

Appendix B: Mid-Atlantic Bight Pioneer Array Regulatory Study

Mid-Atlantic Bight Pioneer Array Regulatory Study

Woods Hole Oceanographic Institution
Ocean Observatories Initiative
Coastal and Global Scale Nodes

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Prepared for



266 Woods Hole Road
Woods Hole, MA 02543-1050

Prepared by



117 Hearthstone Drive
Aiken, SC 29803

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Acronyms and Abbreviations

AUV	Autonomous Underwater Vehicle
AWOIS	Automated Wreck and Obstruction Information System
BOEM	Bureau of Ocean Energy Management
CFR	Code of Federal Regulations
CGSN	Coastal and Global Scale Nodes
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DOI	U.S. Department of the Interior
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
ESA	Endangered Species Act
FR	<i>Federal Register</i>
HAPC	Habitat Areas of Particular Concern
IHA	Incidental Harassment Authorization
LNМ	Local Notice to Mariners
LOA	Letter of Authorization
LOP	Letter of Permission
MAB	Mid-Atlantic Bight
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MMPA	Marine Mammal Protection Act of 1972
NAVSEA	Naval Sea Systems Command
NCDEQ	North Carolina Department of Environmental Quality
NCDCM	North Carolina Division of Coastal Management
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
nm	nautical mile
NMSA	National Marine Sanctuaries Act
NOAA	National Oceanic and Atmospheric Administration
NOAA Fisheries	NOAA National Marine Fisheries Service
NSF	National Science Foundation
NWP	Nationwide Permit

OCS	Outer Continental Shelf
OOI	Ocean Observatories Initiative
PATON	Private Aids to Navigation
SHPO	State Historic Preservation Office
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
WHOI	Woods Hole Oceanographic Institution

1.0 INTRODUCTION

Woods Hole Oceanographic Institution (WHOI) was selected by the National Science Foundation (NSF) to support the development, installation, and initial operation of the coastal and global components of the NSF's Ocean Observatories Initiative (OOI). The OOI consists of a globally distributed and integrated network of marine observation systems that provides the United States ocean sciences research community with an advanced research infrastructure to support sustained, long-term, and adaptive measurements of the oceans across global, regional, and coastal scales.

WHOI is currently responsible for the implementation and operation of one coastal scale arrays and two global scale arrays collectively referred to as the Coastal and Global Scale Nodes (CGSN) portion of the OOI program. The CGSN includes a Coastal Array called the Pioneer Array currently located in the federal waters of the Middle Atlantic Bight off the coast of New England. In 2021, the NSF announced the relocation of the Pioneer Array from the New England Shelf to the Outer Continental Shelf (OCS) off the coast of North Carolina in the southern Mid-Atlantic Bight (MAB).

The following report evaluates the federal and state permits, licenses and approvals that will be required to successfully install and operate each component of the MAB Pioneer Array (henceforth the Pioneer Array) for the intended 5-year life of the project. This report specifically provides the following:

- A detailed assessment of the necessary permits, licenses, notices, consultations, and approvals required at the federal and state levels, as appropriate;
- A description of the specific project and/or environmental information required to support the permit or other regulatory compliance application process;
- An estimate of the time period for agency application review, final determination, and approval or renewal (as necessary);
- An estimate of the fees associated with the applications, registrations, reapplication/renewal (as necessary) and review of the permits or other regulatory requirements; and
- The point(s)-of-contact for each entity responsible for oversight and/or review of the necessary permit(s), license(s), and approval(s) application process(es).

The report provides a detailed permitting matrix highlighting the key aspects of the permitting process, integrated permitting schedules, and a complete record of all agency consultations regarding the requirements for the project.

2.0 PERMIT AND REGULATORY REQUIREMENTS – PIONEER ARRAY

The Pioneer Array is proposed to be relocated to the waters of the Atlantic Ocean off the coast of Nags Head, North Carolina. The planned array will be located approximately 13 nautical miles (nm) offshore on the OCS, to 45 nm at the shelf break and slope (Figure 1). The geographic footprint is the region of the Mid-Atlantic Bight between Cape Hatteras and Norfolk Canyon. The Pioneer Array will consist of the following:

- Three surface moorings with local power generation (wind turbines and solar panels), satellite communications capabilities, and benthic nodes;
- Five profiler moorings that would be internally powered (with primary and/or rechargeable batteries), three of the five would be located at the same site (within a few hundred meters) as a surface mooring;
- Two shallow-water moorings of a design similar to the surface moorings;
- Two autonomous underwater vehicles (AUVs) operated in campaign mode from ships; and
- Four to six buoyancy-driven ocean gliders.

The following sections evaluate the various federal and state permits that will be required to support the successful installation and operation of the Pioneer Array and its components. Records of agency consultations regarding Project permitting, licensing, and approval requirements as described in the following sections have been included in Appendix A to this report. A permits and approval matrix summarizing the requirements to support the installation and operation of the Pioneer Array has been included as Appendix B, and a permitting and approvals schedule has been included in Section 2.5.

2.1 Federal Permits, Licenses, and Approvals

2.1.1 U.S. Army Corps of Engineers

The U. S. Army Corps of Engineers (USACE) is responsible for issuing permits for the development of projects undertaken by other agencies or private entities that may affect the navigable waters of the United States. Navigable waters are defined as “those waters subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce” (33 Code of Federal Regulations [CFR] 329.4). As the Pioneer Array is proposed to be located in navigable waters, installation and operation of the Pioneer Array will require USACE authorization under Section 10 of the Rivers and Harbors Act of 1899 (33 United States Code [U.S.C.] 401 *et seq.*) and Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1251 *et seq.*).

Section 10 of the Rivers and Harbors Act (33 U.S.C. 401 *et seq.*) regulates structures or work in or affecting navigable waters of the U.S. Structures include any pier, wharf, bulkhead, or other structure on the seabed. Work includes dredging, filling, excavation, or other modifications to waters of the U.S.

Section 404 of the CWA (33 U.S.C. 1251 *et seq.*) provides federal authority to issue permits for the discharge of dredged or fill material into waters of the United States at specified disposal sites (USACE n.d.a).

