Ocean Wind 2 Offshore Wind Farm

Coastal General Permit 23 Application for Proposed Geotechnical Borings

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1 Project Background and Description

Ocean Wind II, LLC (Ocean Wind II) is an affiliate of Orsted North America, LLC and recently received approval from the New Jersey Board of Public Utilities to develop an offshore wind farm off the coast of southern New Jersey in Lease Area OCS-A-0532. The Ocean Wind 2 Offshore Wind Farm Project (OCW02 or Project) will generate renewable power and transfer it to the New Jersey electrical grid. This project is proposed to come online as early as 2029; however, it must go through a multi-year Federal and State permitting review and approval process before construction can begin. The Project is being developed pursuant to the Bureau of Ocean Energy Management (BOEM) requirements for the Ocean Wind BOEM Lease Area OCS-A-0532 Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf (30 CFR Part 585 and regulations therein). Ocean Wind II is evaluating potential landfall locations of the Ocean Wind 2 Export Cable - NJ State Waters (OfEC-NJ) in the Cities of Asbury Park and Long Branch, Monmouth County, NJ.

1.1 Project Purpose and Need

Ocean Wind II is planning a geotechnical survey to inform installation of the offshore export cable within New Jersey State waters (OfEC-EC-NJ) and the sea-to-shore transition at potential Landfalls. The borings will acquire site-specific geotechnical data to support the design of the Project. The survey will be informed by the BOEM Guidelines for Providing Geophysical, Geotechnical, and Geohazard Information Pursuant to 30 Code of Federal Regulations (CFR) Part 585 and the Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585. Specifically, geotechnical data will provide information on soil properties to optimize cable burial methods and design for cable installation methodologies for the OfEC-NJ.

1.2 Proposed Geotechnical Survey Activities

Ocean Wind II is proposing to complete geotechnical borings and cone penetration tests (CPTs) within State waters (i.e., nearshore waters) and in upland (non-beach) areas at potential Landfall locations (see figures in Appendix A and permit plans in Appendix B). The nearshore geotechnical boring activities will occur within the Atlantic Ocean, extending north to south from the City of Long Branch to the City of Asbury Park in Monmouth County and east to west from approximately 426.5 feet (130 m) off the coast to the 3 nautical mile (nm) State water boundary, adjacent to the municipalities listed in **Table 1.2-1** below.

Table 1.2-1 Municipalities Adjacent to the Geotechnical Survey Area

County	Municipalities	
Monmouth	Long Branch City	Loch Arbour Village
	Deal Borough	Asbury Park City
	Allenhurst Borough	

Source: Ocean Wind II, LLC

1.2.1 Upland Borings

As outlined in **Table 1.2-2** below, one boring and one CPT will be completed in a parking lot at the Great Lawn Amphitheater in Long Branch, and one boring and one CPT will be completed in a municipal parking lot in Asbury Park.

Table 1.2-2 Location and Number of Proposed Geotechnical Borings

Landfall Name	Location	Number of Proposed Borings	Number of Cone Penetration Tests
Asbury Park Municipal Parking Lot	Asbury Park, Block 4402, Lot 1	1	1
Great Lawn Amphitheater	Long Branch, Block 304.06, Lots 1.01, 1.02, 1.03, and 1.04	1	1

Source: Ocean Wind II, LLC

The borings and CPTs will be performed to a depth of approximately 98 feet (30 meters) using a truck or track-mounted drill rig. In sampling borings, samples will be collected using single push Shelby tube samplers and hammer driven split spoon samplers to the termination depth of each boring (up to 30 meters). The CPT tool will be advanced into the ground by a hydraulic push system to the completion depth. Mud rotary drilling will be used to advance the tooling between samples and advance the CPT tooling if early refusal is encountered. All drilling fluid will be contained within the drilling system and equipment during operations. The borehole and CPT hole will be backfilled using a cementitious grout with bentonite to within 10 feet of the ground surface. The 10 feet of the borehole closest to the ground surface will be backfilled with native material

Representative photos of the proposed boring locations are below:

Photo 1.2-2 View of the Asbury Park Municipal Parking Lot Landfall in Vicinity of Proposed Boring

Photo 1.2-3 View of the Great Lawn Amphitheater Landfall in Vicinity of Proposed Boring

1.2.2 Nearshore Borings

The proposed activities in nearshore (State waters) includes up to 20 shallow geotechnical borings that are referred to as ECR Infill Borings and up to 45 deeper geotechnical borings referred to as Deep Landfall Borings (see Table 1.2-2 below). The ECR Infill Borings will consist of collocated vibracore (VC) explorations, in situ thermal conductivity testing (TCT) and seabed cone penetration tests (CPTs) in up to 20 locations within the Atlantic Ocean. Each VC/CPT/TCT is approximately four inches in diameter and will be performed down to a depth of approximately 19.7 feet (6 m) below seabed (bsb). These borings will naturally backfill with sediment.

The Deep Landfall Borings will consist of collocated sampling borings and CPTs. These locations will be performed down to approximately 98 feet (30 m) bsb to inform potential cable installation at the Landfall. In nearshore waters, these deep borings will be spaced approximately 656 feet (200 m) apart.

Table 1.2-3 2023 Ocean Wind 2 Geotechnical Survey Scope

Project Component	Survey Scope
ECR Infill Borings	Obtain up to 20 collocated VCs, CPTs and in-situ thermal tests up to 19.7 feet (6 m) bsb along the proposed ECR infill section of the proposed potential cable routes.
Deep Landfall Borings	Obtain up to 45 collocated geotechnical borings and CPTs to and up to four collocated onshore upland borings and CPTs 98 feet (30 m) bsb/beneath ground surface along the proposed potential cable routes.

Source: Ocean Wind II, LLC

The National Marine Fisheries Service (NMFS) completed a programmatic consultation with the Bureau of Ocean Energy Management (BOEM) for geophysical and geotechnical surveys and the deployment, operation, and retrieval of environmental data collection buoys. In the NMFS letter, dated June 29, 2021, it states, "we have determined that all activities (inclusive of all PDC [Project Design Criteria] and BMPs [Best Management Practices]) in this consultation will have no effect or are not likely to adversely affect any species listed under the ESA." See Appendix C for the NMFS programmatic consultation letter.

Geophysical surveys were conducted from 2019 through 2022 for offshore locations. All areas planned for geotechnical surveys either have been or will be reviewed and cleared by the Qualified Marine Archaeologist (QMA) as well as the unexploded ordnance consultant prior to sampling.

Representative photos of the nearshore waters are below following by descriptions of the types of nearshore borings.

Photo 1.2-4 View of the Atlantic Ocean in the City of Long Branch adjacent to the Seven Presidents Park Landfall

Photo 1.2-5 View of the Atlantic Ocean in the City of Asbury Park adjacent to the Asbury Park Municipal Lot Landfall

Photo 1.2-6 View of the Atlantic Ocean in the City of Long Branch adjacent to the Great Lawn Amphitheater Landfall

1.2.2.2 ECR Infill Borings

Seabed Cone Penetration Tests

CPT data are used to estimate material density, strength, and soil behavior type. CPT tip resistance is a primary data source for interpolating material boundaries in between geotechnical explorations and defining where the installation will encounter different material types. Geotechnical data will be integrated with the geophysical data to provide a comprehensive and coherent characterization of subsurface materials.

At each sample location the CPT system is lowered to the seabed from the deck of the survey vessel using an on-board vessel crane, deck winch, or similar equipment. The vessel holds position while each test push is completed. The equipment is operated remotely from the vessel deck. Digital data from the cone is transferred through an umbilical cable to a top side system control cabin on the vessel deck where it can be viewed in real time. Each test takes approximately 20 minutes to complete then the unit can be recovered to the vessel deck and moved to the next test location.

Vibracores

VCs provide physical samples that can be tested in a laboratory to determine soil characteristics such as particle size distribution, Atterberg Limit properties (plasticity), thermal resistivity, and specific gravity. These data are used to characterize the material types and support sediment fate studies resulting from jet trenching, erosional potential, and design the cable properties.

VCs will be collected with a high-performance corer, or similar apparatus, lowered to the seabed from the deck of the survey vessel. Retrieved soil cores will be examined and logged by a geologist or geotechnical engineer. The cores will be divided and sealed for subsequent transport to the laboratory and field tests (e.g., pocket penetrometer or torvane tests) will be conducted on cohesive sediments. Samples will be stored vertically onboard the vessel and during subsequent transport of the cores to the laboratory.

Vibratory cores will be collected using a vibratory corer equipped with a 6-m long, approximately 101 mm OD core sampling barrel with an approximate 96 mm OD plastic, hard, clear, liner material. The core barrel will be fitted with a nose cone or "cutter" and a core retainer to improve core retention and sample retrieval. Core retainers of various stiffness and tightness will be available.

The Vibracore rig will utilize an approximately 24-foot-tall seabed "tower", which is supported by three legs. These legs extend approximately 6 to 8 feet out from the base to provide a stable platform. The legs also spread out the weight of the vibracore to minimize any seabed settlement. Corer penetration at each sample site will be to 6 meters (m) (19.7 feet [ft]) or to refusal, whichever is reached first.

The penetration of the vibrocore will be measured real time and relayed to deck to record the sampling depth of each core. Following retrieval, each vibratory core will be cut into 1 m sections, capped, sealed, and marked in accordance with Ocean Wind's instructions. Prior to capping and sealing, the sample ends will be described and torvane and pocket penetrometer testing carried out. The capping and sealing of each end will include electrical tape to create an airtight seal at each end to minimize/retard moisture loss. Each core section will be stored vertically in a cool place with a steady temperature.

Samples will be transported to the onshore laboratory for testing, avoiding vibration or shock loads.

In Situ Thermal Conductivity

In situ thermal conductivity measurements will be taken by either a combination of thermal cone penetration tests and thermal needle probes or thermistors mounted to the side of the VC barrel. Thermal cone and needle probe tests are advanced using the seabed CPT equipment and require a second deployment of the seabed frame after the seabed CPT is performed. VC mounted thermistors chains collect thermal data during the VC deployment. Thermal conductivity data is used to understand the heat transferring and insulating properties of the soil that surround the cable and thus, support the cable design.

In situ thermal conductivity measurements will be taken by the Vibro-Heat system, which consists of a vibracore customized to hold a heat source and a series of heat sensors (thermistors). A 22-thermistors system, able to provide thermal conductivity measurements up to 6 m below seafloor, will be utilized.

The proposed sensors will be working between a temperature range of -2° Celsius (C) and 60° C, with a resolution of less than 1 milliKelvin (mK) and an accuracy of ±2 mK.

The Vibro-Heat measuring device is combined with a vibracorer. The sensor string is mounted parallel to the core barrel of the vibracorer and is stabilized by at least two outrigger fins. The data acquisition unit and power supply unit are affixed to the outer frame of the vibracorer

head section with specially made rubber clamps that absorb oscillations generated by the vibracorer. Together, the combined system is vibrated into the seabed by the action of two counter rotating eccentric weights driven by an electric motor. Depth of penetration can be up to 6 m in suitable soil conditions, with samples being obtained in almost all unconsolidated soil types.

The system will be deployed and recovered using a crane and once onto the deck, temperature data are downloaded from the electronics and quality control is performed. A plot is created that shows the temperature development during the measurement for all 22 thermistors, along with X/Y tilts, vertical acceleration and pressure data.

1.2.2.3 Deep Landfall Geotechnical Borings

Sampling Boreholes

The upland deep geotechnical sampling boreholes will be performed by either track-mounted, truck-mounted, or similar. For the nearshore deep geotechnical borings, the equipment will be mounted on a jack up barge or similar. The equipment includes a fixed drilling rig, mud mixing and pumping unit, as well as other tools and accessories. Drilling mud will be used as needed to stabilize the bore hole and will consist of guar gum and bentonite or comparable solution. Sampling will be performed from the bottom of a vertically stabilized drill string using a thin walled piston sampler, a shelby tube, or a split-spoon hammer sampler driven by hammer at the top of the drill string. Samples will be either extruded on site or kept in sampling tubes.

Cone Penetration Testing

CPT data are used to estimate material density, strength, and soil behavior type. CPT tip resistance is a primary data source for interpolating material boundaries in between geotechnical explorations and defining where the installation will encounter different material types. Deep CPTs will be performed by either track-mounted, truck-mounted, or similar. For locations performed offshore, the equipment will be mounted on a jack up barge or similar. The CPT equipment will be attached to the end of a steel rod and advanced into the ground using hydraulic push technology. CPTs will be performed to the target depth of 30 m. If refusal is encountered prior to the target depth, the CPT equipment will be withdrawn from the hole and drilling equipment will be lowered into the CPT hole per the previous section to further advance the CPT equipment.

1.2.3 Equipment

1.2.3.1 Vessels

Jack up vessels will be used for the Deep Landfall Borings; examples of potential jack up vessels are included in Appendix D. Depending on the vessel used during the survey, the spuds will range in size from 54 inches to 66 inches in diameter, with three legs per vessel. The ECR Infill Borings will be conducted using a dynamically positioned drill vessel or similar vessel equipped with both shallow and deep water in-situ testing and sampling capabilities. Nearshore survey work will be conducted with lift boats or shallow draft vessels.

Vessels will be equipped with a navigation system with sub-meter accuracy to acquire horizontal and vertical positions in real time. The navigation, hydrographic and survey systems will meet or exceed the minimum capabilities and standards as recommended in the BOEM Office of Renewable Energy Programs' Guidelines for Providing Geophysical, Geotechnical and Geohazard information (BOEM 2020). In addition, all vessels will comply with USCG and EPA regulations that require operators to develop waste management plans, post informational placards, manifest trash sent to shore, and use special precautions such as covering outside trash bins to prevent accidental loss of solid materials. Vessels will also comply with BOEM lease stipulations that require adherence to NTL 2015-G03, which instructs operators to exercise caution in the handling and disposal of small items and packaging materials, requires the posting of placards at prominent locations on offshore vessels and structures, and mandates a yearly marine trash and debris awareness training and certification process.

1.2.3.2 Drill Rig

The onshore geotechnical borings and CPTs will be completed with either a truck-mounted or track mounted drill or CPT rig. Truck mounted drill rigs include a drilling or CPT systems fixed to the bed of a pick-up truck while track mounted drill rigs have drilling or CPT systems mounted to the frame of a tracked vehicle. The selection of the appropriate vehicle will depend on the ground surface conditions at the time of the investigation.

1.2.3.3 Sampling Equipment

Surveys will be conducted using industry standard equipment, summarized in Table 1.2-4.

Table 1.2-4 Geotechnical Equipment

Sample Type	Equipment Type
ECR Infill Borings	
Seabed CPTU	Approximately 3.5- to 20-ton seabed CPT rig with a continuous drive CPT system, a system with digital seismic cone penetrometer, or similar
Vibracore	High Performance Corer or similar - 100-millimeter (mm) sample diameter
In Situ Thermal Conductivity	Thermal CPT or thermistor string mounted on VC
Upland Landfall Borings	Single push Shelby tube samplers, and hammer driven split spoon samplers

1.3 Impacted Area

For the ECR Infill Borings and Deep Landfall Borings, impacts to regulated areas around the boring locations would be limited to areas within open water. For the Upland Landfall Borings, impacts would be limited to paved parking areas.

Each boring will be up to approximately four inches in diameter, resulting in approximately 12.6 square inches (0.09 square feet) of ground disturbance per boring. There will be up to 20 ECR Infill Borings and 45 Deep Landfall Borings and CPTs (cumulative 90 Deep Landfall and CPT locations) in the nearshore area. This is a cumulative impact of approximately 1,386 square inches (9.6 square feet) in State waters. The up to two Upland Landfall Borings and CPTs (cumulative four locations) will have a cumulative impact of approximately 50.4 square inches (0.4 square feet) in disturbed upland areas. All impacts would be localized and temporary, and no long-term change to bathymetry or benthic communities are expected within State waters and no impacts are expected in upland areas.

1.4 Regulatory Context

The Federal Coastal Zone Management Act (CZMA) of 1972 was established to encourage coastal states to manage development within the states' designated coastal areas, reduce conflicts between coastal developments, and protect resources within the coastal zone. Requirements for federal approval of coastal zone management programs and grant applications procedures for development of state programs is included in 15 CFR Part 923, Coastal Zone Management Program Development and Approval Regulations, National Oceanic and Atmospheric Administration (NOAA). The CZMA requires that federal activities within a state's coastal zone be consistent with the state's coastal zone management plan. New Jersey has a federally approved coastal zone management program, which is administered by the NJDEP.

NJDEP regulates coastal zone activities under NJAC 7:7, Coastal Zone Management Rules (CZM Rules), last amended October 5, 2021. The CZM Rules set forth substantive rules regarding the use and development of coastal resources, to be used primarily by the New Jersey Department of Environmental Protection – Division of Land Resource Protection (NJDEP-DLRP) in reviewing permit applications under the Coastal Area Facility Review Act (CAFRA), the Wetlands Act of 1970, the Waterfront Development Law (N.J.S.A. 12:5-3), Water Quality Certification (Section 401 of the Clean Water Act), and Federal Consistency Determinations (Part 307 of the Coastal Zone Management Act).

The Project involves conducting geotechnical survey borings within the proposed survey area, which extends north to south from the City of Long Branch to the City of Asbury Park and east to west from approximately 130 m off the coast to the 3 nm State water boundary. Since the ECR Infill and Deep Landfall geotechnical borings will occur below the mean high-water line, it will be regulated by the NJDEP-DLRP under the Waterfront Development Law (N.J.S.A. 12:5-3) and the CZM Rules (N.J.A.C. 7:7). The Upland Landfall Borings will occur in disturbed upland areas within 150 feet of a beach or dune and require a Coastal General Permit 23. Obtaining this permit requires demonstration of the Project's consistency with the CZM Rules, as well as a demonstration of the Project's compliance with the Endangered and Nongame Species Act Rules (N.J.A.C. 7:25-4).

Demonstration of the Project's compliance with the Stormwater Management Rules (N.J.A.C. 7:8) is not required because no new impervious surfaces would be created, and no ground surface will be disturbed. In addition, a Soil Erosion and Sediment Control (SESC) Plan is not required from the Freehold Soil Conservation District because there will be no upland

construction activities and proposed Project activities will not result in upland ground disturbance.

In compliance with the application notice requirements, the Property Owner Certification Forms are provided in Appendix E and proof of public notice is provided in Appendix F with notice being provided to all government officials of adjacent municipalities. Consultations with NJDEP's Natural Heritage Program, the United States Fish and Wildlife Service (USFWS) and the NOAA regarding threatened, endangered, and special concern species are required for the Project. See Appendix G for agency consultation.

2

Existing Conditions

This section describes the existing conditions within the geotechnical survey area.

2.1 Bathymetry

Based on NOAA nautical charts, depths within the nearshore area of the proposed geotechnical survey area east off the coast of Long Branch to Asbury Park range from 18 feet (5.5 meters) to approximately 77 feet (23.5 meters) in depth below mean lower low water.

2.2 Water Quality

Water quality data were collected by BOEM and NOAA as part of a comprehensive multi-scale benthic assessment (Guida et al. 2017). Seasonal temperature fluctuation spanned as much as 68°F (20°C) at the surface and 59°F (15°C) at the bottom, with thermal stratification beginning in April and increasing into August. Actual surface and bottom temperatures varied substantially from year to year, particularly during the fall. Surface to bottom temperature gradients were warmer and the surface and cooler at the bottom, with a stratified condition in spring and summer and isothermal condition following the fall turnover during winter.

In general, the average salinity increases in the offshore direction off New Jersey. The mean seasonal salinity for winter is approximately 30-31.6 parts per trillion (ppt) and between 29-31.6 practical salinity unit for spring. This range for spring is caused by the Hudson River outflow during the spring freshet, where the freshwater is close to the coast. The salinity for summer ranges between approximately 30.25-31.5 ppt for the summer and 31.5-31.75 ppt for the fall.

In the coastal areas of the Project area, chlorophyll-a values are higher compared to the offshore areas due to input of nutrients from anthropogenic sources. The most recent phytoplankton blooms occur during the fall and winter seasons when stratification decreases due to frequent storms and seasonal overturn. In the Project area, the winter bloom generally

extends to a mean depth of 135 feet (41 meters) or 24 NM offshore (NJDEP 2010). Phytoplankton blooms are also common during the summer months when winds blow surface waters away from the coast and the deeper, cooler, nutrient-rich waters well up from the depths, a phenomenon known as upwelling. When upwelling occurs, these nutrients combined with sunlight lead to phytoplankton blooms along the Jersey Shore.

No impacts to water quality are expected as a result of the proposed activities in the work area. BMPs will be incorporated to minimize turbidity increases to the greatest extent possible and to prevent and spills from vessels.

2.3 Sediments and Benthic Community

The nearshore area is characterized by ridges and swales and includes broad cross shelf valleys, shoal retreat massifs and paleoshorelines and channels. In general, sediments are medium grained sand with areas of gravelly sand and gravel deposits (Guida et al. 2017, NJDEP 2010).

Geo-Marine, Inc. (NJDEP 2010) reviewed available data for benthic invertebrate (epifauna) taxa that occur along the New Jersey inner shelf. Common macrofauna within the Project area include species from several taxa including echinoderms (e.g., sea starts, sea urchins, and sand dollars), cnidarians (e.g., sea anemones and corals), mollusks (e.g., bivalves, cephalopods, and gastropods), bryozoans, sponges, amphipods, and crustaceans (NJDEP 2010). The mid-shelf is dominated by sand dollars and surf clams from about 131 feet to 230 feet (40 to 70 m) with various other epifauna (e.g., rock crabs, hermit crabs, cancer crabs, horseshoe crabs1, spider crabs, and lobsters) are found throughout the shelf (NJDEP 2010). Within the nearshore area common crustaceans include hermit crabs (*Pagurus* spp.), Atlantic rock crab (*Cancer irrotatus*) and sevenspine bay shrimp (*Crangon septemspinosa*) (NJDEP 2010). A summary of common benthic invertebrate species that inhabit the Project area is provided in **Table 2.3-1**.

Table 2.3-1 Summary of Common Benthic Invertebrate Species that Could Inhabit the Project Area

Common Name	Scientific Name
Echinoderms	
Common sand dollar	*Echinarachnius parma*
Five-slotted sand dollar	*Mellita quinquiesperforata*
NA	*Cidaris abyssicola*
NA	*Schizaster orbignyanus*
Northern sea urchin	*Strongylocentrotus droebachiensis*
Purple-spined sea urchin	*Arbacia punctulata*
Sea potato	*Echinocardium cordatum*
Cnidarians	
Deeplet sea anemone	*Bolocera tuediae*
Lined sea anemone	*Edwardsiella lineata*
North American tube anemone	*Ceriantheopsis americanus*

Northern cerianthid	*Cerianthus borealis*
Plumose anemone	*Metridium senile*
Mollusks	
Atlantic surfclam	*Spisula solidissima*
Common octopus	*Octopus vulgaris*
Long-finned squid	*Loligo pealei*
Northern moon snail	*Euspira heros*
Shark eye	*Nevirita duplicata*
Short-xfinned squid	*Illex illecebrosus*
Whelks	*Busycon* spp.
Bryozoans	
NA	*Bowerbankia imbricata*
NA	*Bugula fulva*
NA	*Nolella stipata*
Crustaceans	
American horseshoe crab[1]	*Limulus polyphemus*
Atlantic rock crab	*Cancer irroratus*
Hermit crabs	*Pagurus* spp.
Lady crab	*Ovalipes ocellatus*
Sevenspine bay shrimp	*Crangon septemspinosa*
Spider crab	*Libinia emarginata*

Source: NJDEP 2010

It is anticipated that mobile benthic species in the vicinity of the nearshore boring locations would be able to avoid the Project area. Species that cannot avoid the borings or vessel pads may experience minor adverse impacts. However, borings are only up to approximately four inches in diameter and the total impact area for all boring locations within State waters is approximately 1,386 square inches (9.6 square feet).

2.4 Finfish Community

Relevant data for the nearshore area includes studies that took place within the New Jersey Wind Energy Area (WEA) such as the Northeast Fisheries Science Center Seasonal Trawl Surveys conducted between 2003 and 2016 (Guida et al. 2017) as well as studies that were conducted in close proximity to the WEA whose fish and invertebrate collection data would

[1] Horseshoe crabs spend winter in 20 to 60 feet deep on the continental shelf (ASMFC 2013).

be representative of the Project area (Vasslides and Able 2008). These studies encompassed multiple seasons and were grouped into cold (winter/spring) and warm seasons (summer/fall). A summary of species collected in these studies by season is provided in **Table 2.4-1**.

Table 2.4-1 Taxa in Seasonal Trawl Survey Catches Between 2003 and 2016 in Cold (winter/spring) and Warm (Summer/Fall) Seasons

Common Name	Scientific Name	Winter/Spring	Summer/Fall
Atlantic croaker	*Micropogonias undulatus*[1,2]		x
Atlantic herring	*Clupea harengus*[1]	x	x
Atlantic mackerel	*Scomber scombrus*[1]	x	x
Bay anchovy	*Anchoa mitchilli*[1,2]		x
Black sea bass	*Centropristis striatus*[2]		x
Bluefish	*Pomatomus saltatrix*[2]		x
Bullnose ray	*Myliobatis freminvillii*[1]		x
Butterfish	*Peprilus triacanthus*[1,2]		x
Clearnose skate	*Raja eglanteria*[1]		x
Fourspot flounder	*Paralichthys oblongus*[2]		x
Gulf stream flounder	*Citharichthys arctifrons*[2]		x
Horseshoe crab	*Limulidae*[1]	x	x
Little skate	*Leucoraja erinacea*[1]	x	
Longfin Squid	*Doryteuthis pealeii*[1]	x	
Northern puffer	*Sphoeroides maculatus* [2]		x
Northern sand lance	*Ammodytes dubius*[1]	x	x
Northern seahourse	*Hippocampus erectus*[2]		x
Northern searobin	*Prionotus carolinus*[1,2]	x	x
Red hake	*Urophycis chuss*[2]		x
Roughtail stingray	*Dasyatis centroura*[1]		x
Round herring	Etrumeus teres		x
Scup	*Stenotomus chrysops*[1,2]		x
Sea scallop	*Placopecten magellanicus*[1]	x	x
Silver hake	*Merluccius bilinearis*[1,2]	x	x
Smallmouth flounder	*Etropus microstomus*[2]		x
Smooth dogfish	*Mustelus canis*[1]		x
Southern rock crab	*Cancer irroratus*[1]	x	x
Spiny dogfish	*Squalus acanthias*[1]	x	x
Spot	*Leiostomus xanthurus*[1]		x
Spotted hake	*Urophycis regia*[1,2]	x	x
Striped searobin	*Prionotus evolans*[2]		x

Table 2.4-1 Taxa in Seasonal Trawl Survey Catches Between 2003 and 2016 in Cold (winter/spring) and Warm (Summer/Fall) Seasons

Common Name	Scientific Name	Winter/Spring	Summer/Fall
Summer flounder	*Paralichthys dentatus*[1]	x	x
Weakfish	*Cynoscion regalis*[1]		x
Windowpane flounder	*Scophthalmus aquosus*[1]	x	x
Winter skate	*Leucoraja ocellata*[1]	x	x

1 Guida *et al.* 2017, [2] – Vasslides and Able 2008

No adverse impacts are expected to occur on the finfish community within the nearshore work area. Finfish that may be present in the areas where the nearshore boring will be conducted will actively avoid the disturbance for the duration of the activity in the area.

2.5 Threatened and Endangered Species

The NJDEP Natural Heritage Program (NHP), United States Fish and Wildlife Information for Planning and Conservation (IPaC), and the NOAA National Marine Fishery Services (NMFS) Section 7 Endangered Species Act Online Mapping were consulted in July 2022 to assess existing Federally and State-listed species within the geotechnical survey area. A review of these resources identified the species listed in **Table 2.5-1** as potentially occurring within or in the vicinity of the Project area.

Table 2.5-1 Federal and State-Listed Species within the Project Area

Common name	Scientific name	Listing[2]	Feature Type or Population Type
Birds			
Bald Eagle	*Haliaeetus leucocephalus*	SE	Foraging
Black-crowned Night-heron	*Nycticorax nycticorax*	ST	Foraging
Least Tern	*Sternula antillarum*	SE	Foraging and Nesting Colony
Osprey	*Pandion haliaetus*	ST	Foraging and Nest
Piping Plover	*Charadrius melodus*	FT, SE	Nesting Area
Red Knot	*Calidris canutus rufa*	FT, SE	Non-breeding sighting
Yellow-crowned Night-heron	*Nyctanassa violacea*	ST	Foraging
Vascular Plants[1]			
Seabeach Amaranth	*Amaranthus pumilus*	FT, SE	NA
Sea-beach Knotweed	*Polygonum glaucum*	SE	NA
Seabeach Sandwort	*Honckenya peploides var. robusta*	SE	NA

Fish			
Atlantic Sturgeon	*Acipenser oxyrhynchus*	FE, SE	Migrating & Foraging (Adults and Subadults) Migration & Foraging
Sea Turtles			
Atlantic Leatherback	*Dermochelys coriacea*	FE, SE	Migrating & Foraging (Adults and Juveniles) Occupied Habitat
Green Sea Turtle	*Chelonia mydas*	FT, ST	Migrating & Foraging (Adults and Juveniles) Occupied Habitat
Kemp's Ridley Sea Turtle	*Lepidochelys kempii*	FE, SE	Migrating & Foraging (Adults and Juveniles) Occupied Habitat
Loggerhead Sea Turtle	*Caretta caretta*	FT, SE	Migrating & Foraging (Adults and Juveniles) Occupied Habitat
Atlantic Large Whales			
Fin Whale	*Balaenoptera physalus*	FE, SE	Migrating, Overwintering, Foraging (Adults and Juveniles) Live Individual Siting, Calving (Adults)
Humpback Whale	*Megaptera novaeangliae*	FE, SE	Live Individual Siting
North Atlantic Right Whale	*Eubalaena glacialis*	FE, SE	Migrating (Adults and Juveniles) Live Individual Siting

1. FT – Federally Threatened, FE – Federally Endangered, ST – State Threatened, SE – State Endangered
2. Vascular plants will not be impacted because borings will be conducted in either nearshore waters in the Atlantic Ocean or upland, disturbed areas.

Based on Project activities and the life histories of the species listed by both the State and Federal agencies, no impacts to the above listed species are expected to occur as a result of the Project. For the Upland Borings, all boring locations are in disturbed upland areas without threatened or endangered species habitat and will take a maximum of three days to complete. For the nearshore borings, vessels will be at each location for a short duration. Equipment will remain at each location for approximately 45 minutes to an hour per seabed CPTU for the ECR Infill Borings and a maximum of five days for the Deep Landfall Borings. For this duration, any potential listed species in the area, including birds, fish, turtles, and marine mammals will avoid the disturbance.

In addition, geotechnical sampling activities do not use active acoustic sources other than those considered de minimis sources (e.g., Ultra-short Baseline [USBL] positioning systems used for vessel positioning).

Noise produced by geotechnical survey equipment is not expected to result in impacts to ESA-listed whales, sea turtles, or fish, as concluded by NMFS in their Letter of Concurrence on BOEM's Data Collection and Site Survey Activities for Renewable Energy on the Atlantic

Outer Continental Shelf Biological Assessment (NMFS 2021) or require incidental take authorization from NMFS. Therefore, mitigation measures such as exclusion zones, 12-hour monitoring by approved Protected Species Observers (PSOs) and Passive Acoustic Monitoring (PAM), are not warranted. The Project plans to comply with BOEM's Project Design Criteria and Best Management Practices for Protected Species Associated with Offshore Wind Data Collection (last revised November 2021).

3

Compliance Statement for Coastal General Permit No. 23

Below is a discussion of the Project's compliance with N.J.A.C. 7:7-6.23 General Permit 23 – Geotechnical Survey Borings. Text from the applicable rule or policy is in bold with Ocean Wind II's response demonstrating compliance with the rule or policy is in plain text.

1. **Borings and related site disturbance shall not be located in shellfish habitat (N.J.A.C. 7:7-9.2), submerged vegetation habitat (N.J.A.C. 7:7-9.6) or endangered or threatened wildlife or plant species habitats (N.J.A.C. 7:7-9.36).**

   Shellfish Habitat (N.J.A.C. 7:7-9.2)

   The NJDEP has a shellfish inventory program that collects data on the distribution and abundance of shellfish species dating back to 1963. The NJDEP publishes shellfish distribution maps for inland waters (e.g., bays and estuaries), describing the shellfish density by species for hard clams, surf clams, mussels, and oysters based on information collected from the inventory program. A review of the shellfish inventory mapping determined that the geotechnical survey area is not mapped as shellfish habitat. Furthermore, geotechnical surveys do not include inland waters and, as such, it is not anticipated that the borings will be located in shellfish habitat. In addition, the onshore upland borings are not within shellfish habitat. Therefore, the Project is consistent with this policy.

   Submerged Vegetation Habitat (N.J.A.C. 7:7-9.6)

   The NJDEP-DLRP provides historical maps of submerged aquatic vegetation (SAV) in 31 New Jersey coastal bays (Cook et al. 2021). In New Jersey, submerged vegetation is most prevalent in the shallow portions of the Navesink, Shrewsbury, Manasquan, and Metedeconk Rivers, and in Barnegat, Manahawkin, and Little Egg Harbor Bays (inland waters) (Cook et al. 2021). Geotechnical soil borings will occur within the Atlantic Ocean, 130-meters off the coast and do not include inland waters. Therefore, proposed Project activities will not occur in submerged vegetation habitat. In addition, the onshore upland

borings are not within submerged vegetation habitat. Therefore, the Project is consistent with this policy.

Endangered or Threatened Wildlife or Plant Species Habitats (N.J.A.C. 7:7-9.36).

As discussed in Section 2.5, based on Project activities and the life histories of the species listed in Table 2.5-1 by both the State and Federal agencies, no impacts to the listed species are expected to occur as a result of the Project. For the nearshore borings, vessels will be at each location for a short duration. Equipment will remain at each location for approximately 45 minutes to an hour per seabed CPTU for the ECR Infill Borings and one to five days for the Deep Landfall Borings and CPTs in State waters and one to three days for Upland Borings and CPTs onshore. For this duration, any potential listed species in the area, including birds, fish, turtles, and marine mammals will avoid the disturbance. For the onshore upland borings, they will be in previously disturbed areas and are not in threatened or endangered species habitat. Therefore, the Project is consistent with this policy.

2. Borings and related site disturbance shall comply with wild and scenic river corridors, (N.J.A.C. 7:7-9.44), wetlands (N.J.A.C. 7:7-9.27), and wetlands buffers (N.J.A.C. 7:7- 9.28).

   Wild and Scenic River Corridors, (N.J.A.C. 7:7-9.44)

   Proposed geotechnical survey sampling will occur within the Atlantic Ocean and in upland locations onshore. The Atlantic Ocean is not classified as a wild, scenic, or recreational river segment under the criteria of the National Wild and Scenic Rivers System. Therefore, the Project is consistent with this policy.

   Wetlands (N.J.A.C. 7:7-9.27), and Wetlands Buffers (N.J.A.C. 7:7- 9.28)

   Geotechnical survey borings will be taken in the Atlantic Ocean and in disturbed upland locations and will not result in impacts to wetlands or wetland buffers. Therefore, the Project is consistent with this policy.

3. Borings for remedial investigation shall be permitted, constructed, and completed in accordance with the Well Construction and Maintenance; Sealing of Abandoned Well rules, N.J.A.C. 7:9D, and N.J.A.C. 7:26E-1.5(b) and 4 of the Technical Requirements for Site Remediation;
   i. Any excavation shall not adversely impact existing remedial investigation/remediation action (RI/RA) activities:
   ii. Workers on-site shall be notified, in writing, prior to the start of site preparation, of the possible presence of contaminated materials. Appropriate measures shall be taken to protect workers from exposure to possible contaminants; and
   iii. Any potential or actual impact to existing monitoring wells shall be reported to the Department's Site Remediation Program and the licensed site remediation professional (LSRP) of record assigned to the case, if applicable. The LSRP (or the Site Remediation Program if there is no LSRP involved in the case) will coordinate appropriate measures required to protect, decommission, or install the monitoring wells. The LSRP is responsible for ensuring that all damaged or destroyed wells are decommissioned in accordance with N.J.A.C. 7:9D. Any replacement wells shall be installed in accordance with N.J.A.C. 7:9D. Decommissioning of monitoring wells and drilling of regulated soil

borings shall be performed by a New Jersey licensed well driller of the proper class in accordance with N.J.A.C. 7:9D.

The borings associated with this Project are not for remedial investigation. Therefore, this policy is not applicable.

4. Disturbance shall be limited to that which is necessary to access and conduct the geotechnical borings.
   i. Disturbance to vegetation shall be limited to a maximum width of five feet for access.

      Access to the geotechnical survey locations will be obtained via vessel in State waters or in disturbed upland areas and no vegetation will be cleared, cut, or removed. Therefore, the Project is consistent with this policy.

5. Borings and related site disturbance shall not be conducted during the following time periods:
   i. During the migration of anadromous fish from April 1 thru June 30 (inclusive);

      With respect to potential migration through the study area, Ocean Wind II has conducted an in-depth evaluation of scientific research regarding geotechnical survey activities within Atlantic sturgeon migration areas, and any potential impacts which may result as a result of the Project's planned activities. As detailed below, the scientific research and studies supports the conclusion that our 2022 geotechnical survey campaign would not result in adverse impacts on Atlantic sturgeon. It is important to note that this information was provided to and accepted by NJDEP during review of Ocean Wind II's 2022 Coastal General Permit 23 application for nearshore borings.

      Research published in 2018 by Breece, et. al. suggests that although Atlantic sturgeon are likely to be present in the shallow nearshore waters within the survey area during the months of May and June, these individuals will only be present in the geotechnical survey area for a short period of time during their annual migration to the Hudson River. Furthermore, an assessment of the available information published by the National Marine Fisheries Service (NMFS) in 2021 indicates that geotechnical surveys are not anticipated to result in any significant direct or indirect impacts to Atlantic sturgeon or their habitat. Below is a discussion of information in the NMFS Programmatic Consultation letter (NFMS 2021) relative to geotechnical surveys and potential effects to Atlantic sturgeon.

      <u>NMFS Guidance</u>

      In their 2021 Programmatic Consultation letter submitted to the Bureau of Ocean Energy Management (BOEM), NMFS determined that the coring activity being conducted as part of the geotechnical survey campaign is not anticipated to kill, physically harm, significantly modify or degrade the habitat of, impair the essential behavioral patterns of, or annoy to such an extent as to significantly disrupt the normal behavior of Atlantic sturgeon. Per the NMFS determination, impacts to Atlantic sturgeon from coring (geotechnical) survey activities would be limited to the following:

      1. Effects to individuals from survey and vessel noise

- Noise generated from coring activities is below the level that is expected to result in physiological or behavioral responses by Atlantic sturgeon (NMFS 2021). In addition, geotechnical sampling activities do not use active acoustic sources other than those considered de minimis sources (e.g., Ultra-short Baseline [USBL] positioning systems used for vessel positioning). Therefore, noise impacts from geotechnical survey activities are not expected to impact Atlantic sturgeon.
- Vessel noise could cause temporary auditory masking, physiological stress, or minor changes in behavior of Atlantic sturgeon (NMFS 2021). However, at a given geotechnical sampling location, this exposure would be short lived and vessel noise would only result in brief periods of exposure. Further, sturgeon are only expected to be transiting through the proposed geotechnical survey area during this time of year. Therefore, vessel noise would not be expected to accumulate to the levels that would result in injury to Atlantic sturgeon (NMFS 2021) and would not require an incidental take authorization. Additionally, this survey work would only be conducted by two vessels, which would add minimal noise to ambient levels from existing vessel traffic in the area.

2. Effects to habitat from survey activities
   - The proposed work would not overlap with any areas deemed critical habitat for Atlantic sturgeon.
   - Vibratory core samples would result in a temporary and localized disturbance to the seabed. There are no sediment plumes anticipated with this sampling type, and core samples are approximately 4 inches in diameter. The temporary impact from collecting cores is not anticipated to have any measurable effect on any foraging activity or any other behavior of Atlantic sturgeon (NMFS 2021).
3. Effects of vessel use
   - Two vessels will be utilized for this survey effort that are anticipated to operate at very slow speeds. While reports of vessel strikes on sturgeon have been reported within rivers and coastal bays, NMFS determined the risk of vessel strikes to be substantially less in the Atlantic Ocean and that effects of vessel strikes for geotechnical survey activities would be insignificant (NMFS 2021).

Given NMFS's evaluation of the potential impacts discussed above, the 2023 geotechnical survey campaign would not result in adverse impacts on Atlantic sturgeon. Therefore, the Project is consistent with this policy.

ii. **During the period from March 1 thru June 30 and from October 1 thru November 30 (inclusive), within and adjacent to waters on the Delaware River System from the mouth of bay to Delaware Memorial Bridge and tidal Maurice River, identified as American shad migratory pathways; and**

This condition does not apply to the survey location, as the Project is not located within or adjacent to the Delaware River System.

iii. **During the period from April 1 thru June 30 and from September 1 thru November 30 (inclusive), within and adjacent to waters on the Delaware River System from the**

Delaware Memorial Bridge to the New York State line and tidal portions of Rancocas and Raccoon Creeks, identified as American shad migratory pathways.

This condition does not apply to the survey location, as the Project is not located within or adjacent to the Delaware River System.

6. Boreholes shall be backfilled to the original surface level with appropriate, noncontaminated, soil material.

   i. Sand may not be used for backfilling in either freshwater or coastal wetlands. Restoration of all bore holes must maintain the hydrologic integrity of the wetlands. To avoid the potential for draining a wetland by puncturing a hard-pan or confining layer, all borings must be sealed with grout or bentonite in accordance with the Department's Water Monitoring Management Program rules, N.J.A.C. 7:9-6.

   Borings will not be completed in freshwater or coastal wetlands; therefore, this policy does not apply.

   ii. Water used to flush a boring may be discharged to the ground provided the boring is not conducted in proximity to a stream or in an area of hazardous waste or acid producing soils. When the boring is performed in proximity to a stream, and water or drilling fluid is used to remove soil from the hole, the sediment-laden water shall not be allowed to flow overland such that it would enter the stream. Soil erosion and sediment control measures shall be used as necessary to contain/filter excess water. Drilling fluid shall be contained when working adjacent to a fish-populated watercourse during the relevant restricted period, and in any other situation where containment represents the only method of ensuring that there is no impact to adjacent streams.

   The ECR Infill Borings will be completed down to a depth of approximately 19.7 feet (6m) bsb and will naturally backfill with sediment. The Deep Landfall Borings will be completed down to a depth of approximately 98 feet (30 m) bsb and will be backfilled with cementitious grout with bentonite, which is non-toxic, to 10 feet (3 m) bsb to provide a strong seal following the removal of the core in accordance with the Department's Water Monitoring Management Program rules (N.J.A.C. 7:9-6). The remaining 10 feet (3 m) will naturally backfill with sediment. No sampling will be conducted in freshwater or coastal wetlands, nor will water be discharged to the ground.

4

References

Atlantic States Marine Fisheries Commission (ASMFC). 2013. 2013 Horseshoe Crab Stock Assessment Update. Accessed January 2022. http://www.asmfc.org/uploads/file//52a88db82013HSC_StockAssessmentUpdate.pdf

Bureau of Ocean Energy Management (BOEM). 2020. Guidelines for Providing Geophysical, and Geohazard Information Pursuant to 30 CFR Part 585, data May 27, 2020. https://www.boem.gov/sites/default/files/documents/about-boem/GandG%20Guidelines.pdf

Cooke, D., Ravit, E., Wu, M., & Watson, E. 2021. Submerged Aquatic Vegetation and Habitat: Survey and Mapping Methodologies Review. Accessed January 2022. https://www.nj.gov/dep/sab/sab- sav-mapping.pdf

Guida, V., A. Drohan, H. Welch, J. McHenry, D. Johnson, V. Kentner, J. Brink, D. Timmons, E. Estela- Gomez. 2017. Habitat Mapping and Assessment of Northeast Wind Energy Areas. Sterling, VA: US Department of the Interior, Bureau of Ocean Energy Management. OCS Study BOEM 2017-088. 312 p.

Matthew W Breece, Dewayne A Fox, Danielle E Haulsee, Isaac I Wirgin, Matthew J Oliver. (2018) Satellite driven distribution models of endangered Atlantic sturgeon occurrence in the mid-Atlantic Bight, ICES Journal of Marine Science, Volume 75, Issue 2, March-April 2018, Pages 562–571, https://doi.org/10.1093/icesjms/fsx187

National Marine Fisheries Service (NMFS). 2021. Letter of Concurrence on BOEM's Data Collection and Site Survey Activities for renewable Energy on the Atlantic Outer Continental Shelf Biological Assessment. June 29, 2021. https://www.boem.gov/sites/default/files/documents/renewable-energy/OSW-surveys-NLAA-programmatic.pdf

National Oceanic and Atmospheric Administration. 2017. Endangered and Threatened Species; Designation of Critical Habitat for the Endangered New York Bight, Chesapeake Bay, Carolina and South Atlantic Distinct Population Segments of Atlantic Sturgeon and the Threatened Gulf of Main Distinct Population Segment of Atlantic Sturgeon. Docket No.

150818735-7452-02. Federal Register: Endangered and Threatened Species; Designation of Critical Habitat for the Endangered New York Bight, Chesapeake Bay, Carolina and South Atlantic Distinct Population Segments of Atlantic Sturgeon and the Threatened Gulf of Maine Distinct Population Segment of Atlantic Sturgeon. https://www.govinfo.gov/content/pkg/FR-2017-08-17/pdf/2017-17207.pdf

NJDEP 2010. Ocean/Wind Power Ecological Baseline Studies January 2008–December 2009. Final Report. Prepared for New Jersey Department of Environmental Protection Office of Science by Geo-Marine, Inc., Plano, Texas. Accessed January 2022. https://www.nj.gov/dep/dsr/ocean-wind/Ocean%20Wind%20Power%20Ecological%20Baseline%20Studies_Volume%20Four.pdf

NJDEP 2022. Natural Heritage Database and Landscape Project Review. July 22 and 26, 2022

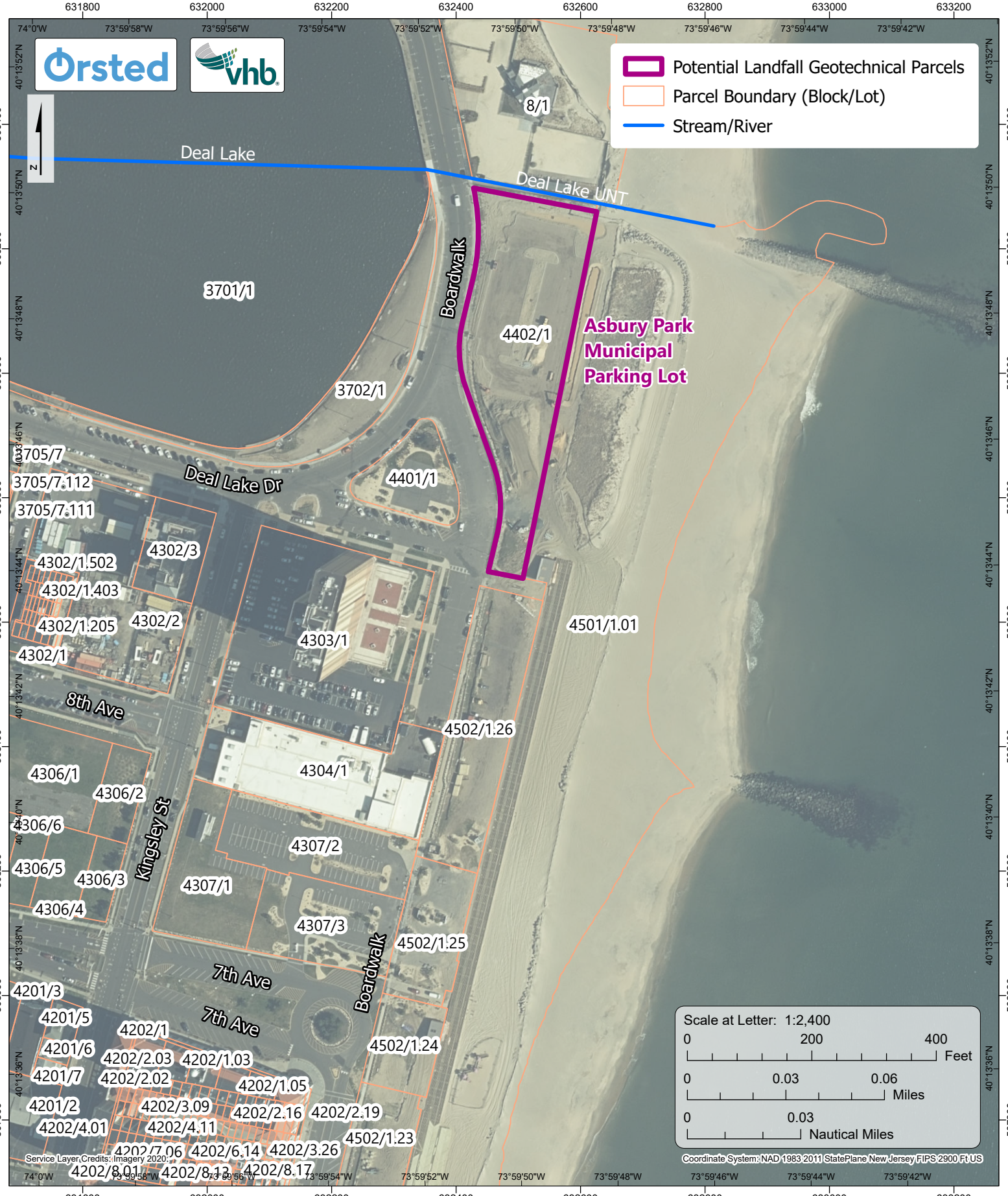
Tetra Tech. 2014. Support Document for Clean Air Act General Conformity Virginia Offshore Wind Technology Advancement Project (VOWTAP). Prepared by Tetra Tech, Inc. for Dominion, submitted November 24, 2014.

United States Fish and Wildlife Service (USFWS). 2022. Information for Planning and Consultation Review and Species Listing. Consultation Code: 05E2NJ00-2022-SLI-0545. Accessed January 21, 2022. http://www.fws.gov/northeast/njfieldoffice/Endangered/consulation.html

Vasslides, James M. and Able, Kenneth W. 2008. Importance of shoreface sand ridges as habitat for fishes off the northeast coast of the United States. Fishery Bulletin, 106(1), pp. 93-107.

Wilber, D.H., D.G. Clarke, G.L. Ray, and M. Burlas. 2003. Response of surf zone fish to beach nourishment operations on the northern coast of New Jersey, USA. Marine Ecology Progress Series. Vol. 250: 231 246.

