanus Project), will deliver up to 816 MW of energy to the Gowanus Point of Interconnection (POI), Brooklyn, Kings County, New York². The second phase, the Empire Wind 2 (EW 2) Project (previously referred to as the Empire Wind Barrett Project), will deliver up to 1,260 MW of energy to the Oceanside POI, Town of Hempstead, Nassau County, New York³. Empire is currently developing the federal and state permit applications that will support construction, operation, and decommissioning of the proposed offshore wind project. This letter provides an update on the upland routes under consideration for the Project.

The lead federal agency for the Project is BOEM. Among the many studies that have been performed to satisfy federal and state permitting requirements are investigations related to cultural resources, with upland archaeological surveys, historic architecture surveys, and underwater surveys completed in compliance with Section 106 of the National Historic Preservation Act and implementing regulations at 36 CFR 800, and with state guidelines of New York.

¹ Equinor Wind US LLC (Equinor Wind) assigned the Lease to Empire Offshore Wind LLC (Empire) on January 27, 2021. Previous correspondence refers to Equinor Wind as the Lease holder.

² On July 18, 2019, New York's Governor announced Empire and its 816 MW EW 1 Project as a winning bidder in the State's competitive solicitation for Offshore Wind Renewable Energy Credits.

³ On January 13, 2021, New York's Governor announced Empire and its 1,260 MW EW 2 Project as a winning bidder in the State's competitive solicitation for Offshore Wind Renewable Energy Credits.

Tetra Tech, Inc.

6 Century Drive, Suite 300, Parsippany, NJ 07054
Tel 973.630.8000 Fax 973.630.8025 www.tetrattech.com

As noted in earlier correspondence, Empire currently expects to place its upland transmission lines within existing rights-of-way to the extent practicable, primarily following public roadways. All transmission cables will be installed subsurface, as well as any supporting infrastructure (e.g., jointing vaults or manholes), to the extent practicable. The proposed transmission routes are shown in Figure 1, Figure 2, and Figure 3. Since the last update provided in April 2021, there have been some minor route modifications; this letter presents an update of the Project's potential landfall locations, onshore substation locations, and offshore and onshore export cable and interconnection cable routes to the point of interconnections.

EW 1

There have been no changes to the EW 1 Project since the April 2021 letter (see Figure 2 for an overview of the EW 1 Project).

EW 2

Since the April 2021 letter, the EW 2 potential landfall locations, onshore substation locations, and offshore and onshore export cable and interconnection cable routes to the point of interconnections have been modified (see Figure 3 for an overview of the potential locations under consideration for EW 2). The EW 2 Project facilities now include evaluation of four potential export cable landfalls including: EW 2 Landfall A (at Riverside Boulevard), EW 2 Landfall B (at Monroe Boulevard), EW 2 Landfall C (Lido Beach West Town Park), and EW 2 Landfall E (Laurelton Boulevard); and onshore export and interconnection cable route segments EW 2 Long Beach (LB) A through H, the EW 2 LB Variant, and EW 2 Island Park (IP) A through H that will traverse a variety of surface and water route options from export cable landfall to the onshore substation and/or Point of Interconnection. There are two potential HDD sites for crossing Reynolds Channel, which separates Long Beach Island and Barnum Island, connecting the EW 2 LB cable route segments to the EW 2 IP cable route segments. Two onshore substation parcels are under consideration, EW 2 Onshore Substation A and EW 2 Onshore Substation C. The onshore export cables will be installed within the rights-of-way of the onshore construction corridor segments. Typically, the onshore export cables will be installed approximately 3 to 10 feet (0.9 to 3 meters) below grade within open-cut trenches on road shoulders, sidewalks, parking areas, or within transit and utility easements, with the exception of a cable bridge proposed to cross Barnum's Channel. Up to two landfalls, up to two complete onshore export and interconnection cable routes, and only one onshore substation will be required for the construction of the EW 2 Project.

Please feel free to reach out with any questions or concerns you may have about the upland routes under consideration for the Project.

As always, thank you for your attention and consideration of this Project.

Very truly yours,



Sydne B. Marshall, Ph.D., RPA
Cultural Resources Lead

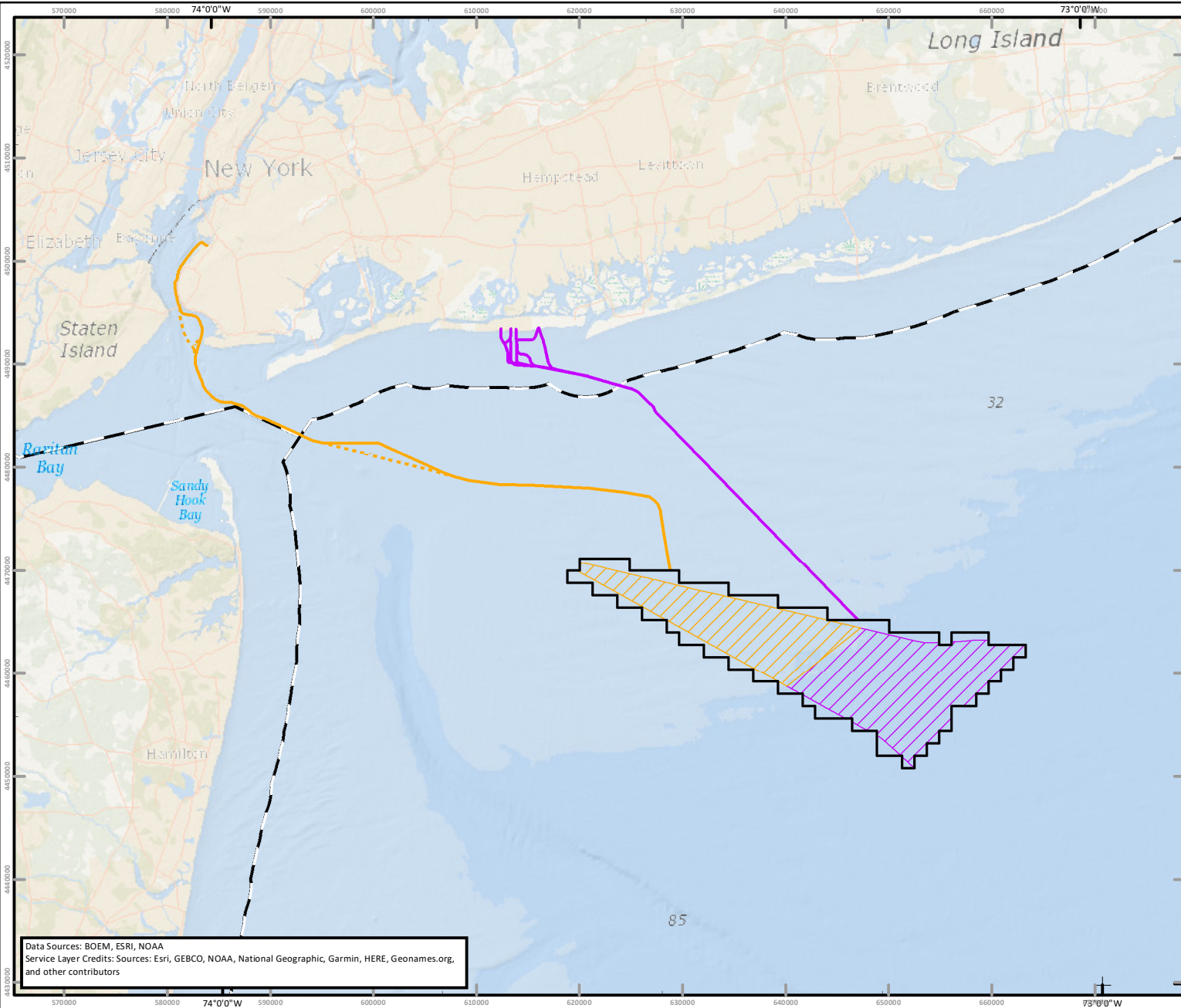
Attachments:

- Figure 1 – Project Overview
- Figure 2 – EW 1
- Figure 3 – EW 2

Dr. Tim Lloyd
May 9, 2022

Page 3

cc: Eva Land (Empire)
 Laura Sliker (Empire)
 Katherine Miller (Tetra Tech)
 Robert Jacoby (Tetra Tech)










**EMPIRE OFFSHORE WIND
LEASE: OCS-A 0512
EMPIRE WIND PROJECT**

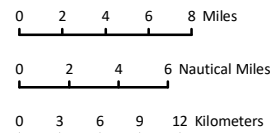


Figure 1



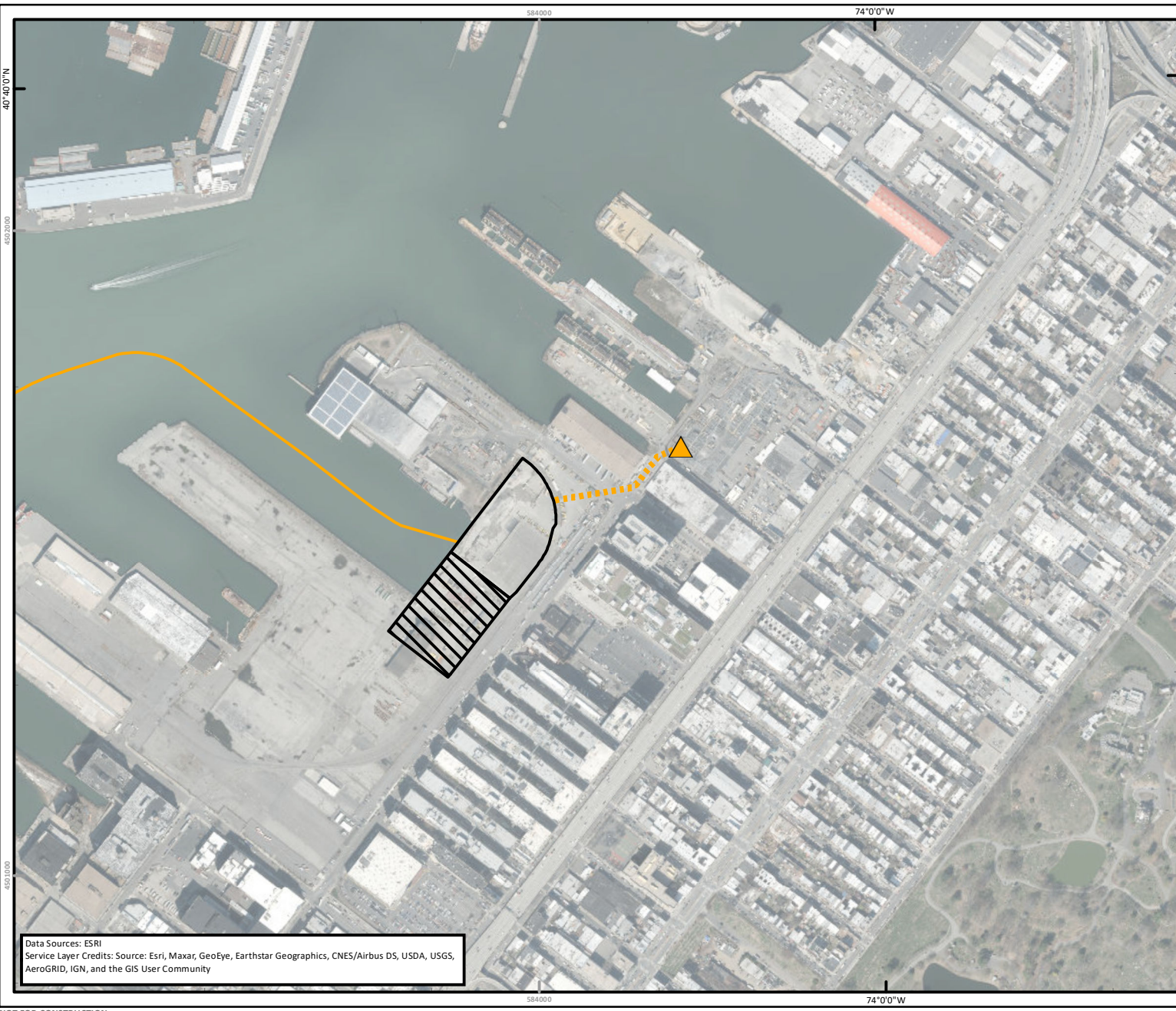
-  EW 1 Submarine Export Cable Route
 EW 1 Submarine Export Cable Route Variant
 EW 2 Submarine Export Cable Route
 EW 1
 EW 2
 Lease Area
 State Territorial Waters Boundary

