U.S. Department of the Navy
Naval Sea Systems Command
Naval Surface Warfare Center, Carderock Division (NSWCCD)

FINDING OF NO SIGNIFICANT IMPACT (FONSI) for the Pacific Deep Electromagnetic Research Measurement Array (PACDERMA) Infrastructure Installation in Kauai, Hawaii

Introduction

Pursuant to the National Environmental Policy Act of 1969 (NEPA, 42 United States Code [U.S.C.] § 4321 *et seq.*) and the Department of Defense NEPA Implementing Procedures (dated 30 June 2025), the Naval Sea Systems Command Naval Surface Warfare Center, Carderock Division (NSWCCD, hereafter "the Navy") gives notice that an Environmental Assessment (EA) has been prepared and an Environmental Impact Statement (EIS) is not required for the Pacific Deep Electromagnetic Research Measurement Array (PACDERMA) Infrastructure Installation in Kauai, Hawaii. This action will be implemented as set out in the Proposed Action.

Description of the Proposed Action

The Navy proposes to construct an underwater electromagnetic measurement system to characterize the electromagnetic fields generated by oceanographic processes and naval vessels. The PACDERMA would be constructed in the waters of the Pacific Ocean off of the Pacific Missile Range Facility (PMRF) on Kauai, Hawaii. The PACDERMA system would include electromagnetic sensors and beacons placed on or tethered to the seafloor, connected by cables and junction boxes. The array (cables, beacons, and sensors) would be installed at a depth sufficient for the safe measurement and navigation of naval vessels in the ocean environment. The system would connect to shore via two trunk cables on the seafloor attached to a shallow water junction box, which also connects to a shore landing cable routed through an underground conduit. The conduit would run from a water depth of approximately 65–70 ft (20–21 m) to an upland, onshore location about 560 ft (171 m) from the shoreline and about 15 ft (5 m) above mean sea level, connecting the PACDERMA system to onshore infrastructure. The underground conduit would be installed via horizontal directional drilling (HDD), a process in which a drill rig onshore drills down from the upland location at a precise, shallow angle. The drill rig steers to emerge at a specific location underwater, thereby allowing the conduit to bypass the sensitive nearshore environment. The Proposed Action would commence in the spring of 2026. HDD would be completed during 2026 and the installation of the array and at-sea cables would occur in 2027. Following installation, all system components would be kept on a maintenance cycle to ensure they remain operable. This would include emergent issues requiring repair.

Purpose and Need

The purpose of the Proposed Action is to provide an underwater electromagnetic measurement capability within the Pacific Ocean. A system is needed in the Pacific Ocean to characterize the electromagnetic environment and the effectiveness of electromagnetic field management techniques. The need for the Proposed Action is to ensure a thorough understanding of the electromagnetic environment present and the effectiveness of the techniques used to manage shipboard electromagnetic fields. Certain present and future classes of Navy vessels require periodic electromagnetic measurements to ensure they meet strict performance requirements over their entire lifecycle. This Proposed Action is necessary to establish mission-capable readiness for Pacific-based vessels.

Alternatives

Alternatives were developed for analysis based upon the following reasonable alternative screening factors:

- location in the Pacific Ocean, central to naval bases;
- sufficient water depth for the safe measurement and navigation of naval vessels;
- low levels of recreational and commercial vessel traffic;
- minimal sources of interference present, creating an electromagnetic-friendly environment for signal measurement (i.e., minimal sound interference and without water components that could degrade system performance); and
- access to existing infrastructure to support the laying of cables.

The Navy explored three alternate locations and sites that were not carried forward for analysis because they would not meet the purpose and need for the Proposed Action. Thus, only the Proposed Action and a No Action Alternative were carried forward. Under the No Action Alternative, the underwater electromagnetic measurement system would not be constructed in a Pacific Ocean location.