Appendix A – Figures



Rev	Description	Date
-	First Issue	2022-11-29

Ocean Wind 2 Offshore Wind Farm

Site Location and Parcels Map

Asbury Park Locations

Doc. No:
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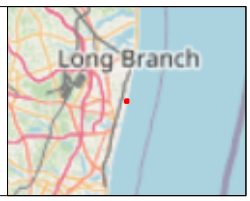
Checked by: KK (VHB)
Approved by:



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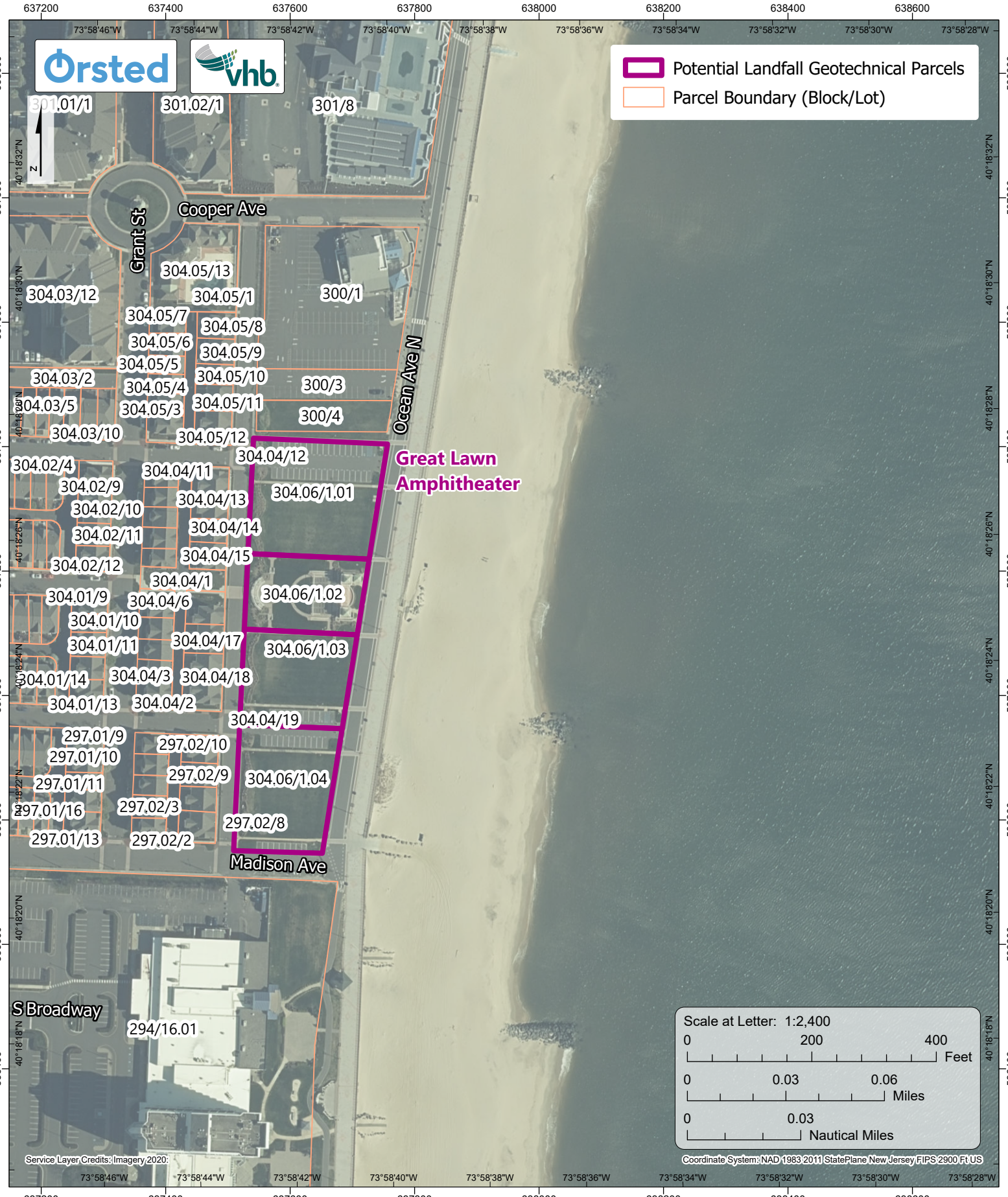

Rev	Description	Date
-	First Issue	2022-11-29

Ocean Wind 2 Offshore Wind Farm

Site Location and Parcels Map

Long Branch Locations

Doc. No:
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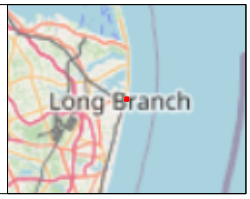
Checked by: KK (VHB)
Approved by:



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Rev	Description	Date
-	First Issue	2022-11-29

Ocean Wind 2
Offshore Wind Farm

USGS Map

Asbury Park Locations - Asbury Park OE E Quadrangle

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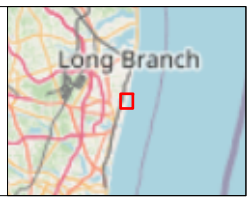
Checked by: KK (VHB)
Approved by:



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Rev	Description	Date
-	First Issue	2022-11-29

Ocean Wind 2
Offshore Wind Farm

USGS Map

Long Branch Locations - Long Branch East Quadrangle

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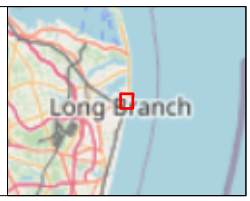
Checked by: KK (VHB)
Approved by:



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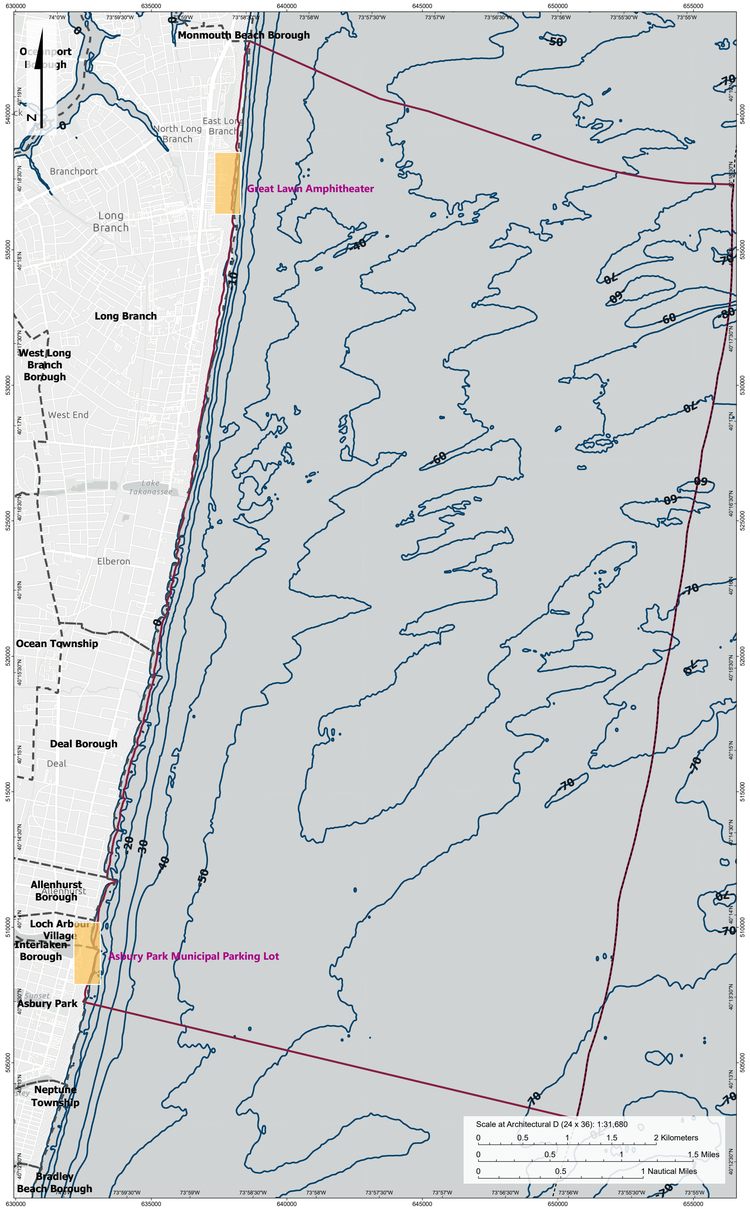
Appendix B – Permit Plans

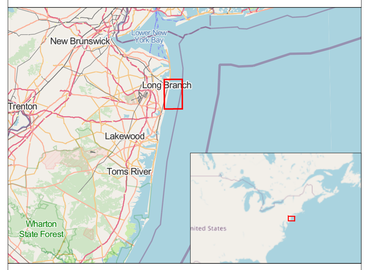


Ocean Wind 2 Offshore Wind Farm Project

Coastal Geotechnical Investigation

Site Plan

- Geotechnical Boring Locations (20m x 20m)
- Parcel Boundary
- Water Edge
- Coastal Wetland Line
- Tidelands Claim Line
- Nearshore Geotechnical Permitting Area
- 3-Nautical Mile State Water Boundary
- Municipal Boundaries
- 10' Bathymetric Contours
- 10' Contours
- 1' Contour



Coordinate System: NAD 1983 2011 StatePlane New Jersey FIPS 2900 Ft US
Vertical Datum: NAVD88

Rev	Description	Date
-	First Issue	2022-11-29

NOTES:

1. UP TO 110 SOIL INVESTIGATIONS APPROXIMATELY 4-INCHES IN DIAMETER TO A DEPTH OF 98 FEET (30 METERS) BELOW GROUND SURFACE WILL BE COMPLETED IN STATE WATERS; EXACT LOCATIONS WILL BE WITHIN THE IMMEDIATE PROXIMITY OF THE PREDETERMINED LOCATION AS SHOWN WITHIN THE NEARSHORE GEOTECHNICAL PERMITTING AREA.

2. TWO UPLAND SOIL BORINGS AND TWO CONE PENETRATION TESTS APPROXIMAGELY 4-INCHES IN DIAMETER WILL BE COMPLETED TO A DEPTH OF 98 FEET (30 METERS) BELOW GROUND SURFACE; EXACT LOCATIONS WILL BE WITHIN THE IMMEDIATE PROXIMITY OF THE PREDETERMINED 20 METER BY 20 METER LOCATIONS.

3. ONSHORE BORE HOLES CREATED DURING GEOTECHNICAL SURVEY BACKFILLED WITH BENTONITE TO WITHIN 10 FEET OF SURFACE; FINAL 10 FEET OF BOREHOLE TO BE BACKFILLED WITH NATIVE SOIL.

4. BATHYMETRIC CONTOURS GENERATED FROM NATIONAL CENTERS FOR ENVIRONMENTAL INFORMATION NINTH ARC-SECOND DEM TILES ACCESSED JULY 19, 2022 AND REFER TO NAVD 1988.

5. NO PERMANENT DISTURBANCE IS REQUIRED. AREA OF TEMPORARY DISTURBANCE IS APPROXIMATELY 0.4 SQUARE FEET IN UPLAND AREAS AND 9.6 SQUARE FEET IN STATE WATERS.

6.TIDELANDS AND COASTAL WETLANDS BOUNDARY
   4.1 ASBURY PARK PER NJDEP MAP #504-2184
   4.2 GREAT LAWN AMPHITHEATER PER NJDEP MAP #532-2190

7. COASTAL WETLANDS BOUNDARY LINE DIGITIZED FROM NJOGIS WMS OF CHRONOFLEX PHOTO-BASEMAPS KNOWN AS THE 1970 WETLANDS BASEMAPS. WATER EDGE BOUNDARY LINE AS IDENTIFIED DURING NV5 SURVEY (APRIL/MAY 2022).

8. HORIZONTAL DATUM IS BASED ON GRID NORTH AND REFER TO NEW JERSEY STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM (NAVD) OF 1983 (2011), 2010 EPOCH, GEOID 18, US SURVEY FEET. ELEVATIONS SHOWN HEREON REFER TO NAVD 1988 AND ARE BASED ON A GEODETIC CONTROL NETWORK PERFORMED BY VHB IN MAY OF 2022.

9. CONTOURS SHOWN HEREON ARE BASED ON LIDAR DATA ACQUIRED BY NV5 GEOSPATIAL IN APRIL/MAY OF 2022.

10. PROPERTY LINE INFORMATION SHOWN HEREON IS BASED UPON NEW JERSEY CAD_PARCEL_MOD4 FEATURE SERVICE. THIS INFORMATION IS SHOWN FOR GRAPHICAL PURPOSES ONLY AND DOES NOT CONSTITUTE A BOUNDARY SURVEY.

Catherine L. Applegate
NJ Professional Engineer License No 4080200
VHB NJ Certificate of Authorization 24GA27957200
VHB, 1805 Atlantic Avenue, Manasquan, NJ 08736

Doc. No:
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Checked by: CA (VHB)
Approved by:

Service Layer Credits: Light Gray Reference from Esri; Imagery from NearMap (2022); Water edge and contour data from NV5 (April/May 2022), bathymetric data from NCEI coastal DEM (2022).

Appendix C – NOAA Fisheries Programmatic Consultation Letter

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930

June 29, 2021

James F. Bennett
Program Manager, Office of Renewable Energy Programs
U.S. Department of the Interior
Bureau of Ocean Energy Management
45600 Woodland Road, VAM-OREP
Sterling, Virginia 20166

Dear Mr. Bennett:

We have completed consultation pursuant to section 7 of the Endangered Species Act (ESA) of 1973, as amended, concerning the effects of certain site assessment and site characterization activities to be carried out to support the siting of offshore wind energy development projects off the U.S. Atlantic coast. The Bureau of Ocean Energy Management (BOEM) is the lead federal agency for this consultation. BOEM's request for consultation included a biological assessment (BA) that was finalized in February 2021 and was supplemented with modified Project Design Criteria (PDC) and supplemental information through June 11, 2021. The activities considered in this consultation may occur in the three Atlantic Renewable Energy Regions (North Atlantic Planning Area, Mid-Atlantic Planning Area, and South Atlantic Planning Area; see Figure 1 in Appendix A) and adjacent coastal waters over the next 10 years (i.e., June 2021 – June 2031). Other action agencies include the U.S. Army Corps of Engineers (USACE), the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), and the National Marine Fisheries Service's (NMFS) Office of Protected Resources (OPR).

ACTION AREA AND PROPOSED ACTIONS

As defined in 50 CFR 402.02, "programmatic consultation is a consultation addressing an agency's multiple actions on a program, region, or other basis. Programmatic consultations allow NMFS to consult on the effects of programmatic actions such as: (1) Multiple similar, frequently occurring, or routine actions expected to be implemented in particular geographic areas; and, (2) A proposed program, plan, policy, or regulation providing a framework for future proposed actions." This programmatic consultation considers category 1--multiple similar, frequently occurring, or routine actions expected to be implemented in particular geographic areas.

The survey activities considered in this consultation are geophysical and geotechnical surveys and the deployment, operation, and retrieval of environmental data collection buoys. These frequent, similar activities are expected to be implemented along the U.S. Atlantic coast in the three Atlantic Renewable Energy Regions (North Atlantic Planning Area, Mid-Atlantic Planning Area, and South Atlantic Planning Area). The meteorological buoys and geophysical and geotechnical surveys are expected to occur to support the potential future siting of offshore wind turbines, cables, and associated offshore facilities such as substations or service platforms.

Action Agencies
As noted above, the activities considered here may be authorized, funded, or carried out by BOEM, the DOE, the EPA, the USACE, and NMFS. The roles of these action agencies are described here.

BOEM
The Outer Continental Shelf Lands Act (OCSLA), as amended, mandates the Secretary of the Interior (Secretary), through BOEM, to manage the siting and development of the Outer Continental Shelf (OCS) for renewable energy facilities. BOEM is delegated the responsibility for overseeing offshore renewable energy development in Federal waters (30 C.F.R. Part 585). Through these regulations, BOEM oversees responsible offshore renewable energy development, including the issuance of leases for offshore wind development. This consultation considers the effects of certain data collection activities (geophysical and geotechnical surveys and deployment of meteorological buoys) that may be undertaken to support offshore wind development. BOEM regulations require that a lessee provide the results of shallow hazard, geological, geotechnical, biological, and archaeological surveys with its Site Assessment Plan and Construction and Operations Plan (see 30 C.F.R. 585.610(b) and 30 C.F.R. 585.626(a)). BOEM also funds data collection projects, such as seafloor mapping through the Environmental Studies Program (ESP). The activities considered here may or may not occur in association with a BOEM lease. This consultation does not obviate the need for an appropriate consultation to occur on lease issuance or the approval of a Site Assessment Plan or Construction and Operations Plan.

DOE
The DOE's Office of Energy Efficiency and Renewable Energy (EERE) provides federal funding (financial assistance) in support of renewable energy technologies. EERE's Wind Energy Technologies Office invests in energy science research and development activities that enable the innovations needed to advance U.S. wind systems, reduce the cost of electricity, and accelerate the deployment of wind power, including offshore wind. EERE's Water Power Technologies Office enables research, development, and testing of emerging technologies to advance marine energy. DOE's financial assistance in support of renewable energy projects could have consequences for listed species in federal or state waters. Data collection activities that may be supported by DOE and are considered in this programmatic consultation include deployment of meteorological buoys and geotechnical and geophysical surveys.

EPA
Section 328(a) of the Clean Air Act (CAA) (42 U.S.C. § 7401 *et seq.*) as amended by Public Law 101-549 enacted on November 15, 1990, required the EPA to establish air pollution control requirements for OCS sources subject to the OCSLA for all areas of the OCS, except those located in the Gulf of Mexico west of 87.5 degrees longitude (near the border of Florida and Alabama),[1] in order to attain and maintain Federal and State ambient air quality standards and comply with the provisions of part C of title I of the Act.[2] To comply with this statutory mandate, on September 4, 1992, EPA promulgated "Outer Continental Shelf Air Regulations" at 40 C.F.R. part 55. (57 Fed. Reg. 40,791). 40 C.F.R part 55 also established procedures for

[1] Public Law 112-74, enacted on December 23, 2011, amended § 328(a) to add an additional exception from EPA regulation for OCS sources "located offshore of the North Slope Borough of the State of Alaska."
[2] Part C of title I contains the Prevention of Significant Deterioration of Air Quality (PSD) requirements.

implementation and enforcement of air pollution control requirements for OCS sources. 40 C.F.R. § 55.2 states:

> OCS source means any equipment, activity, or facility, which:
> (1) Emits or has the potential to emit any air pollutant;
> (2) Is regulated or authorized under OCSLA (43 U.S.C. § 1331 *et seq.*); and,
> (3) Is located on the OCS or in or on waters above the OCS.
> This definition shall include vessels only when they are:
> (1) Permanently or temporarily attached to the seabed and erected thereon and used for the purpose of exploring, developing, or producing resources therefrom …; or
> (2) Physically attached to an OCS facility, in which case only the stationary sources aspects of the vessels will be regulated.

As described in the BA, where activities considered in this consultation emit or will have the potential to emit air pollutants and are located on the OCS or in or on waters above the OCS, the activities may be subject to the 40 C.F.R. part 55 requirements, including the 40 C.F.R. § 55.6 permitting requirements. Such activities are expected to be limited to vessel operations and some meteorological buoys.

USACE

Of the activities considered in this consultation, the deployment of meteorological buoys and carrying out geotechnical surveys may require authorization from the USACE. The USACE has regulatory responsibilities under Section 10 of the Rivers and Harbors Act of 1899 to approve/permit any structures or activities conducted below the mean high water line of navigable waters of the United States. The USACE also has responsibilities under Section 404 of the Clean Water Act (CWA) to prevent water pollution, obtain water discharge permits and water quality certifications, develop risk management plans, and maintain such records. A USACE Nationwide Permit (NWP) 5 or Regional General Permit (RGP) for Scientific Measurement Devices is required for devices and scientific equipment whose purpose is to record scientific data through such means as meteorological stations (which would include buoys); water recording and biological observation devices, water quality testing and improvement devices, and similar structures. In New England States, RGPs are required instead of the NWP. As stated in both types of permit, "*upon completion of the use of the device to measure and record scientific data, the measuring device and any other structures or fills associated with that device (e.g., foundations, anchors, buoys, lines, etc.) must be removed to the maximum extent practicable and the site restored to preconstruction elevations,"* as prescribed by Section 404 of the CWA (U. S. Army Corps of Engineers 2012).

Consideration of Potential Issuance of Incidental Harassment Authorizations for Survey Activities

The Marine Mammal Protection Act (MMPA), and its implementing regulations, allows, upon request, the incidental take of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographic region. Incidental take is an unintentional, but not unexpected, "take." Upon receipt and review of an adequate and complete application, NMFS OPR may authorize the incidental take of marine mammals incidental to the marine site characterization surveys pursuant to the MMPA, if the required findings are made. Proponents of some survey activities considered here may be required to

obtain Incidental Take Authorizations (ITAs) under the MMPA. Therefore, the Federal actions considered in this consultation include the issuance of ITAs for survey activities described herein. Those ITAs may or may not provide MMPA take authorization for marine mammal species that are also listed under the ESA. As noted above, we have determined that all activities considered (inclusive of all PDC and BMPs) in this consultation will have no effect or are not likely to adversely affect any species listed under the ESA. By definition, that means that no take, as defined in the ESA, is anticipated. However, given the differences in the definitions of "harassment" under the MMPA and ESA, it is possible the site characterization surveys could result in harassment, as defined under the MMPA, but meet the ESA definition of "not likely to adversely affect." This consultation addresses such situations.

Under the MMPA (16 U.S.C. §1361 et seq.), take is defined as "to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal" and further defined by regulation (50 C.F.R. §216.3). Harassment is defined under the MMPA as any act of pursuit, torment, or annoyance which: has the potential to injure a marine mammal or marine mammal stock in the wild (Level A Harassment); or has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B Harassment). As defined in the MMPA, Level B harassment does not include an act that has the potential to injure a marine mammal or marine mammal stock in the wild.

Under the ESA, take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct." Harm is defined by regulation (50 C.F.R. §222.102) as "an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including, breeding, spawning, rearing, migrating, feeding, or sheltering." NMFS does not have a regulatory definition of "harass." However, on December 21, 2016, NMFS issued interim guidance[3] on the term "harass," under the ESA, defining it as to "create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering." The NMFS interim ESA definition of "harass" is not equivalent to MMPA Level B harassment. Due to the differences in the definition of "harass" under the MMPA and ESA, there may be activities that result in effects to a marine mammal that would meet the threshold for harassment under both the MMPA and the ESA, while other activities may result in effects that would meet the threshold for harassment under the MMPA but not under the ESA. This issue is addressed further in the Marine Mammals section of this letter.

For this consultation, we considered NMFS' interim guidance on the term "harass" under the ESA when evaluating whether the proposed activities are likely to harass ESA-listed species, and we considered the available scientific evidence to determine the likely nature of the behavioral responses and their potential fitness consequences. As explained below, we determined that the effects to ESA-listed marine mammals resulting from the survey activities considered here would be insignificant and not result in harassment per NMFS' interim guidance on harassment under the ESA.

[3] NMFS Policy Directive 02-110-19; available at *https://media.fisheries.noaa.gov/dam-migration/02-110-19.pdf*; last accessed March 25, 2021.

Activities Considered in this Programmatic Consultation

The survey activities that are considered here consist of high resolution geophysical (HRG) and geotechnical surveys designed to characterize benthic and subsurface conditions and deployment, operation, and retrieval of environmental data collection buoys. A complete description of representative survey equipment to be used is included in Appendix A (Tables A.1 and A.2). Additionally, this consultation considers effects of deploying, operating, and retrieving buoys equipped with scientific instrumentation to collect oceanographic, meteorological, and biological data. All activities considered here will comply with a set of PDC (see Appendix B). We also consider the effects of vessel traffic associated with these activities. All vessels carrying out these activities, including during transits, will comply with measures outlined in Appendix B regardless of the equipment used or the sound levels/frequency at which equipment is operating. This consultation does not consider the effects of any survey activities that have the potential to result in directed or incidental capture or collection of any ESA-listed species (e.g., trawl surveys in areas where ESA-listed sea turtles occur).

This consultation does not evaluate the construction of any commercial electricity generating facilities or transmission cables with the potential to export electricity. Consistent with our understanding of the relevant regulations, BOEM has indicated that any such proposals for installation of electricity generating facilities (i.e., installation of wind turbines) or transmission cables would be a separate federal action (including authorization from BOEM) requiring a separate section 7 consultation. "Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action" (50 CFR §402.02; see also 50 CFR §402.17). The construction, operation, and/or decommissioning of any offshore wind facility or appurtenant facilities (e.g., cables, substations, etc.) are not consequences of the proposed survey activities considered here as they are not reasonably certain to occur. As such, this consultation does not consider these activities.

Action Area

The action area is defined by regulation as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR 402.02). The Action Area for this consultation includes the areas to be surveyed and where buoys will be deployed, areas where increased levels of noise will be experienced as well as the vessel transit routes between existing Atlantic coast ports and the survey area. This area encompasses all effects of the proposed action considered here.

Surveys considered in this programmatic consultation will take place at depths 100-meters (m) or less within the three Atlantic Renewable Energy Regions (North Atlantic Planning Area, Mid-Atlantic Planning Area, and South Atlantic Planning Area) located on the Atlantic Outer Continental Shelf (OCS) and may also occur along potential cable corridor routes in nearshore waters of Atlantic coast states. The three planning areas extend from the US/Canada border in the north to Palm Bay, Florida in the south. The North, Mid-Atlantic, and South Atlantic planning

areas together extend seaward from the U.S./Canadian border in the North to Palm Bay, Florida in the South. For the purposes of this consultation, the action area includes the Atlantic Renewable Energy Regions in OCS waters out to the 100 m depth contour in the North Atlantic, extending from waters offshore Maine to New Jersey; Mid-Atlantic, extending from waters offshore Delaware to North Carolina; and the South Atlantic extending from waters offshore South Carolina to east-central Florida and the adjacent coastal waters to the Atlantic coast (see Figure 1 in Appendix A for map of the action area). The offshore extent of the action area is defined by the anticipated maximum water depth where potential offshore wind facilities could be constructed. The seaward limit for siting a wind energy facility on the OCS is approximately 25 nautical miles (nm) (46.3 kilometers [km]) from shore or 100 m (328 feet [ft.]) water depth due to economic viability limitations. The current fixed foundation technologies are limited to depths of about 60 m. Although the majority of site assessment and site characterization activities will occur in water <60 m to accommodate the depth limitations in support of fixed foundations for wind turbine generators, floating foundations may be used in water depths >60 m in the future.

IMPLEMENTATION, TRACKING, AND REPORTING FOR THIS PROGRAMMATIC CONSULTATION

As noted above, activities considered in this consultation may be authorized, funded, or carried out by one or more action agencies. When one of these action agencies identifies a proposed activity that they believe falls within the scope of this programmatic consultation, they will first identify a lead action agency for the review (we anticipate that in most cases this will be BOEM). They will then review the activity to confirm that it is consistent with the activities covered by this consultation, including a review to confirm that all relevant PDCs (as outlined in Appendix B) will be implemented. The lead action agency for the activity will send written correspondence to the NMFS Greater Atlantic Regional Fisheries Office (GARFO) (nmfs.gar.esa.section7@noaa.gov) providing a brief summary of the proposed activity, including location and duration, and the agency's determination that the proposed activity is consistent with the scope of activities considered in this consultation. The action agency will also confirm in writing that all relevant PDCs will be implemented. If NMFS GARFO has any questions about the activity or determines it is not within the scope of this consultation, a written reply will be provided to the action agency within 15 calendar days. Activities that are determined to not be within the scope of this consultation can be modified by the action agency to bring them within the scope of this consultation or the action agency can request a stand-alone ESA section 7 consultation outside of this programmatic consultation.

To provide flexibility while maintaining the intent of this programmatic consultation, if an action agency proposes use of an equipment type different than described in this consultation, but can demonstrate that the acoustic characteristics are similar to the representative equipment described in Table A.2 and that implementation of the PDCs will result in the same effects considered here, this can be described when the survey plan is transmitted to us. Similarly, it is possible to consider modifications to the PDCs for a particular survey plan when the lead action agency can demonstrate that the same conservation benefit or risk reduction can be achieved with an alternate proposal.

In order to track activities carried out under this programmatic consultation, by February 15 of each year, BOEM, as the lead agency for this programmatic consultation, will provide a written report to NMFS documenting the activities that occurred under the scope of this consultation in

the previous year (e.g., the report for 2021 activities will be due by February 15, 2022). This annual report will also transmit any monitoring reports and any reports of instances where PDCs were not implemented (e.g., where human safety prevented implementation of an otherwise required speed reduction). Following the receipt of the annual report, a meeting will be held if necessary to review and update any PDCs and to update the list of representative equipment.

ESA-LISTED SPECIES AND CRITICAL HABITAT CONSIDERED IN THIS CONSULTATION

In their BA, BOEM described the ESA-listed species and critical habitats that occur along the U.S. Atlantic coast. Of the species listed in the BA, we have determined that oceanic whitetip shark (*Carcharhinus longimanus*), Nassau grouper (*Epinephelus striatus*)[4], staghorn coral (*Acropora cervicornis*), elkhorn coral (*Acropora palmata*), pillar coral (*Dendrogyra cylindrus*), rough cactus coral (*Mycetophyllia ferox*), lobed star coral (*Orbicella annularis*), mountainous star coral (*Orbicella faveolata*), and boulder star coral (*Orbicella franksi*) do not occur in the action area.

ESA-Listed Species in the Action Area

The following listed species occur in the action area and are considered in this consultation:

Table 1. ESA-listed species that may be affected by the proposed action.

Common Name	Scientific Name	ESA Status
Marine Mammals – Cetaceans		
North Atlantic right whale	*Eubalaena glacialis*	Endangered
Fin Whale	*Balaenoptera physalus*	Endangered
Sei Whale	*Balaenoptera borealis*	Endangered
Sperm Whale	*Physeter macrocephalus*	Endangered
Blue whale	*Balaenoptera musculus*	Endangered
Sea Turtles		
Loggerhead turtle - Northwest Atlantic DPS	*Caretta*	Threatened
Green turtle - North Atlantic DPS and South Atlantic DPS	*Chelonia mydas*	Threatened
Kemp's ridley turtle	*Lepidochelys kempii*	Endangered

[4] Nassau grouper may occur in nearshore and offshore waters in the Florida Straits Planning Area but are not known to occur in nearshore or offshore waters of the South Atlantic Planning Area (NMFS 2013)

Leatherback turtle	*Dermochelys coriacea*	Endangered
Hawksbill turtle	*Eretmochelys imbricata*	Endangered
Fishes		
Atlantic salmon	*Salmo salar*	Endangered
Atlantic sturgeon	*Acipenser oxyrinchus*	Endangered
New York Bight DPS		Endangered
Chesapeake Bay DPS		Endangered
Carolina DPS		Endangered
South Atlantic DPS		Endangered
Gulf of Maine DPS		Threatened
Giant Manta Ray	*Manta birostris*	Threatened
Shortnose sturgeon	*Acipenser brevirostrum*	Endangered
Smalltooth sawfish	*Pristis pectinate*	Endangered

BOEM has determined the proposed action is not likely to adversely affect any of these species. We concur with this determination based on the rationale presented below. More information on the status of the species and critical habitat considered in this consultation, as well as relevant listing documents, status reviews, and recovery plans, can be found within the BA and on NMFS webpages accessible at: *https://www.greateratlantic.fisheries.noaa.gov/protected/section7/listing/index.html*, *https://sero.nmfs.noaa.gov/protected_resources/section_7/threatened_endangered/index.html*, and *https://www.fisheries.noaa.gov/species-directory*.

Critical Habitat in the Action Area

The action area overlaps, at least in part, with critical habitat designated for all five DPSs of Atlantic sturgeon, North Atlantic right whales, and the Northwest Atlantic Ocean DPS of loggerhead sea turtles. While critical habitat is designated for some of the other species considered in this consultation, that critical habitat does not occur in the action area. Critical habitat for the Gulf of Maine DPS of Atlantic salmon is limited to certain mainstem rivers in the State of Maine. At this time, we do not know of any geotechnical or geophysical survey activities that are likely to occur in those waters. As such, the proposed action will not overlap with critical habitat designated for the Gulf of Maine DPS of Atlantic salmon. BOEM determined that the activities considered here may affect, but are not likely to adversely affect critical habitat designated for the five DPSs of Atlantic sturgeon or the Northwest Atlantic DPS of loggerhead sea turtles. We concur with these determinations based on the rationale presented in the Effects of the Action section below.

BOEM determined that the activities considered here would have no effect on critical habitat designated for North Atlantic right whales. We agree with this determination as described briefly below.

Critical Habitat designated for the North Atlantic Right Whale

On January 27, 2016, NMFS issued a final rule designating critical habitat for North Atlantic right whales (81 FR 4837). Critical habitat includes two areas (Units) located in the Gulf of Maine and Georges Bank Region (Unit 1) and off the coast of North Carolina, South Carolina, Georgia and Florida (Unit 2). Geophysical and geotechnical surveys and met buoy deployment may occur in Unit 1 and Unit 2. Note that there are seasonal restrictions on certain acoustic survey equipment in Unit 1 and Unit 2 (PDC 4); however, these seasonal restrictions are in place to further reduce the potential for effects to right whales in these areas and are not related to effects on the features of that critical habitat.

Consideration of Potential Effects to Unit 1

As identified in the final rule (81 FR 4837), the physical and biological features essential to the conservation of the North Atlantic right whale that provide foraging area functions in Unit 1 are: The physical oceanographic conditions and structures of the Gulf of Maine and Georges Bank region that combine to distribute and aggregate *C. finmarchicus* for right whale foraging, namely prevailing currents and circulation patterns, bathymetric features (basins, banks, and channels), oceanic fronts, density gradients, and temperature regimes; low flow velocities in Jordan, Wilkinson, and Georges Basins that allow diapausing *C. finmarchicus* to aggregate passively below the convective layer so that the copepods are retained in the basins; late stage *C. finmarchicus* in dense aggregations in the Gulf of Maine and Georges Bank region; and diapausing *C. finmarchicus* in aggregations in the Gulf of Maine and Georges Bank region.

The activities considered here will not affect the physical oceanographic conditions and structures of the region that distribute and aggregate *C. finmarchicus* for foraging. This is because the activities considered here have no potential to affect currents and circulation patterns, flow velocities, bathymetric features (basins, banks, and channels), oceanic fronts, density gradients, or temperature regimes. Therefore, we have determined that the activities considered in this programmatic consultation will have no effect on Unit 1 of right whale critical habitat.

Consideration of Potential Effects to Unit 2

As identified in the final rule (81 FR 4837), the physical and biological features essential to the conservation of the North Atlantic right whale, which provide calving area functions in Unit 2, are: (i) Sea surface conditions associated with Force 4 or less on the Beaufort Scale; (ii) Sea surface temperatures of 7 °C to 17 °C; and, (iii) Water depths of 6 to 28 meters, where these features simultaneously co-occur over contiguous areas of at least 231 nmi^2 of ocean waters during the months of November through April. When these features are available, they are selected by right whale cows and calves in dynamic combinations that are suitable for calving, nursing, and rearing, and which vary, within the ranges specified, depending on factors such as weather and age of the calves.

The activities considered here will have no effect on the features of Unit 2; this is because geophysical and geotechnical surveys, met buoys, and vessel operations do not affect sea surface state, water temperature, or water depth. Therefore, we have determined that the activities considered in this programmatic consultation will have no effect on Unit 2 of right whale critical habitat

EFFECTS OF THE ACTION ON NMFS LISTED SPECIES AND CRITICAL HABITAT

Potential effects of the proposed action on listed species can be broadly categorized into the following categories: (1) effects to individual animals of exposure to noise associated with the survey activities (HRG, geotechnical), (2) effects of buoy deployment, operation, and retrieval; (3) effects to habitat from survey activities (including consideration of effects to Atlantic sturgeon and loggerhead critical habitat), and (4) effects of vessel use.

Effects of Exposure to Noise Associated With Survey Activities

Here we consider effects of noise associated with HRG and geotechnical surveys on ESA-listed species. Noise associated with meteorological buoys and vessel operations is discussed in those sections of this consultation.

Acoustic Thresholds

Due to the different hearing sensitivities of different species groups, NMFS uses different sets of acoustic thresholds to consider effects of noise on ESA-listed species. Below, we present information on thresholds considered for ESA-listed whales, sea turtles, and fish considered in this consultation.

ESA-listed Whales

NMFS *Technical Guidance for Assessing the Effects of Anthropogenic Noise on Marine Mammal Hearing* compiles, interprets, and synthesizes scientific literature to produce updated acoustic thresholds to assess how anthropogenic, or human-caused, sound affects the hearing of all marine mammals under NMFS jurisdiction (NMFS 2018[5]). Specifically, it identifies the received levels, or thresholds, at which individual marine mammals are predicted to experience temporary or permanent changes in their hearing sensitivity for acute, incidental exposure to underwater anthropogenic sound sources. As explained in the document, these thresholds represent the best available scientific information. These acoustic thresholds cover the onset of both temporary (TTS) and permanent hearing threshold shifts (PTS).

[5] See *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance* for more information.

Table 2. Impulsive acoustic thresholds identifying the onset of permanent threshold shift and temporary threshold shift for ESA-listed whales (NMFS 2018).

Hearing Group	Generalized Hearing Range[6]	Permanent Threshold Shift Onset[7]	Temporary Threshold Shift Onset
Low-Frequency Cetaceans (LF: baleen whales)	7 Hz to 35 kHz	*L*pk,flat: 219 dB *L*E,LF,24h: 183 dB	*L*pk,flat: 213 dB *L*E,LF,24h: 168 dB
Mid-Frequency Cetaceans (MF: sperm whales)	150 Hz to 160 kHz	*L*pk,flat: 230 dB *L*E,MF,24h: 185 dB	*L*pk,flat: 224 dB *L*E,MF,24h: 170 dB

These thresholds are a dual metric for impulsive sounds, with one threshold based on peak sound pressure level (0-pk SPL) that does not incorporate the duration of exposure, and another based on cumulative sound exposure level (SEL_{cum}) that does incorporate exposure duration. The two metrics also differ in regard to considering information on species hearing. The cumulative sound exposure criteria incorporate auditory weighting functions, which estimate a species group's hearing sensitivity, and thus susceptibility to TTS and PTS, over the exposed frequency range, whereas peak sound exposure level criteria do not incorporate any frequency dependent auditory weighting functions.

Additionally, NMFS considers exposure to impulsive/intermittent noise greater than 160 dB re 1uPa rms to have the potential to result in Level B harassment, as defined under the MMPA (which does not necessarily equate to ESA harassment). This value is based on observations of behavioral responses of baleen whales (Malme et al. 1983; Malme et al. 1984; Richardson et al. 1986; Richardson et al. 1990), but is used for all marine mammal species.

Sea Turtles

In order to evaluate the effects of exposure to the survey noise by sea turtles, we rely on the available scientific literature. Sea turtles are low frequency hearing specialists, typically hearing frequencies from 30 Hz to 2 kHz, with a range of maximum sensitivity between 100 to 800 Hz (Ridgway et al. 1969, Lenhardt 1994, Bartol et al. 1999, Lenhardt 2002, Bartol and Ketten 2006). Currently, the best available data regarding the potential for noise to cause behavioral disturbance come from studies by O'Hara and Wilcox (1990) and McCauley et al. (2000), who experimentally examined behavioral responses of sea turtles in response to seismic airguns. O'Hara and Wilcox

[6] Represents the generalized hearing range for the entire group as a composite (i.e., all species within the group), where individual species' hearing ranges are typically not as broad. Generalized hearing range chosen based on approximately 65 dB threshold from normalized composite audiogram, with the exception for lower limits for LF cetaceans (Southall et al. 2007).

[7] $L_{pk,flat}$: unweighted ($_{flat}$) peak sound pressure level (L_{pk}) with a reference value of 1 µPa; $L_{E,XF,24h}$: weighted (by species group; $_{LF}$: Low Frequency, or $_{MF}$: Mid-Frequency) cumulative sound exposure level (L_E) with a reference value of 1 μPa^2-s and a recommended accumulation period of 24 hours ($_{24h}$)

(1990) found that loggerhead turtles exhibited avoidance behavior at estimated sound levels of 175 to 176 dB re: 1 µPa (rms) (or slightly less) in a shallow canal. McCauley et al. (2000) reported a noticeable increase in swimming behavior for both green and loggerhead turtles at received levels of 166 dB re: 1 µPa (rms). At 175 dB re: 1 µPa (rms), both green and loggerhead turtles displayed increased swimming speed and increasingly erratic behavior (McCauley et al. 2000). Based on these data, we assume that sea turtles would exhibit a behavioral response when exposed to received levels of 175 dB re: 1 µPa (rms) and higher.

In order to evaluate the effects of exposure to the survey noise by sea turtles that could result in physical effects, we relied on the available literature related to the noise levels that would be expected to result in sound-induced hearing loss (i.e., temporary threshold shift (TTS) or permanent threshold shift (PTS)); we relied on acoustic thresholds for PTS and TTS for impulsive sounds developed by the U.S. Navy for Phase III of their programmatic approach to evaluating the environmental effects of their military readiness activities (U.S. Navy 2017). At the time of this consultation, we consider these the best available data since they rely on all available information on sea turtle hearing and employ the same statistical methodology to derive thresholds as in NMFS recently issued technical guidance for auditory injury of marine mammals (NMFS 2018). Below we briefly detail these thresholds and their derivation. More information can be found in the U.S. Navy's Technical report on the subject (U.S. Navy 2017).

To estimate received levels from airguns and other impulsive sources expected to produce TTS in sea turtles, the U.S. Navy compiled all sea turtle audiograms available in the literature in an effort to create a composite audiogram for sea turtles as a hearing group. Since these data were insufficient to successfully model a composite audiogram via a fitted curve as was done for marine mammals, median audiogram values were used in forming the hearing group's composite audiogram. Based on this composite audiogram and data on the onset of TTS in fishes, an auditory weighting function was created to estimate the susceptibility of sea turtles to TTS. Data from fishes were used since there are currently no data on TTS for sea turtles and fishes are considered to have hearing more similar to sea turtles than do marine mammals (Popper et al. 2014). Assuming a similar relationship between TTS onset and PTS onset as has been described for humans and the available data on marine mammals, an extrapolation to PTS susceptibility of sea turtles was made based on the methods proposed by (Southall et al. 2007). From these data and analyses, dual metric thresholds were established similar to those for marine mammals: one threshold based on peak sound pressure level (0-pk SPL) that does not incorporate the auditory weighting function nor the duration of exposure, and another based on cumulative sound exposure level (SEL_{cum}) that incorporates both the auditory weighting function and the exposure duration (Table 3).

Table 3. Acoustic thresholds identifying the onset of permanent threshold shift and temporary threshold shift for sea turtles exposed to impulsive sounds (U.S. Navy 2017, McCauley et al. 2000).

Hearing Group	Generalized Hearing Range	Permanent Threshold Shift Onset	Temporary Threshold Shift Onset	Behavioral Response
Sea Turtles	30 Hz to 2 kHz	204 dB re: 1 $\mu Pa^2 \cdot s$ SEL_{cum}	189 dB re: 1 $\mu Pa^2 \cdot s$ SEL_{cum}	175 dB re: 1 µPa (rms)
		232 dB re: 1 µPa SPL (0-pk)	226 dB re: 1 µPa SPL (0-pk)	

Marine Fish

There are no criteria developed for considering effects to ESA-listed fish specific to HRG equipment. However, all of the equipment that operates within a frequency that these fish species are expected to respond to, produces intermittent or impulsive sounds; therefore, it is reasonable to use the criteria developed for impact pile driving, seismic, and explosives when considering effects of exposure to this equipment (FHWG 2008). However, unlike impact pile driving, which produces repetitive impulsive noise in a single location, the geophysical survey sound sources are moving; therefore, the potential for repeated exposure to multiple pulses is much lower when compared to pile driving. We expect fish to react to noise that is disturbing by moving away from the sound source and avoiding further exposure. Injury and mortality is only known to occur when fish are very close to the noise source and the noise is very loud and typically associated with pressure changes (i.e., impact pile driving or blasting).

The Fisheries Hydroacoustic Working Group (FHWG) was formed in 2004 and consists of biologists from NMFS, United States Fish and Wildlife Service, Federal Highway Administration, USACE, and the California, Washington, and Oregon Department of Transportations, supported by national experts on underwater sound producing activities that affect fish and wildlife species of concern. In June 2008, the agencies signed an MOA documenting criteria for assessing physiological effects of impact pile driving on fish. The criteria were developed for the acoustic levels at which physiological effects to fish could be expected. It should be noted, that these are onset of physiological effects (Stadler and Woodbury, 2009), and not levels at which fish are necessarily mortally damaged. These criteria were developed to apply to all fish species. The interim criteria are:

- Peak SPL: 206 dB re 1 µPa
- SELcum: 187 B re 1μPa^2-s for fishes 2 grams or larger (0.07 ounces).
- SELcum: 183 dB re 1μPa^2-s for fishes less than 2 grams (0.07 ounces).

At this time, these criteria represent the best available information on the thresholds at which physiological effects to ESA-listed marine fish are likely to occur. It is important to note that physiological effects may range from minor injuries from which individuals are anticipated to completely recover with no impact to fitness to significant injuries that will lead to death. The

severity of injury is related to the distance from the noise source and the duration of exposure. The closer to the source and the greater the duration of the exposure, the higher likelihood of significant injury. Use of the 183 dB re 1 μPa^2-s cSEL threshold, is not appropriate for this consultation because all sturgeon in the action area will be larger than 2 grams. Physiological effects could range from minor injuries that a fish is expected to completely recover from with no impairment to survival to major injuries that increase the potential for mortality, or result in death.

We use 150 dB re: 1 µPa RMS as a threshold for examining the potential for behavioral responses by individual listed fish to noise with frequency less than 1 kHz. This is supported by information provided in a number of studies (Andersson et al. 2007, Purser and Radford 2011, Wysocki et al. 2007). Responses to temporary exposure of noise of this level is expected to be a range of responses indicating that a fish detects the sound, these can be brief startle responses or in the worst case, we expect that listed fish would completely avoid the area ensonified above 150 dB re: 1 uPa rms. Popper et al. (2014) does not identify a behavioral threshold but notes that the potential for behavioral disturbance decreases with the distance from the source.

HRG Acoustic Sources

HRG surveys are used for a number of site characterization purposes: locating shallow hazards, cultural resources, and hard-bottom areas; evaluating installation feasibility; assisting in the selection of appropriate foundation system designs; and determining the variability of subsurface sediments. The equipment typically used for these surveys includes: Bathymetry/Depth Sounder; Magnetometer; Seafloor Imagery/Side-Scan Sonar; Shallow and Medium (Seismic) Penetration Sub-bottom Profilers (e.g., CHIRPs, boomers, bubble guns). This consultation does not consider the use of seismic airguns because this equipment is not required for site characterization activities to support offshore wind development (due to the shallow sediment depths that need to be examined, compared to the miles into the seabed that are examined for oil and gas exploration where airguns are used).

As described in the BA, BOEM completed a desktop analysis of nineteen HRG sources in Crocker and Fratantonio (2016) to evaluate the distance to thresholds of concern for listed species (see tables in Appendix A). Equipment types or frequency settings that would not be used for the survey purposes by the offshore wind industry were not included in this analysis. To provide the maximum impact scenario for these calculations, the highest power levels and most sensitive frequency setting for each hearing group were used when the equipment had the option for multiple user settings. All sources were analyzed at a tow speed of 2.315 m/s (4.5 knots), which is the expected speed vessels will travel while towing equipment. PTS cumulative exposure distances were calculated for the low-frequency hearing group (sei, fin, and North Atlantic right whales), the mid-frequency group (sperm whales), and for a worst-case exposure scenario of 60 continuous minutes for sea turtles and fish.

Tables 4 and 5 describe the greatest distances to thresholds of concern for the various equipment types analyzed by BOEM. It is important to note that as different species groups have different hearing sensitivities, not all equipment operates within the hearing threshold of all species considered here. Complete tables are included in Appendix B of BOEM's BA.

Table 1. Summary of greatest PTS Exposure Distances from mobile HRG Sources at Speeds of 4.5 knots.

HRG SOURCE	PTS DISTANCE (m)								
	Highest Source Level (dB re 1 µPa)	Sea Turtles		Fish[b]		Baleen Whales		Sperm Whales[c]	
Mobile, Impulsive, Intermittent Sources									
		Peak	*SEL*	*Peak*	*SEL*	*Peak*	*SEL*	*Peak*	*SEL*
Boomers, Bubble Guns	176 dB SEL 207 dB RMS 216 PEAK	0	0	3.2	0	0	0.3	0	0
Sparkers	188 dB SEL 214 dB RMS 225 PEAK	0	0	9	0	2	12.7	0	0.2
Chirp Sub-Bottom Profilers	193 dB SEL 209 dB RMS 214 PEAK	NA	NA	NA	NA	0	1.2	0	0.3
Mobile, Non-impulsive, Intermittent Sources									
Multi-beam echosounder (100 kHz)	185 dB SEL 224 dB RMS 228 PEAK	NA	NA	NA	NA	NA	NA	0	0.5
Multi-beam echosounder (>200 kHz) (mobile, non-impulsive, intermittent)	182 dB SEL 218 dB RMS 223 PEAK	NA	NA	NA	NA	NA	NA	NA	NA
Side-scan sonar (>200 kHz) (mobile, non-impulsive, intermittent)	184 dB SEL 220 dB RMS 226 PEAK	NA	NA	NA	NA	NA	NA	NA	NA

[a] Sea turtle PTS distances were calculated for 203 cSEL and 230 dB peak criteria from Navy (2017).
[b] Fisheries Hydroacoustic Working Group (2008).
[c] PTS injury distances for listed marine mammals were calculated with NOAA's sound exposure spreadsheet tool using sound source characteristics for HRG sources in Crocker and Fratantonio (2016)
NA = not applicable due to the sound source being out of the hearing range for the group.

Using the same sound sources for the PTS analysis, BOEM calculated the distances to 175 dB re 1 µPa rms for sea turtles, 160 dB re 1 µPa rms for marine mammals, and 150 dB re 1 µPa rms for fish were calculated using a spherical spreading model (20 LogR) (Table 5). BOEM has conservatively used the highest power levels for each sound source reported in Crocker and Fratantonio (2016). Additionally, the spreadsheet and geometric spreading models do not

consider the tow depth and directionality of the sources; therefore, these are likely overestimates of actual disturbance distances.

Table 5. Summary of greatest disturbance distances by equipment type.