Date	May 3, 2022
File/Job Number	194-1247-0001
Personnel	Figure Prepared by: Tetra Tech Offshore GIS



REFERENCE MAP





Data Sources: ESRI
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

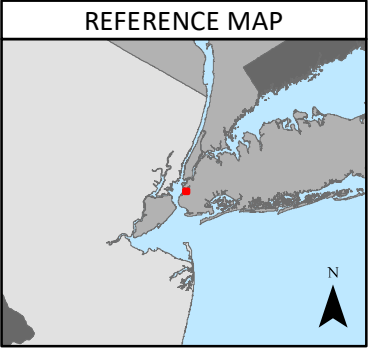
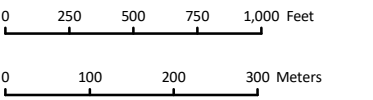
EMPIRE OFFSHORE WIND LEASE: OCS-A 0512 EMPIRE WIND PROJECT

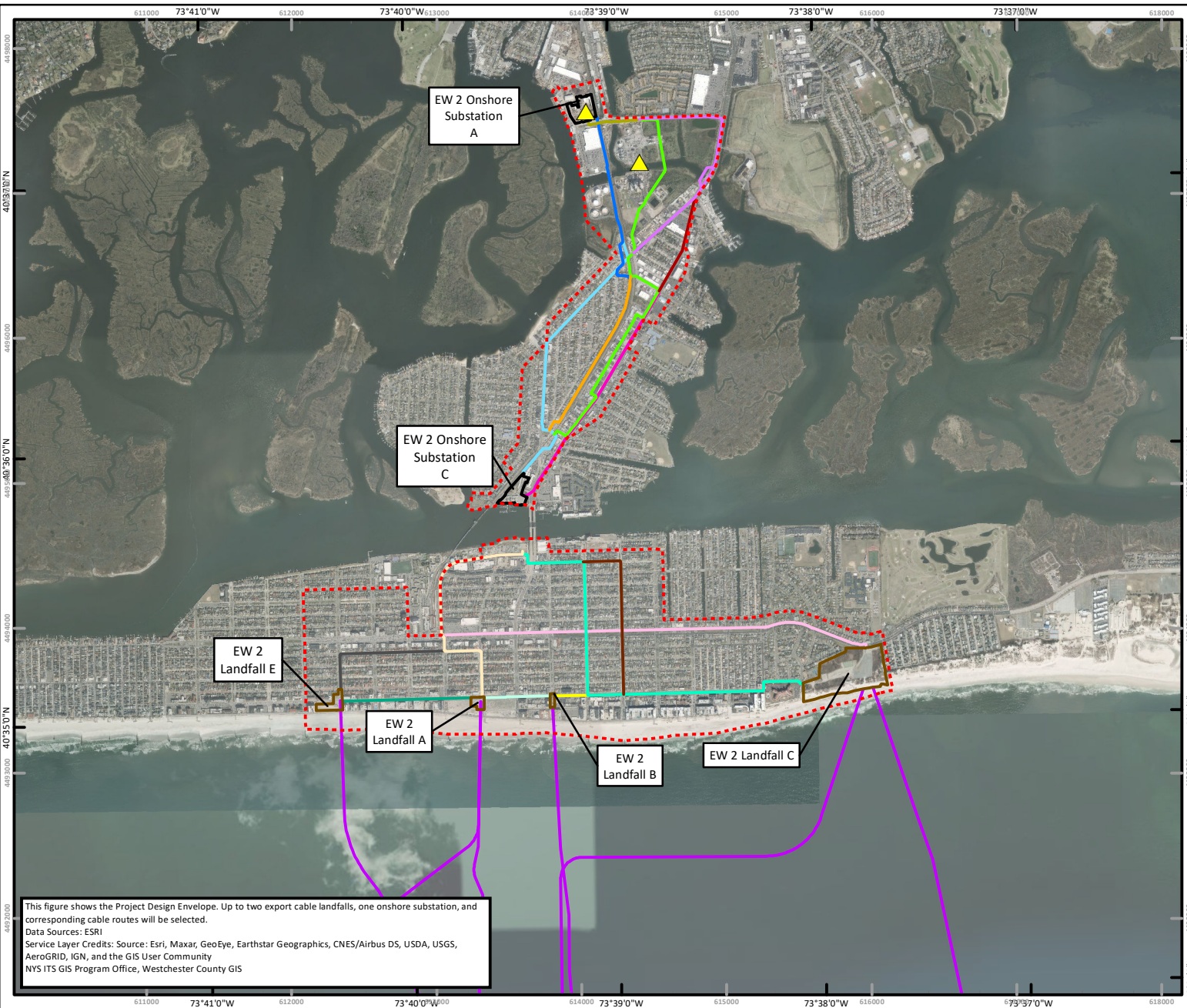
Figure 2



- Gowanus POI
- EW 1 Interconnection Cable Route
- EW 1 Onshore Substation
- O&M Base
- EW 1 Submarine Export Cable Route

Date	May 3, 2022
File/Job Number	194-1247-0001
Personnel	Figure Prepared by: Tetra Tech Offshore GIS






This figure shows the Project Design Envelope. Up to two export cable landfalls, one onshore substation, and corresponding cable routes will be selected.
Data Sources: ESRI
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
NYS ITS GIS Program Office, Westchester County GIS


EMPIRE OFFSHORE WIND


LEASE: OCS-A 0512


EMPIRE WIND PROJECT





 EW 2 POI


 EW 2 Proposed Substation


 EW 2 Landfall Site


 EW 2 Offshore Export Cable Route


 Terrestrial Archaeological PAPE


 Reynolds Channel Crossing Feature


 IC-A


 IC-A/B


 IP-A


 IP-B


 IP-C


 IP-D


 IP-E


 IP-F


 IP-H


 LB-A


 LB-B


 LB-C

 LB-D

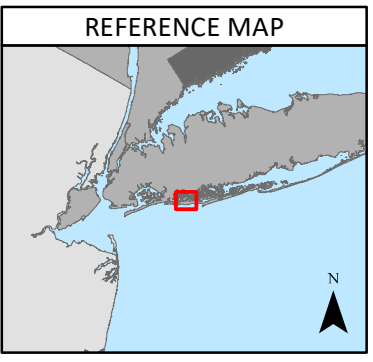
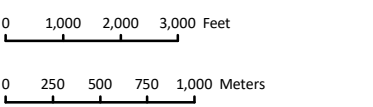
 LB-E

 LB-F

 LB-G

 LB-Variant

Date	May 9, 2022
File/Job Number	194-1247-0001
Personnel	Figure Prepared by: Tetra Tech Offshore GIS





April 19, 2021

Tim Lloyd, Ph.D.
Archaeology Unit
New York State Division for Historic Preservation
Peebles Island Resource Center
Delaware Avenue
Cohoes, NY 12047

**Subject: Empire Offshore Wind LLC – Lease Area OCS-A 0512 Offshore Wind Project, Nassau and Kings Counties, NY
Update #2 Regarding Empire Wind Project Upland Archaeology APE
SHPO No. 18PR07274**

Dear Dr. Lloyd:

As described in letters dated December 13, 2018 and August 22, 2019, Tetra Tech is currently under contract to Empire Offshore Wind LLC (Empire; previously Equinor Wind US LLC¹) to assist with the siting and permitting of a proposed offshore wind energy project associated with the Bureau of Ocean Energy Management's (BOEM's) Lease Area OCS-A-0512 (the Project). This letter provides an update on the upland routes under consideration for the Project.

As previously described, the Project is planned for an area of approximately 80,000 acres in federal waters, located an average of 20 miles south of Long Island, east of the Rockaways (Figure 1). Empire is currently developing the federal and state permit applications that will support construction, operation, and decommissioning of the proposed offshore wind project.

The lead federal agency for the Project is BOEM. Among the many studies that have been performed to satisfy federal and state permitting requirements are investigations related to cultural resources, with upland archaeological surveys, historic architecture surveys, and underwater surveys completed in compliance with Section 106 of the National Historic Preservation Act and implementing regulations at 36 CFR 800, and with state guidelines of New York.

The first phase, the Empire Wind 1 (EW 1) Project (previously referred to as the Empire Wind Gowanus Project), will deliver up to 816 MW of energy to the Gowanus Point of Interconnection (POI), Brooklyn, Kings County, New York². The second phase, the Empire Wind 2 (EW 2) Project (previously referred to as the Empire Wind Barrett Project), will deliver up to 1,260 MW of energy to the Oceanside POI, Town of Hempstead, Nassau County, New York³.

¹ Equinor Wind US LLC (Equinor Wind) assigned the Lease to Empire Offshore Wind LLC (Empire) on January 27, 2021. Previous correspondence refers to Equinor Wind as the Lease holder.

² On July 18, 2019, New York's Governor Cuomo announced Empire and its 816 MW EW 1 Project as a winning bidder in the State's competitive solicitation for Offshore Wind Renewable Energy Credits.

³ On January 13, 2021, New York's Governor Cuomo announced Empire and its 1,260 MW EW 2 Project as a winning bidder in the State's competitive solicitation for Offshore Wind Renewable Energy Credits.