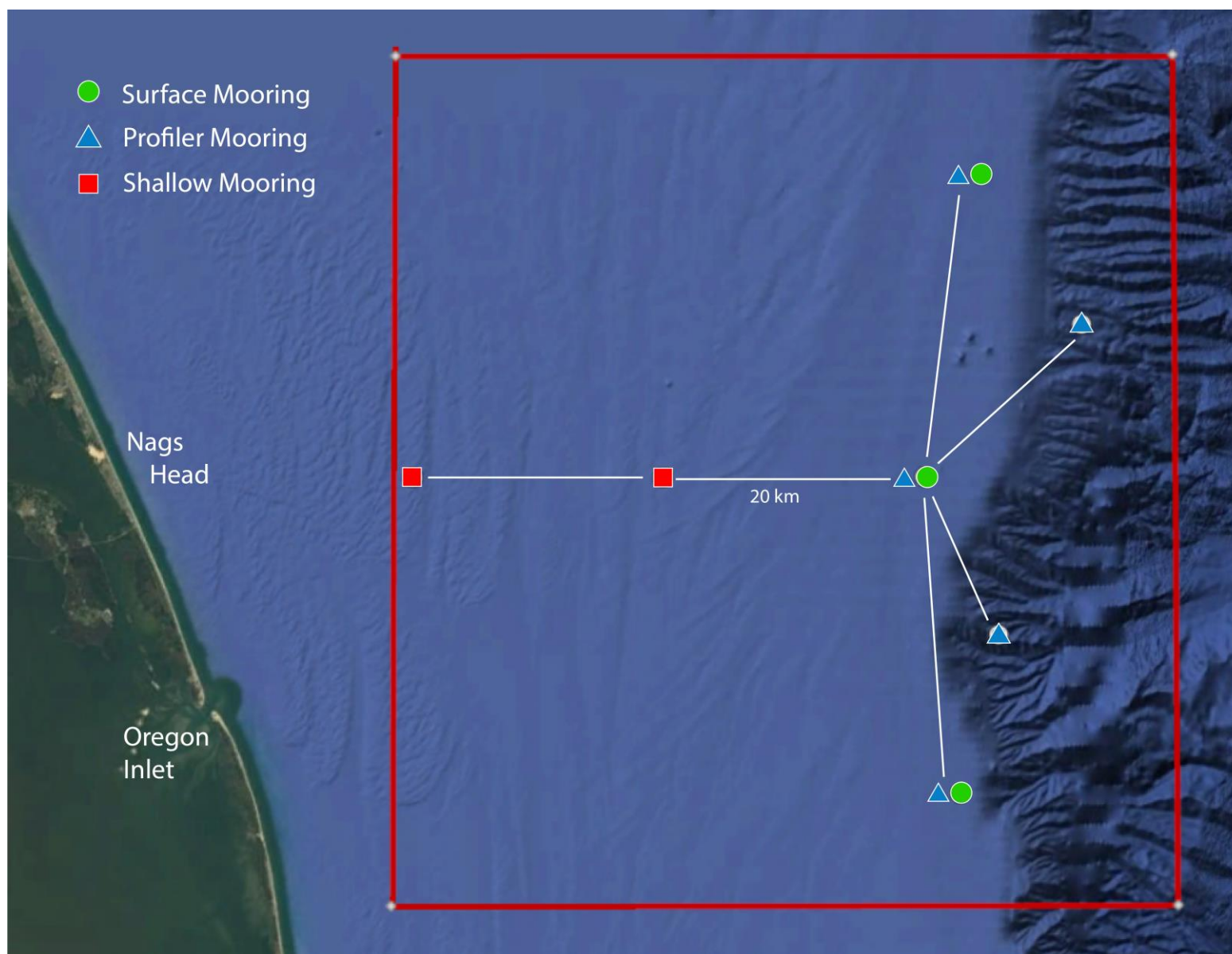


Figure 1. Pioneer Moored Array Location Overview – Preliminary Plan

Consultation with the USACE has determined that the anchoring of the Pioneer Array will qualify for Nationwide Permit (NWP) #5 Scientific Measuring Devices¹. Based on a discussion with the USACE on March 17, 2022, submittal of a Pre-Construction Notification for the project will not be required for authorized use of NWP #5. NWPs are issued by the USACE to authorize activities under Section 10 and Section 404 that have been pre-determined to have minimal impacts to the environment. NWPs are issued for a period lasting no more than 5 years, at which point the USACE must modify, reissue, revoke, or suspend the permits based on the current guidelines and regulations for protection of aquatic resources, protected species, and cultural and historic resources as set forth by the Environmental Protection Agency (EPA) under Section 404 of the CWA and Section 10 Rivers and Harbors Act, the U.S. Fish and Wildlife Service (USFWS) Endangered Species Act, the National Historic Preservation Act of 1966, and other federal or state regulations to ensure those activities result in no more than minimal individual and cumulative adverse effects to the environment (86 *Federal Register* [FR] 73522). The latest NWP #5 was re-issued on February 25, 2022 and shall expire on March 14, 2026.

Deployment of the Pioneer Array is proposed for year 2024 and is expected to be in operations for five years. Maintenance of the moorings is anticipated to occur semi-annually over the five years to ensure the equipment is in good condition and properly functioning. The initial installment falls under the NWP conditions and is good for the life of the project. It is not required to renew for operations unless the scope changes with new installations. Due to maintenance needs, the placement of the mooring anchors may be readjusted, replaced and/or redeployed which may cause slight adjustments to the placement of the anchors on the sea floor. The USACE is expected to view these slight adjustments as re-occurring minor impacts. As such, compliance with all general and regional conditions of NWP #5 will need to be met during the life of the project. Based on the proposed timeline for the project it is highly likely that the latest NWP #5 will expire in 2026 while project operations are ongoing. However, should the USACE reissue NWP #5 and the project meets all general and regional conditions of the reissued permit, then no further action is required to maintain USACE approval.

In the unlikely event that NWP#5 has not been reissued, or the project does not meet all general and regional conditions of the permit, and no other NWP alternative exists, then the project may require approval of an USACE standard individual permit. To apply for a standard individual permit, a USACE ENG Form 4345 and the appropriate supplemental materials including a project description and engineering drawings must be submitted to the Wilmington District. Prior to developing the application, a pre-application meeting with the USACE is recommended to re-introduce the project and to discuss required information that should be included with the application. The pre-application meeting will help avoid the submittal of an incomplete application and subsequent permit processing delays (USACE n.d.b).

Upon receipt of a complete application, the USACE will begin the official review process. The USACE has 10 days to review and deem the application complete (or request additional information). Once deemed complete and if the USACE determines that the work is minor or routine with minimum impacts and objections are unlikely, the agency will issue a Letter of Permission (LOP) authorizing the project to proceed, usually within 30 days. During the pre-application meeting, eligibility for the more

¹ <https://saw-reg.usace.army.mil/NWP2021/NWP-5.pdf>

expedited LOP should be discussed with the USACE. A LOP is valid for a period of 3 years for construction activities. For operational activities the LOP is generally issued for the operational life of the project; however, it may contain certain restrictions and/or requirements based on the nature of the proposed activities. These specific restrictions and/or requirements will be determined during consultation and the permit application process.

If the USACE determines that the proposed project may have potential adverse effects, public input may be necessary. Should public involvement be required, the USACE will issue a public notice 15 days after receiving the complete application. The public notice begins the comment period, typically lasting 30 days, during which comments on the project are received from local, state, and federal agencies, as well as the general public, and interested groups and individuals. Upon completion of the comment period, the USACE will conduct a Public Interest Review to evaluate whether the issuance of the permit is in the public's interest. The USACE may ask the applicant to provide additional information during this time and may hold a public hearing, if necessary. Under this review scenario, the USACE would issue its decision as an individual standard permit (ENG Form 1721). For construction activities, an individual standard permit is valid for a period of 3 years, but can be issued for a period up to 10 years for maintenance dredging projects. For operational activities, an individual standard permit is generally issued and valid for the operational life of the project.

Fees are required for most USACE standard permits. The current fee is \$10.00 for a noncommercial activity and \$100.00 for a commercial or industrial activity. The final decision regarding the required fee (non-commercial versus commercial) is solely the responsibility of the USACE District Engineer. When the USACE issues a standard permit, they will provide notice concerning submission of the required fee. Fees are not charged for transferring a permit from one property owner to another, for nationwide or regional general permits, for LOPs, or for permits issued to governmental agencies.

The following individual has been designated as the USACE point-of-contact:

Billy Standridge

USACE Wilmington District

Phone: 910-251-4595

Email: Billy.w.standridge@usace.army.mil

2.1.2 National Environmental Policy Act Review

The National Environmental Policy Act (NEPA; 42 U.S.C. 4321 et seq.) requires federal agencies to take into consideration the potential environmental consequences of proposed actions in their decision-making process. The intent of NEPA is to consider impacts on the environment through informed federal decision making. As part of the reissuance of the NWP, the USACE prepared a decision document which contains an Environmental Assessment, in compliance with the requirements of NEPA (86 FR 73522). Therefore, no further NEPA documentation is required for the Pioneer Array. In the event the project warrants an USACE individual permit, NEPA's procedural requirements will be met through the individual permitting process.

