

Calendar No. 318

116TH CONGRESS }
1st Session }

SENATE

{ REPORT
116-168 }

COORDINATED OCEAN OBSERVATIONS AND
RESEARCH ACT OF 2019

R E P O R T

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND
TRANSPORTATION

ON

S. 914



DECEMBER 5, 2019.—Ordered to be printed

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED SIXTEENTH CONGRESS

FIRST SESSION

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COORDINATED OCEAN OBSERVATIONS AND RESEARCH ACT OF 2019

DECEMBER 5, 2019.—Ordered to be printed

Mr. WICKER, from the Committee on Commerce, Science, and
Transportation, submitted the following

R E P O R T

[To accompany S. 914]

[Including Cost Estimate of the Congressional Budget Office]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 914) to reauthorize the Integrated Coastal and Ocean Observation System Act of 2009, to clarify the authority of the Administrator of the National Oceanic and Atmospheric Administration with respect to post-storm assessments, and to require the establishment of a National Water Center, and for other purposes, having considered the same, reports favorably thereon without amendment and recommends that the bill do pass.

PURPOSE OF THE BILL

The purpose of S. 914 is to reauthorize the Integrated Coastal and Ocean Observation System (ICOOS) Act of 2009; amend the Omnibus Public Land Management Act of 2009 and update the Consumer Option for an Alternative System to Allocate Losses Act of 2012 (COASTAL Act of 2012) with technical edits so that National Oceanic and Atmospheric Administration (NOAA) can continue to develop an assessment model for determining the magnitude and variations of coastal storm surges and wind speeds associated with hurricanes; and require the establishment of a National Water Center within NOAA. It also would encourage the national Integrated Ocean Observing System (IOOS) to increase modeling capabilities and product development, ensure data are easily used and understood in order to address societal needs in real time, and continue to increase interagency and private sector partnerships.

BACKGROUND AND NEEDS

REAUTHORIZATION OF THE INTEGRATED COASTAL AND OCEAN
OBSERVATION SYSTEM

The ICOOS Act of 2009 consolidated and coordinated the efforts of hundreds of Federal, State, and local ocean observing programs.¹ Prior to the implementation of the ICOOS Act of 2009, these programs collected, distributed, and archived the same types of ocean data (e.g., temperature and salinity) but with different formats and standards, which wasted time and resources. ICOOS is a coordinated network of people and technology that generates and disseminates continuous data, information, models, products, and services on coastal waters, the Great Lakes, and oceans in the U.S. Exclusive Economic Zone. The data consist of standardized and accessible information on key environmental variables such as temperature, salinity, sea level, surface currents, ocean color, pH, wind speed, wave height, dissolved oxygen, and nutrient, pathogen, and contaminant concentrations. NOAA and other agencies need real-time as well as long-term oceanographic databases to effectively monitor changes in the ocean, such as El Niño events, hypoxia, and harmful algal blooms.

Data from IOOS provide the Nation with better predictions of hazardous events and help improve forecasting. IOOS data standards and protocols also allow information to be easily integrated into weather models, increasing accuracy. Federal departments and agencies should continue to leverage the existing network of IOOS regions and fully engage with IOOS to improve data collection, models, forecasts, and access to information about the oceans, coasts, and Great Lakes.

Each of the 11 regions of IOOS are certified by the Federal Government as regional information coordination entities, which means their data are held to the highest standards that NOAA requires for decision making.² In addition to working as a cohesive unit nationally, each of the 11 regions tailors its work to address local needs. Among other missions, IOOS uses floats, gliders, and buoys deployed under IOOS to improve hurricane track, intensity, and impact forecasts in the Atlantic. IOOS data also are used to enhance the safety and efficiency of marine operations, including routing ships more cost-effectively through U.S. waterways.

Furthermore, the U.S. Coast Guard uses high frequency radar data from IOOS to determine surface current speed and direction in near real time, improving the probability of saving lives and reducing search costs.³ IOOS data also are used to predict public health risks by monitoring water quality and harmful algal blooms, and are incorporated into ocean, marine, and coastal ecosystems research.⁴

¹33 U.S.C. 3601.

²IOOS, Certification: Extending the Reach of Regional Data (<https://ioos.noaa.gov/about/governance-and-management/certification-extending-reach-regional-data/>) (accessed March 19, 2019).

³IOOS, HF Radar (<https://ioos.noaa.gov/project/hf-radar/>) (accessed March 27, 2019).

⁴IOOS, IOOS in Action (<https://ioos.noaa.gov/ioos-in-action/>) (accessed March 27, 2019).

IMPLEMENTATION OF THE COASTAL ACT OF 2012

The National Flood Insurance Program (NFIP) was first authorized by the National Flood Insurance Act of 1968⁵ and is currently administered by the Federal Emergency Management Agency (FEMA). The program serves to both offer primary flood insurance to properties with significant flood risk and to reduce flood risk through the adoption of floodplain management standards.⁶ Currently the NFIP is the primary source of flood insurance coverage for residential properties in the United States.⁷ As of January 2018, the NFIP had over 5 million flood insurance policies providing nearly \$1.28 trillion in coverage, with approximately 23,000 participating communities nationwide (including territories and Tribal organizations).⁸ The program currently collects about \$3.6 billion in annual premium revenue.

After Hurricane Katrina struck the Gulf Coast in 2005, lack of clear property loss determinations in the NFIP program created a legal backlog and slowed assistance to hurricane-impacted Americans. Following a hurricane, it can be difficult to assess whether damages were caused by wind or water, particularly when only a structure's foundation, or slab, is left. For these slab properties, there may not be enough physical evidence to determine whether the damages were caused by wind, and thus covered by private home insurers, or by water, and thus covered by the NFIP. These so-called indeterminate loss properties, where the cause of the destruction is not identifiable, created many legal disputes post-Katrina between private home insurance providers and their policyholders over the loss-allocation between flood as a cause of loss, covered by the NFIP, and wind peril, covered by private home insurance.⁹

The COASTAL Act of 2012¹⁰ was designed to mitigate future legal issues by requiring NOAA to produce detailed post-storm assessments in the aftermath of a damaging tropical cyclone that strikes the United States or its territories.¹¹ The purpose of the COASTAL Act of 2012 is to reduce conflict over which party is responsible in indeterminate loss properties by better discerning wind versus water damage.¹² Using output from a hindcast model, NOAA's assessments will indicate the strength and timing of damaging winds and water at a given location in the area impacted by the storm. This data is incorporated along with a variety of other

⁵ 42 U.S.C. 4001 et seq.

⁶ Congressional Research Service, "Introduction to the National Flood Insurance Program" (<http://www.crs.gov/reports/pdf/R44593>) (updated January 14, 2019; accessed March 27, 2019).

⁷ Congressional Research Service, "What Happens If the National Flood Insurance Program (NFIP) Lapses?" (<http://www.crs.gov/Reports/IN10835?source=search&guid=32dc3cb49a574eab920199dfaa0f88c6&index=1>) (updated January 14, 2019; accessed March 27, 2019).

⁸ *Ibid.*

⁹ Government Accountability Office, NOAA: Initial Response to Post-Storm Assessment Requirements (<https://www.gao.gov/assets/660/655843.pdf>) (accessed March 27, 2019).

¹⁰ Pub. L. 112–141.

¹¹ Department of Commerce, Report to Congress Status of the National Oceanic and Atmospheric Administration's Implementation of the Consumer Option for an Alternative System to Allocate Losses Act of 2012 (<https://www.weather.gov/media/sti/coastalact/COASTALActAppropriationsReportFY14.pdf>) (accessed March 27, 2019).

¹² National Weather Service, COASTAL Act Overview (<https://www.weather.gov/sti/coastalact>) (accessed March 27, 2019).

contributing factors into FEMA's Named Storm Event Model to determine the appropriate loss allocation between wind and water.¹³

After the COASTAL Act of 2012 was passed, NOAA began to implement the policy changes and inter-agency coordination required by the Act, but did not receive appropriated funding for the work until 2016. Since receiving dedicated funding, NOAA has been building the modeling and data collection components necessary to implement the post-storm assessments. Title III of this Act provides additional technical edits to the COASTAL Act of 2012 so that NOAA can successfully collect the required data to perform the post-storm assessments and provide it to FEMA for the loss-allocation. The Act also gives the NOAA Administrator the authority to deploy additional sensors before storms hit a coastal area that is likely to be severely damaged, in order to gather additional data for indeterminate property determinations by FEMA. Furthermore, it directs the NOAA Administrator to seek input and suggestions from the public before the Named Storm Event Model is implemented.

WATER PREDICTION AND FORECASTING

The National Water Center (NWC) is located in Tuscaloosa, Alabama, and formally opened in 2015. It hosts the Office of Water Prediction (OWP), which collaboratively researches, develops, and delivers state-of-the-science national hydrologic analyses, forecast information, data, decision-support services and guidance to support and inform essential emergency services and water management decisions. In partnership with National Weather Service (NWS) national, regional, and local offices, the OWP coordinates, integrates, and supports consistent water prediction activities from global to local levels.¹⁴

Central to the NWC's tools is the National Water Model (NWM). The NWM simulates and forecasts how water moves throughout the Nation's rivers and streams. The model generates hourly forecasts for the entire river network including high-resolution forecasts of soil moisture, surface runoff, snow water equivalent, and other parameters. The NWM is a cornerstone of the new NOAA Water Initiative and the NWC, providing more closely integrated water predictive capabilities to promote resilience to water risks. Products like these, hosted at the NWC, help communities and industries make better informed decisions about water management and how to prepare for and respond to extreme water events.¹⁵

Decision support tools like these are incredibly important for protecting American lives and property. NOAA predicts that more than two-thirds of the United States is at risk of exceeding moderate river flood levels in the spring and summer period of 2019.¹⁶ The NWM is providing impact-based decision support services nationwide by providing street level water information and guidance (e.g., flood maps), as well as serving as the foundation for additional private sector water services. The NWM also improves

¹³ Ibid.

¹⁴ Office of Water Prediction (<https://water.noaa.gov/>) (accessed 3/28/2019).

¹⁵ NOAA's Experimental Long Range River Flood Risk Assessment (<https://www.nws.noaa.gov/oh/2019NHA.html>) (accessed 3/28/2019).

¹⁶ 2019 National Hydrologic Assessment (<https://www.nws.noaa.gov/oh/2019NHA.html>) (accessed 3/28/2019).

NOAA's ability to meet the needs of its stakeholders (e.g., emergency managers, reservoir operators, floodplain managers, farmers, etc.) with more accurate, detailed, frequent and expanded water information.¹⁷

SUMMARY OF PROVISIONS

Title I—Reauthorization of Integrated Coastal and Ocean Observation System Act of 2009 would do the following:

- Reauthorize the Integrated Coastal and Ocean Observation System through fiscal year 2024.
- Add requirements for public data access.
- Require the advising committee to consider certain planning priorities.
- Require reporting to Congress on existing gaps in observation infrastructure, an economic vulnerability report, a monitoring prioritization plan, and a strategic research plan.
- Require a mechanism for stakeholder input on monitoring.

Title II—Named Storm Event Model and Post-Storm Assessments would do the following:

- Amend the Omnibus Public Land Management Act of 2009 to align the definitions in the Act so that they match NOAA's definitions for specific technical terminology.
- Direct the NOAA Administrator to seek input and suggestions from the public before the Named Storm Event Model takes effect.
- Direct the NOAA Administrator to deploy additional sensors to enhance data collection in coastal areas that may be at high risk of experiencing indeterminate losses.
- Direct the Administrator to conduct separate post-storm assessments for each coastal State in which indeterminate losses are identified after a storm.

