

Environmental Mitigation Plan

for

Brooklyn Navy Yard

OSW Operations & Maintenance Port

Version 1.0

Prepared pursuant to [contract number, date (TBD)]

with

New York State Energy Research and Development Authority

Albany, NY

Prepared by

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Table of Contents

1	Environmental Mitigation Plan Summary	1
1.1	Overall Philosophy and Principles	1
1.2	Overall Approach to Incorporating Data and Stakeholder Feedback	1
1.3	Existing Guidance and Best Practices That Will be Followed	2
2	Communications and Collaboration Approach	3
2.1	Overview and Communication Plan Objectives	3
2.2	Communication Officers/Positions, Responsibilities, and Contact Information	3
2.3	Identification of Stakeholders	4
2.4	Participation in Stakeholder and Technical Working Groups	4
2.5	Communication Methods and Tools by Phase.....	5
3	Supporting Other Environmental Research	7
3.1	Support of Collaborative Research	7
3.2	Handling/Processing Requests	8
3.3	Data Availability	8
3.4	Proposed Restrictions	8
3.5	Financial Commitment for Third Party Research	9
3.6	Proposed or Existing Commitments/Collaborations	9
4	Proposed Mitigation of Impacts to Marine Mammals and Sea Turtles	10
5	Proposed Mitigation of Impacts to Birds and Bats	11
5.1	Baseline Characterization.....	11
5.2	Species at Risk	14
5.3	Potential Impacts and Mitigation Measures by Phase	15
5.4	Monitor for Potential Impacts During Each Phase	16
5.5	Strategies for Developing Alternative Protocols.....	16
6	Proposed Mitigation of Impacts to Fish, Invertebrates and their Habitats	17
6.1	Baseline Characterization.....	17
6.2	Species at Risk	19
6.3	Potential Impacts and Mitigation Measures by Phase	19
6.4	Monitor for Potential Impacts During Each Phase	21
6.5	Strategies for Developing Alternative Protocols.....	22

7	Considerations for Subsea Cables and Overland Cables.....	23
8	Additional Considerations	24
8.1	Additional Mitigation Strategies and EMP Refinement	24
8.2	Process for Updating the EMP	24
9	Project Decommissioning	25

LIST OF TABLES

Table 1:	Communication Officers/Positions, Responsibilities, and Contact Information	3
Table 2:	Proposed Communication Methods and Tools by Phase	5
Table 3:	List of Migratory Birds in the Vicinity of the Project Site.....	15
Table 4:	Potential Impacts/Risks to Birds and Bats and Mitigation Measures by Project Stage	17
Table 5:	Summary of Potential EFH in the Vicinity of the Project Site	20
Table 6:	Potential Impacts/Risks to Fish, Invertebrates and their Habitats and Mitigation Measures by Project Stage	21

1 Environmental Mitigation Plan Summary

1.1 Overall Philosophy and Principles

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1.2 Overall Approach to Incorporating Data and Stakeholder Feedback

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2 Communications and Collaboration Approach

2.1 Overview and Communication Plan Objectives

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2.2 Communication Officers/Positions, Responsibilities, and Contact Information

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2.3 Identification of Stakeholders

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2.4 Participation in Stakeholder and Technical Working Groups

2.4.1 Communication with TWGs

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2.4.2 Communication with Other New York State Agencies

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2.4.3 Communication with Other Stakeholder and Working Groups

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2.4.4 Communication and Collaboration with Other Developers

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2.5 Communication Methods and Tools by Phase

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3.2 Handling/Processing Requests

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3.3 Data Availability

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3.4 Proposed Restrictions

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3.5 Financial Commitment for Third Party Research

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3.6 Proposed or Existing Commitments/Collaborations

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4 Proposed Mitigation of Impacts to Marine Mammals and Sea Turtles

Neither marine mammals nor sea turtles are expected to be impacted by the Brooklyn Navy Yard Dry Dock project. This claim will be validated during the course of a full environmental review post-award.

