Calendar No. 195

117TH CONGRESS *2d Session*	SENATE	REPORT 117–76

NATIONAL OCEAN EXPLORATION ACT

R E P O R T

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ON

S. 381

FEBRUARY 15, 2022.—Ordered to be printed

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED SEVENTEENTH CONGRESS

SECOND SESSION

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REPORT
117–76

NATIONAL OCEAN EXPLORATION ACT

FEBRUARY 15, 2022.—Ordered to be printed

Ms. CANTWELL, from the Committee on Commerce, Science, and Transportation, submitted the following

R E P O R T

[To accompany S. 381]

[Including cost estimate of the Congressional Budget Office]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 381) to establish the National Ocean Mapping, Exploration, and Characterization Council, and for other purposes, having considered the same, reports favorably thereon with an amendment (in the nature of a substitute) and recommends that the bill (as amended) do pass.

PURPOSE OF THE BILL

The purpose of S. 381, the National Ocean Exploration Act, is to improve the understanding and stewardship of the oceans by improving characterization, mapping, and exploration efforts.

BACKGROUND AND NEEDS

The ocean covers 71 percent of the Earth's surface,[1] facilitating commerce and sustaining diversity of life, food, energy, medicine, and other services essential to global prosperity. Despite these benefits, our understanding of the ocean and the natural processes occurring on the sea floor have been limited due to the difficulties of operating in the deep sea. Over 80 percent of the ocean remains

[1] Pauline Weatherall et al., "A New Digital Bathymetric Model of the World's Oceans," *Earth Space Science*, vol. 2, no. 8 (June 2015), p. 331–345 (https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2015EA000107).

unmapped, unobserved, and unexplored.[2] Over the past few decades, advancements in technologies, such as artificial intelligence and robotics, have made it possible to explore the oceans at deeper depths, at higher resolutions, and at a faster pace.[3] As technologies continue to advance, it will become increasingly easier and more affordable to map, explore, and characterize the ocean, leading to new discoveries and invaluable information that will aid communities, the scientific community, as well as decision-makers.

The United States has economic, environmental, and security interests in mapping, exploring, and characterizing its Exclusive Economic Zone (EEZ). The U.S. EEZ extends 200 nautical miles from its coast and is the second largest EEZ in the world, covering an area larger than all 50 States combined. In 2018, the National Oceanic and Atmospheric Administration (NOAA) estimated that America's blue economy contributed approximately $373 billion in goods and services and grew faster than the Nation's economy as a whole from 2017 to 2018.[4] The top five sectors that contributed to the blue economy were: tourism and recreation ($143 billion), national defense and public administration ($124 billion), offshore minerals ($49 billion), transportation and warehousing ($25 billion), and living resources such as commercial fishing and aquaculture ($13 billion).[5] Despite the ocean's importance to the economy, 54 percent of the U.S. EEZ remains unmapped as of January 2020.[6] In addition to traditional economic benefits, further mapping, exploration, and characterization of the EEZ will equip the United States to more effectively steward its coasts, boost conservation efforts, and improve scientific understanding of the natural environment.

NATIONAL ENVIRONMENTAL POLICY ACT GEOSPATIAL DOCUMENT SYSTEM

The National Environmental Policy Act of 1969 (NEPA)[7] requires an analysis of the impact of Federal actions that may significantly affect the quality of the environment. As part of these analyses, a large amount of environmental data is collected and synthesized into NEPA documents. In 2015, the Environmental Law Institute (ELI) released a report discussing the benefits of aggregating NEPA documents and associated geospatial data (data with a location attribute) in a map-based data system.[8] The ELI re-

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[2] Larry Mayer et al., "The Nippon Foundation-GEBCO Seabed 2030 Project: The Quest to See the World's Oceans Completely Mapped by 2030," *Geosciences*, vol. 8, no. 2 (January 2018) (https://www.mdpi.com/2076-3263/8/2/63/html).

[3] National Oceanic and Atmospheric Administration, "Exploration Tools" (https://oceanexplorer.noaa.gov/technology/technology.html); National Research Council, *Ocean Science Series*, 2009 (https://www.nap.edu/catalog/13353/ocean-science-series); National Academies of Sciences, Engineering, and Medicine, *The Roles of Research and Technology in the Changing Ocean Economy: Proceedings of a Workshop—in Brief*, 2020 (https://www.nap.edu/catalog/25810/the-role-of-research-and-technology-in-the-changing-ocean-economy).

[4] National Oceanic and Atmospheric Administration, "Marine Economy in 2018 Grew Faster Than U.S. Overall," press release, June 2, 2020 (https://www.noaa.gov/media-release/marine-economy-in-2018-grew-faster-than-us-overall).

[5] Ibid.

[6] National Oceanic and Atmospheric Administration, "NOAA Announces New Progress Report on Mapping U.S. Ocean, Coastal, and Great Lakes Waters," press release, March 17, 2020 (https://www.nauticalcharts.noaa.gov/updates/noaa-announces-new-progress-report-on-mapping-u-s-ocean-coastal-and-great-lakes-waters/).

[7] 42 U.S.C. 4321 et seq.

[8] Kathryn Mengerink et al., *Geospatial NEPA for Ocean and Coastal Environments, Environmental Law Institute*, 2015 (http://eli-ocean.org/wp-content/blogs.dir/7/files/Geospatial-NEPA-ELI-2015.pdf).

port highlights that the transition of NEPA documents and geospatial data to Geographic Information System platforms would make data more easily accessible, help build off past assessments, avoid duplication of past assessments, and allow for consideration of cumulative impacts. Additionally, a publicly accessible NEPA geospatial document system would allow the public to more easily discern the quantity, types, and results of NEPA assessments within areas of interest, supplementing lengthy NEPA documents with an intuitive online mapping system. As listed in the report, an ideal NEPA geospatial data system would include the following:

- publicly accessible digital archive of NEPA documents;
- intuitive interface to downloading data and uploading documents or additional information as they are completed; and
- publicly accessible geospatially referenced data system that identifies NEPA documents by location, allows for keyword searches of uploaded documents, and maps and integrates geospatially relevant information.[9]

To achieve U.S. economic, environmental, and security interests, relevant agencies need to increase their ocean characterization, exploration, and mapping efforts. However, data alone is not enough. Effective data dissemination can ensure data collection efforts are streamlined and accessible by relevant stakeholders. Thus, a combined approach to increase the understanding of U.S. deep waters with better dissemination of those data (i.e., by following the suggested ideal NEPA geospatial data system) will help to ensure that the data can lead to implementable actions.

SUMMARY OF PROVISIONS

If enacted, S. 381 would do the following:

- Codify the Ocean Science and Technology (OST) Subcommittee and the Ocean Resource Management Subcommittee of the Ocean Policy Committee to establish or designate one or more systems for ocean-related documents prepared under NEPA that include publicly accessible and geospatially referenced data.
- Codify the National Ocean Mapping, Exploration, and Characterization (NOMEC) Council to set national ocean mapping, exploration, and characterization priorities and strategies; and facilitate better partnerships and data synthesis among Federal and State agencies, Indian Tribes, private industry, academia, and nongovernmental organizations.
- Establish a new interagency working group, the Interagency Working Group on Ocean Exploration and Characterization, which would support the OST Subcommittee and the NOMEC Council.
- Repeal the NOAA Undersea Research Program Act of 2009.
- Amend the NOAA Ocean Exploration Program by providing guidance on data standards, data protocols, and coordination on data collection, analysis, and dissemination.
- Authorize the NOAA Administrator to conduct education and outreach efforts to disseminate findings and conduct workforce training and opportunities to develop science, technology, engineering, and math (STEM) programs at academic institutions.

[9] Ibid.

- Amend the NOAA Ocean and Coastal Mapping Program by including more stakeholders (Federal and State agencies, Tribal governments, private industry, academia, and nongovernmental organizations) in the data collection coordination efforts.
- Develop ocean and coastal mapping Federal funding match opportunities within NOAA with Federal, State, Tribal, local, nonprofit, private industry, or academic partners to increase the acquisition and development of new ocean and coastal mapping data, allow heads of agencies in the working group to enter into cooperative agreements, and allow the Administrator to make grants to any State to carry out these purposes.