Title III—Water Prediction and Forecasting would do the following:

- Establish the National Water Center, within the NWS of NOAA, as the primary facility for hydrologic decision support services.
- Direct the Under Secretary to make a policy directive for the National Water Center publicly available.
- Direct the Under Secretary to initiate and lead all research and development activities, collaboration with relevant State and Federal agencies, and all activities necessary for developing water predictive capacity.

LEGISLATIVE HISTORY

S. 914, the Coordinated Ocean Observations and Research Act of 2019, was introduced on March 27, 2019, by Senator Wicker (for himself and Senator Cantwell) and was referred to the Committee on Commerce, Science, and Transportation of the Senate. Senator Sullivan is an additional cosponsor. On April 3, 2019, the Committee met in open Executive Session and, by voice vote, ordered S. 914 reported favorably without amendment.

¹⁷ 2019 National Hydrologic Assessment (<https://www.nws.noaa.gov/oh/2019NHA.html>) (accessed 3/28/2019).

A related bill, S. 810, the COASTAL Implementation Act of 2019, was introduced on March 14, 2019, by Senator Wicker (for himself) 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:

| At a Glance | | | |
|--|------|-------------------------------------|-----------|
| S. 914, Coordinated Ocean Observations and Research Act of 2019 | | | |
| As ordered reported by the Senate Committee on Commerce, Science, and Transportation on April 3, 2019 | | | |
| By Fiscal year, Millions of Dollars | 2019 | 2019-2024 | 2019-2029 |
| Direct Spending (Outlays) | 0 | 0 | 0 |
| Revenues | 0 | 0 | 0 |
| Deficit Effect | 0 | 0 | 0 |
| Spending Subject to Appropriation (Outlays) | 0 | 490 | 567 |
| Pay-as-you-go procedures apply? | No | Mandate Effects | |
| Increases on-budget deficits in any of the four consecutive 10-year periods beginning in 2030? | No | Contains intergovernmental mandate? | No |
| | | Contains private-sector mandate? | No |
| The bill would | | | |
| <ul style="list-style-type: none"> Amend and authorize appropriations for the Integrated Ocean Observation System Authorize appropriations for the National Oceanic and Atmospheric Administration to create a National Water Center | | | |
| Estimated budgetary effects would primarily stem from | | | |
| <ul style="list-style-type: none"> Spending of amounts specifically authorized to be appropriated | | | |
| Detailed estimate begins on the next page. | | | |

Bill summary: Title I of S. 914 would amend the Integrated Coastal and Ocean Observation System Act of 2009 to make changes to and authorize appropriations for the National Oceanic and Atmospheric Administration's (NOAA's) Integrated Ocean Observation System (IOOS). Title I also would require the National Science and Technology Council's Subcommittee on Ocean Science and Technology to study the economic effects of increasing ocean acidification.

Title II of the bill would require changes to NOAA's Named Storm Event model, which identifies named storms that threaten the United States and assesses storm characteristics and damage.

Title III of the bill would authorize appropriations for a National Water Center within NOAA to focus on analyzing current water resources and future water resource needs within the United States. The center would develop an advanced water resources model and

report on the outlook for flooding and the nation’s use of water resources.

Estimated Federal cost: The estimated budgetary effect of S. 914 is shown in Table 1. The costs of the legislation fall within budget function 300 (natural resources and environment).

TABLE 1.—ESTIMATED INCREASES IN SPENDING SUBJECT TO APPROPRIATION UNDER S. 914

| | By fiscal year, millions of dollars— | | | | | | |
|---|--------------------------------------|------|------|------|------|------|-----------|
| | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2019–2024 |
| Reauthorization of Integrated Coastal and Ocean Observation System Act: | | | | | | | |
| Authorization | 0 | 55 | 62 | 68 | 75 | 82 | 342 |
| Estimated Outlays | 0 | 33 | 49 | 63 | 71 | 78 | 294 |
| Water Prediction and Forecasting: | | | | | | | |
| Authorization | 0 | 44 | 44 | 45 | 46 | 46 | 225 |
| Estimated Outlays | 0 | 26 | 36 | 43 | 45 | 46 | 196 |
| Total Changes: | | | | | | | |
| Authorization | 0 | 99 | 106 | 113 | 121 | 128 | 567 |
| Estimated Outlays | 0 | 59 | 85 | 106 | 116 | 124 | 490 |

Basis of estimate: For this estimate, CBO assumes that S. 914 will be enacted during fiscal year 2019 and that the authorized amounts will be appropriated for each fiscal year beginning in 2020.

S. 914 would authorize the appropriation of \$567 million over the 2020–2024 period. Based on historical spending patterns and assuming appropriation of those amounts, CBO estimates that the bill would cost \$490 million over the same period and \$77 million after 2024.

Reauthorization of Integrated Coastal and Ocean Observation System Act

Title I of S. 914 would authorize the appropriation of specific amounts each year that total about \$342 million over the 2020–2024 period for NOAA to implement the IOOS. CBO estimates that implementing this section would cost \$294 million over the 2020–2024 period. In 2019, NOAA allocated \$45 million to operate the IOOS.

Water prediction and forecasting

Title III of S. 914 would create a National Water Center within NOAA and would authorize the appropriation of specific amounts each year that total about \$225 million over the 2020–2024 period for NOAA to create and run the center. CBO estimates that implementing this section would cost about \$196 million over the 2020–2024 period.

Pay-As-You-Go considerations: None.

Increase in long-term deficits: None.

Mandates: None.

Estimate prepared by: Federal Costs: Robert Reese; Mandates: Zach Byrum.

Estimate reviewed by: Kim P. Cawley, Chief, Natural and Physical Resources Cost Estimates Unit; H. Samuel Papenfuss, Deputy Assistant Director for 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. 914, as reported, would not create any new programs or impose any new regulatory requirements and, therefore, would not subject any individuals or businesses to new regulations.

ECONOMIC IMPACT

S. 914, as reported, is not expected to have a negative impact on the Nation's economy.

PRIVACY

The reported bill would have no impact on the personal privacy of individuals.

PAPERWORK

S. 914, as reported, would not increase paperwork requirements for the private sector. It reduces the frequency of a report from NOAA from once every 2 years to once every 5 years and adds a requirement to the report for an assessment on gaps in existing infrastructure. It adds a report from the Joint Subcommittee on Ocean Science and Technology (JSOST) of the National Science and Technology Council on "Ocean Chemistry Coastal Community Vulnerability Assessment." The first report is required 2 years after enactment and then once every 6 years thereafter. One hundred and eighty (180) days after the submission of the initial report to Congress, the JSOST would be required to submit an additional report on new sensors or observing technologies that could be used to inform the assessment.

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; table of contents.

This section would provide that the bill may be cited as the "Coordinated Ocean Observations and Research Act." This section also would provide a table of contents for the bill.

TITLE I—REAUTHORIZATION OF INTEGRATED COASTAL AND OCEAN
OBSERVATION SYSTEM ACT OF 2009*Section 101. Purposes.*

This section would add modeling capabilities and product development to the IOOS system and require easy access to data while promoting data sharing between Federal and non-Federal sources and with the public. It also would include advanced observing tech-

nologies needed to address critical data gaps to the list of authorized activities, add a requirement to monitor and model ocean chemistry, and make technical fixes to the names of observing system components.

Section 102. Definitions.

This section would define the term “non-Federal assets” as being managed through the Regional Coastal Observing Systems (RCOS), NOAA, or the Interagency Ocean Observation Committee (IOOC). It also would add Tribal interests to the list of coordinating interests and make technical fixes. This section also redefines “regional information coordination entity” as “regional coastal observing system.”

Section 103. Integrated Coastal and Ocean Observation System.

This section would require IOOS to include a product development system to transform observations to readily used and understood products and make data available for research and for use in product development to meet societal needs. It would include an advanced observing technology development program, models to improve regional weather forecasting capabilities and products, and reviews of data collection procedures to meet national needs within the research development program. It would require IOOC to submit annual and long-term plans to the National Ocean Research Leadership Council (Council) at the same time as the President’s budget. The section also would add a requirement that this report define protocols for collection, configuration standards, and formats for new and existing assets within the IOOS network.

Additionally, this section would add contract requirements for RCOS to be established and require the periodic review of the system plan and submission of recommendations for improvements. A requirement to operate the IOOS program office within NOAA and to maintain the established competitive funding process and administrative procedures would be added. It would require periodic updates of the plan to integrate new technology into the system and require NOAA to work with users and RCOS to develop products for real time data sharing for weather forecasting, search and rescue, corrosive sea water, water quality, and harmful algal bloom forecasting.

The section would allow employees of Federal agencies to be members of the RCOS governing body and would require the advisory committee to consider priorities in planning, including national surface current mapping, underwater vehicle fleet acquisition, integrative mapping for manned and unmanned vehicles, remote sensing and data assimilation, coastal sediment monitoring, and marine sound monitoring. It also would allow the Secretary of Commerce (Secretary) to stagger the terms of system advisory committee members and make technical fixes to the names of observing system components.

Section 104. Financing and agreements.

This section would allow the Secretary to execute agreements on a reimbursable or non-reimbursable basis.

Section 105. Reports to Congress.

This section would add a summary of existing gaps in observation infrastructure to an existing report to Congress, including national sea surface current mapping networks, coastal buoys, ocean chemistry monitoring, and marine sound monitoring.

Section 106. Public-private use policy.

This section would require the Council to maintain a policy defining the decision-making process for involved parties. It also would require the Administrator of NOAA to ensure that NOAA adheres to the decision-making process.

Section 107. Repeal of independent cost estimate.

This section would repeal outdated language that requires the IOOC and the National Science Foundation (NSF) to obtain an independent cost estimate for operations and maintenance of existing Federal assets within 1 year of the ICOOS Act of 2009. The independent cost estimate has been completed and submitted to Congress.

Section 108. Authorization of appropriations.

This section would authorize appropriations through fiscal year 2024 at such sums as are necessary.

Section 109. Reports and research plans.

This section would require the JSOST of the National Science and Technology Council to submit an economic vulnerability report and a monitoring prioritization plan to Congress.

Section 110. Strategic research plan.

This section would require the strategic research plan to make recommendations for research to address key knowledge gaps identified in the economic vulnerability report.

Section 111. Stakeholder input on monitoring.

This section would add a requirement for the JSOST to include an ongoing mechanism to allow industry, stakeholders, fishery management councils and commissions, non-Federal resource managers, and scientific experts to provide input on monitoring needs.

Section 112. Research activities.

This section would include the impacts of multiple stressors among the list of research activities for which the Director of the NSF shall continue to support competitive research proposals.

TITLE II—NAMED STORM EVENT MODEL AND POST-STORM
ASSESSMENTS

Section 201. Named Storm Event Model and post-storm assessments.

This section would amend the Omnibus Public Land Management Act of 2009 by changing some of the definitions so that they match the NOAA definitions for specific terminology and fix ambiguity over the identification of indeterminate losses in coastal States. This section also would direct the Administrator to seek

public review before the Named Storm Event Model takes effect, deploy additional sensors as needed to collect data before large storms, and to conduct separate post-storm assessments for multiple coastal States impacted by a single storm, if necessary.

TITLE III—WATER PREDICTION AND FORECASTING

Section 301. Water prediction and forecasting.

This section would authorize the NWC, which would serve as the primary operational center for analyses, forecasting, and related decision support processing of water data. This section also would direct NOAA to make an operations and services policy directive for the Center available to the public. The directive would include staff responsibilities, guidelines for products developed by the Center, and procedures for coordination with other relevant agencies. Finally, this section would direct NOAA to lead all activities related to Total Water Prediction, including research and development of forecasting and decision support products, as well as the delivery of products to relevant Federal agencies.

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):

NATIONAL FLOOD INSURANCE ACT OF 1968

[42 U.S.C. 4057; Pub. L. 90-448, title XIII, section 1337, as added Pub. L. 112-141, div. F, title II, section 100253, July 6, 2012, 126 Stat. 974.]