5 Proposed Mitigation of Impacts to Birds and Bats

5.1 Baseline characterization

Baseline data has been gathered from the state and federal sources described in Section 5.1.1. The Brooklyn Navy Yard Dry Dock project site is located in a disturbed urban setting in an industrially developed part of Brooklyn that is utilized as a waterfront industrial park and marina. Bird and bat species at the project site therefore consist mostly of common or disturbance-tolerant species.

5.1.1 Available information

- New York State Breeding Bird Atlas⁴
- NYSDEC Natural Heritage Program, Environmental Resource Mapper⁵
- US Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) Resource List⁶

5.1.2 Data collected

- According to the New York State Breeding Bird Atlas (2000-2005, the last complete dataset), the following species were observed in the vicinity of the project site:
 - Peregrine Falcon (*Falco peregrinus*)
 - Rock Pigeon (*Columba livia*)
 - Mourning Dove (*Zenaida macroura*)
 - Downy Woodpecker (*Picoides pubescens*)
 - American Robin (*Turdus migratorius*)
 - Northern Mockingbird (*Mimus polyglottos*)
 - European Starling (*Sturnus vulgaris*)
 - Northern Cardinal (*Cardinalis cardinalis*)
 - House Sparrow (*Passer domesticus*)
- According to the NYSDEC, no significant natural communities or rare plants or animals are located at the project site.
- According to USFWS IPaC, the following listed bird and bat species (meaning threatened or endangered under the Endangered Species Act [ESA]) were identified in the vicinity of the project site:
 - Northern Long-eared Bat (*Myotis septentrionalis*) (Endangered)⁷

⁴ <https://www.dec.ny.gov/animals/7312.html>

⁵ <https://www.dec.ny.gov/animals/38801.html>

⁶ <https://ipac.ecosphere.fws.gov/>

⁷ As of November 29, 2022, the USFWS published a ruling reclassifying Northern Long-eared Bat from Threatened to Endangered under the federal Endangered Species Act, effective January 30, 2023.

- Piping Plover (*Charadrius melodus*) (Threatened; the Project Site does not overlap critical habitat for this species)
- Red Knot (*Calidris canutus rufa*) (Threatened)
- Roseate Tern (*Sterna dougallii dougallii*) (Endangered)
- Additionally, as shown in Table 3, the following migratory birds were also identified as having the potential to be present in the vicinity of the project site by IPaC.

TABLE 3: List of Migratory Birds in the Vicinity of the Project Site

Common Name	Scientific Name	Breeding Season
American Oystercatcher	<i>Haematopus palliatus</i>	April 15 - August 31
Bald Eagle	<i>Haliaeetus leucocephalus</i>	October 15 – August 31
Black Skimmer	<i>Rynchops niger</i>	May 20 – September 15
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	May 15 – October 10
Blue-winged Warbler	<i>Vermivora pinus</i>	May 1 – June 30
Bobolink	<i>Dolichonyx oryzivorus</i>	May 20 – July 31
Canada Warbler	<i>Cardellina canadensis</i>	May 20 – August 10
Cerulean Warbler	<i>Dendroica cerulea</i>	April 29 – July 20
Chimney Swift	<i>Chaetura pelagica</i>	March 15 – August 25
Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	May 1 – August 20
Golden Eagle	<i>Aquila chrysaetos</i>	Breeds elsewhere
Hudsonian Godwit	<i>Limosa haemastica</i>	Breeds elsewhere
Kentucky Warbler	<i>Oporornis formosus</i>	April 20 – August 20
Lesser Yellowlegs	<i>Tringa flavipes</i>	Breeds elsewhere
Long-eared Owl	<i>asio otus</i>	March 1 – July 15
Prairie Warbler	<i>Dendroica discolor</i>	May 1 – July 31
Prothonotary Warbler	<i>Protonotaria citrea</i>	April 1 – July 31
Purple Sandpiper	<i>Calidris maritima</i>	Breeds elsewhere
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	May 10 – September 10
Ruddy Turnstone	<i>Arenaria interpres morinella</i>	Breeds elsewhere
Rusty Blackbird	<i>Euphagus carolinus</i>	Breeds elsewhere
Short-billed Dowitcher	<i>Limnodromus griseus</i>	Breeds elsewhere

