UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Silver Spring, Maryland 20910

FINDING OF NO SIGNIFICANT IMPACT FOR THE U.S. INTEGRATED OCEAN OBSERVING SYSTEM® PROGRAM PROGRAMMATIC ENVIRONMENTAL ASSESSMENT

BACKGROUND

The U.S. Integrated Ocean Observing System® (IOOS) Program, a division of the National Ocean Service (NOS), National Oceanic and Atmospheric Administration (NOAA), has prepared a Programmatic Environmental Assessment (PEA) to evaluate the potential environmental impacts associated with expanding and maintaining the national integrated system of ocean, coastal, and Great Lakes observing systems and for funding non-federal Regional Association (RA) activities. This PEA was prepared in accordance with the National Environmental Policy Act (NEPA), 42 U.S.C. 4321, *et seq.*, the Council on Environmental Quality (CEQ), 40 CFR 1500-1508, and NOAA Administrative Order (NAO) 216-6, "*Environmental Review Procedures for Implementing the National Environmental Policy Act.*

NOAA established IOOS in accordance with Public Law 111-11, Subtitle C– Integrated Coastal and Ocean Observation System Act of 2009 (33 USC 3601-3610), herein referred to as "ICOOS Act." The IOOS Program represents a national consortium of federal and non-federal stakeholders with specific interest in marine environmental phenomena occurring in the open ocean, U.S. coastal waters, and the Great Lakes. The core mission of IOOS is the systematic provision of readily accessible marine environmental data and products provided to customers in an interoperable, reliable, timely and user-specified manner to serve seven critical and expanding societal needs:

1. Improve predictions of climate change and weather and their effects on coastal communities and the nation;
2. Improve the safety and efficiency of maritime operations;
3. More effectively mitigate the effects of natural hazards;
4. Improve national and homeland security;
5. Reduce public health risks;
6. More effectively protect and restore healthy coastal ecosystems; and
7. Enable the sustained use of ocean and coastal resources.

PROGRAM OVERVIEW

IOOS is composed of six subsystems that represent a collection of components organized to accomplish a specific function or set of functions. The subsystems are further split amongst functional systems to obtain data and those cross-cut systems to enhance the utility of the functional subsystem. The three functional systems are (1) Observing systems, (2) Data management and communication (DMAC), (3) Modeling and analysis. The subsystems that enhance utility functions are (1) Governance and management, (2) Research and development, and (3) Training and education.

The Observing subsystem contains various types of technology assets that would be deployed throughout the RAs to obtain marine environmental data and produce data products. The types of technology assets the IOOS Program would potentially fund to support the RAs include:

- ***Passive Sensors/Instrumentation*** – Sensors can monitor parameters such as meteorological conditions, chlorophyll, turbidity, dissolved oxygen, temperature, salinity, pCO_2, pH, and wind.
- ***Animal Telemetry Observing Network*** – Tagging large animals (i.e., sharks and sea turtles) to obtain environmental data and monitor animal movements.
- ***Vessels and Sampling*** – Marine vessels used to conduct sampling activities, such as; conductivity, temperature, and depth surveys; beach monitoring; bathymetric surveys; monitoring of algae, zooplankton, and ocean conditions; invertebrate and fish sampling; and monitoring of fixed arrays.
- ***AUVs/Gliders/Drifters*** – Autonomous underwater vehicles (AUVs), gliders and drifters are unmanned and untethered underwater vehicle that navigate without any physical connection to a research vessel at the surface, to monitor water currents, temperature, and conditions that reveal effects from storms, impacts on fisheries, and water quality.
- ***Moorings, Stations, Buoys and Fixed Arrays*** – Moored buoy, open-ocean observatories are used to support air-sea, water-column, and seafloor sensors operating in remote, scientifically important locations and provide data and near-real time interaction to diverse communities of scientific and educational users.
- ***HF Radar*** – HF radar systems measure the speed and direction of ocean surface currents in near real time.
- ***SONAR*** – SONAR uses sound waves to find and identify objects in the water and determine water depth. Side-scan and multi-beam sonar SONAR systems are used to obtain bathymetric data.
- ***LIDAR*** – Light radar or light detection and ranging (LIDAR) is an active remote sensing technique similar to radar but uses light pulses instead of radio waves. Bathymetric LIDAR is used to acquire data in areas with complex and rugged shorelines.