SEC. 1337. ALTERNATIVE LOSS ALLOCATION SYSTEM FOR INDETERMINATE CLAIMS.

(a) DEFINITIONS.—In this section:

(1) ADMINISTRATOR.—The term “Administrator” means the Administrator of the Federal Emergency Management Agency.

(2) COASTAL FORMULA.—The term “COASTAL Formula” means the formula established under subsection (b).

(3) COASTAL STATE.—The term “coastal State” has the meaning given the term “coastal state” in section 304 of the Coastal Zone Management Act of 1972 (16 U.S.C. 1453)[.], *except that the term shall not apply with respect to a State or territory that has an operational wind and flood loss allocation system.*

(4) INDETERMINATE LOSS.—

(A) IN GENERAL.—The term “indeterminate loss” means, as determined by an insurance claims adjuster certified under the national flood insurance program and in consultation with an engineer as appropriate, a loss resulting from physical damage to, or loss of, property located in any coastal State arising from the combined perils of flood and wind associated with a named storm.

(B) REQUIREMENTS.—An insurance claims adjuster certified under the national flood insurance program shall only determine that a loss is an indeterminate loss if the claims adjuster determines that—

(i) no material remnant of physical buildings or man-made structures remain except building foundations for the specific property for which the claim is made; and

(ii) there is insufficient or no tangible evidence created, yielded, or otherwise left behind of the specific property for which the claim is made as a result of the named storm.

(5) NAMED STORM.—The term “named storm” means any organized weather system with a defined surface circulation and maximum *sustained* winds of not less than 39 miles per hour which the National Hurricane Center of the United States National Weather Service names as a tropical storm or a hurricane.

(6) POST-STORM ASSESSMENT.—The term “post-storm assessment” means the post-storm assessment developed under section 12312(b) of the Omnibus Public Land Management Act of 2009.

(7) STATE.—The term “State” means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, and any other territory or possession of the United States.

(8) SECRETARY.—The term “Secretary” means the Secretary of Homeland Security.

(9) STANDARD INSURANCE POLICY.—The term “standard insurance policy” means any insurance policy issued under the national flood insurance program that covers loss or damage to property resulting from water peril.

(10) PROPERTY.—The term “property” means real or personal property that is insured under a standard insurance policy for loss or damage to structure or contents.

(11) UNDER SECRETARY.—The term “Under Secretary” means the Under Secretary of Commerce for Oceans and Atmosphere, in the Under Secretary’s capacity as Administrator of the National Oceanic and Atmospheric Administration.

(b) ESTABLISHMENT OF FLOOD LOSS ALLOCATION FORMULA FOR INDETERMINATE CLAIMS.—

(1) IN GENERAL.—Not later than 180 days after the date on which the protocol is established under section 12312(c)(1) of the Omnibus Public Land Management Act of 2009, the Secretary, acting through the Administrator and in consultation with the Under Secretary, shall [establish by rule] *publish for comment in the Federal Register* a standard formula to determine and allocate wind losses and flood losses for claims involving indeterminate losses.

(2) CONTENTS.—The standard formula established under paragraph (1) shall—

(A) incorporate data available from the Coastal Wind and Water Event Database established under section 12312(f) of the Omnibus Public Land Management Act of 2009;

(B) use relevant data provided on the National Flood Insurance Program Elevation Certificate, *or other data or information used to determine a property’s current risk of*

flood, as determined by the Administrator, for each indeterminate loss for which the formula is used;

(C) consider any sufficient and credible evidence, approved by the Administrator, of the pre-event condition of a specific property, including the findings of any policyholder or insurance claims adjuster in connection with the indeterminate loss to that specific property;

(D) include other measures, as the Administrator considers appropriate, required to determine and allocate by mathematical formula the property damage caused by flood or storm surge associated with a named storm; and

(E) subject to paragraph (3), for each indeterminate loss, use the post-storm assessment to allocate water damage (flood or storm surge) associated with a named storm.

(3) DEGREE OF ACCURACY REQUIRED.—The standard formula established under paragraph (1) shall specify that the Administrator may only use the post-storm assessment for purposes of the formula if the Under Secretary certifies that the post-storm assessment has a degree of accuracy of not less than 90 percent in connection with the specific indeterminate loss for which the assessment and formula are used.

(c) AUTHORIZED USE OF POST-STORM ASSESSMENT AND COASTAL FORMULA.—

(1) IN GENERAL.—Subject to paragraph (3), the Administrator may use the post-storm assessment and the COASTAL Formula to—

(A) review flood loss payments for indeterminate losses, including as part of the quality assurance reinspection program of the Federal Emergency Management Agency for claims under the national flood insurance program and any other process approved by the Administrator to review and validate payments under the national flood insurance program for indeterminate losses following a named storm; and

(B) assist the national flood insurance program to—

- (i) properly cover qualified flood loss for claims for indeterminate losses; and
- (ii) avoid paying for any loss or damage to property caused by any peril (including wind), other than flood or storm surge, that is not covered under a standard policy under the national flood insurance program.

(2) FEDERAL DISASTER DECLARATION.—Subject to paragraph (3), in order to expedite claims and reduce costs to the national flood insurance program, following any major disaster declared by the President under section 401 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5170) relating to a named storm in a coastal State, the Administrator may use the COASTAL Formula to determine and pay for any flood loss covered under a standard insurance policy under the national flood insurance program, if the loss is an indeterminate loss.

(3) NATIONAL ACADEMY OF SCIENCES EVALUATION.—

(A) EVALUATION REQUIRED.—

(i) EVALUATION.—Upon [the issuance of the rule establishing the COASTAL Formula] *publication of the*

COASTAL Formula in the Federal Register as required by subsection (b)(1), and each time the Administrator modifies the COASTAL Formula, the National Academy of Sciences shall—

(I) evaluate the expected financial impact on the national flood insurance program of the use of the COASTAL Formula as so established or modified; and

(II) evaluate the validity of the scientific assumptions upon which the formula is based and determine whether the COASTAL formula can achieve a degree of accuracy of not less than 90 percent in allocating flood losses for indeterminate losses.

(ii) Report.—The National Academy of Sciences shall submit a report containing the results of each evaluation under clause (i) to the Administrator, the Committee on Banking, Housing, and Urban Affairs and the Committee on Commerce, Science, and Transportation of the Senate, and the Committee on Financial Services and the Committee on Science, Space, and Technology of the House of Representatives.

(B) EFFECTIVE DATE AND APPLICABILITY.—

(i) EFFECTIVE DATE.—Paragraphs (1) and (2) of this subsection shall not take effect unless the report under subparagraph (A) relating to the establishment of the COASTAL Formula concludes that the use of the COASTAL Formula for purposes of paragraph (1) and (2) would not have an adverse financial impact on the national flood insurance program and that the COASTAL Formula is based on valid scientific assumptions that would allow a degree of accuracy of not less than 90 percent to be achieved in allocating flood losses for indeterminate losses.

(ii) EFFECT OF MODIFICATIONS.—Unless the report under subparagraph (A) relating to a modification of the COASTAL Formula concludes that the use of the COASTAL Formula, as so modified, for purposes of paragraphs (1) and (2) would not have an adverse financial impact on the national flood insurance program and that the COASTAL Formula is based on valid scientific assumptions that would allow a degree of accuracy of not less than 90 percent to be achieved in allocating flood losses for indeterminate losses the Administrator may not use the COASTAL Formula, as so modified, for purposes of paragraphs (1) and (2).

(C) FUNDING.—Notwithstanding section 1310 of the National Flood Insurance Act of 1968 (42 U.S.C. 4017), there shall be available to the Administrator from the National Flood Insurance Fund, of amounts not otherwise obligated, not more than \$750,000 to carry out this paragraph.

(d) DISCLOSURE OF COASTAL FORMULA.—Not later than 30 days after the date on which a post-storm assessment is submitted to the Secretary under section 12312(b)(2)(C) of the Omnibus Public Land Management Act of 2009, for each indeterminate loss for

which the COASTAL Formula is used pursuant to subsection (c)(2), the Administrator shall disclose to the policyholder that makes a claim relating to the indeterminate loss—

(1) that the Administrator used the COASTAL Formula with respect to the indeterminate loss; and

(2) a summary of the results of the use of the COASTAL Formula.

(e) CONSULTATION.—In carrying out subsections (b) and (c), the Secretary shall consult with—

(1) the Under Secretary for Oceans and Atmosphere;

(2) the Director of the National Institute of Standards and Technology;

(3) the Chief of Engineers of the Corps of Engineers;

(4) the Director of the United States Geological Survey;

(5) the Office of the Federal Coordinator for Meteorology;

(6) State insurance regulators of coastal States; and

(7) such public, private, and academic sector entities as the Secretary considers appropriate for purposes of carrying out such subsections.

(f) RECORDKEEPING.—Each consideration and measure the Administrator determines necessary to carry out subsection (b) may be required, with advanced approval of the Administrator, to be provided for on the National Flood Insurance Program Elevation Certificate, or maintained otherwise on record if approved by the Administrator, for any property that qualifies for the COASTAL Formula under subsection (c).

(g) CIVIL PENALTY.—

(1) IN GENERAL.—If an insurance claims adjuster knowingly and willfully makes a false or inaccurate determination relating to an indeterminate loss, the Administrator may, after notice and opportunity for hearing, impose on the insurance claims adjuster a civil penalty of not more than \$1,000.

(2) DEPOSIT.—Notwithstanding section 3302 of title 31, United States Code, or any other law relating to the crediting of money, the Administrator shall deposit in the National Flood Insurance Fund any amounts received under this subsection, which shall remain available until expended and be available to the Administrator for purposes authorized for the National Flood Insurance Fund without further appropriation.

(h) RULE OF CONSTRUCTION.—Nothing in this subsection shall be construed to require the Administrator to make any payment under the national flood insurance program, or an insurance company that issues a standard flood insurance policy under the national flood insurance program to make any payment, for an indeterminate loss based upon post-storm assessment **[or the COASTAL Formula]**, *the COASTAL Formula, or any other loss allocation or post-storm assessment arising under the laws or ordinances of any State.*

(i) APPLICABILITY.—Subsection (c) shall apply with respect to an indeterminate loss associated with a named storm that occurs **[after the date on which the Administrator issues the rule establishing the COASTAL Formula under subsection (b)]** *60 days after publication of the COASTAL Formula in the Federal Register as required by subsection (b)(1).*

(j) **RULE OF CONSTRUCTION.**—Nothing in this subsection shall be construed to negate, set aside, or void any policy limit, including any loss limitation, set forth in a standard insurance policy.

(k) **RULE OF CONSTRUCTION.**—*Nothing in this section shall be construed to create a cause of action under this Act.*

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OMNIBUS PUBLIC LAND MANAGEMENT ACT OF 2009

[Public Law 111–11; 123 Stat. 991]

* * * * *

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) **SHORT TITLE.**—This Act may be cited as the “Omnibus Public Land Management Act of 2009”.

(b) **TABLE OF CONTENTS.**—The table of contents of this Act is as follows:

Sec. 1. Short title; table of contents.

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TITLE XII—OCEANS

* * * * *

SUBTITLE C—INTEGRATED COASTAL AND OCEAN OBSERVATION SYSTEM ACT OF 2009

Sec. 12301. Short title.

Sec. 12302. Purposes.

Sec. 12303. Definitions.

Sec. 12304. Integrated coastal and ocean observing system.

Sec. 12305. Interagency financing and agreements.

Sec. 12306. Application with other laws.

Sec. 12307. Report to Congress.

Sec. 12308. Public-private use policy.

[Sec. 12309. Independent cost estimate.]

Sec. 12310. Intent of Congress.

Sec. 12311. Authorization of appropriations.

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TITLE XII—OCEANS

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SUBTITLE C—INTEGRATED COASTAL AND OCEAN OBSERVATION SYSTEM ACT OF 2009

[33 U.S.C. 3601 et seq]

SEC. 12301. SHORT TITLE.