Environmental Impacts of the Proposed Action

NEPA and the Department of Defense NEPA Implementing Procedures specify that an EA should address those resource areas potentially subject to impacts. In addition, the level of analysis should be commensurate with the anticipated level of environmental impact. The following resource areas have been addressed in this EA: physical resources (benthic habitat, terrestrial habitat, water resources) and biological resources (aquatic invertebrates and coral, birds, fish, essential fish habitat [EFH], sea turtles, terrestrial mammals, marine mammals). Because potential impacts were determined to be negligible or nonexistent, the following resources were not evaluated in this EA: air resources, visual resources, socioeconomic resources, cultural

resources, public health and safety, and other physical or biological resources, such as aquatic vegetation.

As described in the EA, implementation of the Proposed Action would result in no significant impacts to the physical, biological, and socioeconomic environments.

Standard Operating Procedures (SOPs) and Protective Measures

Both SOPs and protective measures would be implemented during the Proposed Action. SOPs serve the primary purpose of providing for safety and mission success and are implemented regardless of their secondary benefits to a resource. Protective measures are used specifically to avoid or reduce potential impacts to a resource. The SOPs and protective measures that are applicable to potential impacts to ESA-listed marine species from the Proposed Action are provided below.

Vessel Operations

- Issuance of a Notice to Mariners would alert boaters to the need to avoid areas of installation activity.
- Semi-permanent anchoring would be utilized and installed clear of sensitive resources based on benthic surveys.
- Vessels would operate at slow speeds (expected to be slower than 10 knots) when performing work. Vessels in the proposed action area would travel at speeds necessary for safe and efficient navigation, i.e., at speeds necessary to maintain steerage if towing equipment, but not so fast that objects in the water cannot be avoided. These considerations would be expected to further reduce the potential for ship strike of protected marine species.
- Vessels associated with the Proposed Action would immediately (or as soon as operational security considerations allow) notify a United States (U.S.) Navy PMRF Natural Resources staff member at the PMRF resource hotline (808-208-4416) and the U.S. Pacific Fleet command center (808-471-5250) if a dead or seriously injured sea turtle or marine mammal is observed during a Navy activity.
- Vessels associated with the Proposed Action would carry a Ship Oil Pollution Emergency Plan kit for clean-up in the unlikely event of a fuel spill and would adhere to all Navy (Office of the Chief of Naval Operations Instruction [OPNAVINST] 5090.1E, June 25, 2021, 39-3 Requirements), and Coast Guard (Clean Water Act, section 311) requirements regarding the containment, cleanup, and reporting of spills.
- Vessels (commercial or Navy-owned) associated with the Proposed Action would operate under all provisions laid out in the OPNAVINST 5090.1E (June 25, 2021) or other federal requirements for appropriate ballast water discharge and/or treatment to

prevent introduction of a non-native/invasive species. As practicable, Navy small boats would be free of organic material.

- Navy vessels would follow the provisions in the Uniform National Discharge Standards program, which establishes national discharge standards for vessels of the Armed Forces for pumping gray water (40 Code of Federal Regulations [CFR] 1700.26). Commercial vessels involved would be expected to adhere to any applicable national standard of performance per the Vessel Incidental Discharge Act (89 Federal Register 82074; Oct 9, 2024).
- Vessels would follow provisions of the Clean Water Act (33 U.S.C. 1322) and the OPNAVINST 5090.1E (June 25, 2021) as they pertain to federal regulations for disposing of black water.

Deployment of Equipment

- All objects would be lowered to the bottom (or installed) in a controlled manner.
- Sensor placement locations would be identified in advance to minimize at-sea mission time and navigation. Vessel movement and drift would be minimized to ensure that the proposed cable, sensor, and/or installation plan is followed with limited deviation.
- Use of established cable routes and corridors would be considered in order to reduce the potential for unnecessary contact with previously undisturbed coral, living hardbottom or other high-quality habitats. These habitats would be avoided to the maximum extent practicable.
- The Navy would identify in advance the proposed cable route that would minimize the required cable path and length of cable deployment. Existing cables and tying-in to established junction boxes (where feasible) would be used to the maximum extent practicable to minimize the length of cable required. The actual cable route selected when practicable would be based on a corridor resulting in minimal impacts on resources.
- During cable installation, vessel lookouts would ensure that sea turtles and marine mammals are not present before beginning to lay cable. Cable at the surface of the water should be monitored for species presence and operations can be paused if species are present until they depart, though vessels cannot move from their locations.
- The Remotely Operated Vehicle (ROV) would be cleaned, then shipped in a container to PMRF. It is unlikely any living organisms would survive this transit, but in order to minimize the spread of invasive species, the ROV would be inspected and cleaned of any organic material prior to being placed aboard the vessel.