The eleven RAs that were established around the country to address regional stakeholder needs for data and information products are:

1. Pacific Islands Ocean Observing System (PacIOOS)
2. Alaska Ocean Observing System (AOOS)
3. Northwest Association of Networked Ocean Observing Systems (NANOOS)
4. Central and Northern California Ocean Observing System (CeNCOOS)
5. Southern California Coastal Ocean Observing System (SCCOOS)
6. Gulf of Mexico Ocean Observing System (GCOOS)
7. Southeast Coastal Ocean Observing Regional Association (SECOORA)
8. Caribbean Coastal Ocean Observing System (CariCOOS)
9. Mid-Atlantic Regional Association for Coastal Ocean Observing Systems (MARACOOS)

10. Northeastern Regional Association of Coastal Ocean Observing Systems (NERACOOS)
11. Great Lakes Observing System (GLOS)

SUMMARY OF PROPOSED ACTION AND ALTERNATIVES

IOOS is proposing to expand and maintain the national integrated system of ocean, coastal, and Great Lakes observing systems to address regional and national informational needs. The Proposed Action also includes the issuance of cooperative agreements or competitive awards in the RAs to support implementation of the IOOS Program. Three alternatives were analyzed in the PEA: the Proposed Action (Preferred Alternative), the Full Capabilities Alternative, and the No Action Alternative. The Preferred Alternative is based on historic funding levels and budget requests submitted by the RAs. The Full Capabilities Alternative is based on the Blueprint determination of the levels of sensor and equipment deployment, data capture and analysis, system control, and information distribution required to realize the full capabilities of the IOOS Program envisioned in the Blueprint. The No Action Alternative is analyzed to provide a comparison of potential impacts if the program is not funded.

Proposed Action (Preferred Alternative)

Implementation of the IOOS Program requires implementation of all of the subsystems identified above. Historically, authorized funding of the program elements (approximately 50 to 60 percent) has not been sufficient to complete actions necessary to provide the Full Capability buildouts envisioned in the Blueprint and identified by the RAs. The RAs typically identified three levels or tiers of actions based on potential levels of appropriations and funding, with Tier 1 budgets representing full capability , Tier 2 representing less than full capability and Tier 3 representing level funding with prior years . The activities identified in the Proposed Action represent the priority actions to be implemented consistent with the levels of funding historically available and the Tier 3 budget requests submitted by the RAs.

Full Capabilities Buildout Alternative

The Full Capabilities Alternative assumes that budget constraints are not a barrier to execution of the buildout plans developed by the RAs for the Blueprint. Under the Full Capabilities Alternative all proposed equipment acquisitions, deployments, maintenance and operations discussed by the RAs in the Blueprint would be completed.

No Action Alternative

Under the No Action Alternative, the IOOS Program would maintain the currently deployed network of observing systems (804 assets) and would not fund additional observational technology assets to expand the existing network of observing systems. The program would be implemented using the same protocols implemented from 2010-2015. Maintaining the currently deployed network of observing systems is necessary to fulfill the minimum requirements set forth in the ICOOS Act, the First U.S. Integrated Ocean Observing System Development Plan, and the *U.S. Integrated Ocean Observing System: A Blueprint for Full Capability.*

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER ANALYSIS

In developing the Proposed Action, variations of the Full Capabilities Alternative were identified. The alternatives identified involved operating at various levels below the full capability identified for the Proposed Action and decreasing funding for asset deployment and maintenance, training, product development, DMAC, and modeling and analysis. The quantity

of observational activities would change at other funding levels, but the type and range of activities would not change significantly in terms of impact on the environment. A range of alternatives that focused on deploying specific technologies at projected funding levels at the expense of not deploying other technologies addressed in the Blueprint. While it appears that environmental impacts may be reduced by deploying only those technologies that would not result in direct impacts on the environment, the scope and consistency of data that would result from selective deployment would not meet the purpose and need of the system, and the resultant gaps in data would likely significantly reduce the usefulness of the IOOS data sets. For these reasons, we determined these alternatives did not meet the purpose and need for the Proposed Action or merit further study. Thus, the analyses of alternatives in this PEA are limited to the Proposed Action, the Full Capabilities Alternative, and the No Action Alternative.