2.1.3 National Oceanic and Atmospheric Administration

The requirement to initiate consultations with the National Oceanic and Atmospheric Administration (NOAA) is triggered by a federal action (i.e., the issuance of the USACE authorization). As the Pioneer Array qualifies for the NWP #5, the requirements for these consultations were satisfied as a part of the USACE reissuance of these authorizations; therefore, no further action is required for the Pioneer Array. In the event the project warrants an USACE individual permit, the USACE will initiate consultation with NOAA and/or the USFWS to concur on any proposed impacts to living marine resources and to determine if any permits are required. Details regarding these consultations and the potential resulting permits are described in sections 2.1.3.1 and 2.1.3.2 below for reference.

2.1.3.1 NOAA National Marine Fisheries Service

The NOAA National Marine Fisheries Service (NOAA Fisheries), a division of the Department of Commerce, is the federal agency responsible for the management, conservation, and protection of living marine resources within the Exclusive Economic Zone (EEZ). This EEZ jurisdiction includes the area extending from the territorial sea baseline (the mean lower low water drawn across river mouths, bay openings and along the outer points of complex coastlines) out to 200 nm.

Endangered Species Act Section 7 Consultation

The Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 *et seq.*) and subsequent amendments provide for the conservation of threatened and endangered species of animals (including some marine mammals) and plants, and the habitats in which they are found. The ESA prohibits jeopardizing threatened and endangered species or adversely modifying critical habitats essential to their survival. Section 7 of the ESA (with implementing regulations at 50 CFR 402) requires each federal agency to consult with NOAA Fisheries and the USFWS regarding any action they authorize, fund, or carry out to determine whether any threatened or endangered species under their jurisdiction may be affected by a proposed action (USFWS n.d.). Generally, the USFWS manages land and freshwater species, while NOAA Fisheries manages marine species, including anadromous salmon. However, the USFWS has responsibility for some marine animals such as nesting sea turtles, walrus, polar bears, sea otters, and manatees (see Section 2.1.4).

Marine Mammal Protection Act Incidental Harassment Authorization or Letter of Authorization

The Marine Mammal Protection Act of 1972 (MMPA) (16 U.S.C. 1361 *et seq.*) protects marine mammals by strictly limiting their “taking” in waters or on lands under U.S. jurisdiction, and on the high seas by vessels or persons under U.S. jurisdiction. The term “take,” as defined in Section 3 (16 U.S.C. 1362) of the MMPA and its implementing regulations, means “to harass, hunt, capture, or kill, or attempt to harass, capture, or kill any marine mammal.” The term “harassment” was further defined in the 1994 amendments to the MMPA as any act of pursuit, torment, or annoyance, at two distinct levels:

- Level A Harassment – potential to injure a marine mammal or marine stock in the wild.
- Level B Harassment – potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of natural behavior patterns including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.

Should a project result in the “incidental take” of a marine mammal, a take authorization would be required, and a written request must be submitted to the NOAA Fisheries Office of Protected Resources. The application for the appropriate authorization must include a detailed description of the project, a list of potentially affected species, potential mitigation measures, and suggested means for monitoring and reporting impacts. This authorization, issued in the form of an Incidental Harassment Authorization (IHA) or Letter of Authorization (LOA), normally involve one public comment period and, depending on the issues and species involved, can take anywhere from 6 months to one year for issuance. Consultation with NOAA has determined that the anchoring of the Pioneer Array will not require an IHA or LOA; no further action is required at this time.

Consultation under the Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801-1882) established U.S. jurisdiction from the seaward boundary of the coastal states out to 200 nm for the purpose of managing fisheries resources. The MSA is the principal federal statute that provides for the management of marine fisheries in the U.S. The purposes of the MSA include (1) conservation and management of the fishery resources of the U.S.; (2) support and encouragement of the international fishery agreements; (3) promotion of domestic commercial and recreational fishing; (4) preparation and implementation of Fishery Management Plans; (5) establishment of Regional Fishery Management Councils; (6) development of fisheries which are underutilized or not utilized; and (7) protection of Essential Fish Habitat (EFH).

EFH is defined as those waters and substrate necessary to fish or invertebrates for spawning, breeding, feeding, or growth to maturity. Areas designated as EFH contain habitat essential to the long-term survival and health of U.S. fisheries. Under provisions of the MSA, eight Regional Management Fishery Councils were established for the New England, Mid-Atlantic, South Atlantic, Caribbean, Gulf of Mexico, Pacific, Western Pacific, and North Pacific regions.

Consultation under MSA also considers impacts to Habitat Areas of Particular Concern (HAPC). HAPCs are site-specific areas of EFH for managed species. The designation of HAPCs can provide focus for additional conservation efforts for habitat that is ecologically important, sensitive to disturbance, exposed to development activities, or rare. No HAPCs have been designated within the vicinity of the Pioneer Array.

2.1.3.2 NOAA Office of National Marine Sanctuaries

The NOAA Office of National Marine Sanctuaries manages the National Marine Sanctuary Program. The mission of the program is to identify, designate, and manage areas of the marine environment of special national, and in some cases international, significance due to their conservation, recreational, ecological, historical, research, educational, or aesthetic qualities (15 CFR 922.2). The NOAA Office of National Marine Sanctuaries is responsible for overseeing the implementation of sanctuary management plans and conservation activities and has the authority to issue permits to allow certain activities that would otherwise be prohibited by sanctuary regulations (National Marine Sanctuaries Office 2008).

National Marine Sanctuaries Act

The National Marine Sanctuaries Act (NMSA) (16 USC 1431 et seq.) authorizes the Secretary of Commerce to designate and protect areas of the marine environment with special national significance as national marine sanctuaries. Regulations at 15 CFR Part 922 further implement the NMSA and regulate the conduct of certain activities within the sanctuaries. Section 304(d) of the NMSA further requires federal agencies to consult with NOAA before taking actions, including authorization of private activities, “likely to destroy, cause the loss of, or injure a sanctuary resource.” In addition, federal agencies are required to consult on proposed actions that “may affect” the resources of a national marine sanctuary (Section 304[d]). Any activities prohibited by the aforementioned regulations can only be undertaken by obtaining a permit from the National Marine Sanctuary Program. No National Marine Sanctuaries have been identified within proximity to the proposed Pioneer Array; therefore, no further action is required at this time.

2.1.4 United States Fish and Wildlife Service

The USFWS within the U.S. Department of the Interior (DOI) is responsible for the conservation of terrestrial and freshwater fish and wildlife species and habitats. The USFWS activities include identification of threatened and endangered species, management of National Wildlife Refuges, and issuance of permits for activities affecting protected species and their habitats (50 CFR 1 through 100). The USFWS manages land and freshwater species, while NOAA Fisheries manages marine species, including anadromous salmon. The USFWS has responsibility for some marine animals such as nesting sea turtles, walruses, polar bears, sea otters, and manatees.

Consultations with the USFWS are also required under Section 7 of the ESA. The ESA defines “take” as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any threatened or endangered species. Significant habitat modifications where listed species experience mortality or injury through impairment of essential behavior (e.g., nesting or reproduction) can be considered a “take” (USFWS 2016).