LEGISLATIVE HISTORY

S. 381 was introduced on February 23, 2021, by Senator Wicker (for himself and Senators Cantwell, Schatz, Murkowski, and Whitehouse) and was referred to the Committee on Commerce, Science, and Transportation of the Senate. Senator Hyde-Smith is an additional cosponsor. On April 28, 2021, the Committee met in open Executive Session and, by voice vote, ordered S. 381 reported favorably with an amendment (in the nature of a substitute with an amendment).

In the 116th Congress, a similar bill, S. 5024, was introduced on December 16, 2020, by Senator Wicker (for himself and Senators Cantwell and Schatz) and was referred to the Committee on Commerce, Science, and Transportation of the Senate.

ESTIMATED COSTS

In accordance with paragraph 11(a) of rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office:

U.S. CONGRESS,
CONGRESSONAL BUDGET OFFICE,
Washington, DC, June 10, 2021.

Hon. MARIA CANTWELL,
Chair, Committee on Commerce, Science, and Transportation,
U.S. Senate, Washington, DC.

DEAR MADAM CHAIR: The Congressional Budget Office has prepared the enclosed cost estimate for S. 381, the National Ocean Exploration Act.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contact is Robert Reese.

Sincerely,

PHILLIP L. SWAGEL,
Director.

Enclosure.

S. 381, National Ocean Exploration Act
As ordered reported by the Senate Committee on Commerce, Science, and Transportation on April 28, 2021

By Fiscal Year, Millions of Dollars	2021	2021-2026	2021-2031
Direct Spending (Outlays)	*	*	*
Revenues	0	0	0
Increase or Decrease (-) in the Deficit	*	*	*
Spending Subject to Appropriation (Outlays)	*	1,091	1,398

Statutory pay-as-you-go procedures apply?	Yes	Mandate Effects	
Increases on-budget deficits in any of the four consecutive 10-year periods beginning in 2032?	No	Contains intergovernmental mandate?	No
		Contains private-sector mandate?	No

* = between -$500,000 and $500,000.

S. 381 would amend several ocean mapping and exploration programs administered by the National Oceanic and Atmospheric Administration (NOAA). The bill would authorize the appropriation of specific amounts for those programs over the 2021–2026 period. Because specific amounts are already authorized or appropriated under current law, CBO's estimate of the budgetary effects is based on the difference between the amounts in the bill and those specified in the law. In total, the bill would authorize the appropriation, on net, of $1.4 billion for the following programs:

- $317 million for the Ocean Exploration and Research program,
- $268 million for the Ocean and Coastal Mapping program, and
- $813 million for multiple programs related to hydrographic surveying (the measurement and description of features that affect maritime navigation).

In 2021, NOAA allocated $77 million for similar purposes. Using historical spending patterns for similar activities, CBO estimates that implementing S. 381 would cost about $1.1 billion over the 2021–2026 period and about $300 million after 2026, assuming appropriation of the authorized amounts.

S. 381 also would repeal the Undersea Research Program Act of 2009 and would codify the activities of the National Ocean Mapping, Exploration, and Characterization Council; the Ocean Science and Technology Subcommittee; and the Ocean Research Management Subcommittee. Because the council and subcommittees currently exist and any new activities required under the bill would not require substantial action by NOAA or other federal agencies, CBO estimates that implementing the requirements related to those entities would not have a significant cost.

The costs of the legislation, detailed in Table 1, fall within budget function 300 (natural resources and environment).

TABLE 1.—ESTIMATED INCREASES IN SPENDING SUBJECT TO APPROPRIATION UNDER S. 381

	By fiscal year, millions of dollars—						
	2021	2022	2023	2024	2025	2026	2021–2026
Ocean Exploration Program:							
Authorization [a]	17	60	60	60	60	60	317
Estimated Outlays	*	36	49	58	60	60	263
Ocean and Coastal Mapping Program:							
Authorization [b]	43	45	45	45	45	45	268
Estimated Outlays	*	27	37	44	45	45	198
Hydrographic Surveys:							
Authorization [c]	44	44	44	227	227	227	813
Estimated Outlays	*	26	36	152	194	222	630
Total Changes:							
Authorization	104	149	149	332	332	332	1,398
Estimated Outlays	*	89	122	254	299	327	1,091

*= between zero and $500,000.

[a] The bill would authorize appropriations totaling $60 million in 2021 for the Ocean Exploration Program within the National Oceanic and Atmospheric Administration (NOAA). However, in 2021, NOAA allocated $43 million for that purpose. As a result, CBO estimates that S. 381 would increase authorizations in 2021 for that program by $17 million—the difference between those amounts for that year.

[b] The bill would authorize appropriations totaling $45 million in 2021 for NOAA's Ocean and Coastal Mapping Program. However, in 2021, NOAA allocated $2 million for that purpose. As a result, CBO estimates that S. 381 would increase authorizations in 2021 for that program by $43 million—the difference between those amounts for that year.

[c] Under current law, $183 million is authorized to be appropriated annually for these hydrographic surveying activities through 2023. Because specific authorization levels already exist for those years, CBO only shows the incremental increase in authorization amounts that would be created by S. 381. The bill would authorize appropriations of $227 million for hydrographic surveying in each year over the 2021–2023 period. Therefore, CBO estimates that S. 381 would increase authorizations in each year over the 2021–2023 period by $44 million—the difference between the amount authorized by S. 381 ($227 million annually) and the amounts authorized under current law ($183 million annually) for each of those years.

S. 381 would expand NOAA's authority to accept and spend, without further appropriation, monetary gifts to assist in implementing the National Ocean Exploration program. Such gifts would be recorded as offsetting receipts, which are treated as reductions in direct spending.

CBO estimates that the net change in direct spending would be negligible because we expect that any monetary gifts would be spent soon after they are received.

The CBO staff contact for this estimate is Robert Reese. The estimate was reviewed by H. Samuel Papenfuss, Deputy Director of Budget Analysis.

REGULATORY IMPACT STATEMENT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation, as reported:

NUMBER OF PERSONS COVERED

S. 381, as reported, would not impose any new significant regulatory requirements, and, therefore, would not subject any individuals or businesses to new significant regulations.

ECONOMIC IMPACT

S. 381, as reported, would not have an adverse economic impact on the nation. It will likely have a positive impact by increasing the understanding of the U.S. EEZ.

PRIVACY

S. 381, as reported, would not have any adverse impact on the personal privacy of individuals.

PAPERWORK

S. 381, as reported, would not require additional paperwork.

CONGRESSIONALLY DIRECTED SPENDING

In compliance with paragraph 4(b) of rule XLIV of the Standing Rules of the Senate, the Committee provides that no provisions contained in the bill, as reported, meet the definition of congressionally directed spending items under the rule.

SECTION-BY-SECTION ANALYSIS

Section 1. Short title.

This section would provide that the bill may be cited as the "National Ocean Exploration Act".

Section 2. Findings.

This section would highlight the value of a healthy and resilient ocean for the United States and the benefits of a robust national ocean exploration program.

Section 3. Definitions.

This section would define ocean characterization, exploration, mapping, and Indian Tribe.

Section 4. Ocean Policy Committee.

This section would establish the OST Subcommittee and Ocean Resource Management Subcommittee under the Ocean Policy Committee. The Ocean Policy Committee was authorized by the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021.[10] This section would direct the Ocean Policy Committee to establish an ocean-related NEPA document system. This system would include the following: (1) an accessible centralized digital archive of NEPA documents that are finalized after the date of enactment of this Act, (2) geospatially referenced data contained in the NEPA documents, and (3) a mechanism to retrieve information through geo-information tools that can map and integrate geospatially referenced NEPA data.

Section 5. National Ocean Mapping, Exploration, and Characterization Council.

This section would codify the NOMEC Council, under the OST Subcommittee, to update national priorities for ocean mapping, exploration, and characterization, and to coordinate and facilitate activities to advance those priorities. The NOMEC Council would be co-chaired by two senior-level representatives from NOAA and one-senior level representative from the Department of Interior. The Interagency Working Group on Ocean Exploration and Characterization and an existing Interagency Working Group on Ocean and Coastal Mapping[11] would be directed to support the NOMEC Council and OST Subcommittee. This section would also require the NOMEC Council to develop and submit a plan to Congress within a year on recommendations to establish an integrated ocean

[10] Public Law 116–283.
[11] Public Law 111–11.

mapping, exploration, and characterization initiative to meet the duties of the NOMEC Council, which among other things, would identify priorities and would set forth a timetable and estimated costs for implementation and completion of those priorities. Thereafter, briefings to Congress would be required to describe progress made towards meeting national priorities and further recommendations for meeting priorities.