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CONTAINS CONFIDENTIAL AND PROPRIETARY INFORMATION

As noted in the earlier correspondence, Empire currently expects to place its upland transmission lines within existing rights-of-way to the extent practicable, primarily following public roadways. All transmission cables will be installed subsurface, as well as any supporting infrastructure (e.g., jointing vaults or manholes), to the extent practicable. The proposed transmission routes are shown in Figure 1. Since the last update provided in August 2019, there have been some minor route modifications; this letter presents an update of the Project's upland energy transmission routes.

EW 1 (Formerly identified as Gowanus Onshore Route)

As described in August 2019, the EW 1 export cable route was proposed to make landfall along the Gowanus Bay shoreline, with two parcels under consideration as the substation with which the route would tie in: the Eastern Generation Narrows Substation (EGNS) and the South Brooklyn Marine Terminal (SBMT). Currently, only the SBMT substation alternative is under consideration (Figure 2). Once making landfall at SBMT, the EW 1 route then exits SBMT from the northwest corner, at the intersection of 2nd Ave and 29th St. The route then traverses north along 2nd Ave until entering the Gowanus Point of Interconnection (POI) on 28th St.

EW 2 (Formerly identified as Barrett Onshore Export Cable Route)

Since the August 2019 letter, the EW 2 onshore export cable route has also been modified (Figure 3). The EW 2 Project facilities now include evaluation of four potential export cable landfalls, including: EW 2 Landfall A (at Riverside Boulevard), EW 2 Landfall B (at Monroe Boulevard), EW 2 Landfall C (Lido Beach West Town Park), and EW 2 Landfall D (Lido Beach Town Park); and eleven onshore export cable route segments, EW 2 Long Beach (LB) A through E, the EW 2 LB Variant, and EW 2 Island Park (IP) A through E, that will traverse a variety of surface and water route options from landfall to substation. There are two HDD sites for crossing Reynolds Channel, which separates Long Beach Island and Barnum Island, connecting the EW 2 LB cable route segments to the EW 2 IP cable route segments. Two onshore substation parcels are under consideration, EW 2 Onshore Substation A and EW 2 Onshore Substation B. Two interconnection cable routes connecting the onshore substation to the existing Oceanside POI are also proposed; the EW 2 Interconnection Cable (IC) Route A will connect the EW 2 Onshore Substation A to the POI, while the EW 2 IC Route B will connect the EW 2 Onshore Substation B to the POI. The onshore export cables will be installed within the rights-of-way of the corridor segments. Typically, the onshore export cables will be installed approximately 3 to 10 feet (0.9 to 3 meters) below grade within open-cut trenches on road shoulders, sidewalks, parking areas, or within transit and utility easements. Only up to two landfalls, two complete onshore export cable routes, and only one onshore substation and interconnection cable route will be required for the construction of the EW 2 Project.

Please feel free to reach out with any questions or concerns you may have about the upland routes under consideration for the Project.

As always, thank you for your attention and consideration of this Project.

Very truly yours,



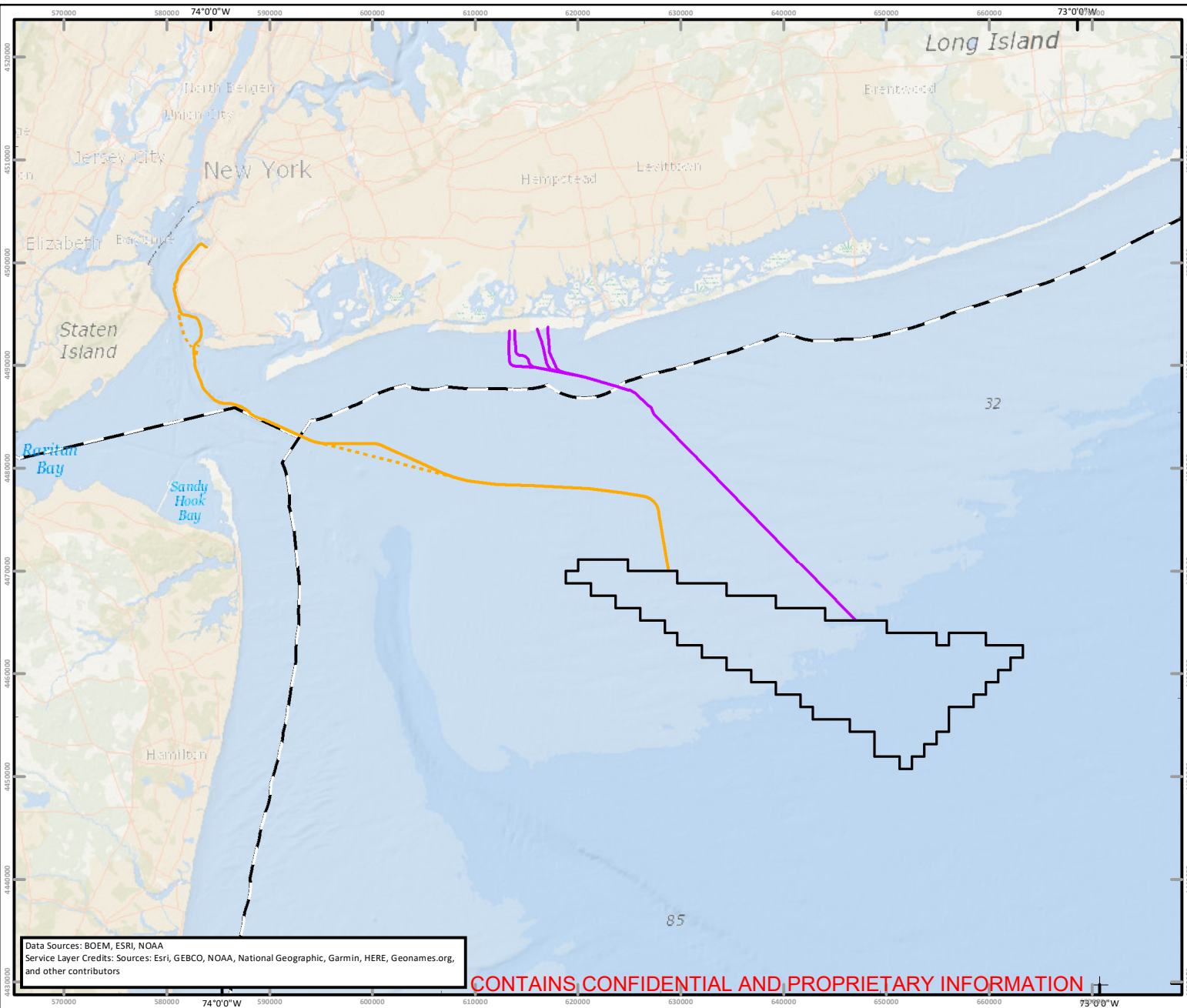
Sydne B. Marshall, Ph.D., RPA
Cultural Resources Lead

Attachments:

- Figure 1 – Project Overview
- Figure 2 – EW 1 (Formerly Identified as Gowanus Alternative)
- Figure 3 – EW 2 (Formerly Identified as Barrett Alternative)

Dr. Tim Lloyd
April 19, 2021
Page 3

cc: Laura Morales (Empire)
Laura Sliker (Empire)
Nathalie Schils (Tetra Tech)
Katherine Miller (Tetra Tech)
Robert Jacoby (Tetra Tech)



Data Sources: BOEM, ESRI, NOAA
Service Layer Credits: Sources: Esri, GEBCO, NOAA, National Geographic, Garmin, HERE, Geonames.org, and other contributors

EMPIRE OFFSHORE WIND
LEASE: OCS-A 0512
EMPIRE WIND PROJECT



EW 1 Submarine Export Cable Route

EW 1 Submarine Export Cable Route Variant

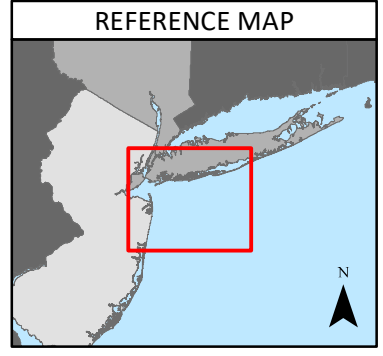
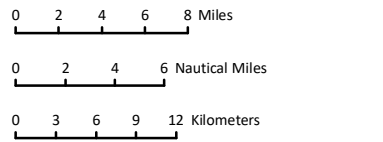
EW 2 Submarine Export Cable Route

Lease Area

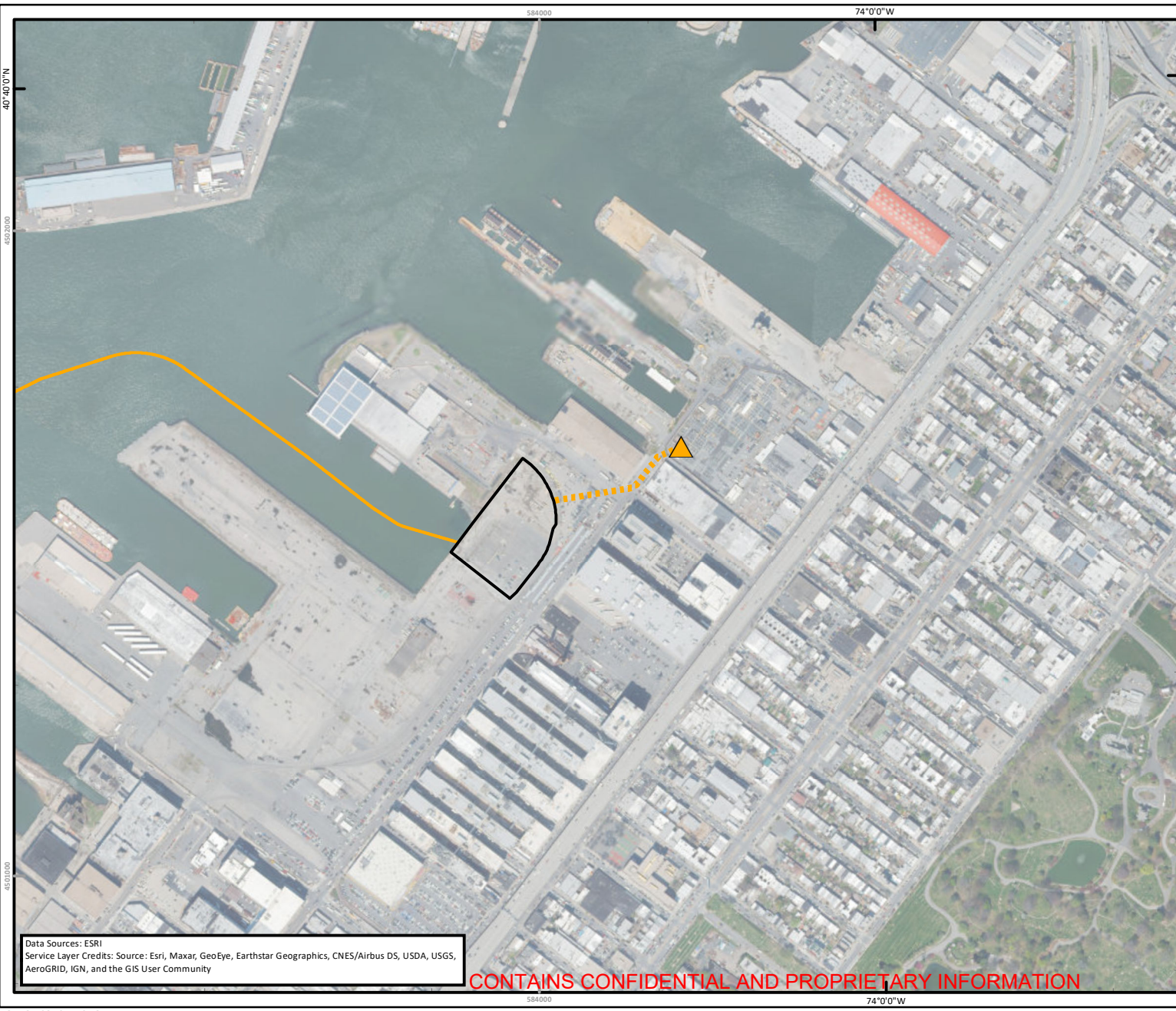
State Territorial Waters Boundary

Up to two landfalls will be selected for the EW 2 Project

Date	March 31, 2021
File/Job Number	194-1247-0001
Personnel	Figure Prepared by: Tetra Tech Offshore GIS