This subtitle may be cited as the “Integrated Coastal and Ocean Observation System Act of 2009”.

[33 U.S.C. 3601]

[SEC. 12302. PURPOSES.

[The purposes of this subtitle are to—

(1) establish a national integrated System of ocean, coastal, and Great Lakes observing systems, comprised of Federal and non-Federal components coordinated at the national level by the National Ocean Research Leadership Council and at the regional level by a network of regional information coordination entities, and that includes in situ, remote, and other coast-

al and ocean observation, technologies, and data management and communication systems, and is designed to address regional and national needs for ocean information, to gather specific data on key coastal, ocean, and Great Lakes variables, and to ensure timely and sustained dissemination and availability of these data to—

【(A) support national defense, marine commerce, navigation safety, weather, climate, and marine forecasting, energy siting and production, economic development, ecosystem-based marine, coastal, and Great Lakes resource management, public safety, and public outreach training and education;

【(B) promote greater public awareness and stewardship of the Nation’s ocean, coastal, and Great Lakes resources and the general public welfare; and

【(C) enable advances in scientific understanding to support the sustainable use, conservation, management, and understanding of healthy ocean, coastal, and Great Lakes resources;

【(2) improve the Nation’s capability to measure, track, explain, and predict events related directly and indirectly to weather and climate change, natural climate variability, and interactions between the oceanic and atmospheric environments, including the Great Lakes; and

【(3) authorize activities to promote basic and applied research to develop, test, and deploy innovations and improvements in coastal and ocean observation technologies, modeling systems, and other scientific and technological capabilities to improve our conceptual understanding of weather and climate, ocean-atmosphere dynamics, global climate change, physical, chemical, and biological dynamics of the ocean, coastal and Great Lakes environments, and to conserve healthy and restore degraded coastal ecosystems.】

SEC. 12302. PURPOSES.

The purposes of this subtitle are—

(1) to establish and sustain a national integrated System of ocean, coastal, and Great Lakes observing systems, comprised of Federal and non-Federal components coordinated at the national level by the Council and at the regional level by a network of regional coastal observing systems, and that includes in situ, remote, and other coastal and ocean observation and modeling capabilities, technologies, data management systems, communication systems, and product development systems, and is designed to address regional and national needs for ocean and coastal information, to gather specific data on key coastal, ocean, and Great Lakes variables, and to ensure timely and sustained dissemination and availability of these data—

(A) to the public;

(B) to support national defense, search and rescue operations, marine commerce, navigation safety, weather, climate, and marine forecasting, energy siting and production, economic development, ecosystem-based marine, coastal, and Great Lakes resource management, public safety, and public outreach and education;

(C) to promote greater public awareness and stewardship of the Nation’s ocean, coastal, and Great Lakes resources and the general public welfare;

(D) to provide easy access to ocean, coastal, and Great Lakes data and promote data sharing between Federal and non-Federal sources and promote public data sharing;

(E) to enable advances in scientific understanding to support the sustainable use, conservation, management, and understanding of healthy ocean, coastal, and Great Lakes resources to ensure the Nation can respond to opportunities to enhance food, economic, and national security; and

(F) to monitor and model changes in the oceans and Great Lakes, including with respect to chemistry, harmful algal blooms, hypoxia, water levels, and other phenomena;

(2) to improve the Nation’s capability to measure, track, observe, understand, and predict events related directly and indirectly to weather and climate, natural climate variability, and interactions between the oceanic and atmospheric environments, including the Great Lakes;

(3) to sustain, upgrade, and modernize the Nation’s ocean and Great Lakes observing infrastructure to detect changes and ensure delivery of reliable and timely information; and

(4) to authorize activities—

(A) to promote basic and applied research to develop, test, and deploy innovations and improvements in coastal and ocean observation technologies, including advanced observing technologies such as unmanned maritime systems needed to address critical data gaps, modeling systems, other scientific and technological capabilities to improve the understanding of weather and climate, ocean-atmosphere dynamics, global climate change, and the physical, chemical, and biological dynamics of the ocean, coastal and Great Lakes environments; and

(B) to conserve healthy and restore degraded coastal ecosystems.

[33 U.S.C. 3602]

SEC. 12303. DEFINITIONS.

In this subtitle:

(1) **ADMINISTRATOR.**—The term “Administrator” means the Under Secretary of Commerce for Oceans and Atmosphere in the Under Secretary’s capacity as Administrator of the National Oceanic and Atmospheric Administration.

(2) **COUNCIL.**—The term “Council” means the National Ocean Research Leadership Council established by [section 7902] section 8932 of title 10, United States Code.

(3) **FEDERAL ASSETS.**—The term “Federal assets” means all relevant non-classified civilian coastal and ocean observations, technologies, and related modeling, research, data management, basic and applied technology research and development, and public education and outreach programs, that are managed by member agencies of the Council.

(4) **INTERAGENCY OCEAN OBSERVATION COMMITTEE.**—The term “Interagency Ocean Observation Committee” means the committee established under section 12304(c)(2).

(5) **NON-FEDERAL ASSETS.**—The term “non-Federal assets” means all relevant coastal and ocean observation technologies, related basic and applied technology research and development, and public education and outreach programs that are **[integrated into the System and are managed through States, regional organizations, universities, nongovernmental organizations, or the private sector]** *managed through States, regional organizations, universities, nongovernmental organizations, or the private sector and integrated into the System by a regional coastal ocean observing system, the National Oceanic and Atmospheric Administration, or the agencies participating in the Interagency Ocean Observation Committee.*

[(6) REGIONAL INFORMATION COORDINATION ENTITIES.—

[(A) IN GENERAL.—The term “regional information coordination entity” means an organizational body that is certified or established by contract or memorandum by the lead Federal agency designated in section 12304(c)(3) of this subtitle and coordinates State, Federal, local, and private interests at a regional level with the responsibility of engaging the private and public sectors in designing, operating, and improving regional coastal and ocean observing systems in order to ensure the provision of data and information that meet the needs of user groups from the respective regions.

[(B) CERTAIN INCLUDED ASSOCIATIONS.—The term “regional information coordination entity” includes regional associations described in the System Plan.]

(6) REGIONAL COASTAL OBSERVING SYSTEM.—*The term “regional coastal observing system” means an organizational body that is certified or established by contract or memorandum by the lead Federal agency designated in section 12304(c)(3) and coordinates State, Federal, local, tribal, and private interests at a regional level with the responsibility of engaging the private and public sectors in designing, operating, and improving regional coastal and ocean observing systems in order to ensure the provision of data and information that meet the needs of user groups from the respective regions.*

(7) SECRETARY.—The term “Secretary” means the Secretary of Commerce, acting through the **[National Oceanic and Atmospheric Administration]** *Administrator.*

(8) SYSTEM.—The term “System” means the National Integrated Coastal and Ocean Observation System established under section 12304.

(9) SYSTEM PLAN.—The term “System Plan” means the plan contained in the document entitled “Ocean. US Publication No. 9, The First Integrated Ocean Observing System (IOOS) Development Plan”, as updated by the Council under this subtitle.

[33 U.S.C. 3603(b)]

SEC. 12304. INTEGRATED COASTAL AND OCEAN OBSERVING SYSTEM.

(a) ESTABLISHMENT.—The President, acting through the Council, shall establish a National Integrated Coastal and Ocean Observation System to fulfill the purposes set forth in section 12302 of this subtitle and the System Plan and to fulfill the Nation’s inter-

national obligations to contribute to the Global Earth Observation System of Systems and the Global Ocean Observing System.

(b) SYSTEM ELEMENTS.—

【(1) IN GENERAL.—In order to fulfill the purposes of this subtitle, the System shall be national in scope and consist of—

【(A) Federal assets to fulfill national and international observation missions and priorities;

【(B) non-Federal assets, including a network of regional information coordination entities identified under subsection (c)(4), to fulfill regional observation missions and priorities;

【(C) data management, communication, and modeling systems for the timely integration and dissemination of data and information products from the System;

【(D) a research and development program conducted under the guidance of the Council, consisting of—

【(i) basic and applied research and technology development to improve understanding of coastal and ocean systems and their relationships to human activities and to ensure improvement of operational assets and products, including related infrastructure, observing technologies, and information and data processing and management technologies; and

【(ii) large scale computing resources and research to advance modeling of coastal and ocean processes.】

(1) *IN GENERAL.—In order to fulfill the purposes of this subtitle, the System shall be national in scope and consist of—*

(A) Federal assets to fulfill national and international observation missions and priorities;

(B) non-Federal assets, including a network of regional coastal observing systems identified under subsection (c)(4), to fulfill regional and national observation missions and priorities;

(C) observing, modeling, data management, and communication systems for the timely integration and dissemination of data and information products from the System, including reviews of data collection procedures across regions and programs to make recommendations for data collection standards across the System to meet national ocean, coastal, and Great Lakes observation, applied research, and weather forecasting needs;

(D) a product development system to transform observations into products in a format that may be readily used and understood; and

(E) a research and development program conducted under the guidance of the Council, consisting of—

(i) basic and applied research and technology development—

(I) to improve understanding of coastal and ocean systems and their relationships to human activities; and

(II) to ensure improvement of operational assets and products, including related infrastructure, observing technologies such as unmanned maritime

- systems, and information and data processing and management technologies;*
- (ii) *an advanced observing technology development program to fill gaps in technology;*
- (iii) *large scale computing resources and research to advance modeling of coastal, ocean, and Great Lakes processes;*
- (iv) *models to improve regional weather forecasting capabilities and regional weather forecasting products; and*
- (v) *reviews of data collection procedures across regions and programs to make recommendations for data collection standards across the System to meet national ocean, coastal, and Great Lakes observation, applied research, and weather forecasting needs.*

(2) ENHANCING ADMINISTRATION AND MANAGEMENT.—The head of each Federal agency that has administrative jurisdiction over a Federal asset shall support the purposes of this subtitle and may take appropriate actions to enhance internal agency administration and management to better support, integrate, finance, and utilize observation data, products, and services developed under this section to further its own agency mission and responsibilities.

[33 U.S.C. 3603(b)(3)]

(3) AVAILABILITY OF DATA.—The head of each Federal agency that has administrative jurisdiction over a Federal asset shall make available data that are produced by that asset and that are not otherwise restricted for integration, management, and dissemination by the System *for research and for use in the development of products to address societal needs.*

(4) NON-FEDERAL ASSETS.—Non-Federal assets shall be coordinated, as appropriate, by the Interagency Ocean Observing Committee or by [regional information coordination entities] *regional ocean observing systems.*

[33 U.S.C. 3603(c)]

(c) POLICY OVERSIGHT, ADMINISTRATION, AND REGIONAL COORDINATION.—

(1) COUNCIL FUNCTIONS.—The Council shall serve as the policy and coordination oversight body for all aspects of the System. In carrying out its responsibilities under this subtitle, the Council shall—

(A) approve and adopt comprehensive System budgets developed and maintained by the Interagency Ocean Observing Committee to support System operations, including operations of both Federal and non-Federal assets;

(B) ensure coordination of the System with other domestic and international earth observing activities including the Global Ocean Observing System and the Global Earth Observing System of Systems, and provide, as appropriate, support for and representation on United States delegations to international meetings on coastal and ocean observing programs; and

(C) encourage coordinated intramural and extramural research and technology development, and a process to

transition developing technology and methods into operations of the System.