Section 6. Modifications to the Ocean Exploration Program of the National Oceanic and Atmospheric Administration.

This section would amend the NOAA Ocean Exploration Program in the Omnibus Public Land Management Act of 2009.[12] It would strike responsibilities towards establishing and maintaining a national undersea research program and include ocean characterization in program efforts. The undersea research program has been inactive for more than 13 years. It would require the Administrator to coordinate with the NOMEC Council when carrying out the NOAA Ocean Exploration Program. It would require the Administrator to provide guidance to non-Federal entities on data standards related to ocean exploration and characterization efforts and ways to contribute and access such data. It would repeal the previously disbanded Ocean Exploration and Undersea Research Technology and Infrastructure Task Force. This section would include authorization of appropriations of $60 million for fiscal years 2021 through 2026 to carry out this program. This section would also give the Administrator a clear directive to engage in efforts to enhance public awareness and understanding of national ocean mapping, exploration, and characterization.

Section 7. Repeal.

This section would repeal the disbanded NOAA Undersea Research Program Act of 2009 (part II of subtitle A of title XII of Pub. L. 111–11).

Section 8. Modifications to Ocean and Coastal Mapping Program of the National Oceanic and Atmospheric Administration.

This section would amend the Ocean and Coastal Mapping Integration Act,[13] updating the legislation to reflect current ocean and coastal mapping activities. This section would update the activities of the Interagency Working Group on Ocean and Coastal Mapping (as mentioned in section 5) to support the NOMEC Council and OST Subcommittee and amend the co-chairs to reflect agencies currently serving as co-chairs. It would task the NOAA Administrator to develop an ocean and coastal mapping Federal funding match opportunity to increase coordinated acquisition, processing, stewardship, and archival of ocean and coastal mapping data and allow for agencies serving on the Working Group to more easily exchange resources to carry out mapping activities. This section would also provide authorization of appropriations of $45 million for the Ocean and Coastal Mapping Integration Act for fiscal years 2021 to 2026.

[12] Ibid.
[13] Ibid.

Section 9. Modifications to Hydrographic Services Improvement Act of 1998.

This section would provide authorization of appropriations for the Hydrographic Services Improvement Act[14] of 1998 for fiscal years 2021 to 2026 and give the program the ability to enter into agreements for distribution of products and services, with any proceeds covering the cost of the program.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new material is printed in italic, existing law in which no change is proposed is shown in roman):

UNITED STATES CODE

* * * * * * *

TITLE 10—ARMED FORCES

* * * * * * *

Subtitle C—Navy and Marine Corps

* * * * * * *

PART IV—GENERAL ADMINISTRATION

* * * * * * *

CHAPTER 893—NATIONAL OCEANOGRAPHIC PARTNERSHIP PROGRAM

* * * * * * *

§ 8932. Ocean Policy Committee

(a) COMMITTEE.—There is established an Ocean Policy Committee (hereinafter referred to as the "Committee"). The Committee shall retain broad and inclusive membership.

(b) RESPONSIBILITIES.—The Committee shall—

(1) continue the activities of that Committee as it was in existence on the day before the date of the enactment of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021;

(2) engage and collaborate, pursuant to existing laws and regulations, with stakeholders, including regional ocean partnerships, to address ocean-related matters that may require interagency or intergovernmental solutions;

(3) facilitate coordination and integration of Federal activities in ocean and coastal waters to inform ocean policy and

[14] Public Law 105–384.

identify priority ocean research, technology, and data needs; [and]

(4) prescribe policies and procedures to implement the National Oceanographic Partnership Program, including developing guidelines for review, selection, identification, and approval of partnership projects, in conjunction with Federal agencies participating in the program, for implementation under the program, based on—

(A) whether the project addresses important research objectives or operational goals;

(B) whether the project has, or is designed to have, appropriate participation or support from public, academic, commercial, and private entities within the oceanographic community;

(C) whether the partners have a long-term commitment to the objectives of the project;

(D) whether the resources supporting the project are shared among the partners;

(E) whether the project has been subjected to adequate scientific and technical merit review according to each participating agency; and

(F) the approval of such guidelines by a consensus of the members of the Committee[.]*; and*

(5) establish or designate one or more systems for ocean-related documents prepared under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), in accordance with subsection (h).

[(c) DELEGATION OF RESPONSIBILITIES.—In discharging its responsibilities in support of agreed-upon scientific needs, and to assist in the execution of the responsibilities described in subsection (b), the Committee may delegate responsibilities to a subcommittee of the Committee, as the Committee determines appropriate.]

(c) SUBCOMMITTEES.—(1) The Committee shall include—

(A) a subcommittee to be known as the "Ocean Science and Technology Subcommittee"; and

(B) a subcommittee to be known as the "Ocean Resource Management Subcommittee".

(2) In discharging its responsibilities in support of agreed-upon scientific needs, and to assist in the execution of the responsibilities described in subsection (b), the Committee may delegate responsibilities to the Ocean Science and Technology Subcommittee, the Ocean Resource Management Subcommittee, or another subcommittee of the Committee, as the Committee determines appropriate.

(d) * * *

* * * * * * *

(g) * * *

(h) ELEMENTS OF DOCUMENT SYSTEM.—The systems established or designated under subsection (b)(5) shall include the following:

(1) A publicly accessible, centralized digital archive of documents described in subsection (b)(5) that are finalized after the date of the enactment of the National Ocean Exploration Act, including—

(A) environmental impact statements;

(B) environmental assessments;

(C) categorical exclusions;

(D) records of decision; and

(E) other relevant documents as determined by the Committee.

(2) Geospatially referenced data, if any, contained in the documents under paragraph (1).

(3) A mechanism to retrieve information through geo-information tools that can map and integrate relevant geospatial information, such as—

(A) Ocean Report Tools;

(B) the Environmental Studies Program Information System;

(C) Regional Ocean Partnerships; and

(D) the Integrated Ocean Observing System.

[(h)]*(i)* APPROPRIATE CONGRESSIONAL COMMITTEES.—In this section, the term "appropriate congressional committees" means—

(1) the Committee on Commerce, Science, and Transportation of the Senate;

(2) the Committee on Armed Services of the Senate;

(3) the Committee on Appropriations of the Senate;

(4) the Committee on Natural Resources of the House of Representatives;

(5) the Committee on Science, Space, and Technology of the House of Representatives;

(6) the Committee on Armed Services of the House of Representatives; and

(7) the Committee on Appropriations of the House of Representatives.

* * * * * * *

OMNIBUS PUBLIC LAND MANAGEMENT ACT OF 2009

[33 U.S.C. 3401 et seq.; Pub. L. 111–11]

TITLE XII—OCEANS

Subtitle A—Ocean Exploration

PART I—EXPLORATION

SEC. 12001. PURPOSE.

The purpose of this part is to establish the national ocean exploration program [and the national undersea research program] within the National Oceanic and Atmospheric Administration.

SEC. 12002. PROGRAM ESTABLISHED.

The Administrator of the National Oceanic and Atmospheric Administration shall, in consultation with the National Science Foundation and other appropriate Federal agencies, establish a coordinated national ocean exploration program within the National Oceanic and Atmospheric Administration that promotes collaboration with other Federal ocean [and undersea] research and exploration programs. To the extent appropriate, the Administrator

shall seek to facilitate coordination of data and information management systems, outreach and education programs to improve public understanding of ocean and coastal resources, and development and transfer of technologies to facilitate ocean [and undersea research and exploration] *research and ocean exploration and characterization efforts*.

SEC. 12003. POWERS AND DUTIES OF THE ADMINISTRATOR.