Willet	<i>Tringa semipalmata</i>	April 20 – August 5
Wood Thrush	<i>Hyllocichla mustelina</i>	May 10 – August 31

5.2 Species at risk

There are no species at risk due to the scope of the Brooklyn Navy Yard Dry Dock project; the following species are discussed because they are endangered according to USFWS IPaC:

- Northern Long-eared Bat (*Myotis septentrionalis*)
Based on the information reviewed, the project is unlikely to impact the Northern Long-eared Bat. Additionally, according to USFWS, no critical habitat has been designated for this species.
- Roseate Tern (*Sterna dougallii dougallii*)
Based on the information reviewed, the project is unlikely to impact the Roseate tern. Additionally, according to USFWS, no critical habitat has been designated for this species.

Overall, the habitat present at the project site is not ideal for any of the species listed. As a result, project actions are not anticipated to contribute to the loss of viability of T&E species or jeopardize or adversely modify critical habitat for these species. During construction, bird species previously documented to use the project site can be expected to find suitable habitat on adjacent parcels.

5.3 Potential impacts/risks and mitigation measures by Project stage

TABLE 4: Potential Impacts/Risks to Birds and Bats and Mitigation Measures by Project Stage

Potential Impacts	Proposed Mitigation Measures	Phase*			
		1	2	3	4
Collision risk to marine birds and bats	<p>-To avoid and minimize attraction- and disorientation-related impacts to birds and bats, artificial lighting shall be reduced to the extent practicable while maintaining human safety and compliance with FAA, USCG, BOEM and other regulations.</p> <p>-Monitoring shall be conducted to determine if there is a need for perching-related deterrents to reduce attraction and minimize potential perching and loafing opportunities for birds.</p> <p>-Physical deterrents to perching (e.g. such as spikes and netting or other best available technology) shall be implemented if there is demonstrated risk at the site (e.g., perching and roosting on infrastructure is a common occurrence) and to the extent that they do not represent a human safety hazard.</p>	X	X	X	
Habitat impacts, including breeding and nesting areas	<p>Siting and construction of nearshore and onshore project components for offshore wind farms (including but not limited to nearshore export cable routes, landfall sites, onshore cable routes, and onshore substations) shall be conducted in such a way as to avoid or minimize the loss or alteration of bird and bat habitat, as well as avoid or minimize disturbance and direct and indirect effects to bird and bat populations and their prey. Specifically, onshore infrastructure (i.e., landfall site, cable routes, substations) and development activities should 1) maximize the use of previously developed or disturbed areas, and 2) avoid unique or protected habitats, as well as habitat for key species, where feasible.</p> <p>Development activities for the project are anticipated to avoid unique or protected species, as well as habitat for key species.</p>	X	X	X	
*Phase: 1: Survey/Design; 2: Construction; 3: Operation; 4: Decommission					

5.4 Monitor for impacts during each phase

[Redacted]

5.4.1 Pre/Post monitoring to assess and quantify changes

[Redacted]

5.4.2 Address data gaps

[Redacted]

5.5 Strategies for developing alternate protocols

[Redacted]

6 Proposed Mitigation of Impacts to Fish, Invertebrates and their Habitats

6.1 Baseline characterization

The Brooklyn Navy Yard Dry Dock project site is currently utilized as a waterfront industrial park and marina in the Williamsburg neighborhood of Brooklyn. The East River adjacent to the project site is characterized by low quality benthic habitat. According to research conducted by the New York State Department of Environmental Conservation (NYSDEC), this area is a region of high sediment accumulation and represents an anthropogenically impacted area.⁸ Invertebrate organisms found in this area are thus disturbance-tolerant, and include small nematodes, a variety of arthropods, and mollusks. The organisms that are most pollution-tolerant were found to occur in the greatest densities. The area of benthic habitat that would be potentially affected by the project represents a small fraction of the overall benthic habitat available in the New York harbor, and it would be impacted on a temporary basis during construction.