【(2) INTERAGENCY OCEAN OBSERVATION COMMITTEE.—The Council shall establish or designate an Interagency Ocean Observation Committee which shall—

【(A) prepare annual and long-term plans for consideration and approval by the Council for the integrated design, operation, maintenance, enhancement and expansion of the System to meet the objectives of this subtitle and the System Plan;

【(B) develop and transmit to Congress at the time of submission of the President’s annual budget request an annual coordinated, comprehensive budget to operate all elements of the System identified in subsection (b), and to ensure continuity of data streams from Federal and non-Federal assets;

【(C) establish required observation data variables to be gathered by both Federal and non-Federal assets and identify, in consultation with regional information coordination entities, priorities for System observations;

【(D) establish protocols and standards for System data processing, management, and communication;

【(E) develop contract certification standards and compliance procedures for all non-Federal assets, including regional information coordination entities, to establish eligibility for integration into the System and to ensure compliance with all applicable standards and protocols established by the Council, and ensure that regional observations are integrated into the System on a sustained basis;

【(F) identify gaps in observation coverage or needs for capital improvements of both Federal assets and non-Federal assets;

【(G) subject to the availability of appropriations, establish through one or more participating Federal agencies, in consultation with the System advisory committee established under subsection (d), a competitive matching grant or other programs—

【(i) to promote intramural and extramural research and development of new, innovative, and emerging observation technologies including testing and field trials; and

【(ii) to facilitate the migration of new, innovative, and emerging scientific and technological advances from research and development to operational deployment;

【(H) periodically review and recommend to the Council, in consultation with the Administrator, revisions to the System Plan;

【(I) ensure collaboration among Federal agencies participating in the activities of the Committee; and

【(J) perform such additional duties as the Council may delegate.

【(3) LEAD FEDERAL AGENCY.—The National Oceanic and Atmospheric Administration shall function as the lead Federal agency for the implementation and administration of the Sys-

tem, in consultation with the Council, the Interagency Ocean Observation Committee, other Federal agencies that maintain portions of the System, and the regional information coordination entities, and shall—

[(A) establish an Integrated Ocean Observing Program Office within the National Oceanic and Atmospheric Administration utilizing to the extent necessary, personnel from member agencies participating on the Interagency Ocean Observation Committee, to oversee daily operations and coordination of the System;

[(B) implement policies, protocols, and standards approved by the Council and delegated by the Interagency Ocean Observing Committee;

[(C) promulgate program guidelines to certify and integrate non-Federal assets, including regional information coordination entities, into the System to provide regional coastal and ocean observation data that meet the needs of user groups from the respective regions;

[(D) have the authority to enter into and oversee contracts, leases, grants or cooperative agreements with non-Federal assets, including regional information coordination entities, to support the purposes of this subtitle on such terms as the Administrator deems appropriate;

[(E) implement a merit-based, competitive funding process to support non-Federal assets, including the development and maintenance of a network of regional information coordination entities, and develop and implement a process for the periodic review and evaluation of all non-Federal assets, including regional information coordination entities;

[(F) provide opportunities for competitive contracts and grants for demonstration projects to design, develop, integrate, deploy, and support components of the System;

[(G) establish efficient and effective administrative procedures for allocation of funds among contractors, grantees, and non-Federal assets, including regional information coordination entities in a timely manner, and contingent on appropriations according to the budget adopted by the Council;

[(H) develop and implement a process for the periodic review and evaluation of regional information coordination entities;

[(I) formulate an annual process by which gaps in observation coverage or needs for capital improvements of Federal assets and non-Federal assets of the System are identified by the regional information coordination entities, the Administrator, or other members of the System and transmitted to the Interagency Ocean Observing Committee;

[(J) develop and be responsible for a data management and communication system, in accordance with standards and protocols established by the Council, by which all data collected by the System regarding ocean and coastal waters of the United States including the Great Lakes, are processed, stored, integrated, and made available to all end-user communities;

[(K) implement a program of public education and outreach to improve public awareness of global climate change and effects on the ocean, coastal, and Great Lakes environment;

[(L) report annually to the Interagency Ocean Observing Committee on the accomplishments, operational needs, and performance of the System to contribute to the annual and long-term plans developed pursuant to subsection (c)(2)(A)(i); and

[(M) develop a plan to efficiently integrate into the System new, innovative, or emerging technologies that have been demonstrated to be useful to the System and which will fulfill the purposes of this subtitle and the System Plan.

[(4) REGIONAL INFORMATION COORDINATION ENTITIES.—

[(A) IN GENERAL.—To be certified or established under this subtitle, a regional information coordination entity shall be certified or established by contract or agreement by the Administrator, and shall agree to meet the certification standards and compliance procedure guidelines issued by the Administrator and information needs of user groups in the region while adhering to national standards and shall—

[(i) demonstrate an organizational structure capable of gathering required System observation data, supporting and integrating all aspects of coastal and ocean observing and information programs within a region and that reflects the needs of State and local governments, commercial interests, and other users and beneficiaries of the System and other requirements specified under this subtitle and the System Plan;

[(ii) identify gaps in observation coverage needs for capital improvements of Federal assets and non-Federal assets of the System, or other recommendations to assist in the development of the annual and long-term plans created pursuant to subsection (c)(2)(A)(i) and transmit such information to the Interagency Ocean Observing Committee via the Program Office;

[(iii) develop and operate under a strategic operational plan that will ensure the efficient and effective administration of programs and assets to support daily data observations for integration into the System, pursuant to the standards approved by the Council;

[(iv) work cooperatively with governmental and non-governmental entities at all levels to identify and provide information products of the System for multiple users within the service area of the regional information coordination entities; and

[(v) comply with all financial oversight requirements established by the Administrator, including requirements relating to audits.

[(B) PARTICIPATION.—For the purposes of this subtitle, employees of Federal agencies may participate in the functions of the regional information coordination entities.]

(2) *INTERAGENCY OCEAN OBSERVATION COMMITTEE.*—

(A) *ESTABLISHMENT.*—*The Council shall establish or designate a committee, which shall be known as the Interagency Ocean Observation Committee.*

(B) *DUTIES.*—*The Interagency Ocean Observation Committee shall—*

(i) *prepare annual and long-term plans for consideration and approval by the Council for the integrated design, operation, maintenance, enhancement, and expansion of the System to meet the objectives of this subtitle and the System Plan;*

(ii) *develop and transmit to Congress, along with the budget submitted by the President to Congress pursuant to section 1105(a) of title 31, United States Code, an annual coordinated, comprehensive budget—*

(I) *to operate all elements of the System identified in subsection (b); and*

(II) *to ensure continuity of data streams from Federal and non-Federal assets;*

(iii) *establish requirements for observation data variables to be gathered by both Federal and non-Federal assets and identify, in consultation with regional coastal observing systems, priorities for System observations;*

(iv) *establish and define protocols and standards for System data processing, management, collection, configuration standards, formats, and communication for new and existing assets throughout the System network;*

(v) *develop contract requirements for each regional coastal observing system—*

(I) *to establish eligibility for integration into the System;*

(II) *to ensure compliance with all applicable standards and protocols established by the Council; and*

(III) *to ensure that regional observations are integrated into the System on a sustained basis;*

(vi) *identify gaps in observation coverage or needs for capital improvements of both Federal assets and non-Federal assets;*

(vii) *subject to the availability of appropriations, establish through 1 or more Federal agencies participating in the Interagency Ocean Observation Committee, in consultation with the System advisory committee established under subsection (d), a competitive matching grant or other programs—*

(I) *to promote intramural and extramural research and development of new, innovative, and emerging observation technologies including testing and field trials; and*

(II) *to facilitate the migration of new, innovative, and emerging scientific and technological advances from research and development to operational deployment;*

- (viii) periodically—
 - (I) review the System Plan; and
 - (II) submit to the Council such recommendations as the Interagency Ocean Observation Committee may have for improvements to the System Plan;
- (ix) ensure collaboration among Federal agencies participating in the Interagency Ocean Observation Committee; and
- (x) perform such additional duties as the Council may delegate.

(3) LEAD FEDERAL AGENCY.—

(A) IN GENERAL.—The National Oceanic and Atmospheric Administration shall function as the lead Federal agency for the implementation and administration of the System.

(B) CONSULTATION REQUIRED.—In carrying out this paragraph, the Administrator shall consult with the Council, the Interagency Ocean Observation Committee, other Federal agencies that maintain portions of the System, and the regional coastal observing systems.

(C) REQUIREMENTS.—In carrying out this paragraph, the Administrator shall—

(i) establish and operate an Integrated Ocean Observing System Program Office within the National Oceanic and Atmospheric Administration that—

(I) utilizes, to the extent necessary, personnel from Federal agencies participating in the Interagency Ocean Observation Committee; and

(II) oversees daily operations and coordination of the System;

(ii) implement policies, protocols, and standards approved by the Council and delegated by the Interagency Ocean Observation Committee;

(iii) promulgate program guidelines—

(I) to certify and integrate regional associations into the System; and

(II) to provide regional coastal and ocean observation data that meet the needs of user groups from the respective regions;

(iv) have the authority to enter into and oversee contracts, leases, grants, or cooperative agreements with non-Federal assets, including regional coastal observing systems, to support the purposes of this subtitle on such terms as the Administrator deems appropriate;

(v) implement and maintain a merit-based, competitive funding process to support non-Federal assets, including the development and maintenance of a national network of regional coastal observing systems, and develop and implement a process for the periodic review and evaluation of the regional associations;

(vi) provide opportunities for competitive contracts and grants for demonstration projects to design, develop, integrate, deploy, maintain, and support components of the System;

(vii) establish and maintain efficient and effective administrative procedures for the timely allocation of

funds among contractors, grantees, and non-Federal assets, including regional coastal observing systems;

(viii) develop and implement a process for the periodic review and evaluation of the regional coastal observing systems;

(ix) formulate an annual process by which gaps in observation coverage or needs for capital improvements of Federal assets and non-Federal assets of the System are—

(I) identified by the regional associations described in the System plan, the Administrator, or other members of the System; and

(II) submitted to the Interagency Ocean Observation Committee;

(x) develop and be responsible for a data management and communication system, in accordance with standards and protocols established by the Interagency Ocean Observation Committee, by which all data collected by the System regarding ocean and coastal waters of the United States including the Great Lakes, are processed, stored, integrated, and made available to all end-user communities;

(xi) not less frequently than once each year, submit to the Interagency Ocean Observation Committee a report on the accomplishments, operational needs, and performance of the System to contribute to the annual and long-term plans prepared pursuant to paragraph (2)(B)(i);

(xii) develop and periodically update a plan to efficiently integrate into the System new, innovative, or emerging technologies that have been demonstrated to be useful to the System and which will fulfill the purposes of this subtitle and the System Plan; and

(xiii) work with users and regional associations to develop products to enable real-time data sharing for decision makers, including with respect to weather forecasting and modeling, search and rescue operations, corrosive seawater forecasts, water quality monitoring and communication, and harmful algal bloom forecasting.

(4) REGIONAL COASTAL OBSERVING SYSTEMS.—

(A) IN GENERAL.—*A regional coastal observing system described in the System Plan as a regional association may not be certified or established under this subtitle unless it—*

(i) has been or shall be certified or established by contract or agreement by the Administrator;

(ii) meets—

(I) the certification standards and compliance procedure guidelines issued by the Administrator; and

(II) the information needs of user groups in the region while adhering to national standards;

(iii) demonstrates an organizational structure, that under funding limitations is capable of—

(I) gathering required System observation data;

(II) supporting and integrating all aspects of coastal and ocean observing and information programs within a region; and

(III) reflecting the needs of State, local, and tribal governments, commercial interests, and other users and beneficiaries of the System and other requirements specified under this subtitle and the System Plan;

(iv) identifies—

(I) gaps in observation coverage needs for capital improvements of Federal assets and non-Federal assets of the System; and

(II) other recommendations to assist in the development of the annual and long-term plans prepared pursuant to paragraph (2)(B)(i) and transmits such information to the Interagency Ocean Observation Committee through the Program Office established under paragraph (3)(C)(i);

(v) develops and operates under a strategic plan that will ensure the efficient and effective administration of programs and assets to support daily data observations for integration into the System, pursuant to the standards approved by the Council;

(vi) works cooperatively with governmental and non-governmental entities at all levels to identify and provide information products of the System for multiple users within the service area of the regional coastal observing system; and

(vii) complies with all financial oversight requirements established by the Administrator, including requirements relating to audits.