(a) IN GENERAL.—In carrying out the program authorized by section 12002, the Administrator of the National Oceanic and Atmospheric Administration*, in coordination with the Ocean Policy Committee established under section 8932 of title 10, United States Code,* shall—

(1) conduct interdisciplinary [voyages] *expeditions* or other scientific activities in conjunction with other [Federal agencies or academic or educational institutions, to explore and survey] *Federal and State agencies, Tribal governments, private industry, academia, and nongovernmental organizations, to map, explore, and characterize* little known areas of the marine environment, inventory, observe, *characterize,* and assess living and nonliving marine resources, and report such findings;

(2) give priority attention to deep ocean regions *of the exclusive economic zone*, with a focus on deep water marine systems that hold potential for important scientific discoveries, such as hydrothermal vent communities and seamounts;

(3) conduct scientific [voyages] *expeditions* to locate, define, and document historic shipwrecks, submerged sites, and other ocean exploration activities that combine archaeology and oceanographic sciences;

(4) develop and implement[, in consultation with the National Science Foundation,] a transparent, competitive process for merit-based peer-review and approval of proposals for activities to be conducted under this program, taking into consideration advice of the Board established under section 12005;

[(5) enhance the technical capability of the United States marine science community by promoting the development of improved oceanographic research, communication, navigation, and data collection systems, as well as underwater platforms and sensor and autonomous vehicles; and]

(5) support technological innovation of the United States marine science community by promoting the development and use of new and emerging technologies for research, communication, navigation, and data collection, such as sensors and autonomous vehicles;

(6) establish an ocean exploration forum*, in collaboration with the National Ocean Mapping, Exploration, and Characterization Council established under section 5 of the National Ocean Exploration Act,* to encourage partnerships and promote communication among experts and other stakeholders in order to enhance the scientific and technical expertise and relevance of the national program[.]*; and*

(7) provide guidance, in coordination with the National Ocean Mapping, Exploration, and Characterization Council, to Federal and State agencies, Tribal governments, private industry, academia (including secondary schools, community colleges, and universities), and nongovernmental organizations on data

standards, protocols for accepting data, and coordination of data collection, compilation, processing, archiving, and dissemination for data relating to ocean exploration and characterization.

[(b) DONATIONS.—The Administrator may accept donations of property, data, and equipment to be applied for the purpose of exploring the oceans or increasing knowledge of the oceans.]

(b) DONATIONS.—For the purpose of mapping, exploring, and characterizing the oceans or increasing the knowledge of the oceans, the Administrator may—

(1) accept monetary donations and donations of property, data, and equipment; and

(2) pay all necessary expenses in connection with the conveyance or transfer of a gift, devise, or bequest.

(c) DEFINITION OF EXCLUSIVE ECONOMIC ZONE.—In this section, the term "exclusive economic zone" means the zone established by Presidential Proclamation Number 5030, dated March 10, 1983 (16 U.S.C. 1453 note; relating to the exclusive economic zone of the United States of America).

[SEC. 12004. OCEAN EXPLORATION AND UNDERSEA RESEARCH TECHNOLOGY AND INFRASTRUCTURE TASK FORCE.

[(a) IN GENERAL.—The Administrator of the National Oceanic and Atmospheric Administration, in coordination with the National Science Foundation, the National Aeronautics and Space Administration, the United States Geological Survey, the Department of the Navy, the Mineral Management Service, and relevant governmental, non-governmental, academic, industry, and other experts, shall convene an ocean exploration and undersea research technology and infrastructure task force to develop and implement a strategy—

[(1) to facilitate transfer of new exploration and undersea research technology to the programs authorized under this part and part II of this subtitle;

[(2) to improve availability of communications infrastructure, including satellite capabilities, to such programs;

[(3) to develop an integrated, workable, and comprehensive data management information processing system that will make information on unique and significant features obtained by such programs available for research and management purposes;

[(4) to conduct public outreach activities that improve the public understanding of ocean science, resources, and processes, in conjunction with relevant programs of the National Oceanic and Atmospheric Administration, the National Science Foundation, and other agencies; and

[(5) to encourage cost-sharing partnerships with governmental and nongovernmental entities that will assist in transferring exploration and undersea research technology and technical expertise to the programs.

[(b) BUDGET COORDINATION.—The task force shall coordinate the development of agency budgets and identify the items in their annual budget that support the activities identified in the strategy developed under subsection (a).]

SEC. 12004. EDUCATION, WORKFORCE TRAINING, AND OUTREACH.

(a) IN GENERAL.—The Administrator of the National Oceanic and Atmospheric Administration shall—

(1) conduct education and outreach efforts in order to broadly disseminate information to the public on the discoveries made by the program under section 12002; and

(2) to the extent possible, coordinate the efforts described in paragraph (1) with the outreach strategies of other domestic or international ocean mapping, exploration, and characterization initiatives.

(b) EDUCATION AND OUTREACH EFFORTS.—Efforts described in subsection (a)(1) may include—

(1) education of the general public, teachers, students, and ocean and coastal resource managers; and

(2) workforce training, reskilling, and opportunities to encourage development of ocean related science, technology, engineering, and mathematics (STEM) technical training programs involving secondary schools, community colleges, and universities, including Historically Black Colleges or Universities (within the meaning of the term "part B institution" under section 322 of the Higher Education Act of 1965 (20 U.S.C. 1061)), Tribal Colleges or Universities (as defined in section 316(b) of such Act (20 U.S.C. 1059c(b))), and other minority-serving institutions (as described in section 371(a) of such Act (20 U.S.C. 1067q(a))).

(c) OUTREACH STRATEGY.—Not later than 180 days after the date of the enactment of the National Ocean Exploration Act, the Administrator of the National Oceanic and Atmospheric Administration shall develop an outreach strategy to broadly disseminate information on the discoveries made by the program under section 12002.

SEC. 12005. OCEAN EXPLORATION ADVISORY BOARD.

(a) ESTABLISHMENT.—The Administrator of the National Oceanic and Atmospheric Administration shall appoint an Ocean Exploration Advisory Board composed of experts in relevant fields—

(1) to advise the Administrator *and the National Ocean Mapping, Exploration, and Characterization Council established under section 5 of the National Ocean Exploration Act* on priority areas for survey and discovery;

(2) to assist the program in the development of a 5-year strategic plan for the fields of ocean, marine, and Great Lakes science, exploration, and discovery;

(3) to annually review the quality and effectiveness of the proposal review process established under section 12003(a)(4); and

(4) to provide other assistance and advice as requested by the Administrator.

(b) FEDERAL ADVISORY COMMITTEE ACT.—Section 14 of the Federal Advisory Committee Act (5 U.S.C. App.) shall not apply to the Board appointed under subsection (a).

(c) APPLICATION WITH OUTER CONTINENTAL SHELF LANDS ACT.—Nothing in *this* part supersedes, or limits the authority of the Secretary of the Interior under the Outer Continental Shelf Lands Act (43 U.S.C. 1331 et seq.).

SEC. 12006. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the National Oceanic and Atmospheric Administration to carry out [this part—

[(1) $33,550,000 for fiscal year 2009;

[(2) $36,905,000 for fiscal year 2010;

[(3) $40,596,000 for fiscal year 2011;

[(4) $44,655,000 for fiscal year 2012;

[(5) $49,121,000 for fiscal year 2013;

[(6) $54,033,000 for fiscal year 2014; and

[(7) $59,436,000 for fiscal year 2015.]*this part $60,000,000 for each of fiscal years 2021 through 2026.*

SEC. 12007. DEFINITIONS.

In this part:

(1) CHARACTERIZATION.—The terms "characterization", "characterize", and "characterizing" refer to activities that provide comprehensive data and interpretations for a specific area of interest of the seafloor, sub-bottom, water column, or hydrologic features, such as water masses and currents, in direct support of specific research, environmental protection, resource management, policymaking, or applied mission objectives.

(2) EXPLORATION.—The term "exploration", "explore", and "exploring" refer to activities that provide—

(A) a multidisciplinary view of an unknown or poorly understood area of the seafloor, sub-bottom, or water column; and

(B) an initial assessment of the physical, chemical, geological, biological, archaeological, or other characteristics of such an area.

(3) MAPPING.—The terms "map" and "mapping" refer to activities that provide comprehensive data and information needed to understand seafloor characteristics, such as depth, topography, bottom type, sediment composition and distribution, underlying geologic structure, and benthic flora and fauna.