A desktop assessment of publicly available data and a protected species habitat assessment or survey will be needed to determine the potential for protected species to occupy or navigate the waters and aquatic habitats surrounding the proposed project location. Should results of the assessments determine protected species and/or their suitable habitat is present within the proposed project area, but the project is expected to have a “no effect” or “may affect, not likely to adversely affect” determination for protected species, request for informal consultation with the USFWS and NOAA (as detailed in Section 2.1.3) is recommended in order to comply with Section 7 of the ESA. Under an informal consultation, the applicant will submit a letter request to the USFWS and NOAA for concurrence that the proposed project will incur minimal to no adverse impacts to protected species. If the federal agencies agree that the action is not likely to adversely affect protected species (e.g., the effects are beneficial, insignificant, or discountable) the agencies will provide concurrence in writing and no formal consultation will be required.

However, should the USFWS or NOAA consider the project to be likely to adversely affect protected species within the area, formal consultation will be required. Formal consultation generally lasts up to 90 days where USFWS and NOAA coordinate with the federal permitting agency (USACE) to share

information of the proposed project and the species likely to be affected. Following the 90 days, the USFWS has 45 days to prepare a Biological Opinion which analyzes the effects of the proposed actions to those species and may conclude on specific measures the project must take, including implementing conservative approaches or applying for an incidental take permit, to ensure its actions do not jeopardize the continued existence of the protected species.

It should be noted that documentation of all completed species assessments, surveys, and/or informal/formal consultations with the USFWS will be required for approval of a USACE permit.

2.1.5 United States Coast Guard

The United States Coast Guard (USCG) is a military branch of the United States, one of seven uniformed services and the smallest armed service of the United States. The USCG plays a role in homeland security, law enforcement, search and rescue, marine environmental pollution response, and the maintenance of river, intracoastal and offshore aids to navigation (USCG 2017). The USCG has jurisdiction over navigation safety on the high seas and navigable waters of the United States (33 CFR 1.01).

Based upon previous investigations and direct consultations with the USCG for the first deployment of the Pioneer Array as well as current experience with permitting the deployment of surface met buoys, it has been determined that USCG approved Private Aids to Navigation (PATON) and Local Notice to Mariners (LNM) will be required to support the installation and operation of the Pioneer Array.

2.1.5.1 Private Aids to Navigation and Local Notice to Mariners

A PATON is a buoy, light, or daybeacon owned and maintained by any individual or organization other than the USCG (33 CFR 66). The deployment of OOI's scientific buoys will require the submittal of an application for PATONs for each buoy deployed. To obtain PATON approval, a completed Aids to Navigation Application (CG-2554) must be submitted to the USCG District Commander for the district in which the PATON will be located (District 5 for the Mid-Atlantic Region including North Carolina). The applicant must provide information such as overall size, buoy color, light color and period (rate), latitude/longitude, depth, ownership/contact, mooring marking, and overall deployment duration. For the AUVs and gliders, the mission area boundaries must be clearly defined on a navigational chart and the outer-boundary coordinates of the "mission box" should be identified. Information provided in the Aids to Navigation Application will also be used by the USCG to develop an LNM that will inform mariners of the existence of the Project PATONs and areas where AUVs and gliders could be encountered.

As described in the Aids to Navigation Application (USCG 2018), the USCG District Commander will review the application for completeness and will assign the PATON one of the following classifications:

- Class I – Aids to navigation on marine structures of other works which the owners are legally obligated to establish, maintain, and operate as prescribed by the USCG.
- Class II – Aids to navigation exclusive of Class I located in waters used by general navigation.
- Class III – Aids to navigation exclusive of Class I located in waters not ordinarily used by general navigation.

PATON applications must be initiated through the following website: www.usharbormaster.com. To use the site, the applicant must first become a registered user, after which a username and password will be provided. Once initiated, three copies of the Aids to Navigation Application form must be forwarded to the USCG District Commander at least 30 days in advance of the proposed action.

As stated above, each of the 10 individual Pioneer Array buoys as well as the AUV and glider mission areas will require the submittal of separate Aids to Navigation Applications. There are no costs associated with application submittal or review. The general turnaround time from application submittal to issuance of the PATON and LNM is expected to be approximately 2 weeks. No buoy, AUV, or glider deployment will be permitted until the PATONs are authorized and the LNM is issued. If an authorized PATON is not installed within one year of the approval date, the approved application will automatically be cancelled.

PATONs must be maintained and kept in working order. Any discrepancy in the operation of the aids at any time must be expediently reported to the USCG District Commander so that Notices to Mariners may be issued. A discrepancy exists whenever an aid is not operating or presenting itself as described in the approved permit (e.g., lack of signal or incorrect light characteristic). All classes of PATONs are subject to inspection by the USCG at any time and without prior notice. Also, removal, change in use, or discontinuance of use of Class I private aid to navigation will also require approval from the USCG District Commander. Class II and Class III private aids may be removed after 30 days' notice to the USCG District Commander who received the original request for authorization for the aid.

In addition to notifying mariners, the USCG will notify the U.S. Navy that a PATON has been issued. The USCG will also notify the National Oceanic and Atmospheric Administration (NOAA) to ensure that each PATON is included on new NOAA Navigational Charts.

It is important to note that, before a PATON consisting of a fixed structure is placed in the navigable waters of the United States, authorization must first be obtained from USACE and included within the PATON application.

The following individual has been designated as the USCG PATON and LNM point-of-contact for District 5:

Lieutenant Gregory C. Goetz

Commander Fifth Coast Guard District
Waterways Management
Private Aids to Navigation
431 Crawford Street
Portsmouth, Virginia 23704
Waterways Management Division: 910-772-2230
Phone: 757-398-6220
Email: gregory.c.goetz2@uscg.mil

2.1.6 U.S. Navy

The U.S. Navy requires notification of operation areas in accordance with Naval Sea Systems Command (NAVSEA) Instruction 4740.1A, referencing CNO ITR SER 02/6U385030 of April 1986. Because of the proximity of the Pioneer Array to naval submarine operations near Virginia Beach, Virginia, the

Pioneer Array may be of interest to the U.S. Navy and therefore the agency should be contacted to ensure that there are no conflicts between the proposed Project and current or future planned naval activities. The USCG has previously indicated that they will take responsibility for conducting this consultation during the PATON permitting process (Tetra Tech 2008). As such, WHOI will require no direct consultation with the U.S. Navy and no fees will be required to support the USCG's consultation with this agency.

The USCG will likely be contacting the following as part of their PATON consultations and notifications process:

FACSFAC VACAPES
601 Oceana Blvd
Virginia Beach, VA 23460
Phone: 757-433-1211

Commander, Naval Air Force Atlantic
1562 Mitscher Ave, Suite 300
Norfolk, VA 23551

2.1.7 Bureau of Ocean Energy Management

The Bureau of Ocean Energy Management (BOEM) within the DOI manages alternative energy activities (wind, wave, and current) and mineral resources on the OCS and is responsible for granting leases for the use of the OCS for alternative energy production or mineral extraction (BOEM n.d.a). The OCS includes the submerged lands, subsoil, and seabed seaward of state territorial boundaries to the outer limit of the United States' EEZ (i.e., between 3 and 200 nm off the coast of all states except Texas, Louisiana, and the Gulf Coast of Florida) (BOEM n.d.b).

Although the Pioneer Array would be located on the OCS, the installation of scientific measurement devices does not fall under BOEM jurisdiction. However, because the Pioneer Array is located within proximity of existing and planned offshore wind lease areas, it is recommended that the BOEM be notified of the Project so that potential conflicts can be avoided.