HRG SOURCE	DISTURBANCE DISTANCE (m)			
	Sea Turtles (175 dB re 1uPa rms)	**Fish (150 dB re 1uPa rms)**	**Baleen Whales (160 dB re 1uPa rms)**	**Sperm Whales (160 dB re 1uPa rms)**
Boomers, Bubble Guns	40	708	224	224
Sparkers	90	1,996[a]	502	502
Chirp Sub-Bottom Profilers	2	32	10	10
Multi-beam Echosounder (100 kHz)	NA	NA	NA	<369[b]
Multi-beam Echosounder (>200 kHz)	NA	NA	NA	NA
Side-scan Sonar (>200 kHz)	NA	NA	NA	NA

a – the calculated distance to the 150 dB rms threshold for the Applied Acoustics Dura-Spark is 1,996m; however, the distances for other equipment in this category is significantly smaller
b – this distance was recalculated using the NMFS spreadsheet following receipt of the BA.
NA = not applicable due to the sound source being out of the hearing range for the group.

Marine Mammals

Considering peak noise levels, the equipment resulting in the greatest isopleth to the marine mammal PTS threshold is the sparker (2.0 m for baleen whales, 0 m for sperm whales; Table A.3). Considering the cumulative threshold (24 hour exposure), the greatest distance to the PTS threshold is 12.7 m for baleen whales and 0.5 m for sperm whales. Animals in the survey area during the HRG survey are unlikely to incur any hearing impairment due to the characteristics of the sound sources, considering the source levels (176 to 205 dB re 1 µPa-m) and generally very short pulses and duration of the sound. Individuals would have to make a very close approach and

also remain very close to vessels operating these sources (<13 m) in order to receive multiple exposures at relatively high levels, as would be necessary to have the potential to result in any hearing impairment. Kremser et al. (2005) noted that the probability of a whale swimming through the area of exposure when a sub-bottom profiler emits a pulse is small—because if the animal was in the area, it would have to pass the transducer at close range in order to be subjected to sound levels that could cause PTS and would likely exhibit avoidance behavior to the area near the transducer rather than swim through at such a close range. Further, the restricted beam shape of many of HRG survey devices planned for use makes it unlikely that an animal would be exposed more than briefly during the passage of the vessel. The potential for exposure to noise that could result in PTS is even further reduced by the clearance zone and the use of PSOs to all for a shutdown of equipment operating within the hearing range of ESA-listed whales should a right whale or unidentified large whale be detected within 500 m or 100 m for an identified sei, fin, or sperm whale, see PDC 4. Based on these considerations, it is extremely unlikely that any ESA-listed whale will be exposed to noise that could result in PTS.

Masking is the obscuring of sounds of interest to an animal by other sounds, typically at similar frequencies. Marine mammals are highly dependent on sound, and their ability to recognize sound signals amid other sounds is important in communication and detection of both predators and prey (Tyack 2000). Although masking is a phenomenon which may occur naturally, the introduction of loud anthropogenic sounds into the marine environment at frequencies important to marine mammals increases the severity and frequency of occurrence of masking. The components of background noise that are similar in frequency to the signal in question primarily determine the degree of masking of that signal. In general, little is known about the degree to which marine mammals rely upon detection of sounds from conspecifics, predators, prey, or other natural sources. In the absence of specific information about the importance of detecting these natural sounds, it is not possible to predict the impact of masking on marine mammals (Richardson et al., 1995). In general, masking effects are expected to be less severe when sounds are transient than when they are continuous. Masking is typically of greater concern for those marine mammals that utilize low-frequency communications, such as baleen whales, because of how far low-frequency sounds propagate. NMFS has previously concluded that marine mammal communications would not likely be masked appreciably by the sub-bottom profiler signals given the directionality of the signals for most HRG survey equipment types planned for use for the types of surveys considered here and the brief period when an individual mammal is likely to be within its beam (see for example, 86 FR 22160). Based on this, any effects of masking on ESA-listed whales will be insignificant.

For equipment that operates within the functional hearing range (7 Hz to 35 kHz) of baleen whales, the area ensonified by noise greater than 160 dB re: 1uPa rms will extend no further than 502 m from the source (sparkers; the distance for chirp (10 m) and boomers and bubble guns (224 m) is smaller (Table A.5)). For equipment that operates within the functional hearing range of sperm whales (150 Hz to 160 kHz), the area ensonified by noise greater than 160 dB re: 1uPa rms will extend no further than 369 m from the source (100 kHz Multi-beam echosounder; the distance for sparkers (502 m), boomers and bubble guns (224 m), and chirp (10 m) is smaller; Table A.5).

Given that the distance to the 160 dB re: 1 uPa rms threshold extends beyond the required Shutdown Zone, it is possible that ESA-listed whales will be exposed to potentially disturbing levels of noise during the surveys considered here. We have determined that, in this case, the exposure to noise above the MMPA Level B harassment threshold (160 dB re: 1uPa rms) will result in effects that are insignificant. We expect that the result of this exposure would be, at worst, temporary avoidance of the area with underwater noise louder than this threshold, which is a reaction that is considered to be of low severity and with no lasting biological consequences (e.g., Ellison et al. 2007). The noise source itself will be moving. This means that any co-occurrence between a whale, even if stationary, will be brief and temporary. Given that exposure will be short (no more than a few seconds, given that the noise signals themselves are short and intermittent and because the vessel towing the noise source is moving) and that the reaction to exposure is expected to be limited to changing course and swimming away from the noise source only far/long enough to get out of the ensonified area (502 m or less, depending on the noise source), the effect of this exposure and resulting response will be so small that it will not be able to be meaningfully detected, measured or evaluated and, therefore, is insignificant. Further, the potential for disruption to activities such as breeding, feeding (including nursing), resting, and migrating is extremely unlikely given the very brief exposure to any noise (given that the source is traveling and the area ensonified at any given moment is so small). Any brief interruptions of these behaviors are not anticipated to have any lasting effects. Because the effects of these temporary behavioral changes are so minor, it is not reasonable to expect that, under the NMFS' interim ESA definition of harassment, they are equivalent to an act that would "create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering."

Sea Turtles

None of the equipment being operated for these surveys that overlaps with the hearing range (30 Hz to 2 kHz) for sea turtles has source levels loud enough to result in PTS or TTS based on the peak or cumulative exposure criteria (Table A.4). Therefore, physical effects are extremely unlikely to occur.

As explained above, we assume that sea turtles would exhibit a behavioral response when exposed to received levels of 175 dB re: 1 µPa (rms) and are within their hearing range (below 2 kHz). For boomers and bubble guns the distance to this threshold is 40 m, and is 90 m for sparkers and 2 m for chirps (Table A.5). Thus, a sea turtle would need to be within 90 m of the source to be exposed to potentially disturbing levels of noise. We expect that sea turtles would react to this exposure by swimming away from the sound source; this would limit exposure to a short time period, just the few seconds it would take an individual to swim away to avoid the noise.

The risk of exposure to potentially disturbing levels of noise is reduced by the use of PSOs to monitor for sea turtles. As required by the PDC 4, a Clearance Zone (500 m in all directions) for ESA-listed species must be monitored around all vessels operating equipment at a frequency of less than 180 kHz. At the start of a survey, equipment cannot be turned on until the Clearance Zone is clear for at least 30 minutes. This condition is expected to reduce the potential for sea turtles to be exposed to noise that may be disturbing. However, even in the event that a sea turtle is submerged and not seen by the PSO, in the worst case, we expect that sea turtles would avoid the area ensonified by the survey equipment that they can perceive. Because the area where

increased underwater noise will be experienced is transient and increased underwater noise will only be experienced in a particular area for only seconds, we expect any effects to behavior to be minor and limited to a temporary disruption of normal behaviors, temporary avoidance of the ensonified area and minor additional energy expenditure spent while swimming away from the noisy area. If foraging or migrations are disrupted, we expect that they will quickly resume once the survey vessel has left the area. No sea turtles will be displaced from a particular area for more than a few minutes. While the movements of individual sea turtles will be affected by the sound associated with the survey, these effects will be temporary (seconds to minutes) and localized (avoiding an area no larger than 90 m) and there will be only a minor and temporary impact on foraging, migrating or resting sea turtles. For example, BOEM calculated that for a survey with equipment being towed at 3 knots, exposure of a turtle that was within 90 m of the source would last for less than two minutes. We also note that, to minimize disturbance to the Northwest Atlantic Ocean DPS of loggerhead sea turtles, a voluntary pause in sparker operation will be implemented for all vessels operating in nearshore critical habitat for loggerhead sea turtles if any loggerhead or other sea turtle is observed within a 100 m Clearance Zone during a survey. This will further reduce the potential for behavioral disturbance.

Given the intermittent and short duration of exposure to any potentially disturbing noise from HGR equipment, major shifts in habitat use or distribution or foraging success are not expected. Effects to individual sea turtles from brief exposure to potentially disturbing levels of noise are expected to be minor and limited to a brief startle, short increase in swimming speed and/or short displacement, and will be so small that they cannot be meaningfully measured, detected, or evaluated; therefore, effects are insignificant.

Marine Fish

Of the equipment that may be used for geophysical surveys, only equipment that operates at a frequency within the estimated hearing range of the ESA-listed fish that may occur in the action area (i.e., frequency less than 1 kHz; Lovell et al. 2005; Meyer et al. 2010) may affect these species. Generally, this includes sparkers, boomers, and bubble guns (see Table A.2). All other survey equipment operates at a frequency higher than the ESA-listed fish considered here are expected to hear; therefore, we do not expect any effects to ESA-listed fish exposed to increased underwater noise from the other higher frequency survey equipment. Due to their typically submerged nature, monitoring clearance or shutdown zones for marine fish is not expected to be effective. As required by PDC 4, the surveys will use a ramp up procedure; that is, noise producing equipment will not be used at full energy right away. This gives any fish in the immediate area a "warning" and an opportunity to leave the area before the full energy of the survey equipment is used.

As explained above, the available information suggests that for noise exposure to result in physiological impacts to the fish species considered here, received levels need to be at least 206 dB re: 1uPa peak sound pressure level (SPLpeak) or at least 187 dB re: u1Pa cumulative. The peak thresholds are exceeded only very close to the noise source (<3.2 m for the boomers/bubble guns and <9 m for the sparkers (see Table A.4); the cumulative threshold is not exceeded at any distance. As such, in order to be exposed to peak sound pressure levels of 206 dB re: 1uPa from any of these sources, an individual fish would need to be within 9 m of the source (Table A.4). This is extremely unlikely to occur given the dispersed nature of the distribution of ESA-listed fish

in the action area, the use of a ramp up procedure, the moving and intermittent/pulsed characteristic of the noise source, and the expectation that ESA-listed fish will swim away, rather than towards the noise source. Based on this, no physical effects to any ESA-listed fish, including injury or mortality, are expected to result from exposure to noise from the geophysical surveys.

We use 150 dB re: 1 μPa root mean square (RMS) sound pressure level (SPL) as a threshold for examining the potential for behavioral responses to underwater noise by ESA-listed fish. This is supported by information provided in a number of studies (Andersson et al. 2007, Purser and Radford 2011, Wysocki et al. 2007). In the worst case, we expect that ESA-listed fish would completely avoid an area ensonified above 150 dB re: 1uPa rms for the period of time that noise in that area was elevated. The calculated distances to the 150 dB re: 1 uPa rms threshold for the boomers/bubble guns, sparkers, and sub-bottom profilers is 708 m, 1,996 m, and 32 m, respectively (Table A.5). It is important to note that BOEM has conservatively used the highest power levels for each sound source reported in Crocker and Fratantonio (2016) to calculate these distances; thus, they likely overestimate actual sound fields.

Because the area where increased underwater noise will be experienced is transient (because the survey vessel towing the equipment is moving), increased underwater noise will only be experienced in a particular area for a short period of time. Given the transient and temporary nature of the increased noise, we expect any effects to behavior to be minor and limited to a temporary disruption of normal behaviors, potential temporary avoidance of the ensonified area and minor additional energy expenditure spent while swimming away from the noisy area. If foraging, resting, or migrations are disrupted, we expect that these behaviors will quickly resume once the survey vessel has left the area (i.e., in seconds to minutes, given its traveling speed of 3 – 4.5 knots). Therefore, no fish will be displaced from a particular area for more than a few minutes. While the movements of individual fish will be affected by the sound associated with the survey, these effects will be temporary and localized and these fish are not expected to be excluded from any particular area and there will be only a minimal impact on foraging, migrating, or resting behaviors. Sustained shifts in habitat use or distribution or foraging success are not expected. Effects to individual fish from brief exposure to potentially disturbing levels of noise are expected to be limited to a brief startle or short displacement and will be so small that they cannot be meaningfully measured, detected, or evaluated; therefore, effects of exposure to survey noise are insignificant.

Acoustic Effects - Geotechnical Surveys

Geotechnical surveys generally do not use active acoustic sources, but may have some low-level ancillary sounds associated with them. As described in the BA, the loudest noises are from drilling associated with obtaining bore samples. Small-scale drilling noise associated with bore samples taken in shallow water has been measured to produce broadband sounds centered at 10 Hz with source levels at 71-89 dB re 1 μPa rms and 75-97 dB re 1 μPa peak depending on the water depth of the work site (Willis et al. 2010). Another study reported measured drilling noise from a small jack-up rig at 147 – 151 db re 1 μPa rms in the 1 Hz to 22 kHz range at 10 m from source (Erbe and McPherson 2017).

Noise associated with geotechnical surveys is below the level that we expect may result in physiological or behavioral responses by any ESA-listed species considered here. As such, effects

to listed whales, sea turtles, or fish from exposure to this noise source are extremely unlikely to occur.

Meteorological Buoys

A meteorological buoy (met buoy) is designed to collect meteorological data for a period of four-five years. During this time, data will be collected and transmitted to onshore facilities. The operation of the meteorological data collection instrumentation (i.e., light detection and ranging remote sensing technology (LIDAR) and Acoustic Doppler Current Profilers (ADCP)) will have no effect on any listed species as it does not operate in any way that could result in effects to listed species. Bathymetric LIDAR uses water-penetrating green light to also measure seafloor and riverbed elevations. ADCP uses extremely high frequency sound (well above the hearing frequency of any species considered in this consultation) to measure water currents. No other acoustic effects from the deployment of the met buoys are anticipated.

Buoys will be deployed and retrieved by vessels; maintenance will also be carried out from vessels. Potential effects of vessel traffic for all activities considered in this consultation is addressed below. PDCs for siting the buoy will result in avoidance of anchoring buoys on any sensitive habitats (i.e., placement will occur on unconsolidated and uncolonized areas only, avoiding eelgrass, corals, etc.) (see PDC 1). Buoys will be anchored to a clump weight anchor and attached to the anchor with heavy chain. We have considered the potential for any listed species, including whales and/or sea turtles, to interact with the buoy and to become entangled in the buoy or mooring system and have determined that this is extremely unlikely to occur for the reasons outlined below.

In order for an entanglement to occur, an animal must first encounter the gear, which has an extremely low likelihood based on the number of buoys and total area where buoys may be deployed (Atlantic OCS). BOEM predicts that up to two met buoys could be deployed in any potential lease area, for a maximum of 60 buoys deployed in the entirety of the Atlantic OCS. Given the small number of buoys and their dispersed locations on the OCS, the potential for encounter between an individual whale or sea turtle and a buoy is extremely low. However even if there is co-occurrence between an individual animal and one or more buoys, entanglement is extremely unlikely to occur. This is because the buoy will be attached to the anchor with heavy gauge chain, which reduces the risk of entanglement due to the tension that the buoy will be under and the gauge of the chain, which prevents any slack in the chain that could result in an entanglement (see PDC 6). There have been no documented incidences of any listed species, including whales or sea turtles, entangled in United States Coast Guard navigational buoys, which have a similar mooring configuration to these met buoys, but also far outnumber the potential number of deployed met buoys (there are 1000s of navigational buoys within the range of ESA-listed whales and sea turtles and no recorded entanglements). Based on the analysis herein, it is extremely unlikely that any ESA-listed species will interact with the buoy and anchor system such that it becomes entangled. As such, effects are extremely unlikely to occur.

Effects to Habitat

Vibracores and grab samples may be used to document habitat types during geophysical and geotechnical survey activities. Both of these survey methods will result in temporary disturbance

of the benthos and a potential temporary loss of benthic resources. Additionally, bottom disturbance will occur in the area where a met buoy is anchored.

The vibracores and grab samples will affect an extremely small area (approximately 0.1 to 2.7 ft^2) at each sampling location, with sampling locations several hundred meters apart. While the vibracore and grab sampler will take a portion of the benthos that will be brought onto the ship, because of the small size of the sample and the nature of the removal, there is little to no sediment plume associated with the sampling. While there may be some loss of benthic species at the sample sites, including potential forage items for listed species that feed on benthic resources, the amount of benthic resources potentially lost will be extremely small and limited to immobile individuals that cannot escape capture during sampling. As such a small area will be disturbed and there will be a large distance between disturbed areas, recolonization is expected to be rapid. The amount of potential forage lost for any benthic feeding species is extremely small, localized, and temporary. While the area of the bottom impacted by the anchoring of the met buoy is larger (i.e., several meters in diameter), as stated above, there will be a small number of buoys deployed along the entire Atlantic OCS. Any loss of benthic resources will be small, temporary, and localized.

These temporary, isolated reductions in the amount of benthic resources are not likely to have a measurable effect on any foraging activity or any other behavior of listed species; this is due to the small size of the affected areas in relation to remaining available habitat in the OCS and the temporary nature of any disturbance. As effects to listed species will be so small that they cannot be meaningfully measured, detected, or evaluated, effects are insignificant.

Other Considerations – Geotechnical Surveys
The PDCs include a seasonal prohibition on any activities involving disturbance of the bottom in areas where early life stages of Atlantic or shortnose sturgeon may occur (see PDC 2). The seasonal prohibition is designed to avoid any activity that could disturb potential spawning or rearing substrate during the time of year that spawning or rearing may occur in that river. This PDC will also ensure that no bottom disturbing survey activities will occur at a time that eggs or other immobile or minimally mobile early life stages of sturgeon are present. This will ensure that sampling activities will not result in the disturbance, injury, or mortality of any sturgeon. Based on this, any effects to sturgeon spawning habitat or early life stages are extremely unlikely to occur.

Atlantic Sturgeon Critical Habitat
Critical habitat has been designated for all five DPSs of Atlantic sturgeon (82 FR 39160; effective date September 18, 2017). While there is no Atlantic sturgeon critical habitat in the three Atlantic Renewable Energy Regions located on the Atlantic OCS, survey activities along potential cable routes, including vessel transits, may occur within Atlantic sturgeon critical habitat. While BOEM anticipates that activities would be limited to overlapping with critical habitat designated in the Hudson, Delaware, and James rivers for the New York Bight and Chesapeake Bay DPSs respectively, the conclusions reached here apply to critical habitat designated for all five DPSs.

The PDCs include a seasonal prohibition on any geophysical and geotechnical survey activities involving disturbance of the bottom in freshwater (salinity less than 0.5 parts per thousand (ppt))

areas designated as critical habitat for any DPS of Atlantic sturgeon (see PDC # 2 for more detail). The PDCs also require operation of vessels in a way that ensures that vessel activities do not result in disturbance of bottom habitat.

In order to determine if the proposed action may affect critical habitat, we consider whether it would impact the habitat in a way that would affect its ability to support reproduction and recruitment. Specifically, we consider the effects of the action on the physical features of the proposed critical habitat. The Physical and Biological Features (PBFs) essential for Atlantic sturgeon conservation identified in the final rule (82 FR 39160) are:

> (1) Hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0.0 to 0.5 ppt range) for settlement of fertilized eggs, refuge, growth, and development of early life stages;
>
> (2) Aquatic habitat with a gradual downstream salinity gradient of 0.5 up to as high as 30 ppt and soft substrate (e.g., sand, mud) between the river mouth and spawning sites for juvenile foraging and physiological development;
>
> (3) Water of appropriate depth and absent physical barriers to passage (e.g., locks, dams, thermal plumes, turbidity, sound, reservoirs, gear, etc.) between the river mouth and spawning sites necessary to support: (i) Unimpeded movement of adults to and from spawning sites; (ii) Seasonal and physiologically dependent movement of juvenile Atlantic sturgeon to appropriate salinity zones within the river estuary; and, (iii) Staging, resting, or holding of subadults or spawning condition adults. Water depths in main river channels must also be deep enough (e.g., at least 1.2 m) to ensure continuous flow in the main channel at all times when any sturgeon life stage would be in the river.
>
> (4) Water, between the river mouth and spawning sites, especially in the bottom meter of the water column, with the temperature, salinity, and oxygen values that, combined, support: (i) Spawning; (ii) Annual and interannual adult, subadult, larval, and juvenile survival; and, (iii) Larval, juvenile, and subadult growth, development, and recruitment (e.g., 13 degrees Celsius [°C] to 26 °C for spawning habitat and no more than 30 °C for juvenile rearing habitat, and 6 milligrams per liter (mg/L) dissolved oxygen (DO) or greater for juvenile rearing habitat).

PBF 1: Hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0.0–0.5 ppt range) for settlement of fertilized eggs, refuge, growth, and development of early life stages

In considering effects to PBF 1, we consider whether the proposed action will have any effect on areas of hard substrate in low salinity waters that may be used for settlement of fertilized eggs, refuge, growth, and development of early life stages; therefore, we consider effects of the action on hard bottom substrate and any change in the value of this feature in the action area.

Vessel operations during transits or surveys would not affect hard bottom habitat in the part of the river with salinity less than 0.5 ppt, because they would not impact the river bottom in any way or change the salinity of portions of the river where hard bottom is found. Similarly, geophysical

surveys use acoustics to accurately map the seafloor, which would not impact any hard bottom that is present.

Grab samples, geotechnical surveys, and any other activity that may affect hard bottom is prohibited in areas with salinity less than 0.5 ppt during the time of year that these areas may be used for spawning or rearing (PDC 2). Given the very small footprint of all survey activities that may affect the hard bottom (3-4 inch diameter area would be disturbed during sampling) and the spacing of sampling several hundred meters apart, any effects to hard bottom substrate from survey activities outside of the time of year when these areas may be used for spawning and rearing would be small, localized, and dispersed. Given the dynamic nature of river sediments and the small area that will be disturbed, we expect that substrate conditions will recover to pre-survey conditions within days to weeks of sampling occurring. As such, any effects to hard bottom substrate and the value of this feature in the action area or to any of the critical habitat units as a whole are temporary and so small that they cannot be meaningfully measured, evaluated, or detected and, therefore, are insignificant.

PBF 2: Aquatic habitat with a gradual downstream salinity gradient of 0.5 up to as high as 30 ppt and soft substrate (e.g., sand, mud) between the river mouth and spawning sites for juvenile foraging and physiological development

In considering effects to PBF 2, we consider whether the proposed action will have any effect on areas of soft substrate within transitional salinity zones between the river mouth and spawning sites for juvenile foraging and physiological development; therefore, we consider effects of the action on soft substrate and salinity and any change in the value of this feature in the action area.

Project vessels (whether transiting or surveying) do not have the potential to effect salinity. Vessels are expected to maintain a minimum of 4-feet clearance with the river bottom (see PDC 2) and, therefore, effects to the soft substrate are extremely unlikely. The vessels' operations would not preclude or significantly delay the development of soft bottom habitat in the transitional salinity zone because they would not impact salinity or the river bottom in any way. Similarly, geophysical surveys use acoustics to accurately map the bottom, which would not affect any soft substrate that is present.

Grab samples and geotechnical surveys may impact soft substrate; however, given the very small footprint of any such activities (3-4 inch diameter area would be disturbed during sampling) and the spacing of sampling locations several hundred meters apart, any effects to soft substrate would be small, localized, and dispersed. Given the dynamic nature of river sediments and the small area that will be disturbed, we expect that substrate conditions will recover to pre-survey conditions within days to weeks of sampling occurring. As such, any effects to soft substrate and the value of this feature in the action area, are extremely unlikely or so small that they cannot be meaningfully measured, evaluated, or detected.

PBF 3: Water absent physical barriers to passage between the river mouth and spawning sites

In considering effects to PBF 3, we consider whether the proposed action will have any effect on water of appropriate depth and absent physical barriers to passage (e.g., locks, dams, thermal

plumes, turbidity, sound, reservoirs, gear, etc.) between the river mouth and spawning sites necessary to support: unimpeded movements of adults to and from spawning sites; seasonal and physiologically dependent movement of juvenile Atlantic sturgeon to appropriate salinity zones within the river estuary, and; staging, resting, or holding of subadults or spawning condition adults. We also consider whether the proposed action will affect water depth or water flow, as if water is too shallow it can be a barrier to sturgeon movements, and an alteration in water flow could similarly impact the movements of sturgeon in the river, particularly early life stages that are dependent on downstream drift. Therefore, we consider effects of the action on water depth and water flow and whether the action results in barriers to passage that impede the movements of Atlantic sturgeon.

Survey activities, including vessel transits, will have no effect on this feature as they will not have any effect on water depth or water flow and will not be physical barriers to passage for any life stage of Atlantic sturgeon that may occur in this portion of the action area. As explained above, noise associated with the geotechnical surveys is below the threshold that would be expected to result in any disturbance of sturgeon; therefore, noise associated with geotechnical surveys will not affect the habitat in any way that would affect the movement of Atlantic sturgeon. Similarly, while HRG surveys may affect the movement of individual sturgeon, the effects are short-term and transient; noise is not expected to result in a barrier to passage. Based on this analysis, any effects to PBF 3 will be insignificant.

PBF 4: Water with the temperature, salinity, and oxygen values that, combined, provide for DO values that support successful reproduction and recruitment and are within the temperature range that supports the habitat function

In considering effects to PBF 4, we consider whether the proposed action will have any effect on water, between the river mouth and spawning sites, especially in the bottom meter of the water column, with the temperature, salinity, and oxygen values that, combined, support: spawning; annual and interannual adult, subadult, larval, and juvenile survival; and larval, juvenile, and subadult growth, development, and recruitment. Therefore, we consider effects of the action on temperature, salinity and DO needs for Atlantic sturgeon spawning and recruitment. These water quality conditions are interactive and both temperature and salinity influence the DO saturation for a particular area. We also consider whether the action will have effects to access to this feature, temporarily or permanently and consider the effect of the action on the action area's ability to develop the feature over time. Survey activities, including vessel transit, will have no effect on this feature as they will not have any effect on temperature, salinity or dissolved oxygen.

Summary of effects to Atlantic sturgeon critical habitat
We have determined that the effects of the activities considered here will be insignificant on PBFs 1, 2, and 3, and will have no effects to PBF 4. As such, the activities considered here are not likely to adversely affect Atlantic sturgeon critical habitat designated for any of the five DPSs.

Critical Habitat Designated for the Northwest Atlantic Ocean DPS of Loggerhead Sea Turtles
Critical habitat for the Northwest Atlantic Ocean DPS of loggerhead sea turtles was designated in 2014 (79 FR 39855). Specific areas for designation include 38 occupied marine areas within the range of the Northwest Atlantic Ocean DPS. These areas contain one or a combination of habitat

types: Nearshore reproductive habitat, winter area, breeding areas, constricted migratory corridors, and/or *Sargassum* habitat. There is no critical habitat designated in the North Atlantic Renewable Energy Region. Winter, breeding, and migratory habitat occur in the Mid-Atlantic and South Atlantic regions of the action areas; there is also a small amount of overlap with *Sargassum* critical habitat on the outer edges of the action area near the 100-m isobaths. Geophysical and geotechnical surveys and met buoy deployment may take place within this critical habitat. As explained below, the activities considered in this programmatic consultation are not likely to adversely affect critical habitat designated for the Northwest Atlantic Ocean DPS of loggerheads.

Nearshore Reproductive
The PBF of nearshore reproductive habitat is described as a portion of the nearshore waters adjacent to nesting beaches that are used by hatchlings to egress to the open-water environment as well as by nesting females to transit between beach and open water during the nesting season. The occurrence of designated nearshore reproductive habitat in the action area is limited to the area between the beach to 1 mile offshore along the Atlantic coast from Cape Hatteras, North Carolina to the southern extent of the South Atlantic planning area along the Florida coast.

As described in the final rule, the primary constituent elements (PCE) that support this habitat are the following: (1) Nearshore waters directly off the highest density nesting beaches and their adjacent beaches as identified in 50 CFR 17.95(c) to 1.6 km (1 mile) offshore; (2) Waters sufficiently free of obstructions or artificial lighting to allow transit through the surf zone and outward toward open water; and, (3) Waters with minimal manmade structures that could promote predators (i.e., nearshore predator concentration caused by submerged and emergent offshore structures), disrupt wave patterns necessary for orientation, and/or create excessive longshore currents.

Met buoys will only be deployed in federal waters; therefore, no met buoys will be deployed in nearshore reproductive habitat. HRG and geotechnical surveys and associated vessel transits could occur in this nearshore habitat. The intermittent noise associated with these activities will not be an obstruction to turtles moving through the surf zone; this is because the noise that can be perceived by sea turtles would dissipate to non-disturbing levels within 90 m of the moving source (see further explanation above) and the area with potentially disturbing levels of noise would be limited to one area within 90 m of the source at any given time. Therefore, given the small geographic area affected by noise and that these effects will be temporary (experienced for no more than 2 minutes in any given area), the effects to habitat are insignificant. Any lighting associated with the surveys would be limited to lights on vessels in the ocean, this lighting would not disorient turtles the way that artificial lighting along land can. Additionally, there are no mechanisms by which the HRG and geotechnical surveys and vessel activities would promote predators or disrupt wave patterns necessary for orientation or create excessive longshore currents.

Winter
The PBF of winter habitat is described as warm water habitat south of Cape Hatteras, North Carolina near the western edge of the Gulf Stream used by a high concentration of juveniles and adults during the winter months. The one area of winter critical habitat identified in the final rule extends from Cape Hatteras at the 20 m depth contour straight across 35.27° N. lat. to the 100 m (328 ft.) depth contour, south to Cape Fear at the 20 m (66 ft.) depth contour (approximately

33.47° N. lat., 77.58° W. long.) extending in a diagonal line to the 100 m (328 ft.) depth contour (approximately 33.2° N. lat., 77.32° W. long.). This southern diagonal line (in lieu of a straight latitudinal line) was chosen to encompass the loggerhead concentration area (observed in satellite telemetry data) and identified habitat features, while excluding the less appropriate habitat (e.g., nearshore waters at 33.2° N. lat.). PCEs that support this habitat are the following: (1) Water temperatures above 10°C from November through April; (2) Continental shelf waters in proximity to the western boundary of the Gulf Stream; and, (3) Water depths between 20 and 100 m.

Met buoy deployment/operation, HRG and geotechnical surveys, and vessel transits that may occur within the designated winter habitat will have no effect on this habitat because they will not: affect or change water temperatures above 10° C from November through April; affect continental shelf waters in proximity to the western boundary of the Gulf Stream; or, affect or change water depths between 20 and 100 m.

Breeding
The PBFs of concentrated breeding habitat are sites with high densities of both male and female adult individuals during the breeding season. Two units of breeding critical habitat are identified in the final rule. One occurs in the action area – a concentrated breeding site located in the nearshore waters just south of Cape Canaveral, Florida. The PCEs that support this habitat are the following: (1) High densities of reproductive male and female loggerheads; (2) Proximity to primary Florida migratory corridor; and, (3) Proximity to Florida nesting grounds.

Met buoys, HRG and geotechnical surveys, and vessel transits will not affect the habitat in the breeding units in a way that would change the density of reproductive male or female loggerheads. This is because (as explained fully above), any effects to distribution of sea turtles will be limited to intermittent, temporary disturbance limited to avoidance of an area no more than 90m from the survey vessel. The impacts to habitat from temporary increases in noise will be so small that they will be insignificant.

Constricted Migratory Corridors
The PBF of constricted migratory habitat is high use migratory corridors that are constricted (limited in width) by land on one side and the edge of the continental shelf and Gulf Stream on the other side. The final rule describes two units of constricted migratory corridor habitat. The constricted migratory corridor off North Carolina serves as a concentrated migratory pathway for loggerheads transiting to neritic foraging areas in the north, and back to winter, foraging, and/or nesting areas in the south. The constricted migratory corridor in Florida stretches from the westernmost edge of the Marquesas Keys (82.17° W. long.) to the tip of Cape Canaveral (28.46° N. lat.) and partially overlaps with the action area (i.e., the designated habitat extends further south than the action area). PCEs that support this habitat are the following: (1) Constricted continental shelf area relative to nearby continental shelf waters that concentrate migratory pathways; and, (2) Passage conditions to allow for migration to and from nesting, breeding, and/or foraging areas.

Noise associated with the survey activities considered here will have minor and temporary effects on winter habitat; however, as explained fully above, any effects to sea turtles will be limited to intermittent, temporary disturbance or avoidance of an area no more than 90m from the survey vessel. These temporary and intermittent increases in underwater noise will have insignificant

effects on the conditions of the habitat that will not result in any decreased ability or availability of habitat for passage of sea turtles. No other activities will affect passage of loggerhead sea turtles in the wintering habitat.

Sargassum
The PBF of loggerhead *Sargassum* habitat is developmental and foraging habitat for young loggerheads where surface waters form accumulations of floating material, especially *Sargassum*. Two areas are identified in the final rule – the Atlantic Ocean area and the Gulf of Mexico area. The Atlantic Ocean area extends from the Gulf of Mexico along the northern/western boundary of the Gulf Stream and east to the outer edge of the U.S. EEZ. There is a small amount of overlap between the action area and the Atlantic Ocean *Sargassum* critical habitat unit on the outer edges of the action area near the 100-m isobaths. PCEs that support this habitat are the following: (i) Convergence zones, surface-water downwelling areas, the margins of major boundary currents (Gulf Stream), and other locations where there are concentrated components of the *Sargassum* community in water temperatures suitable for the optimal growth of *Sargassum* and inhabitance of loggerheads; (ii) *Sargassum* in concentrations that support adequate prey abundance and cover; (iii) Available prey and other material associated with *Sargassum* habitat including, but not limited to, plants and cyanobacteria and animals native to the *Sargassum* community such as hydroids and copepods; and, (iv) Sufficient water depth and proximity to available currents to ensure offshore transport (out of the surf zone), and foraging and cover requirements by *Sargassum* for post-hatchling loggerheads, i.e., >10 m depth.

Given the distance from shore, met buoy deployment is not anticipated in areas designated as *Sargassum* critical habitat. The occasional project vessel transits, HRG and geotechnical surveys that may occur within the designated *Sargassum* habitat will have no effect on: conditions that result in convergence zones, surface-water downwelling areas, the margins of major boundary currents (Gulf Stream), and other locations where there are concentrated components of the *Sargassum* community in water temperatures suitable for the optimal growth of *Sargassum* and inhabitance of loggerheads; the concentration of *Sargassum*; the availability of prey within *Sargassum*; or the depth of water in any area. This is because these activities do not affect hydrological or oceanographic processes, no *Sargassum* will be removed due to survey activities, and the intermittent noise associated with surveys will not affect the availability of prey within *Sargassum*.

Summary of effects to critical habitat
Any effects to designated critical habitat will be insignificant. Therefore, the survey activities considered in this programmatic consultation are not likely to adversely affect critical habitat designated for the Northwest Atlantic DPS of loggerhead sea turtles.

Vessel Traffic
The HRG and geotechnical surveys are carried out from vessels. Additionally, vessels will be used to transport met buoys to and from deployment sites and to carry out any necessary inspections. As described in BOEM's BA, survey operations involve slow moving vessels, traveling at no more than 3-4.5 knots. HRG and geotechnical surveys typically involve one to three survey vessels operating within the area to be surveyed; up to approximately 36 areas may be surveyed over the 10-year period considered here. During transits to or from survey locations,

these vessels would travel at a maximum speed of around 12 knots. Met buoy deployment, retrieval, and inspection will also involve one or two vessels at a time; a total of 60 buoys are considered in this consultation. These vessels will typically travel at speeds of 12 knots or less; however, service vessels (limited to one trip per month per buoy) may travel at speeds of up to 25 knots (BOEM 2021).

Marine Mammals

As detailed in Appendix B, a number of Best Management Practices (BMPs) (see PDC 5), designed to reduce the risk of vessel strike, will be implemented for all activities covered by this programmatic consultation, including the following requirements:

1. All vessel operators and crews will maintain a vigilant watch for marine mammals at all times, and slow down or stop their vessel to avoid any interaction.
2. PSOs monitoring a Vessel Strike Avoidance Zone during all vessel operations.
3. Complying with speed restrictions in North Atlantic right whale management areas including Seasonal Management Areas (SMAs), active Dynamic Management Areas (DMAs)/visually triggered Slow Zones.
4. Daily monitoring of the NMFS North Atlantic right whale reporting systems.
5. Reducing vessel speeds to ≤10 knots when mother/calf pairs, pods, or large assemblages of ESA-listed marine mammals are observed.
6. Maintaining >500 m separation distance from all ESA-listed whales or an unidentified large marine mammal; if a whale is sighted within 200 m of the forward path of the vessel, then reducing speed and shifting the engines into neutral, and must not be engaged until the whale has move outside of the vessel's path and beyond 500 m.

An examination of all known ship strikes from all shipping sources (civilian and military) indicates vessel speed is a principal factor in whether a vessel strike results in death of a whale (Kelley et al. 2020; Knowlton and Kraus 2001; Laist et al., 2001; Jensen and Silber 2003; Vanderlaan and Taggart 2007). In assessing records with known vessel speeds, Laist et al. (2001) found a direct relationship between the occurrence of a whale strike and the speed of the vessel involved in the collision. The authors concluded that most deaths occurred when a vessel was traveling in excess of 24.1 km/h (14.9 mph; 13 knots (kn)). Additionally, Kelley et al (2020) found that collisions that create stresses in excess of 0.241 megapascals were likely to cause lethal injuries to large whales and through biophysical modeling that vessels of all sizes can yield stresses higher than this critical level. Survey vessels will typically travel slowly (less than 4.5 knots) as necessary for data acquisition, will have PSOs monitoring for whales, and will adjust vessel operations as necessary to avoid striking whales during survey operations and transits. The only times that survey vessels will operate at speeds above 4 knots is during transit to and from the survey site where they may travel at speeds up to 12 knots (although several circumstances described below will restrict speed to 10 knots), a number of measures (see PDC 5) will be in place to minimize the risk of strike during these transits. Slow operating speeds mean that vessel operators have more time to react and steer the vessel away from a whale. The

use of dedicated PSOs to keep a constant watch for whales and to alert vessel operators of any sightings also allows vessel operators to avoid striking any sighted whales.

As noted above, vessels used to inspect and maintain met buoys may travel at speeds up to 25 knots. This vessel traffic will be an extremely small increase in the amount of vessel traffic in the action area (i.e., if 60 buoys are deployed this would be a maximum of 60 trips per month spread out along the entire Atlantic OCS), which is transited by thousands of vessels each day. These vessels are subject to all of the vessel related BMPs (see PDC 5) noted above, including use of a dedicated lookout, vessel strike avoidance procedures, and requirements to slow down to 10 knots in areas where North Atlantic right whales have been documented (i.e., within SMAs, DMAs/visually triggered Slow Zones). Based on this analysis, it is extremely unlikely that a vessel associated with the survey activities considered here, when added to the environmental baseline, will strike an ESA-listed whale. We note that similar activities have taken place since at least 2012 in association with BOEM's renewable energy program and there have been no reports of any vessel strikes of marine mammals.

The frequency range for vessel noise (10 to 1000 Hz; MMS 2007) overlaps with the generalized hearing range for sei, fin, and right whales (7 Hz to 35 kHz) and sperm whales (150 Hz to 160 kHz) and would therefore be audible. Vessels without ducted propeller thrusters would produce levels of noise of 150 to 170 dB re 1 µPa-1 meter at frequencies below 1,000 Hz, while the expected sound-source level for vessels with ducted propeller thrusters level is 177 dB (RMS) at 1 meter (BOEM 2015, Rudd et al. 2015). For ROVs, source levels may be as high as 160 dB (BOEM 2021). Given that the noise associated with the operation of project vessels is below the thresholds that could result in injury, no injury is expected.

Marine mammals may experience masking due to vessel noises. For example, right whales were observed to shift the frequency content of their calls upward while reducing the rate of calling in areas of increased anthropogenic noise (Parks et al. 2007) as well as increasing the amplitude (intensity) of their calls (Parks et al. 2011a; Parks et al. 2009). Right whales also had their communication space reduced by up to 84 percent in the presence of vessels (Clark et al. 2009). Although humpback whales did not change the frequency or duration of their vocalizations in the presence of ship noise, their source levels were lower than expected, potentially indicating some signal masking (Dunlop 2016).

Vessel noise can potentially mask vocalizations and other biologically important sounds (e.g., sounds of prey or predators) that marine mammals may rely on. Potential masking can vary depending on the ambient noise level within the environment, the received level and frequency of the vessel noise, and the received level and frequency of the sound of biological interest. In the open ocean, ambient noise levels are between about 60 and 80 dB re 1 µPa in the band between 10 Hz and 10 kHz due to a combination of natural (e.g., wind) and anthropogenic sources (Urick 1983), while inshore noise levels, especially around busy ports, can exceed 120 dB re 1 µPa. When the noise level is above the sound of interest, and in a similar frequency band, masking could occur. This analysis assumes that any sound that is above ambient noise levels and within an animal's hearing range may potentially cause masking. However, the degree of masking increases with increasing noise levels; a noise that is just detectable over ambient levels is unlikely to cause any substantial masking.

Vessel noise has the potential to disturb marine mammals and elicit an alerting, avoidance, or other behavioral reaction. These reactions are anticipated to be short-term, likely lasting the amount of time the vessel and the whale are in close proximity (e.g., Magalhaes et al. 2002; Richardson et al. 1995; Watkins 1981), and not consequential to the animals. Additionally, short-term masking could occur. Masking by passing ships or other sound sources transiting the action area would be short term and intermittent, and therefore unlikely to result in any substantial costs or consequences to individual animals or populations. Areas with increased levels of ambient noise from anthropogenic noise sources such as areas around busy shipping lanes and near harbors and ports may cause sustained levels of masking for marine mammals, which could reduce an animal's ability to find prey, find mates, socialize, avoid predators, or navigate.

Based on the best available information, ESA-listed whales are either not likely to respond to vessel noise or are not likely to measurably respond in ways that would significantly disrupt normal behavior patterns that include, but are not limited to, breeding, feeding or sheltering. Therefore, the effects of vessel noise on ESA-listed whales are insignificant (i.e., so minor that the effect cannot be meaningfully evaluated or detected).

Sea Turtles

As detailed in Appendix B, a number of BMPs (see PDC 5), designed to reduce the risk of vessel strike, will be implemented for all activities covered by this programmatic consultation, including dedicated lookouts on board all transiting vessels, reduced speeds and avoidance of areas where sea turtles are likely to occur (e.g., Sargassum patches), and required separation distances from any observed sea turtles.

Sea turtles are vulnerable to vessel collisions because they regularly surface to breathe and often rest at or near the surface. Sea turtles often congregate close to shorelines during the breeding season, where boat traffic is denser (Schofield et al. 2007; Schofield et al. 2010) which can increase vulnerability to vessel strike in such areas, particularly by smaller, fast moving vessels. Sea turtles, with the exception of hatchlings and pre-recruitment juveniles, spend a majority of their time submerged (Renaud and Carpenter 1994; Sasso and Witzell 2006). Although, Hazel et al. (2007) demonstrated sea turtles preferred to stay within the three meters of the water's surface, despite deeper water being available. Any of the sea turtle species found in the action area can occur at or near the surface in open-ocean and coastal areas, whether resting, feeding or periodically surfacing to breathe.

While research is limited on the relationship between sea turtles, vessel strikes and vessel speeds, sea turtles are at risk of vessel strike where they co-occur with vessels. Sea turtle detection is likely based primarily on the animal's ability to see the oncoming vessel, which would provide less time to react to vessels traveling at speeds at or above 10 knots (Hazel et al. 2007). Hazel et al. (2007) examined vessel strike risk to green sea turtles and suggested that sea turtles may habituate to vessel sound and are more likely to respond to the sight of a vessel rather than the sound of a vessel, although both may play a role in eliciting responses (Hazel et al. 2007). Regardless of what specific stressor associated with vessels turtles are responding, they only appear to show responses (avoidance behavior) at approximately 10 m or closer (Hazel et al. 2007). This is a concern because faster vessel speeds also have the potential to result in more

serious injuries (Work et al. 2010). Although sea turtles can move quickly, Hazel et al. (2007) concluded that at vessel speeds above 4 km/hour (2.1 knots) vessel operators cannot rely on turtles to actively avoid being struck. Thus, sea turtles are not considered reliably capable of moving out of the way of vessels moving at speeds greater than 2.1 knots.

While vessel struck sea turtles have been observed throughout their range, including in the action area, the regions of greatest concern for vessel strike are areas with high concentrations of recreational-boat traffic such as the eastern Florida coast, the Florida Keys, and the shallow coastal bays in the Gulf of Mexico (NRC 1990). In general, the risk of strike for sea turtles is considered to be greatest in areas with high densities of sea turtles and small, fast moving vessels such as recreational vessels or speed boats (NRC 1990). Similarly, Foley et al. (2019) concluded that in a study in Florida, vessel strike risk for sea turtles was highest at inlets and passes. Stetzar (2002) reports that 24 of 67 sea turtles stranded along the Atlantic Delaware coast from 1994-1999 had evidence of boat interactions (hull or propeller strike); however, it is unknown how many of these strikes occurred after the sea turtle died. There are no estimates of the total number of sea turtles struck by vessels in the Atlantic Ocean each year. Foley et al. (2019), estimated that strikes by motorized watercraft killed a mean of 1,326–4,334 sea turtles each year in Florida during 2000–2014 (considering the Atlantic and Gulf coasts of Florida). As described in NRC 1990, vessel strike risk for sea turtles in the Atlantic Ocean is highest in Florida.

The proposed survey activities will result in an increase in vessel traffic in the action area. Compared to baseline levels of vessel traffic in the action area (in its entirety and in any particular portion), the survey vessels, which will be likely two or three vessels operating in a particular survey area at a time (and spaced such that the sound fields of any noise producing equipment do not overlap), represent an extremely small fraction of total vessel traffic. For example, the U.S. Coast Guard's Atlantic Coast Port Access Route Study (ACPARS; USCG 2015), reports nearly 36,000 unique vessel transits through wind energy areas and lease areas along the Atlantic Coast. Those vessel transits represent only a fraction of the total coastal traffic as the wind energy areas and lease areas are located further offshore than most of the routes used by coastal tug traffic, for example. The U.S. Coast Guard's New Jersey PARS (USCG 2021) reports between 77,000 and 80,000 unique trips annual in the Atlantic Ocean off a portion of the coast of New Jersey in 2017-2019. This data is not wholly representative of all vessel traffic in this area as it only includes vessels carrying AIS systems, which is only required for vessels 65 feet in length or greater (although smaller vessels can utilize AIS and some do). Even if there were 3-boat surveys occurring in each of the four lease areas located in the New Jersey PARS study area, this would represent an increase of 12 vessels off New Jersey in a single year; this represents an approximately 0.01% increase in vessel traffic in that area. We expect that this increase is similar in other portions of the action area. If we assume that any increase in vessel traffic in the action area would increase the risk of vessel strike to sea turtles, then we could also assume that this would result in a corresponding increase in the number of sea turtles struck by vessels. However, it is unlikely that all vessels represent an equal increase in risk and the slow speeds (up to 4.5 knots) that the majority of vessels considered here will typically be moving, requirements to monitor for sea turtles during vessel transits, avoid or slowdown in areas where sea turtles are likely to occur, and to maintain distance from any sighted turtles, means that the risk to sea turtles from the survey vessels is considerably less than other vessels, particularly small, fast vessels operating in nearshore areas where sea turtle densities are high.

An analysis conducted by NMFS Southeast Regional Office (Barnette 2018) considered sea turtle vessel strike risk in Florida; the portion of the action area where risk is considered highest due to the concentration of sea turtles and vessels. Barnette (2018) concluded that, when using the conservative mean estimate of a sea turtle strike every 193 years (range of 135-250 years) per vessel, it would require approximately 200 new vessels introduced to an area to potentially result in a single sea turtle strike in any single year. Considering that the proposed action will introduce significantly fewer vessels in any particular area and that survey vessels will increase vessel traffic in the action area by less than 0.01%, and the measures that will be in place to reduce risk of vessel strike, as well as the slow speed of the survey vessels, we conclude that any increase in the number of sea turtles struck in the action area because of the increase in traffic resulting from survey vessels added to the environmental baseline is extremely unlikely. Therefore, effects of this increase in traffic are extremely unlikely.

The vessels used for the proposed project will produce low-frequency, broadband underwater sound below 1 kHz (for larger vessels), and higher-frequency sound between 1 kHz to 50 kHz (for smaller vessels), although the exact level of sound produced varies by vessel type.

ESA-listed turtles could be exposed to a range of vessel noises within their hearing abilities. Depending on the context of exposure, potential responses of green, Kemp's ridley, leatherback, and loggerhead sea turtles to vessel noise disturbance, would include startle responses, avoidance, or other behavioral reactions, and physiological stress responses. Very little research exists on sea turtle responses to vessel noise disturbance. Currently, there is nothing in the available literature specifically aimed at studying and quantifying sea turtle response to vessel noise. However, a study examining vessel strike risk to green sea turtles suggested that sea turtles may habituate to vessel sound and may be more likely to respond to the sight of a vessel rather than the sound of a vessel, although both may play a role in prompting reactions (Hazel et al. 2007). Regardless of the specific stressor associated with vessels to which turtles are responding, they only appear to show responses (avoidance behavior) at approximately 10 m or closer (Hazel et al. 2007).

Therefore, the noise from vessels is not likely to affect sea turtles from further distances, and disturbance may only occur if a sea turtle hears a vessel nearby or sees it as it approaches. These responses appear limited to non-injurious, minor changes in behavior based on the limited information available on sea turtle response to vessel noise.

For these reasons, vessel noise is expected to cause minimal disturbance to sea turtles. If a sea turtle detects a vessel and avoids it or has a stress response from the noise disturbance, these responses are expected to be temporary and only endure while the vessel transits through the area where the sea turtle encountered it. Therefore, sea turtle responses to vessel noise disturbance are considered insignificant (i.e., so minor that the effect cannot be meaningfully evaluated), and a sea turtle would be expected to return to normal behaviors and stress levels shortly after the vessel passes by.

Marine Fish

The only listed fish in the action area that are known to be at risk of vessel strike are shortnose and Atlantic sturgeon and giant manta ray. Vessel activities will have no effect on Atlantic salmon or

smalltooth sawfish. There is no information to indicate that Atlantic salmon are struck by vessels; therefore, we have concluded that strike is extremely unlikely to occur. A vessel strike to smalltooth sawfish is extremely unlikely; smalltooth sawfish are primarily demersal and rarely would be at risk from moving vessels. PDC 5 requires vessels to maintain sufficient clearance above the bottom and to reduce speeds to 5 knots or less in waters with less than 4 feet of clearance. These conditions, combined with the low likelihood of vessels operating in nearshore coastal waters of Florida where sawfish occur, is expected to eliminate risk of vessel strikes with smalltooth sawfish.