ANALYSIS SUMMARY

The IOOS Program applied qualitative analyses to evaluate potential environmental effects of the Proposed Action (Preferred Alternative) and the Full Capabilities Alternative and analyzed the significance of this action based on NAO 216-6 and CEQ criteria. NAO 216-6 contains criteria for determining the significance of the impacts of a proposed action and CEQ regulations (40 CFR §1508.27) state that the significance of an action should be analyzed both in terms of "context" and "intensity." Each criterion discussed below is relevant to making a finding of no significant impact and the IOOS Program considered each criterion individually, as well as in combination with the others.

a. Has the agency considered both beneficial and adverse effects? (A significant effect may exist even if the Federal agency believes on balance the effect will be beneficial.)
The IOOS Program considered both adverse and beneficial effects of the Proposed Action (Preferred Alternative). The proposal to expand the national ocean observing system and implement the IOOS Program would have short-term, negligible to minor, adverse impacts on the physical and biological resources within the regions specified. Although there are no direct beneficial effects to resources evaluated from the IOOS Program itself, there would be indirect beneficial effects, including reduced impacts from other programs and projects in the affected areas that result from enhanced observations of ocean, coastal and Great Lakes environmental conditions as well as increased coordination, analysis and distribution of these observations for societal benefit.

b. To what degree would the proposed action affect public health and safety?
The Proposed Action (Preferred Alternative) would not be expected to result in any adverse impacts to public health and safety. The assets that would be deployed under the Proposed Action are already in use throughout the Region of Influence (ROI) and do not pose any risk to public health or safety. Therefore, it is reasonable to assume that the addition of these assets would not add health or safety risks.

c. To what degree would the proposed action affect unique characteristics of the geographic area in which the proposed action is to take place?
The Proposed Action (Preferred Alternative) would be expected to result in short-term, negligible to minor, adverse impacts on unique characteristics within the ROI. The Proposed Action (Preferred Alternative) would not be expected to adversely affect threatened or endangered species, their critical habitat, marine mammals, or other species. Through informal consultation with the National Marine Fisheries Service (NMFS), a determination was made

stating that the potential impacts on marine mammals would be negligible. NMFS also stated that installation and maintenance, and research and development activities associated with subsystem enhancement, may affect, but are not likely to adversely affect, any species or designated critical habitat protected under the Endangered Species Act. The remaining subsystems involving data modeling, analysis, and communications are administrative and take place in existing facilities, therefore, they do not have the potential to impact the quality of the human environment.

d. To what degree would the proposed action have effects on the human environment that are likely to be highly controversial?

The Proposed Action (Preferred Alternative) would not be expected to affect the human environment in a highly controversial manner, because there is no substantial dispute regarding the location, nature or effect of the proposed action and there is no known scientific controversy over the potential impacts of the proposed action. In addition, IOOS published the Draft PEA in the Federal Register on 1 April 2014 (79 FR 18281) to allow other agencies and the public the opportunity to review and comment on the Proposed Action. None of the comments received during the 30-day public comment period indicated that the potential effects of the proposed action would be controversial.

e. What is the degree to which effects are highly uncertain or involve unique or unknown risks?

The effects of the Proposed Action (Preferred Alternative) are not highly uncertain and do not involve unique or unknown risks. The activities are based on proven observing platform technologies and operational characteristics, for which the effects on the environment and risk posture are well known. Project Design Criteria (PDC) were developed in consultation with NMFS to to avoid adverse effects on ESA-listed species and designated critical habitat and to avoid harassment of marine mammals. For activities where there is a known potential for some effect to the environment, proven mitigation measures and best management practices would be implemented in the PDC, such as:

- Prior to deployment of assets which would have the potential for marine geological or biological impacts (e.g., dropping mooring anchors), personnel from the individual RA or the vessel crew would survey the bottom to assure that assets are not sited in an area such that adverse impacts could occur (e.g., adverse impacts to submerged aquatic vegetation, essential fish habitat, shipwrecks).
- Federal and state permits required for marine species tagging, as well as Institutional Animal Care and Use Committee (IACUC) approvals, would be obtained prior to any IOOS-related marine species tagging efforts.
- Prior to tagging, each researcher proposing to conduct animal tagging would submit their tagging methods for approval by their individual IACUC to ensure compliance with the U.S. Department of Agriculture Animal Welfare Act of 1966 and 1985 amendments, and the Public Health Service Policy on Humane Care and Use of Laboratory Animals.
- All vessels operating within the ROI in support of IOOS projects would be required to follow vessel owner/operator best management practices in the deployment of assets and during survey and sampling activities.
- RAs would notify the USCG prior to glider or AUV deployments to keep them informed of the planned route and duration of the deployment.

- Surveying the ROI prior to deployment of sensors or AUVs/gliders/drifters to ensure that threatened or endangered species are not within the area.
- Prior to deploying AUVs, gliders, or drifters, each RA would consult with its regional USCG office to determine if any permits are required. Additionally, if any of these assets move through tribal boundaries or usual and accustomed fishing areas, NOAA would initiate consultation with affected tribes or tribal nations under Section 106 of the NHPA.
- Prior to deploying moorings, appropriate permits from the USACE, USCG, or state agencies must be obtained.
- Appropriate personnel from each RA would consult and file permits, as appropriate, with federal and state agencies prior to deploying assets (e.g., moorings, HF radar) in support of IOOS.
- The site-specific placement of moorings and other IOOS assets within the ROI would be done in coordination with regional and local fishing communities to avoid and minimize potential fisheries interactions.
- When individual technology assets proposed under the IOOS Program are ready for deployment a site-specific environmental assessment (EA) may be required and the IOOS Program Office may conduct additional consultation with regulatory authorities, such as the U.S. Fish and Wildlife Service, State Historic Preservation Offices, and Coastal Zone Management Act administrators, as appropriate. Any additional coordination or consultation requirements would be addressed in the tiered, site-specific EAs.

f. What is the degree to which the action establishes a precedent for future actions with significant effects or represents a decision in principle about a future consideration?
The Proposed Action (Preferred Alternative) only includes the activities assessed in this PEA and does not establish a precedent for future action or represent a decision in principle about a future consideration. In addition, any activities conducted by the RAs that are not assessed in this PEA would require a tiered environmental review for adherence to applicable Federal, state, local, and tribal laws and regulations, and if necessary, the appropriate NEPA analysis will be prepared prior to awarding funds.

g. Does the proposed action have individually insignificant but cumulatively significant impacts?
The Proposed Action (Preferred Alternative) would have short term, negligible adverse impacts that are not expected to have cumulatively significant impacts when combined with impacts of other activities that occur in the vicinity. As explained in the PEA, other activities that occur in the vicinity of the IOOS Program with impacts on the environment include: vessel traffic, Ocean Observatories Initiative (OOI) stations, Physical Oceanographic Real-Time Systems® (PORTS), offshore energy development, oil and gas exploration activities, and commercial fishing. However, because the impacts of the preferred alternative are short term and negligible, the impacts are not expected to have cumulatively significant impacts. Any impacts will be further minimized by implementation of mitigation and best management practices in the PDC. Although the number of deployed assets under the IOOS Program and the other federally funded programs (OOI and PORTS), such as water-level gauges and meteorological instruments, would be greater among all programs than for any single program alone, the impacts associated with these assets would be similar to those associated with the IOOS Program with negligible to minor, and short-term impacts that are not expected to accumulate in the environment.

h. What is the degree to which the action adversely affects entities listed in or eligible for listing in the National Register of Historic Places, or may cause loss or destruction of significant scientific, cultural, or historic resources?
The Proposed Action (Preferred Alternative) is not expected to adversely affect or cause loss or destruction of districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places. Consultation letters notifying each potentially affected State Historic Preservation Office (SHPO) have been sent to alert them of the nature of the IOOS activities. However, since specific locations are not known, formal consultation under Section 106 of the NHPA is not possible at this time. Prior to the installation or operation of IOOS assets, a tiered NEPA analysis would be completed to address specific project areas.