The following individual has been designated as the BOEM point-of-contact:

Olivia Woods
Renewable Energy
Office of Public Affairs
1849 C Street, NW
Washington, D.C. 20240
Phone: 202-531-0667
Email: Olivia.woods@boem.gov

2.2 State Permits, Licenses and Approvals

The Submerged Lands Act of 1953 (43 U.S.C. 1301 et seq.) gives states jurisdiction over the natural resources of submerged lands out to 3 nm from shore (BOEM n.d.c). Environmental resources in North Carolina are protected under the North Carolina Administrative Code Title 15A Environmental Quality.

State agencies are required to lead and cooperate to manage the types of activities that require environmental documentation and compliance, including proposed construction on lands and waters owned or managed by any North Carolina Department of Environmental Quality (NCDEQ) agency. NCDEQ jurisdiction extends through state waters requiring the North Carolina Division of Coastal Management (NCDQM) to provide a federal consistency certification pursuant to the Federal Coastal Zone Management Act (CZMA) and compliance with the North Carolina Coastal Area Management Act.

Although the Pioneer Array is located outside of state waters, formal interagency consultation was undertaken with a consultation letter specifically sent to the NCDQM in the anticipation of the letter being circulated to appropriate North Carolina agencies. The NCDQM point of contact is:

Daniel Govoni

Policy Analyst & Federal Consistency Coordinator
North Carolina Department of Environmental Quality
Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557-3421

Mr. Govoni followed up with a request of a map of the array with coordinates on a navigational chart, which was provided via email. As such, no further action by WHOI is anticipated for NCDQM to complete a CZMA federal consistency review. WHOI may consider forwarding the self-certification for NWP #5 to the NCDQM.

Applicability of the adjacent states' Water Quality Certification under Section 401 of the CWA and Section 106 Consultation under the National Historic Preservation Act of 1966 (NHPA) (16 U.S.C. 470 et seq.) were also evaluated for the Pioneer Array. Projects that require a federal permit or involve dredging or fill activities that may result in a discharge to U.S. surface waters and/or waters of the U.S. are required to obtain a CWA Section 401 Water Quality Certification to verify that the project activities would comply with state water quality standards. Although the Pioneer Array would require federal permits, given the location of the array several miles outside of state territorial water, the Project is not likely to affect state water quality; however, a Section 401 Water Quality Certification is automatically associated with NWPs, and therefore a separate authorization application and approval will not be required. A separate Water Quality Certification would only be required in the event an USACE individual permit is required.

Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties that are potentially eligible for listing on the National Register of Historic Places. Section 106 compliance generally involves consultation with the State Historic Preservation Office (SHPO) of the state where the Project is located. Since the Pioneer Array is located outside of North Carolina state territorial waters and will not be visible from shore, compliance with the NHPA will require consultation with federal agencies (i.e., USACE) rather than with the SHPO. Survey data will be collected in the proposed project area with a review of the Automated Wreck and Obstruction Information System (AWOIS), and with appropriate siting, the installation of Pioneer Array's components would avoid impacts to cultural resources. Desktop survey data will be compiled

for the NWP #5 self-certification to document proposed locations and avoidance of cultural resources, with a field survey to confirm siting will avoid impacts.

2.3 Local Permits, Licenses, and Approvals

The Pioneer Array is located approximately 13 nm at its closest point from the town of Nags Head in North Carolina. The remainder of the array locations are planned further offshore, approximately 45 nm from the Outer Banks along the OCS, shelf break, and slope, and therefore well outside of these states' territorial sea boundaries. At these distances from shore the Pioneer Array is well beyond the jurisdiction of local agencies and will not affect local resources.

2.4 International Permits, Licenses, and Approvals

The Pioneer Array does not extend past the EEZ; therefore, no international approvals or consultations will be required.

2.5 Pioneer Array Permits, Licenses, and Approvals Schedule

A project schedule specific to the requirements of the Pioneer Array has been included below. This schedule includes the anticipated surveys and permits to support the installation and operation of the Pioneer Array.

WHOI has indicated that the target date for installing the Pioneer Array is April 2024. Therefore, the surveys to support the permitting process could start in Spring 2023 to complete the self-certification documentation by September 2023 with PATON applications submitted to the USCG in January 2024.

Pioneer Array Proposed Schedule (Assuming approval under NWP #5)

- Desktop Analysis – Summer/Fall 2022
- Field Surveys – Spring 2023
- NWP #5 Self-Certification – Summer/Fall 2023
- PATON Applications – Winter 2023/2024

Pioneer Array Proposed Schedule (Assuming NWP #5 is not renewed in 2026 and approval is needed to maintain project under an IP)

- Desktop Analysis Update – Early 2026
- Field Surveys – Not planned for IP if array is already deployed, use previous survey results
- Submittal of IP – Spring 2026
 - Public Comment/Hearing Period (if warranted) – Summer/Fall (15 – 30 days)
- Agency approval of IP – Spring/Summer 2027
- PATON Applications – Winter 2023/2024

3.0 REFERENCES

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APPENDIX A: FEDERAL AND STATE RECORD OF AGENCY CORRESPONDENCES

Telephone Contact Log

Project Name: WHOI Pioneer Permit Analysis

Tetra Tech Caller: Mike Murphy

Conversation with: Daniel Govoni – North Carolina Division of Coastal Management

Subject: Pioneer Array required State permits or authorizations

Date and Time: March 8, 2022 – 9:15 AM

Summary of Conversation:

I spoke with Mr. Daniel Govoni, the Federal Consistency Coordinator with the North Carolina Division of Coastal Management. He informed me that he would require a brief, one-page memo summarizing the intent of the Project, that he would then review and distribute to the respective agencies that would have a regulatory interest in the proposed project.

He was very receptive during our discussion and seemed willing to facilitate the process.

Daniel Govoni's contact information:

Mr. Daniel Govoni, Policy Analyst & Federal Consistency Coordinator

NCDCM – Morehead City Headquarters

400 Commerce Ave.

Morehead City, NC 28557 Congress St. Suite 1100

[Federal Consistency | NC DEQ](#)

252-808-2808, ext. 233

daniel.govoni@ncdenr.gov

Telephone Contact Log

Project Name: WHOI Pioneer Permit Analysis

Tetra Tech Caller: Katherine Miller

Conversation with: Benjamin Laws - NOAA

Subject: Need for NOAA Authorization for Acoustic Emitting Equipment

Date and Time: March 15, 2022, 4:45 pm

Summary of Conversation:

Katherine Miller had a quick conversation with Benjamin Laws to confirm that an Incidental Harassment Authorization would not be required for the Project due to the following equipment:

- Acoustic doppler (ADCP);
- Single point velocity;
- Bio-acoustic sonar; and
- Passive hydrophones.

Telephone Contact Log

Project Name: WHOI Pioneer Permit Analysis

Tetra Tech Caller: Katherine Miller

Conversation with: Bill Standridge (910-251-4595) - USACE

Subject: Applicability of the NWP #5

Date and Time: March 17, 2022, 12:50 pm

Summary of Conversation:

Katherine Miller had a quick conversation with Bill Standridge to confirm that the project qualifies for the Nationwide Permit #5 (NWP #5). Katherine provided an overview of the Project, including that up to 10 mooring will be deployed within federal waters, moored with weighted anchors. Bill noted that the Project sounds like it qualifies for the NWP #5, and as long as it follows and is in compliance with the General Conditions, then a Pre-Construction Notification (PCN) would not be required. Bill added that the USACE would prefer to not have to process a PCN, if not required. The USACE's main concern is with the USCG, and as long as a PATON is received, then there are no concerns from the USACE side.