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EMPIRE OFFSHORE WIND


LEASE: OCS-A 0512


EMPIRE WIND PROJECT



 Gowanus POI

 EW 1 Interconnection Cable Route

 EW 1 Onshore Substation

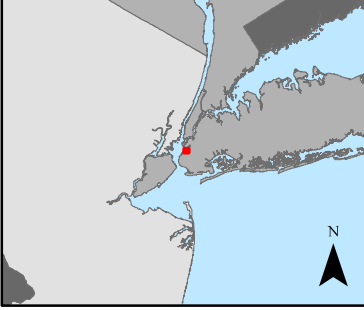
 EW 1 Submarine Export Cable Route

Date	March 31, 2021
File/Job Number	194-1247-0001
Personnel	Figure Prepared by: Tetra Tech Offshore GIS

02505007501,000 Feet

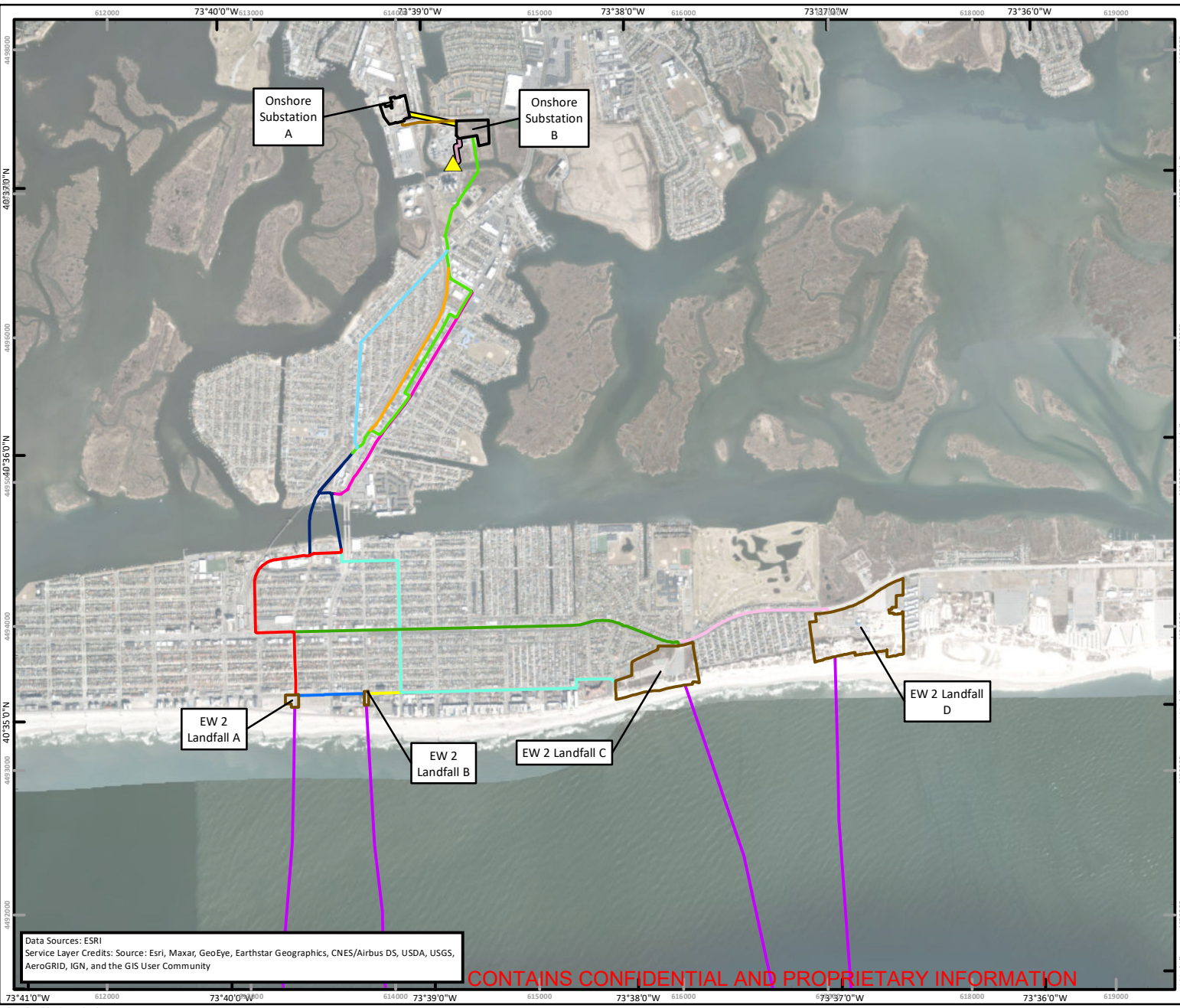
0100200300 Meters

REFERENCE MAP



Data Sources: ESRI
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

CONTAINS CONFIDENTIAL AND PROPRIETARY INFORMATION



EMPIRE OFFSHORE WIND LEASE: OCS-A 0512 EMPIRE WIND PROJECT



- ▲ EW 2 POI
- EW 2 Interconnection Cable Route
 - IC-A
 - IC-A/B
- EW 2 Proposed Substation
- EW 2 Landfall Site
- EW 2 Offshore Export Cable Route
- EW 2 Onshore Export Cable Route
- Reynolds Channel Crossing Feature
- LB-Variant
- IP-A
- IP-B
- IP-C
- IP-D
- IP-E
- LB-A
- LB-B
- LB-C
- LB-D
- LB-E

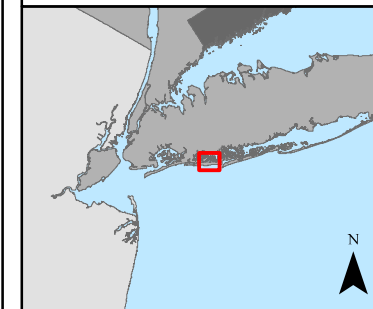
Up to two landfalls and onshore export cable routes will be selected.

Date	April 8, 2021
File/Job Number	194-1247-0001
Personnel	Figure Prepared by: Tetra Tech Offshore GIS

0 1,000 2,000 3,000 Feet

0 250 500 750 1,000 Meters

REFERENCE MAP



Data Sources: ESRI
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

CONTAINS CONFIDENTIAL AND PROPRIETARY INFORMATION



August 22, 2019

Tim Lloyd, Ph.D.
Archaeology Unit
New York State Division for Historic Preservation
Peebles Island Resource Center
Delaware Avenue
Cohoes, NY 12047

**Subject: Equinor Wind US – Lease Area OCS-A 0512 Offshore Wind Project
Nassau County, NY
Update Regarding Empire Wind Project
18PR07274**

Dear Dr. Lloyd:

As described in a letter to you dated December 13, 2018, Tetra Tech is currently under contract to Equinor Wind US (Equinor) to assist with the siting and permitting of a proposed offshore wind energy project associated with the Bureau of Ocean Energy Management's (BOEM's) Lease Area OCS-A-0512 (the Project). This letter provides an update on the upland routes under consideration for the Project.

As previously described, the Project is planned for an area of approximately 80,000 acres in federal waters, located an average of 20 miles south of Long Island, east of the Rockaways (Figure 1). The Project could have the capacity to produce up to approximately 2,100 megawatts (MW) of electricity, enough to power one million homes. Equinor is currently developing the federal and state permit applications that will support construction, operation, and decommissioning of the proposed offshore wind project.

The lead federal agency for the Project is BOEM. Among many studies that are currently planned or in progress to satisfy federal and state permitting requirements are investigations related to cultural resources. Upland archaeological surveys, historic architecture surveys, and underwater surveys are ongoing in compliance with Section 106 of the National Historic Preservation Act and implementing regulations at 36 CFR 800, and with state guidelines of New York.

In New York, the energy produced by the offshore facilities could be transmitted to two substations. As announced by Governor Cuomo on July 18, 2019, the first phase, known as the Empire Wind Project, proposes to connect into the Gowanus Generating Station, Brooklyn, Kings County, New York. A subsequent phase considers connection to the Barrett substation, located in the Town of Hempstead,

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Nassau County, New York. An additional phase, the Boardwalk Wind Project, proposes to bring energy to New Jersey.

A goal of this letter is to present an update of the Project's upland energy transmission routes since the December 2018 letter. Although Equinor maintains its request for interconnection at the Ruland Road substation, the Barrett substation route has been added for consideration. Tetra Tech continues to perform the background research that will include the added route as part of the Area of Potential Effects (APE). Tetra Tech has been performing in-field reconnaissance of the Barrett Onshore Export Cable Route to identify areas that are both potentially sensitive for containing archaeological sites that may be eligible to the NRHP and testable. As noted in the earlier correspondence, Equinor currently expects to place its upland transmission lines within existing rights-of-way to the maximum extent practicable, primarily following public roadways. All transmission cables will be installed subsurface, as well as any supporting infrastructure (e.g., jointing vaults or manholes), to the extent practicable. The proposed transmission routes are shown in the attached figures and are described below.