Giant Manta Ray

Giant manta rays can be frequently observed traveling just below the surface and will often approach or show little fear toward humans or vessels (Coles 1916), which may also make them vulnerable to vessel strikes (Deakos 2010); vessel strikes can injure or kill giant manta rays, decreasing fitness or contributing to non-natural mortality (Couturier et al. 2012; Deakos et al. 2011). However, information about interactions between vessels and giant manta rays is limited. We have at least some reports of vessel strike, including a report of five giant manta rays struck by vessels from 2016 through 2018; individuals had injuries (i.e., fresh or healed dorsal surface propeller scars) consistent with a vessel strike. These interactions were observed by researchers conducting surveys from Boynton Beach to Jupiter, Florida (J. Pate, Florida Manta Project, pers. comm. to M. Miller, NMFS OPR, 2018) and it is unknown where the manta was at the time of the vessel strike. The giant manta ray is frequently observed in nearshore coastal waters and feeding at inlets along the east coast of Florida. As recreational vessel traffic is concentrated in and around inlets and nearshore waters, this overlap exposes the giant manta ray in these locations to an increased likelihood of potential vessel strike injury especially from faster moving recreational vessels. Yet, few instances of confirmed or suspected strandings of giant manta rays are attributed to vessel strike injury. This lack of documented mortalities could also be the result of other factors that influence carcass detection (i.e., wind, currents, scavenging, decomposition etc.); however, giant manta rays appear to be able to be fast and agile enough to avoid most moving vessels, as anecdotally evidenced by videos showing rays avoiding interactions with high-speed vessels.

While there is limited available information on the giant manta ray, we expect the circumstances and factors resulting in vessel strike injury are similar between sea turtles and the giant manta ray because these species are both found in nearshore waters (including in the vicinity of inlets where vessel traffic may also be concentrated) and may spend significant time at or near the surface. Therefore, consistent with Barnette 2018, we will rely on the more robust available data on sea turtle vessel strike injury to serve as a proxy for the giant manta ray. Because the activities considered here will result in far fewer than 200 new vessels, it is extremely unlikely that any giant manta rays will be struck by new or increased vessel traffic.

Sturgeon

Here, we consider whether the increase in vessel traffic is likely to increase the risk of strike for Atlantic or shortnose sturgeon in any part of the action area. Because the increase in traffic will be limited to no more than two or three survey vessels operating in an area being surveyed at one time, the increase in vessel traffic in any portion of the action area, as well as the action area as a whole, will be extremely small.

We do not expect shortnose sturgeon to occur along the survey routes in the Atlantic Ocean because coastal migrations are extremely rare. However, Atlantic sturgeon are present in this part of the action area. Both shortnose and Atlantic sturgeon may occur in nearshore waters and rivers and bays that may be surveyed for potential cable corridors and/or may be used for survey vessel transits to or from ports.

While we know that vessels and sturgeon co-occur in many portions of their range, we have no reports of vessel strikes outside of rivers and coastal bays. The risk of strike is expected to be considerably less in the Atlantic Ocean than in rivers. This is because of the greater water depth, lack of obstructions or constrictions and the more disperse nature of vessel traffic and more disperse distribution of individual sturgeon. All of these factors are expected to decrease the likelihood of an encounter between an individual sturgeon and a vessel and also increase the likelihood that a sturgeon would be able to avoid any vessel. While we cannot quantify the risk of vessel strike in the portions of the Atlantic Ocean that overlap with the action area, we expect the risk to be considerably lower than it is within the Delaware River, which is considered one of the areas with the highest risk of vessel strike for Atlantic sturgeon.

As evidenced by reports and collections of Atlantic and shortnose sturgeon with injuries consistent with vessel strike (NMFS unpublished data[8]), both species are struck and killed by vessels in the Delaware River. Brown and Murphy (2010) reported that from 2005-2008, 28 Atlantic sturgeon carcasses were collected in the Delaware River; approximately 50% showed signs of vessel interactions. Delaware Division of Fish and Wildlife has been recording information on suspected vessel strikes since 2005. From May 2005 – March 2016, they recorded a total of 164 carcasses, 44 of which were presumed to have a cause of death attributable to vessel interaction. Estimates indicate that up to 25 Atlantic sturgeon may be struck and killed in the Delaware River annually (Fox, unpublished 2016). Information on the number of shortnose sturgeon struck and killed by vessels in the Delaware River is currently limited to reports provided to NMFS through our sturgeon salvage permit. A review of the database indicates that of the 53 records of salvaged shortnose sturgeon (2008-2016), 11 were detected in the Delaware River. Of these 11, 6 had injuries consistent with vessel strike. This is considerably less than the number of records of Atlantic sturgeon from the Delaware River with injuries consistent with vessel strike (15 out of 33 over the same time period). Based on this, we assume that more Atlantic sturgeon are struck by vessels in the Delaware River than shortnose sturgeon.

Several major ports are present along the Delaware River. In 2014, there were 42,398 one-way trips reported for commercial vessels in the Delaware River Federal navigation channel (USACE 2014). In 2020, 2,195 cargo ships visited Delaware River ports[9]. Neither of these numbers include any recreational or other non-commercial vessels, ferries, tug boats assisting other larger vessels or any Department of Defense vessels (i.e., Navy, USCG, etc.).

If we assume that any increase in vessel traffic in the Delaware River would increase the risk of vessel strike to shortnose or Atlantic sturgeon, then we could also assume that this would result in

[8] The unpublished data are reports received by NMFS and recorded as part of the sturgeon salvage program authorized under ESA permit 17273.

[9] *https://ajot.com/news/maritime-exchange-reports-2020-ship-arrivals*; last accessed March 24, 2021

a corresponding increase in the number of sturgeon struck and killed in the Delaware River. However, it is unlikely that all vessels represent an equal increase in risk, the slow speeds (4.5 knots) and shallower drafts of the survey vessels may mean that the risk to sturgeon is not as greater as faster moving deep draft cargo or tanker vessels as sturgeon may be able to more readily avoid the survey vessels and may not even overlap in the same part of the water column. The survey activities considered here will involve up to three slow-moving (up to 4.5 knots) vessels operating in a similar area. Sets of survey vessels will be dispersed along the coast and not co-occur in time or space. Even if there were four surveys in a year that transited the Delaware River (equivalent to the number of BOEM leases that are proximal to the entrance of Delaware Bay), that would be an increase of 12 vessels annually. Considering only the number of commercial one way trips in a representative year (42,398), an increase of 12 vessels operating in the Delaware River represents an approximately 0.03% increase in vessel traffic in the Delaware River navigation channel in a particular year. The actual percent increase in vessel traffic is likely even less considering that commercial traffic is only a portion of the vessel traffic in the river. Even in a worst-case scenario that assumes that all 25 Atlantic sturgeon struck and killed in the Delaware River in an average year occurred in the portion of the Delaware River that will be transited by the survey vessels, and that any increase in vessel traffic results in a proportionate increase in vessel strikes, this increase in vessel traffic would result in a hypothetical additional 0.0075 Atlantic sturgeon struck and killed in the Delaware River in a given year. Assuming a maximum case that four, 3-boat surveys transit the Delaware River every year for the 10 years considered here, that would result in a hypothetical additional 0.075 Atlantic sturgeon struck and killed in the Delaware River. Because we expect fewer strikes of shortnose sturgeon, the hypothetical increase in the number of struck shortnose sturgeon would be even less. Given this very small increase in traffic and the similar very small potential increase in risk of strike and a calculated potential increase in the number of strikes that is very close to zero, we conclude that any increase in the number of sturgeon struck because of the increase in traffic resulting from survey vessels operating in the Delaware River or Delaware Bay is extremely unlikely. BOEM has indicated that survey vessels may also transit the lower Chesapeake Bay and New York Bight/lower Hudson River. The risk of vessel strike in these areas is considered to be lower than in the Delaware River; thus, any prediction of vessel strike for the Delaware River can be considered a conservative estimate of vessel strike risk in other areas. Even applying this hypothetical increased risk for all three areas, we would estimate that a hypothetical additional 0.2 Atlantic sturgeon would be killed coast-wide over a 10-year period. As noted above, this is likely an overestimate given the slower speed of survey vessels compared to other vessels which is anticipated to reduce risk. Based on this analysis, effects of this increase in traffic are extremely unlikely. In addition, given the very small increase in risk and the calculated increase in strikes is close to zero, the effect of adding the survey vessels to the baseline cannot be meaningfully measured, detected, or evaluated; therefore, effects are also insignificant.

Vessel Noise

The vessels used for the proposed project will produce low-frequency, broadband underwater sound below 1 kHz (for larger vessels), and higher-frequency sound between 1 kHz to 50 kHz (for smaller vessels), although the exact level of sound produced varies by vessel type. In general, information regarding the effects of vessel noise on fish hearing and behaviors is limited. Some TTS has been observed in fishes exposed to elevated background noise and other white noise, a continuous sound source similar to noise produced from vessels. Caged studies on sound pressure

sensitive fishes show some TTS after several days or weeks of exposure to increased background sounds, although the hearing loss appeared to recover (e.g., Scholik and Yan 2002; Smith et al. 2006; Smith et al. 2004a). Smith et al. (2004b) and Smith et al. (2006) exposed goldfish (a fish with hearing specializations, unlike any of the ESA-listed species considered in this opinion) to noise with a sound pressure level of 170 dB re 1 μPa and found a clear relationship between the amount of TTS and duration of exposure, until maximum hearing loss occurred at about 24 hours of exposure. A short duration (e.g., 10-minute) exposure resulted in 5 dB of TTS, whereas a three-week exposure resulted in a 28 dB TTS that took over two weeks to return to pre-exposure baseline levels (Smith et al. 2004b). Recovery times were not measured by researchers for shorter exposure durations, so recovery time for lower levels of TTS was not documented.

Vessel noise may also affect fish behavior by causing them to startle, swim away from an occupied area, change swimming direction and speed, or alter schooling behavior (Engas et al. 1998; Engas et al. 1995; Mitson and Knudsen 2003). Physiological responses have also been documented for fish exposed to increased boat noise. Nichols et al. (2015) demonstrated physiological effects of increased noise (playback of boat noise) on coastal giant kelpfish. The fish exhibited acute stress responses when exposed to intermittent noise, but not to continuous noise. These results indicate variability in the acoustic environment may be more important than the period of noise exposure for inducing stress in fishes. However, other studies have also shown exposure to continuous or chronic vessel noise may elicit stress responses indicated by increased cortisol levels (Scholik and Yan 2001; Wysocki et al. 2006). These experiments demonstrate physiological and behavioral responses to various boat noises that have the potential to affect species' fitness and survival, but may also be influenced by the context and duration of exposure. It is important to note that most of these exposures were continuous, not intermittent, and the fish were unable to avoid the sound source for the duration of the experiment because this was a controlled study. In contrast, wild fish are not hindered from movement away from an irritating sound source, if detected, so are less likely to subjected to accumulation periods that lead to the onset of hearing damage as indicated in these studies. In other cases, fish may eventually become habituated to the changes in their soundscape and adjust to the ambient and background noises.

All fish species can detect vessel noise due to its low-frequency content and their hearing capabilities. Because of the characteristics of vessel noise, sound produced from vessels is unlikely to result in direct injury, hearing impairment, or other trauma to ESA-listed fish. Plus, in the near field, fish are able to detect water motion as well as visually locate an oncoming vessel. In these cases, most fishes located in close proximity that detect the vessel either visually, via sound and motion in the water would be capable of avoiding the vessel or move away from the area affected by vessel sound. Thus, fish are more likely to react to vessel noise at close range than to vessel noise emanating from a greater distance away. These reactions may include physiological stress responses, or avoidance behaviors. Auditory masking due to vessel noise can potentially mask biologically important sounds that fish may rely on. However, impacts from vessel noise would be intermittent, temporary, and localized, and such responses would not be expected to compromise the general health or condition of individual fish from continuous exposures. Instead, the only impacts expected from exposure to project vessel noise for Atlantic sturgeon may include temporary auditory masking, physiological stress, or minor changes in behavior.

Therefore, similar to marine mammals and sea turtles, exposure to vessel noise for fishes could result in short-term behavioral or physiological responses (e.g., avoidance, stress). Vessel noise would only result in brief periods of exposure for fishes and would not be expected to accumulate to the levels that would lead to any injury, hearing impairment or long-term masking of biologically relevant cues. For these reasons, any effects of vessel noise on ESA-listed fish is considered insignificant (i.e., so minor that the effect cannot be meaningfully measured, detected, or evaluated).

Consideration of Effects of the Actions on Air Quality

In order to issue an OCS Air Permit for an activity considered in this consultation, EPA must conclude that the activity will not cause or contribute to a violation of applicable national ambient air quality standards (NAAQS) or prevention of significant deterioration (PSD) increments. The NAAQS are health-based standards that the EPA sets to protect public health with an adequate margin of safety. The PSD increments are designed to ensure that air quality in an area that meets the NAAQS does not significantly deteriorate from baseline levels. At this time, there is no information on the effects of air quality on listed species that may occur in the action area. However, as the PSD increments are designed to ensure that air quality in the area regulated by any OCS Air Permit do not significantly deteriorate from baseline levels, we conclude that any effects to listed species from these emissions will be so small that they cannot be meaningfully measured, detected, or evaluated and therefore are insignificant.

CONCLUSIONS

As explained above, we have determined that the actions considered here are not likely to adversely affect any ESA-listed species or critical habitat. The requirements for reviewing survey activities as they are developed will ensure that surveys carried out under this programmatic consultation do not have effects that exceed those considered here.

Reinitiation of consultation is required and shall be requested by BOEM or by NMFS where discretionary federal involvement or control over the action has been retained or is authorized by law and "(a) If the amount or extent of taking specified in the incidental take statement is exceeded; (b) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (c) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or (d) If a new species is listed or critical habitat designated that may be affected by the identified action." For the activities considered here, no take is anticipated or exempted; take is defined in the ESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct." If there is any incidental take of a listed species, reinitiation would be required. As required by the PDCs outlined in Appendix B, all observations of dead or injured listed species should be reported to us immediately.

Should you have any questions regarding this consultation, please contact Julie Crocker of my staff at (978) 282-8480 or by e-mail (*Julie.Crocker@noaa.gov*).

Sincerely,

Jennifer Anderson

Jennifer Anderson
Assistant Regional Administrator
for Protected Resources

ec: Hooker, Baker - BOEM
Burns - GARFO HSED
Bernhart - SERO
Harrison, Daly, Carduner - OPR
DOE
EPA
USACE

File Code: Sec 7 BOEM OSW site assessment programmatic (2021)
ECO ID: GARFO-2021-0999

Literature Cited

Andersson, M.H., M. Gullstrom, M.E. Asplund, and M.C. Ohman. 2007. Swimming Behavior of Roach (*Rutilus rutilus*) and Three-spined Stickleback (*Gasterosteus aculeatus*) in Response to Wind Power Noise and Single-tone Frequencies. AMBIO: A Journal of the Human Environment 36: 636-638.

Barnette, M. Threats and Effects Analysis for Protected Resources on Vessel Traffic Associated with Dock and Marina Construction. NMFS SERO PRD Memorandum. April 18, 2018.

Bartol, S. M. and Ketten, D. R. 2006. Turtle and tuna hearing. US Department of Commerce, NOAA-TM-NMFS-PIFSC. NOAA Tech. Memo. 7, 98-103

Bartol, S.M., J.A. Musick, and M. Lenhardt. 1999. Auditory evoked potentials of the loggerhead sea turtle (*Caretta caretta*). Copeia 99(3):836-840.

Brown, J.J. and G.W. Murphy. 2010. Atlantic sturgeon vessel strike mortalities in the Delaware River. Fisheries 35(2):72-83.

BOEM. 2015. Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continetal Shelf Offshore North Carolina. Sterling, VA

Bureau of Ocean Energy Management (BOEM). 2021. Data Collection and Site Survey Activities for Renewable Energy on the Atlantic Outer Continental Shelf: Biological Assessment.

Clark, C.W., et al. 2009. Acoustic masking in marine ecosystems: Intuitions, analysis, and implication. Marine Ecology Progress Series 395:201-222.

Coles RJ. 1916. Natural history notes on the devil-fish, Manta birostris (Walbaum) and Mobula olfersi (Muller)

Conn, P.B. and G.K. Silber. 2013. Vessel speed restrictions reduce risk of collision related mortality for North Atlantic right whales. Ecosphere 4(4):43

Couturier LI, Marshall AD, Jaine FR, Kashiwagi T, Pierce SJ, Townsend KA, Weeks SJ, Bennett MB, Richardson AJ. 2012 Biology, ecology and conservation of the Mobulidae. Journal of fish biology 80: 1075-1119 doi 10.1111/j.1095- 8649.2012.03264.x

Crocker, SE, Fratantonio FD. 2016. Characteristics of sounds emitted during high-resolution marine geophysical surveys. Newport, Rhode Island: Naval Undersea Warfare Center Division. No. NUWC-NPT Technical Report 12,203.

Deakos MH, Baker JD, Bejder L. 2011. Characteristics of a manta ray Manta alfredi population off Maui, Hawaii, and implications for management. Mar Ecol Prog Ser 429: 245-260 doi 10.3354/meps09085

Dunlop, R. A. 2016. The effect of vessel noise on humpback whale, Megaptera novaeangliae, communication behaviour. Animal Behaviour 111:13-21.

Engas, A., E. Haugland, and J. Ovredal. 1998. Reactions of Cod (Gadus Morhua L.) in the Pre-Vessel Zone to an Approaching Trawler under Different Light Conditions. Hydrobiologia, 371/372: 199–206.

Engas, A., O. Misund, A. Soldal, B. Horvei, and A. Solstad. 1995. Reactions of Penned Herring and Cod to Playback of Original, Frequency-Filtered and Time-Smoothed Vessel Sound. Fisheries Research, 22: 243–54.

Erbe, C. and C. McPherson. 2017. Underwater noise from geotechnical drilling and standard penetration testing. Journal of the Acoustical Society of America. 142 (3).

FHWG. 2008. Memorandum of agreement in principle for interim criteria for injury to fish from pile driving. California Department of Transportation and Federal Highway Administration, Fisheries Hydroacoustic Working Group. *https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/ser/bio-fhwg-criteria-agree-a11y.pdf*

Finneran, J.J. and Schlundt, C.E., 2010. Frequency-dependent and longitudinal changes in noise induced hearing loss in a bottlenose dolphin (Tursiops truncatus). The Journal of the Acoustical Society of America, 128(2), pp.567-570.

Foley, A.M., Stacy, B.A., Hardy, R.F., Shea, C.P., Minch, K.E. and Schroeder, B.A. 2019. Characterizing watercraft-related mortality of sea turtles in Florida. Jour. Wild. Mgmt., 83: 1057-1072. *https://doi.org/10.1002/jwmg.21665*

Hazel, J., I. R. Lawler, H. Marsh, and S. Robson. 2007. Vessel speed increases collision risk for the green turtle Chelonia mydas. Endangered Species Research 3:105-113.

Jensen, A.S. and G.K. Silber. 2004. Large Whale Ship Strike Database. NOAA Technical Memorandum: NMFS-OPR-25. January 2004. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service.

Kelley, DE, Vlasic, JP, Brillant, SW. 2021. Assessing the lethality of ship strikes on whales using simple biophysical models. *Marine Mammal Science* 7: 251– 267.

Knowlton, A. R. and S. D. Kraus. 2001. Mortality and serious injury of North Atlantic right whales (Eubalaena glacialis) in the North Atlantic Ocean. J. Cetacean Res. Manage. (Special Issue) 2: 193-208.

Kremser, U., Klemm, P. and KOeTZ, W.D., 2005. Estimating the risk of temporary acoustic threshold shift, caused by hydroacoustic devices, in whales in the Southern Ocean. Antarctic Science, 17(01), pp.3-10.

Laist, D.W., A.R. Knowlton, J.G. Mead, A.S. Collet, and M. Podesta. 2001. Collisions between Ships and Whales. Marine Mammal Science 17(1):35–75.

Lenhardt, M.L. 1994. Seismic and very low frequency sound induced behaviors in captive loggerhead marine turtles (*Caretta caretta*). In Bjorndal, K.A., A.B. Dolten, D.A. Johnson, and P.J. Eliazar (Compilers). Proceedings of the Fourteenth Annual Symposium on Sea Turtle Biology and Conservation. NOAA Technical Memorandum NMFS-SEFSC-351, 323 pp.

Lenhardt, M. L. 2002. Sea turtle auditory behavior. Journal of the Acoustical Society of America 112(5 Part 2):2314.

Lovell, J. M., M. M. Findlay, R. M. Moate, J. R. Nedwell, and M. A. Pegg. 2005. The inner ear morphology and hearing abilities of the paddlefish (Polyodon spathula) and the lake sturgeon (Acipenser fulvescens). Comparative Biochemistry and Physiology. Part A, Molecular and Integrative Physiology 142(3):286-296.

Magalhaes, S., and coauthors. 2002. Short-term reactions of sperm whales (Physeter macrocephalus) to whale-watching vessels in the Azores. Aquatic Mammals 28(3):267-274.

Malme, C.I., P.R. Miles, C.W. Clark, P. Tyack, and J.E. Bird. 1983. Investigations of the potential effects of underwater noise from petroleum industry activities on migrating gray whale behavior. BBN Rep. 5366. Rep. from Bolt Beranek & Newman Inc., Cambridge, MA, for U .S. Minerals Manage. Serv., Anchorage, AK. Var. pag. NTIS PB86-174174.

Malme, C.I., P.R. Miles, C.W. Clark, P. Tyack, and J.E. Bird. 1984. Investigations of the potential effects of underwater noise from petroleum industry activities on migrating gray whale behavior, phase II: January 1984 migration. Report No. 5586, Prepared by Bolt Beranek and Newman, Inc. for Minerals Management Service: 357.

McCauley, R.D., J. Fewtrell, A.J. Duncan, C. Jenner, M.N. Jenner, J.D. Penrose, R.I.T. Prince, A. Adhitya, J. Murdoch, and K. McCabe. 2000. Marine seismic surveys – a study of environmental implications. APPEA Journal. 40:692–708.

Meyer, M., and A. N. Popper. 2002a. Hearing in "primitive" fish: Brainstem responses to pure tone stimuli in the lake sturgeon, Acipenser fulvescens. Abstracts of the Association for Research in Otolaryngology 25:11-12.

Meyer, M, Fay RR, Popper AN. 2010. Frequency tuning and intensity coding of sound in the auditory periphery of the lake sturgeon, *Acipenser fulvescens*. Journal of Experimental Biology. 213(9):1567-1578.

Mitson, Ron & Knudsen, Hans. (2003). Causes and effects of underwater noise on fish abundance estimation. Aquatic Living Resources. 16. 10.1016/S0990-7440(03)00021-4.

Mooney, T.A., Nachtigall, P.E. and Vlachos, S., 2009a. Sonar-induced temporary hearing loss in dolphins. Biology letters, pp.rsbl-2009.

National Research Council. 1990. Decline of the Sea Turtles: Causes and Prevention. Washington, DC: The National Academies Press. https://doi.org/10.17226/1536.

National Marine Fisheries Service (NMFS). 2018. 2018 Revisions to: Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0): Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts. U.S. Dept. of Commer., NOAA. NOAA Technical Memorandum NMFS-OPR-59, 167 p. *https://www.fisheries.noaa.gov/resources/documents*

NMFS. 2013. Nassau grouper, Epinephelus striatus (Bloch 1792): biological report. Available at: *https://repository.library.noaa.gov/view/noaa/16285*

NMFS. 2016. Procedural Instruction 02-110-19. Interim Guidance on the Endangered Species Act Term "Harass." December 21, 2016. *https://www.fisheries.noaa.gov/national/laws-and-policies/protected-resources-policy-directives*

Nichols, T., T. Anderson, and A. Sirovic. 2015. Intermittent noise induces physiological stress in a coastal marine fish. PLoS ONE, 10(9), e0139157

O'Hara, J. & J.R. Wilcox. 1990. Avoidance responses of loggerhead turtles, *Caretta caretta*, to low frequency sound. Copeia 1990: 564-567.

Parks, S. E., and C. W. Clark. 2007. Acoustic communication: Social sounds and the potential impacts of noise. Pages 310-332 in S. D. Kraus, and R. M. Rolland, editors. The Urban Whale: North Atlantic Right Whales at the Crossroads. Harvard University Press, Cambridge, Massachusetts.

Parks, S.E., C.W. Clark, and P.L. Tyack. 2007. Short- and long-term changes in right whale calling behavior: The potential effects of noise on acoustic communication. Journal of the Acoustical Society of America 122 (6):3725-3731.

Parks, S. E., I. Urazghildiiev, and C. W. Clark. 2009. Variability in ambient noise levels and call parameters of North Atlantic right whales in three habitat areas. Journal of the Acoustical Society of America 125(2):1230-1239.

Parks, S. E., M. Johnson, D. Nowacek, and P. L. Tyack. 2011a. Individual right whales call louder in increased environmental noise. Biology Letters 7(1):33-35.

Parks, S. E., Searby, A., Célérier, A., Johnson, M. P., Nowacek, D. P., & Tyack, P. L. 2011b. Sound production behavior of individual North Atlantic right whales: implications for passive acoustic monitoring. Endangered Species Research, 15(1), 63-76.

Popper, A. D. H., and A. N. 2014. Assessing the impact of underwater sounds on fishes and

other forms of marine life. Acoustics Today 10(2):30-41.

Purser, J. and Radford, A.N., 2011. Acoustic noise induces attention shifts and reduces foraging performance in three-spined sticklebacks (Gasterosteus aculeatus). PLoS One, 6(2), p.e17478.

Renaud, M. L., & Carpenter, J. A. 1994. Movements and submergence patterns of loggerhead turtles (Caretta caretta) in the Gulf of Mexico determined through satellite telemetry. Bulletin of Marine Science, 55(1), 1-15.

Richardson, W. J., Würsig, B. & Greene, C. R., Jr. 1986. Reactions of bowhead whales, Balaena mysticetus, to seismic exploration in the Canadian Beaufort Sea. J. Acoust. Soc. Am. 79, 1117–1128.

Richardson, W.J., B. Würsig, and C.R. Greene, Jr. 1990. Reactions of bowhead whales, *Balaena mysticetus*, to drilling and dredging noise in the Canadian Beaufort Sea. Mar. Environ. Res. 29(2):135–160.

Richardson, W. J. 1995. Marine mammal hearing. Pages 205-240 in C. R. W. J. G. J. Richardson, C. I. Malme, and D. H. Thomson, editors. Marine Mammals and Noise. Academic Press, San Diego, California.

Ridgway, S.H., E.G. Wever, J.G. McCormick, J. Palin & J.H. Anderson. 1969. Hearing in the giant sea turtle, *Chelonia mydas*. Proceedings of the National Academy of Sciences USA 64: 884-890.

Rudd, A.B. et al. 2015. "Underwater Sound Measurements of a High-Speed Jet-Propelled Marine Craft: Implications for Large Whales," Pacific Science, 69(2), 155-164.

Sasso, C. R., & Witzell, W. N. 2006. Diving behaviour of an immature Kemp's ridley turtle (Lepidochelys kempii) from Gullivan Bay, Ten Thousand Islands, south-west Florida. Journal of the Marine Biological Association of the United Kingdom, 86(4), 919-92.

Schofield, G., Bishop, C. M., MacLean, G., Brown, P., Baker, M., Katselidis, K. A., ... & Hays, G. C. 2007. Novel GPS tracking of sea turtles as a tool for conservation management. Journal of Experimental Marine Biology and Ecology, 347(1-2), 58-68.

Schofield, G., Hobson, V. J., Lilley, M. K., Katselidis, K. A., Bishop, C. M., Brown, P., & Hays, G. C. 2010. Inter-annual variability in the home range of breeding turtles: implications for current and future conservation management. Biological Conservation, 143(3), 722-730.

Scholik, A. R., and H. Y. Yan. 2001. Effects of underwater noise on auditory sensitivity of a cyprinid fish. Hearing Research 152(2-Jan):17-24.

Smith, M. E., A. B. Coffin, D. L. Miller, and A. N. Popper. 2006. Anatomical and functional recovery of the goldfish (Carassius auratus) ear following noise exposure. Journal of Experimental Biology 209(21):4193-4202.

Smith, M. E., A. S. Kane, and A. N. Popper. 2004a. Acoustical stress and hearing sensitivity in fishes: Does the linear threshold shift hypothesis hold water? Journal of Experimental Biology 207(20):3591-3602.

Smith, M. E., A. S. Kane, and A. N. Popper. 2004b. Noise-induced stress response and hearing loss in goldfish (Carassius auratus). Journal of Experimental Biology 207(3):427-435.

Southall, B. L., Bowles, A. E., Ellison, W. T., Finneran, J. J., Gentry, R. L., Greene, C. R., Jr., Kastak, D., Ketten, D. R., Miller, J. H., Nachtigall, P. E., Richardson, W. J., Thomas, J. A., and Tyack, P. L. (2007). "Marine mammal noise exposure criteria: initial scientific recommendations," Aquatic Mammals 33, 411-521.

Stadler, John & Woodbury, David. (2009). Assessing the effects to fishes from pile driving: Application of new hydroacoustic criteria. 38th International Congress and Exposition on Noise Control Engineering 2009, INTER-NOISE 2009. 5.

Stetzar, E. J. 2002. Population characterization of sea turtles that seasonally inhabit the Delaware Bay estuary. M.S. Thesis. Delaware State Univ., Dover. 136 p.

United States Army Corps of Engineers (USACE). 2014. Waterborne Commerce of the United States (WCUS) Waterways and Harbors on the Atlantic Coast (Part 1). Available at: *http://www.navigationdatacenter.us/wcsc/webpub14/webpubpart-1.htm*

Urick, R.J. 1983. Principles of Underwater Sound. Peninsula Publishing, Los Altos, CA.

U.S. Coast Guard. 2015. Atlantic Coast Port Access Route Study Final Report. Docket Number USCG-2011-0351. Available at: *https://www.navcen.uscg.gov/?pageName=PARSReports*

U.S. Coast Guard. 2021. Vessel Traffic Analysis for Port Access Route Study: Seacoast of New Jersey including the offshore approaches to the Delaware Bay, Delaware (NJ PARS). Available at: *https://www.navcen.uscg.gov/pdf/PARS/NJ/NJPARSTrafficSummaryFeb2021IncludingVMS.pdf*

U.S. Navy. 2017. Criteria and Thresholds for U.S. Navy Acoustic and Explosive Effects Analysis (Phase III). Technical Report. June 2017. Available at: *https://www.hstteis.com/portals/hstteis/files/reports/Criteria_and_Thresholds_for_U.S._Navy_Acoustic_and_Explosive_Effects_Analysis_June2017.pdf*

Vanderlann, A.S.M., and C.T. Taggart. 2006. Vessel collisions with whales: the probability of lethal injury based on vessel speed. Marine Mammal Science. 23(1):144-156.

Watkins, WA. 1981. Activities and underwater sounds of fin whales. Scientific Reports of the Whales Research Institute. 33:83-117.

Willis, MR, Broudic M, Bhurosah M, Mster I. 2010. Noise Associated with Small Scale Drilling Operations. 3rd International Conference on Ocean Energy, 6 October, Bilbao.

Work, P. A., Sapp, A. L., Scott, D. W., & Dodd, M. G. (2010). Influence of small vessel operation and propulsion system on loggerhead sea turtle injuries. Journal of Experimental Marine Biology and Ecology, 393(1-2), 168-175.

Wysocki, L. E., J. P. Dittami, and F. Ladich. 2006. Ship noise and cortisol secretion in European freshwater fishes. Biological Conservation 128(4):501-508.

Appendix A – Tables and Figures

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Figure 1. Action Area for this programmatic consultation.

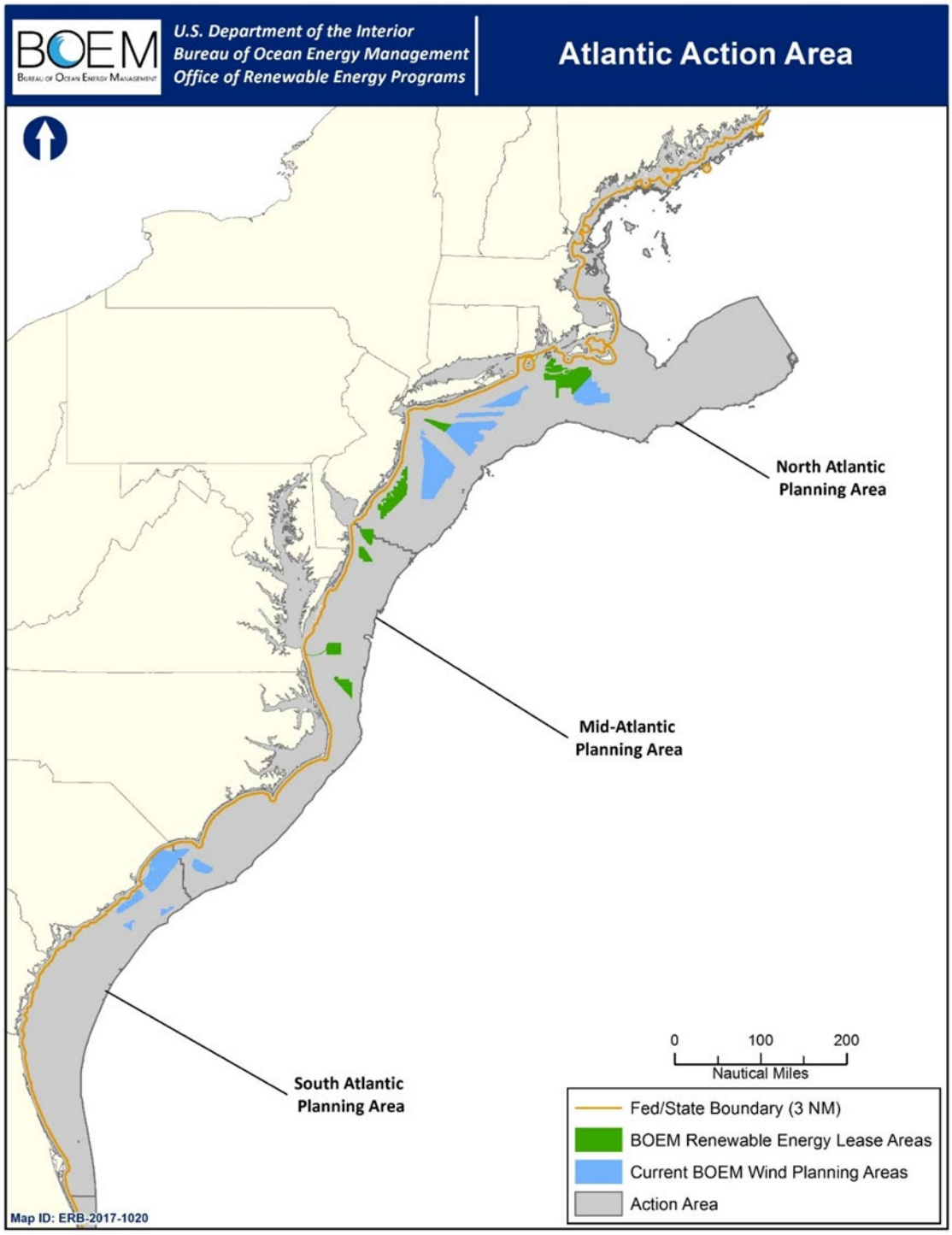


Table A.1 Description of Representative HRG Survey Equipment and Methods

Equipment Type	Data Collection and/or Survey Types	Description of the Equipment
Acoustic Corer™ (https://www.pangeosubsea.com/acoustic-corer/)	Stationary acoustic source deployed on the seafloor with low and mid frequency chirp sonars to detect shallow (15 m to 40 m) subsea hazards such as boulders, cavities, and abandoned infrastructure by generating a 3D, 12-m diameter "acoustic core" to full penetration depth (inset above).	A seabed deployed unit with dual subsurface scanning sonar heads attached to a 12-m boom. The system is set on a tripod on the seafloor. Each arm rotates 180 degrees to cover a full 360 degrees. Chirp sonars of different frequencies can be attached to each arm providing for multi-aspect depth resolution. Acoustic cores supplement geophysical surveys such as bore holes and Cone Penetration Testing.
Bathymetry/ multi-beam echosounder	Bathymetric charting	A depth sounder is a microprocessor-controlled, high-resolution survey-grade system that measures precise water depths in both digital and graphic formats. The system would be used in such a manner as to record with a sweep appropriate to the range of water depths expected in the survey area.
Magnetometer	Collection of geophysical data for shallow hazards and archaeological resources assessments	Surveys would be used to detect and aid in the identification of ferrous or other objects having a distinct magnetic signature. A sensor is typically towed as near as possible to the seafloor and anticipated to be no more than approximately 20 ft. (6 m) above the seafloor.
Shallow and Medium (Seismic) Penetration Profilers (i.e. Chirps, Sparkers, Boomers, Bubble Guns)	Collection of geophysical data for shallow hazards and archaeological resources assessments and to characterize subsurface sediments	High-resolution CHIRP System sub-bottom profiler or boomers are used to generate a profile view below the bottom of the seabed, which is interpreted to develop a geologic cross-section of subsurface sediment conditions under the track line surveyed. Another type of sub-bottom profiler that may be employed is a medium penetration system such as a boomer, bubble pulser or impulse-type system. Sub-bottom profilers are capable of penetrating sediment depth ranges of 10 ft. (3 m) to greater than 328 ft. (100 m), depending on frequency and bottom composition.
Side-Scan Sonar	Collection of geophysical data for shallow hazards and archaeological resources assessments	This survey evaluates surface and near-surface sediments, seafloor morphology, and potential surface obstructions (MMS, 2007a). A typical side-scan sonar system consists of a top-side processor, tow cable, and towfish with transducers (or "pingers") located on the sides. Typically, a lessee would use a digital dual-frequency side-scan sonar system with 300 to 500 kHz frequency ranges or greater to record continuous planimetric images of the seafloor.

Table A.2. Acoustic Characteristics of Representative HRG Survey Equipment. Note list of equipment is representative and surveys may use similar equipment and actual source levels may be below those indicated.

	Highest Measured Source Level (Highest Power Setting)						
HRG Source	**Source Setting**	**PK**	**RMS**	**SEL**	**Pulse Width (s)**	**Main Pulse Frequency (kHz)**	**Inter-Pulse Interval (s) (1/PPS)**
Mobile, Impulsive, Intermittent Sources							
AA200 Boomer Plate	250 J (low)	209	200	169	0.0008	4.3	1.0 (1 pps)
AA251 Boomer Plate	300 J (high)	216	207	176	0.0007	4.3	1.0 (1 pps)
Applied Acoustic Delta Sparker	2400 J at 1 m depth, 0.5 kHz	221	205	185	0.0095	0.5	.33333 (1-3 pps)
Applied Acoustic Dura-Spark	2400 J (high), 400 tips	225	214	188	0.0022	2.7	.33333 (1-3 pps)
Applied Acoustics S-Boom (3 AA252 boomer plates)	700 J	211	205	172	0.0006	6.2	1.0 (1 pps)
Applied Acoustics S-Boom (CSP-N Source)	1000 J	209	203	172	0.0009	3.8	.33333 (3 pps)
ELC820 Sparker	750 J (high) 1m depth	214	206	182	0.0039	1.2	1.0 (1 pps)
FSI HMS-620D Bubble Gun	Dual Channel 86 cm	204	198	173	0.0033	1.1	8.0 (1 per 8 s)
Mobile, Non-Impulsive, Intermittent Sources							
Bathyswath SWATHplus-M	100%, 234 kHz	223	218	180	0.00032	≥200 kHz	0.2000 pps (unknown)
Echotrac CV100 Single-Beam Echosounder	Power 12, 80 cycles, 200 kHz	196	193	159	0.00036	≥200 kHz	0.0500 (20 pps)
EdgeTech 424 with 3200-XS topside processor (Chirp)	100% power, 4-20 kHz	187	180	156	0.0046	7.2-11	.12500 (8 pps)

EdgeTech 512i Sub-bottom Profiler, 8.9 kHz (Chirp)	100% power, 2-12 kHz	186	180	159	0.0087	6.3-8.9	.12500 (8 pps)
EdgeTech 4200 Side-Scan	100%, 100 kHz (also a 400 kHz setting)	206	201	179	0.0072	100 kHz	.03333 (30 pps)
Klein 3000 Side-Scan	132 kHz (also capable of 445 kHz)	224	219	184	0.000343	132 kHz	.03333 (30 pps)
Klein 3900 Side-Scan	445 kHz	226	220	179	0.000084	≥200 kHz	unreported
Knudsen 3202 Sub-bottom Profiler (2 transducers), 5.7 kHz	Power 4	214	209	193	0.0217	3.3-5.7	0.25000 (4 pps)
Reson Seabat 7111 Multibeam Echosounder	100 kHz	228	224	185	0.00015	100 kHz	0.0500 (20 pps)
Reson Seabat T20P Multibeam Echosounder	200, 300, or 400 kHz	221	218	182	0.00025	≥200 kHz	0.0200 (50 pps)

Source: Highest reported source levels reported in Crocker and Fratantonio (2016).

Table 1. Predicted isopleths for peak pressure (using 20 LogR) and cSEL using NOAA's general spreadsheet tool (December 2020 Revision) to predict cumulative exposure distances using the highest power levels were used for each sound source reported in Crocker and Fratantonio (2016).

HRG SOURCE	PTS INJURY DISTANCE (m)							
	Low Frequency Cetaceans		Mid Frequency Cetaceans		High Frequency Cetaceans		Seals (Phocids)	
	PK	SEL	PK	SEL	PK	SEL	PK	SEL
AA200 Boomer Plate	0	0.1	0	0	2.2	0.9	0	0.0
AA251 Boomer Plate	0	0.3	0	0	5.0	4.7	0.0	0.2
Applied Acoustics S-Boom (3 AA252 boomer plates)	0	0.1	0	0.0	2.8	5.6	0	0.1
Applied Acoustics S-Boom (CSP-N Source)	0	0.3	0	0	2.2	3.7	0	0.2
FSI HMS-620D Bubble Gun (impulsive)	0	0	0	0	1.3	0	0	0
ELC820 Sparker (impulsive)	0	3.2	0	0	4.0	0.7	0.0	0.7

HRG SOURCE	PTS INJURY DISTANCE (m)							
	Low Frequency Cetaceans		Mid Frequency Cetaceans		High Frequency Cetaceans		Seals (Phocids)	
	PK	SEL	PK	SEL	PK	SEL	PK	SEL
Applied Acoustics Dura-Spark (impulsive)	2.0	12.7	0	0.2	14.1	47.3	2.2	6.4
Applied Acoustics Delta Sparker (impulsive)	1.3	5.7	0	0	8.9	0.1	1.4	0.3
EdgeTech 424 Sub-bottom profiler 3200-XS, 7.2 kHz	—	0	—	0	—	0.0	—	0
EdgeTech 512i Sub-bottom Profiler, 6.39 kHz	—	0	—	0	—	0.0	—	0
Knudsen 3202 Chirp Sub-bottom profiler (2 transducers), 5.7 kHz	—	1.2	—	0.3	—	35.2	—	<1
Reson Seabat 7111 Multibeam Echosounder,100 kHz	—	0	—	0.5	—	251.4	—	0.0
Reson Seabat T20P Multibeam Echosounder	—	0	—	0	—	0	—	0
Bathyswath SWATHplus-M	—	0	—	0	—	0	—	0
Echotrac CV100 Single-Beam Echosounder	—	0	—	0	—	0	—	0
Klein 3000 Side-Scan, 132 kHz	—	0	—	0.4	—	193.6	—	0.0
Klein 3000 Side-Scan, 445 kHz	—	0	—	0	—	0	—	0
Klein 3900 Side-Scan, 445 kHz	—	0	—	0	—	0	—	0

Table A.4. PTS distance for sea turtles and listed fish for impulsive HRG sound sources (60 minutes duration using the highest power levels were used for each sound source reported in Crocker and Fratantonio (2016)).

HRG SOURCE		Sea Turtles*, ESA-listed Fish			
		PTS INJURY DISTANCE (m) for Impulsive HRG Sources			
	SEL Source level	Fish cSEL[a] Distance to 187 dB (m)	Turtle cSEL[a] Distance (m)	Peak Source Level	Fish Peak Distance to 206 dB (m)
AA200 Boomer Plate	169	0	0	209	1.4
AA251 Boomer Plate	176	0	0	216	3.2
Applied Acoustics S-Boom (3 AA252 boomer plates)	172	0	0	211	2.5
Applied Acoustics S-Boom (CSP-N Source)	172	0	0	209	1.4
FSI HMS-620D Bubble Gun (impulsive)	173	0	0	204	0
ELC820 Sparker (impulsive)	182	0	0	214	4.0

HRG SOURCE		Sea Turtles*, ESA-listed Fish			
		PTS INJURY DISTANCE (m) for Impulsive HRG Sources			
	SEL Source level	Fish cSEL[a] Distance to 187 dB (m)	Turtle cSEL[a] Distance (m)	Peak Source Level	Fish Peak Distance to 206 dB (m)
Applied Acoustics Dura-Spark (impulsive)	188	1.6	0	225	9.0
Applied Acoustics Delta Sparker (impulsive)	185	1.1	0	221	5.7
EdgeTech 424 Sub-bottom profiler 3200-XS, 7.2 kHz	156	NA	NA	187	NA
EdgeTech 512i Sub-bottom Profiler, 8.9 kHz	159	NA	NA	186	NA
Knudsen 3202 Chirp Sub-bottom profiler (2 transducers), 5.7 kHz	193	NA	NA	214	NA
Reson Seabat 7111 Multibeam Echosounder,100 kHz	185	NA	NA	228	NA
Reson Seabat T20P Multibeam Echosounder	182	NA	NA	221	NA
Bathyswath SWATHplus-M	180	NA	NA	223	NA
Echotrac CV100 Single-Beam Echosounder	159	NA	NA	196	NA
Klein 3000 Side-Scan, 132 kHz	184	NA	NA	224	NA
Klein 3000 Side-Scan, 445 kHz	179	NA	NA	226	NA
EdgeTech 4200 Side-Scan, 100 kHz	169	NA	NA	206	NA
EdgeTech 4200 Side-Scan, 400 kHz	176	NA	NA	210	NA

[a] = cSEL distances were calculated by 20 log(Source Level + 10 log(1800 sec) – Threshold Level)

NA = Frequencies are out of the hearing range of the sea turtles, sturgeon, and salmon

*Sea Turtle peak pressure distances for all HRG sources are below the threshold level of 232dB.

Table A.5. Disturbances distances for marine mammals (160 dB RMS), sea turtles (175 dB RMS), and fish (150 dB RMS) using 20LogR spherical spreading loss using the highest power levels were used for each sound source reported in Crocker and Fratantonio (2016).

HRG SOURCE	DISTANCE OF POTENTIAL DISTURBANCE (m)*		
	Marine Mammals	Sea Turtles	Fish
AA200 Boomer Plate	100	18	317
AA251 Boomer Plate	224	40	708
Applied Acoustics S-Boom (3 AA252 boomer plates)	178	32	563
Applied Acoustics S-Boom (CSP-N Source)	142	26	447

FSI HMS-620D Bubble Gun	80	15	252
ELC820 Sparker	200	36	631
Applied Acoustics Dura-Spark	502	90	1,996
Applied Acoustics Delta Sparker	178	32	563
EdgeTech 424 Sub-bottom Profiler, 7.2 and 11 kHz	10	2	32
EdgeTech 512i Sub-bottom Profiler	10	2	32
Knudsen 3202 Echosounder (2 transducers)	892	NA	NA
Reson Seabat 7111 Multibeam Echosounder[1]	NA	NA	NA
Reson Seabat T20P Multibeam Echosounder[1]	NA	NA	NA
Bathyswath SWATHplus-M	NA	NA	NA
Echotrac CV100 Single-Beam Echosounder[1]	NA	NA	NA
Klein 3000 Side-Scan, 132 kHz	NA	NA	NA
Klein 3000 Side-Scan, 445 kHz	NA	NA	NA
Klein 3900 Side-scan, 445 kHz	NA	NA	NA
EdgeTech 4200 Side-Scan, 100 kHz	NA	NA	NA
EdgeTech 4200 Side-Scan, 400 kHz	NA	NA	NA

NA = Not Audible

[1] These multi-beam echosounder and side-scan sonars are only audible to mid- and high-frequency hearing groups of marine mammals.

* Disturbance distances have been round up to the next nearest whole number.

APPENDIX B

Project Design Criteria (PDC) and Best Management Practices (BMPs) for Threatened and Endangered Species for Site Characterization and Site Assessment Activities to Support Offshore Wind Projects

Any survey plan must meet the following minimum requirements specified below, except when complying with these requirements would put the safety of the vessel or crew at risk.

PDC 1: Avoid Live Bottom Features

BMPs:

1. All vessel anchoring and any seafloor-sampling activities (i.e., drilling or boring for geotechnical surveys) are restricted from seafloor areas with consolidated seabed features.[1] All vessel anchoring and seafloor sampling must also occur at least 150 m from any known locations of threatened or endangered coral species. All sensitive live bottom habitats (eelgrass, cold-water corals, etc.) should be avoided as practicable. All vessels in coastal waters will operate in a manner to minimize propeller wash and seafloor disturbance and transiting vessels should follow deep-water routes (e.g., marked channels), as practicable, to reduce disturbance to sturgeon and sawfish habitat.

PDC 2: Avoid Activities that Could Affect Early Life Stages of Atlantic Sturgeon

BMP:

1. No geotechnical or bottom disturbing activities will take place during the spawning/rearing season within freshwater reaches of rivers where Atlantic or shortnose sturgeon spawning occurs. Any survey plan that includes geotechnical or other benthic sampling activities in freshwater reaches (salinity 0-0.5 ppt) of such rivers will identify a time of year restriction that will avoid such activities during the time of year when Atlantic sturgeon spawning and rearing of early life stages occurs in that river. Appropriate time of year restrictions include the following:

River	No Work Window	Area Affected
Hudson	April – July	Upstream of the Delaware Memorial Bridge
Delaware	April – July	Upstream of Newburgh, NY - Beacon Bridge/Rt 84

This table will be supplemented with additional rivers as necessary.

PDC 3: Marine Trash and Debris Awareness and Prevention

"*Marine trash and debris*" is defined as any object or fragment of wood, metal, glass, rubber, plastic, cloth, paper or any other solid, man-made item or material that is lost or discarded in the marine environment by the Lessee or an authorized representative of the Lessee (collectively, the

[1] Consolidated seabed features for this measure are pavement, scarp walls, and deep/cold-water coral reefs and shallow/mesophotic reefs as defined in the CMECS Geologic Substrate Classifications.

"Lessee") while conducting activities on the OCS in connection with a lease, grant, or approval issued by the Department of the Interior (DOI). To understand the type and amount of marine debris generated, and to minimize the risk of entanglement in and/or ingestion of marine debris by protected species, lessees must implement the following BMPS.