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TITLE XII—OCEANS

Subtitle A—Ocean Exploration

PART I—EXPLORATION

* * * * * * *

[The NOAA Undersea Research Program Act of 2009 (part II of subtitle A of title XII of Public Law 111–11; 33 U.S.C. 3421 et seq.) is repealed.]

[PART II—NOAA UNDERSEA RESEARCH PROGRAM ACT OF 2009

[SEC. 12101. SHORT TITLE.

[This part may be cited as the "NOAA Undersea Research Program Act of 2009".

[SEC. 12102. PROGRAM ESTABLISHED.

[(a) IN GENERAL.—The Administrator of the National Oceanic and Atmospheric Administration shall establish and maintain an undersea research program and shall designate a Director of that program.

[(b) PURPOSE.—The purpose of the program is to increase scientific knowledge essential for the informed management, use, and preservation of oceanic, marine, and coastal areas and the Great Lakes.

[SEC. 12103. POWERS OF PROGRAM DIRECTOR.

[The Director of the program, in carrying out the program, shall—

[(1) cooperate with institutions of higher education and other educational marine and ocean science organizations, and shall make available undersea research facilities, equipment, technologies, information, and expertise to support undersea research efforts by these organizations;

[(2) enter into partnerships, as appropriate and using existing authorities, with the private sector to achieve the goals of the program and to promote technological advancement of the marine industry; and

[(3) coordinate the development of agency budgets and identify the items in their annual budget that support the activities described in paragraphs (1) and (2).

[SEC. 12104. ADMINISTRATIVE STRUCTURE.

[(a) IN GENERAL.—The program shall be conducted through a national headquarters, a network of extramural regional undersea research centers that represent all relevant National Oceanic and Atmospheric Administration regions, and the National Institute for Undersea Science and Technology.

[(b) DIRECTION.—The Director shall develop the overall direction of the program in coordination with a Council of Center Directors comprised of the directors of the extramural regional centers and the National Institute for Undersea Science and Technology. The Director shall publish a draft program direction document not later than 1 year after the date of enactment of this Act in the Federal Register for a public comment period of not less than 120 days. The Director shall publish a final program direction, including responses to the comments received during the public comment period, in the Federal Register within 90 days after the close of the comment period. The program director shall update the program direction, with opportunity for public comment, at least every 5 years.

[SEC. 12105. RESEARCH, EXPLORATION, EDUCATION, AND TECHNOLOGY PROGRAMS.

[(a) IN GENERAL.—The following research, exploration, education, and technology programs shall be conducted through the network of regional centers and the National Institute for Undersea Science and Technology:

[(1) Core research and exploration based on national and regional undersea research priorities.

[(2) Advanced undersea technology development to support the National Oceanic and Atmospheric Administration's research mission and programs.

[(3) Undersea science-based education and outreach programs to enrich ocean science education and public awareness of the oceans and Great Lakes.

[(4) Development, testing, and transition of advanced undersea technology associated with ocean observatories, submersibles, advanced diving technologies, remotely operated vehicles, autonomous underwater vehicles, and new sampling and sensing technologies.

[(5) Discovery, study, and development of natural resources and products from ocean, coastal, and aquatic systems.

[(b) OPERATIONS.—The Director of the program, through operation of the extramural regional centers and the National Institute for Undersea Science and Technology, shall leverage partnerships and cooperative research with academia and private industry.

[SEC. 12106. COMPETITIVENESS.

[(a) DISCRETIONARY FUND.—The Program shall allocate no more than 10 percent of its annual budget to a discretionary fund that may be used only for program administration and priority undersea research projects identified by the Director but not covered by funding available from centers.

[(b) COMPETITIVE SELECTION.—The Administrator shall conduct an initial competition to select the regional centers that will participate in the program 90 days after the publication of the final program direction under section 12104 and every 5 years thereafter. Funding for projects conducted through the regional centers shall be awarded through a competitive, merit-reviewed process on the basis of their relevance to the goals of the program and their technical feasibility.

[SEC. 12107. AUTHORIZATION OF APPROPRIATIONS.

[There are authorized to be appropriated to the National Oceanic and Atmospheric Administration—

[(1) for fiscal year 2009—

[(A) $13,750,000 for the regional centers, of which 50 percent shall be for West Coast regional centers and 50 percent shall be for East Coast regional centers; and

[(B) $5,500,000 for the National Technology Institute;

[(2) for fiscal year 2010—

[(A) $15,125,000 for the regional centers, of which 50 percent shall be for West Coast regional centers and 50 percent shall be for East Coast regional centers; and

[(B) $6,050,000 for the National Technology Institute;

[(3) for fiscal year 2011—

[(A) $16,638,000 for the regional centers, of which 50 percent shall be for West Coast regional centers and 50 percent shall be for East Coast regional centers; and

[(B) $6,655,000 for the National Technology Institute;

[(4) for fiscal year 2012—

[(A) $18,301,000 for the regional centers, of which 50 percent shall be for West Coast regional centers and 50 percent shall be for East Coast regional centers; and

[(B) $7,321,000 for the National Technology Institute;

[(5) for fiscal year 2013—

[(A) $20,131,000 for the regional centers, of which 50 percent shall be for West Coast regional centers and 50 percent shall be for East Coast regional centers; and

[(B) $8,053,000 for the National Technology Institute;

[(6) for fiscal year 2014—

[(A) $22,145,000 for the regional centers, of which 50 percent shall be for West Coast regional centers and 50 percent shall be for East Coast regional centers; and

[(B) $8,859,000 for the National Technology Institute; and

[(7) for fiscal year 2015—

[(A) $24,359,000 for the regional centers, of which 50 percent shall be for West Coast regional centers and 50 percent shall be for East Coast regional centers; and

[(B) $9,744,000 for the National Technology Institute.]

[33 U.S.C. 3501 et seq.]

Subtitle B—Ocean and Coastal Mapping Integration Act

SEC. 12201. SHORT TITLE.

This subtitle may be cited as the "Ocean and Coastal Mapping Integration Act".

SEC. 12202. ESTABLISHMENT OF PROGRAM.

(a) IN GENERAL.—The President, in coordination with the [Interagency Committee on Ocean and Coastal Mapping] *Interagency Working Group on Ocean and Coastal Mapping under section 12203* and affected coastal states, shall [establish a program to develop a coordinated and] *establish and maintain a program to coordinate* comprehensive Federal ocean and coastal mapping [plan] *efforts* for the Great Lakes and coastal state waters, the territorial sea, the exclusive economic zone, and the continental shelf of the United States [that enhances ecosystem approaches in decision-making for conservation and management of marine resources and habitats, establishes research and mapping priorities, supports the siting of research and other platforms, and advances ocean and coastal science.] *that—*

(1) enhances ecosystem approaches in decision-making for natural resource and habitat management restoration and conservation, emergency response, and coastal resilience and adaptation;

(2) establishes research and mapping priorities;

(3) supports the siting of research and other platforms; and

(4) advances ocean and coastal science.

[(b) MEMBERSHIP.—The Committee shall be comprised of high level representatives of the Department of Commerce, through the National Oceanic and Atmospheric Administration, the Department of the Interior, the National Science Foundation, the Department of Defense, the Environmental Protection Agency, the Department of Homeland Security, the National Aeronautics and Space Administration, and other appropriate Federal agencies involved in ocean and coastal mapping.]