i. What is the degree to which endangered or threatened species, or their critical habitat, as defined under the Endangered Species Act of 1973, are adversely affected?
The Proposed Action (Preferred Alternative) would not be expected to adversely affect endangered or threatened species or their critical habitat. Through informal consultation, NMFS determined that the proposed action may affect, but is not likely to adversely affect, endangered or threatened species or their critical habitat. In addition, the PDC developed in coordination with NMFS and described in Appendix G of the PEA would be implemented to avoid any potential impact on endangered or threatened species or their critical habitat as defined by ESA.

j. Does the proposed action have a potential to violate Federal, state, or local law for environmental protection?
The Proposed Action (Preferred Alternative) does not have the potential to violate Federal, state or local laws for environmental protection. The RAs would adhere to all applicable Federal, state, local, and tribal environmental protection laws and regulations in carrying out their activities.

k. Will the proposed action result in the introduction or spread of a non-indigenous species?
The Proposed Action (Preferred Alternative) would not reasonably be expected to result in the introduction or spread of any non-indigenous species. PDC described in the PEA in Appendix G would be implemented to prevent the introduction or spread of non-indigenous species, such as sanitizing boats and vessels before departure from ports and sterilizing gear/equipment/materials prior to placement in water bodies.

AGENCY COORDINATION AND CONSULTATION SUMMARY

The early participation and coordination with NOAA's Office of National Marine Sanctuaries (ONMS) and NMFS during the NEPA process aided in our analysis of potential environmental impacts to living marine resources and the marine environment. A summary of the results from each coordination and consultation process is provided below:

National Marine Sanctuaries Act (NMSA): The IOOS Program had informational discussions with ONMS and determined that the Proposed Action (Preferred Alternative) is not likely to destroy, cause the loss of, or injure a sanctuary resource and that a sanctuary consultation pursuant to Section 304(d) of the NMSA is not required. However, if and when, a RA proposes work in a National Marine Sanctuary, the RA must prepare a Sanctuary Resource Statement and consult with ONMS before undertaking the activity.

Magnuson-Stevens Act (MSA): The IOOS Program had informational discussions with NOAA Fisheries Office of Habitat Conservation and determined proposed mooring activities have the potential for short-term, minor, localized, adverse impacts to essential fish habitat and benthic habitats. IOOS intends to implement all Programmatic EFH Conservation Recommendations provided by NOAA Fisheries and described in the PEA in Chapter 4.5 to avoid, mitigate, or offset the impact of proposed mooring actions on EFH. There may be cases where effects on EFH from a specific activity in the IOOS program requires project-specific recommendations to conserve EFH. In these cases, IOOS has the responsibility to contact regional EFH staff to determine if additional Conservation Recommendations apply.

ESA and Marine Mammal Protection Act (MMPA): To fulfill requirements and obligations under ESA, the IOOS Program Office engaged in informal consultation with the Office of Protected Resources under NMFS. NMFS concurred that the IOOS Program's proposed action is not likely to adversely affect any ESA-listed species or designated critical habitat. After discussions with NMFS, IOOS also determined that the proposed action does not have a reasonable likelihood of resulting in the incidental take of marine mammal species pursuant to the MMPA, and therefore a MMPA authorization is not warranted. These determinations are dependent on the implementation of PDC designed to avoid adverse effects on ESA-listed species and designated critical habitat and to avoid harassment of marine mammals. These PDCs were developed in consultation with NMFS and are described in Appendix G of the PEA.

NMFS determined that further consultation and/or authorization pursuant to ESA and MMPA may be required if one or more of the following occurs:

- A RA is unable to implement all relevant PDC;
- There is any incidental take of ESA-listed species and/or marine mammals;
- New information reveals effects of the action that may affect ESA-listed species or critical habitat or marine mammals in a manner or to an extent not previously considered;
- The action is modified in a manner causing effects to ESA-listed species or critical habitat or marine mammals not previously considered; or
- A new species is listed or critical habitat designated that may be affected by the action.

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting PEA prepared for the IOOS Program, NOAA has determined the Proposed Action to expand and implement the national network of observing systems and fund RA activities would not significantly impact the quality of the human environment. Accordingly, preparation of an Environmental Impact Statement for this action is not necessary.

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Date