According to the NOAA Fisheries Greater Atlantic Regional Fisheries Office (GARFO) Section 7 Mapper, Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) and Shortnose sturgeon (*Acipenser brevirostrum*) are protected fish species that have potential migratory and foraging habitat in the vicinity of the project site. The Atlantic sturgeon and Shortnose sturgeon are federal and state endangered species that are known to occur in the New York Bight. Critical habitat for the Atlantic sturgeon has been designated in the Hudson River.

Atlantic sturgeon spawn in freshwater areas of the Hudson River and spend the winter throughout the New York Bight, including throughout the Long Island Sound. Transient populations moving between the Hudson River and the overwinter areas travel through the Upper Bay and may also pass through the East River.⁹ Atlantic sturgeon occurrences in the East River are typically transitory and brief, however, as these species prefer open waters with greater water depths than the East River provides.

The Shortnose sturgeon typically overwinters in the upper Hudson River, and the northern portion of the East River is the extreme southern limit of this species' range. Shortnose sturgeon therefore have limited potential to occur in the portion of the East River that includes the project site.

Essential Fish Habitat (EFH) is any aquatic habitat that promotes fish spawning, breeding, feeding, or growth for any federally regulated fish species. Per EFH source documents from the NOAA Fisheries EFH Mapper, Table 5 denotes the federally managed species and their associated life stages with potential EFH within the project site. Overall, effects to EFH at the project site would be minimal, and it would constitute a small portion of the available habitat for these species within the New York harbor.

⁸ 2015 Benthic Mapping. Accessed via: <https://hudsonriverpark.org/app/uploads/2021/01/New-York-State-Department-of-Environmental-Conservation-2015-Benthic-Mapping.pdf>

⁹ ESCR Natural Resources Assessment. Accessed via: https://www.nycgovparks.org/download/escr/ESCR%20EIS_Chapter%205.6_Natural%20Resources.pdf

TABLE 5: Summary of Potential EFH in the Vicinity of the Project Site

Common Name	Scientific Name	Lifestage(s) Potentially Present			
		Eggs	Larvae	Juvenile	Adult
Winter Flounder	<i>Pseudopleuronectes americanus</i>	X	X	X	X
Little Skate	<i>Leucoraja erinacea</i>			X	X
Atlantic Herring	<i>Clupea harengus</i>		X	X	X
Red Hake	<i>Urophycis chuss</i>	X	X	X	X
Windowpane Flounder	<i>Scophthalmus aquosus</i>	X	X	X	X
Winter Skate	<i>Leucoraja ocellata</i>			X	X
Clearnose Skate	<i>Raja eglantera</i>			X	X
Longfin Inshore Squid	<i>Doryteuthis pealeii</i>	X			
Bluefish	<i>Pomatomus saltatrix</i>			X	X
Atlantic Butterfish	<i>Peprilus triacanthus</i>		X		
Summer Flounder	<i>Paralichthys dentatus</i>		X	X	X

6.1.1 Available information

- NOAA Fisheries EFH Mapper¹⁰
- NOAA Fisheries GARFO Endangered Species Act (ESA) Section 7 Mapper¹¹

¹⁰ <https://www.habitat.noaa.gov/apps/efhmapper/>

¹¹ <https://www.fisheries.noaa.gov/resource/map/greater-atlantic-region-esa-section-7-mapper>

- NYSDEC 2015 Benthic Mapping Study¹²
- East Side Coastal Resiliency (ESCR) Environmental Impact Statement (EIS) Natural Resources Assessment¹³

6.1.2 Data being collected

- Fish species found in the vicinity of the project site were identified using the NOAA Fisheries EFH Mapper and NOAA Fisheries GARFO ESA Section 7 mapper
- Information on invertebrates was referenced via NYSDEC’s 2015 Benthic Mapping Study
- General information related to fish and invertebrates in the East River was referenced via the ESCR EIS Natural Resources Assessment

6.2 Species at risk

Atlantic sturgeon adult and sub-adult may occasionally use the areas in the vicinity of the project site as a migratory route and infrequent foraging grounds, but they are a deep-water species and would be expected to use the existing navigation channel as a migratory corridor and not the shallow waters of the marine project site. Further, the project site is located outside of the area designated as critical habitat for the Atlantic sturgeon. Therefore, it is unlikely that this species would be impacted by the project.