(B) PARTICIPATION.—For the purposes of this subtitle, employees of Federal agencies are permitted to be members of the governing body for the regional coastal observing systems and may participate in the functions of the regional coastal ocean observing systems.

[33 U.S.C. 3603(d)]

(d) SYSTEM ADVISORY COMMITTEE.—

(1) IN GENERAL.—The Administrator shall establish or designate a System advisory committee, which shall provide advice as may be requested by the Administrator [or the Interagency Ocean Observing Committee.] or the Council under this subtitle.

(2) PURPOSE.—The purpose of the System advisory committee is to advise the Administrator and the Interagency Ocean Observing Committee on—

(A) administration, operation, management, and maintenance of the System, including integration of Federal and non-Federal assets and data management, *data sharing*, and communication aspects of the System, and fulfillment of the purposes set forth in section 12302;

(B) expansion and periodic modernization and upgrade of technology components of the System;

(C) identification of end-user communities, their needs for information provided by the System, and the System's

effectiveness in disseminating information to end-user communities and the general public; [and]

[(D) any other purpose identified by the Administrator or the Interagency Ocean Observing Committee.]

(D) additional priorities, including—

(i) a national surface current mapping network designed to improve fine scale sea surface mapping using high frequency radar technology and other emerging technologies to address national priorities, including Coast Guard search and rescue operation planning and harmful algal bloom forecasting and detection that—

(I) is comprised of existing high frequency radar and other sea surface current mapping infrastructure operated by national programs and regional coastal observing systems;

(II) incorporates new high frequency radar assets or other fine scale sea surface mapping technology assets, and other assets needed to fill gaps in coverage on United States coastlines; and

(III) follows a deployment plan that prioritizes closing gaps in high frequency radar infrastructure in the United States, starting with areas demonstrating significant sea surface current data needs, especially in areas where additional data will improve Coast Guard search and rescue models;

(ii) fleet acquisition for unmanned maritime systems for deployment and data integration to fulfill the purposes of this subtitle;

(iii) an integrative survey program for application of unmanned maritime systems to the real-time or near real-time collection and transmission of sea floor, water column, and sea surface data on biology, chemistry, geology, physics, and hydrography;

(iv) remote sensing and data assimilation to develop new analytical methodologies to assimilate data from the System into hydrodynamic models;

(v) integrated, multi-State monitoring to assess sources, movement, and fate of sediments in coastal regions; and

(vi) a multi-region marine sound monitoring system to be—

(I) planned in consultation with the Interagency Ocean Observation Committee, the National Oceanic and Atmospheric Administration, the Department of the Navy, and academic research institutions; and

(II) developed, installed, and operated in coordination with the National Oceanic and Atmospheric Administration, the Department of the Navy, and academic research institutions; and

(E) any other purpose identified by the Administrator or the Council.

(3) MEMBERS.—

(A) IN GENERAL.—The System advisory committee shall be composed of members appointed by the Administrator. Members shall be qualified by education, training, and experience to evaluate scientific and technical information related to the design, operation, maintenance, or use of the System, or use of data products provided through the System.

(B) TERMS OF SERVICE.—*The Administrator may stagger the terms of the System advisory committee members.* Members shall be appointed for 3-year terms, renewable once. A vacancy appointment shall be for the remainder of the unexpired term of the vacancy, and an individual so appointed may subsequently be appointed for 2 full 3-year terms if the remainder of the unexpired term is less than 1 year.

(C) CHAIRPERSON.—The Administrator shall designate a chairperson from among the members of the System advisory committee.

(D) APPOINTMENT.—Members of the System advisory committee shall be appointed as special Government employees for purposes of section 202(a) of title 18, United States Code.

(4) ADMINISTRATIVE PROVISIONS.—

(A) REPORTING.—The System advisory committee shall report to the Administrator [and the Interagency Ocean Observing Committee], as appropriate.

(B) ADMINISTRATIVE SUPPORT.—The Administrator shall provide administrative support to the System advisory committee.

(C) MEETINGS.—The System advisory committee shall meet at least once each year, and at other times at the call of the Administrator, the Interagency Ocean [Observing] Observation Committee, or the chairperson.

(D) COMPENSATION AND EXPENSES.—Members of the System advisory committee shall not be compensated for service on that Committee, but may be allowed travel expenses, including per diem in lieu of subsistence, in accordance with subchapter I of chapter 57 of title 5, United States Code.

(E) EXPIRATION.—Section 14 of the Federal Advisory Committee Act (5 U.S.C. App.) shall not apply to the System advisory committee.

[33 U.S.C. 3603(e)]

(e) CIVIL LIABILITY.—For purposes of determining liability arising from the dissemination and use of observation data gathered pursuant to this section, any non-Federal asset or regional [information coordination entity] *coastal observing system* incorporated into the System by [contract, lease, grant, or cooperative agreement under subsection (c)(3)(D)] *a memorandum of agreement of certification under subsection (c)(3)(C)(iii)* that is participating in the System shall be considered to be part of the National Oceanic and Atmospheric Administration. Any employee of such a non-Federal asset or regional [information coordination entity] *coastal observing system*, while operating within the scope of his or her employment in carrying out the purposes of this subtitle, with respect to

tort liability, is deemed to be an employee of the Federal Government.

(f) **LIMITATION.**—Nothing in this subtitle shall be construed to invalidate existing certifications, contracts, or agreements between **[regional information coordination entities]** *regional ocean observing systems* and other elements of the System.

[33 U.S.C. 3604(a)]

SEC. 12305. INTERAGENCY FINANCING AND AGREEMENTS.

[(a) IN GENERAL.—To carry out interagency activities under this subtitle, the Secretary of Commerce may execute cooperative agreements, or any other agreements, with, and receive and expend funds made available by, any State or subdivision thereof, any Federal agency, or any public or private organization, or individual.]

(a) IN GENERAL.—The Secretary of Commerce may execute an agreement, on a reimbursable or nonreimbursable basis, with any State or subdivision thereof, any Federal agency, any public or private organization, or any individual to carry out activities under this subtitle.

(b) **RECIPROCITY.**—Member Departments and agencies of the Council shall have the authority to create, support, and maintain joint centers, and to enter into and perform such contracts, leases, grants, and cooperative agreements as may be necessary to carry out the purposes of this subtitle and fulfillment of the System Plan.

SEC. 12306. APPLICATION WITH OTHER LAWS.

Nothing in this subtitle supersedes or limits the authority of any agency to carry out its responsibilities and missions under other laws.

[33 U.S.C. 3606]

[SEC. 12307. REPORT TO CONGRESS.

[(a) REQUIREMENT.—Not later than 2 years after the date of the enactment of this Act and every 2 years thereafter, the Administrator shall prepare and the President acting through the Council shall approve and transmit to the Congress a report on progress made in implementing this subtitle.

[(b) CONTENTS.—The report shall include—

[(1) a description of activities carried out under this subtitle and the System Plan;

[(2) an evaluation of the effectiveness of the System, including an evaluation of progress made by the Council to achieve the goals identified under the System Plan;

[(3) identification of Federal and non-Federal assets as determined by the Council that have been integrated into the System, including assets essential to the gathering of required observation data variables necessary to meet the respective missions of Council agencies;

[(4) a review of procurements, planned or initiated, by each Council agency to enhance, expand, or modernize the observation capabilities and data products provided by the System, including data management and communication subsystems;

[(5) an assessment regarding activities to integrate Federal and non-Federal assets, nationally and on the regional level, and discussion of the performance and effectiveness of regional

information coordination entities to coordinate regional observation operations;

[(6) a description of benefits of the program to users of data products resulting from the System (including the general public, industries, scientists, resource managers, emergency responders, policy makers, and educators);

[(7) recommendations concerning—

[(A) modifications to the System; and

[(B) funding levels for the System in subsequent fiscal years; and

[(8) the results of a periodic external independent programmatic audit of the System.]

SEC. 12307. REPORT TO CONGRESS.

(a) *REQUIREMENT.*—Not later than 2 years after March 30, 2020, and every 5 years thereafter, the Administrator shall prepare, and the President acting through the Council shall approve and transmit to Congress, a report on progress made in implementing this subtitle.

(b) *CONTENTS.*—Each report required under subsection (a) shall include—

(1) a description of activities carried out under this subtitle and the System Plan;

(2) an evaluation of the effectiveness of the System, including an evaluation of progress made by the Council to achieve the goals identified under the System Plan;

(3) the identification of Federal and non-Federal assets as determined by the Council that have been integrated into the System, including assets essential to the gathering of required observation data variables necessary to meet the respective missions of Council agencies;

(4) a review of procurements, planned or initiated, by each department or agency represented on the Council to enhance, expand, or modernize the observation capabilities and data products provided by the System, including data management and communication subsystems;

(5) a summary of the existing gaps in observation infrastructure and monitoring data collection, including—

(A) priorities considered by the System advisory committee;

(B) the national sea surface current mapping network;

(C) coastal buoys;

(D) ocean chemistry monitoring;

(E) marine sound monitoring; and

(F) unmanned maritime systems technology gaps;

(6) an assessment regarding activities to integrate Federal and non-Federal assets, nationally and on the regional level, and discussion of the performance and effectiveness of regional coastal observing systems to coordinate regional observation operations;

(7) a description of benefits of the program to users of data products resulting from the System (including the general public, industries, scientists, resource managers, emergency responders, policy makers, and educators);

(8) recommendations concerning—

(A) modifications to the System; and

(B) funding levels for the System in subsequent fiscal years; and
 (9) the results of a periodic external independent programmatic audit of the System.

* * * * *

[33 U.S.C. 3607]

[SEC. 12308. PUBLIC-PRIVATE USE POLICY.]

【The Council shall develop a policy within 6 months after the date of the enactment of this Act that defines processes for making decisions about the roles of the Federal Government, the States, regional information coordination entities, the academic community, and the private sector in providing to end-user communities environmental information, products, technologies, and services related to the System. The Council shall publish the policy in the Federal Register for public comment for a period not less than 60 days. Nothing in this section shall be construed to require changes in policy in effect on the date of enactment of this Act.】

SEC. 12308. PUBLIC-PRIVATE USE POLICY.

The Council shall maintain a policy that defines processes for making decisions about the roles of the Federal Government, the States, regional coastal observing systems, the academic community, and the private sector in providing to end-user communities environmental information, products, technologies, and services related to the System. The Administrator shall ensure that National Oceanic and Atmospheric Administration adheres to the decision making process developed by the Council regarding the roles of the Federal Government, the States, the regional coastal observing systems, the academic community, and the private sector in providing end-user communities environmental information, data products, technologies, and services related to the System.

[33 U.S.C. 3608]

[SEC. 12309. INDEPENDENT COST ESTIMATE.]

【Within 1 year after the date of enactment of this Act, the Interagency Ocean Observation Committee, through the Administrator and the Director of the National Science Foundation, shall obtain an independent cost estimate for operations and maintenance of existing Federal assets of the System, and planned or anticipated acquisition, operation, and maintenance of new Federal assets for the System, including operation facilities, observation equipment, modeling and software, data management and communication, and other essential components. The independent cost estimate shall be transmitted unabridged and without revision by the Administrator to Congress.】

SEC. 12310. INTENT OF CONGRESS.

It is the intent of Congress that funding provided to agencies of the Council to implement this subtitle shall supplement, and not replace, existing sources of funding for other programs. It is the further intent of Congress that agencies of the Council shall not enter into contracts or agreements for the development or procurement of new Federal assets for the System that are estimated to be in excess of \$250,000,000 in life-cycle costs without first pro-

viding adequate notice to Congress and opportunity for review and comment.