To: Daniel Govoni – North Carolina Division of Coastal Management

From: Michael Murphy and Jennifer Kraus, Tetra Tech, Inc.

CC: Derek Buffitt and Albert Plueddemann, Woods Hole Oceanographic Institution

Date: April 7, 2022

Subject: Pioneer Array Relocation – Mid-Atlantic Bight

Summary

On behalf of the Ocean Observatories Initiative and the Woods Hole Oceanographic Institution, we would like to inform you of the proposed relocation of the Pioneer Array from the New England Shelf to the Outer Continental Shelf off the coast of North Carolina (Project). It is our intention to notify and inform all federal, state and local stakeholders of our intentions as to ensure that respective organizations have the opportunity to review and provide feedback regarding any permitting activities required of the Project.

Project Description

Woods Hole Oceanographic Institution (WHOI) was selected by the National Science Foundation (NSF) to support the development, installation and operation of the coastal and global components of the NSF's Ocean Observatories Initiative (OOI; <https://oceanobservatories.org>). The OOI consists of a globally distributed and integrated network of marine observation systems that provide the ocean sciences research community with an advanced research infrastructure to support sustained, long-term, and adaptive measurements of the oceans across global, regional, and coastal scales.

WHOI is currently responsible for the implementation and operation of one coastal scale array and two global scale arrays collectively referred to as the Coastal and Global Scale Nodes (CGSN) portion of the OOI program. The CGSN includes a Coastal Array called the Pioneer Array currently located in the federal waters of the Middle Atlantic Bight off the coast of New England (<https://oceanobservatories.org/array/coastal-pioneer-array>). In 2021, The NSF announced the relocation of the Pioneer Array from the New England Shelf to the Outer Continental Shelf (OCS) off the coast of North Carolina.

The Pioneer Array is proposed to be relocated in the Spring of 2024, in the waters of the Atlantic Ocean off the coast of Nags Head, North Carolina. The preliminary plan is for the moored array to be constituted in a sideways "T" shape, with seven mooring sites between about 13 nm and 45 nm offshore, outside of state waters.

The Pioneer Array will consist of:

- Three surface moorings with local power generation (wind turbines and solar panels), satellite communications capabilities, and benthic nodes;
- Five profiler moorings that would be internally powered (with primary and/or rechargeable batteries), three of the five would be located at the same site (within a few hundred meters) as a surface mooring;
- Two shallow-water moorings of a design similar to the surface moorings;

- Two autonomous underwater vehicles (AUVs) operated in campaign mode from ships; and
- Four to six buoyancy-driven ocean gliders.

We are seeking input as to the federal and state permits, licenses and approvals that will be required to successfully install and operate each component of the Pioneer Array for the intended 5-year life of the Project. The United States Army Corps of Engineers has confirmed that this Project will be permitted under Nationwide Permit #5. We have reviewed the State's policies and concur that proposed activity is consistent (to the maximum extent practicable) with the enforceable policies of the State's coastal management program.

Please contact me at your convenience at Michael.Murphy@tetrattech.com to discuss further details regarding the Project, as your support in this effort is greatly appreciated.

Attachments:

Figure 1 – Pioneer Array Overview

Figure 2 – Potential Mooring Types

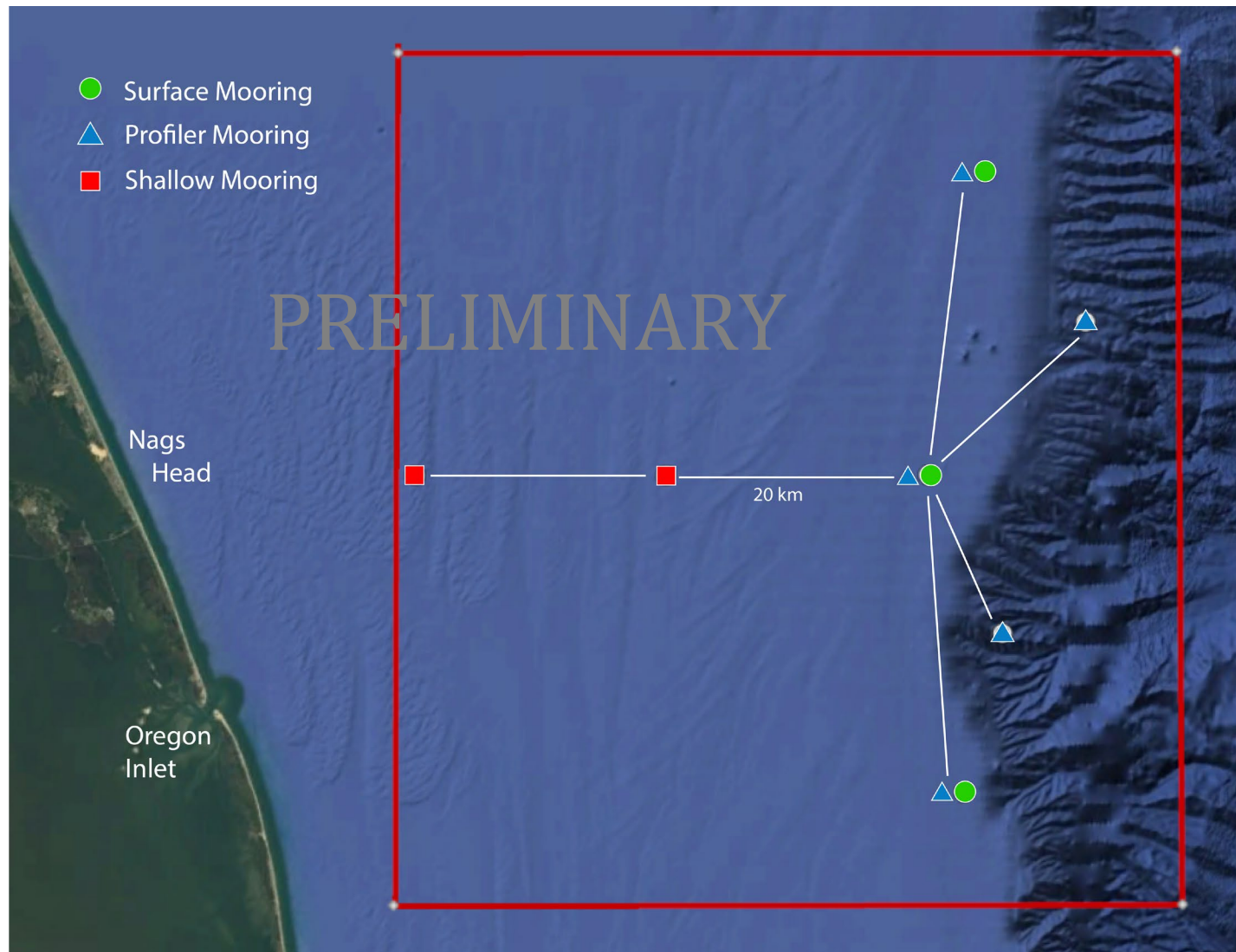


Figure 1- Pioneer Moored Array Location Overview – Preliminary plan.