BMPs:

1. Training: All vessel operators, employees, and contractors performing OCS survey activities on behalf of the Lessee (collectively, "Lessee Representatives") must complete marine trash and debris awareness training annually. The training consists of two parts: (1) viewing a marine trash and debris training video or slide show (described below); and (2) receiving an explanation from management personnel that emphasizes their commitment to the requirements. The marine trash and debris training videos, training slide packs, and other marine debris related educational material may be obtained at https://www.bsee.gov/debris. The training videos, slides, and related material may be downloaded directly from the website. Lessee Representatives engaged in OCS survey activities must continue to develop and use a marine trash and debris awareness training and certification process that reasonably assures that they, as well as their respective employees, contractors, and subcontractors, are in fact trained. The training process must include the following elements:
    a. Viewing of either a video or slide show by the personnel specified above;
    b. An explanation from management personnel that emphasizes their commitment to the requirements;
    c. Attendance measures (initial and annual); and
    d. Recordkeeping and availability of records for inspection by DOI.

    By January 31 of each year, the Lessee must submit to DOI an annual report signed by the Lessee that describes its marine trash and debris awareness training process and certifies that the training process has been followed for the previous calendar year. You must send the reports via email to *renewable_reporting@boem.gov* and to *marinedebris@bsee.gov*.

2. Marking: Materials, equipment, tools, containers, and other items used in OCS activities which are of such shape or configuration that they are likely to snag or damage fishing devices, and could be lost or discarded overboard, must be clearly marked with the vessel or facility identification and properly secured to prevent loss overboard. All markings must clearly identify the owner and must be durable enough to resist the effects of the environmental conditions to which they may be exposed.

3. Recovery: Lessees must recover marine trash and debris that is lost or discarded in the marine environment while performing OCS activities when such incident is likely to: (a) cause undue harm or damage to natural resources, including their physical, atmospheric, and biological components, with particular attention to those that could result in the entanglement of or ingestion by marine protected species; or (b) significantly interfere with OCS uses (e.g., are likely to snag or damage fishing

equipment, or present a hazard to navigation). Lessees must notify DOI when recovery activities are (i) not possible because conditions are unsafe; or (ii) not practicable because the marine trash and debris released is not likely to result in any of the conditions listed in (a) or (b) above. The lessee must recover the marine trash and debris lost or discarded if DOI does not agree with the reasons provided by the Lessee to be relieved from the obligation to recover the marine trash and debris. If the marine trash and debris is located within the boundaries of a potential archaeological resource/avoidance area, or a sensitive ecological/benthic resource area, the Lessee must contact DOI for approval prior to conducting any recovery efforts.

Recovery of the marine trash and debris should be completed immediately, but no later than 30 days from the date in which the incident occurred. If the Lessee is not able to recover the marine trash or debris within 48 hours (*See* BMP 4. Reporting), the Lessee must submit a recovery plan to DOI explaining the recovery activities to recover the marine trash or debris ("Recovery Plan"). The Recovery Plan must be submitted no later than 10 calendar days from the date in which the incident occurred. Unless otherwise objected by DOI within 48 hours of the filing of the Recovery Plan, the Lessee can proceed with the activities described in the Recovery Plan. The Lessee must request and obtain approval of a time extension if recovery activities cannot be completed within 30 days from the date in which the incident occurred. The Lessee must enact steps to prevent similar incidents and must submit a description of these actions to BOEM and BSEE within 30 days from the date in which the incident occurred.

4. Reporting: The Lessee must report all marine trash and debris lost or discarded to DOI (using the email address listed on DOI's most recent incident reporting guidance). This report applies to all marine trash and debris lost or discarded, and must be made monthly, no later than the fifth day of the following month. The report must include the following:

    a. Project identification and contact information for the lessee, operator, and/or contractor;
    b. The date and time of the incident;
    c. The lease number, OCS area and block, and coordinates of the object's location (latitude and longitude in decimal degrees);
    d. A detailed description of the dropped object to include dimensions (approximate length, width, height, and weight) and composition (e.g., plastic, aluminum, steel, wood, paper, hazardous substances, or defined pollutants);
    e. Pictures, data imagery, data streams, and/or a schematic/illustration of the object, if available;
    f. Indication of whether the lost or discarded item could be a magnetic anomaly of greater than 50 nanoTesla (nT), a seafloor target of greater than 0.5 meters (m), or a sub-bottom anomaly of greater than 0.5m when operating a magnetometer or gradiometer, side scan sonar, or sub-bottom profile in accordance with DOI's applicable guidance;
    g. An explanation of how the object was lost; and

h. A description of immediate recovery efforts and results, including photos.

In addition to the foregoing, the Lessee must submit a report within 48 hours of the incident ("48-hour Report") if the marine trash or debris could (a) cause undue harm or damage to natural resources, including their physical, atmospheric, and biological components, with particular attention to those that could result in the ingestion by or entanglement of marine protected species; or (b) significantly interfere with OCS uses (e.g., are likely to snag or damage fishing equipment, or present a hazard to navigation). The information in the 48-hour Report would be the same as that listed above, but just for the incident that triggered the 48-hour Report. The Lessee must report to DOI if the object is recovered and, as applicable, any substantial variation in the activities described in the Recovery Plan that were required during the recovery efforts. Information on unrecovered marine trash and debris must be included and addressed in the description of the site clearance activities provided in the decommissioning application required under 30 CFR § 585.906. The Lessee is not required to submit a report for those months in which no marine trash and debris was lost or discarded.

PDC 4: Minimize Interactions with Listed Species during Geophysical Survey Operations
To avoid injury of ESA-listed species and minimize any potential disturbance, the following measures will be implemented for all vessels operating impulsive survey equipment that emits sound at frequency ranges <180 kHz (within the functional hearing range of marine mammals)[2] as well as CHIRP sub bottom profilers. The Clearance Zone is defined as the area around the sound source that needs to be visually cleared of listed species for 30 minutes before the sound source is turned on. The Clearance Zone is equivalent to a minimum visibility zone for survey operations to begin (*See* BMP 6). The Shutdown Zone is defined as the area around the sound source that must be monitored for possible shutdown upon detection of protected species within or entering that zone. For both the Clearance and Shutdown Zones, these are minimum visibility distances and for situational awareness PSOs should observe beyond this area when possible.

BMPs:

1. For situational awareness a Clearance Zone extending at least (500 m in all directions) must be established around all vessels operating sources <180 kHz.
    a. The Clearance Zone must be monitored by approved third-party PSOs at all times and any observed listed species must be recorded (see reporting requirements below).
    b. For monitoring around the autonomous surface vessel (ASV) where remote PSO monitoring must occur from the mother vessel, a dual thermal/HD camera must be installed on the mother vessel facing forward and angled in a direction so as to provide a field of view ahead of the vessel and around the ASV. PSOs must be able to monitor the real-time output of the camera on hand-held computer tablets. Images from the cameras must be able to be captured and reviewed to assist in verifying species identification. A monitor must also be installed in the bridge displaying the real-time images from the thermal/HD camera installed on

[2] Note that this requirement does not apply to Parametric Subbottom Profilers, Ultra Short Baseline, echosounders or side scan sonar; the acoustic characteristics (frequency, narrow beam width, rapid attenuation) are such that no effects to listed species are anticipated.

the front of the ASV itself, providing a further forward view of the craft. In addition, night-vision goggles with thermal clip-ons and a handheld spotlight must be provided and used such that PSOs can focus observations in any direction around the mother vessel and/or the ASV.

2. To minimize exposure to noise that could be disturbing, Shutdown Zone(s) (500 m for North Atlantic right whales and 100 m for other ESA-listed whales visible at the surface) must be established around the sources operating at <180 kHz being towed from the vessel .
    a. The Shutdown Zone(s) must be monitored by third-party PSOs at all times when noise-producing equipment (<180 kHz) is being operated and all observed listed species must be recorded (see reporting requirements below).
    b. If an ESA-listed species is detected within or entering the respective Shutdown Zone, any noise-producing equipment operating below 180 kHz must be shut off until the minimum separation distance from the source is re-established (500 m for North Atlantic right whales and 100 m for other ESA-listed species, including other ESA-listed marine mammals) and the measures in (5) are carried out.
        i. A PSO must notify the survey crew that a shutdown of all active boomer, sparker, and bubble gun acoustic sources below 180 kHz is immediately required. The vessel operator and crew must comply immediately with any call for a shutdown by the PSO. Any disagreement or discussion must occur only after shutdown.
    c. If the Shutdown Zone(s) cannot be adequately monitored for ESA-listed species presence (i.e., a PSO determines conditions, including at night or other low-visibility conditions, are such that listed species cannot be reliably sighted within the Shutdown Zone(s), no equipment operating at <180 kHz can be deployed until such time that the Shutdown Zone(s) can be reliably monitored.
3. Before any noise-producing survey equipment (operating at <180 kHz) is deployed, the Clearance Zone (500 m for all listed species) must be monitored for 30 minutes of pre-clearance observation.
    a. If any ESA-listed species is observed within the Clearance Zone during the 30-minute pre-clearance period, the 30-minute clock must be paused. If the PSO confirms the animal has exited the zone and headed away from the survey vessel, the 30-minute clock that was paused may resume. The pre-clearance clock will reset to 30 minutes if the animal dives or visual contact is otherwise lost.
4. When technically feasible, a “ramp up” of the electromechanical survey equipment must occur at the start or re-start of geophysical survey activities. A ramp up must begin with the power of the smallest acoustic equipment for the geophysical survey at its lowest power output. When technically feasible the power will then be gradually turned up and other acoustic sources added in a way such that the source level would increase gradually.
5. Following a shutdown for any reason, ramp up of the equipment may begin immediately only if: (a) the shutdown is less than 30 minutes, (b) visual monitoring of

the Shutdown Zone(s) continued throughout the shutdown, (c) the animal(s) causing the shutdown was visually followed and confirmed by PSOs to be outside of the Shutdown Zone(s) (500 m for North Atlantic right whales and 100 m for other ESA-listed species, including other ESA-listed marine mammals) and heading away from the vessel, and (d) the Shutdown Zone(s) remains clear of all listed species. If all (a, b, c, and d) the conditions are not met, the Clearance Zone (500 m for all listed species) must be monitored for 30 minutes of pre-clearance observation before noise-producing equipment can be turned back on.

6. In order for geophysical surveys to be conducted at night or during low-visibility conditions, PSOs must be able to effectively monitor the Clearance and Shutdown Zone(s). No may occur if the Clearance and Shutdown Zone(s) cannot be reliably monitored for the presence of ESA-listed species to ensure avoidance of injury to those species.
    a. An Alternative Monitoring Plan (AMP) must be submitted to BOEM (or the federal agency authorizing, funding, or permitting the survey) detailing the monitoring methodology that will be used during nighttime and low-visibility conditions and an explanation of how it will be effective at ensuring that the Shutdown Zone(s) can be maintained during nighttime and low-visibility survey operations. The plan must be submitted 60 days before survey operations are set to begin.
    b. The plan must include technologies that have the technical feasibility to detect all ESA-listed whales out to 500 m and sea turtles to 100 m.
    c. PSOs should be trained and experienced with the proposed alternative monitoring technology.
    d. The AMP must describe how calibration will be performed, for example, by including observations of known objects at set distances and under various lighting conditions. This calibration should be performed during mobilization and periodically throughout the survey operation.
    e. PSOs shall make nighttime observations from a platform with no visual barriers, due to the potential for the reflectivity from bridge windows or other structures to interfere with the use of the night vision optics.
7. To minimize risk to North Atlantic right whales, no surveys may occur in Cape Cod Bay from January 1 - May 15 of any year (in an area beginning at 42°04′56.5″ N-070°12′00.0″ W; thence north to 42°12′00.0″ N-070°12′00.0″ W; thence due west to charted mean high water line; thence along charted mean high water within Cape Cod Bay back to beginning point).
8. Sound sources used within the North Atlantic right whale Critical Habitat Southeastern U.S. Calving Area (i.e., Unit 2) during the calving and nursing season (December-March) shall operate at frequencies <7 kHz and >35 kHz (functional hearing range of right whales) at night or low visibility conditions.
9. At times when multiple survey vessels are operating within a lease area, adjacent lease areas, or exploratory cable routes, a minimum separation distance (to be determined on a survey specific basis, dependent on equipment being used) must be maintained between survey vessels to ensure that sound sources do not overlap.
10. To minimize disturbance to the Northwest Atlantic Ocean DPS of loggerhead sea turtles, a voluntary pause in sparker operation should be implemented for all vessels

operating in nearshore critical habitat for loggerhead sea turtles. These conditions apply to critical habitat boundaries for nearshore reproductive habitats LOGG N-3 through LOGG N-16 (79 FR 39855) from April 1 to September 30. Following pre-clearance procedures, if any loggerhead or other unidentified sea turtles is observed within a 100 m Clearance Zone during a survey, sparker operation should be paused by turning off the sparker until the sea turtle is beyond 100 m of the survey vessel. If the animal dives or visual contact is otherwise lost, sparker operation may resume after a minimum 2-minute pause following the last sighting of the animal.

11. Any visual observations of listed species by crew or project personnel must be communicated to PSOs on-duty.
12. During good conditions (e.g., daylight hours; Beaufort scale 3 or less) when survey equipment is not operating, to the maximum extent practicable, PSOs must conduct observations for protected species for comparison of sighting rates and behavior with and without use of active geophysical survey equipment. Any observed listed species must be recorded regardless of any mitigation actions required.

PDC 5: Minimize Vessel Interactions with Listed Species

All vessels associated with survey activities (transiting [i.e., travelling between a port and the survey site] or actively surveying) must comply with the vessel strike avoidance measures specified below. The only exception is when the safety of the vessel or crew necessitates deviation from these requirements. If any such incidents occur, they must be reported as outlined below under Reporting Requirements (PDC 8). The Vessel Strike Avoidance Zone is defined as 500 m or greater from any sighted ESA-listed species or other unidentified large marine mammal.

BMPs:

1. Vessel captain and crew must maintain a vigilant watch for all protected species and slow down, stop their vessel, or alter course, as appropriate and regardless of vessel size, to avoid striking any listed species. The presence of a single individual at the surface may indicate the presence of submerged animals in the vicinity; therefore, precautionary measures should always be exercised. If pinnipeds or small delphinids of the following genera: Delphinus, Lagenorhynchus, Stenella, and Tursiops are visually detected approaching the vessel (i.e., to bow ride) or towed equipment, vessel strike avoidance and shutdown is not required.
2. Anytime a survey vessel is underway (transiting or surveying), the vessel must maintain a 500 m minimum separation distance and a PSO must monitor a Vessel Strike Avoidance Zone (500 m or greater from any sighted ESA-listed species or other unidentified large marine mammal visible at the surface) to ensure detection of that animal in time to take necessary measures to avoid striking the animal. If the survey vessel does not require a PSO for the type of survey equipment used, a trained crew lookout may be used (see #3). For monitoring around the autonomous surface vessels, regardless of the equipment it may be operating, a dual thermal/HD camera must be installed on the mother vessel facing forward and angled in a direction so as to provide a field of view ahead of the vessel and around the ASV. A dedicated operator must be able to monitor the real-time output of the camera on hand-held computer tablets. Images from the cameras must be able to be captured and reviewed to assist in verifying species identification. A monitor must also be

installed in the bridge displaying the real-time images from the thermal/HD camera installed on the front of the ASV itself, providing a further forward view of the craft.

a. Survey plans must include identification of vessel strike avoidance measures, including procedures for equipment shut down and retrieval, communication between PSOs/crew lookouts, equipment operators, and the captain, and other measures necessary to avoid vessel strike while maintaining vessel and crew safety. If any circumstances are anticipated that may preclude the implementation of this PDC, they must be clearly identified in the survey plan and alternative procedures outlined in the plan to ensure minimum distances are maintained and vessel strikes can be avoided.
b. All vessel crew members must be briefed in the identification of protected species that may occur in the survey area and in regulations and best practices for avoiding vessel collisions. Reference materials must be available aboard all project vessels for identification of listed species. The expectation and process for reporting of protected species sighted during surveys must be clearly communicated and posted in highly visible locations aboard all project vessels, so that there is an expectation for reporting to the designated vessel contact (such as the lookout or the vessel captain), as well as a communication channel and process for crew members to do so.
c. The Vessel Strike Avoidance Zone(s) are a minimum and must be maintained around all surface vessels at all times.
d. If a large whale is identified within 500 m of the forward path of any vessel, the vessel operator must steer a course away from the whale at 10 knots (18.5 km/hr) or less until the 500 m minimum separation distance has been established. Vessels may also shift to idle if feasible.
e. If a large whale is sighted within 200 m of the forward path of a vessel, the vessel operator must reduce speed and shift the engine to neutral. Engines must not be engaged until the whale has moved outside of the vessel's path and beyond 500 m. If stationary, the vessel must not engage engines until the large whale has moved beyond 500 m.
f. If a sea turtle or manta ray is sighted within the operating vessel's forward path, the vessel operator must slow down to 4 knots (unless unsafe to do so) and steer away as possible. The vessel may resume normal operations once the vessel has passed the individual.
g. During times of year when sea turtles are known to occur in the survey area, vessels must avoid transiting through areas of visible jellyfish aggregations or floating vegetation (e.g., sargassum lines or mats). In the event that operational safety prevents avoidance of such areas, vessels must slow to 4 knots while transiting through such areas.
h. Vessels operating in water depths with less than 4 ft. clearance between the vessel and the bottom should maintain speeds no greater than 4 knots to minimize vessel strike risk to sturgeon and sawfish.

3. To monitor the Vessel Strike Avoidance Zone, a PSO (or crew lookout if PSOs are not required) must be posted during all times a vessel is underway (transiting or surveying) to monitor for listed species in all directions.

   a. Visual observers monitoring the vessel strike avoidance zone can be either PSOs or crew members (if PSOs are not required). If the trained lookout is a vessel crew member, this must be their designated role and primary responsibility while the vessel is transiting. Any designated crew lookouts must receive training on protected species identification, vessel strike minimization procedures, how and when to communicate with the vessel captain, and reporting requirements. All observations must be recorded per reporting requirements.
   b. Regardless of monitoring duties, all crew members responsible for navigation duties must receive site-specific training on ESA-listed species sighting/reporting and vessel strike avoidance measures.
4. Regardless of vessel size, vessel operators must reduce vessel speed to 10 knots (18.5 mph) or less while operating in any Seasonal Management Area (SMA), Dynamic Management Area (DMA)/Slow Zones triggered by visual detection of North Atlantic right whales. The only exception to this requirement is for vessels operating in areas within a DMA/visually triggered Slow Zone where it is not reasonable to expect the presence of North Atlantic right whales (e.g. Long Island Sound, shallow harbors). Reducing vessel speed to 10 knots or less while operating in Slow Zones triggered by acoustic detections of North Atlantic right whales is encouraged.
5. Vessels underway must not divert their course to approach any listed species.
6. All vessel operators must check for information regarding mandatory or voluntary ship strike avoidance (SMAs, DMAs, Slow Zones) and daily information regarding North Atlantic right whale sighting locations. These media may include, but are not limited to: NOAA weather radio, U.S. Coast Guard NAVTEX and channel 16 broadcasts, Notices to Mariners, the Whale Alert app, or WhaleMap website.
   a. North Atlantic right whale Sighting Advisory System info can be accessed at: https://apps-nefsc.fisheries.noaa.gov/psb/surveys/MapperiframeWithText.html
   b. Information about active SMAs, DMAs, and Slow Zones can be accessed at: https://www.fisheries.noaa.gov/national/endangered-species-conservation/reducing-vessel-strikes-north-atlantic-right-whales

PDC 6: Minimize Risk During Buoy Deployment, Operations, and Retrieval
Any mooring systems used during survey activities prevent any potential entanglement or entrainment of listed species, and in the unlikely event that entanglement does occur, ensure proper reporting of entanglement events according to the measures specified below.

BMPs:
1. Ensure that any buoys attached to the seafloor use the best available mooring systems. Buoys, lines (chains, cables, or coated rope systems), swivels, shackles, and anchor designs must prevent any potential entanglement of listed species while ensuring the safety and integrity of the structure or device.
2. All mooring lines and ancillary attachment lines must use one or more of the following measures to reduce entanglement risk: shortest practicable line length, rubber sleeves, weak-links, chains, cables or similar equipment types that prevent lines from looping, wrapping, or entrapping protected species.
3. Any equipment must be attached by a line within a rubber sleeve for rigidity. The length of the line must be as short as necessary to meet its intended purpose.

4. During all buoy deployment and retrieval operations, buoys should be lowered and raised slowly to minimize risk to listed species and benthic habitat. Additionally, PSOs or trained project personnel (if PSOs are not required) should monitor for listed species in the area prior to and during deployment and retrieval and work should be stopped if listed species are observed within 500 m of the vessel to minimize entanglement risk.
5. If a live or dead marine protected species becomes entangled, you must immediately contact the applicable NMFS stranding coordinator using the reporting contact details (see Reporting Requirements section) and provide any on-water assistance requested.
6. All buoys must be properly labeled with owner and contact information.

PDC 7: Protected Species Observers
Qualified third-party PSOs to observe Clearance and Shutdown Zones must be used as outlined in the conditions above.

BMPs:
1. All PSOs must have completed an approved PSO training program and must receive NMFS approval to act as a PSO for geophysical surveys. Documentation of NMFS approval for geophysical survey activities in the Atlantic and copies of the most recent training certificates of individual PSOs' successful completion of a commercial PSO training course with an overall examination score of 80% or greater must be provided upon request. Instructions and application requirements to become a NMFS-approved PSO can be found at: *www.fisheries.noaa.gov/national/endangered-species-conservation/protected-species-observers*.
2. In situations where third-party party PSOs are not required, crew members serving as lookouts must receive training on protected species identification, vessel strike minimization procedures, how and when to communicate with the vessel captain, and reporting requirements.
3. PSOs deployed for geophysical survey activities must be employed by a third-party observer provider. While the vessel is underway, they must have no other tasks than to conduct observational effort, record data, and communicate with and instruct relevant vessel crew to the presence of listed species and associated mitigation requirements. PSOs on duty must be clearly listed on daily data logs for each shift.
    a. Non-third-party observers may be approved by NMFS on a case-by-case basis for limited, specific duties in support of approved, third-party PSOs.
4. A minimum of one PSO (assuming condition 5 is met) must be on duty observing for listed species at all times that noise-producing equipment <180 kHz is operating, or the survey vessel is actively transiting during daylight hours (i.e. from 30 minutes prior to sunrise and through 30 minutes following sunset). Two PSOs must be on duty during nighttime operations. A PSO schedule showing that the number of PSOs used is sufficient to effectively monitor the affected area for the project (e.g., surveys) and record the required data must be included. PSOs must not be on watch for more than 4 consecutive hours, with at least a 2-hour break after a 4-hour watch. PSOs must not be on active duty observing for more than 12 hours in any 24-hour period.
5. Visual monitoring must occur from the most appropriate vantage point on the associated operational platform that allows for 360-degree visual coverage around the vessel. If

360-degree visual coverage is not possible from a single vantage point, multiple PSOs must be on watch to ensure such coverage.

6. Suitable equipment must be available to each PSO to adequately observe the full extent of the Clearance and Shutdown Zones during all vessel operations and meet all reporting requirements.
    a. Visual observations must be conducted using binoculars and the naked eye while free from distractions and in a consistent, systematic, and diligent manner.
    b. Rangefinders (at least one per PSO, plus backups) or reticle binoculars (e.g., 7 x 50) of appropriate quality (at least one per PSO, plus backups) to estimate distances to listed species located in proximity to the vessel and Clearance and Shutdown Zone(s).
    c. Digital full frame cameras with a telephoto lens that is at least 300 mm or equivalent. The camera or lens should also have an image stabilization system. Used to record sightings and verify species identification whenever possible.
    d. A laptop or tablet to collect and record data electronically.
    e. Global Positioning Units (GPS) if data collection/reporting software does not have built-in positioning functionality.
    f. PSO data must be collected in accordance with standard data reporting, software tools, and electronic data submission standards approved by BOEM and NMFS for the particular activity.
    g. Any other tools deemed necessary to adequately perform PSO tasks.

PDCs 8: Reporting Requirements

To ensure compliance and evaluate effectiveness of mitigation measures, regular reporting of survey activities and information on listed species will be required as follows.

BMPs:

1. Data from all PSO observations must be recorded based on standard PSO collection and reporting requirements. PSOs must use standardized electronic data forms to record data. The following information must be reported electronically in a format approved by BOEM and NMFS:

    Visual Effort:
    a. Vessel name;
    b. Dates of departures and returns to port with port name;
    c. Lease number;
    d. PSO names and affiliations;
    e. PSO ID (if applicable);
    f. PSO location on vessel;
    g. Height of observation deck above water surface (in meters);
    h. Visual monitoring equipment used;
    i. Dates and times (Greenwich Mean Time) of survey on/off effort and times corresponding with PSO on/off effort;
    j. Vessel location (latitude/longitude, decimal degrees) when survey effort begins and ends; vessel location at beginning and end of visual PSO duty shifts; recorded at 30 second intervals if obtainable from data collection software, otherwise at practical regular interval;

k. Vessel heading and speed at beginning and end of visual PSO duty shifts and upon any change;
l. Water depth (if obtainable from data collection software) (in meters);
m. Environmental conditions while on visual survey (at beginning and end of PSO shift and whenever conditions change significantly), including wind speed and direction, Beaufort scale, Beaufort wind force, swell height (in meters), swell angle, precipitation, cloud cover, sun glare, and overall visibility to the horizon;
n. Factors that may be contributing to impaired observations during each PSO shift change or as needed as environmental conditions change (e.g., vessel traffic, equipment malfunctions);
o. Survey activity information, such as type of survey equipment in operation, acoustic source power output while in operation, and any other notes of significance (i.e., pre-clearance survey, ramp-up, shutdown, end of operations, etc.);

Visual Sighting (all Visual Effort fields plus):

a. Watch status (sighting made by PSO on/off effort, opportunistic, crew, alternate vessel/platform);
b. Vessel/survey activity at time of sighting;
c. PSO/PSO ID who sighted the animal;
d. Time of sighting;
e. Initial detection method;
f. Sightings cue;
g. Vessel location at time of sighting (decimal degrees);
h. Direction of vessel's travel (compass direction);
i. Direction of animal's travel relative to the vessel;
j. Identification of the animal (e.g., genus/species, lowest possible taxonomic level, or unidentified); also note the composition of the group if there is a mix of species;
k. Species reliability;
l. Radial distance;
m. Distance method;
n. Group size; Estimated number of animals (high/low/best);
o. Estimated number of animals by cohort (adults, yearlings, juveniles, calves, group composition, etc.);
p. Description (as many distinguishing features as possible of each individual seen, including length, shape, color, pattern, scars or markings, shape and size of dorsal fin, shape of head, and blow characteristics);
q. Detailed behavior observations (e.g., number of blows, number of surfaces, breaching, spyhopping, diving, feeding, traveling; as explicit and detailed as possible; note any observed changes in behavior);
r. Mitigation Action; Description of any actions implemented in response to the sighting (e.g., delays, shutdown, ramp-up, speed or course alteration, etc.) and time and location of the action.
s. Behavioral observation to mitigation;
t. Equipment operating during sighting;
u. Source depth (in meters);

v. Source frequency;
w. Animal's closest point of approach and/or closest distance from the center point of the acoustic source;
x. Time entered shutdown zone;
y. Time exited shutdown zone;
z. Time in shutdown zone;
aa. Photos/Video

2. The project proponent must submit a final monitoring report to BOEM and NMFS (to *renewable_reporting@boem.gov* and *nmfs.gar.incidental-take@noaa.gov*) within 90 days after completion of survey activities. The report must fully document the methods and monitoring protocols, summarizes the survey activities and the data recorded during monitoring, estimates of the number of listed species that may have been taken during survey activities, describes, assesses and compares the effectiveness of monitoring and mitigation measures. PSO sightings and effort data and trackline data in Excel spreadsheet format must also be provided with the final monitoring report.
3. Reporting sightings of North Atlantic right whales:
    a. If a North Atlantic right whale is observed at any time by a PSO or project personnel during surveys or vessel transit, sightings must be reported within two hours of occurrence when practicable and no later than 24 hours after occurrence. In the event of a sighting of a right whale that is dead, injured, or entangled, efforts must be made to make such reports as quickly as possible to the appropriate regional NOAA stranding hotline (from Maine-Virginia report sightings to 866-755-6622, and from North Carolina-Florida to 877-942-5343). Right whale sightings in any location may also be reported to the U.S. Coast Guard via channel 16 and through the WhaleAlert App (http://www.whalealert.org/).
    b. Further information on reporting a right whale sighting can be found at: *https://apps-nefsc.fisheries.noaa.gov/psb/surveys/documents/20120919_Report_a_Right_Whale.pdf*
4. In the event of a vessel strike of a protected species by any survey vessel, the project proponent must immediately report the incident to BOEM (*renewable_reporting@boem.gov*) and NMFS (*nmfs.gar.incidental-take@noaa.gov*) and for marine mammals to the NOAA stranding hotline: from Maine-Virginia, report to 866-755-6622, and from North Carolina-Florida to 877-942-5343 and for sea turtles from Maine-Virginia, report to 866-755-6622, and from North Caroline-Florida to 844-732-8785. The report must include the following information:
    a. Name, telephone, and email or the person providing the report;
    b. The vessel name;
    c. The Lease Number;
    d. Time, date, and location (latitude/longitude) of the incident;
    e. Species identification (if known) or description of the animal(s) involved;
    f. Vessel's speed during and leading up to the incident;
    g. Vessel's course/heading and what operations were being conducted (if applicable);
    h. Status of all sound sources in use;

i. Description of avoidance measures/requirements that were in place at the time of the strike and what additional measures were taken, if any, to avoid strike;
j. Environmental conditions (wave height, wind speed, light, cloud cover, weather, water depth);
k. Estimated size and length of animal that was struck;
l. Description of the behavior of the species immediately preceding and following the strike;
m. If available, description of the presence and behavior of any other protected species immediately preceding the strike;
n. Disposition of the animal (e.g., dead, injured but alive, injured and moving, blood or tissue observed in the water, last sighted direction of travel, status unknown, disappeared); and
o. To the extent practicable, photographs or video footage of the animal(s).

5. Sightings of any injured or dead listed species must be immediately reported, regardless of whether the injury or death is related to survey operations, to BOEM (*renewable_reporting@boem.gov*), NMFS (*nmfs.gar.incidental-take@noaa.gov*), and the appropriate regional NOAA stranding hotline (from Maine-Virginia report sightings to 866-755-6622, and from North Carolina-Florida to 877-942-5343 for marine mammals and 844-732-8785 for sea turtles). If the project proponent's activity is responsible for the injury or death, they must ensure that the vessel assist in any salvage effort as requested by NMFS. When reporting sightings of injured or dead listed species, the following information must be included:
    a. Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
    b. Species identification (if known) or description of the animal(s) involved;
    c. Condition of the animal(s) (including carcass condition if the animal is dead);
    d. Observed behaviors of the animal(s), if alive;
    e. If available, photographs or video footage of the animal(s); and
    f. General circumstances under which the animal was discovered.
6. Reporting and Contact Information:
    a. Dead and/or Injured Protected Species:
        1. NMFS Greater Atlantic Region's Stranding Hotline: 866-755-6622
        2. NMFS Southeast Region's Stranding Hotline: 877-942-5343 (marine mammals), 844-732-8785 (sea turtles)
    ii. Injurious Takes of Endangered and Threatened Species:
        1. NMFS Greater Atlantic Regional Office, Protected Resources Division (*nmfs.gar.incidental-take@noaa.gov*)
        2. BOEM Environment Branch for Renewable Energy, Phone: 703-787-1340, Email: *renewable_reporting@boem.gov*

Appendix D – Equipment

ARIES MARINE
CORPORATION

RAM XV

Liftboat Class 175'

Dimensions

Length Overall	113'
Length (Barge Only)	98'
Beam Overall	70'
Beam (Barge Only)	40'
Depth (Barge Only)	9'
Design Draft	9'5"
Open Deck Area	4.500 sq. ft.

Crane (Nautilius) Hydraulic & Propulsion

Capacity	10 & 100 Ton
Boom Length (10 Ton)	Fixed 70'
Boom Length (100 Ton)	Fixed 100'
Main Engines	Two (2) 3412 Caterpillar
Rated Ship	Approx 1080
Reduction Gear	Twin Disc

Hull Characteristics & Legs

Gross Tonnage	168
Net Tonnage	134
Max Deck Cargo	500,000#
Number of Legs	3
Length	175'
Size	54" diameter
Wall Thickness	¾" (braced inside)

Generators & Capacities

Engines	Two (2) Caterpillar
Generator	Two (2) 95kw
Fuel	Approx. 7,500 Gallons
Potable Water	Approx. 15,000 Gallon

Pads & Jacking System

Length	26'
Width	14'
Depth	26'
Configuration	Raked on Both Ends
Max. Working Water Depth	130'
Max Sea Conditions(Jacking)	5'

Estimated Speed

Eight (8) Knots

Electronics

VHF – SSB
Fathometer
Tilt Alarm
GPS
Loud Hailer
Radar
DSS TV

Available Berths (excluding crew) 22

P. O. Drawer 51789 • Lafayette, LA 70505
www.ariesmarine.com

DIMENSIONS

LENGTH OVERALL	113'
LENGTH BARGE ONLY	98'
BEAM OVERALL	70'
BEAM BARGE ONLY	40'
DEPTH BARGE ONLY	9'
OPEN DECK AREA W AUX.	5074 SQ/FT

HULL CHARACTERISTICS:

GROSS TONAGE	UNDER 500
NET TONAGE	139 TONS
MAX DECK CARGO	500,000 LBS.

LEGS:

NUMBER	3
LENGTH	175'
SIZE	54" DIA.
WALL THICKNESS	3/4"

PADS

LENGTH	26'
WIDTH	14'
DEPTH	24"
CONFIGURATION	RAKED

SPEED

EIGHT (8) KNOTS

JACKING:

MAXIMUM WORKING WATER DEPTH	130'
MAXIMUM SEA CONDITIONS (JACKING UP OR DOWN)	5'

CRANE: (RAM MACHINE) HYDRAULIC

CAPCITY	10 & 100 TON
BOOM LENGTH	10 TON = 60' BOOM 100 TON = 100' BOOM
CRANE ENGINE	CATERPILLAR

PROPULSION:

MAIN ENGINES	TDW (2) 3412D CATERPILLAR
MAINS HP	APPROXIMATELY 1080 HP
REDUCTION GEAR	TWIN DISC.

GENERATORS:

ENGINES	TWO (2) CATERPILLAR
GENERATOR	TWO (2) 95 KW

CAPACITIES:

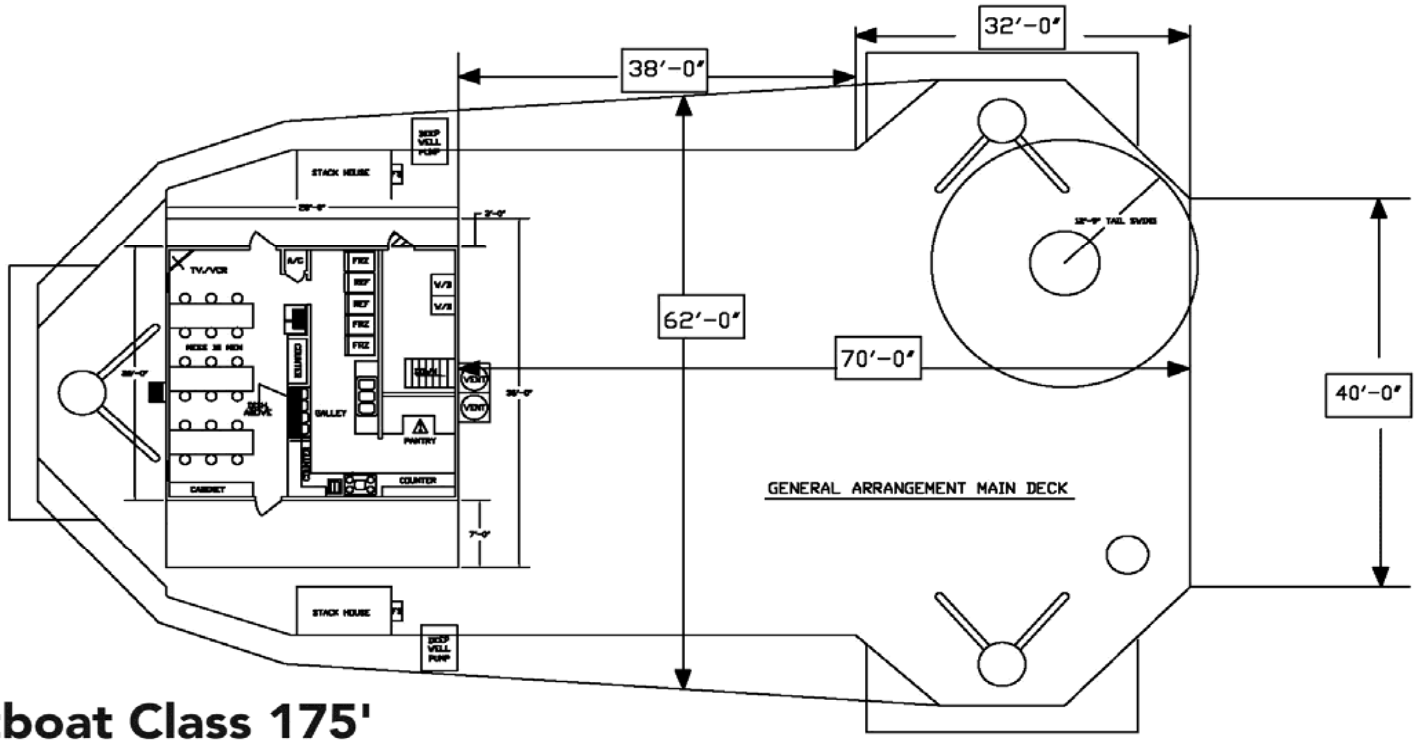
FUEL	APPROX. 8550 GALS
POTABLE WATER	APPROX. 14,000 GALS.

LIVING QTS.

BERTHS	29 (INCLUDING BOAT CREW)
A/C & HEATERS	CENTRAL
LOUNGE	COLOR TV, SOFAS, LOUNGE SEATS
HEADS	6-(ALL LEVELS)
GALLEY	18 SEATS, REF. & FRZ.S
	RANGE, ICE MAKER
LAUNDRY	2- WASHER/DRYERS

ELECTRONICS

VHS, SSB, FATHOMETER, LAUD HAILER, TILT ALARM, GPS, RADER



Liftboat Class 175'

M/V Ram XV

CLASS 175'
M/V RAM XV

MAIN HOIST
LIFTING LOAD CAPACITY CHART
RAM 10 TON 60 FT BOOM

60' BOOM CRANE			
		MAIN HOIST	
RADIUS (FT)	**BOOM ANGLE (DEG)**	**STATIC RATING (X 1000 LB)**	**DYNAMIC RATING (X 1000 LB)**
10	80	21.000	14.000
15	76	21.000	14.000
20	71	20.000	13.333
25	66	16.974	11.316
30	61	13.833	9.222
35	55	11.584	7.723
40	49	9.897	6.598
45	42	8.585	5.723
50	34	7.535	5.023
55	24	6.676	4.451
60	0	4.800	3.200

MAIN HOIST
LIFTING LOAD CAPACITY CHART
RAM 100 TON 100 FT BOOM

100' BOOM CRANE			
		MAIN HOIST	
RADIUS (FT)	**BOOM ANGLE (DEG)**	**STATIC RATING (X 1000 LB)**	**DYNAMIC RATING (X 1000 LB)**
25	80	202.000	134.667
30	77	202.000	134.667
35	74	171.224	114.149
40	71	148.977	99.318
45	68	131.670	87.780
50	65	117.823	78.549
55	62	106.492	70.995
60	58	97.050	64.700
65	55	89.059	59.373
70	51	82.209	54.806
75	47	76.045	50.697
80	43	69.657	46.438
85	39	63.651	42.434
90	34	57.871	38.581
95	28	52.111	34.741
100	21	45.982	30.655
105	9	39.629	26.419
106	0	36.033	24.022

LAREDO

M/V Trinity – Class 200 Liftboat – Vessel Specifications

Main Characteristics

Overall Length	98 ft
Overall Beam	78 ft
Hull Depth	13 ft
Design Draft	9 ft 5 in (based upon deck load)
Total Deck Space	3,771 sq ft
Usable Deck Space	3,200 sq ft
Fuel Capacity	11,300 gal
Potable Water	16,126 gal
Gross Tonnage	Under 200 GRT
Max Deck Cargo	Variable / Contingent on water depth

Special Features

VIP Stateroom	(2) Company Rep Room with Workspace; Private Shower and Toilet
Lounge Room	Seating and TV

Registration

Flag	United States

Generators

Engines	(2) CAT 3406
Generators	(2) 175 ekW

Jacking

Max Working Depth	154 ft (with 20 ft air gap) (176 ST DL)
Max Height of Deck	187 ft (above mud line less penetration)
Max Sea Conditions	4 ft (hard bottom) / 5 ft (soft bottom)

Pads

Length	36 ft
Width	15 ft
Depth	2 ft 6 in

Legs

Number	3
Length	200 ft
Diameter	66 in
Wal Thickness	3/4 in Braced

Propulsion

Main Engines	(2) CAT 3412
Shaft Horsepower	Approx 1340 SHP
Bow Thrusters	250 HP
Estimated Speed	4 - 5 knots

Navigation / Communication Equipment

Navigation	Electronic Bridge Navigation System
Communications	Satellite (phone, fax, internet, email)
Radios	Multichannel VHF Marine Radio; SSB
Compass	Electronic
Positioning	GPS System: AIS
Radar	Furuno ARPA System
Depth	Fathometer
Weather	Weather Receivers: Anemometer

Accessories

Submersible Pumps	(2)
Welding Machines	(2) 400 Amp
Air Compressors	(2)

Cranes (API 2C Certified)

Main	Capacity – 125 tons
	Boom Length – 105 ft
	Engine – Iveco
Auxiliary	Capacity – 70 tons
	Boom Length – 90 ft
	Engine – 6V-71N GM
Bow to Center of Pedestal	14 ft 4 in and 13 ft 4 in above deck

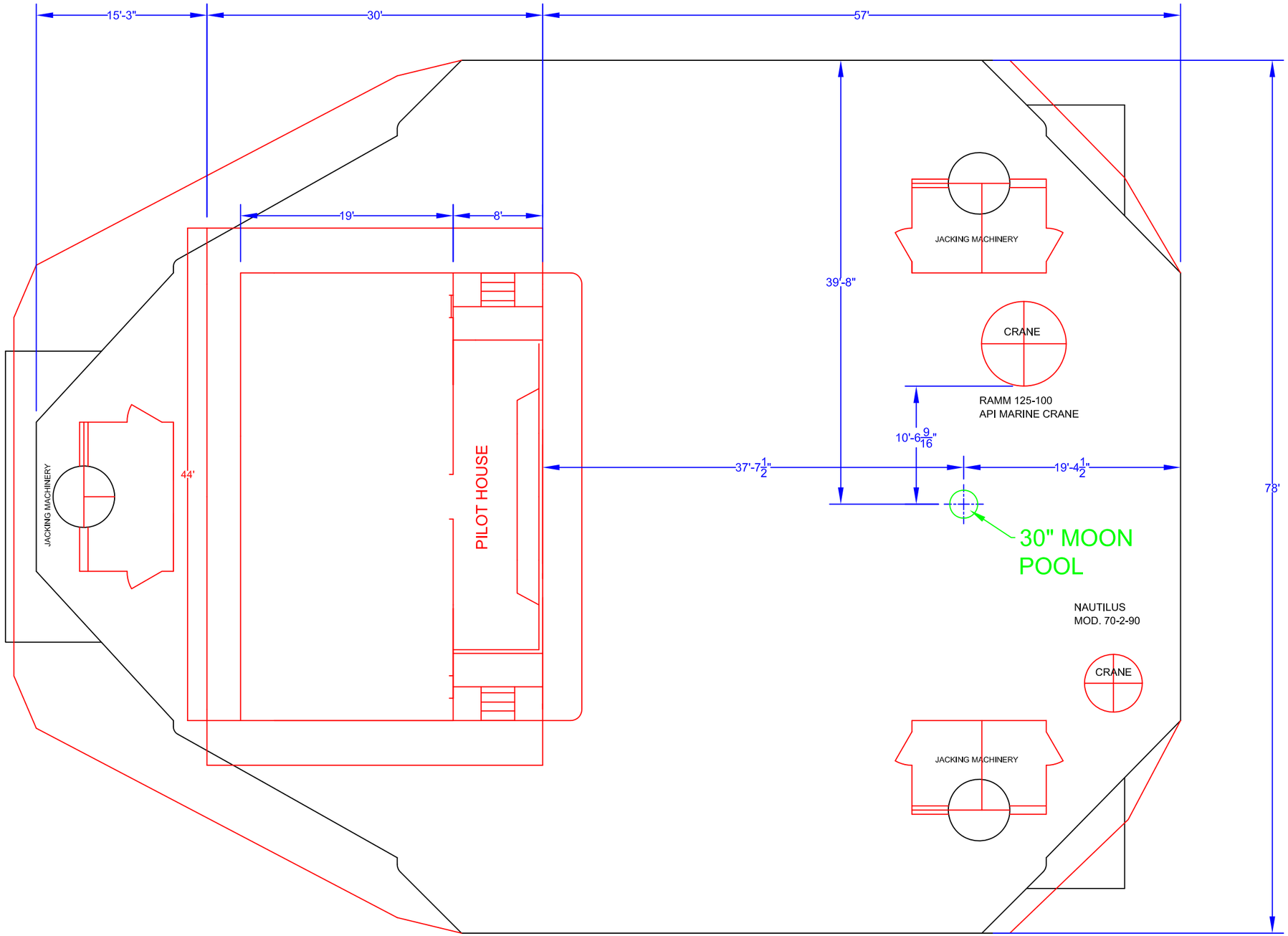
Accommodations

Berths	Total 35 (6 crew / 29 PAC's)
Climate	(5) Central A/C and Heating Units
Lounge	Satellite TV and Sofas
Lavatory Facilities	(6)
Galley	(20) Seats; Freezer and Icemaker
Laundry	(2) Washers and Dryers

Moon Pool

30 in Diameter

CLASS 190 LIFTBOAT M/V TRINITY



LOAD CAPACITY CHART

LAREDO OFFSHORE L/B TRINITY

MFG. NAUTILUS
BOOM LENGTH: 90 FT.
S/N: 1228882079
MODEL: 70-2-90

MAIN HOIST ROPE: 3/4" X 1,300' DYFORM 18
AUX. HOIST ROPE: 5/8" X 350' DYFORM 18
MAIN LOAD BLOCK WEIGHT: 1,500 LBS.
AUX. BALL WEIGHT:286 LBS.

MAIN HOIST				AUXILLIARY HOIST		
RADIUS OF LOAD (FEET)	BOOM ANGLE IN DEGREES	EIGHT (8) PART REEVING		ONE (1) PART REEVING		
		STATIC (LBS.)	DYNAMIC (LBS.)	STATIC (LBS.)	DYNAMIC (LBS.)	PERSONNEL CAPACITY (LBS.)
10'	83	94,867	66,667	6,450	6,450	2,000
15'	80	91,684	62,834	6,450	6,450	2,000
20'	77	88,500	59,000	6,450	6,450	2,000
25'	74	76,250	50,834	6,450	6,450	2,000
30'	71	64,000	42,667	6,450	6,450	2,000
35'	66	59,450	39,640	6,450	6,450	2,000
40'	60	54,920	36,613	6,450	6,450	2,000
45'	59	47,360	31,573	6,450	6,450	2,000
50'	56	39,800	26,533	6,450	6,450	2,000
55'	52	36,050	24,033	6,450	6,450	2,000
60'	48	32,300	21,533	6,450	6,450	2,000
65'	43	29,550	19,700	6,450	6,450	2,000
70'	39	26,800	17,867	6,450	6,450	2,000
74'	34	24,400	16,267	6,450	6,450	2,000
78'	29	22,000	14,667	6,450	6,450	2,000
83'	21	16,945	11,634	6,450	6,450	2,000
87'	16	12,900	8,600	6,450	6,450	2,000
90'	0	9,000	6,000	6,450	6,000	2,000

1. ALLOWABLE LIFTING CAPACITIES SHOWN ABOVE DO NOT INCLUDE WEIGHT OF MAIN LOAD BLOCK, AUXILLARY BALL OR RIGGING.
THESE WEIGHTS MUST BE INCLUDED IN THE OVERALL LIFT WEIGHT
2. USE STATIC CAPACITY FOR LIFTING TO OR FROM STATIONARY OBJECT, i.e. PLATFORM/DOCK
3. USE DYNAMIC CAPACITY FOR LIFTING TO OR FROM A MOVING VESSEL OR UNKNOWN ENVIRONMENTAL FORCES.
4. MAIN LOAD LINE LIFTING CAPACITIES REFLECT A BRADEN (CH240A-53120-02-1) WINCH. WIRE ROPE EFFICIENCY IS ACCOUNTED FOR.

TRINITY – Main Hoist
Ram 125 Ton 100 FT Boom
Maximum Safe Working Load

Serial No. 125-050-3013

BOOM RADIUS (FEET)	BOOM ANGLE (DEGREES)	STATIC RATING (X 1000 LBS)	DYNAMIC RATING (X 1000 LBS)
25	80	250,000	166,667
30	77	250,000	166,667
35	74	216,000	144,000
40	71	188,000	125,333
45	68	165,000	110,000
50	65	147,000	98,000
55	62	131,000	87,333
60	58	118,000	78,667
65	55	106,000	70,667
70	51	97,000	64,667
75	48	89,000	59,333
80	43	80,000	53,333
85	39	72,000	48,000
90	34	66,000	44,000
95	28	62,000	41,333
100	21	56,000	37,333
105	10	51,000	34,000
106	1	45,000	30,000

- Auxiliary Hoist Maximum Safe Working Load 12,000 LBS One Part, 24,000 LBS Two part at all Radii.

BASIS OF RATING:

- Static Rating are for lifting and landing loads on the platform.
- Dynamic Rating are for lifting and landing loads on a floating vessel.
- Rating does not include weight of Hook Block, Overhaul Ball, Slings and Rigging.
- Load Chart Radius from Center of Rotation to Center of Gravity of Load.

RIGGING:

- Main Hoist: Eight Part Reeving of 1-1/8" Wire Rope Rotation Resistant Right Regular Lay with a Minimum Breaking Strength of 156,250 LBS.
- Auxiliary Hoist: One Part Reeving of ¾" Wire Rope Rotation Resistant Right Regular Lay with a Minimum Breaking Strength of 60,000 LBS.
- Boom Hoist: Eleven Part Reeving of 1" Wire Rope 6x19 EEIP IWRC (or equal) Right Regular Lay with a Minimum Breaking Strength of 115,000 LBS.
- Pendants: 2" Wire Rope 6x19 EEIP IWRC Right Regular Lay with a Minimum Breaking Strength of 400,000 LBS EA.