[33 U.S.C. 3610]

[SEC. 12311. AUTHORIZATION OF APPROPRIATIONS.

【There are authorized to be appropriated to the Secretary of Commerce for fiscal years 2009 through 2013 such sums as are necessary to fulfill the purposes of this subtitle and support activities identified in the annual coordinated System budget developed by the Interagency Ocean Observation Committee and submitted to the Congress.】

SEC. 12311. AUTHORIZATION OF APPROPRIATIONS.

To fulfill the purposes set forth in section 12302 and to support activities identified in the annual coordinated System budget developed by the Interagency Ocean Observation Committee, there are authorized to be appropriated to the Secretary of Commerce—

- (1) \$54,900,000 for fiscal year 2020;
- (2) \$61,600,000 for fiscal year 2021;
- (3) \$68,300,000 for fiscal year 2022;
- (4) \$75,000,000 for fiscal year 2023; and
- (5) \$81,700,000 for fiscal year 2024.

[33 U.S.C. 3611; Pub. L. 111–11, title XII, section 12312, as added Pub. L. 112–141, div. F, title II, section 100252, July 6, 2012, 126 Stat. 969.]

SEC. 12312. ASSESSING AND MODELING NAMED STORMS OVER COASTAL STATES.

(a) DEFINITIONS.—In this section:

(1) COASTAL FORMULA.—The term “COASTAL Formula” has the meaning given the term in section 1337(a) of the National Flood Insurance Act of 1968.

(2) COASTAL STATE.—The term “coastal State” has the meaning given the term “coastal state” in section 304 of the Coastal Zone Management Act of 1972 (16 U.S.C. 1453)【.】, *except that the term shall not apply with respect to a State or territory that has an operational wind and flood loss allocation system.*

(3) COASTAL WATERS.—The term “coastal waters” has the meaning given the term in such section.

(4) COVERED DATA.—The term “covered data” means, with respect to a named storm identified by the Administrator under subsection (b)(2)(A), empirical data that are—

(A) collected before, during, or after such storm; and

(B) necessary to determine magnitude and timing of wind speeds, rainfall, the barometric pressure, river flows, the extent, height, and timing of storm surge, topographic and bathymetric data, and other measures required to accurately model and assess damage from such storm.

(5) INDETERMINATE LOSS.—The term “indeterminate loss” has the meaning given the term in section 1337(a) of the National Flood Insurance Act of 1968.

(6) NAMED STORM.—The term “named storm” means any organized weather system with a defined surface circulation and maximum *sustained* winds of at least 39 miles per hour which the National Hurricane Center of the United States National Weather Service names as a tropical storm or a hurricane.

(7) NAMED STORM EVENT MODEL.—The term “Named Storm Event Model” means the official meteorological and oceano-

graphic computerized model, developed by the Administrator under subsection (b)(1)(A), which utilizes covered data to replicate the magnitude, timing, and spatial variations of winds, rainfall, and storm surges associated with named storms [that threaten any portion of a coastal State] *for which post-storm assessments are conducted.*

(8) PARTICIPANT.—The term “participant” means a Federal, State, or private entity that chooses to cooperate with the Administrator in carrying out the provisions of this section by collecting, contributing, and maintaining covered data.

(9) POST-STORM ASSESSMENT.—The term “post-storm assessment” means a scientific assessment produced and certified by the Administrator to determine the magnitude, timing, and spatial variations of winds, rainfall, and storm surges associated with a specific named storm to be used in the COASTAL Formula.

(10) STATE.—The term “State” means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, and any other territory or possession of the United States.

(b) NAMED STORM EVENT MODEL AND POST-STORM ASSESSMENT.—

(1) ESTABLISHMENT OF NAMED STORM EVENT MODEL.—

(A) IN GENERAL.—Not later than [540 days after the date of the enactment of the Consumer Option for an Alternative System to Allocate Losses Act of 2012] *December 31, 2019*, the Administrator shall develop [by regulation] the Named Storm Event Model.

(B) ACCURACY.—The Named Storm Event Model shall be designed to generate post-storm assessments, as provided in paragraph (2), that have a degree of accuracy of not less than 90 percent for [every] *an* indeterminate loss for which a post-storm assessment is utilized.

(C) PUBLIC REVIEW.—*The Administrator shall seek input and suggestions from the public before the Named Storm Event Model, or any modification to the Named Storm Event Model, takes effect.*

(2) POST-STORM ASSESSMENT.—

(A) IDENTIFICATION OF NAMED STORMS THREATENING COASTAL STATES.—After the establishment of the COASTAL Formula, the Administrator shall, in consultation with the Secretary of Homeland Security, identify named storms that may reasonably constitute a threat to any portion of a coastal State.

(B) DATA COLLECTION.—

(i) IN GENERAL.—*Upon identification of a named storm under subparagraph (A), and pursuant to the protocol established under subsection (c), the Administrator may deploy sensors to enhance the collection of covered data in the areas in coastal States that the Administrator determines are at the highest risk of experiencing geophysical events that would cause indeterminate losses.*

(ii) RULE OF CONSTRUCTION.—*If the Administrator takes action under clause (i), that action may not be*

construed as indicating that a post-storm assessment will be developed for any coastal State in which that action is taken.

(C) IDENTIFICATION OF INDETERMINATE LOSSES IN COASTAL STATES.—*Not later than 30 days after the first date on which sustained winds of not less than 39 miles per hour are measured in a coastal State during a named storm identified under subparagraph (A), the Secretary of Homeland Security shall notify the Administrator with respect to the existence of any indeterminate losses in that coastal State resulting from that named storm.*

[(B)] (D) POST-STORM ASSESSMENT REQUIRED.—*Upon [identification of a named storm under subparagraph (A)] confirmation of indeterminate losses identified under subparagraph (C) with respect to a named storm, the Administrator shall develop a post-storm [assessment for such named storm] assessment for each coastal State that suffered such indeterminate losses as a result of the named storm using the Named Storm Event Model and covered data collected for such named storm pursuant to the protocol established under subsection (c)(1).*

[(C)] (E) SUBMITTAL OF POST-STORM ASSESSMENT.—*Not later than 90 days after [an identification of a named storm is made under subparagraph (A)] any indeterminate losses are identified under subparagraph (C), the Administrator shall submit to the Secretary of Homeland Security the post-storm assessment developed [for such storm under subparagraph (B)] under subparagraph (D) for any coastal State that suffered such indeterminate losses.*

(F) SEPARATE POST-STORM ASSESSMENTS FOR A SINGLE NAMED STORM.—

(i) IN GENERAL.—*The Administrator may conduct a separate post-storm assessment for each coastal State in which indeterminate losses are identified under subparagraph (C).*

(ii) TIMELINE.—*If the Administrator conducts a separate post-storm assessment under clause (i), the Administrator shall complete the assessment based on the dates of actions that the Administrator takes under subparagraphs (C) and (D).*

(3) ACCURACY.—*The Administrator shall ensure, to the greatest extent practicable, that each post-storm assessment developed under paragraph (2) has a degree of accuracy of not less than 90 percent.*

(4) CERTIFICATION.—*For each post-storm assessment carried out under paragraph (2), the Administrator shall—*

(A) certify the degree of accuracy for such assessment, including specific reference to any segments or geographic areas for which the assessment is less than 90 percent accurate; and

(B) report such certification to the Secretary of Homeland Security for the purposes of use with indeterminate loss claims under section 1337 of the National Flood Insurance Act of 1968.

(5) FINALITY OF DETERMINATIONS.—A certification of the degree of accuracy of a post-storm assessment under this subsection by the Administrator shall be final and shall not be subject to judicial review.

(6) AVAILABILITY.—The Administrator shall make available to the public the Named Storm Event Model and any post-storm assessment developed under this subsection.

(c) ESTABLISHMENT OF A PROTOCOL FOR POST-STORM ASSESSMENT.—

(1) IN GENERAL.—Not later than [540 days after the date of the enactment of the Consumer Option for an Alternative System to Allocate Losses Act of 2012] *December 31, 2019*, the Administrator shall establish a protocol, based on the plan submitted under subsection (d)(3), to collect and assemble all covered data required by the Administrator to produce post-storm assessments required by subsection (b), including assembling data collected by participants and stored in the database established under subsection (f) and from such other sources as the Administrator considers appropriate.

(2) ACQUISITION OF SENSORS AND STRUCTURES.—If the Administrator is unable to use a public or private asset to obtain covered data as part of the protocol established under paragraph (1), the Administrator may acquire such sensors and structures for the placement of sensors as may, *in the discretion of the Administrator*, be necessary to obtain such data.

(3) USE OF FEDERAL ASSETS.—If the protocol requires placement of a sensor to develop assessments pursuant to subsection (b), the Administrator shall, to the extent practicable, use Federal assets for the placement of such sensors.

(4) USE OF ACQUIRED STRUCTURES.—

(A) IN GENERAL.—If the Administrator acquires a structure for the placement of a sensor for purposes of such protocol, the Administrator shall to the extent practical permit other public and private entities to place sensors on such structure to collect—

- (i) meteorological data;
- (ii) national security-related data;
- (iii) navigation-related data;
- (iv) hydrographic data; or
- (v) such other data as the Administrator considers appropriate.

(B) RECEIPT OF CONSIDERATION.—The Administrator may receive *and expend* consideration for the placement of a sensor on a structure under subparagraph (A).

SUBTITLE D—FEDERAL OCEAN ACIDIFICATION RESEARCH AND MONITORING ACT OF 2009

SEC. 12401. SHORT TITLE.

This subtitle may be cited as the “Federal Ocean Acidification Research And Monitoring Act of 2009” or the “FOARAM Act”.

SEC. 12402. PURPOSES.

- (a) PURPOSES.—The purposes of this subtitle are to provide for—
- (1) development and coordination of a comprehensive inter-agency plan to—

- (A) monitor and conduct research on the processes and consequences of ocean acidification on marine organisms and ecosystems; and
- (B) establish an interagency research and monitoring program on ocean acidification;
- (2) establishment of an ocean acidification program within the National Oceanic and Atmospheric Administration;
- (3) assessment and consideration of regional and national ecosystem and socioeconomic impacts of increased ocean acidification; and
- (4) research adaptation strategies and techniques for effectively conserving marine ecosystems as they cope with increased ocean acidification.

SEC. 12403. DEFINITIONS.

In this subtitle:

- (1) OCEAN ACIDIFICATION.—The term “ocean acidification” means the decrease in pH of the Earth’s oceans and changes in ocean chemistry caused by chemical inputs from the atmosphere, including carbon dioxide.
- (2) SECRETARY.—The term “Secretary” means the Secretary of Commerce, acting through the Administrator of the National Oceanic and Atmospheric Administration.
- (3) SUBCOMMITTEE.—The term “Subcommittee” means the Joint Subcommittee on Ocean Science and Technology of the National Science and Technology Council.

SEC. 12404. INTERAGENCY SUBCOMMITTEE.

(a) * * *

[33 U.S.C. 3703(c)]

(c) REPORTS TO CONGRESS.—

- (1) INITIAL REPORT.—Not later than 1 year after the date of enactment of this Act, the Subcommittee shall transmit a report to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science and Technology and the Committee on Natural Resources of the House of Representatives that—
 - (A) includes a summary of federally funded ocean acidification research and monitoring activities, including the budget for each of these activities; and
 - (B) describes the progress in developing the plan required under section 12405 of this subtitle.
- (2) BIENNIAL REPORT.—Not later than 2 years after the delivery of the initial report under paragraph (1) and every 2 years thereafter, the Subcommittee shall transmit a report to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science and Technology and the Committee on Natural Resources of the House of Representatives that includes—
 - (A) a summary of federally funded ocean acidification research and monitoring activities, including the budget for each of these activities; and
 - (B) an analysis of the progress made toward achieving the goals and priorities for the interagency research plan developed by the Subcommittee under section 12405.