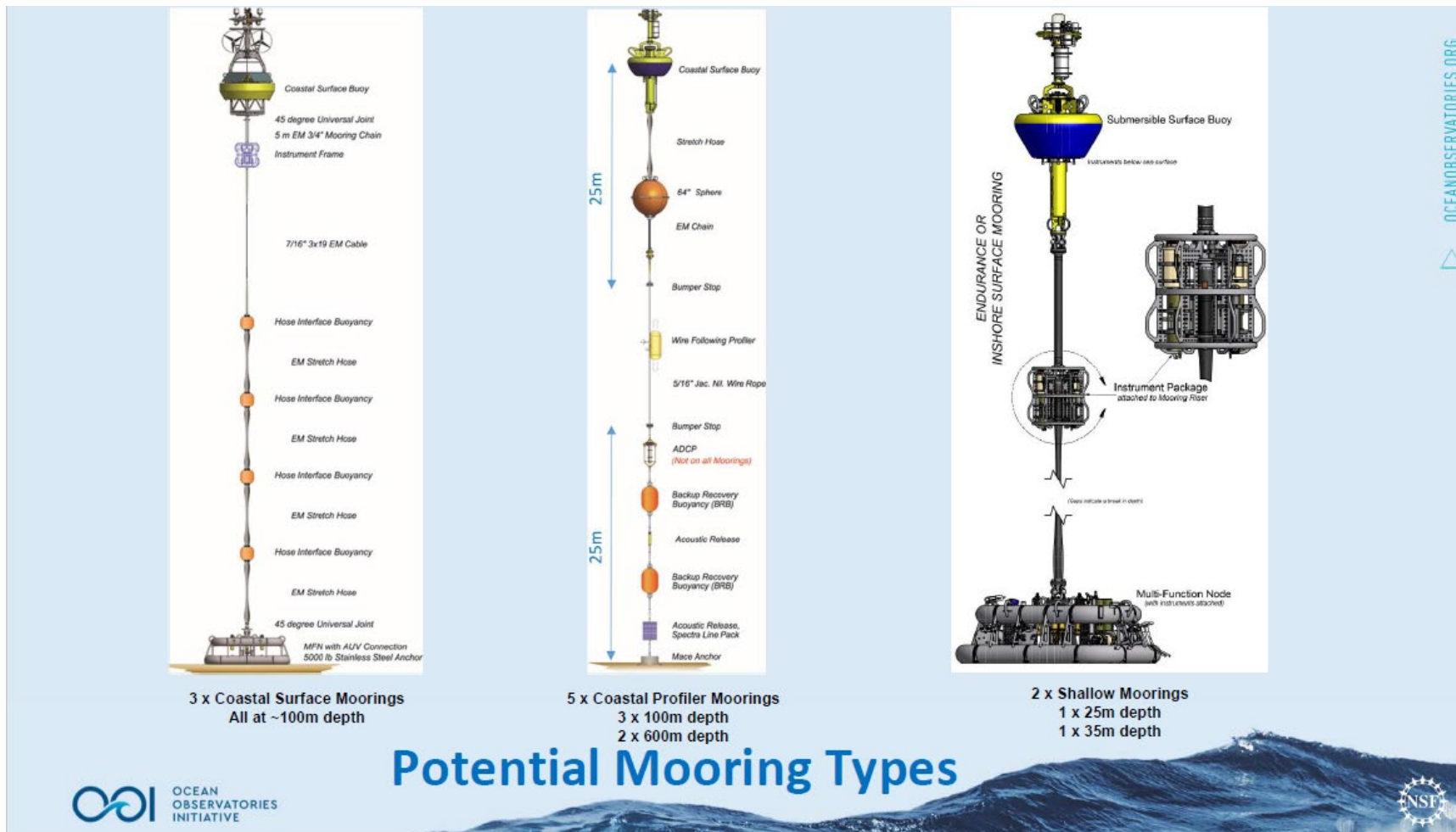


Figure 2 - Potential Mooring Types

Telephone Contact Log

Project Name: WHOI Pioneer Permit Analysis

Tetra Tech Caller: Mike Murphy

Conversation with: Daniel Govoni – North Carolina Division of Coastal Management

Subject: Pioneer Array required State permits or authorizations

Date and Time: June 10, 2022 – 10:15 AM

Summary of Conversation:

I spoke with Mr. Daniel Govoni, the Federal Consistency Coordinator with the North Carolina Division of Coastal Management. He informed me that he would have the Pioneer Array memo review complete by June 17, 2022, as he was waiting on feedback from NC Marine Fisheries.

He was, again, very receptive during our discussion and seemed willing to facilitate the process. He requested a map of the array with coordinates on a navigational chart. A new map was provided via email on June 15, 2022 (attached).

Daniel Govoni's contact information:

Mr. Daniel Govoni, Policy Analyst & Federal Consistency Coordinator

NCDCM – Morehead City Headquarters

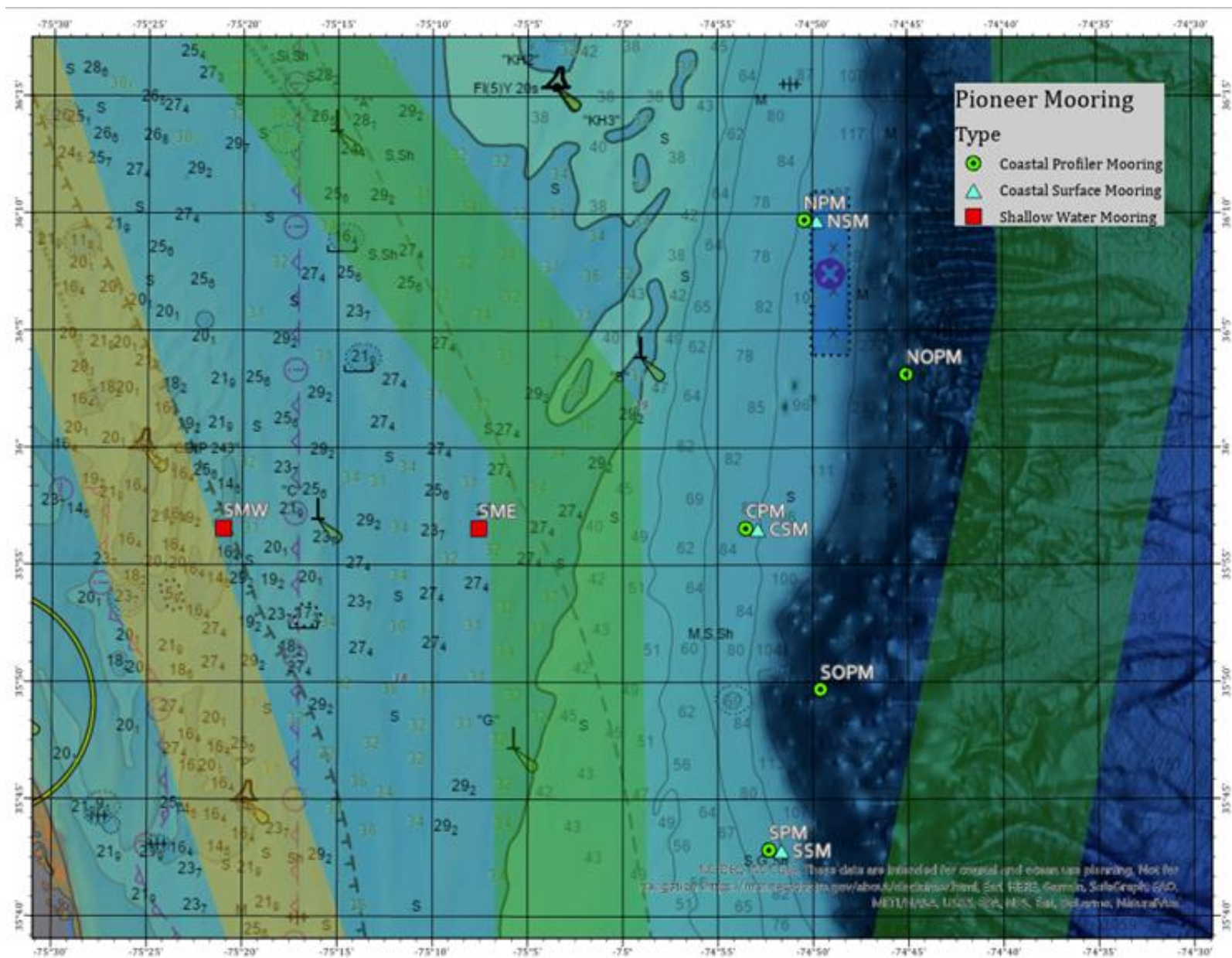
400 Commerce Ave.