Geoprobe® 3145GT Geotech Drill Rig

Efficiency and Performance to Punch Out Power and Pipe Line Projects

Quickly traverse long stretches of tough terrain encountered on pipe line, power line, or wind farm projects in the NEW 3145GT geotechnical drill rig, combining the efficiency and simplicity of 31 series drill mast with speed and comfort of crawler carrier.

VIDEOS AVAILABLE AT GEOPROBE.COM/3145GT WHEN YOU SEE THIS SYMBOL

Telescoping Winch Mast

- Primary winch
  - 6,800 lbf.
- Secondary winch options
  - 2,500 lbf.
  - 1,800 lbf. *(quick change hook)*
  - 1,100 lbf. *(quick change hook)*
- Third winch - optional
  - 1,100 lbf. *(quick change hook, wireline)*
- Taller standard winch
  - pull 20-foot tooling string with attached split spoon above the breakout

Geotech Head Options

(All functions are available along the head side shift)

- 4-speed rotary head (4,000 ft-lb, 750 rpm) *(standard option)*
- 6-speed rotary head (7,000 ft-lb, 720 rpm) *(high torque - optional)*
- GH63 percussion hammer
- CPT push / pull assembly
- DH104 automatic drop hammer (Hands-Free)
- Rod grip pull system

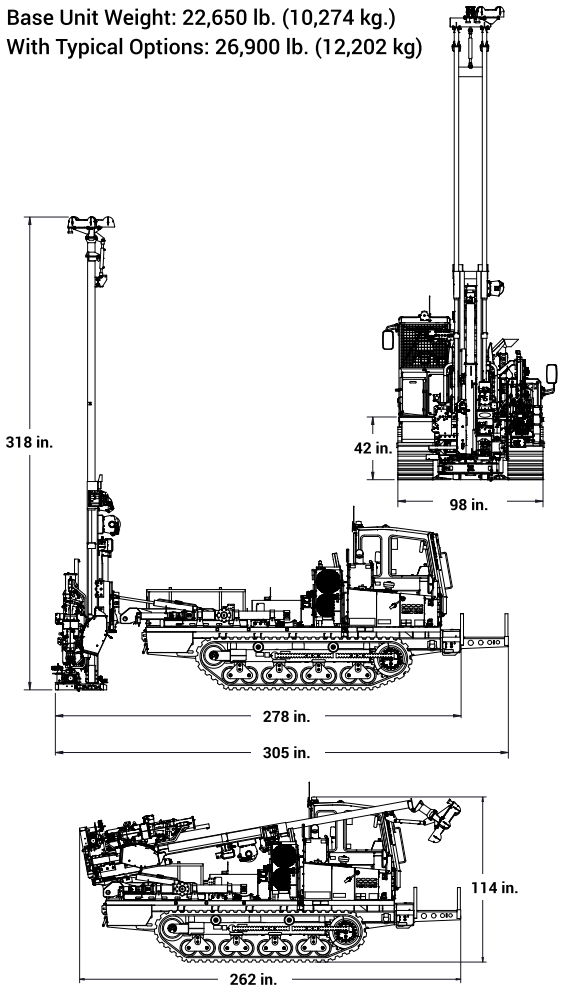
Drill Mast

- 105 in. of head feed travel
- 36,000 lb. of push force
- 48,000 lb. of pull force
- Extend, swing, mast dump, oscillation, and fold
- CPT feed rate and hydraulic limit functions are standard
- Mast dump provides 45 in. of vertical travel to allow room for a mud pan
- Pivoting winch mast option lowers transport height 15 inches
- Standard coring controls

- Manual controls provide tactile feel
- Electric controls add SAFE, HANDS-FREE operation

WEIGHT & DIMENSIONS

Base Unit Weight: 22,650 lb. (10,274 kg.)
With Typical Options: 26,900 lb. (12,202 kg)

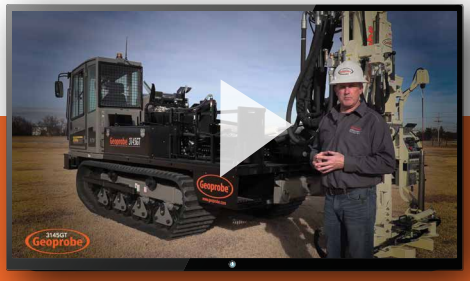


TOOLING

Typical Geoprobe® Tooling for the 3145GT

- Geotechnical Tooling
  - SPT Sampling (Interlocking Split Spoon Sampler, Driven Casing SPT, HSA, Solid Auger, Mud Rotary)
  - Cone Penetration Testing (CPT)
- Direct Push
  - 60-in. Direct Push Tooling
  - Probe Rod Sizes: 3.75 in., 3.25 in., 2.25 in., 1.5 in., 1.25 in.*
  - Macro Core® Soil Sampling (MC5, MC7)
  - Dual Tube Soil Sampling (DT37, DT325, DT22)
  - Groundwater Sampling (SP22, SP16)
  - Prepacked Monitoring Well Installations (2.0 in., 1.5 in., 1.0 in., 0.75-in.)
  - Direct Image® Tooling
- HSA System (3.25 in, 4.25 in. and 6.25 in.)

** Center Rod Use Only*
Rig shown with optional features. Weights & dimensions subject to change without notice.



OPTIONS

Head Options

- Geotech Head Assembly (4-Speed Rotary Head)
  - 4,000 ft-lbf
  - 750 rpm
- Geotech Head Assembly (6-Speed Rotary Head)
  - 6,800 ft-lbf
  - 720 rpm
- GH63 Percussion Hammer

Automatic Drop Hammer

- Automatic Drop Hammer, 140 lb.
- Expansion Kit
  - 340 lb.
  - 300 lb.
  - 170 lb.
- Weight, 65 kg

Mast / Winch

- Primary Winch
  - 6,800 lbf
- Secondary Winch (Options)
  - 2,500 lbf.
  - 1,800 lbf. (quick change hook)
  - 1,100 lbf. (quick change hook)
- Third Winch (Optional)
  - 1,100 lbf (quick change hook, wireline)
- Telescoping Pivoting Dual Winch Mast
- Telescoping Pivoting Triple Winch Mast
- Drill Mast Outrigger Kit

Breakout

- 7 in. Breakout
- Coring Upgrade Kit for 7 in. Breakout
- Breakout Storage Rack

Rotational Safety Cage

- Safety Cage

Water Swivels

- High Speed Water Swivel with Float
- Float Sub NWJ Pin Assembly
- Float Sub NWL Pin Assembly
- Float Sub HWL Pin Assembly
- Water Swivel Assembly

Control System

- Head Feed Pressure Control Kit
- Control Panel Display Screen Heater Kit

Water / Mud Pumps

- Moyno® 3L6 Pump Kit
- Moyno® 3L8 Pump Kit
- Water Carrier Kit, 50 gal. with Pump

Hydraulic Extruder

- Hydraulic Extruder Kit
- 3 in. Shelby Tube Cradle

Toolboxes / Rod Racks

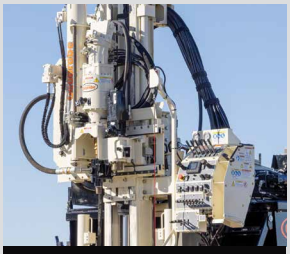
- Fixed Tool Carrier Assembly
- 60 in. Toolbox
- 5 ft. Tool Rack Assembly
- Rear Storage Box
- 10 ft. Tool Rack Assembly - Side Mount
- 5 ft. / 10 ft. Tool Rack Assembly - Side Mount
- Split Spoon Table Weldment

Mud Pans

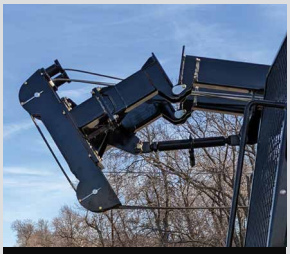
- Aluminum 100 gal Mud Pan

Additional Options

- CPT Accessory Package
- Yoke Vise & Mounting Bracket Kit, Horizontal
- Drill Mast Light Kit
- Rod Grip Pull Latch

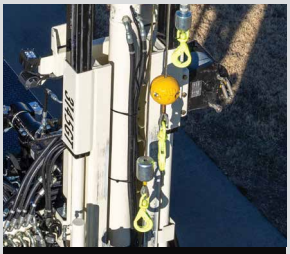


Geotech Head Assembly & Automatic Drop Hammer



Pivoting Winch Mast

60 in. Toolbox



Triple Winches

Moyno® Pump

Videos, Photos, Specifications, Resources
geoprobe.com/3145gt

Geoprobe® 3100GT Geotech Drill Rig

Geotechnical Sampling – Powerful, Flexible, Fast, Easy on Drillers

Geoprobe® 3100GT Geotechnical Rig is designed to quickly perform SPT borings (augers & mud rotary), collect shelby tube samples, take rock cores, and push CPT cone.

VIDEOS AVAILABLE AT GEOPROBE.COM/3100GT WHEN YOU SEE THIS SYMBOL

Telescoping Winch Mast

- Primary winch
  - 6,800 lbf.
- Secondary winch options
  - 2,500 lbf.
  - 1,800 lbf. *(quick change hook)*
  - 1,100 lbf. *(quick change hook)*
- Third winch - optional
  - 1,100 lbf. *(quick change hook, wireline)*

Drill Mast

- 105 in. of head feed travel
- 36,000 lb. of push force
- 48,000 lb. of pull force
- Extend, swing, mast dump, oscillation, and fold
- Direct push options

No CDL* Required!
(*Class A/B)

Geotech Head Options

(All functions are available along the head side shift)

- 4-speed rotary head (4,000 ft-lb, 750 rpm) *(standard option)*
- 6-speed rotary head (6,800 ft-lb, 720 rpm) *(high torque - optional)*
- GH63 percussion hammer
- CPT push / pull assembly
- DH104 automatic drop hammer (hands-free)
- Rod grip pull system

Hands-Free Automatic Drop Hammer

Control Panel

- Manual controls provide tactile feel
- Electric controls add SAFE, HANDS-FREE operation

26 in. of Head Side Shift

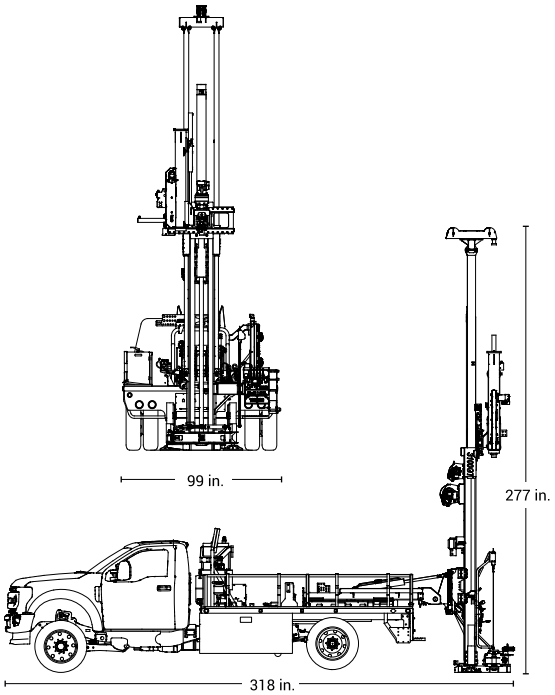
Mud Pumps

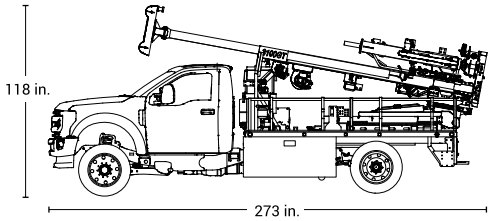
- Multiple configurations available

Swing Out 7 in. Breakout

WEIGHT & DIMENSIONS

Unit Weight (w/ typical options): 18,200 lb. (8,255 kg.)



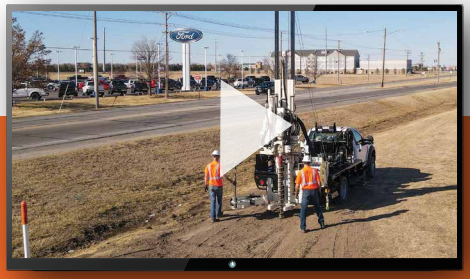


TOOLING

Typical Geoprobe® Tooling for the 3100GT

- Geotechnical Tooling
  - SPT Sampling (Interlocking Split Spoon Sampler, Driven Casing SPT, HSA, Solid Auger, Mud Rotary)
  - Cone Penetration Testing (CPT)
- Direct Push
  - 60-in. Direct Push Tooling
  - Probe Rod Sizes: 3.75 in., 3.25 in., 2.25 in., 1.5 in., 1.25 in.*
  - Macro Core® Soil Sampling (MC5, MC7)
  - Dual Tube Soil Sampling (DT37, DT325, DT22)
  - Groundwater Sampling (SP22, SP16)
  - Prepacked Monitoring Well Installations (2.0 in., 1.5 in., 1.0 in., 0.75-in.)
  - Direct Image® Tooling
- HSA System (3.25 in, 4.25 in. and 6.25 in.)

** Center Rod Use Only*
Rig shown with optional features. Weights & dimensions subject to change without notice.



OPTIONS

Head Options

- Geotech Head Assembly (4-Speed Rotary Head)
  - 4,000 ft-lbf
  - 750 rpm
- Geotech Head Assembly (6-Speed Rotary Head)
  - 6,800 ft-lbf
  - 720 rpm
- GH63 Percussion Hammer

Automatic Drop Hammer

- Automatic Drop Hammer, 140 lb.
- Expansion Kit
  - 340 lb.
  - 300 lb.
  - 170 lb.
- Weight, 65 kg

Mast / Winch

- Primary Winch
  - 6,800 lbf
- Secondary Winch (Options)
  - 2,500 lbf.
  - 1,800 lbf. (quick change hook)
  - 1,100 lbf. (quick change hook)
- Third Winch (Optional)
  - 1,100 lbf (quick change hook, wireline)
- Telescoping Dual Winch Mast
- Telescoping Triple Winch Mast
- Mast Extension, 3 ft.
- Drill Mast Outrigger Kit

Breakout

- 7 in. Breakout
- Coring Upgrade Kit for 7 in. Breakout
- Breakout Storage Rack

Rotational Safety Cage

- Safety Cage

Water Swivels

- High Speed Water Swivel with Float
- Float Sub NWJ Pin Assembly
- Float Sub NWL Pin Assembly
- Float Sub HWL Pin Assembly
- Water Swivel Assembly

Control System

- Head Feed Pressure Control Kit
- Control Panel Display Screen Heater Kit

Water / Mud Pumps

- Moyno® 3L6 Pump Kit
- Moyno® 3L8 Pump Kit
- Water Carrier Kit, 50 gal. with Pump

Hydraulic Extruder

- Hydraulic Extruder Kit
- 3 in. Shelby Tube Cradle

Toolboxes / Rod Racks

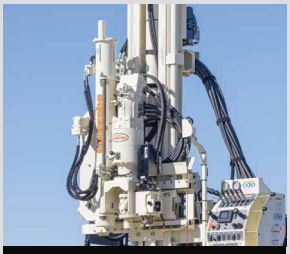
- 10 in. Tool Rack, Side Mount
- 5 ft. Tool Rack Assembly - Side Mount
- Underbody Toolbox, 60 in. X 17 in. X 18 in.
- Underbody Storage Kit - Driver Side
- Underbody Storage Kit - Passenger Side
- Rear Underbody Storage Package
- 2.0 Split Spoon Table Weldment

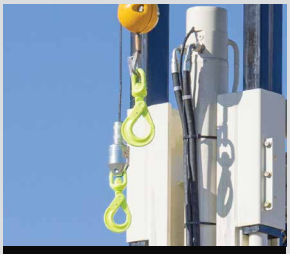
Mud Pans

- Aluminum 100 gal Mud Pan

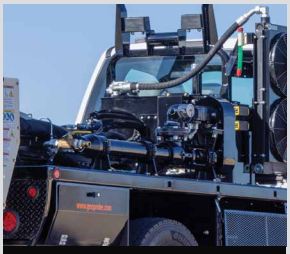
Additional Options

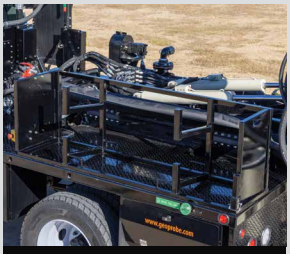
- CPT Accessory Package
- Yoke Vise & Mounting Bracket Kit, Horizontal
- Rod Grip Pull Latch


Geotech Head Assembly & Automatic Drop Hammer


Dual Winches


7-in. Breakout


Moyno® Pump


5-ft. Tool Rack

Geotech Drill Rigs | 3100GT

VIDEO

Videos, Photos, Specifications, Resources
geoprobe.com/3100gt

Appendix E – Property Owner Certification Forms

New Jersey Department of Environmental Protection
Land Use Management Program
Division of Land Use Regulation

PROPERTY OWNER CERTIFICATION

INSTRUCTIONS: All applicants are required to complete Sections A and B of this form. Applicants who are individual owners of record of the property upon which the activities will occur must also complete Section C.

All other persons who are required to certify to this application in accordance with N.J.A.C. 7:7-23.2(d), N.J.A.C. 7:7A-16.2(d), and N.J.A.C. 7:13-18.2(d) must complete Sections A and C.

Separate forms may be submitted for each signatory, or a single form may be submitted with all required signatures.

SECTION A. SITE INFORMATION (required)

Project Name: Ocean Wind 02 Wind Farm

Applicant's Name: Ocean Wind II, LLC

Street Address: 1800 Ocean Ave North

Municipality: Asbury Park County: Monmouth Zip Code: 07740

Blocks and Lots: Block 4402, Lot 1

SECTION B. SIGNATURE OF APPLICANT

The undersigned applicant hereby certifies that he/she is one of the following: 1) an owner of the site on which the activity is proposed or conducted; 2) an agent designated by the site owner(s) to obtain the permit, verification, or letter of interpretation on the owner's behalf; 3) a representative of a public entity proposing an activity within a right-of-way or easement that is held or controlled by that entity or that will be appropriated by the entity under the power of eminent domain; OR 4) a person with the legal authority to perform the proposed activities.

The undersigned applicant also certifies to the following:

1. Does the application include any activities within an easement or right-of-way? ☒ Yes ☐ No
   If "**Yes**," has written consent from all easement or right-of-way holders in accordance with N.J.A.C. 7:7-23.2(g), 7:7A-16.2(g), and 7:13-18.2(g) been attached to this form? ☒ Yes ☐ No
2. Will any part of the project be located within property belonging to the State of New Jersey? ☐ Yes ☒ No
3. Does the application include activities on any property owned by any public agency that would be encumbered by Green Acres? ☐ Yes ☒ No
4. Does this project require a Section 106 (National Register of Historic Places) Determination as part of a federal approval? ☐ Yes ☒ No

Applicant's Name: Carl Poole Date: 8/23/2022

Applicant's Signature: Carl Poole

Applicant's Name: _____ Date: _____

Applicant's Signature: _____

Applicant's Name: _____ Date: _____

Applicant's Signature: _____

Applicant's Name: _____ Date: _____

Applicant's Signature: _____

SECTION C. PROPERTY OWNER'S CERTIFICATION

All individual owners of record of the property upon which the activities will occur must certify to this application unless the applicant is a corporation, partnership, sole proprietorship, municipality, or State, Federal, or other public entity. If the applicant is a corporation, a principal executive officer of at least the level of vice president must certify below. In the case of partnerships and sole proprietorships, a general partner or the proprietor, respectively, is required to certify. For a municipality or for a State, Federal, or other public entity, the certification must be provided by either a principal executive officer or ranking elected official.

A duly authorized representative may sign this application on behalf of any individual who is required to certify provided that the authorization is made in writing and is submitted as part of this application. Please note that in lieu of a property owner's signature, a legal agreement with the current property owner may be attached to this form. Acceptable legal agreements include, but are not limited to, certificates of eminent domain and certificates of inverse condemnation. **Please note that contracts of sale are not considered an acceptable substitute for a property owner's signature.**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining and preparing the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment. I hereby grant permission for the conduct of the proposed activities and consent to allow access to the site by representatives or agents of the Department for the purpose of conducting a site inspection(s) of the property in question.

Name of Owner/Easement Holder: City of Asbury Park Date: 8/11/2022

Signature: [signature]

Specific Block(s) and Lot(s) Owned: Block 4402, Lot 1. Block 3702, Lot 1.

Name of Owner/Easement Holder: _____ Date: _____

Signature: _____

Specific Block(s) and Lot(s) Owned: _____

Name of Owner/Easement Holder: _____ Date: _____

Signature: _____

Specific Block(s) and Lot(s) Owned: _____

Name of Owner/Easement Holder: _____ Date: _____

Signature: _____

Specific Block(s) and Lot(s) Owned: _____

Name of Owner/Easement Holder: _____ Date: _____

Signature: _____

Specific Block(s) and Lot(s) Owned: _____

Name of Owner/Easement Holder: _____ Date: _____

Signature: _____

Specific Block(s) and Lot(s) Owned: _____

New Jersey Department of Environmental Protection
Land Use Management Program
Division of Land Use Regulation

PROPERTY OWNER CERTIFICATION

INSTRUCTIONS: All applicants are required to complete Sections A and B of this form. Applicants who are individual owners of record of the property upon which the activities will occur must also complete Section C.

All other persons who are required to certify to this application in accordance with N.J.A.C. 7:7-23.2(d), N.J.A.C. 7:7A-16.2(d), and N.J.A.C. 7:13-18.2(d) must complete Sections A and C.

Separate forms may be submitted for each signatory, or a single form may be submitted with all required signatures.

SECTION A. SITE INFORMATION (required)

Project Name: Ocean Wind 02 Wind Farm

Applicant's Name: Ocean Wind II, LLC

Street Address: 10 Ocean Avenue North

Municipality: Long Branch County: Monmouth Zip Code: 07740

Blocks and Lots: Block 304.06, Lots 1.01, 1.02, 1.03, 1.04

SECTION B. SIGNATURE OF APPLICANT

The undersigned applicant hereby certifies that he/she is one of the following: 1) an owner of the site on which the activity is proposed or conducted; 2) an agent designated by the site owner(s) to obtain the permit, verification, or letter of interpretation on the owner's behalf; 3) a representative of a public entity proposing an activity within a right-of-way or easement that is held or controlled by that entity or that will be appropriated by the entity under the power of eminent domain; OR 4) a person with the legal authority to perform the proposed activities.

The undersigned applicant also certifies to the following:

1. Does the application include any activities within an easement or right-of-way? ☐ Yes ☒ No
   If "**Yes**," has written consent from all easement or right-of-way holders in accordance with N.J.A.C. 7:7-23.2(g), 7:7A-16.2(g), and 7:13-18.2(g) been attached to this form? ☐ Yes ☐ No
2. Will any part of the project be located within property belonging to the State of New Jersey? ☐ Yes ☒ No
3. Does the application include activities on any property owned by any public agency that would be encumbered by Green Acres? ☐ Yes ☒ No
4. Does this project require a Section 106 (National Register of Historic Places) Determination as part of a federal approval? ☐ Yes ☒ No

Applicant's Name: Carl Poole Date: 8/23/2022

Applicant's Signature: Carl Poole

Applicant's Name: Date:

Applicant's Signature:

Applicant's Name: Date:

Applicant's Signature:

Applicant's Name: Date:

Applicant's Signature:

SECTION C. PROPERTY OWNER'S CERTIFICATION

All individual owners of record of the property upon which the activities will occur must certify to this application unless the applicant is a corporation, partnership, sole proprietorship, municipality, or State, Federal, or other public entity. If the applicant is a corporation, a principal executive officer of at least the level of vice president must certify below. In the case of partnerships and sole proprietorships, a general partner or the proprietor, respectively, is required to certify. For a municipality or for a State, Federal, or other public entity, the certification must be provided by either a principal executive officer or ranking elected official.

A duly authorized representative may sign this application on behalf of any individual who is required to certify provided that the authorization is made in writing and is submitted as part of this application. Please note that in lieu of a property owner's signature, a legal agreement with the current property owner may be attached to this form. Acceptable legal agreements include, but are not limited to, certificates of eminent domain and certificates of inverse condemnation. **Please note that contracts of sale are not considered an acceptable substitute for a property owner's signature.**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining and preparing the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment. I hereby grant permission for the conduct of the proposed activities and consent to allow access to the site by representatives or agents of the Department for the purpose of conducting a site inspection(s) of the property in question.

Name of Owner/Easement Holder: City of Long Branch Date: 8/17/2022

Signature: [signature]

Specific Block(s) and Lot(s) Owned: Block 304.06, Lots 1.01, 1.02, 1.03, 1.04

Name of Owner/Easement Holder: _____ Date: _____

Signature: _____

Specific Block(s) and Lot(s) Owned: _____

Name of Owner/Easement Holder: _____ Date: _____

Signature: _____

Specific Block(s) and Lot(s) Owned: _____

Name of Owner/Easement Holder: _____ Date: _____

Signature: _____

Specific Block(s) and Lot(s) Owned: _____

Name of Owner/Easement Holder: _____ Date: _____

Signature: _____

Specific Block(s) and Lot(s) Owned: _____

Name of Owner/Easement Holder: _____ Date: _____

Signature: _____

Specific Block(s) and Lot(s) Owned: _____

Appendix F – Public Notification Documentation

New Jersey Department of Environmental Protection
Land Use Management Program
Division of Land Use Regulation

PUBLIC NOTICE

SECTION A. SITE INFORMATION

Applicant's Name: Ocean Wind II, LLC

Street Address: Multiple

Municipality: Asbury Park & Long Branch County: Monmouth Zip Code: 07712 & 07740

Blocks and Lots: Blk 4402, Lot 1; Blk 304.06, Lts 1.01, 1.02, 1.03, & 1.04; N/A - Atlantic Ocean

SECTION B. STANDARD NOTICE REQUIREMENTS

Except as provided at item 6 below, public notice of the application shall be provided no more than 30 calendar days prior to submitting the application and no later than the date the application is submitted to the Department.

1. Public notice is required for all of the following (*check all that apply*):

- ☐ A flood hazard area general permit authorization (except general permit 1)
- ☐ A flood hazard area individual permit
- ☐ A flood hazard area verification
- ☒ A coastal general permit authorization
- ☐ A CAFRA individual permit
- ☐ An in-water waterfront development individual permit
- ☐ An upland waterfront development individual permit
- ☐ A coastal wetlands individual permit
- ☐ A freshwater wetlands individual permit
- ☐ A freshwater wetlands transition area waiver
- ☐ A freshwater wetlands general permit authorization (except general permit 15)
- ☐ A freshwater wetlands general permit 15 **(please skip to Section C)**

2. Has a copy of the entire application been sent to the municipal clerk of each municipality in which the proposed activity or project is located? ☒ Yes ☐ No

Note: For electronic submissions, the application consists of a description of the project, which must include the lot and block, municipality, and county, the specific permit(s)/authorization(s) being sought, and all items that will be uploaded to the submission service, including all required items on the applicable application checklist(s).

If "**Yes**," did you attach a copy of the certified United States Postal Service white mailing receipt, or other written receipt, and a copy of any letter sent with the application to this form? ☒ Yes ☐ No

3. Have both a notice letter, including a brief description of the proposed activity or project, and a legible copy of the site plans been sent to the all following applicable agencies? ☒ Yes ☐ No

- The construction official of each municipality in which the site is located
- The environmental commission, or other government agency with similar responsibilities, of each municipality in which the site is located
- The planning board of each municipality in which the site is located
- The planning board of each county in which the site is located

If "**Yes**," did you attach **both** of the following to this form? ☒ Yes ☐ No

- A copy of the certified United States Postal Service white mailing receipt or other written receipt
- A copy of the notice letter

4. Is the application for a coastal permit for an activity within the 12-mile circle with Delaware, as described at N.J.A.C. 7:7-1.2(c), or within 200 feet of the 12-mile circle? ☐ Yes ☒ No

   If "**Yes**," have both a notice letter, including a brief description of the proposed activity or project, and a legible copy of the site plans been sent to the State of Delaware, Department of Natural Resources & Environmental Control, Delaware Coastal Management Program, 89 Kings Highway, Dover, DE 19901? ☐ Yes ☐ No

   If "**Yes**," did you attach **both** of the following to this form? ☐ Yes ☐ No

   - A copy of the certified United States Postal Service white mailing receipt or other written receipt
   - A copy of the notice letter

5. Is the application for a waterfront development individual permit to install a submarine cable in the ocean or to perform sand mining in the ocean? ☐ Yes ☒ No

   If "**Yes**," have you submitted a description of the project, the specific permit(s)/authorization(s) being sought, and a copy of the NOAA nautical chart showing the proposed cable route or the limits of the proposed sand mining area to **all** of the following entities? ☐ Yes ☐ No

   - Garden State Seafood Association
   - National Fisheries Institute
   - North Atlantic Clam Association
   - Rutgers Cooperative Extension
   - New Jersey Shellfisheries Council
   - New Jersey Marine Fisheries Council

6. Does the application include a CAFRA individual permit? ☐ Yes ☒ No

   If "**No**," skip to Question 7.

   If "**Yes**," has newspaper notice, consisting of a legal notice or display advertisement, been published in the official newspaper of the municipality in which the site is located or a newspaper of general circulation in the municipality? ☐ Yes ☐ No

   If "**Yes**," did you attach a copy of the published newspaper notice, the date of publication, and the name of the newspaper to this form? ☐ Yes ☐ No

   If "**No**," did you verify that a newspaper notice, consisting of a legal notice or display advertisement, will be published in the official newspaper of the municipality in which the site is located or a newspaper of general circulation in the municipality no more than **10 calendar days** after the application is submitted to the Department? ☐ Yes ☐ No

   Note: A copy of the published newspaper notice, the date of publication, and the name of the newspaper must be submitted to the Department within this timeframe.

7. Does the application include one or more of the activities listed below (**other than those proposed in a freshwater wetlands individual permit application**)? ☐ Yes ☒ No

   - A delineation of one-half mile or longer of a regulated water
   - A mosquito control activity subject to flood hazard general permit 2
   - A linear project of one-half mile or longer
   - A shore protection development, including beach nourishment, beach and dune maintenance, or dune creation of one-half mile or longer
   - A public development on a site of 50 acres or more
   - An industrial or commercial development on a site of 100 acres or more
   - A project to remove sediment or debris from a channel of one-half mile or longer
   - Maintenance dredging of a State navigation channel of one-half mile or longer
   - A trail or boardwalk of one-half mile or longer subject to a freshwater wetlands general permit or transition area waiver

If you answered "**No**," to question 7:

Have both a notice letter, including a brief description of the proposed activity or project, and a legible copy of the site plans been sent to all owners of real property, including easements, located **within 200 feet of the property boundary of the site**? ☐ Yes ☐ No

If "**Yes**," did you attach **all** of the following to this form? ☐ Yes ☐ No

- A copy of the certified United States Postal Service white mailing receipt or other written receipt
- A copy of the notice letter
- A certified list of all owners of real property, including easements, within 200 feet of the property boundary, prepared by the municipality with a date of certification no earlier than one year prior to the date of the application

If you answered "**Yes**," to question 7, answer questions I. and II. below:

I. Have both a notice letter, including a brief description of the proposed activity or project, and a legible copy of the site plans been sent to all owners of property, including easements, **within 200 feet of any proposed above-ground structure**? ☐ Yes ☐ No

If "**Yes**," did you attach **all** of the following to this form? ☐ Yes ☐ No

- A copy of the certified United States Postal Service white mailing receipt or other written receipt
- A copy of the notice letter
- A certified list of all owners of real property, including easements, within 200 feet of the property boundary, prepared by the municipality with a date of certification no earlier than one year prior to the date of the application

II. For all applications, **except CAFRA individual permits**, has newspaper notice, consisting of a legal notice or display advertisement been published in the official newspaper of the municipality in which the site is located or a newspaper of general circulation in the municipality? ☐ Yes ☐ No

If "**Yes**," did you attach a copy of the published newspaper notice, the date of publication, and the name of the newspaper to this form? ☐ Yes ☐ No

8. Will the proposed activity or project disturb 5,000 square feet of land or more? ☐ Yes ☒ No

If "**Yes**," have both a notice letter, including a brief description of the proposed activity or project, and a legible copy of the site plans been sent to the local Soil Conservation District? ☐ Yes ☐ No

If "**Yes**," did you attach a copy of the certified United States Postal Service white mailing receipt or other written receipt **and** a copy of the notice letter to this form? ☐ Yes ☐ No

9. Is the proposed activity or project located within the Pinelands Area as designated under the Pinelands Protection Act at N.J.S.A. 13:18A-11(a)? ☐ Yes ☒ No

If "Yes," you are also required to complete Section D of this form.

10. Does the application include a freshwater wetlands individual permit application? ☐ Yes ☒ No

If "**No**," skip to Question 11.

If "**Yes**," does the proposed project involve more than 10 acres of fill? ☐ Yes ☐ No

If "**Yes**," has newspaper notice been published in a newspaper with regional circulation in the region in which the site is located? ☐ Yes ☐ No

If "**Yes**," did you attach a copy of the published newspaper notice, the date of publication, and the name of the newspaper to this form? ☐ Yes ☐ No

If "**No**," has newspaper notice consisting of a legal notice or display advertisement been published in the official newspaper of the municipality in which the site is located or a newspaper of general circulation in the municipality? ☐ Yes ☐ No

If "**Yes**," did you attach a copy of the published newspaper notice, the date of publication, and the name of the newspaper to this form? ☐ Yes ☐ No

11. Does the application include a flood hazard individual permit based on a hardship exception? ☐ Yes ☒ No

If "**Yes**," do all notice letters and published newspaper notices attached to this form (under questions 3, 4, 7, and 8 above, as applicable) include a description of the nature of the hardship as well as the citation and subject matter of each requirement for which the hardship exception is being requested? ☐ Yes ☐ No

SECTION C. FRESHWATER WETLANDS GENERAL PERMIT 15

This section only applies to applications that include a freshwater wetlands general permit 15.

1. Is the applicant a Federal agency conducting activities on Federal land? ☐ Yes ☐ No

If "Yes," public notice is not required for this activity.

2. Has a display advertisement describing the proposed activities, at least four column inches in size, been published in a newspaper with local circulation (including the municipality) and in a newspaper with regional circulation (including the county)? ☐ Yes ☐ No

If "**Yes**," did you attach a copy of the published newspaper notices, the dates of publication, and the names of the newspapers to this form? ☐ Yes ☐ No

SECTION D. PINELANDS

This section only applies to applications where the proposed activity or project is located within the Pinelands Area as designated under the Pinelands Protection Act at N.J.S.A. 13:18A-11.a.

1. Does the application include a flood hazard general permit or individual permit? ☐ Yes ☐ No

If "**Yes**," has a description of the project, including the lot and block, municipality, county, and specific permit(s)/authorization(s) being sought, been sent to the New Jersey Pinelands Commission? ☐ Yes ☐ No

If "**Yes**," did you attach a copy of the certified United States Postal Service white mailing receipt or other written receipt and a copy of any letter provided with the project description to this form? ☐ Yes ☐ No

2. Does the application include a coastal general permit or individual permit? ☐ Yes ☐ No

If "**Yes**," has a copy of the entire application been sent to the New Jersey Pinelands Commission? ☐ Yes ☐ No

Note: For electronic submissions, the application consists of a description of the project, which must include the lot and block, municipality, and county, the specific permit(s)/authorization(s) being sought, and all items that will be uploaded to the submission service, including all required items on the applicable application checklist(s).

If "**Yes**," did you attach a copy of the certified United States Postal Service white mailing receipt or other written receipt and a copy of any letter provided with the application to this form? ☐ Yes ☐ No

3. Is the application solely for a freshwater wetlands general permit(s)? ☐ Yes ☐ No

If "Yes," do not submit the application to the Department. Submit the application to the New Jersey Pinelands Commission.

Subject: Ocean Wind II, LLC
Ocean Wind 2 Offshore Wind Farm Project
Application for NJDEP Coastal General Permit 23 for
Geotechnical Survey Borings
Regarding Property at:
Block 4402, Lot 1, Asbury Park
Block 304.06, Lots 1.01, 1.02, 1.03, and 1.04, Long Branch
State Waters of the Atlantic Ocean

Applicant: Ocean Wind II, LLC
110 Edison Place
Newark, NJ 07102

Dear Ms. Hartsgrove:

This letter is to provide you with legal notification that an application for a Coastal General Permit 23 will be submitted to the New Jersey Department of Environmental Protection, Division of Land Resource Protection for geotechnical survey borings. A brief project description of the proposed project follows.

Ocean Wind II, LLC is an affiliate of Orsted North America, LLC and recently received approval from the New Jersey Board of Public Utilities to develop an offshore wind farm off the coast of southern New Jersey. This project is proposed to come online as early as 2029; however, it must go through a multi-year federal and state permitting review and approval process before construction can begin. Before this permitting process begins, the project must gather environmental data along potential offshore and onshore areas to help determine the best locations to bring power from the wind farm on to land through underground transmission cables that will connect to the electric grid. The data gathered this year and next year will inform project plans and ultimately the permits the project submits to the federal and state government for review and approval. Importantly, the permit being submitted today is not for construction of the wind farm, but for the purposes of gathering data to inform the project's design.

As part of this data gathering effort, Ocean Wind II, LLC is submitting a permit application to the NJDEP requesting permission to complete onshore and nearshore (i.e., State waters) geotechnical surveys to provide information on soil properties to optimize cable burial methods and design for the Ocean Wind 2 Offshore Wind Farm Project, which is being proposed in federal waters off the coast of Atlantic County and Cape May County, New Jersey. The onshore geotechnical surveys will include advancing up to two borings and two cone penetration tests in disturbed upland areas down to a depth of approximately 98 feet (30 meters) using a truck-mounted drill rig. Each boring and cone penetration test will be up to approximately four inches in diameter. A sample core will be collected for laboratory testing and the bore hole will be backfilled. The nearshore borings will occur within the Atlantic Ocean in State waters and will be a combination of up to 20 shallow borings of approximately 19.7 feet (6 m) below seabed and up to 45 deep borings and cone penetration tests of approximately 98 feet (30 meters) below seabed. The nearshore borings will be completed using vessels. The survey will begin in spring 2023 or upon permit issuance.

Enclosed is one copy of the complete Coastal General Permit 23. In accordance with the NJDEP public notification requirements, we ask that you **please retain the copy of the enclosed application in your office for public review**.

Please contact Carl Poole at capoo@orsted.com or 857-286-1948 if you have any questions or require additional information.

Yours sincerely,
Ocean Wind II, LLC

Carl Poole
OCW02 Permit Manager

capoo@orsted.com
Tel +18572861948

Subject: Ocean Wind II, LLC
Ocean Wind 2 Offshore Wind Farm Project
Application for NJDEP Coastal General Permit 23 for
Geotechnical Survey Borings
Regarding Property at:
Block 4402, Lot 1, Asbury Park
Block 304.06, Lots 1.01, 1.02, 1.03, and 1.04, Long Branch
State Waters of the Atlantic Ocean

Applicant: Ocean Wind II, LLC
110 Edison Place
Newark, NJ 07102

Dear Ms. Capone:

This letter is to provide you with legal notification that an application for a Coastal General Permit 23 will be submitted to the New Jersey Department of Environmental Protection, Division of Land Resource Protection for geotechnical survey borings. A brief project description of the proposed project follows.

Ocean Wind II, LLC is an affiliate of Orsted North America, LLC and recently received approval from the New Jersey Board of Public Utilities to develop an offshore wind farm off the coast of southern New Jersey. This project is proposed to come online as early as 2029; however, it must go through a multi-year federal and state permitting review and approval process before construction can begin. Before this permitting process begins, the project must gather environmental data along potential offshore and onshore areas to help determine the best locations to bring power from the wind farm on to land through underground transmission cables that will connect to the electric grid. The data gathered this year and next year will inform project plans and ultimately the permits the project submits to the federal and state government for review and approval. Importantly, the permit being submitted today is not for construction of the wind farm, but for the purposes of gathering data to inform the project's design.

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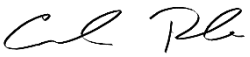
Please contact Carl Poole at capoo@orsted.com or 857-286-1948 if you have any questions or require additional information.

Yours sincerely,
Ocean Wind II



Carl Poole
OCW02 Permit Manager

capoo@orsted.com
Tel +18572861948

Subject: Ocean Wind II, LLC
Ocean Wind 2 Offshore Wind Farm Project
Application for NJDEP Coastal General Permit 23 for
Geotechnical Survey Borings
Regarding Property at:
Block 4402, Lot 1, Asbury Park
Block 304.06, Lots 1.01, 1.02, 1.03, and 1.04, Long Branch
State Waters of the Atlantic Ocean

Applicant: Ocean Wind II, LLC
110 Edison Place
Newark, NJ 07102

Dear Ms. Carasia:

This letter is to provide you with legal notification that an application for a Coastal General Permit 23 will be submitted to the New Jersey Department of Environmental Protection, Division of Land Resource Protection for geotechnical survey borings. A brief project description of the proposed project follows.

Ocean Wind II, LLC is an affiliate of Orsted North America, LLC and recently received approval from the New Jersey Board of Public Utilities to develop an offshore wind farm off the coast of southern New Jersey. This project is proposed to come online as early as 2029; however, it must go through a multi-year federal and state permitting review and approval process before construction can begin. Before this permitting process begins, the project must gather environmental data along potential offshore and onshore areas to help determine the best locations to bring power from the wind farm on to land through underground transmission cables that will connect to the electric grid. The data gathered this year and next year will inform project plans and ultimately the permits the project submits to the federal and state government for review and approval. Importantly, the permit being submitted today is not for construction of the wind farm, but for the purposes of gathering data to inform the project's design.

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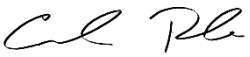
Please contact Carl Poole at capoo@orsted.com or 857-286-1948 if you have any questions or require additional information.

Yours sincerely,
Ocean Wind II



Carl Poole
OCW02 Permit Manager

capoo@orsted.com
Tel +18572861948

Subject: Ocean Wind II, LLC
Ocean Wind 2 Offshore Wind Farm Project
Application for NJDEP Coastal General Permit 23 for
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Regarding Property at:
Block 4402, Lot 1, Asbury Park
Block 304.06, Lots 1.01, 1.02, 1.03, and 1.04, Long Branch
State Waters of the Atlantic Ocean

Applicant: Ocean Wind II, LLC
110 Edison Place
Newark, NJ 07102

Dear Ms. Simons:

This letter is to provide you with legal notification that an application for a Coastal General Permit 23 will be submitted to the New Jersey Department of Environmental Protection, Division of Land Resource Protection for geotechnical survey borings. A brief project description of the proposed project follows.

Ocean Wind II, LLC is an affiliate of Orsted North America, LLC and recently received approval from the New Jersey Board of Public Utilities to develop an offshore wind farm off the coast of southern New Jersey. This project is proposed to come online as early as 2029; however, it must go through a multi-year federal and state permitting review and approval process before construction can begin. Before this permitting process begins, the project must gather environmental data along potential offshore and onshore areas to help determine the best locations to bring power from the wind farm on to land through underground transmission cables that will connect to the electric grid. The data gathered this year and next year will inform project plans and ultimately the permits the project submits to the federal and state government for review and approval. Importantly, the permit being submitted today is not for construction of the wind farm, but for the purposes of gathering data to inform the project's design.

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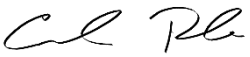
Please contact Carl Poole at capoo@orsted.com or 857-286-1948 if you have any questions or require additional information.

Yours sincerely,
Ocean Wind II



Carl Poole
OCW02 Permit Manager

capoo@orsted.com
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Subject: Ocean Wind II, LLC
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Block 304.06, Lots 1.01, 1.02, 1.03, and 1.04, Long Branch
State Waters of the Atlantic Ocean

Applicant: Ocean Wind II, LLC
110 Edison Place
Newark, NJ 07102

Dear Ms. Campagna:

This letter is to provide you with legal notification that an application for a Coastal General Permit 23 will be submitted to the New Jersey Department of Environmental Protection, Division of Land Resource Protection for geotechnical survey borings. A brief project description of the proposed project follows.

Ocean Wind II, LLC is an affiliate of Orsted North America, LLC and recently received approval from the New Jersey Board of Public Utilities to develop an offshore wind farm off the coast of southern New Jersey. This project is proposed to come online as early as 2029; however, it must go through a multi-year federal and state permitting review and approval process before construction can begin. Before this permitting process begins, the project must gather environmental data along potential offshore and onshore areas to help determine the best locations to bring power from the wind farm on to land through underground transmission cables that will connect to the electric grid. The data gathered this year and next year will inform project plans and ultimately the permits the project submits to the federal and state government for review and approval. Importantly, the permit being submitted today is not for construction of the wind farm, but for the purposes of gathering data to inform the project's design.

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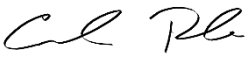
Please contact Carl Poole at capoo@orsted.com or 857-286-1948 if you have any questions or require additional information.

Yours sincerely,
Ocean Wind II



Carl Poole
OCW02 Permit Manager

capoo@orsted.com
Tel +18572861948

Subject: Ocean Wind II, LLC
Ocean Wind 2 Offshore Wind Farm Project
Application for NJDEP Coastal General Permit 23 for
Geotechnical Survey Borings
Regarding Property at:
Block 4402, Lot 1, Asbury Park
Block 304.06, Lots 1.01, 1.02, 1.03, and 1.04, Long Branch
State Waters of the Atlantic Ocean

Applicant: Ocean Wind II, LLC
110 Edison Place
Newark, NJ 07102

Dear Interested Party:

This letter is to provide you with legal notification that an application for a Coastal General Permit 23 will be submitted to the New Jersey Department of Environmental Protection (NJDEP), Division of Land Resource Protection for geotechnical survey borings. A brief description of the proposed project follows.

Ocean Wind II, LLC is an affiliate of Orsted North America, LLC and recently received approval from the New Jersey Board of Public Utilities to develop an offshore wind farm off the coast of southern New Jersey. This project is proposed to come online as early as 2029; however, it must go through a multi-year federal and state permitting review and approval process before construction can begin. Before this permitting process begins, the project must gather environmental data along potential offshore and onshore areas to help determine the best locations to bring power from the wind farm on to land through underground transmission cables that will connect to the electric grid. The data gathered this year and next year will inform project plans and ultimately the permits the project submits to the federal and state government for review and approval. Importantly, the permit being submitted today is not for construction of the wind farm, but for the purposes of gathering data to inform the project's design.

As part of this data gathering effort, Ocean Wind II, LLC is submitting a permit application to the NJDEP requesting permission to complete onshore and nearshore (i.e., State waters) geotechnical surveys to provide information on soil properties to optimize cable burial methods and design for the Ocean Wind 2 Offshore Wind Farm Project, which is being proposed in federal waters off the coast of Atlantic County and Cape May County, New Jersey. The onshore geotechnical surveys will include advancing up to two borings and two cone penetration tests in disturbed upland areas down to a depth of approximately 98 feet (30 meters) using a truck-mounted drill rig. Each boring and cone penetration test will be up to approximately four inches in diameter. A sample core will be collected for laboratory testing and the bore hole will be backfilled. The nearshore borings will occur within the Atlantic Ocean in State waters and will be a combination of up to 20 shallow borings of approximately 19.7 feet (6 m) below seabed and up to 45 deep borings and cone penetration tests of approximately 98 feet (30 meters) below seabed. The nearshore borings will be completed using vessels. The survey will begin in spring 2023 or upon permit issuance.

The complete permit application package will be available for review by the public at the municipal clerks' offices in Long Branch and Asbury Park, respectively, or by appointment at the NJDEP's Trenton Office. The Department of Environmental Protection welcomes comments and

any information that you may provide concerning the proposed development and site. **Please submit your written comments within 15 calendar days of receiving this letter to:**

New Jersey Department of Environmental Protection
Division of Land Resource Protection
P.O. Box 420, Code 501-02A
Trenton, New Jersey 08625

Attn: Cities of Long Branch and Asbury Park

Please contact Carl Poole at capoo@orsted.com or 857-286-1948 if you have any questions or require additional information.

Yours sincerely,
Ocean Wind II, LLC

Carl Poole
OCW02 Permit Manager

capoo@orsted.com
Tel +18572861948

Cc: Tom Suthard, Stakeholder Relations Manager, NJ

Michael Delre, CTA
Tax Assessor
City of Asbury Park
One Municipal Plaza
Asbury Park, NJ 07712
P. (732) 502-5750
michael.delre@cityofasburypark.com

July 6, 2022

200 Foot

Property Owners List

1800 Ocean Avenue and Deal Lake Area

Block: 4402 & 3702 Lot(s): 1 & 1

Dear Tax Payer,

Please find the attached 200-foot certification list as requested.

Do not hesitate to contact our office if further assistance is required.

Thank you.