(3) **STRATEGIC RESEARCH PLAN.**—Not later than 2 years after the date of enactment of this Act, the Subcommittee shall transmit the strategic research plan developed under section 12405 to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science and Technology and the Committee on Natural Resources of the House of Representatives. A revised plan shall be submitted at least once every 5 years thereafter.

(4) **ECONOMIC VULNERABILITY REPORT.**—

(A) **IN GENERAL.**—Not later than 2 years after the date of the enactment of the Coordinated Ocean Observations and Research Act of 2019, and every 6 years thereafter, the Subcommittee shall transmit to the appropriate committees of Congress a report that—

(i) is named the “Ocean Chemistry Coastal Community Vulnerability Assessment”;

(ii) identifies gaps in ocean acidification monitoring by public, academic, and private assets in the network of regional coastal observing systems;

(iii) identifies geographic areas which have gaps in ocean acidification research;

(iv) identifies United States coastal communities, including fishing communities, low-population rural communities, tribal and subsistence communities, and island communities, that may be impacted by ocean acidification;

(v) identifies impacts of changing ocean carbonate chemistry on the communities described in clause (iv), including impacts from changes in ocean and coastal marine resources that are not managed by the Federal Government;

(vi) identifies gaps in understanding of the impacts of ocean acidification on economically or commercially important species, particularly those which support United States commercial, recreational, and tribal fisheries and aquaculture;

(vii) identifies habitats that may be particularly vulnerable to corrosive sea water, including areas experiencing multiple stressors such as hypoxia, sedimentation, and harmful algal blooms;

(viii) identifies areas in which existing National Integrated Coastal and Ocean Observation System assets, including unmanned maritime systems, may be leveraged as platforms for the deployment of new sensors or other applicable observing technologies; and

(ix) is written in collaboration with the agencies responsible for carrying out this subtitle.

(B) **FORM OF REPORT.**—

(i) **INITIAL REPORT.**—The initial report required under subparagraph (A) shall include the information described in clauses (i) through (ix) on a national level.

(ii) **SUBSEQUENT REPORTS.**—Each report required under subparagraph (A) after the initial report—

(I) may describe the information described in clauses (i) through (ix) on a national level; or

(II) may consist of separate reports for each region of the National Oceanic and Atmospheric Administration.

(iii) REGIONAL REPORTS.—If the Subcommittee opts to prepare a report required under subparagraph (A) as separate regional reports under clause (ii)(II), the Subcommittee shall submit a report for each region of the National Oceanic and Atmospheric Administration not less frequently than once during each 6-year reporting period.

(C) APPROPRIATE COMMITTEES OF CONGRESS DEFINED.—In this paragraph and in paragraph (5), the term “appropriate committees of Congress” means the Committee on Commerce, Science, and Transportation of the Senate, the Committee on Science, Space, and Technology of the House of Representatives, and the Committee on Natural Resources of the House of Representatives.

(5) MONITORING PRIORITIZATION PLAN.—Not later than 180 days after the date of the submission of the initial report under paragraph (4)(A), the Subcommittee shall transmit to the appropriate committees of Congress a report that develops a plan to deploy new sensors or other applicable observing technologies such as unmanned maritime systems—

(A) based on such initial report;

(B) prioritized by—

(i) the threat to coastal economies and ecosystems;

(ii) gaps in data; and

(iii) research needs; and

(C) that leverage existing platforms, where possible.

SEC. 12405. STRATEGIC RESEARCH PLAN.

(a) **IN GENERAL.**—Not later than 2 years after the date of enactment of this Act, the Subcommittee shall develop a strategic plan for Federal research and monitoring on ocean acidification that will provide for an assessment of the impacts of ocean acidification on marine organisms and marine ecosystems and the development of adaptation and mitigation strategies to conserve marine organisms and marine ecosystems. In developing the plan, the Subcommittee shall consider and use information, reports, and studies of ocean acidification that have identified research and monitoring needed to better understand ocean acidification and its potential impacts, and recommendations made by the National Academy of Sciences in the review of the plan required under subsection (d).

[33 U.S.C. 3704(b)]

(b) **CONTENTS OF THE PLAN.**—The plan shall—

(1) provide for interdisciplinary research among the ocean sciences, and coordinated research and activities to improve the understanding of ocean chemistry that will affect marine ecosystems;

(2) establish, for the 10-year period beginning in the year the plan is submitted, the goals and priorities for Federal research and monitoring which will—

(A) advance understanding of ocean acidification and its physical, chemical, and biological impacts on marine organisms and marine ecosystems;

- (B) improve the ability to assess the socioeconomic impacts of ocean acidification; and
- (C) provide information for the development of adaptation and mitigation strategies to conserve marine organisms and marine ecosystems;
- (3) describe specific activities, including—
 - (A) efforts to determine user needs;
 - (B) research activities;
 - (C) monitoring activities;
 - (D) technology and methods development;
 - (E) data collection;
 - (F) database development;
 - (G) modeling activities;
 - (H) assessment of ocean acidification impacts; and
 - (I) participation in international research efforts;
- (4) identify relevant programs and activities of the Federal agencies that contribute to the interagency program directly and indirectly and set forth the role of each Federal agency in implementing the plan;
- (5) consider and utilize, as appropriate, reports and studies conducted by Federal agencies, the National Research Council, or other entities;
- (6) make recommendations for the coordination of the ocean acidification research and monitoring activities of the United States with such activities of other nations and international organizations;
- (7) outline budget requirements for Federal ocean acidification research and monitoring and assessment activities to be conducted by each agency under the plan;
- (8) identify the monitoring systems and sampling programs currently employed in collecting data relevant to ocean acidification and prioritize additional monitoring systems that may be needed to ensure adequate data collection and monitoring of ocean acidification and its impacts; **[and]**
- (9) describe specific activities designed to facilitate outreach and data and information exchange with stakeholder communities~~[\.]~~; *and*
- (10) *make recommendations for research to be conducted, including in the social sciences and economics, to address the key knowledge gaps identified in the Ocean Chemistry Coastal Community Vulnerability Assessment conducted under section 12404(c)(4).*

[33 U.S.C. 3704(e)]

(c) PROGRAM ELEMENTS.—The plan shall include at a minimum the following program elements:

- (1) Monitoring of ocean chemistry and biological impacts associated with ocean acidification at selected coastal and open-ocean monitoring stations, including satellite-based monitoring to characterize—
 - (A) marine ecosystems;
 - (B) changes in marine productivity; and
 - (C) changes in surface ocean chemistry.
- (2) Research to understand the species specific physiological responses of marine organisms to ocean acidification, impacts on marine food webs of ocean acidification, and to develop envi-

ronmental and ecological indices that track marine ecosystem responses to ocean acidification.

(3) Modeling to predict changes in the ocean carbon cycle as a function of carbon dioxide and atmosphere-induced changes in temperature, ocean circulation, biogeochemistry, ecosystem and terrestrial input, and modeling to determine impacts on marine ecosystems and individual marine organisms.

(4) Technology development and standardization of carbonate chemistry measurements on moorings and autonomous floats.

(5) Assessment of socioeconomic impacts of ocean acidification and development of adaptation and mitigation strategies to conserve marine organisms and marine ecosystems.

(6) *Research to understand the combined impact of changes in ocean chemistry and other stressors, including sediment delivery, hypoxia, and harmful algal blooms, on each other and on living marine resources, including aquaculture and coastal ecosystems.*

(7) *Applied research to identify adaptation strategies for species impacted by changes in ocean chemistry including vegetation-based systems, shell recycling, species and genetic diversity, applied technologies, aquaculture methodologies, and management recommendations.*

(d) NATIONAL ACADEMY OF SCIENCES EVALUATION.—The Secretary shall enter into an agreement with the National Academy of Sciences to review the plan.

(e) PUBLIC PARTICIPATION.—In developing the plan, the Subcommittee shall consult with representatives of academic, State, industry and environmental groups. Not later than 90 days before the plan, or any revision thereof, is submitted to the Congress, the plan shall be published in the Federal Register for a public comment period of not less than 60 days.

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[33 U.S.C. 3705(a)]

SEC. 12406. NOAA OCEAN ACIDIFICATION ACTIVITIES.

(a) IN GENERAL.—The Secretary shall establish and maintain an ocean acidification program within the National Oceanic and Atmospheric Administration to conduct research, monitoring, and other activities consistent with the strategic research and implementation plan developed by the Subcommittee under section 12405 that—

(1) includes—

(A) interdisciplinary research among the ocean and atmospheric sciences, and coordinated research and activities to improve understanding of ocean acidification;

(B) the establishment of a long-term monitoring program of ocean acidification utilizing existing global and national ocean observing assets, and adding instrumentation and sampling stations as appropriate to the aims of the research program;

(C) research to identify and develop adaptation strategies and techniques for effectively conserving marine ecosystems as they cope with increased ocean acidification;

(D) as an integral part of the research programs described in this subtitle, educational opportunities that en-

courage an interdisciplinary and international approach to exploring the impacts of ocean acidification;

(E) as an integral part of the research programs described in this subtitle, national public outreach activities to improve the understanding of current scientific knowledge of ocean acidification and its impacts on marine resources; and

(F) coordination of ocean acidification monitoring and impacts research with other appropriate international ocean science bodies such as the International Oceanographic Commission, the International Council for the Exploration of the Sea, the North Pacific Marine Science Organization, and others;

(2) provides grants for critical research projects that explore the effects of ocean acidification on ecosystems and the socioeconomic impacts of increased ocean acidification that are relevant to the goals and priorities of the strategic research plan; **[and]**

(3) incorporates a competitive merit-based process for awarding grants that may be conducted jointly with other participating agencies or under the National Oceanographic Partnership Program under section 7901 of title 10, United States Code**[.]; and**

(4) includes an ongoing mechanism that allows industry, coastal stakeholders, fishery management councils and commissions, non-Federal resource managers, and scientific experts to provide input on monitoring needs that are necessary to support on the ground management, decision making, and adaptation related to ocean acidification.

(b) **ADDITIONAL AUTHORITY.**—In conducting the Program, the Secretary may enter into and perform such contracts, leases, grants, or cooperative agreements as may be necessary to carry out the purposes of this subtitle on such terms as the Secretary considers appropriate.

[33 U.S.C. 3706(a)]

SEC. 12407. NSF OCEAN ACIDIFICATION ACTIVITIES.

[(a) RESEARCH ACTIVITIES.—The Director of the National Science Foundation shall continue to carry out research activities on ocean acidification which shall support competitive, merit-based, peer-reviewed proposals for research and monitoring of ocean acidification and its impacts, including—

[(1) impacts on marine organisms and marine ecosystems;

[(2) impacts on ocean, coastal, and estuarine biogeochemistry; and

[(3) the development of methodologies and technologies to evaluate ocean acidification and its impacts.]

(a) RESEARCH ACTIVITIES.—*The Director of the National Science Foundation shall continue to carry out research activities on ocean acidification which shall support competitive, merit-based, peer-reviewed proposals for research, observation, and monitoring of ocean acidification and its impacts, including—*

(1) impacts on marine organisms, including species cultured for aquaculture, and marine ecosystems;

(2) impacts on ocean, coastal, and estuarine biogeochemistry;

(3) the development of methodologies and technologies to evaluate ocean acidification and its impacts; and

(4) impacts of multiple stressors on ecosystems exhibiting hypoxia, harmful algal blooms, or sediment delivery, combined with changes in ocean chemistry.

(b) CONSISTENCY.—The research activities shall be consistent with the strategic research plan developed by the Subcommittee under section 12405.

(c) COORDINATION.—The Director shall encourage coordination of the Foundation's ocean acidification activities with such activities of other nations and international organizations.