Morehead City, NC 28557 Congress St. Suite 1100

[Federal Consistency | NC DEQ](#)

252-808-2808, ext. 233

daniel.govoni@ncdenr.gov



APPENDIX B: PIONEER ARRAY PERMIT MATRIX

Required Approvals and/or Consultations

Permitting Agency	Name of Permit/Regulatory Requirement	Jurisdiction	Point-of-Contact	Application Process Timeframe	Application Cost(s)	Permit/Regulatory Duration
FEDERAL						
U.S. Army Corp of Engineers (USACE)	Section 10 Individual Standard Permit under the Rivers and Harbors Act and Section 404 of the Clean Water Act	Navigable waters of the U.S.	Washington Regulatory Field Office U.S. Army Corps of Engineers 2407 West Fifth Street Washington, NC 27889 General Number: (910) 251-4610 Fax Number: (252) 975-1399 https://www.saw.usace.army.mil	Nationwide Permit #5 Scientific Measurement Devices ² A Pre-Construction Notification Form would not be submitted.	N/A	The current Nationwide Permit authorizations are valid from February 25, 2022 through March 14, 2026.
Advisory Council on Historic Preservation	National Historic Preservation Act (NHPA) Section 106 Consultation	Historic properties in the United States	N/A	Section 106 consultation completed through the NWP. USACE to confirm the Project is compliant with Section 106.	N/A	Life of Project
U.S. Coast Guard (USCG)	Private Aid to Navigation Approval (PATON) and Local Notice to Mariners (LNM)	High seas and navigable waters of the U.S.	Gregory Goetz Commander Fifth Coast Guard District 431 Crawford Street Portsmouth, Virginia 23704 Portsmouth Federal Building Staff Status: 757-398-6441 or 800-334-8377 gregory.c.goetz2@uscg.mil (757) 398-6220 CGD5Waterways@uscg.mil	30 days prior to installation submit 3 copies of each application (separate application for each buoy, AUV, glider mission areas). Agency review period is approximately 2 - 4 weeks from application receipt.	N/A	PATON valid for life of project. PATON will expire after 1 year from the date of issuance if the project is not installed. Removal or change requires USCG approval.
U.S. Navy	FACSFAC VACAPES	High seas and navigable waters of the U.S.	FACSFAC VACAPES 601 Oceana Blvd Virginia Beach, VA 23460 Phone: 757-433-1211 Commander, Naval Air Force Atlantic 1562 Mitscher Ave, Suite 300 Norfolk, VA 23551	Courtesy notification recommended as the buoys will be located within the VACAPES.	N/A	Life of Project

² Tetra Tech confirmed that the NWP #5 is applicable for the Pioneer Array; USACE confirmed that a Pre-Construction Notification would not be needed, therefore a self-verification package would be prepared but not submitted to the USACE.

Permitting Agency	Name of Permit/Regulatory Requirement	Jurisdiction	Point-of-Contact	Application Process Timeframe	Application Cost(s)	Permit/Regulatory Duration
U.S. Department of Interior Bureau of Ocean Energy Management (BOEM)	Courtesy Notification	Resources on the Outer Continental Shelf	Office of Public Affairs 1849 C Street, NW Washington, D.C. 20240 Phone: 202-208-6474 Olivia Woods Renewable Energy 202-531-0667 Olivia.Woods@Boem.gov	Courtesy notification recommended prior to the installation of the Project due to proximity to the Kitty Hawk Lease Area.	N/A	N/A
NOAA National Marine Fisheries Service (NOAA Fisheries)	Programmatic Level Consultation under Section 7 of the Endangered Species Act (ESA)	Exclusive Economic Zone (EEZ; 200 nautical miles from territorial sea baseline)	Southeast Regional Office 263 13 th Ave South St. Petersburg, FL 33701 727-824-5301 David Bernhart Assistant Regional Administrator Protected Resources Division Email: David.bernhart@noaa.gov	Consultation conducted through the NWP (no further action required by WHOI)	N/A	Life of project.
	Programmatic Level Consultation under Marine Mammal Protection Act (MMPA)	EEZ (200 nautical miles from territorial sea baseline)	Southeast Regional Office 263 13 th Ave South St. Petersburg, FL 33701 727-824-5301 David Bernhart Assistant Regional Administrator Protected Resources Division Email: David.bernhart@noaa.gov	Consultation conducted through the NWP (no further action required by WHOI)	N/A	Life of project.
	Programmatic Level Consultation under the Magnuson-Stevens Fishery Conservation Management Act (MSA)	The management of marine fisheries resources within the EEZ (200 nautical miles from territorial sea baseline)	Southeast Regional Office 263 13 th Ave South St. Petersburg, FL 33701 727-824-5301 Virginia Fay Acting Deputy Regional Administrator Habitat Conservation Division Email: virginia.fay@noaa.gov	Consultation conducted through the NWP (no further action required by WHOI)	N/A	Life of project.

Permitting Agency	Name of Permit/Regulatory Requirement	Jurisdiction	Point-of-Contact	Application Process Timeframe	Application Cost(s)	Permit/Regulatory Duration
U.S. Fish and Wildlife Service (USFWS)	Programmatic Level Consultation under Section 7 of the ESA	The conservation of terrestrial and freshwater species and habitats some marine mammal species including nesting sea turtles, walruses, polar bears, sea otter and manatees.	Southeast Regional Office U.S. Fish and Wildlife Service 1875 Century Boulevard Atlanta, GA 31830 (703) 358-2630	Consultation conducted through the NWP (no further action required by WHOI)	N/A	Life of project.
	Programmatic Level Consultation under the MMPA	Marine mammal species including walruses, polar bears, sea otter and manatees.	Southeast Regional Office U.S. Fish and Wildlife Service 1875 Century Boulevard Atlanta, GA 31830 (703) 358-2630	Consultation conducted through the NWP (no further action required by WHOI)	N/A	Life of project.
U.S. Environmental Protection Agency (EPA)	Spill Prevention Control and Countermeasures (SPCC) Plan	Regulation of pollutant discharges into U.S. waterways	Region 4 EPA Sum Nunn Atlanta Federal Center 61 Forsyth Street, SW Atlanta, GA 30303 Phone: 404-562-9900 Water Protection Division 404-562-9345	SPCC Plan not likely required, confirmation of liquids/oils/greases/etc. and amounts required to make final determination.	N/A	Life of project.

STATE

North Carolina Division of Coastal Management	Courtesy Notification	3 nautical miles from shore	Daniel Govoni Federal Consistency Coordinator 400 Commerce Ave Morehead City, NC 28557 Phone: 252-515-5405 Email: daniel.govoni@ncdenr.gov	Approval through the NWP authorization. Courtesy notification recommended prior to the installation of the Project due to proximity to the Kitty Hawk Lease Area.	N/A	N/A
North Carolina Department of Environmental Quality - Division Water Resources	Section 401 Water Quality Certification	3 nautical miles from shore	N/A	Approval through the NWP authorization.	N/A	N/A