Sincerely,

Michael Delre, CTA

3702/1 **7/6/2022**

Deal Lake Area

Mun/Bl/L/Q	Owner	CSZ		
1304-4401-1	ASBURY PARTNERS LLC%ISTAR FINANCIA	1114 AVE OF THE AMER 39FL	NEW YORK NY	10036
1304-4402-1	CITY OF ASBURY PARK	1 MUNICIPAL PLAZA	ASBURY PARK NJ	07712
1304-4302-2	AP FIVE PROP HOLDINGS LLC%ISTAR TAX	1114 AVE OF THE AMER 39FL	NEW YORK NY	10036
1304-4302-3	SW 200 DEAL LAKE LLC	15 AMERICA AVE STE 301	LAKEWOOD NJ	08701
1304-3705-7	DEAL LAKE VILLAGE % DSV PRPT MANGMT	15 BAY AVENUE	HIGHLANDS NJ	07732
1304-3704-2	SANTANDER % DSV PROPERTY MGMT	15 BAY AVENUE	HIGHLANDS NJ	07732
1304-3701-1	CITY OF ASBURY PARK	1 MUNICIPAL PLAZA	ASBURY PARK NJ	07712
1304-3702-1	CITY OF ASBURY PARK	1 MUNICIPAL PLAZA	ASBURY PARK NJ	07712
1304-3002-1	CITY OF ASBURY PARK	1 MUNICIPAL PLAZA	ASBURY PARK NJ	07712
1326-8-1	KASSIN BEACH LLC.	29 MORGAN AVENUE	DEAL NJ	07723
1304-100-1	CITY OF ASBURY PARK	1 MUNICIPAL PLAZA	ASBURY PARK NJ	07712
1304-4303-1	ASBURY SENIOR CITIZENS HOUSING LP	4814 OUTLOOK DR STE 201	WALL TWP NJ	07753
1304-3705-7.305-C0034	BONGIORNI T&L LLC	10 SCHOOLHOUSE LANE	MATAWAN NJ	07747
1304-3705-7.306-C0033	BRAUN WILLIAM & KAREN DITOLLA-	5 MATTHEWS AVENUE	STATEN ISLAND NY	10310
1304-3705-7.307-C0036	DISAVINO ROSEMARY & MASCARI CAROL	304 DEAL LAKE DR UNIT 30	ASBURY PARK NJ	07712
1304-3705-7.308-C0035	GCA PROPERTIES LLC	1 NESBITT DRIVE	MENDHAM NJ	07945
1304-3705-7.533-C0033	HEITZER FRANCES	3 PONDEROSA LANE	OLD BRIDGE NJ	08857
1304-3705-7.534-C0034	FORSMAN RICHARD S & ENID D	300 DEAL LAKE DR UNIT 14	ASBURY PARK NJ	07712
1304-3705-7.304-C0031	KONSIG LESLIE & STEPHANIE	23 MITCHELL PLACE	LITTLE SILVER NJ	07739
1304-3705-7.532-C0032	FORNWALT DONALD B &CATHERMAN THOMAS	302 DEAL LAKE DR UNIT 28	ASBURY PARK NJ	07712
1304-3704-2.40-C0502	PEREZ MARGARITA	400 DEAL LAKE DR UNIT 5B	ASBURY PARK NJ	07712
1304-3705-7.531-C0031	MACKINTOSH MICHAEL ROSS & SABINO C	302 DEAL LAKE DR UNIT 22	ASBURY PARK NJ	07712
1304-3705-7.101-C0002	WOROSZ PIOTR & ANETA	300 DEAL LAKE DR UNIT 2	ASBURY PARK NJ	07712
1304-3705-7.102-C0001	DESIDERIO SANDRA	65 UNION STREET APT 21	MONTCLAIR NJ	07042
1304-3705-7.103-C0004	MARTINEZ MILDRED E & COLON JANICE	183 MARYLAND AVENUE	STATEN ISLAND NY	10305
1304-3705-7.104-C0003	KLEIN SHEILA	6 STEPPING RIDGE	FAIRFIELD NJ	07004
1304-3705-7.105-C0006	MARANZANI JOSEPH	298 FOURTH STREET	HAZLET NJ	07734
1304-3705-7.106-C0005	HAVENS LESLIE	300 DEAL LAKE DR UNIT 5	ASBURY PARK NJ	07712
1304-3705-7.107-C0008	BAUER JESSICA	300 DEAL LAKE DR UNIT 8	ASBURY PARK NJ	07712
1304-3705-7.412-C0049	GCA PROPERTIES LLC	1 NESBITT DRIVE	MENDHAM NJ	07945

1304-3705-7.413-C0052	WEISE STEPHANIE	108 RIDGE AVE APT 1	PARK RIDGE NJ 07656
1304-3705-7.414-C0051	CARTAINA FAMILY TRUST	7936 LEEWARD LANE	MURRELLS INLET SC 29576
1304-3705-7.415-C0054	ANSELL KEVIN & JENNIFER DESTINY	1417 WOODLAND ST	NASHVILLE TN 37206
1304-3705-7.416-C0053	WILSON EMILY	306 DEAL LAKE DR UNIT 53	ASBURY PARK NJ 07712
1304-3705-7.501-C0001	DISAVINO ROSEMARY & MASCARI CAROL	304 DEAL LAKE DR UNIT 30	ASBURY PARK NJ 07712
1304-3705-7.204-C0019	GCA PROPERTIES LLC	1 NESBITT DRIVE	MENDHAM NJ 07945
1304-3705-7.205-C0022	MACKINTOSH MICHAEL ROSS & SABINO C	302 DEAL LAKE DR UNIT 22	ASBURY PARK NJ 07712
1304-3705-7.206-C0021	MARINO GEORGE V	302 DEAL LAKE DR UNIT 21	ASBURY PARK NJ 07712
1304-3705-7.210-C0025	SHANAHAN THOMAS	302 DEAL LAKE DR UNIT 25	ASBURY PARK NJ 07712
1304-3705-7.211-C0028	FORNWALT DONALD B &CATHERMAN THOMAS	302 DEAL LAKE DR UNIT 28	ASBURY PARK NJ 07712
1304-3705-7.212-C0027	WASILEWSKI WENDY	607 WHEATFIELD CT	FLEMINGTON NJ 08822
1304-3705-7.301-C0029	SMITH GREGORY J & BELLA	304 DEAL LAKE DR UNIT 29	ASBURY PARK NJ 07712
1304-3705-7.302-C0030	DISAVINO ROSEMARY & MASCARI CAROL	304 DEAL LAKE DR UNIT 30	ASBURY PARK NJ 07712
1304-3705-7.303-C0032	BOTNIK STEPHEN & SUSAN	6 SWAN COURT	MARLBORO NJ 07746
1304-3705-7.502-C0002	GCA PROPERTIES LLC	1 NESBITT DRIVE	MENDHAM NJ 07945
1304-3705-7.503-C0003	NACH BONNIE & HOBAN KAY	4 ELLSWORTH AVENUE	MORRISTOWN NJ 07960
1304-3705-7.504-C0004	JACOBSON TRAVIS RYAN & DAVID SCOTT	8 CRESTMONT AVENUE	EWING NJ 08618
1304-3705-7.505-C0005	SHANAHAN THOMAS	302 DEAL LAKE DR UNIT 25	ASBURY PARK NJ 07712
1304-3705-7.506-C0006	WASILEWSKI WENDY	607 WHEATFIELD CT	FLEMINGTON NJ 08822
1304-3705-7.108-C0007	GCA PROPERTIES LLC	1 NESBITT DRIVE	MENDHAM NJ 07945
1304-3705-7.404-C0041	MNM LAKE PROPERTIES LLC	66 ALBEMARLE ROAD	COLONIA NJ 07067
1304-3705-7.405-C0044	ANSELL MICHAEL H & BLUM STEPHANIE	9 EGBERT AVENUE	MORRISTOWN NJ 07960
1304-3705-7.406-C0043	SURKS MARK & LINDA	60 DAWSON LANE	MONROE NJ 08831
1304-3705-7.407-C0046	DISILVESTRI JENNIE	73 DAWSON COURT	STATEN ISLAND NY 10314
1304-3705-7.408-C0045	KIERNAN THOMAS & ASSUNCAO ERICA	306 DEAL LAKE DR UNIT 45	ASBURY PARK NJ 07712
1304-3705-7.115-C0016	GIANNOTTI PAUL JOSEPH	300 DEAL LAKE DR UNIT 16	ASBURY PARK NJ 07712
1304-3704-2.20-C0304	YANDLE KATHY & MILLER RICK K	400 DEAL LAKE DRIVE #3D	ASBURY PARK NJ 07712
1304-3705-7.116-C0015	SURKS MARK & LINDA	60 DAWSON LANE	MONROE NJ 08831
1304-3704-2.38-C0411	MCALEAVY MARY ANNE	400 DEAL LAKE DR UNIT 4L	ASBURY PARK NJ 07712
1304-3704-2.39-C0501	HUE 400 DEAL LAKE DRIVE LLC	30 RONA STREET	INTERLAKEN NJ 07712
1304-3705-7.109-C0010	KAPLAN NANCY	300 DEAL LAKE DR UNIT 10	ASBURY PARK NJ 07712
1304-3705-7.110-C0009	PASQUALE ANTONIO&NASTRO RYAN ETAL	45 ATKINS TERRACE	EAST RUTHERFORD NJ 07073
1304-3705-7.111-C0012	JACO INVESTMENTS LLC	400 DEAL LAKE DRIVE #6JJ	ASBURY PARK NJ 07712
1304-3705-7.112-C0011	JACOBSON TRAVIS RYAN	8 CRESTMONT AVENUE	EWING NJ 08616

1304-3705-7.113-C0014	FORSMAN RICHARD S & ENID D	300 DEAL LAKE DR UNIT 14	ASBURY PARK NJ 07712
1304-3705-7.114-C0013	MEHTA ASHOK & SHEFALI	300 DEAL LAKE DR UNIT 13	ASBURY PARK NJ 07712
1304-3705-3	BIBI STEVEN	2 DEAL COURT	ASBURY PARK NJ 07712
1304-3705-4	PAPENDICK LUKE & GOETTMAN GRACE	3 DEAL COURT	ASBURY PARK NJ 07712
1304-3705-5	LATERRA LINDA D & JAMIE ROBERTS	103 CHARLTON AVE	LODI NJ 07644
1304-3705-6	HANSEN RICHARD N & SUSAN	1029 MCKINLEY AVE	OAKLAND CA 94610
1304-3705-11	MAGNOLIA SHORES 20 LLC	38 PORTER PLACE	MONTCLAIR NJ 07042
1304-3705-12	MARSHALL DOROTHY	7 DEAL COURT	ASBURY PARK NJ 07712
1304-3705-13	SPRINGER MARIO DAVID & LESLIE ANNE	8 DEAL COURT	ASBURY PARK NJ 07712
1304-3705-14	LORD CAROL	9 DEAL CT	ASBURY PARK NJ 07712
1304-3705-1	JACOBSON DANIEL P	10 DEAL COURT	ASBURY PARK NJ 07712
1304-3705-2	ERLICH MALKA MARNA	1 JAMESTOWN COURT	EAST BRUNSWICK NJ 08816

THE FOLLOWING UTILITY COMPANIES ARE ATTACHED TO AND MADE A PART OF THIS 200' CERTIFIED LIST AND MUST BE NOTIFIED IN ACCORDANCE WITH CHAPTER 245, P.L. OF NEW JERSEY

RICHARD S. COHEN, SECRETARY & CORPORATE COUNSEL
JERSEY CENTRAL POWER AND LIGHT COMPANY
300 MADISON AVENUE
MORRISTOWN, NJ 07962-1911

OLETA HARDEN, SR., VICE PRESIDENT AND SECRETARY
NEW JERSEY NATURAL GAS COMPANY
1514 WYCKOFF ROAD
PO BOX 1464
WALL, NJ 07719

NEW JERSEY -AMERICAN WATER COMPANY, INC.
C/O GENERAL TAX DEPT.
PO BOX 5627
CHERRY HILL, NJ 08034

CABLEVISION
ENGINEERING DEPARTMENT
1501 18TH AVENUE
WALL, NJ 07719

ASBURY PARK ENGINEERING
PUBLIC WORKS & SEWER DEPT.
9 MAIN STREET
ASBURY PARK, NJ 07712

OTHER AGENCIES TO BE NOTIFIED ON 200' CERTIFIED LISTS:

FOR RAILROAD:	RUDY GUERDS, DIRECTOR PROPERTY MANAGEMENT NEW JERSEY TRANSIT ORPORATION ONE PENN PLAZA EAST, 7th FLOOR NEWARK, NJ 07105-2246
COUNTY ROADS: (ASBURY AVE & MEMORIAL DR. & SUBDIVISIONS)	ROBERT W CLARK, DIRECTOR MONMOUTH COUNTY PLANNING BOARD HALL OF RECORDS ANNEX MAIN STREET FREEHOLD, NJ 07728
STATE HIGHWAY: (RT 71 & MAIN ST.)	THOMAS DOWD, REGIONAL ENGINEER NJ DOT CENTRAL REGION PERMITS 100 DANIELS WAY FREEHOLD, NJ 07728
WATERWAYS: (OCEAN & LAKES)	STATE OF NEW JERSEY DEPT OF ENVIRONMENTAL PROTECTION LAND USE MANAGEMENT & COMPLIANCE PO BOX 439 TRENTON, NJ 08625-0439

VILLAGE OF LOCH ARBOUR
550 MAIN STREET
LOCH ARBOUR, NEW JERSEY 07711
TELEPHONE: 732.531.4740 FACSIMILE: 732.531.8778

August 1, 2022

VHB
1805 Atlantic Avenue
Manasquan, New Jersey 08736
Attention: Jessica Druze

Re: Request for 200' Certified Property Owners List
Block 4402;4501, Lot 1
1800 Ocean Avenue, Asbury Park, NJ

Dear Ms. Druze:

Per your request, I am enclosing the Certified Property Owners' List within 200' of the above referenced property located in the City of Asbury Park.

Very truly yours,

Marilyn Simons, R.M.C.
Village Clerk

Enclosure

I, MARILYN SIMONS, CLERK OF THE VILLAGE OF LOCH ARBOUR, MONMOUTH COUNTY, do hereby certify that this List, consisting of 2 page(s), represents all of the interested parties to be notified in The Village of Loch Arbour of the property known as Block 4402, 4501 Lot 1, also known as 1800 Ocean Avenue, Asbury, New Jersey in accordance with the requirements of N.J.S.A. 40:55D-12.

DATED: August 1, 2022.

Marilyn Simons
MARILYN SIMONS, R.M.C.

BLOCK #	LOT #	OWNER	PERSONAL SERVICE		CERTIFIED MAIL (white and green cards attached)	
			DATE OF SERVICE	SIGNATURE OF PERSON SERVED	DATE OF SERVICE	CERTIFIED MAIL RECEIPT NUMBER
8	1	10 Ocean Place Kassin Beach, LLC 43 West 24th Street, 10th Floor New York New York 10010				
		Village of Loch Arbour 550 Main Street Loch Arbour, NJ 07711				
		City of Asbury One Municipal Plaza Asbury Park, New Jersey 07712				
		Comcast of Monmouth County, LLC 403 South Street P.O Box 598 Eatontown, New Jersey 07724				
		Jersey Central Power & Light Co. 101 Crawford Corner Road, Suite 1-511 Holmdel, New Jersey 07733				
		New Jersey American Water Co. 661 Shrewsbury Avenue Shrewsbury, New Jersey 07701				
		New Jersey Natural Gas Co. 1945 Wyckoff Road Wall, NJ 07719				
		Verizon 1 Verizon Way Basking Ridge, New Jersey 07920				

CITY OF LONG BRANCH, MUNICIPAL BUILDING, 344 BROADWAY, LONG BRANCH, N.J. 07740 (732) 222-7000

November 10, 2022

Vanasse Hangen Brustlin, INC
1805 Atlantic Ave
Manasquan, NJ 08736
ATTN: Jessica Druze

RE: Block: 304.06 Lot: 1.01-1.04

Dear Sir or Madam:

Pursuant to your request received November 10, 2022, attached please find a list of property owners in the City of Long Branch located within 200 feet of the above referenced property. Please contact neighboring municipalities to determine if you need to notify any property owners located within their border.

Please be advised that you must notify the following:

NJ American Water Co.
661 Shrewsbury Ave.
Shrewsbury, N J 07701

Public Service Electric and Gas Company
Manager-Corporate Properties
80 Park Plaza, T6B
Newark, NJ 07102

LB Sewerage Authority
P.O. Box 720
Long Branch, N J 07740

JCP&L Co.
ATTN: Richard Cohen
300 Madison Ave.
Morristown, N J 07962

NJ Natural Gas Co.
1415 Wyckoff Rd.
Wall, N J 07719

Verizon
Attn: Manager of Engineering
5011 Belmar Blvd.
Wall, NJ 07727

Comcast
403 South Street
Eatontown, NJ 07724

If I may be of further assistance in this matter, please do not hesitate to contact me.

Thank you,

John Butow, CTA, SCRREA
Tax Assessor
City of Long Branch

OWNER & ADDRESS REPORT

200 FT OWNERS LIST BLOCK: 304.06 LOT(S): 1.01-1.04

BLOCK	LOT	QUAL	CLA	PROPERTY OWNER	PROPERTY LOCATION	Add'l Lots
294	16.01		4A	AFP 104 CORP C/O UNITED CAPITAL CRP 9 PARK PLACE GREAT NECK, NY 11021	1 OCEAN BLVD	
297.02	1		15F	BEACHFRONT NORTH HOMEOWNERS ASSOC 1 WILLOW POND DR HOWELL, NJ 07731	ACCESS	
297.02	2		2	MAZZONE, PATRICIA H. 1 GRANT ST LONG BRANCH, NJ 07740	1 GRANT ST	
297.02	3		2	COLE, ROBERT & MAXINE 3 GRANT ST LONG BRANCH,N J 07740	3 GRANT ST	
297.02	4		2	CHRISTIE, RONALD JR. & KARA L 5 GRANT STREET LONG BRANCH, NJ 07740	5 GRANT ST	
297.02	5		2	DEFALCO, PHILIP A & MONICA 7 GRANT ST LONG BRANCH, NJ 07740	7 GRANT ST	
297.02	6		2	GOLDBERG, STEVEN CRAIG & ROSE M 9 GRANT ST LONG BRANCH, NJ 07740	9 GRANT ST	
297.02	7		2	DUSHEY, JACK & LINDA A 388 STERLING ROAD HARRISON, NY 10528	2 MCKINLEY ST	
297.02	8		2	JOSEPHSON, GLENN R & EDITH M 161 JORDAN ROAD EMERSON, NJ 07630	4 MCKINLEY ST	
297.02	9		2	LONG BRANCH LLC 360 MADISON AVE,9TH FLOOR NEW YORK, NY 10017	6 MCKINLEY ST	
297.02	10		2	O'FRIEL, LAWRENCE & DIANE 8 MCKINLEY ST LONG BRANCH, NJ 07740	8 MCKINLEY ST	
298	6		15C	CITY OF LONG BRANCH 344 BROADWAY LONG BRANCH, NJ 07740	11 OCEAN AVE NO	L6.01
298	7		15C	CITY OF LONG BRANCH 344 BROADWAY LONG BRANCH, NJ 07740	15 OCEAN AVE NO	
298	8		15C	CITY OF LONG BRANCH 344 BROADWAY LONG BRANCH, NJ 07740	19 OCEAN AVE NO	L8.01
298	9		15C	CITY OF LONG BRANCH 344 BROADWAY LONG BRANCH, NJ 07740	25 OCEAN AVE NO	
299	1		15C	CITY OF LONG BRANCH 344 BROADWAY LONG BRANCH, NJ 07740	75 OCEAN AVE NO	
300	1		4A	100 OCEAN AVE ASSOC LLC 32 HIGHLAND AVE MONMOUTH BEACH, NJ 07750	100 OCEAN AVE NO	
304.04	1		15F	BEACHFRONT NORTH HOMEOWNERS ASSOC. 1 WILLOW POND DR HOWELL, NJ 07731	ACCESS	
304.04	2		2	BALTER FAM. TRUST % R. FINKELSTEIN 75 LIVINGSTON AVENUE ROSELAND, NJ 07068	11 GRANT ST	

200 FT OWNERS LIST BLOCK: 304.06 LOT(S): 1.01-1.04

BLOCK	LOT	QUAL	CLA	PROPERTY OWNER	PROPERTY LOCATION	Add'l Lots
304.04	3		2	DELLIBOVI ALFRED & ELIZABETH 35 PARK AVE APT 14-A NEW YORK, NY 10016	15 GRANT ST	
304.04	4		2	FERRITER,K.F. & K.M. & PARRY,M. 15 SUN VALLEY ROAD RAMSEY, NJ 07446	17 GRANT ST	
304.04	5		2	SAVO, LILLIAN 953 EDGEGROVE AVE STATEN ISLAND, NY 10309	19 GRANT ST	
304.04	6		2	BARAK, JOANNE & TUVIA TRUSTEES 42 WOODS RD. P.O. BOX 7 PALISADES, NY 10964	21 GRANT ST	
304.04	7		2	SURICK, BURTON & IIONA 420 ACORN DRIVE PARAMUS, NJ 07652	23 GRANT ST	
304.04	8		2	MILLER, STEVEN 25 GRANT ST LONG BRANCH, NJ 07740	25 GRANT ST	
304.04	9		2	CIAMBRONE, FRANCIS A & ADRIAN G 452 LINCOLN DRIVE PARAMUS, NJ 07652	27 GRANT ST	
304.04	10		2	COHEN, ROB & SHERILYN 4 STRATFORD COURT WARREN, NJ 07059	29 GRANT ST	
304.04	11		2	GUEMPEL, MARGARET M 31 GRANT STREET LONG BRANCH, NJ 07740	31 GRANT ST	
304.04	12		2	BAZERBASHI, AMMAR 950 ROUTE 35 MIDDLETOWN, NJ 07748	24 MCKINLEY ST	
304.04	13		2	ELKHOLY, WAEL 127 GRAYSON DRIVE BELLE MEAD, NJ 08502	22 MCKINLEY ST	
304.04	14		2	REINSTEIN, RICHARD & KAREN 20 MCKINLEY ST LONG BRANCH, NJ 07740	20 MCKINLEY ST	
304.04	15		2	TRAUB, RICHARD K & BARBARA W 18 MCKINLEY ST. LONG BRANCH, NJ 07740	18 MCKINLEY ST	
304.04	16		2	16 MCKINLEY STREET LLC 90 SPARTA AVENUE SPARTA, NJ 07871	16 MCKINLEY ST	
304.04	17		2	INELLI, PAMELA P. 17 OLD FARMSTEAD RD. CHESTER, NJ 07930	14 MCKINLEY ST	
304.04	18		2	WANG, XIN & MEI DENG 23 WINCHESTER LN HOLMDEL, NJ 07733	12 MCKINLEY ST	
304.04	19		2	7777S, LLC 4 STATILE COURT SPRINGFIELD, NJ 07081	10 MCKINLEY ST	
304.05	1		15F	BEACHFRONT NORTH HOMEOWNERS ASSOC. 1 WILLOW POND DR HOWELL, NJ 07731	ACCESS	
304.05	2		2	BLEIBERG, GARY 33 GRANT ST LONG BRANCH, NJ 07740	33 GRANT ST	

200 FT OWNERS LIST BLOCK: 304.06 LOT(S): 1.01-1.04

BLOCK	LOT	QUAL	CLA	PROPERTY OWNER	PROPERTY LOCATION	Add'l Lots
304.05	3		2	MACH, JONATHAN 11 TARA LANE MONTVILLE , NJ 07045	35 GRANT ST	
304.05	4		2	ZHUANG, SEN HONG & HAN, RAY-JEAN 37 GRANT ST LONG BRANCH, NJ 07740	37 GRANT ST	
304.05	5		2	39 GRANT STREET, LLC 3547 53RD AVE W #354 BRADENTON, FL 34210	39 GRANT ST	
304.05	6		2	LEFKOWITZ, BARRY & NANCY 7679 FRANCISCA CLUB LANE DELRAY BEACH, FL 33446	41 GRANT ST	
304.05	7		2	HINSUMKEUNG, PAUL & CINDY & SETH,V 36 GREAT OAK DR SHORT HILLS, NJ 07078	43 GRANT ST	
304.05	8		2	STRUMINGER, MARLA 34 HARTLANDER STREET EAST BRUNSWICK, NJ 08816	34 MCKINLEY ST	
304.05	9		2	DAS, SANJAY & CHIDAMBARAM, MAJULA 32 MCKINLEY ST LONG BRANCH, NJ 07740	32 MCKINLEY ST	
304.05	10		2	SPIELBERGER, JOHN & JANE 30 MCKINLEY ST LONG BRANCH, NJ 07740	30 MCKINLEY ST	
304.05	11		2	GIDEA, MARIAN & CLAUDIA G 28 MCKINLEY ST LONG BRANCH, NJ 07740	28 MCKINLEY ST	
304.05	12		2	TURNACIOGLU, KENAN & KRISTIN M 26 MCKINLEY ST LONG BRANCH, NJ 07740	26 MCKINLEY ST	
304.05	13		15F	BEACHFRONT NORTH MASTER ASSOCIATION 1 WILLOW POND DR HOWELL, NJ 07731	14 COOPER AVE	

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage and Fees $ 7.82
Sent To: Mary Anne Mcaleavy
Street and Apt. No.: 400 DEAL LAKE DR UNIT 4L
City, State, ZIP+4: Asbury Park, NJ 07712

Postmark Here DEC 2022 MANASQUAN POST OFFICE MANASQUAN NJ 08736

7020 0640 0002 0597 3074

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage and Fees $ 7.82
Sent To: Mark & Linda Surks
Street and Apt. No.: 60 DAWSON LANE
City, State, ZIP+4: Monroe, NJ 08831

Postmark Here DEC 2022 MANASQUAN POST OFFICE MANASQUAN NJ 08736

7020 0640 0002 0597 3081

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage and Fees $ 7.82
Sent To: Oleta Harden
Street and Apt. No.: Vice President and Secretary
City, State, ZIP+4: New Jersey Natural Gas Company
1514 Wycoff Road, P.O. Box 1464
Wall, NJ 07719

Postmark Here DEC 2022 MANASQUAN POST OFFICE MANASQUAN NJ 08736

7020 0640 0002 0597 3050

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage and Fees $ 7.82
Sent To: Nancy Kaplan
Street and Apt. No.: 300 DEAL LAKE DR UNIT 10
City, State, ZIP+4: Asbury Park, NJ 07712

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7020 0640 0002 0597 3067

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☑ Return Receipt (hardcopy) $ 3.35
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage and Fees $ 7.82
Sent To: Piotr & Aneta Worosz
Street and Apt. No.: 300 DEAL LAKE DR UNIT 2
City, State, ZIP+4: Asbury Park, NJ 07712

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7020 0640 0002 0597 3036

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage and Fees $ 7.82
Sent To: Paul & Cindy & Seth V Hinsumkeung
Street and Apt. No.: 36 Great Oak Dr
City, State, ZIP+4: Short Hills, NJ 07078

Postmark Here DEC 2022 MANASQUAN POST OFFICE MANASQUAN NJ 08736

7020 0640 0002 0597 3043

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage and Fees $ 7.82
Sent To Rob & Sherilyn Cohen
Street and Apt. No. 4 Stratford Court
City, State, ZIP+4 Warren, NJ 07059

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage and Fees $ 7.82
Sent To Richard K & Barbara W Traub
Street and Apt. No. 18 McKinley St
City, State, ZIP+4 Long Branch, NJ 07740

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage and Fees $ 7.82
Sent To Ashok & Shefali Mehta
Street and Apt. No. 300 DEAL LAKE DR UNIT 13
City, State, ZIP+4 Asbury Park, NJ 07712

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage and Fees $ 7.82
Sent To Asbury Park Engineering
Street and Apt. No. Public Works & Sewer Dept.
City, State, ZIP+4 9 Main Street
Asbury Park, NJ 07712

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage and Fees $ 7.82
Sent To Dorothy Marshall
Street and Apt. No. 7 DEAL COURT
City, State, ZIP+4 Asbury Park, NJ 07712

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☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage and Fees $ 7.82
Sent To Carol Lord
Street and Apt. No. 9 DEAL CT
City, State, ZIP+4 Asbury Park, NJ 07712

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☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage a $ 7.82

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Sent To William Braun & Karen Ditolla
Street and Apt. N 5 MATTHEWS AVENUE
City, State, ZIP+ Staten Island, NY 10310

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☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Pos $ 7.82

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Sent To Francis A & Adrian G Ciambrone
Street ar 452 Lincoln Drive
City, Sta Paramus, NJ 07652

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☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage a $ 7.82

MANASQUAN POST OFFICE MANASQUAN NJ 08736 DEC - 1 2022 Postmark Here

Sent To CITY OF ASBURY PARK
Street and Apt. N 1 MUNICIPAL PLAZA
City, State, ZIP+ Asbury Park, NJ 07712

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☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage $ 7.82

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Sent To SW 200 DEAL LAKE LLC
Street and Api 15 AMERICA AVE STE 301
City, State, Zl Lakewood, NJ 08701

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☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Posta $ 7.82

MANASQUAN POST OFFICE MANASQUAN NJ 08736 DEC - 1 2022 Postmark Here

Sent To New Jersey American Water Company, Inc.
Street and New Jersey American Water Company, Inc.
P.O. Box 5627
City, State, Cherry Hill, NJ 08034

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☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage $ 7.82

MANASQUAN POST OFFICE MANASQUAN NJ 08736 DEC - 1 2022 Postmark Here

Sent To Travis Ryan Jacobson & David Scott
Street and Apt. 8 CRESTMONT AVENUE
City, State, ZIP+ Ewing, NJ 08618

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage a
$ 7.82

Sent To
Barry & Nancy Lefkowitz

Street and Apt. N
7679 Francisca Club Lane

City, State, ZIP+
Delray Beach, FL 33446

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To
Alfred & Elizabeth Dellibovi

Street and A
35 Park Ave Apt 14-A

City, State, Z
New York, NY 10016

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☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage ar
$ 7.82

Sent To
Emily Wilson

Street and Apt. N
306 DEAL LAKE DR UNIT 53

City, State, ZIP+
Asbury Park, NJ 07712

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage ai
$ 7.82

Sent To
Daniel P Jacobson

Street and Apt. N
10 DEAL COURT

City, State, ZIP+
Asbury Park, NJ 07712

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☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
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Sent To
Thomas Shanahan

Street and Apt.
302 DEAL LAKE DR UNIT 25

City, State, ZIP
Asbury Park, NJ 07712

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To
Steven Bibi

Street and Apt.
2 DEAL COURT

City, State, ZIP
Asbury Park, NJ 07712

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- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage and
$ 7.82

Sent To
Ferriter K.F. & K.M. & Parry, M.

Street and Apt. N
15 Sun Valley Road

City, State, ZIP+4
Ramsey, NJ 07446

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- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Pos
$ 7.82

Sent To
Melody Hartsgrove
Asbury Park City Clerk
City of Asbury Park

Street an
1 Municipal Plaza

City, Stat
Asbury Park, NJ 07712

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- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage and
$ 7.82

Sent To
Jack & Linda A Dushey
388 Sterling Road
Harrison, NY 10528

Street and Apt. No

City, State, ZIP+4

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- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage and
$ 7.82

Sent To
Xin & Mei Deng Wang
23 Winchester Ln
Holmdel, NJ 07733

Street and Apt. N

City, State, ZIP+4

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- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To
Marla Struminger
34 Hartlander Street
East Brunswick, NJ 08816

Street and Apt.

City, State, ZIP

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- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Posta
$ 7.82

Sent To
Glenn R & Edith M Josephson
161 Jordan Road
Emerson, NJ 07630

Street and

City, State,

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- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage $ ~~1.60~~ .57

Total Postage $ 7.82

Sent To: Joseph Ciccone
Deal Construction Official
Street and Apt.: 190 Norwood Avenue
City, State, ZIP+: Deal, NJ 07723

MANASQUAN POST OFFICE Postmark Here DEC - 1 2022 MANASQUAN NJ 08736

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- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage $ .57

Total Postage $ 7.82

Sent To: Joanne Barak
Tuvia Trustees
Street and Apt.: 42 Woods Rd. P.O. Box 7
City, State, ZIP+: Palisades, NY 10964

MANASQUAN POST OFFICE DEC - 1 2022 Postmark Here MANASQUAN NJ 08736

7020 0640 0002 0597 2510

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- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage $ .57

Total Postage $ 7.82

Sent To: Leslie & Stephanie Konsig
23 MITCHELL PLACE
Street and Apt.:
City, State, ZIP+: Little Silver, NJ 07739

MANASQUAN POST OFFICE Postmark Here DEC - 1 2022 MANASQUAN NJ 08736

7020 0640 0002 0597 2480

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- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage $ .57

Total Postage $ 7.82

Sent To: Kenan & Kristin M Turnacioglu
26 McKinley St
Street and Apt.:
City, State, ZIP+: Long Branch, NJ 07740

MANASQUAN POST OFFICE DEC - 1 2022 Postmark Here MANASQUAN NJ 08736

7020 0640 0002 0597 2497

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- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage $ .57

Total Postage $ 7.82

Sent To: Mario David & Leslie Anne Springer
8 DEAL COURT
Street and Apt.:
City, State, ZIP+: Asbury Park, NJ 07712

MANASQUAN POST OFFICE Postmark Here DEC - 1 2022 MANASQUAN NJ 08736

7020 0640 0002 0597 2473

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- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage $ .57

Total Postage $ 7.82

Sent To: Margarita Perez
400 DEAL LAKE DR UNIT 5B
Street and Apt.:
City, State, ZIP+: Asbury Park, NJ 07712

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7020 0640 0002 0597 2466

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- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To
Michael Ross & Sabino C Mackintosh
302 DEAL LAKE DR UNIT 22
Asbury Park, NJ 07712

Street and Apt.

City, State, ZIP

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PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0640 0002 0577 3166

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- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To
Marna Erlich Malka
1 JAMESTOWN COURT
East Brunswick, NJ 08816

Street and Apt.

City, State, ZIP

MANASQUAN POST OFFICE Postmark Here DEC - 1 2022 MANASQUAN NJ 08736

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0640 0002 0577 3173

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- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To
GCA PROPERTIES LLC
1 NESBITT DRIVE
Mendham, NJ 07945

Street and Apt.

City, State, ZIP

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PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0090 0001 2058 5902

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- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To
Gregory & Bella Smith
304 DEAL LAKE DR UNIT 29
Asbury Park, NJ 07712

Street and Apt.

City, State, ZIP

MANASQUAN POST OFFICE Postmark Here DEC - 1 2022 MANASQUAN NJ 08736

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7020 0640 0002 0577 3159

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- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To
Deal Building Department
190 Norwood Avenue
Deal, NJ 07723

Street and Apt.

City, State, ZIP

MANASQUAN POST OFFICE Postmark Here DEC - 1 2022 MANASQUAN NJ 08736

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7020 0090 0001 2058 5889

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- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To
Interlacken Lake Commission
100 Grasmere Ave
Interlacken, NJ 07712

Street and Apt.

City, State, ZIP

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7020 0090 0001 2058 5896

7020 0090 0001 2058 5865

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.57
Total Postage $7.82
Sent To 16 McKinley Street LLC
Street and Apt. 90 Sparta Avenue
City, State, ZIP Sparta, NJ 07871

MANASQUAN POST OFFICE Postmark Here DEC - 1 2022 MANASQUAN NJ 08736

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0090 0001 2058 5872

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☒ Return Receipt (hardcopy) $3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.57
Total Postage $7.82
Sent To Long Branch Planning Board
Street and Apt. City of Long Branch
City, State, ZIP 344 Broadway
Long Branch, NJ 07724

MANASQUAN POST OFFICE Postmark Here DEC 1 2022 MANASQUAN NJ 08736

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0090 0001 2058 5841

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.57
Total Postage $7.82
Sent To Village of Loch Arbour
Street and A 550 Main Street
City, State, Loch Arbour, NJ 07711

MANASQUAN POST OFFICE Postmark Here DEC - 1 2022 MANASQUAN NJ 08736

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0090 0001 2058 5858

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☒ Return Receipt (hardcopy) $3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.57
Total Postage $7.82
Sent To Verizon
Street and Apt 1 Verizon Way
City, State, ZI Basking Ridge, NJ 07920

MANASQUAN POST OFFICE Postmark Here DEC - 1 2022 MANASQUAN NJ 08736

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7020 0090 0001 2058 5827

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.57
Total Postage $7.82
Sent To Asbury Park Environmental Shade Tree
Street and Apt. Commission
City, State, ZIP City of Asbury Park
1 Municipal Plaza
Asbury Park, NJ 07712

MANASQUAN POST OFFICE Postmark Here DEC - 1 2022 MANASQUAN NJ 08736

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0090 0001 2058 5834

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.57
Total Postage $7.82
Sent To Sanjay Das & Majula Chidambaram
Street and Apt. 32 McKinley St
City, State, ZIP Long Branch, NJ 07740

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☑ Return Receipt (hardcopy) $3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.57
Total Postage $7.82
Sent To Rosemary Disavino & Carol Mascari
Street and Apt. 304 DEAL LAKE DR UNIT 30
City, State, Asbury Park, NJ 07712

MANASQUAN POST OFFICE Postmark Here DEC - 1 2022 MANASQUAN NJ 08736

7020 0090 0001 2058 5803

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.57
Total Postage $7.82
Sent To Mildred E Martinez & Janice Colon
Street and Apt 183 MARYLAND AVENUE
City, State, ZI Staten Island, NY 10305

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7020 0090 0001 2058 5810

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☑ Return Receipt (hardcopy) $3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.57
Total Postage ar $7.82
Sent To BONGIORNI T&L LLC
Street and Apt. 10 SCHOOLHOUSE LANE
City, State, ZIP+ Matawan, NJ 07747

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.57
Total Postage ar $7.82
Sent To CARTAINA FAMILY TRUST
Street and Apt. 7936 LEEWARD LANE
City, State, ZIP+ Murrels Inlet, SC 29576

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7020 0090 0001 2058 5797

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☑ Return Receipt (hardcopy) $3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.57
Total Postage an $7.82
Sent To MNM LAKE PROPERTIES LLC
Street and Apt. Nc 66 ALBEMARLE ROAD
City, State, ZIP+4 Colonia, NJ 07067

MANASQUAN POST OFFICE Postmark Here DEC 2022 MANASQUAN NJ 08736

7020 0090 0001 2058 5766

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Extra Services & Fees (check box, add fee as appropriate)
☑ Return Receipt (hardcopy) $3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.57
Total Postage and Fee $7.82
Sent To AP FIVE PROP HOLDINGS LLC-ISTAR TAX
Street and Apt. No., or 1114 AVE OF THE AMER 39FL
City, State, ZIP+4 New York, NY 10036

MANASQUAN POST OFFICE Postmark Here DEC - 1 2022 MANASQUAN NJ 08736

7020 0090 0001 2058 5773

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7020 0090 0001 2058 5742

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- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage a
$ 7.82

Sent To
Cablevision Engineering Department

Street and Apt. N
Cablevision - Engineering Department

City, State, ZIP+
1501 8th Avenue
Wall, NJ 07719

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7020 0090 0001 2058 5759

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- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To
Bonnie Nach & Kay Hoban

Street and Apt
4 ELLSWORTH AVENUE

City, State, Zi
Morristown, NJ 07960

Postmarked Here

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0090 0001 2058 5735

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- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To
Ammar Bazerbashi

Street and Ap
950 Route 35

City, State, Zi
Middletown, NJ 07748

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☑ Return Receipt (hardcopy) $ 3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage $ 7.82

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Sent To: HUE 400 DEAL LAKE DRIVE LLC
Street and Apt.: 30 RONA STREET
City, State, ZIP: Interlaken, NJ 07712

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7020 0090 0001 2058 6244

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☑ Return Receipt (hardcopy) $ 3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage $ 7.82

Postmark Here DEC 2021

Sent To: Balter Fam. Trust - R. Finkelstein
Street and Apt.: 75 Livingston Avenue
City, State, ZIP: Roseland, NJ 07068

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7020 0090 0001 2058 6220

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☑ Return Receipt (hardcopy) $ 3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage $ 7.82

Postmark Here DEC 1 2021

Sent To: AFP 104 CORP C/O United Capital CRP
Street and Apt.: 9 Park Place
City, State, ZIP: Great Neck, NY 11021

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☑ Return Receipt (hardcopy) $ 3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage $ 7.82

Postmark Here DEC 1 - 330

Sent To: NJ Natural Gas Co.
Street and Apt.: 1415 Wyckoff Road
City, State, ZIP: Wall, NJ 07719

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0090 0001 2058 6251

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Extra Services & Fees (check box, add fee as appropriate)
☑ Return Receipt (hardcopy) $ 3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage $ 7.82

Postmark Here DEC - 330

Sent To: Comcast
Street and Apt.: 403 South Street
City, State, ZIP: Eatontown, NJ 07724

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0090 0001 2058 6250

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Extra Services & Fees (check box, add fee as appropriate)
☑ Return Receipt (hardcopy) $ 3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage $ 7.82

Postmark Here DEC 330

Sent To: MAGNOLIA SHORES 20 LLC
Street and Apt.: 38 PORTER PLACE
City, State, ZIP: Montclair, NJ 07042

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Certified Mail Fee
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Extra Services & Fees (check box, add fee as appropriate)
- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To: JACO INVESTMENTS LLC
Street and Apt.: 400 DEAL LAKE DRIVE #6JJ
City, State, ZIP: Asbury Park, NJ 07712

Postmark Here
DEC - 1 2022

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0090 0001 2058 6183

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- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To: ASBURY PARTNERS LLC - ISTAR FINANCIAL
Street and Apt.: 1114 AVE OF THE AMER 39FL
City, State, ZIP: New York, NY 10036

Postmark Here
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- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To: Kathy Yandle & Rick K Miller
Street and Apt.: 400 DEAL LAKE DRIVE #3D
City, State, ZIP: Asbury Park, NJ 07712

Postmark Here
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- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To: Long Branch LLC
Street and Apt.: 360 Madison Ave, 9th Floor
City, State, ZIP: New York, NY 10017

Postmark Here
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- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage and
$ 7.82

Sent To: Ronald Jr. & Kara L Christie
Street and Apt. No.: 5 Grant St
City, State, ZIP+4: Long Branch, NJ 07740

Postmark Here
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PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0640 0002 0597 2992

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- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage and
$ 7.82

Sent To: Sheila Klein
Street and Apt. No.: 6 STEPPING RIDGE
City, State, ZIP+4: Fairfield, NJ 07004

Postmark Here
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- [X] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage and
$ 7.82

Sent To
Stephen & Susan Botnik

Street and Apt. No.
6 SWAN COURT

City, State, ZIP+4®
Marlboro, NJ 07746

Postmark Here
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7020 0640 0002 0597 2978

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Extra Services & Fees (check box, add fee as appropriate)
- [X] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage and
$ 7.82

Sent To
Steven Craig & Rose M Goldberg

Street and Apt. No.,
9 Grant St

City, State, ZIP+4®
Long Branch, NJ 07740

Postmark Here
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- [X] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage and
$ 7.82

Sent To
Wael Elkholy

Street and Apt. No.
127 Grayson Drive

City, State, ZIP+4®
Belle Mead, NJ 08502

Postmark Here
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- [X] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage and
$ 7.82

Sent To
Pamela P. Inelli

Street and Apt. No.
17 Old Farmstead Rd.

City, State, ZIP+4®
Chester, NJ 07930

Postmark Here
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Extra Services & Fees (check box, add fee as appropriate)
- [X] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To
Paul Joseph Giannotti

Street and Apt.
300 DEAL LAKE DR UNIT 16

City, State, ZIP
Asbury Park, NJ 07712

Postmark Here
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- [X] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To
Richard & Karen Reinstein

Street and Apt
20 McKinley St

City, State, ZI
Long Branch, NJ 07740

Postmark Here
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- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage and
$ 7.82

Sent To
Jennie Disilvestri

Street and Apt. N
73 DAWSON COURT

City, State, ZIP+4
Staten Island, NY 10314

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- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To
John & Jane Spielberger

Street and Ap
30 McKinley St

City, State, Z
Long Branch, NJ 07740

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- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postag
$ 7.82

Sent To
Joseph Maranzani

Street and Ap
298 FOURTH STREET

City, State, Z
Hazlet, NJ 07734

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- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postag
$ 7.82

Sent To
Lawrence & Diane O'Friel

Street and Ap
8 McKinley St

City, State, Z
Long Branch, NJ 07740

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- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To
Lillian Savo

Street and Apt
953 Edgegrove Ave

City, State, ZI
Staten Island, NY 10309

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PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage a
$ 7.82

Sent To
Marian & Claudia G Gidea

Street and Apt. N
28 McKinley St

City, State, ZIP+
Long Branch, NJ 07740

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Extra Services & Fees (check box, add fee as appropriate)
☑ Return Receipt (hardcopy) $3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.57
Total Postage $7.82
Sent To Long Branch Environmental Commission
Street and Apt. City of Long Branch
City, State, Zip 344 Broadway
Long Branch, NJ 07724

DEC - 1 2022
MANASQUAN NJ 08736
Postmark Here

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☑ Return Receipt (hardcopy) $3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.57
Total Postage $7.82
Sent To Comcast of Monmouth County, LLC
Street and 403 South Street, P.O. Box 598
City, State, Eatontown, NJ 07724

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MANASQUAN NJ 08736
Postmark Here

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☑ Return Receipt (hardcopy) $3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.57
Total Postage $7.82
Sent To 7777S, LLC
Street and Ap 4 Statile Court
City, State, Z Springfield , NJ 07081

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MANASQUAN NJ 08736
Postmark Here

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☑ Return Receipt (hardcopy) $3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.57
Total Postage $7.82
Sent To Asbury Park Planning Board
Street and City of Asbury Park
City, State, 1 Municipal Plaza
Asbury Park, NJ 07712

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MANASQUAN NJ 08736
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☑ Return Receipt (hardcopy) $3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.57
Total Postage $7.82
Sent To NJ American Water Co.
Street and Api 661 Shrewsbury Ave
City, State, Zi Shrewsbury, NJ 07701

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MANASQUAN NJ 08736
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Extra Services & Fees (check box, add fee as appropriate)
☑ Return Receipt (hardcopy) $3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.57
Total Postage $7.82
Sent To Beachfront North Master Association
Street and Api 1 Willow Pond Dr
City, State, Zi Howell, NJ 07731

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MANASQUAN NJ 08736
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- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postag
$ 7.82

Sent To
Public Service Electric and Gas Company
Manager-Corporate Properties

Street and A
80 Park Plaza, T6B

City, State, Z
Newark, NJ 07102

Postmark Here
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- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage and
$ 7.82

Sent To
Jessica Bauer
300 DEAL LAKE DR UNIT 8
Asbury Park, NJ 07712

Street and Apt. No.

City, State, ZIP+4

Postmark Here
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- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage ar
$ 7.82

Sent To
Jonathan Mach
11 Tara Lane
Montville, NJ 07045

Street and Apt. N

City, State, ZIP+4

Postmark Here
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Extra Services & Fees (check box, add fee as appropriate)
- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage ai
$ 7.82

Sent To
Kelly Barrett
Allenhurst Planning Board
125 Corlies Ave
Allenhurst, NJ 07711

Street and Apt. N

City, State, ZIP+4

Postmark Here
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- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To
Leslie Havens
300 DEAL LAKE DR UNIT 5
Asbury Park, NJ 07712

Street and Apt.

City, State, ZIP

Postmark Here
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Extra Services & Fees (check box, add fee as appropriate)
- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage and
$ 7.82

Sent To
Margaret M Guempel
31 Grant Street
Long Branch, NJ 07740

Street and Apt. No.