[(c)](b) PROGRAM PARAMETERS.—In [developing] *maintaining* such a program, the President, through the [Committee] *Working Group*, shall—

(1) identify all Federal and federally-funded programs conducting shoreline delineation and ocean or coastal mapping, noting geographic coverage, frequency, spatial coverage, resolution, and subject matter focus of the data and location of data archives;

(2) facilitate cost-effective, cooperative mapping efforts that incorporate policies for contracting with non-governmental entities among all Federal agencies conducting ocean and coastal mapping *and for leveraging existing Federal geospatial services capacities and contract vehicles for efficiencies*, by increasing data sharing, developing appropriate data acquisition and metadata standards, and facilitating the interoperability of in situ data collection systems, data processing, archiving, and distribution of data products;

(3) facilitate the adaptation of existing technologies as well as foster expertise in new ocean and coastal mapping technologies, including through research, development, and training conducted among Federal agencies and in cooperation with non-governmental entities;

(4) develop standards and protocols for testing innovative experimental mapping technologies and transferring new technologies between the Federal Government, coastal state, and non-governmental entities;

(5) provide for the archiving, management, and distribution of data sets through a national registry as well as provide mapping products and services to the general public in service of statutory requirements;

(6) develop data standards and protocols consistent with standards developed by the Federal Geographic Data Committee for use by Federal, coastal state, and other entities in mapping and otherwise documenting locations of federally permitted activities, living and nonliving coastal and marine resources, marine ecosystems, sensitive habitats, submerged cultural resources, undersea cables, offshore aquaculture projects, offshore energy projects, and any areas designated for purposes of environmental protection or conservation and management of living and nonliving coastal and marine resources;

(7) identify the procedures to be used for coordinating the collection and integration of Federal ocean and coastal mapping data [with coastal state and local government programs] *with mapping programs, in conjunction with Federal and State agencies, Tribal governments, private industry, academia, and nongovernmental organizations*;

(8) facilitate, to the extent practicable, the collection [of real-time tide data and the development] *of tide data and water-level data and the development and dissemination* of hydrodynamic models for coastal areas to allow for the application of Vdatum tools that will facilitate the seamless integration of onshore and offshore maps and charts;

(9) establish a plan for the acquisition and collection of ocean and coastal mapping data[; and]*;*

(10) set forth a timetable for completion and implementation of the plan[.]*; and*

(11) support—

(A) the Ocean Science and Technology Subcommittee of the Ocean Policy Committee established under section 8932(c) of title 10, United States Code; and

(B) the National Ocean Mapping, Exploration, and Characterization Council established under section 5 of the National Ocean Exploration Act.

SEC. 12203. INTERAGENCY [COMMITTEE] *WORKING GROUP* ON OCEAN AND COASTAL MAPPING.

(a) IN GENERAL.—The Administrator of the National Oceanic and Atmospheric Administration, [within 30 days after the date of enactment of this Act, shall convene or utilize an existing interagency committee on ocean and coastal mapping to implement section 12202.] *not later than 30 days after the date of the enactment of the National Ocean Exploration Act, shall use the Interagency Working Group on Ocean and Coastal Mapping in existence as of the date of the enactment of such Act to implement section 12202.*

(b) MEMBERSHIP.—The [committee] *Working Group* shall be comprised of senior-level representatives from Federal agencies with ocean and coastal mapping and surveying responsibilities. [The representatives shall be high-ranking officials of their respective agencies or departments and, whenever possible, the head of the portion of the agency or department that is most relevant to the purposes of this subtitle.] Membership shall include [senior] *senior-level* representatives from the National Oceanic and Atmospheric Administration, the Chief of Naval Operations, the United States Geological Survey, [the Minerals Management Service] *the Bureau of Ocean Energy Management of the Department of the Interior, the Office of the Assistant Secretary, Fish and Wildlife and Parks of the Department of the Interior*, the National Science Foundation, the National Geospatial-Intelligence Agency, the United States Army Corps of Engineers, the Coast Guard, the Environmental Protection Agency, the Federal Emergency Management Agency, the National Aeronautics and Space Administration, and other appropriate Federal agencies involved in ocean and coastal mapping.

[(c) CO-CHAIRMEN.—The Committee shall be co-chaired by the representative of the Department of Commerce and a representative of the Department of the Interior.]

(c) CO-CHAIRS.—The Working Group shall be co-chaired by one representative from each of the following:

(1) The National Oceanic and Atmospheric Administration.

(2) The Department of the Interior.

(3) The United States Army Corps of Engineers.

[(d) SUBCOMMITTEE.—The co-chairmen shall establish a subcommittee to carry out the day-to-day work of the Committee, comprised of senior representatives of any member agency of the committee. Working groups may be formed by the full Committee to address issues of short duration. The subcommittee shall be chaired by the representative from the National Oceanic and Atmospheric Administration. The chairmen of the Committee may create such additional subcommittees and working groups as may be needed to carry out the work of Committee.]

(d) SUBORDINATE GROUPS.—The co-chairs may establish such permanent or temporary subordinate groups as determined appropriate by the Working Group.

(e) MEETINGS.—The [committee] *Working Group* shall meet on a quarterly basis, but [each subcommittee and each working group] *each subordinate group* shall meet on an as-needed basis.

(f) COORDINATION.—The [committee] *Working Group* shall coordinate activities when appropriate, with—

[(1) other Federal efforts, including the Digital Coast, Geospatial One-Stop, and the Federal Geographic Data Committee;

[(2) international mapping activities;

[(3) coastal states;

[(4) user groups through workshops and other appropriate mechanisms; and

[(5) representatives of nongovernmental entities.]

(1) other Federal efforts, such as the Digital Coast, the Federal Geographic Data Committee, GeoPlatform, the Integrated Ocean Observing System, the Hydrographic Services Review Panel of the National Oceanic and Atmospheric Administration, the Ocean Exploration Advisory Board of the National Oceanic and Atmospheric Administration, the National Geospatial Advisory Committee of the Department of the Interior, the advisory committee for the National Integrated Coastal and Ocean Observation System, and the Technical Mapping Advisory Council of the Federal Emergency Management Agency;

(2) international mapping activities;

(3) coastal states;

(4) coastal Indian Tribes;

(5) data acquisition and user groups through workshops, partnerships, and other appropriate mechanisms; and

(6) representatives of nongovernmental entities.

[(g) ADVISORY PANEL.—The Administrator may convene an ocean and coastal mapping advisory panel consisting of representatives from non-governmental entities to provide input regarding activities of the committee in consultation with the interagency committee.]

(g) SUPPORT FUNCTIONS.—The Working Group shall support the National Ocean Mapping, Exploration, and Characterization Council established under section 5 of the National Ocean Exploration Act and the Ocean Science and Technology Subcommittee of the Ocean Policy Committee established under section 8932(c) of title 10, United States Code, on ocean mapping activities and associated technology development across the Federal Government, State governments, coastal Indian Tribes, private industry, nongovernmental organizations, and academia.

SEC. 12204. BIENNIAL REPORTS.

[No later than 18 months after the date of enactment of this Act, and biennially thereafter, the co-chairmen of the Committee shall transmit to the Committees on Commerce, Science, and Transportation and Energy and Natural Resources of the Senate and the Committee on Natural Resources of the House of Representatives] *Not later than 18 months after the date of the enactment of the National Ocean Exploration Act, and biennially thereafter until 2040, the co-chairs of the Working Group, in coordina-*

tion with the National Ocean Mapping, Exploration, and Characterization Council established under section 5 of such Act, shall submit to the Committee on Commerce, Science, and Transportation and the Committee on Energy and Natural Resources of the Senate, and the Committee on Natural Resources and the Committee on Science, Space, and Technology of the House of Representatives, a report detailing progress made in implementing this subtitle, including—

(1) an inventory of ocean and coastal mapping data*, including the data maintained by the National Centers for Environmental Information of the National Oceanic and Atmospheric Administration,* within the territorial sea and the exclusive economic zone and throughout the Continental Shelf of the United States, noting the age and source of the survey and the spatial resolution (metadata) of the data;

(2) identification of priority areas in need of survey coverage using present technologies;

(3) a resource plan that identifies when priority areas in need of modern ocean and coastal mapping surveys can be accomplished*, including a plan to map the coasts of the United States on a requirements-based cycle, with mapping agencies and partners coordinating on a unified approach that factors in recent related studies, meets multiple user requirements, and identifies gaps*;

(4) the status of efforts to produce integrated digital maps of ocean and coastal areas;

(5) a description of any products resulting from coordinated mapping efforts under this subtitle that improve public understanding of the coasts and oceans, or regulatory decisionmaking;

(6) documentation of minimum and desired standards for data acquisition and integrated metadata;

(7) a statement of the status of Federal efforts to leverage mapping technologies, coordinate mapping activities, share expertise, and exchange data;

(8) a statement of resource requirements for organizations to meet the goals of the program, including technology needs for data acquisition, processing, and distribution systems;

(9) a statement of the status of efforts to declassify data gathered by the Navy, the National Geospatial-Intelligence Agency, and other agencies to the extent possible without jeopardizing national security, and make it available to partner agencies and the public;