Gowanus Onshore Route

The Gowanus Export Cable is proposed to make landfall in Gowanus, Brooklyn NY, with two parcels currently under consideration as the substation with which the onshore route would tie in: the Eastern Generation Narrows Substation (EGNS) and the South Brooklyn Marine Terminal (SBMT). From the EGNS site, the Gowanus Onshore Export Cable would traverse approximately 8,900 feet through portions of 1st Avenue, 2nd Avenue, and the margins of Bush Terminal including Bush Terminal Park, ultimately connecting into the Gowanus Generating Station. From the SBMT site, the Gowanus Onshore Export Cable route traverses north into the Gowanus Generating Substation (see Figure 2). A review of nineteenth century maps of the Brooklyn shoreline indicates that the Terrestrial Archaeological APE occurs in its entirety on landfill constructed into Gowanus Bay in the late nineteenth and early twentieth centuries (NYPL 2019); therefore, no additional areas are recommended for further investigation.

Barrett Onshore Export Cable Route

The Barrett Onshore Export Cable Route is proposed to make landfall on Long Beach Island, Nassau County, New York and extends approximately 3.1 miles northward to the proposed substation located on the E.F. Barrett power station parcel, in the Town of Hempstead, Nassau County, New York (Figure 3). The route would include open trench and trenchless installation of the cable. Open trench installation would occur within surface road ROW, Long Island Rail Road parking ROW, and vacant land parcels. Trenchless crossings, utilizing bores or horizontal direct drilling (HDD), are being considered for large intersections and water crossing (Reynolds Channel) between Long Beach Island and Barnum Island. The offshore cable landfall would bore/drill under the beach and boardwalk at Long Beach and connect to open trench installation along Riverside Boulevard. Equinor is examining two potential trenchless crossings of Reynolds Channel; one extends northward from Riverside Boulevard; the second potential crossing extends northward from Long Beach Road just west of the Long Beach Bridge. The cable route would cross Hog Island Channel, an arm of Barnums Channel, about 650 feet south of the proposed

substation. The substation parcel is adjacent to the existing power station and supports thick scrub-shrub vegetation and wetlands.

A pedestrian reconnaissance was conducted by registered professional archaeologists under contract to Equinor Wind in July 2019. Archaeological sensitivity is judged to be low across the full extent of the Barrett onshore cable route. Based on the site files review and pedestrian reconnaissance, it is recommended that no further archaeological investigations are warranted for the Barrett Onshore Export Cable Route and Onshore Substation.

Field and reporting efforts associated with historic architecture issues and underwater cultural resources issues are also ongoing as described within the December 2018 correspondence.

Please feel free to reach out with any questions or concerns you may have about the upland routes under consideration for the Project.

As always, thank you for your attention and consideration of this Project.

Very truly yours,

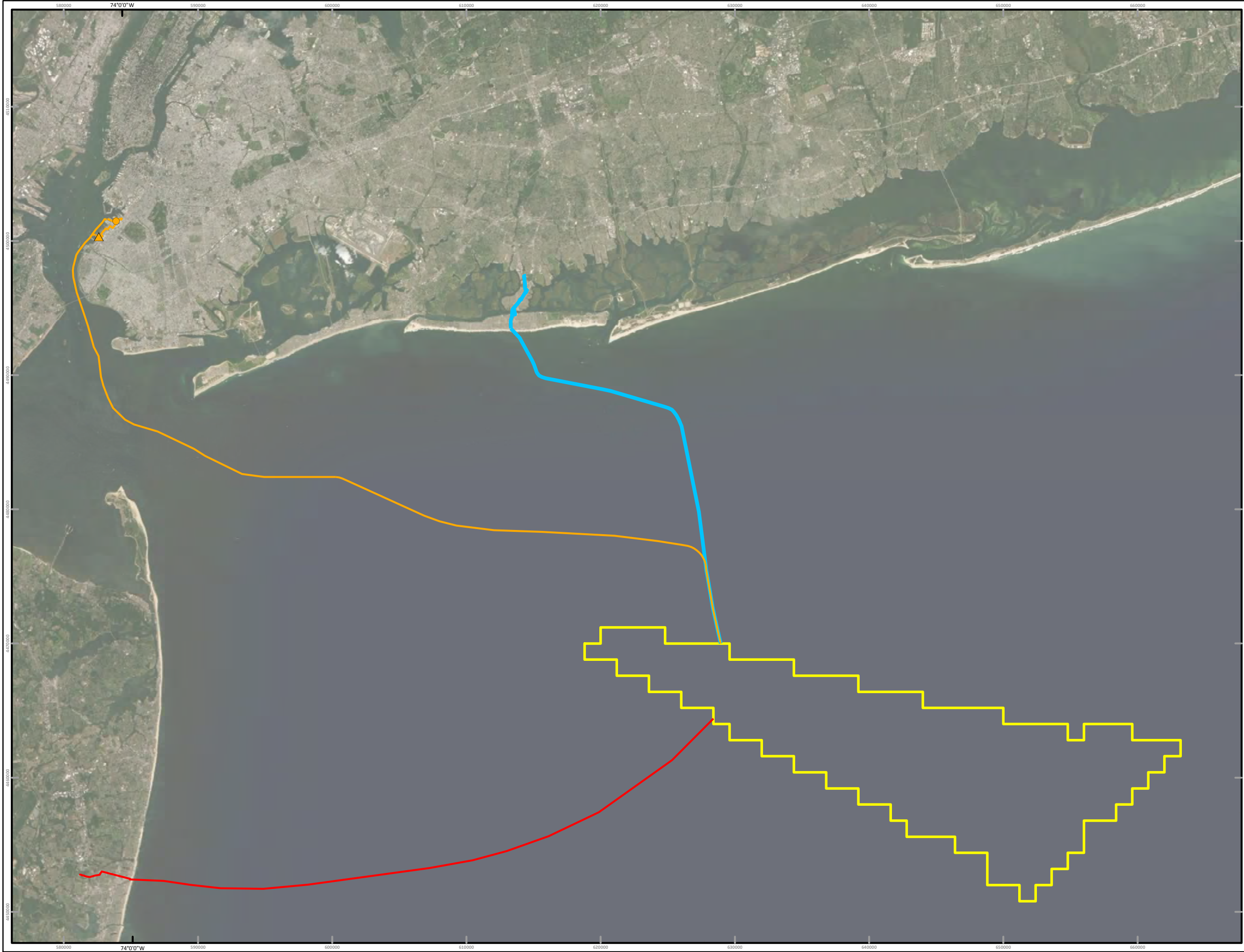
A handwritten signature in cursive script, reading "Sydne B. Marshall".

Sydne B. Marshall, Ph.D., RPA
Cultural Resources Lead

Attachments:

- Figure 1 – Project Overview
- Figure 2 – Gowanus Alternative
- Figure 3 – Barrett Alternative

cc: N. Schils (TT PM)
K. Miller (TT DPM)
R. Jacoby (TT)
C. Borstel (TT)
J. Sexton (TT)
Martin Goff (Equinor)
Laura Morales (Equinor)



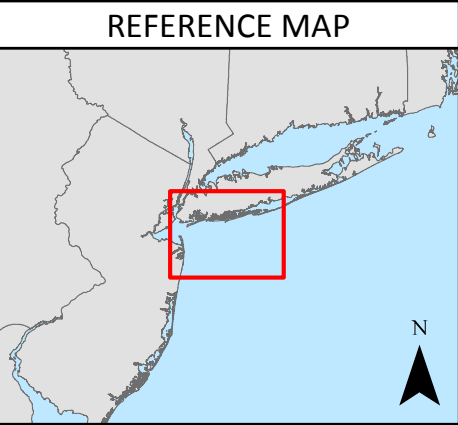
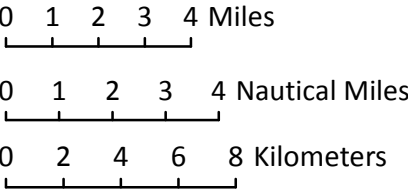
Empire Wind Project

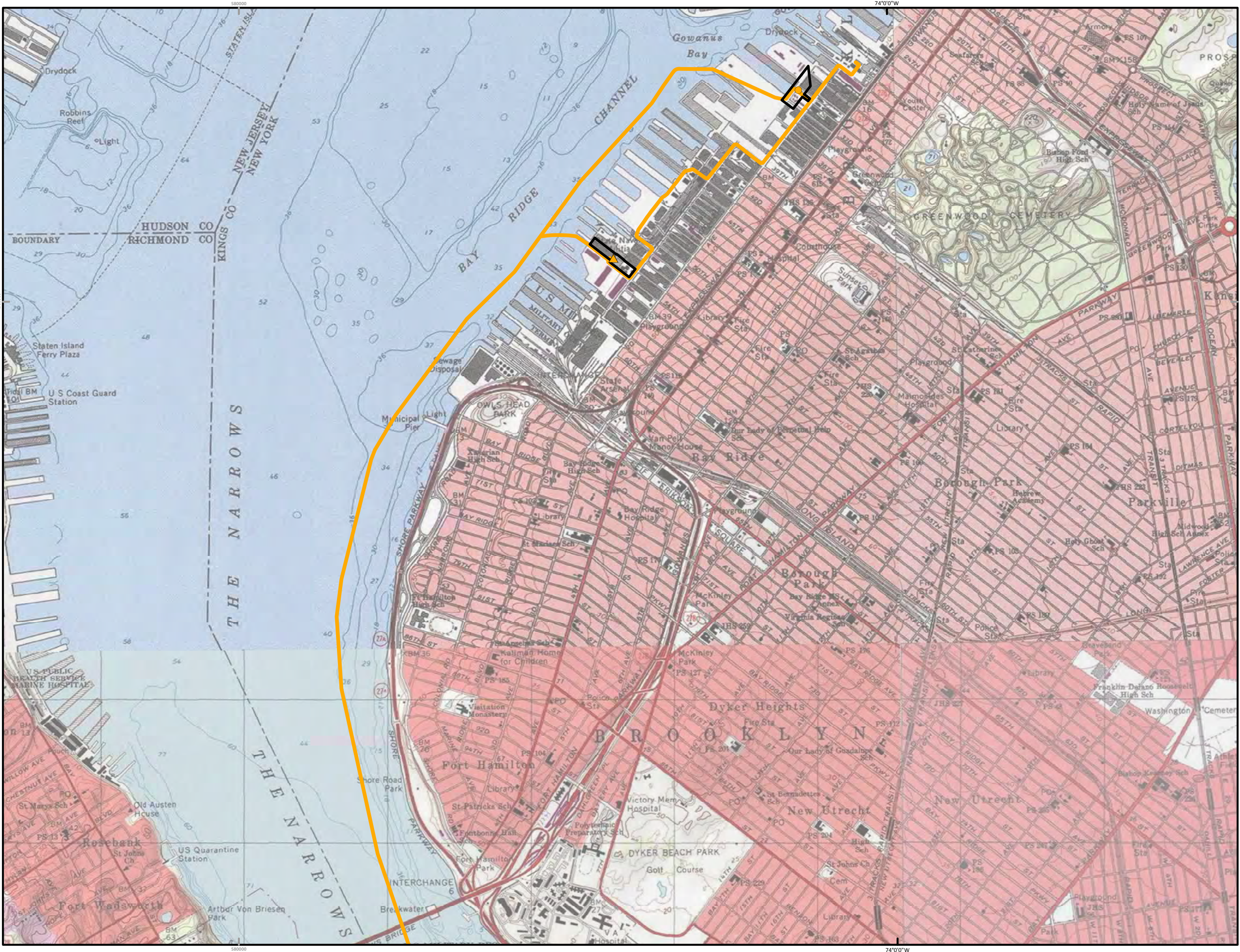
Cultural Resources Survey
Figure 1: Project Overview