City, State, ZIP+4

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Extra Services & Fees (check box, add fee as appropriate)
- [x] Return Receipt (hardcopy) $3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage $.57

Total Postage $7.82

Sent To: Gary Bleiberg
Street and Apt.: 33 Grant St
City, State, ZIP: Long Branch, NJ 07740

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- [x] Return Receipt (hardcopy) $3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage $.57

Total Postage $7.82

Sent To: George V Marino
Street and Apt.: 302 DEAL LAKE DR UNIT 21
City, State, ZIP: Asbury Park, NJ 07712

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- [x] Return Receipt (hardcopy) $3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage $.57

Total Postage $7.82

Sent To: Heather Capone
Street and Apt.: Long Branch City Clerk
City, State, ZIP: City of Long Branch
344 Broadway
Long Branch, NJ 07724

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7020 0090 0001 2058 5728

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Certified Mail Fee $4.00

Extra Services & Fees (check box, add fee as appropriate)
- [x] Return Receipt (hardcopy) $3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage $.57

Total Postage $7.82

Sent To: Burton & Iiona Surick
Street and Apt.: 420 Acorn Drive
City, State, ZIP: Paramus, NJ 07652

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- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage $.57

Total Postage $7.82

Sent To: Donna Campagna
Street and Apt.: Allenhurst Borough Clerk
City, State, ZIP: 125 Corlies Ave
Allenhurst, NJ 07711

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7020 0090 0001 2058 5704

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- [x] Return Receipt (hardcopy) $3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage $.57

Total Postage $7.82

Sent To: Frances Heitzer
Street and Apt.: 3 PONDEROSA LANE
City, State, ZIP: Old Bridge, NJ 08857

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- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To: Kevin Ansell & Jennifer Destiny
Street and Apt.: 1417 WOODLAND ST
City, State, ZIP: Nashville, TN 37206

Postmark Here
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PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0090 0001 2058 6305

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Extra Services & Fees (check box, add fee as appropriate)
- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To: Beachfront North Homeowners Assoc
Street and Apt.: 1 Willow Pond Dr
City, State, ZIP: Howell, NJ 07731

Postmark Here
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Extra Services & Fees (check box, add fee as appropriate)
- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To: Verizon
Street and Apt.: 5011 Belmar Blvd
City, State, ZIP: Wall, NJ 07727

Postmark Here
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PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0090 0001 2058 6282

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Certified Mail Fee
$ 4.00

Extra Services & Fees (check box, add fee as appropriate)
- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To: Michael H Ansell & Stephanie Blum
Street and Apt.: 9 EGBERT AVENUE
City, State, ZIP: Morristown, NJ 07960

Postmark Here
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Extra Services & Fees (check box, add fee as appropriate)
- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To: City of Long Branch
Street and Apt.: 344 Broadway
City, State, ZIP+4: Long Branch, NJ 07740

Postmark Here
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MANASQUAN POST OFFICE

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7020 0090 0001 2058 6268

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Certified Mail Fee
$ 4.00

Extra Services & Fees (check box, add fee as appropriate)
- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To: Luke Papendick & Grace Goettman
Street and Apt.: 3 DEAL COURT
City, State, ZIP+4: Asbury Park, NJ 07712

Postmark Here
DEC - 1 2021
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PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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Certified Mail Fee
$ 4.00

Extra Services & Fees (check box, add fee as appropriate)
- ☑ Return Receipt (hardcopy) $ 3.25
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage and Fees
$ 7.82

Sent To: Kassin Beach, LLC
Street and Apt. No.: 43 West 24th Street, 10th Floor
City, State, ZIP+4: New York, NY 10010

Postmark Here
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HANASQUAN POST OFFICE
HANASQUAN NJ 08736

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7020 0090 0001 2058 6022

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- ☑ Return Receipt (hardcopy) $ 3.25
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage and Fees
$ 7.82

Sent To: 39 Grant Street, LLC
Street and Apt. No.: 3547 53rd Ave W #354
City, State, ZIP+4: Bradenton, FL 34210

Postmark Here
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HANASQUAN NJ 08736

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Extra Services & Fees (check box, add fee as appropriate)
- ☑ Return Receipt (hardcopy) $ 3.25
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage and Fees
$ 7.82

Sent To: SANTANDER - DSV PROPERTY MGMT
Street and Apt. No.: 15 BAY AVENUE
City, State, ZIP+4: Highlands, NJ 07732

Postmark Here
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HANASQUAN NJ 08736

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7020 0090 0001 2058 6008

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- ☑ Return Receipt (hardcopy) $ 3.25
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage and Fees
$ 7.82

Sent To: Donald B Fornwalt & Thomas Catherman
Street and Apt. No.: 302 DEAL LAKE DR UNIT 28
City, State, ZIP+4: Asbury Park, NJ 07712

Postmark Here
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HANASQUAN NJ 08736

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- ☑ Return Receipt (hardcopy) $ 3.25
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage and Fees
$ 7.82

Sent To: Loch Arbor Planning Board
Street and Apt. No.: 550 Main Street
City, State, ZIP+4: Loch Arbour, NJ 07711

Postmark Here
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HANASQUAN NJ 08736

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7020 0090 0001 2058 5995

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Extra Services & Fees (check box, add fee as appropriate)
- ☑ Return Receipt (hardcopy) $ 3.25
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage and Fees
$ 7.82

Sent To: New Jersey Natural Gas Co.
Street and Apt. No.: 1945 Wyckoff Road
City, State, ZIP+4: Wall, NJ 07719

Postmark Here
DEC - 1 2022
HANASQUAN POST OFFICE
HANASQUAN NJ 08736

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0640 0002 0597 2916

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Certified Mail Fee $ 4.00
Extra Services & Fees (check box, add fee as appropriate)
☑ Return Receipt (hardcopy) $ 3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ 0.57
Total Postage and Fees $ 7.82
Sent To: Robert & Maxine Cole
Street and Apt. No.: 3 Grant St
City, State, ZIP+4: Long Branch, NJ 07740

Postmark Here DEC - 1 2022 MANASQUAN POST OFFICE MANASQUAN NJ 08736

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0640 0002 0597 2923

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Certified Mail Fee $ 4.00
Extra Services & Fees (check box, add fee as appropriate)
☑ Return Receipt (hardcopy) $ 3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ 0.57
Total Postage and Fees $ 7.82
Sent To: Richard S & Enid D Forsman
Street and Apt. No.: 300 DEAL LAKE DR UNIT 14
City, State, ZIP+4: Asbury Park, NJ 07712

Postmark Here DEC - 1 2022 MANASQUAN POST OFFICE MANASQUAN NJ 08736

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7020 0640 0002 0597 2893

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Certified Mail Fee $ 4.00
Extra Services & Fees (check box, add fee as appropriate)
☑ Return Receipt (hardcopy) $ 3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ 0.57
Total Postage and Fees $ 7.82
Sent To: Stephanie Weise
Street and Apt. No.: 108 RIDGE AVE APT 1
City, State, ZIP+4: Park Ridge, NJ 07656

Postmark Here DEC - 1 2022 MANASQUAN POST OFFICE MANASQUAN NJ 08736

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7020 0640 0002 0597 2909

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Extra Services & Fees (check box, add fee as appropriate)
☑ Return Receipt (hardcopy) $ 3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ 0.57
Total Postage and Fees $ 7.82
Sent To: Rudy Guerds
Street and Apt. No.: Director - Property Management
City, State, ZIP+4: New Jersey Transit
1 Penn Plaza East, 7th Floor
Newark, NJ 07105

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7020 0640 0002 0597 2879

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Extra Services & Fees (check box, add fee as appropriate)
☑ Return Receipt (hardcopy) $ 3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ 0.57
Total Postage and Fees $ 7.82
Sent To: Thomas Dowd
Street and Apt. No.: Regional Engineer
City, State, ZIP+4: NJDOT Central Region Permits
100 Daniels Way
Freehold, NJ 07728

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7020 0640 0002 0597 2886

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Extra Services & Fees (check box, add fee as appropriate)
☑ Return Receipt (hardcopy) $ 3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ 0.57
Total Postage and Fees $ 7.82
Sent To: Steven Miller
Street and Apt. No.: 25 Grant St
City, State, ZIP+4: Long Branch, NJ 07740

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7020 0640 0002 0597 2855

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Extra Services & Fees (check box, add fee as appropriate)
☒ Return Receipt (hardcopy) $ 3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage & $ 7.82
Sent To Patricia Mazzone
Street and Apt. 1 1 Grant St
City, State, ZIP+ Long Branch, NJ 07740

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7020 0640 0002 0597 2862

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Certified Mail Fee $ 4.00
Extra Services & Fees (check box, add fee as appropriate)
☒ Return Receipt (hardcopy) $ 3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postag $ 7.82
Sent To Wendy Wasilewski
Street and Ap 607 WHEATFIELD CT
City, State, Z Flemington, NJ 08822

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7020 0640 0002 0597 2831

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Extra Services & Fees (check box, add fee as appropriate)
☒ Return Receipt (hardcopy) $ 3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postag $ 7.82
Sent To Richard & Susan Hansen
Street and Ap 1029 MCKINLEY AVE
City, State, Z Oakland, CA 94610

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7020 0640 0002 0597 2848

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Extra Services & Fees (check box, add fee as appropriate)
☒ Return Receipt (hardcopy) $ 3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postag $ 7.82
Sent To Philip A & Monica Defalco
Street and A 7 Grant St
City, State, Z Long Branch, NJ 07740

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7020 0640 0002 0597 3234

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Extra Services & Fees (check box, add fee as appropriate)
☒ Return Receipt (hardcopy) $ 3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage a $ 7.82
Sent To Robert W. Clark
Director
Street and Apt. 1 Monmouth County Planning Board
City, State, ZIP+ Hall of Records Annex, Main Street
Freehold, NJ 07728

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7020 0640 0002 0597 3241

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Extra Services & Fees (check box, add fee as appropriate)
☒ Return Receipt (hardcopy) $ 3.25
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $ .57
Total Postage an $ 7.82
Sent To $
Street and Apt. N Richard S. Cohen
City, State, ZIP+4 Secretary & Corporate Counsel
Jersey Central Power and Light Company
300 Madison Avenue
Morristown, NJ 07692

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Certified Mail Fee
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Extra Services & Fees (check box, add fee as appropriate)
- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To: DEAL LAKE VILLAGE - DSV PRPT MANGMT
Street and Apt.: 15 BAY AVENUE
City, State, ZIP: Highlands, NJ 07732

7020 0640 0002 0597 2824

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Extra Services & Fees (check box, add fee as appropriate)
- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To: Sandra Desiderio
Street and Apt.: 65 UNION STREET APT 21
City, State, ZIP+4: Montclair, NJ 07042

7020 0640 0002 0597 3227

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Certified Mail Fee
$ 4.00

Extra Services & Fees (check box, add fee as appropriate)
- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To: KASSIN BEACH LLC.
Street and Apt.: 29 MORGAN AVENUE
City, State, ZIP: Deal, NJ 07723

7020 0640 0002 0597 2800

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Certified Mail Fee
$ 4.00

Extra Services & Fees (check box, add fee as appropriate)
- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .57

Total Postage
$ 7.82

Sent To: ASBURY SENIOR CITIZENS HOUSING LP
Street and Apt.: 4814 OUTLOOK DR STE 201
City, State, ZIP: Wall, NJ 07753

7020 0640 0002 0597 2817

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Extra Services & Fees (check box, add fee as appropriate)
- [x] Return Receipt (hardcopy) $ 3.25
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ .54

Total Postage
$ 7.82

Sent To: Marilyn Simons
Street and Apt.: Loch Arbor Village Clerk
City, State, ZIP: 550 Main Street
Loch Arbour, NJ 07711

7020 0640 0002 0597 2565

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City, State, ZIP: P.O. Box 439
Trenton, NJ 08625

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LB Sewerage Authority
P.O. Box 720
Long Branch, NJ 07740

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100 Ocean Ave Assoc LLC
32 Highland Ave
Monmouth Beach, NJ 07750

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Linda D Laterra & Jamie Roberts
103 CHARLTON AVE
Lodi, NJ 07644

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Sen Hong Zhuang & Ray-Jean Han
37 Grant St
Long Branch, NJ 07740

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Thomas Kiernan & Erica Assuncao
306 DEAL LAKE DR UNIT 45
Asbury Park, NJ 07712

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7020 0090 0001 2058 6114

Antonio Pasquale & Ryan Etal Nastro
45 ATKINS TERRACE
East Rutherford, NJ 07073

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City, State, ZIP+: Allenhurst, NJ 07711

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7020 0090 0001 2058 6084

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Postage
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Sent To: Deal Planning Board
Street and Ap: 190 Norwood Avenue
City, State, Zi: Deal, NJ 07723

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Street and Apt. N: Monmouth County
City, State, ZIP+: 1 East Main Street Freehold, NJ 07728

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Sent To: Long Branch Building & Development
Street and Apt. No: City of Long Branch
City, State, ZIP+4: 344 Broadway Long Branch, NJ 07724

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Street and Apt: 101 Crawford Corner Road, Suite 1-511
City, State, Zi: Holmdel, NJ 07733

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Stephen Carasia
Deal Borough Clerk/Administrator
190 Norwood Avenue
Deal, NJ 07723

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Melody Hartsgrove
Asbury Park City Clerk
City of Asbury Park
1 Municipal Plaza
Asbury Park, NJ 07712

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City, St
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Marilyn Simons
Loch Arbor Village Clerk
550 Main Street
Loch Arbour, NJ 07711

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Total Postage and Fees $ ~~16.80~~ 17.45

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Heather Capone
Long Branch City Clerk
City of Long Branch
344 Broadway
Long Branch, NJ 07724

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Stephen Carasia
Deal Borough Clerk/Administrator
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Deal, NJ 07723

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Donna Campagna
Allenhurst Borough Clerk
125 Corlies Ave
Allenhurst, NJ 07711

Appendix G – Agency Consultation

State of New Jersey
MAIL CODE 501-04
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE PARKS, FORESTS & HISTORIC SITES
OFFICE OF NATURAL LANDS MANAGEMENT
501 East State Street
P.O. Box 420, Mail Code 501-04
Trenton, NJ 08625-0420
Tel. (609) 984-1339 • Fax (609) 984-0427

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

SHAWN M. LATOURETTE
Commissioner

July 26, 2022

Katie Kinsella
VHB
1805 Atlantic Avenue
Manasquan, NJ 08736

Re: Ocean Wind 02 Wind Farm Project
Long Branch and Asbury Park Cities, Deal and Allenhurst Boroughs, Loch Arbor Village, Monmouth County

Dear Ms. Kinsella:

Thank you for your data request regarding rare species information for the above referenced project site.

Searches of the Natural Heritage Database and the Landscape Project (Version 3.3) are based on a representation of the boundaries of your project site in our Geographic Information System (GIS). We make every effort to accurately transfer your project bounds from the map(s) submitted with the Natural Heritage Data Request Form into our GIS. We do not typically verify that your project bounds are accurate, or check them against other sources.

We have checked the Landscape Project habitat mapping and the Biotics Database for occurrences of any rare wildlife species or wildlife habitat on the referenced site. The Natural Heritage Database was searched for occurrences of rare plant species or ecological communities that may be on the project site. Please refer to Table 1 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented on site. A detailed report is provided for each category coded as 'Yes' in Table 1.

We have also checked the Landscape Project habitat mapping and Biotics Database for occurrences of rare wildlife species or wildlife habitat in the immediate vicinity (within ¼ mile) of the referenced site. Additionally, the Natural Heritage Database was checked for occurrences of rare plant species or ecological communities within ¼ mile of the site. Please refer to Table 2 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented within the immediate vicinity of the site. Detailed reports are provided for all categories coded as 'Yes' in Table 2. These reports may include species that have also been documented on the project site.

The Natural Heritage Program reviews its data periodically to identify priority sites for natural diversity in the State. Included as priority sites are some of the State's best habitats for rare and endangered species and ecological communities. Please refer to Tables 1 and 2 (attached) to determine if any priority sites are located on or in the immediate vicinity of the site.

A list of rare plant species and ecological communities that have been documented from the county (or counties), referenced above, can be downloaded from https://nj.gov/dep/parksandforests/natural/heritage/database.html. If suitable habitat is present at the project site, the species in that list have potential to be present.

Status and rank codes used in the tables and lists are defined in EXPLANATION OF CODES USED IN NATURAL HERITAGE REPORTS, which can be downloaded from https://nj.gov/dep/parksandforests/natural/docs/nhpcodes_2010.pdf.

Beginning May 9, 2017, the Natural Heritage Program reports for wildlife species will utilize data from Landscape Project Version 3.3. If you have questions concerning the wildlife records or wildlife species mentioned in this response, we recommend that you visit the interactive web application at the following URL,

NHP File No. 22-4007338-25398

https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=0e6a44098c524ed99bf739953cb4d4c7, or contact the Division of Fish and Wildlife, Endangered and Nongame Species Program at (609) 292-9400.

For additional information regarding any Federally listed plant or animal species, please contact the U.S. Fish & Wildlife Service, New Jersey Field Office at http://www.fws.gov/northeast/njfieldoffice/endangered/consultation.html.

Information supplied by the Natural Heritage Program summarizes existing data known to the program at the time of the request regarding the biological elements (species and/or ecological communities) or their locations. They should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments.

Thank you for consulting the Natural Heritage Program. The attached invoice details the payment due for processing this data request. Feel free to contact us again regarding any future data requests.

Sincerely,

Robert J. Cartica
oAdministrator

c: NHP File No. 22-4007338-25398

Table 1: On Site Data Request Search Results (6 Possible Reports)

Report Name	Included	Number of Pages
1. Possibly on Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	Yes	1 page(s) included
2. Natural Heritage Priority Sites On Site	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Species Based Patches	Yes	1 page(s) included
4. Vernal Pool Habitat on the Project Site Based on Search of Landscape Project 3.3	No	0 pages included
5. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Stream Habitat File	No	0 pages included
6. Other Animal Species On the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	No	0 pages included

Possibly on Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database

Scientific Name	Common Name	Federal Protection Status	State Protection Status	Regional Status	Grank	Srank	Identified	Last Observed	Location
Vascular Plants									
Amaranthus pumilus	Seabeach Amaranth	LT	E	LP, HL	G2	S1	Y	2016-08-24	Along the coast in various locations from east of Fort Hancock on Sandy Hook south to West End in Long Branch.

Total number of records: 1

Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Species Based Patches

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
Aves								
	American Oystercatcher	Haematopus palliatus	Nesting Area	2	NA	Special Concern	G5	S3B,S3N
	Common Tern	Sterna hirundo	Foraging	2	NA	Special Concern	G5	S3B,S4N
	Least Tern	Sternula antillarum	Foraging	4	NA	State Endangered	G4	S1B,S1N
	Least Tern	Sternula antillarum	Nesting Colony	4	NA	State Endangered	G4	S1B,S1N
	Osprey	Pandion haliaetus	Foraging	3	NA	State Threatened	G5	S2B,S4N
	Piping Plover	Charadrius melodus	Nesting Area	5	Federally Listed Threatened	State Endangered	G3	S1B,S1N
Mammalia								
	Fin Whale	Balaenoptera physalus	Live Individual Sighting	5	Federally Listed Endangered	State Endangered	G3G4	S1
	Humpback Whale	Megaptera novaeangliae	Live Individual Sighting	5	Federally Listed Endangered	State Endangered	G4	S1
	North Atlantic Right Whale	Eubalaena glacialis	Live Individual Sighting	5	Federally Listed Endangered	State Endangered	G1	S1
Reptilia								
	Atlantic Leatherback	Dermochelys coriacea	Occupied Habitat	5	Federally Listed Endangered	State Endangered	G2	S1

Table 2: Vicinity Data Request Search Results (6 possible reports)

Report Name	Included	Number of Pages
1. Immediate Vicinity of the Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	Yes	1 page(s) included
2. Natural Heritage Priority Sites within the Immediate Vicinity	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat Within the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Species Based Patches	Yes	2 page(s) included
4. Vernal Pool Habitat In the Immediate Vicinity of Project Site Based on Search of Landscape Project 3.3	No	0 pages included
5. Rare Wildlife Species or Wildlife Habitat In the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Stream Habitat File	No	0 pages included
6. Other Animal Species In the Immediate Vicinity of the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	No	0 pages included

Immediate Vicinity of the Project Site
Based on Search of Natural Heritage Database
Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database

Scientific Name	Common Name	Federal Protection Status	State Protection Status	Regional Status	Grank	Srank	Identified	Last Observed	Location
Vascular Plants									
Amaranthus pumilus	Seabeach Amaranth	LT	E	LP, HL	G2	S1	Y	2016-08-24	Along the coast in various locations from east of Fort Hancock on Sandy Hook south to West End in Long Branch.
Honckenya peploides var. robusta	Seabeach Sandwort		E	LP, HL	G5T5	S1	Y	1902-08-02	Asbury Park.
Polygonum glaucum	Sea-beach Knotweed		E	LP, HL	G3	S1	Y	2016-08-24	South section of Monmouth Beach, from border of Monmouth Beach/Long Branch to 180 meters north of border, in Monmouth County.
Polygonum glaucum	Sea-beach Knotweed		E	LP, HL	G3	S1	Y	2016-08-24	Located in northern section of Long Branch City, from 80 meters south of border of Long Branch/Monmouth Beach south to southern end of Seven Presidents Beach (0.2 mile northeast of intersection of County Route 57/Ocean Boulevard and Seaview Avenue), in Monmouth County.
Polygonum glaucum	Sea-beach Knotweed		E	LP, HL	G3	S1	Y	2014-07-09	Long Branch. 4.2 kilometers of ocean beaches in Long Branch, from Cooper Avenue south to Sycamore Avenue.
Polygonum glaucum	Sea-beach Knotweed		E	LP, HL	G3	S1	Y	2011-08-12	Asbury Park.

Total number of records: 6

Rare Wildlife Species or Wildlife Habitat Within the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Species Based Patches

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
Aves								
	American Oystercatcher	Haematopus palliatus	Nesting Area	2	NA	Special Concern	G5	S3B,S3N
	Black-crowned Night-heron	Nycticorax nycticorax	Foraging	3	NA	State Threatened	G5	S2B,S3N
	Cliff Swallow	Petrochelidon pyrrhonota	Breeding Sighting-Confirmed	2	NA	Special Concern	G5	S3B,S4N
	Common Tern	Sterna hirundo	Foraging	2	NA	Special Concern	G5	S3B,S4N
	Great Blue Heron	Ardea herodias	Foraging	2	NA	Special Concern	G5	S3B,S4N
	Least Tern	Sternula antillarum	Foraging	4	NA	State Endangered	G4	S1B,S1N
	Least Tern	Sternula antillarum	Nesting Colony	4	NA	State Endangered	G4	S1B,S1N
	Osprey	Pandion haliaetus	Foraging	3	NA	State Threatened	G5	S2B,S4N
	Piping Plover	Charadrius melodus	Nesting Area	5	Federally Listed Threatened	State Endangered	G3	S1B,S1N
Mammalia								
	Fin Whale	Balaenoptera physalus	Live Individual Sighting	5	Federally Listed Endangered	State Endangered	G3G4	S1
	Humpback Whale	Megaptera novaeangliae	Live Individual Sighting	5	Federally Listed Endangered	State Endangered	G4	S1
	North Atlantic Right Whale	Eubalaena glacialis	Live Individual Sighting	5	Federally Listed Endangered	State Endangered	G1	S1

Rare Wildlife Species or Wildlife Habitat Within the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Species Based Patches

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
Reptilia								
	Atlantic Leatherback	Dermochelys coriacea	Occupied Habitat	5	Federally Listed Endangered	State Endangered	G2	S1

State of New Jersey
MAIL CODE 501-04
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE PARKS, FORESTS & HISTORIC SITES
OFFICE OF NATURAL LANDS MANAGEMENT
501 East State Street
P.O. Box 420, Mail Code 501-04
Trenton, NJ 08625-0420
Tel. (609) 984-1339 • Fax (609) 984-0427

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

SHAWN M. LATOURETTE
Commissioner

July 22, 2022

Jessica Druze
VHB
1805 Atlantic Avenue
Manasquan, NJ 08736

Re: Ocean Wind 2 / 1800 Ocean Avenue North
Block(s) - 4402 / 4501
Lot(s) - 1 / (part of) 1.01
Asbury Park City, Monmouth County

Dear Ms. Druze:

Thank you for your data request regarding rare species information for the above referenced project site.

Searches of the Natural Heritage Database and the Landscape Project (Version 3.3) are based on a representation of the boundaries of your project site in our Geographic Information System (GIS). We make every effort to accurately transfer your project bounds from the map(s) submitted with the Natural Heritage Data Request Form into our GIS. We do not typically verify that your project bounds are accurate, or check them against other sources.

We have checked the Landscape Project habitat mapping and the Biotics Database for occurrences of any rare wildlife species or wildlife habitat on the referenced site. The Natural Heritage Database was searched for occurrences of rare plant species or ecological communities that may be on the project site. Please refer to Table 1 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented on site. A detailed report is provided for each category coded as 'Yes' in Table 1.

We have also checked the Landscape Project habitat mapping and Biotics Database for occurrences of rare wildlife species or wildlife habitat in the immediate vicinity (within ¼ mile) of the referenced site. Additionally, the Natural Heritage Database was checked for occurrences of rare plant species or ecological communities within ¼ mile of the site. Please refer to Table 2 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented within the immediate vicinity of the site. Detailed reports are provided for all categories coded as 'Yes' in Table 2. These reports may include species that have also been documented on the project site.

The Natural Heritage Program reviews its data periodically to identify priority sites for natural diversity in the State. Included as priority sites are some of the State's best habitats for rare and endangered species and ecological communities. Please refer to Tables 1 and 2 (attached) to determine if any priority sites are located on or in the immediate vicinity of the site.

A list of rare plant species and ecological communities that have been documented from the county (or counties), referenced above, can be downloaded from https://nj.gov/dep/parksandforests/natural/heritage/database.html. If suitable habitat is present at the project site, the species in that list have potential to be present.

Status and rank codes used in the tables and lists are defined in EXPLANATION OF CODES USED IN NATURAL HERITAGE REPORTS, which can be downloaded from https://nj.gov/dep/parksandforests/natural/docs/nhpcodes_2010.pdf.

Beginning May 9, 2017, the Natural Heritage Program reports for wildlife species will utilize data from Landscape Project Version 3.3. If you have questions concerning the wildlife records or wildlife species mentioned in this response, we

recommend that you visit the interactive web application at the following URL, https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=0e6a44098c524ed99bf739953cb4d4c7, or contact the Division of Fish and Wildlife, Endangered and Nongame Species Program at (609) 292-9400.

For additional information regarding any Federally listed plant or animal species, please contact the U.S. Fish & Wildlife Service, New Jersey Field Office at http://www.fws.gov/northeast/njfieldoffice/endangered/consultation.html.

Information supplied by the Natural Heritage Program summarizes existing data known to the program at the time of the request regarding the biological elements (species and/or ecological communities) or their locations. They should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments.

Thank you for consulting the Natural Heritage Program. The attached invoice details the payment due for processing this data request. Feel free to contact us again regarding any future data requests.

Sincerely,

Robert J. Cartica
Administrator

c: NHP File No. 22-4007421-25400

Table 1: On Site Data Request Search Results (6 Possible Reports)

Report Name	Included	Number of Pages
1. Possibly on Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	Yes	1 page(s) included
2. Natural Heritage Priority Sites On Site	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Species Based Patches	Yes	1 page(s) included
4. Vernal Pool Habitat on the Project Site Based on Search of Landscape Project 3.3	No	0 pages included
5. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Stream Habitat File	No	0 pages included
6. Other Animal Species On the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	No	0 pages included

Possibly on Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database

Scientific Name	Common Name	Federal Protection Status	State Protection Status	Regional Status	Grank	Srank	Identified	Last Observed	Location
Vascular Plants									
Polygonum glaucum	Sea-beach Knotweed		E	LP, HL	G3	S1	Y	2011-08-12	Asbury Park.

Total number of records: 1

Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Species Based Patches

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
Aves								
	Common Tern	Sterna hirundo	Foraging	2	NA	Special Concern	G5	S3B,S4N
	Least Tern	Sternula antillarum	Foraging	4	NA	State Endangered	G4	S1B,S1N
Mammalia								
	Fin Whale	Balaenoptera physalus	Live Individual Sighting	5	Federally Listed Endangered	State Endangered	G3G4	S1
	Humpback Whale	Megaptera novaeangliae	Live Individual Sighting	5	Federally Listed Endangered	State Endangered	G4	S1
	North Atlantic Right Whale	Eubalaena glacialis	Live Individual Sighting	5	Federally Listed Endangered	State Endangered	G1	S1
Reptilia								
	Atlantic Leatherback	Dermochelys coriacea	Occupied Habitat	5	Federally Listed Endangered	State Endangered	G2	S1

Table 2: Vicinity Data Request Search Results (6 possible reports)

Report Name	Included	Number of Pages
1. Immediate Vicinity of the Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	Yes	1 page(s) included
2. Natural Heritage Priority Sites within the Immediate Vicinity	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat Within the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Species Based Patches	Yes	1 page(s) included
4. Vernal Pool Habitat In the Immediate Vicinity of Project Site Based on Search of Landscape Project 3.3	No	0 pages included
5. Rare Wildlife Species or Wildlife Habitat In the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Stream Habitat File	No	0 pages included
6. Other Animal Species In the Immediate Vicinity of the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	No	0 pages included

Immediate Vicinity of the Project Site
Based on Search of Natural Heritage Database
Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database

Scientific Name	Common Name	Federal Protection Status	State Protection Status	Regional Status	Grank	Srank	Identified	Last Observed	Location
Vascular Plants									
Honckenya peploides var. robusta	Seabeach Sandwort		E	LP, HL	G5T5	S1	Y	1902-08-02	Asbury Park.

Total number of records: 1

Rare Wildlife Species or Wildlife Habitat Within the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Species Based Patches

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
Aves								
	Black-crowned Night-heron	Nycticorax nycticorax	Foraging	3	NA	State Threatened	G5	S2B,S3N
	Common Tern	Sterna hirundo	Foraging	2	NA	Special Concern	G5	S3B,S4N
	Great Blue Heron	Ardea herodias	Foraging	2	NA	Special Concern	G5	S3B,S4N
	Least Tern	Sternula antillarum	Foraging	4	NA	State Endangered	G4	S1B,S1N
Mammalia								
	Fin Whale	Balaenoptera physalus	Live Individual Sighting	5	Federally Listed Endangered	State Endangered	G3G4	S1
	Humpback Whale	Megaptera novaeangliae	Live Individual Sighting	5	Federally Listed Endangered	State Endangered	G4	S1
	North Atlantic Right Whale	Eubalaena glacialis	Live Individual Sighting	5	Federally Listed Endangered	State Endangered	G1	S1
Reptilia								
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State of New Jersey
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DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE PARKS, FORESTS & HISTORIC SITES
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501 East State Street
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PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

SHAWN M. LATOURETTE
Commissioner

July 22, 2022

Jessica Druze
VHB
1805 Atlantic Avenue
Manasquan, NJ 08736

Re: Ocean Wind 2 / 10 Ocean Avenue North
Block(s) - 304.06 / (299 / 298 as depicted on Municipal Tax Maps)
Lot(s) - 1.01, 1.02, 1.03, 1.04 / (1 / 6, 7, 8, 9 as depicted on Municipal Tax Maps)
Long Branch City, Monmouth County

Dear Ms. Druze:

Thank you for your data request regarding rare species information for the above referenced project site.

Searches of the Natural Heritage Database and the Landscape Project (Version 3.3) are based on a representation of the boundaries of your project site in our Geographic Information System (GIS). We make every effort to accurately transfer your project bounds from the map(s) submitted with the Natural Heritage Data Request Form into our GIS. We do not typically verify that your project bounds are accurate, or check them against other sources.

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Beginning May 9, 2017, the Natural Heritage Program reports for wildlife species will utilize data from Landscape Project Version 3.3. If you have questions concerning the wildlife records or wildlife species mentioned in this response, we

recommend that you visit the interactive web application at the following URL, https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=0e6a44098c524ed99bf739953cb4d4c7, or contact the Division of Fish and Wildlife, Endangered and Nongame Species Program at (609) 292-9400.

For additional information regarding any Federally listed plant or animal species, please contact the U.S. Fish & Wildlife Service, New Jersey Field Office at http://www.fws.gov/northeast/njfieldoffice/endangered/consultation.html.

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Thank you for consulting the Natural Heritage Program. The attached invoice details the payment due for processing this data request. Feel free to contact us again regarding any future data requests.

Sincerely,

Robert J. Cartica
oAdministrator

c: NHP File No. 22-4007338-25402

Table 1: On Site Data Request Search Results (6 Possible Reports)

Report Name	Included	Number of Pages
1. Possibly on Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	Yes	1 page(s) included
2. Natural Heritage Priority Sites On Site	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Species Based Patches	Yes	1 page(s) included
4. Vernal Pool Habitat on the Project Site Based on Search of Landscape Project 3.3	No	0 pages included
5. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Stream Habitat File	No	0 pages included
6. Other Animal Species On the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	No	0 pages included

Possibly on Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database

Scientific Name	Common Name	Federal Protection Status	State Protection Status	Regional Status	Grank	Srank	Identified	Last Observed	Location
Vascular Plants									
Amaranthus pumilus	Seabeach Amaranth	LT	E	LP, HL	G2	S1	Y	2016-08-24	Along the coast in various locations from east of Fort Hancock on Sandy Hook south to West End in Long Branch.
Polygonum glaucum	Sea-beach Knotweed		E	LP, HL	G3	S1	Y	2014-07-09	Long Branch. 4.2 kilometers of ocean beaches in Long Branch, from Cooper Avenue south to Sycamore Avenue.

Total number of records: 2

Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Species Based Patches

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
Aves								
	Common Tern	Sterna hirundo	Foraging	2	NA	Special Concern	G5	S3B,S4N
	Least Tern	Sternula antillarum	Foraging	4	NA	State Endangered	G4	S1B,S1N
Mammalia								
	Fin Whale	Balaenoptera physalus	Live Individual Sighting	5	Federally Listed Endangered	State Endangered	G3G4	S1
	Humpback Whale	Megaptera novaeangliae	Live Individual Sighting	5	Federally Listed Endangered	State Endangered	G4	S1
	North Atlantic Right Whale	Eubalaena glacialis	Live Individual Sighting	5	Federally Listed Endangered	State Endangered	G1	S1
Reptilia								
	Atlantic Leatherback	Dermochelys coriacea	Occupied Habitat	5	Federally Listed Endangered	State Endangered	G2	S1

Table 2: Vicinity Data Request Search Results (6 possible reports)

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2. Natural Heritage Priority Sites within the Immediate Vicinity	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat Within the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Species Based Patches	Yes	1 page(s) included
4. Vernal Pool Habitat In the Immediate Vicinity of Project Site Based on Search of Landscape Project 3.3	No	0 pages included
5. Rare Wildlife Species or Wildlife Habitat In the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Stream Habitat File	No	0 pages included
6. Other Animal Species In the Immediate Vicinity of the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	No	0 pages included

Immediate Vicinity of the Project Site
Based on Search of Natural Heritage Database
Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database

Scientific Name	Common Name	Federal Protection Status	State Protection Status	Regional Status	Grank	Srank	Identified	Last Observed	Location
Vascular Plants									
Polygonum glaucum	Sea-beach Knotweed		E	LP, HL	G3	S1	Y	2014-07-09	Long Branch. 4.2 kilometers of ocean beaches in Long Branch, from Cooper Avenue south to Sycamore Avenue.

Total number of records: 1

Rare Wildlife Species or Wildlife Habitat Within the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Species Based Patches

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
Aves								
	American Oystercatcher	Haematopus palliatus	Nesting Area	2	NA	Special Concern	G5	S3B,S3N
	Black-crowned Night-heron	Nycticorax nycticorax	Foraging	3	NA	State Threatened	G5	S2B,S3N
	Common Tern	Sterna hirundo	Foraging	2	NA	Special Concern	G5	S3B,S4N
	Least Tern	Sternula antillarum	Foraging	4	NA	State Endangered	G4	S1B,S1N
	Least Tern	Sternula antillarum	Nesting Colony	4	NA	State Endangered	G4	S1B,S1N
	Osprey	Pandion haliaetus	Foraging	3	NA	State Threatened	G5	S2B,S4N
	Piping Plover	Charadrius melodus	Nesting Area	5	Federally Listed Threatened	State Endangered	G3	S1B,S1N
Mammalia								
	Fin Whale	Balaenoptera physalus	Live Individual Sighting	5	Federally Listed Endangered	State Endangered	G3G4	S1
	Humpback Whale	Megaptera novaeangliae	Live Individual Sighting	5	Federally Listed Endangered	State Endangered	G4	S1
	North Atlantic Right Whale	Eubalaena glacialis	Live Individual Sighting	5	Federally Listed Endangered	State Endangered	G1	S1
Reptilia								
	Atlantic Leatherback	Dermochelys coriacea	Occupied Habitat	5	Federally Listed Endangered	State Endangered	G2	S1

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Monmouth County, New Jersey

Local office

New Jersey Ecological Services Field Office

(609) 646-9310

4 E. Jimmie Leeds Road, Suite 4
Galloway, NJ 08205

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. 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.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat Myotis septentrionalis Wherever found This species only needs to be considered if the following condition applies: • The specified area occurs within the range of the northern long-eared bat. No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened
Tricolored Bat Perimyotis subflavus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Birds

NAME	STATUS
Piping Plover Charadrius melodus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot Calidris canutus rufa Wherever found There is **proposed** critical habitat for this species. https://ecos.fws.gov/ecp/species/1864	Threatened

Flowering Plants

NAME	STATUS
Seabeach Amaranth Amaranthus pumilus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8549	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Oystercatcher Haematopus palliatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8935	Breeds Apr 15 to Aug 31
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Oct 15 to Aug 31
Black Guillemot Cepphus grylle This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds May 15 to Sep 10
Black Scoter Melanitta nigra This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds elsewhere
Black Skimmer Rynchops niger This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5234	Breeds May 20 to Sep 15
Black-billed Cuckoo Coccyzus erythropthalmus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10

Black-legged Kittiwake Rissa tridactyla — Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Blue-winged Warbler Vermivora pinus — Breeds May 1 to Jun 30

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Bobolink Dolichonyx oryzivorus — Breeds May 20 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Brown Pelican Pelecanus occidentalis — Breeds Jan 15 to Sep 30

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Canada Warbler Cardellina canadensis — Breeds May 20 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Chimney Swift Chaetura pelagica — Breeds Mar 15 to Aug 25

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Eider Somateria mollissima — Breeds Jun 1 to Sep 30

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Common Loon gavia immer — Breeds Apr 15 to Oct 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/4464

Cory's Shearwater Calonectris diomedea — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Dovekie Alle alle — Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/6041

Eastern Whip-poor-will Antrostomus vociferus — Breeds May 1 to Aug 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Great Shearwater Puffinus gravis — Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Gull-billed Tern Gelochelidon nilotica — Breeds May 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9501

Lesser Yellowlegs Tringa flavipes — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9679

Long-tailed Duck Clangula hyemalis — Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/7238

Prairie Warbler Dendroica discolor — Breeds May 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Prothonotary Warbler Protonotaria citrea — Breeds Apr 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Purple Sandpiper Calidris maritima — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Razorbill Alca torda — Breeds Jun 15 to Sep 10

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Red-breasted Merganser Mergus serrator — Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Red-headed Woodpecker Melanerpes erythrocephalus — Breeds May 10 to Sep 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Red-necked Phalarope Phalaropus lobatus — Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Red-throated Loon Gavia stellata — Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Ring-billed Gull Larus delawarensis — Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Royal Tern Thalasseus maximus — Breeds Apr 15 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Ruddy Turnstone Arenaria interpres morinella — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Rusty Blackbird Euphagus carolinus — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Short-billed Dowitcher Limnodromus griseus — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

Surf Scoter Melanitta perspicillata — Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Thick-billed Murre Uria lomvia — Breeds Apr 15 to Aug 15

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

White-winged Scoter Melanitta fusca — Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Willet Tringa semipalmata — Breeds Apr 20 to Aug 5

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wilson's Storm-petrel Oceanites oceanicus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds elsewhere
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

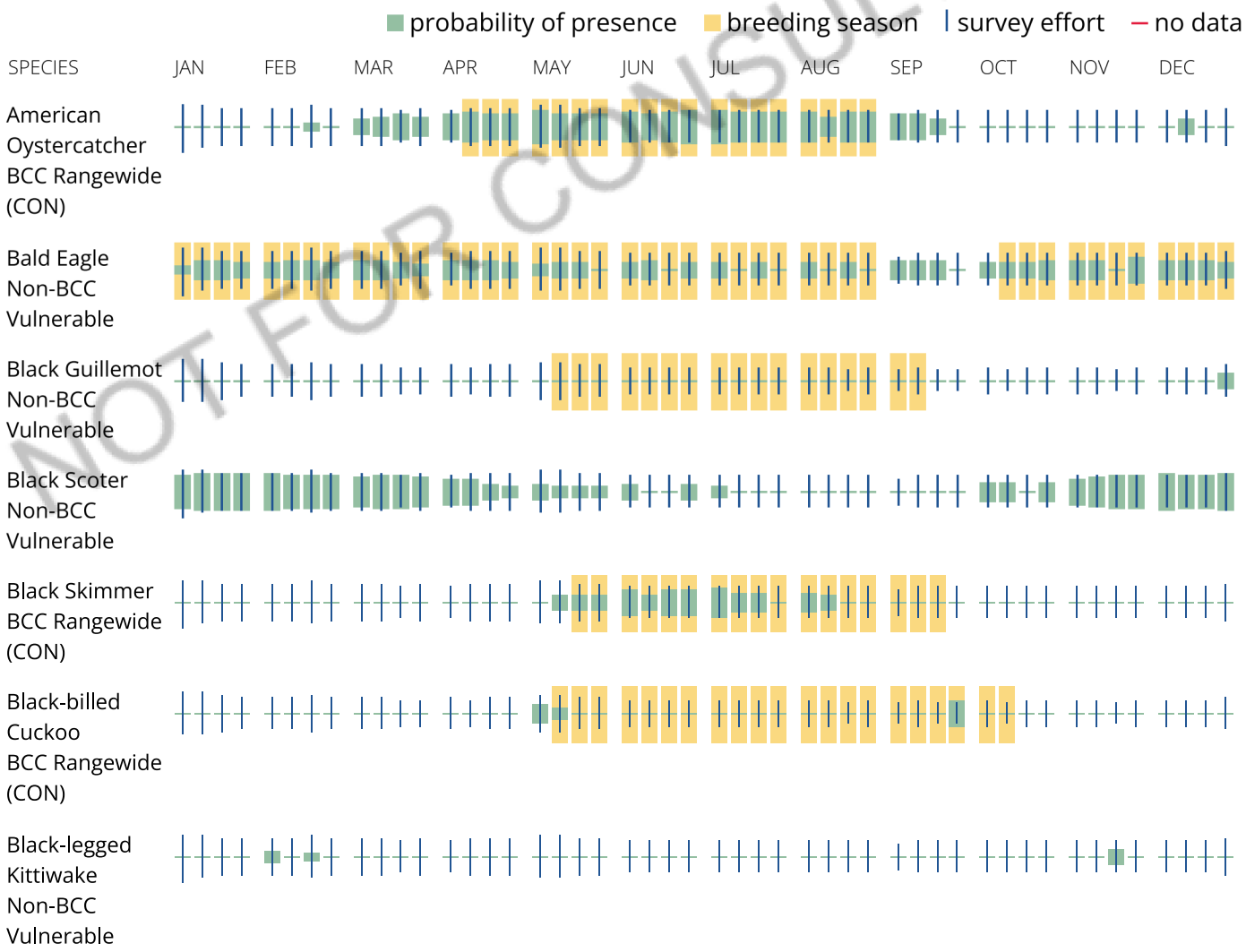
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

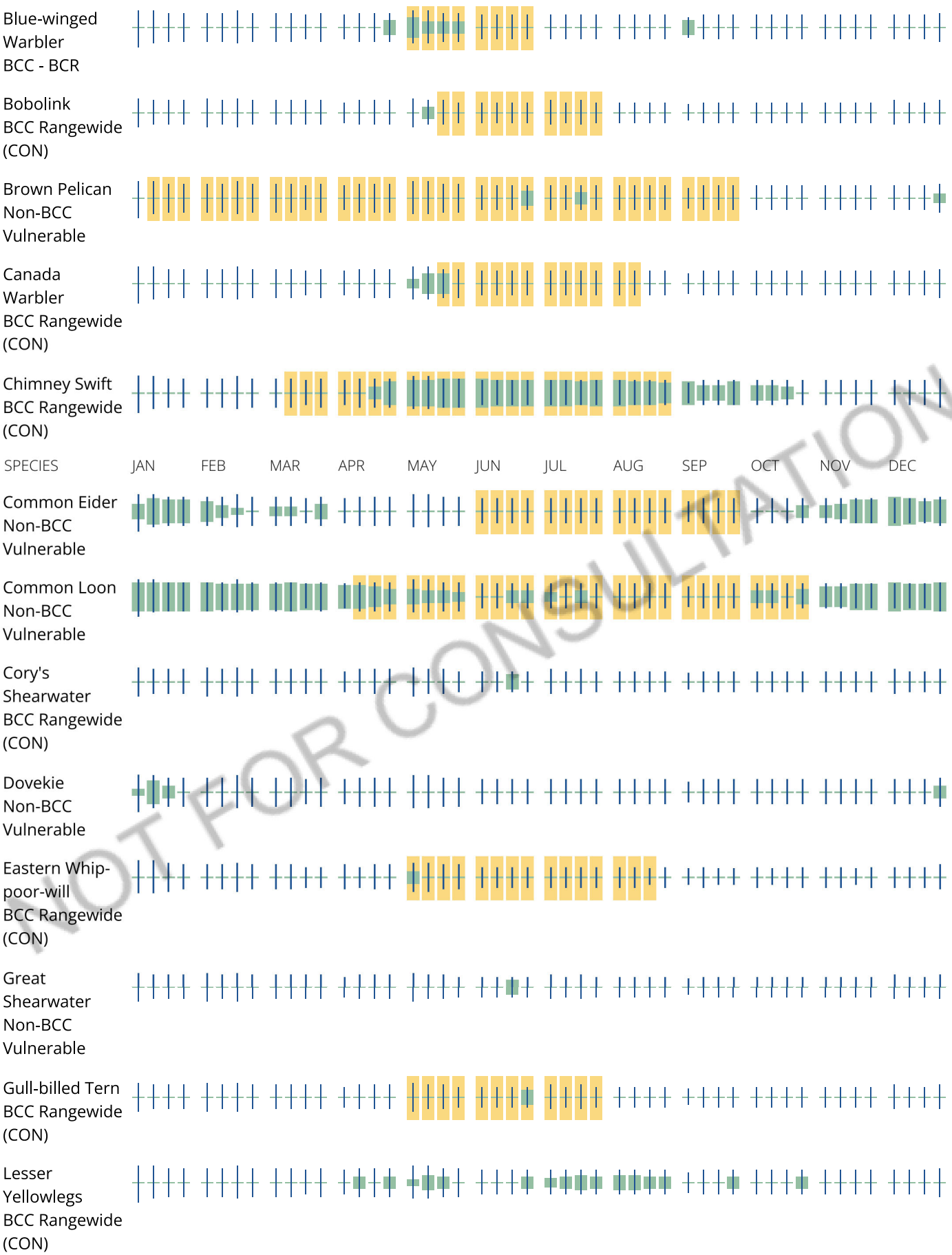
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

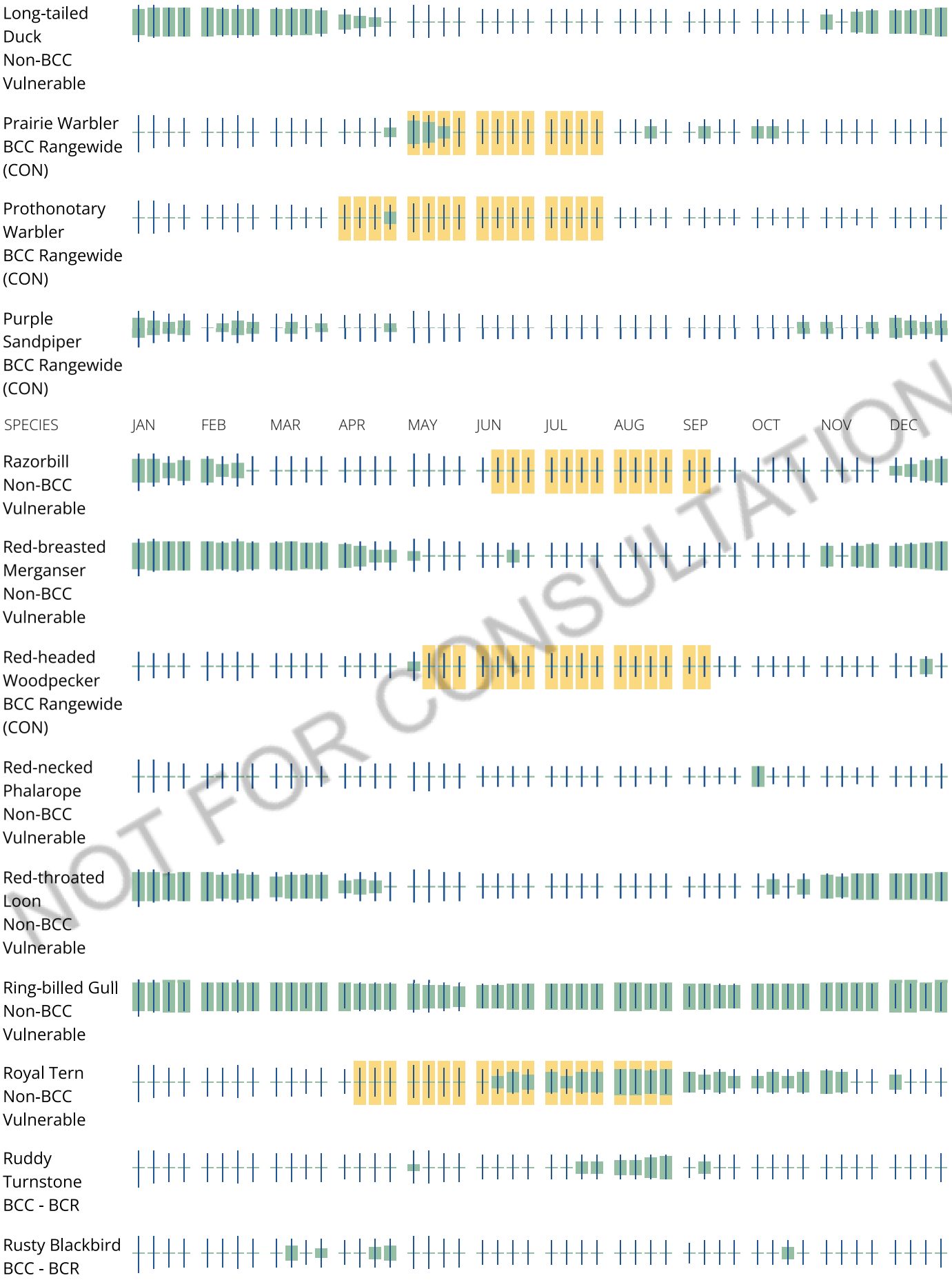
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

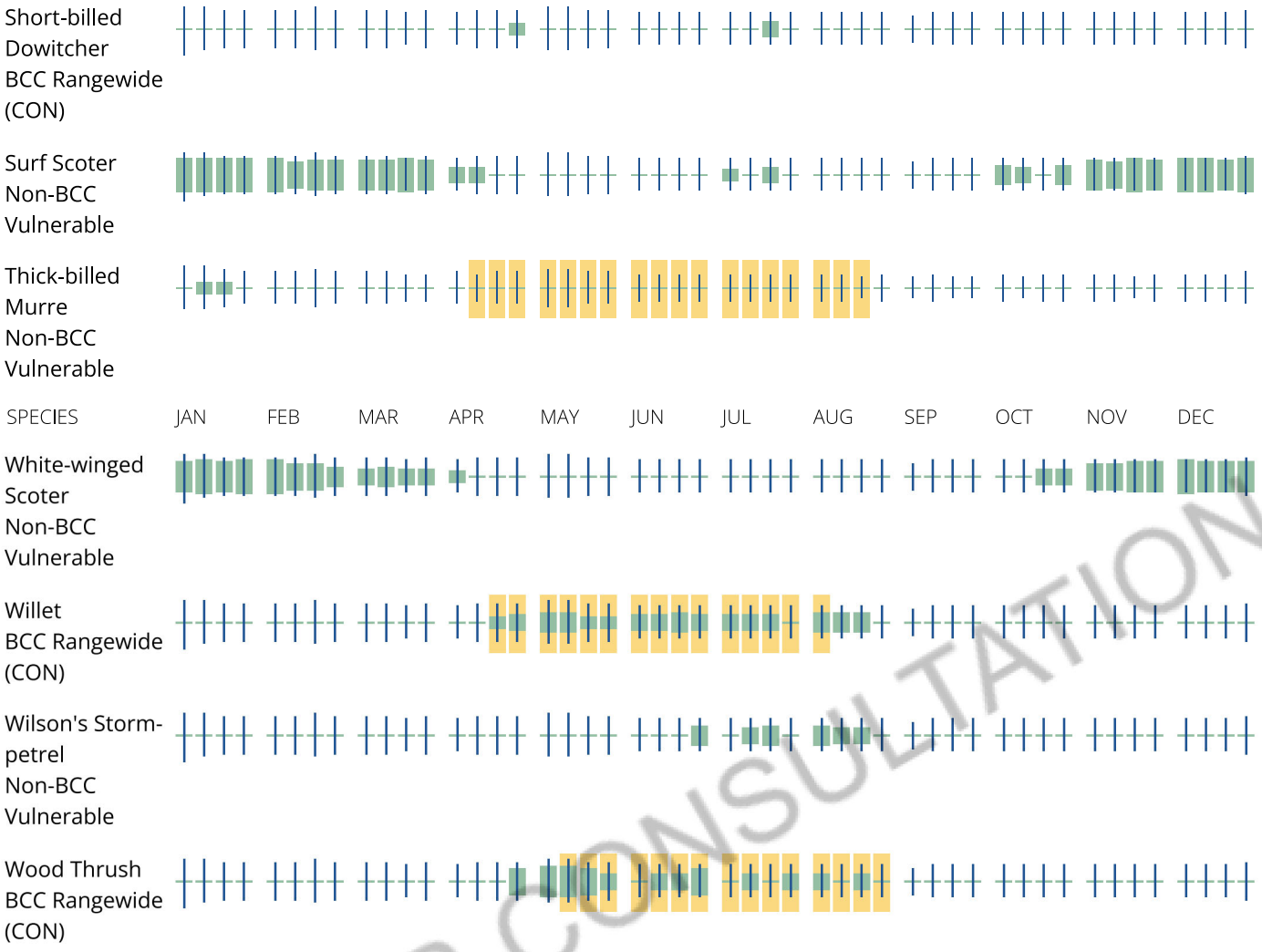
No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.









Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid

cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Coastal Barrier Resources System

Projects within the John H. Chafee Coastal Barrier Resources System (CBRS) may be subject to the restrictions on Federal expenditures and financial assistance and the consultation requirements of the Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 et seq.). For more information, please contact the local Ecological Services Field Office or visit the CBRA Consultations website. The CBRA website provides tools such as a flow chart to help determine whether consultation is required and a template to facilitate the consultation process.

There are no known coastal barriers at this location.

Data limitations

The CBRS boundaries used in IPaC are representations of the controlling boundaries, which are depicted on the official CBRS maps. The boundaries depicted in this layer are not to be considered authoritative for in/out determinations close to a CBRS boundary (i.e., within the "CBRS Buffer Zone" that appears as a hatched area on either side of the boundary). For projects that are very close to a CBRS boundary but do not clearly intersect a unit, you may contact the Service for an official determination by following the instructions here: https://www.fws.gov/service/coastal-barrier-resources-system-property-documentation

Data exclusions

CBRS units extend seaward out to either the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS data, therefore projects in the offshore areas of units (e.g., dredging, breakwaters, offshore wind energy or oil and gas projects) may be subject to CBRA even if they do not intersect the CBRS data. For additional information, please contact CBRA@fws.gov.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

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

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

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

Data exclusions

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

Data precautions

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