[(10) a resource plan for a digital coast integrated mapping pilot project for the northern Gulf of Mexico that will—

[(A) cover the area from the authorized coastal counties through the territorial sea;

[(B) identify how such a pilot project will leverage public and private mapping data and resources, such as the United States Geological Survey National Map, to result in an operational coastal change assessment program for the subregion;**]**

[(11)**]***(10)* the status of efforts to coordinate Federal programs **[**with coastal state and local government programs**]** *with international, coastal state, and local government and*

nongovernmental mapping programs and leverage those programs;

[(12)]*(11)* a description of efforts of Federal agencies to [increase] *streamline and expand* contracting with nongovernmental entities *for the purpose of fulfilling Federal mapping and charting responsibilities, plans, and strategies*[; and]*;*

[(13)]*(12)* an inventory and description of any new Federal or federally funded programs conducting shoreline delineation and ocean or coastal mapping since the previous reporting cycle[.]*;*

(13) a progress report on the development of new and innovative technologies and applications through research and development, including cooperative or other agreements with joint or cooperative research institutes and centers and other nongovernmental entities;

(14) a description of best practices in data processing and distribution and leveraging opportunities among agencies represented on the Working Group and with coastal states, coastal Indian Tribes, and nongovernmental entities;

(15) an identification of any training, technology, or other requirements for enabling Federal mapping programs, vessels, and aircraft to support a coordinated ocean and coastal mapping program; and

(16) a timetable for implementation and completion of the plan described in paragraph (3), including recommendations for integrating new approaches into the program.

SEC. 12205. [PLAN] *NOAA JOINT OCEAN AND COASTAL MAPPING CENTERS.*

[(a) IN GENERAL.—Not later than 6 months after the date of enactment of this Act, the Administrator, in consultation with the Committee, shall develop and submit to the Congress a plan for an integrated ocean and coastal mapping initiative within the National Oceanic and Atmospheric Administration.

[(b) PLAN REQUIREMENTS.—The plan shall—

[(1) identify and describe all ocean and coastal mapping programs within the agency, including those that conduct mapping or related activities in the course of existing missions, such as hydrographic surveys, ocean exploration projects, living marine resource conservation and management programs, coastal zone management projects, and ocean and coastal observations and science projects;

[(2) establish priority mapping programs and establish and periodically update priorities for geographic areas in surveying and mapping across all missions of the National Oceanic and Atmospheric Administration, as well as minimum data acquisition and metadata standards for those programs;

[(3) encourage the development of innovative ocean and coastal mapping technologies and applications, through research and development through cooperative or other agreements with joint or cooperative research institutes or centers and with other non-governmental entities;

[(4) document available and developing technologies, best practices in data processing and distribution, and leveraging opportunities with other Federal agencies, coastal states, and non-governmental entities;

[(5) identify training, technology, and other resource requirements for enabling the National Oceanic and Atmospheric Administration's programs, vessels, and aircraft to support a coordinated ocean and coastal mapping program;

[(6) identify a centralized mechanism or office for coordinating data collection, processing, archiving, and dissemination activities of all such mapping programs within the National Oceanic and Atmospheric Administration that meets Federal mandates for data accuracy and accessibility and designate a repository that is responsible for archiving and managing the distribution of all ocean and coastal mapping data to simplify the provision of services to benefit Federal and coastal state programs; and

[(7) set forth a timetable for implementation and completion of the plan, including a schedule for submission to the Congress of periodic progress reports and recommendations for integrating approaches developed under the initiative into the interagency program.]

[(c) NOAA JOINT OCEAN AND COASTAL MAPPING CENTERS.—] The Administrator may maintain and operate up to [3] *three* joint ocean and coastal mapping centers, including a joint hydrographic center, which shall each be co-located with an institution of higher education. The centers shall serve as hydrographic centers of excellence and may conduct activities necessary to carry out the purposes of this subtitle, including—

(1) research and development of innovative ocean and coastal mapping technologies, equipment, and data products;

(2) mapping of the United States Outer Continental Shelf and other regions;

(3) data processing for nontraditional data and uses;

(4) advancing the use of remote sensing *and uncrewed* technologies, for related issues, including mapping and assessment of essential fish habitat and of coral resources, ocean observations, and ocean exploration; and

(5) providing graduate education and training in ocean and coastal mapping sciences for members of the National Oceanic and Atmospheric Administration Commissioned Officer Corps, personnel of other agencies with ocean and coastal mapping programs, and civilian personnel.

[(d) NOAA REPORT.—The Administrator shall continue developing a strategy for expanding contracting with non-governmental entities to minimize duplication and take maximum advantage of nongovernmental capabilities in fulfilling the Administration's mapping and charting responsibilities. Within 120 days after the date of enactment of this Act, the Administrator shall transmit a report describing the strategy developed under this subsection to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Natural Resources of the House of Representatives.]

SEC. 12206. OCEAN AND COASTAL MAPPING FEDERAL FUNDING OPPORTUNITY.

(a) IN GENERAL.—Not later than one year after the date of the enactment of the National Ocean Exploration Act, the Administrator shall develop an integrated ocean and coastal mapping Federal funding match opportunity within the National Oceanic and Atmos-

pheric Administration with Federal, State, Tribal, local, nonprofit, private industry, or academic partners in order to increase the coordinated acquisition, processing, stewardship, and archival of new ocean and coastal mapping data in United States waters.

(b) RULES.—The Administrator shall develop administrative and procedural rules for the ocean and coastal mapping Federal funding match opportunity developed under subsection (a), to include—

(1) specific and detailed criteria that must be addressed by an applicant, such as geographic overlap with pre-established priorities, number and type of project partners, benefit to the applicant, coordination with other funding opportunities, and benefit to the public;

(2) determination of the appropriate funding match amounts and mechanisms to use, such as grants, agreements, or contracts; and

(3) other funding award criteria as are necessary or appropriate to ensure that evaluations of proposals and decisions to award funding under this section are based on objective standards applied fairly and equitably to those proposals.

(c) GEOSPATIAL SERVICES AND CONTRACT VEHICLES.—The ocean and coastal mapping Federal funding match opportunity developed under subsection (a) shall leverage Federal expertise and capacities for geospatial services and Federal geospatial contract vehicles using the private sector for acquisition efficiencies.

SEC. 12207. COOPERATIVE AGREEMENTS, CONTRACTS, AND GRANTS.

(a) IN GENERAL.—To carry out interagency activities under this subtitle, the heads of agencies represented on the Working Group may enter into cooperative agreements, or any other agreement with each other, and transfer, receive, and expend funds made available by any Federal agency, any State or subdivision thereof, or any public or private organization or individual, for ocean and coastal mapping investigations, surveys, studies, and other geospatial collaborations authorized by this subtitle or agreements authorized by section 5 of the Act entitled 'An Act to define the functions and duties of the Coast and Geodetic Survey, and for other purposes', approved August 6, 1947 (33 U.S.C. 883e).

(b) GRANTS.—The Administrator may make grants to any State or subdivision thereof or any public or private organization or individual to carry out the purposes of this subtitle.

SEC. [12206] *12208.* EFFECT ON OTHER LAWS.

Nothing in this subtitle shall be construed to supersede or alter the existing authorities of any Federal agency with respect to ocean and coastal mapping.

SEC. [12207] *12209.* AUTHORIZATION OF APPROPRIATIONS.

(a) IN GENERAL.—In addition to the amounts authorized by section 306 of the Hydrographic Services Improvement Act of 1998 (33 U.S.C. 892d), there are authorized to be appropriated to the Administrator to carry out [this subtitle—

[(1) $26,000,000 for fiscal year 2009;

[(2) $32,000,000 for fiscal year 2010;

[(3) $38,000,000 for fiscal year 2011; and

[(4) $45,000,000 for each of fiscal years 2012 through 2015.]*this subtitle $45,000,000 for each of fiscal years 2021 through 2026.*

(b) JOINT OCEAN AND COASTAL MAPPING CENTERS.—Of the amounts appropriated pursuant to subsection (a), the following amounts shall be used to carry out section 12205(c) of [this subtitle:

[(1) $11,000,000 for fiscal year 2009.

[(2) $12,000,000 for fiscal year 2010.

[(3) $13,000,000 for fiscal year 2011.