- South Brooklyn Marine Terminal
- ▲ Eastern Generation Narrows Substation
- Empire Wind Gowanus Export/Onshore Cable Route
- Empire Wind Barrett Export/Onshore Cable Route
- Boardwalk Wind Oceanview Export/Onshore Cable Route
- Lease Area

Date	8/22/2019
File/Job Number	
Personnel	Figure Prepared by:





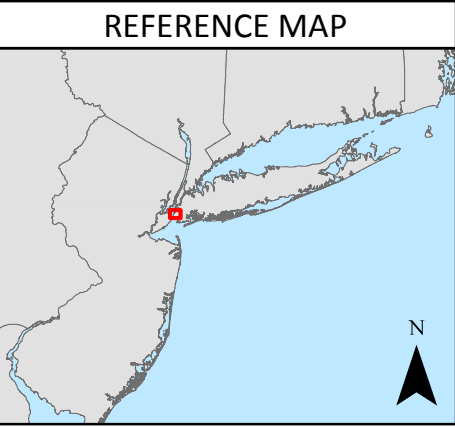
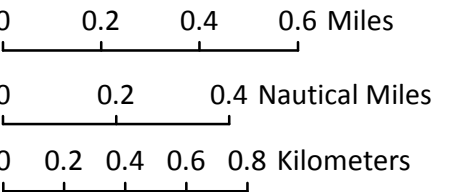
Empire Wind Project

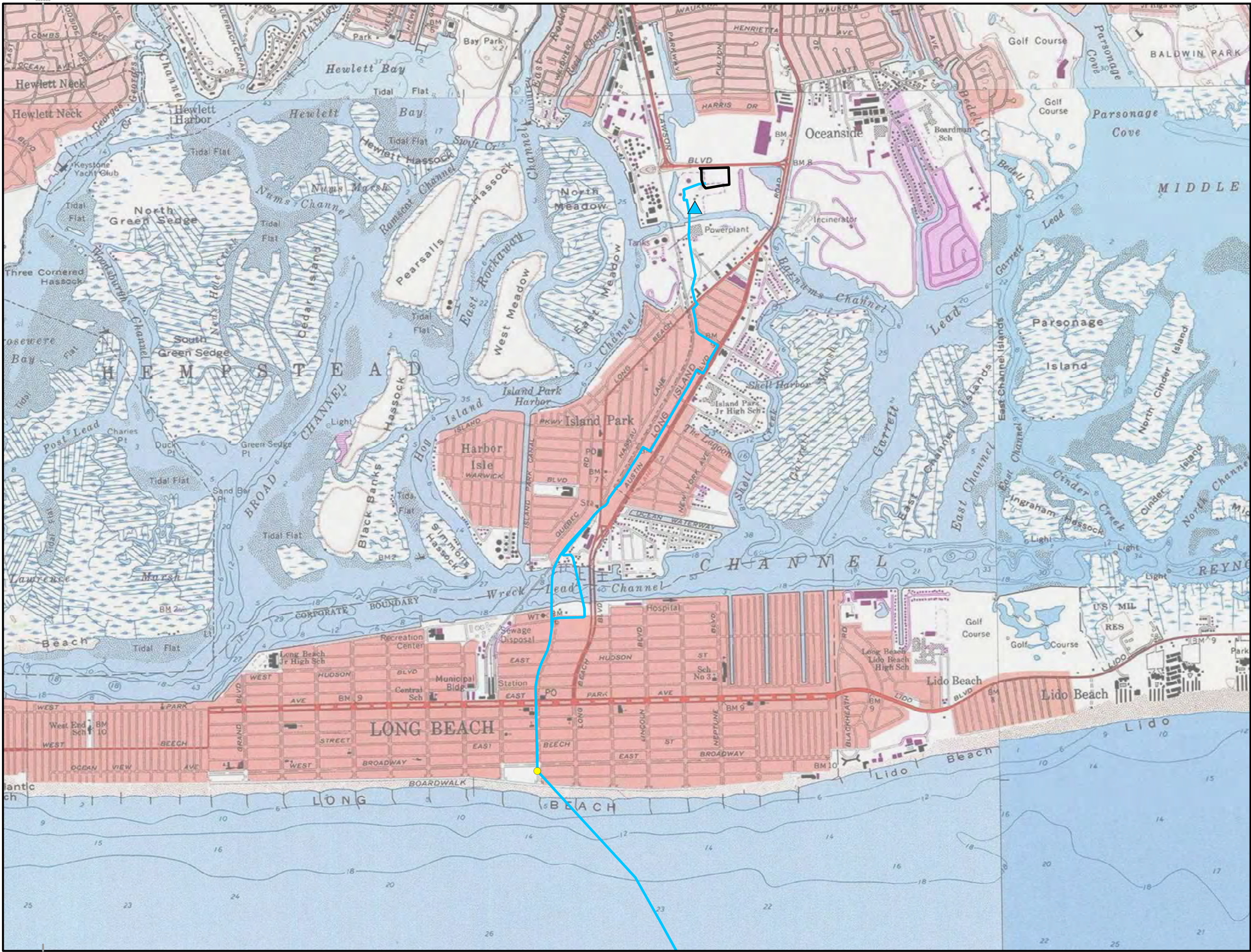
Cultural Resources Survey
Figure 2: Gowanus Alternative



- South Brooklyn Marine Terminal
- ▲ Eastern Generation Narrows Substation
- ▭ Proposed Substation Property Line
- Empire Wind Gowanus Export/Onshore Cable Route

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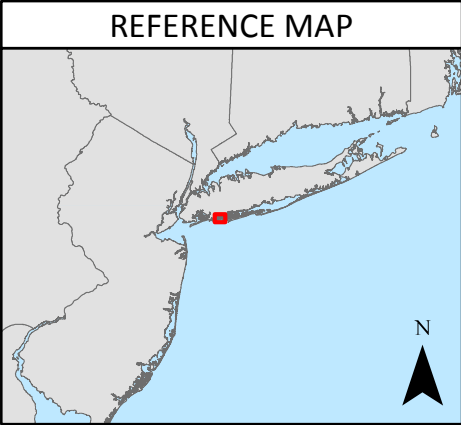
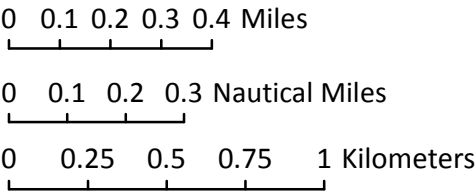
Cultural Resources Survey

Figure 3: Barrett Alternative



- Existing Substation
- Landfall Site
- Proposed Onshore Substation Parcel
- Empire Wind Barrett
- Export/Onshore Cable Route

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December 13, 2018

Tim Lloyd, Ph.D.
Archaeology Unit
New York State Division for Historic Preservation
Peebles Island Resource Center
Delaware Avenue
Cohoes, NY 12047

**Subject: Equinor Wind US – Empire Wind Project
Kings, Nassau, and Suffolk Counties, NY
Initiate Project Review Under Section 106 of National Historic Preservation Act
NY Project #: 18PR07274**

Dear Dr. Lloyd:

Tetra Tech is currently under contract to Equinor Wind US (Equinor) to assist with the siting and permitting of a proposed offshore wind energy project associated with the Bureau of Ocean Energy Management's (BOEM's) Lease Area OCS-A-0512 (the Project). The Project is planned for an area of approximately 80,000 acres in federal waters, located an average of 20 miles south of Long Island, east of the Rockaways (Figure 1). The Project could have the capacity to produce up to approximately 2,100 megawatts (MW) of electricity, enough to power one million homes. Equinor is currently developing the federal and state permit applications that will support construction, operation, and decommissioning of the proposed offshore wind farm(s) on the lease site where development occurs.

The energy produced by the offshore facilities could be transmitted to as many as three substations: Oceanview Substation, Neptune, Monmouth County, New Jersey; Gowanus Generating Station, Brooklyn, Kings County, New York; and Ruland Road Substation, Village of Melville in the Town of Huntington, Suffolk County, New York. As such, the New Jersey portion of the Project has been named "Boardwalk Wind" and the New York portion of the Project has been named "Empire Wind." Multiple potential routes for underwater transmission lines, landfall locations, and upland transmission to the respective substations are currently under review (Figure 1). The lead federal agency for the Project is BOEM. Among many studies that are currently planned or in progress to satisfy federal and state permitting requirements are investigations related to cultural resources. Upland archaeological surveys, historic architecture surveys, and underwater surveys will be performed in compliance with Section 106 of the National Historic Preservation Act and implementing regulations at 36 CFR 800, and with state

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guidelines of New Jersey and New York. Equinor will also be submitting this Project Review to the New Jersey State Historic Preservation Office in parallel with this request.

A goal of this letter is to present an overview of the approach that Tetra Tech will take to perform cultural resources studies in New York on behalf of Equinor as this work continues into 2019. We would appreciate hearing any comments or questions you may have about our proposed approach by **January 4, 2019**.

Upland Archaeology Survey

Tetra Tech will perform background research within a study area that extends approximately one mile around potential land cable routes. The Project's Area of Potential Effects (APE) for archaeology includes all areas where ground-disturbing activity will take place including export cable corridors and all associated appurtenances such as landfalls, horizontal direct drill (HDD) entry and exit locations, workspaces, equipment laydown areas, and access roads. Tetra Tech has been performing in-field reconnaissance of the alternative routes under consideration by Equinor's design team to identify areas that are both potentially sensitive for containing archaeological sites that may be eligible to the NRHP and testable. Equinor currently proposes to place its upland transmission lines within existing rights-of-way to the maximum extent practicable, primarily following public roadways. All transmission cables will be installed subsurface, as well as any supporting infrastructure (e.g., jointing vaults or manholes), to the extent practicable. In New York, several alternatives under consideration would bring transmission through extant streets located within made-land. These areas will not be recommended for archaeological investigation. Other segments of alternatives under consideration extend through portions of the Massapequa Preserve, Owls Head Park, and some sections of Shore Road Park that are located on fast land. Review of historic cartographic sources suggest that some of these areas may have potential to contain archaeological sites and they may be recommended for focused and limited subsurface testing. Additionally, areas that have been previously surveyed for other projects for which reports are available are identified. These areas are illustrated in Figures 2a and 2b.