6.3 Potential impacts/risks and mitigation measures by project stage

TABLE 6: Potential Impacts/Risks to Fish, Invertebrates and their Habitats and Mitigation Measures by Project Stage

Potential Impacts	Proposed Mitigation Measures	Phase*			
		1	2	3	4
Micro-siting conflicts with habitats and	The developer shall seek input from regulatory authorities, the fishing industry, and maritime industry to design the project in the least impactful manner that is practicable.	X			

¹²<https://hudsonriverpark.org/app/uploads/2021/01/New-York-State-Department-of-Environmental-Conservation-2015-Benthic-Mapping.pdf>

¹³

https://www.nycgovparks.org/download/escr/ESCR%20EIS_Chapter%205.6_Natural%20Resources.pdf

fishery resources					
Temporary, alteration of the seabed and localized increases in noise and turbidity	<p>The developer shall seek to use noise attenuation technologies to reduce sound from project activities.</p> <p>The Proposed Project is committed to several construction minimization measures and best management practices. The measures are concurrently being developed as part of the ongoing regulatory pre-application effort. As the project requires permits and approvals from multiple federal, state and local agencies; the permit applications will detail and demonstrate that impacts have been minimized to the greatest extent practicable. Unavoidable impacts will be evaluated and a mitigation plan will be prepared if necessary as part of the permitting process for the project.</p>	X	X	X	X
Long-term changes to seabed and habitat	The developer shall, to the extent possible, avoid sensitive benthic habitats.	X	X	X	X
EMF Impacts	<p>The developer shall use proper shielding to reduce EMF.</p> <p>The developer shall conduct EMF modeling and assessments to identify potential mitigation requirements.</p>	N/A			
Cable burial	<p>The developer shall bury export and inter array cables to an appropriate minimal depth to reduce exposure risk. If depth cannot be reached, the developer shall add protective materials over the cable.</p> <p>The developer shall conduct routine surveys or inspections of sub-sea cables and shall conduct a survey or inspection to ensure and correct for cable exposure following hurricane or other major events causing disturbance to the seabed.</p>	N/A			
Turbine Scour Protection	The developer shall seek collaboration with state and federal regulatory authorities and key stakeholders to assess the use of ecological enhancements for turbine scour protection to provide offsets from potential adverse impacts.	N/A			
*Phase: 1: Survey/Design; 2: Construction; 3: Operation; 4: Decommission					

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[Redacted text]

6.4 Monitor for impacts during each phase

[Redacted text]

6.4.1 Pre/Post monitoring to assess and quantify changes

[Redacted text]

[Redacted text block]

6.4.2 Addressing data gaps

[Redacted text block]

6.5 Strategies for developing alternate protocols

[Redacted text block]

7 Considerations for Subsea Cables and Overland Cables

Considerations for subsea cables and overland cables is not applicable for the Brooklyn Navy Yard Dry Dock project.

8 Additional Considerations

8.1 Additional Mitigation Strategies and EMP Refinement

Other critical environmental issues or concerns given the scope and location of the Brooklyn Navy Yard Dry Dock project, may include but are not limited to hazardous materials, historic resources, archaeological resources, visual impacts, noise, and traffic. [REDACTED]

[REDACTED]

[REDACTED]

8.2 Process for Updating the EMP

[REDACTED]

[REDACTED]

9 Project Decommissioning

Environmental mitigation relating to project decommissioning is not applicable for the Brooklyn Navy Yard Dry Dock project as it is anticipated that the facility will remain a part of the Brooklyn Navy Yard in perpetuity.