- In order to avoid emergency stoppage once cable laying and array installation have begun, the installation plan has been built in 4–6 hour blocks of work. Should rough weather be forecast, for example, work could stop at the end of that block and continue when conditions improve. This would hopefully eliminate the need to pause and hold station with cable out or terminate the installation before the block of work has ended.
- At-sea mission time and navigation would be minimized to reduce potential contact with protected marine species.

Diver Operations

- All in-water dive activities will be halted if an ESA-listed species were to come within 50 yards (yds) of divers. Work can begin or resume once the animal has voluntarily departed the area and the activity would no longer adversely affect the animal.
- Divers would use reef-safe sunblock to avoid impacts to corals.
- Divers would clean gear prior to using gear during the Proposed Action.

Upland Construction

- Onshore construction would occur only during daytime work hours. There would be no active work at night and no lights on during nighttime hours.
- No fencing that may harm birds or bats would be erected around the construction site.
- Covers would be placed over dug areas (i.e., holes or depressions) that could pose an entrapment hazard to wildlife.
- Placement of stakes/sandbags and guy wires to electromagnetically steer the HDD rig would be placed by hand and would avoid the dune areas of cultural significance and visible animal species or nests that may be present at PMRF on shore.

Hazardous Materials and Safety

- Safety data sheets would be adhered to at all times.
- All garbage would be disposed of properly. Debris and other waste would be prevented from entering or remaining in the marine environment for the duration of installation activities.
- Any hazardous material would be kept in labeled containers to prevent discharge.
- No toxic substances would be introduced to the land, beach, or ocean environment during cable/sensor installation activities. Hazardous materials would be disposed of in compliance with all

applicable federal, state and local laws, regulations, codes and ordinances.

Protective Measures

- Vessels would include marine species lookouts that have successfully completed the most recent version of the Introduction to the U.S. Navy Afloat Environmental Compliance Training Series and the U.S. Navy Marine Species Awareness Training. While on watch, personnel shall employ visual search techniques, including the use of binoculars, using a scanning method in accordance with the Lookout Training Handbook. Visual observations of applicable marine species would be communicated immediately to the appropriate watch station for information dissemination and appropriate action.
    - Introduction to the U.S. Navy Afloat Compliance Training Series https://www.youtube.com/watch?v=NWhnT-42Z3c
    - Marine Species Awareness Training (MSAT) https://www.youtube.com/watch?app=desktop&v=D1_uLRdzWxA
- No attempt would be made to feed, touch, or otherwise intentionally interact with any ESA-listed marine species.
- Vessels would increase vigilance if marine animals have been sighted in the area and would take reasonable and practicable actions to avoid collisions and activities that might result in a close interaction (of less than 100 yds). When not actively laying cable, vessels would avoid approaching marine mammals head on and shall maneuver to maintain a distance of 500 yds from observed whales and 200 yds from all other marine mammals and sea turtles (except bow riding dolphins). Floating weeds, algal mats, Sargassum rafts, clusters of seabirds, and jellyfish are good indicators of sea turtles and marine mammals. Therefore, increased vigilance in watching for sea turtles and marine mammals would be taken where these are present.

Agency Consultation and Coordination

Endangered Species Act (ESA): The Navy consulted with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) under section 7 of the ESA regarding the Proposed Action to receive their concurrence with the Navy's finding that the Proposed Action may affect, but is not likely to adversely affect ESA-listed species or critical habitat. Species and critical habitat included in the NMFS consultation included the following: giant manta ray (*Manta birostris*), oceanic whitetip shark (*Carcharhinus longimanus*), green sea turtle (*Chelonia mydas*) and their proposed critical habitat, hawksbill sea turtle (*Eretmochelys imbricata*), blue whale (*Balaenoptera musculus*), fin whale (*Balaenoptera physalus*), sei whale (*Balaenoptera borealis*), the Main Hawaiian Islands Insular stock of the false killer whale (*Pseudorca crassidens*), sperm whale (*Physeter macrocephalus*), and Hawaiian monk seal (*Neomonachus schauinslandi*). The Proposed Action would not cause the destruction or adverse