Historic Architecture Survey

Tetra Tech's architectural historian is working with the visual impact assessment team to identify areas from which the offshore project may be visible and to identify project effects to aboveground cultural resources listed in and/or eligible to the NRHP. As a starting point, the visual assessment study area is a 35-mile radius around the proposed offshore Lease Area, as described in the draft visual impact assessment study plan, previously provided on November 7, 2018, and for which SHPO provided responses on November 29, 2018. The actual APE for historic architecture is anticipated to be within 0.5 km (0.3 mile) of shorelines within the Visual Study Area (Figure 3) where at least the hub of the turbines and above are visible. Properties most likely to be affected within the APE would likely comprise aboveground cultural resources listed in, eligible to, or potentially eligible to the NRHP that are associated with maritime settings. These cultural resources would be the focus of inventory and evaluation by the team's architectural historian.

Underwater Survey

Underwater survey will be performed for this Project by Tetra Tech's subcontractor, SEARCH, Inc. The study area for underwater archaeology will comprise the Lease Area depicted in Figure 1, and the submarine cable routes under consideration (Figure 1). Systematic remote sensing survey involving use of a combination of high resolution sub-bottom profiler, magnetometer, and side scan sonar technologies implemented along transects that generally do not exceed 30 meter intervals and that satisfy BOEM's *Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585* (March 2017) will be used to collect geophysical data within the entire Lease Area and within a 500-foot-wide submarine cable corridors. These data will be assessed by a qualified marine archaeologist to identify potentially archaeologically sensitive locations of submerged landforms that have potential to contain NRHP-eligible sites possibly related to Archaic and Paleo-Indian prehistoric time periods, and to identify potential targets suggestive of submerged marine-related cultural resources that may also be eligible to the NRHP.

We look forward to hearing from you about any concerns you and your staff may have related to our approaches to upland archaeology, historic architecture, and marine archaeology. Thank you for your attention and consideration of this Project.

Very truly yours,

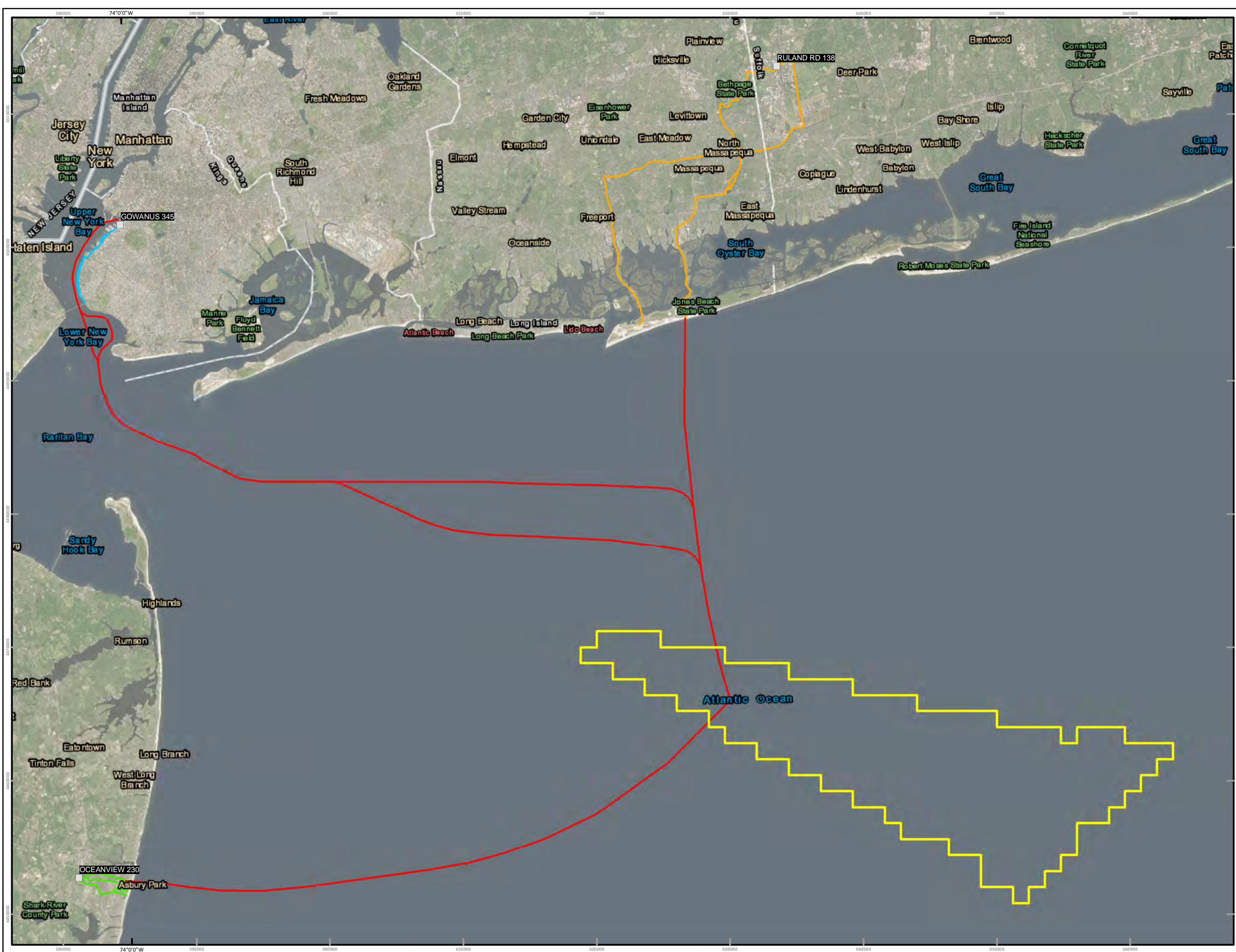


Sydne B. Marshall, Ph.D., RPA
Cultural Resources Lead

Attachments:

- Figure 1 Project Overview
- Figure 2a Cultural Resources Survey: Gowanus Alternative
- Figure 2b Cultural Resources Survey: Ruland Rd. Alternative
- Figure 3 Project Visual Study Area and Historic Architecture APE



cc: M. Goff (Equinor)
L. Morales (Equinor)
S. Lundin (TT PM)
N. Schils (TT DPM)
R. Jacoby (TT)
C. Borstel (TT)
J. Sexton (TT)









Empire Wind Project

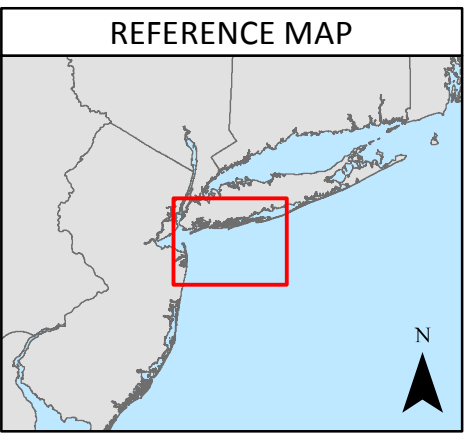
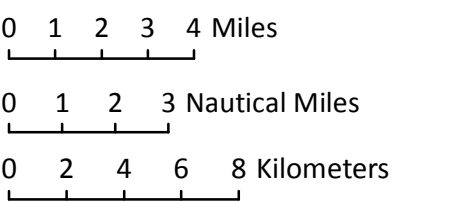
Figure 1

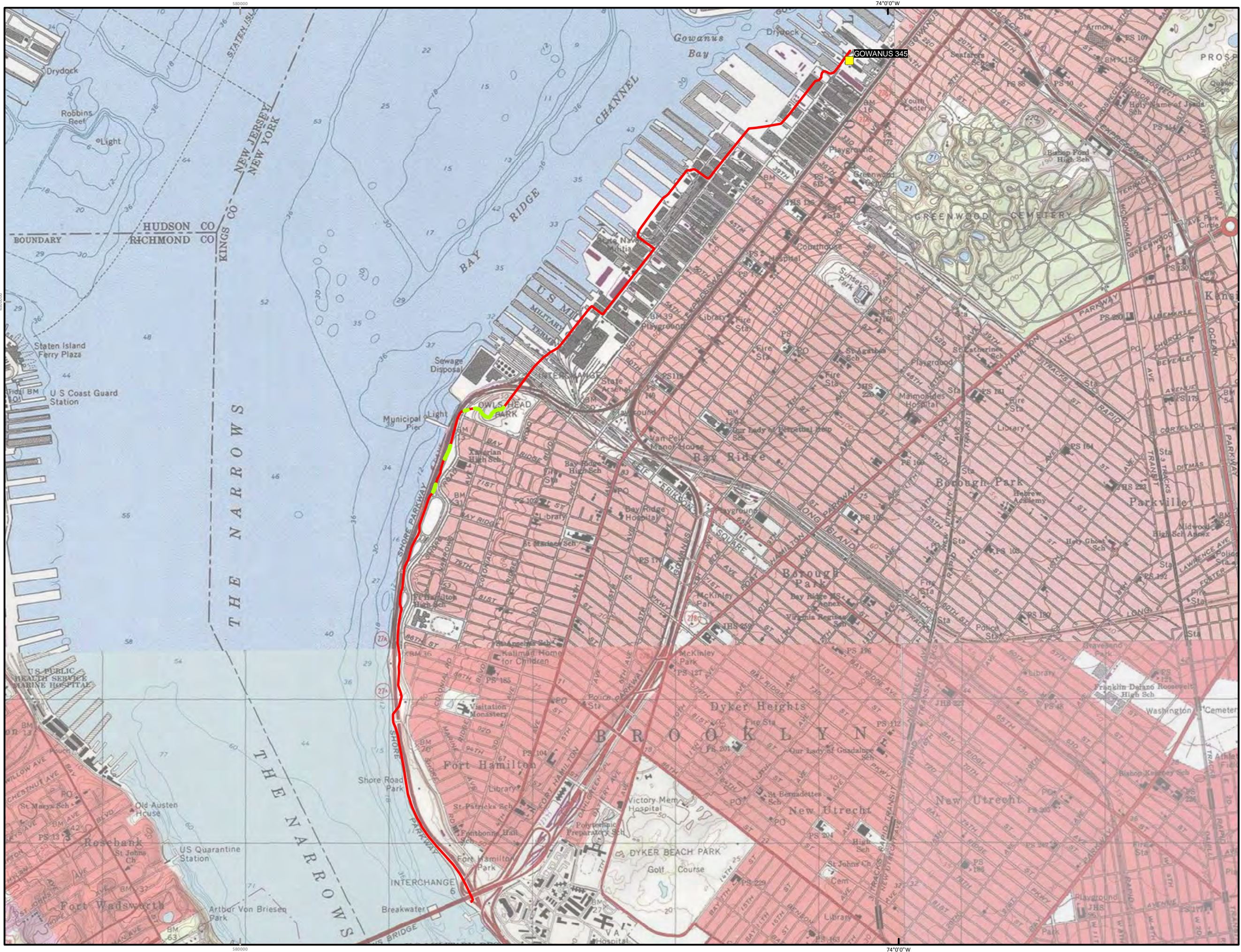
PROJECT OVERVIEW



-  Lease Area
-  Approximate Offshore Cable Route Corridor (500 ft wide)
-  Onshore Route Alternatives (Gowanus)
-  Onshore Route Alternatives (Oceanview)
-  Onshore Route Alternatives (Ruland Rd.)
-  Substation