[(4) $15,000,000 for each of fiscal years 2012 through 2015.]*this subtitle $15,000,000 for each of fiscal years 2021 through 2026.*

[(c) COOPERATIVE AGREEMENTS.—To carry out interagency activities under section 12203 of this subtitle, the head of any department or agency may execute a cooperative agreement with the Administrator, including those authorized by section 5 of the Act of August 6, 1947 (33 U.S.C. 883e).]

(c) OCEAN AND COASTAL MAPPING FEDERAL FUNDING OPPORTUNITY.—Of amounts appropriated pursuant to subsection (a), $20,000,000 is authorized to carry out section 12206.

SEC. [12208] *12210.* DEFINITIONS.

In this subtitle:

(1) ADMINISTRATOR.—The term "Administrator' " means the Administrator of the National Oceanic and Atmospheric Administration.

(2) COASTAL STATE.—The term "coastal state" has the meaning given that term by section 304(4) of the Coastal Zone Management Act of 1972 (16 U.S.C. 1453(4).

[(3) COMMITTEE.—The term "Committee" means the Interagency Ocean and Coastal Mapping Committee established by section 12203.]

(3) WORKING GROUP.—The term "Working Group" means the Interagency Working Group on Ocean and Coastal Mapping under section 12203.

(4) EXCLUSIVE ECONOMIC ZONE.—The term "exclusive economic zone" means the exclusive economic zone of the United States established by Presidential Proclamation No. 5030, of March 10, 1983.

(5) OCEAN AND COASTAL MAPPING.—The term "ocean and coastal mapping" means the acquisition, [processing, and management] *processing, management, maintenance, interpretation, certification, and dissemination* of physical, biological, geological, chemical, and archaeological characteristics and boundaries of ocean and coastal areas, resources, and sea beds through the use of acoustics, satellites, aerial photogrammetry, light and imaging, direct sampling, and other mapping technologies.

(6) TERRITORIAL SEA.—The term "territorial sea" means the belt of sea measured from the baseline of the United States determined in accordance with international law, as set forth in Presidential Proclamation Number 5928, dated December 27, 1988.

(7) NONGOVERNMENTAL ENTITIES.—The term "nongovernmental entities" includes nongovernmental organizations,

members of the academic community, and private sector organizations that provide products and services associated with measuring, locating, and preparing maps, charts, surveys, aerial photographs, satellite imagines, or other graphical or digital presentations depicting natural or manmade physical features, phenomena, and legal boundaries of the Earth.

(8) OUTER CONTINENTAL SHELF.—The term "Outer Continental Shelf" means all submerged lands lying seaward and outside of lands beneath navigable waters (as that term is defined in section 2 of the Submerged Lands Act (43 U.S.C. 1301)), and of which the subsoil and seabed appertain to the United States and are subject to its jurisdiction and control.

(9) COASTAL INDIAN TRIBE.—The term "coastal Indian Tribe" means an "Indian tribe", as defined in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304), the land of which is located in a coastal state.

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HYDROGRAPHIC SERVICES IMPROVEMENT ACT OF 1998

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SEC. 301. SHORT TITLE.

This title may be cited as the "Hydrographic Services Improvement Act of 1998".

[33 U.S.C. 892 et seq.]

SEC. 302. DEFINITIONS.

In this title:

(1) ADMINISTRATOR.—The term "Administrator" means the Administrator of the National Oceanic and Atmospheric Administration.

(2) ADMINISTRATION.—The term "Administration" means the National Oceanic and Atmospheric Administration.

(3) HYDROGRAPHIC DATA.—The term "hydrographic data" means information that—

(A) is acquired through—

(i) hydrographic, bathymetric, photogrammetric, lidar, radar, remote sensing, or shoreline and other ocean- and coastal-related surveying;

(ii) geodetic, geospatial, or geomagnetic measurements;

(iii) tide, water level, and current observations; or

(iv) other methods; and

(B) is used in providing hydrographic services.

(4) HYDROGRAPHIC SERVICES.—The term "hydrographic services" means—

(A) the management, maintenance, interpretation, certification, and dissemination of bathymetric, hydrographic, shoreline, geodetic, geospatial, geomagnetic, and tide, water level, and current information, including the production of nautical charts, nautical information databases, *hydrodynamic forecast and datum transformation models,* and other products derived from hydrographic data;

(B) the development of nautical information systems; and

(C) related activities.

(5) COAST AND GEODETIC SURVEY ACT.—The term "Coast and Geodetic Survey Act" means the Act entitled "An Act to define the functions and duties of the Coast and Geodetic Survey, and for other purposes", approved August 6, 1947 (33 U.S.C. 883a et seq.).

SEC. 303. FUNCTIONS OF THE ADMINISTRATOR.

(a) * * *

(b) AUTHORITIES.—To fulfill the data gathering and dissemination duties of the Administration under the Coast and Geodetic Survey Act, promote *precision navigation,* safe, efficient, and environmentally sound marine transportation, and otherwise fulfill the purposes of this Act, subject to the availability of appropriations, the Administrator—

(1) may procure, lease, evaluate, test, develop, and operate vessels, equipment, and technologies necessary to ensure safe navigation and maintain operational expertise in hydrographic data acquisition and hydrographic services;

(2) shall, subject to the availability of appropriations, design, install, maintain, and operate real-time hydrographic monitoring systems *and hydrodynamic forecast models* to enhance navigation safety and efficiency *and provide foundational information and services required to support coastal resilience planning for coastal transportation and other infrastructure, coastal protection and restoration projects, and related activities*[; and]*;*

(3) where appropriate and to the extent that it does not detract from the promotion of safe and efficient navigation, may acquire hydrographic data and provide hydrographic services to support the conservation and management of coastal and ocean resources;

(4) where appropriate, may acquire hydrographic data and provide hydrographic services to save and protect life and property and support the resumption of commerce in response to emergencies, natural and man-made disasters, and homeland security and maritime domain awareness needs, including obtaining mission assignments (as defined in section 641 of the Post-Katrina Emergency Management Reform Act of 2006 (6 U.S.C. 741));

(5) may create, support, and maintain such joint centers with other Federal agencies and other entities as the Administrator deems appropriate or necessary to carry out the purposes of this Act; and

(6) notwithstanding the existence of such joint centers, shall award contracts for the acquisition of hydrographic data in accordance with subchapter VI of chapter 10 of title 40, United States Code.

(c) CONSERVATION AND MANAGEMENT OF COASTAL AND OCEAN RESOURCES.—Where appropriate and to the extent that it does not detract from the promotion of safe and efficient navigation, the Secretary may use hydrographic data and services to support the conservation and management of coastal and ocean resources.

SEC. 304. QUALITY ASSURANCE PROGRAM.

(a) DEFINITION.—For purposes of this section, the term "hydrographic product" means any publicly or commercially available [product produced] *product or service produced or disseminated* by a non-Federal entity that includes or displays hydrographic data.

(b) * * *

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(e) * * *

SEC. 305. * * *

SEC. 306. AUTHORIZATION OF APPROPRIATIONS.

(a) IN GENERAL.—There are authorized to be appropriated to the Administrator the following:

(1) To carry out nautical mapping and charting functions under sections 304 and 305, except for conducting hydrographic surveys, [$70,814,000 for each of fiscal years 2019 through 2023] *$71,000,000 for each of fiscal years 2021 through 2026*.

(2) To contract for hydrographic surveys under section 304(b)(1), including the leasing or time chartering of vessels, [$25,000,000 for each of fiscal years 2019 through 2023] *$34,000,000 for each of fiscal years 2021 through 2026*.

(3) To operate hydrographic survey vessels owned by the United States and operated by the Administration, [$29,932,000 for each of fiscal years 2019 through 2023] *$38,000,000 for each of fiscal years 2021 through 2026*.

(4) To carry out geodetic functions under this title, [$26,800,000 for each of fiscal years 2019 through 2023] *$45,000,000 for each of fiscal years 2021 through 2026*.

(5) To carry out tide and current measurement functions under this title, [$30,564,000 for each of fiscal years 2019 through 2023] *$35,000,000 for each of fiscal years 2021 through 2026*.

(6) To acquire a replacement hydrographic survey vessel capable of staying at sea continuously for at least 30 days $75,000,000.

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