modification of proposed green sea turtle critical habitat. Concurrence from NMFS was received on May 9, 2025. Species included in the USFWS consultation were the: band-rumped storm petrel (*Hydrobates castro*), Hawaiian common gallinule (*Gallinula galeata sandvicensis*), Hawaiian coot (*Fulica alai*), Hawaiian duck (*Anas wyvilliana*), Hawaiian goose (*Branta [Nesochen] sandvicensis*), Hawaiian petrel (*Pterodroma sandwichensis*), Hawaiian stilt (*Himantopus maxicanus knudseni*), Newell's shearwater (*Puffinus auricularis newelli*), short-tailed albatross (*Phoebastria [Diomedea] albatrus*), and Hawaiian hoary bat (*Lasiurus cinereus semotus*). Concurrence was received from the USFWS on June 2, 2025.

Magnuson-Stevens Fishery Conservation and Management Act (MSA): The Navy consulted with NMFS under the MSA regarding the Proposed Action to receive their concurrence with the Navy's finding that there would be a long term impact to the quality or quantity of Essential Fish Habitat (EFH) as a result of the Proposed Action. NMFS concurred with this finding and submitted conservation recommendations under the MSA, which were accepted by the Navy on June 10, 2025.

National Historic Preservation Act (NHPA): After conducting archaeological subsurface testing and ground penetrating radar in the proposed area of the construction site on shore, no significant archaeological site or eligible historic properties are within the project's footprint for construction on shore. The Navy has determined no effect to historic properties with the recommendation of archaeological monitoring during construction. The proposed action area is located within an area with low probability for encountering cultural resources as defined in the 2012 PMRF Integrated Cultural Resources Management Plan. The area has been previously tested for archaeological resources, has not identified additional historic properties, and has been previously disturbed. In the event cultural remains are exposed during construction-related activities, all work shall be halted and the Navy archaeologist shall be notified. Review of these resources falls under the Programmatic Agreement among the Commander Navy Region Hawaii, the Advisory Council on Historic Preservation and the Hawaii State Historic Preservation Officer regarding Navy Undertakings in Hawaii. The proposed undertaking does not require further Section 106 review under the NHPA.

Section 10 of the Rivers and Harbors Act: The Navy plans to submit a permit application with the U.S. Army Corps of Engineers (USACE) under Section 10 of the Rivers and Harbors Act. When the permit is received it will be for USACE Nationwide Permits 5 and 57, a water quality certification (under Section 401 of the Clean Water Act).

Coastal Zone Management Act (CZMA): The Navy has found that the PACDERMA Infrastructure Installation is consistent with the "Navy/Marine Corps *De Minimis* Activities Under CZMA" list (dated 9 July 2009) as determined by the Hawaii Coastal Zone Management program and the Department of the Navy. The Navy has determined these listed actions have insignificant coastal effects in accordance with the Department of Commerce, NOAA, and CZMA federal consistency regulations (15 CFR part 930.33(3)). These actions are exempt from a negative

determination or a consistency determination from the State of Hawaii. The appropriate point of contact at the Department of Business, Economic Development, and Tourism was notified of the project EA.

Area Environmental Coordinator / Regional Environmental Coordinator: No comments were received on the EA from the Regional Environmental Coordinator (Commander, Navy Region Hawaii) and the Area Environmental Coordinator (Commander, U.S. Pacific Fleet).

Finding

Based on the analysis presented in the EA, which has been prepared in accordance with the requirements of NEPA and DoD NEPA implementing procedures and in coordination with the State of Hawaii, the USFWS, and NMFS, the Navy finds that implementation of the Proposed Action will not significantly impact the quality of the human environment. Therefore, an EIS will not be prepared. Copies of the EA, including this FONSI, can be obtained from Mr. Matthew Young, Naval Surface Warfare Center, Carderock Division, 9500 MacArthur Blvd, Bethesda, MD 20817-5700.

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