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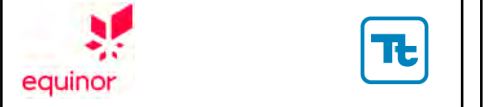




Empire Wind Project

Figure 2a

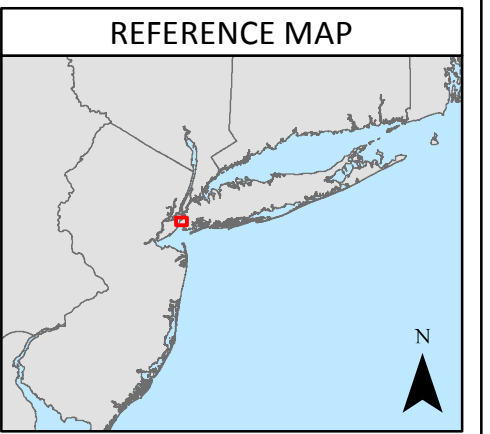
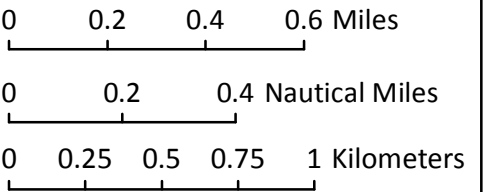
Cultural Resources Survey:
Gowanus Alternative

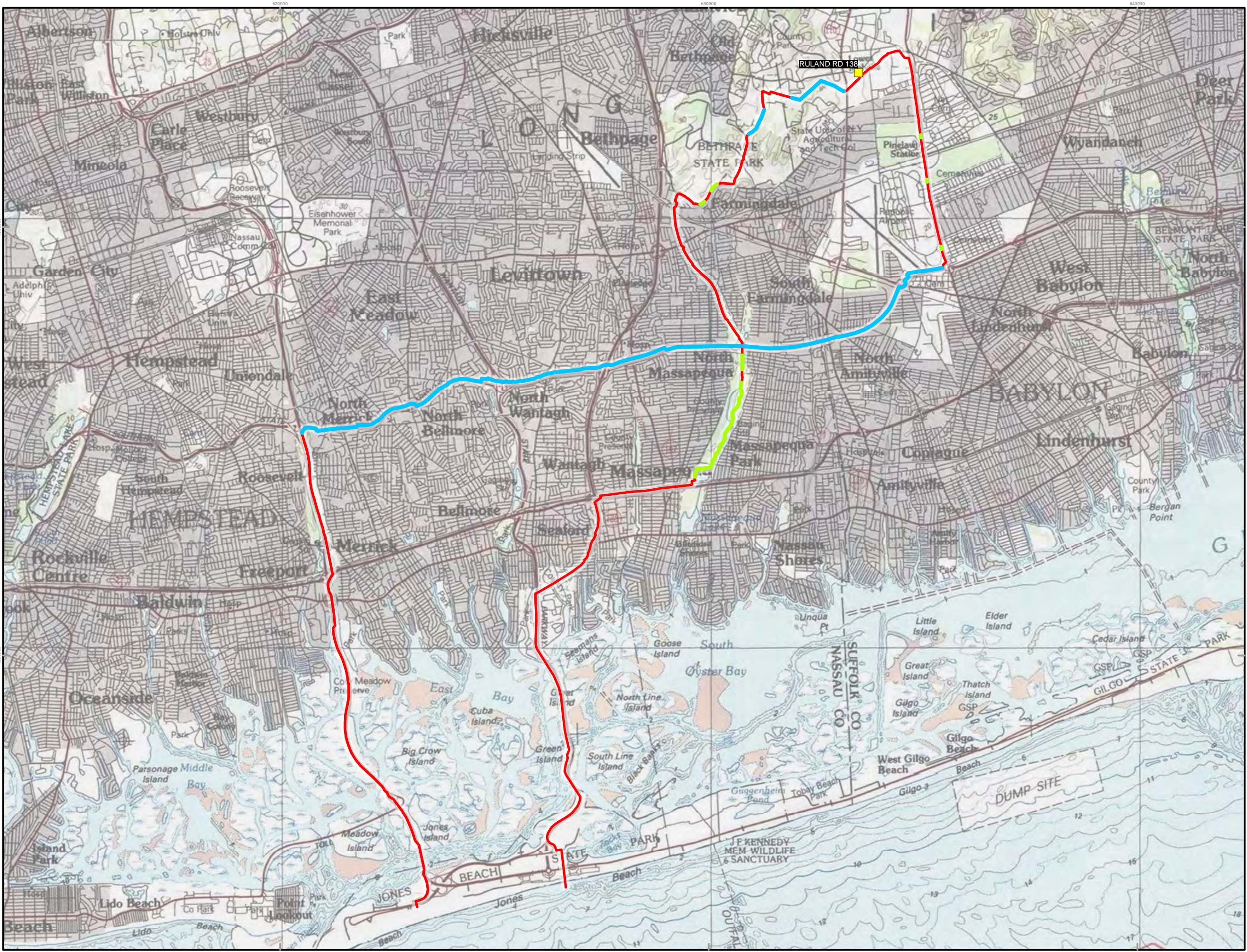


- Substation
- Previously Surveyed
- Recommended for Survey
- Recommended No Survey

PRELIMINARY – SUBJECT TO CHANGE

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Empire Wind Project

Figure 2b

Cultural Resources Survey:
Ruland Rd. Alternative



- Substation
- Previously Surveyed
- Recommended for Survey
- Recommended No Survey

PRELIMINARY – SUBJECT TO CHANGE

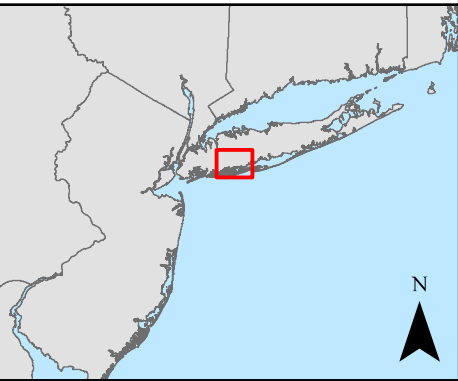
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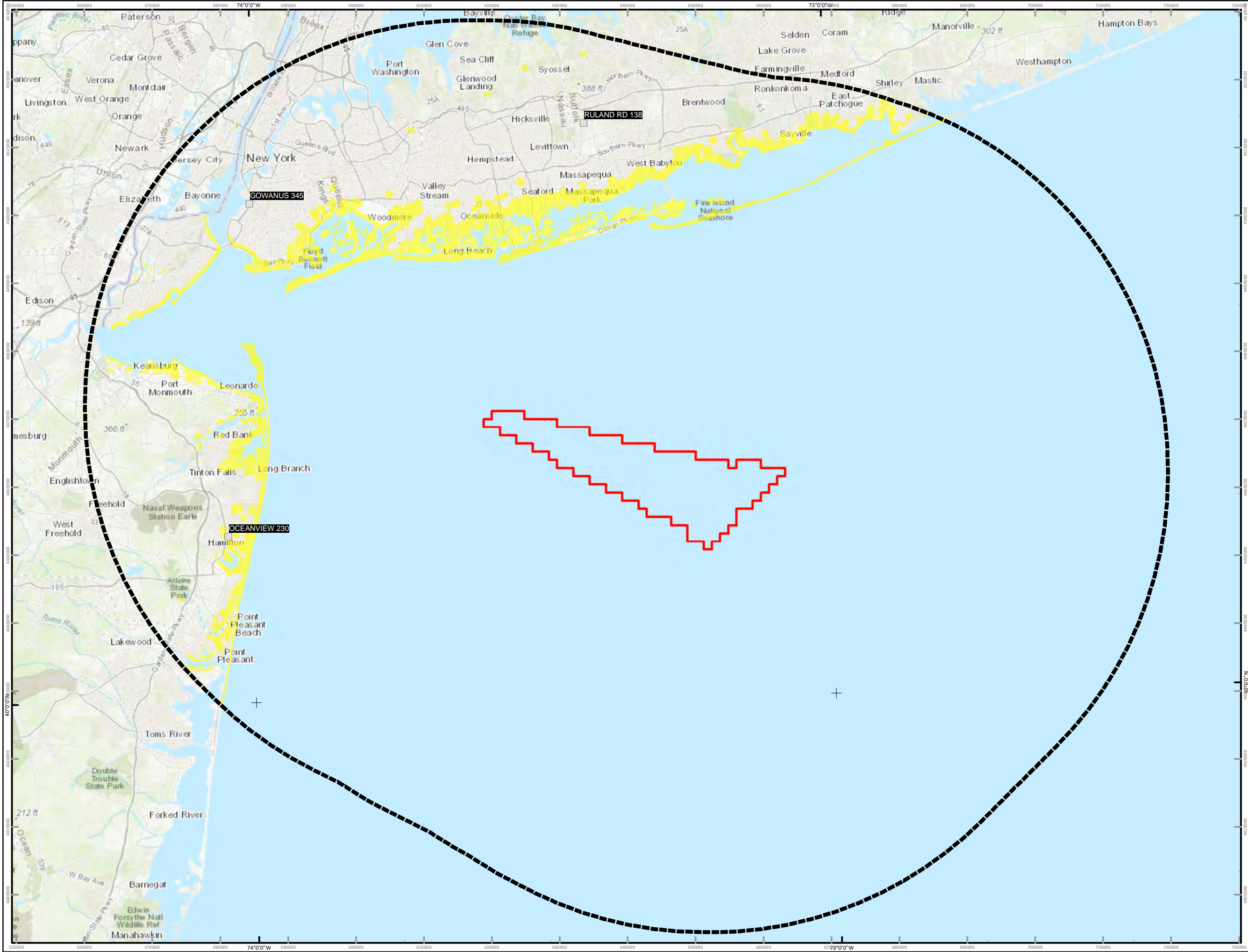
0 0.5 1 1.5 2 Miles

0 0.5 1 Nautical Miles

0 0.5 1 1.5 2 Kilometers

REFERENCE MAP









Empire Wind Project


Figure 3


Project Visual Study Area
and Historic Architecture APE



 Historic Architecture Survey –
Area of Potential Effects (APE)

 35-mile Visual Study Area

 Lease Area (OCS-A-05412)

 Substation

Date	12/4/2018
File/Job Number	
Personnel	Figure Prepared by:

