

# ***In the House of Representatives, U. S.,***

*December 3, 2020.*

*Resolved*, That the bill from the Senate (S. 914) entitled “An Act 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.”, do pass with the following

## **AMENDMENT:**

Strike out all after the enacting clause and insert:

1 ***SECTION 1. SHORT TITLE; TABLE OF CONTENTS.***

2       (a) *SHORT TITLE.*—*This Act may be cited as the “Co-*  
3 *ordinated Ocean Observations and Research Act of 2020”.*

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

*Sec. 1. Short title; table of contents.*

***TITLE I—REAUTHORIZATION OF INTEGRATED COASTAL AND  
OCEAN OBSERVATION SYSTEM ACT OF 2009***

*Sec. 101. Purposes.*

*Sec. 102. Definitions.*

*Sec. 103. Integrated Coastal and Ocean Observation System.*

*Sec. 104. Financing and agreements.*

*Sec. 105. Reports to Congress.*

*Sec. 106. Public-private use policy.*

*Sec. 107. Repeal of independent cost estimate.*

*Sec. 108. Authorization of appropriations.*

*Sec. 109. Reports and research plans.*

*Sec. 110. Strategic research plan.*

*Sec. 111. Stakeholder input on monitoring.*

*Sec. 112. Research activities.*

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

*Sec. 201. Named Storm Event Model and post-storm assessments.*

*TITLE III—WATER PREDICTION AND FORECASTING*

*Sec. 301. Water prediction and forecasting.*

1 ***TITLE I—REAUTHORIZATION OF***  
2 ***INTEGRATED COASTAL AND***  
3 ***OCEAN OBSERVATION SYS-***  
4 ***TEM ACT OF 2009***

5 ***SEC. 101. PURPOSES.***

6 *Section 12302 of the Integrated Coastal and Ocean Ob-*  
7 *servation System Act of 2009 (33 U.S.C. 3601) is amended*  
8 *to read as follows:*

9 ***“SEC. 12302. PURPOSES.***

10 *“The purposes of this subtitle are—*

11 *“(1) to establish and sustain a national inte-*  
12 *grated System of ocean, coastal, and Great Lakes ob-*  
13 *servicing systems, comprised of Federal and non-Fed-*  
14 *eral components coordinated at the national level by*  
15 *the Council and at the regional level by a network of*  
16 *regional coastal observing systems, and that includes*  
17 *in situ, remote, and other coastal and ocean observa-*  
18 *tion and modeling capabilities, technologies, data*  
19 *management systems, communication systems, and*  
20 *product development systems, and is designed to ad-*  
21 *dress regional and national needs for ocean and*  
22 *coastal information, to gather specific data on key*

1        *ocean, coastal, and Great Lakes variables, and to en-*  
2        *sure timely and sustained dissemination and avail-*  
3        *ability of these data—*

4                *“(A) to the public;*

5                *“(B) to support national defense, search*  
6        *and rescue operations, marine commerce, navi-*  
7        *gation safety, weather, climate, and marine fore-*  
8        *casting, energy siting and production, economic*  
9        *development, ecosystem-based marine, coastal,*  
10       *and Great Lakes resource management, public*  
11       *safety, and public outreach and education;*

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

16               *“(D) to provide easy access to ocean, coast-*  
17       *al, and Great Lakes data and promote data*  
18       *sharing between Federal and non-Federal sources*  
19       *and promote public data sharing;*

20               *“(E) to enable advances in scientific under-*  
21       *standing to support the sustainable use, con-*  
22       *servation, management, and understanding of*  
23       *healthy ocean, coastal, and Great Lakes resources*  
24       *to ensure the Nation can respond to opportuni-*

1        *ties to enhance food, economic, and national se-*  
 2        *curity; and*

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

7                *“(2) to improve the Nation’s capability to meas-*  
 8        *ure, track, observe, understand, and predict events re-*  
 9        *lated directly and indirectly to weather and climate,*  
 10        *natural climate variability, and interactions between*  
 11        *the oceanic and atmospheric environments, including*  
 12        *the Great Lakes;*

13                *“(3) to sustain, upgrade, and modernize the Na-*  
 14        *tion’s ocean and Great Lakes observing infrastructure*  
 15        *to detect changes and ensure delivery of reliable and*  
 16        *timely information; and*

17                *“(4) to authorize activities—*

18                *“(A) to promote basic and applied research*  
 19        *to develop, test, and deploy innovations and im-*  
 20        *provements in coastal and ocean observation*  
 21        *technologies, including advanced observing tech-*  
 22        *nologies such as unmanned maritime systems*  
 23        *needed to address critical data gaps, modeling*  
 24        *systems, other scientific and technological capa-*  
 25        *bilities 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.”.

**SEC. 102. DEFINITIONS.**

Section 12303 of the Integrated Coastal and Ocean Observation System Act of 2009 (33 U.S.C. 3602) is amended—

(1) in paragraph (2), by striking “section 7902” and inserting “section 8932”;

(2) in paragraph (5), by striking “integrated into the System and are managed through States, regional organizations, universities, nongovernmental organizations, or the private sector” and inserting “managed through States, regional organizations, universities, nongovernmental organizations, or the private sector and integrated into the System by a regional coastal observing system, the National Oceanic and Atmospheric Administration, or the agencies participating in the Interagency Ocean Observation Committee”;

(3) by amending paragraph (6) to read as follows:

1           “(6) *REGIONAL COASTAL OBSERVING SYSTEM.*—  
 2           *The term ‘regional coastal observing system’ means*  
 3           *an organizational body that is certified or established*  
 4           *by contract or memorandum by the lead Federal*  
 5           *agency designated in section 12304(c)(3) and coordi-*  
 6           *nates State, Federal, local, tribal, and private inter-*  
 7           *ests at a regional level with the responsibility of en-*  
 8           *gaging the private and public sectors in designing,*  
 9           *operating, and improving regional coastal observing*  
 10           *systems in order to ensure the provision of data and*  
 11           *information that meet the needs of user groups from*  
 12           *the respective regions.”; and*

13           (4) *in paragraph (7), by striking “National Oce-*  
 14           *anic and Atmospheric Administration” and inserting*  
 15           *“Administrator”.*

16 **SEC. 103. INTEGRATED COASTAL AND OCEAN OBSERVATION**  
 17 **SYSTEM.**

18           (a) *SYSTEM ELEMENTS.*—

19           (1) *IN GENERAL.*—*Section 12304(b) of the Inte-*  
 20           *grated Coastal and Ocean Observation System Act of*  
 21           *2009 (33 U.S.C. 3603(b)) is amended by striking*  
 22           *paragraph (1) and inserting the following:*

23           “(1) *IN GENERAL.*—*In order to fulfill the pur-*  
 24           *poses of this subtitle, the System shall be national in*  
 25           *scope and consist of—*

1           “(A) *Federal assets to fulfill national and*  
2           *international observation missions and prior-*  
3           *ities;*

4           “(B) *non-Federal assets, including a net-*  
5           *work of regional coastal observing systems iden-*  
6           *tified under subsection (c)(4), to fulfill regional*  
7           *and national observation missions and prior-*  
8           *ities;*

9           “(C) *observing, modeling, data manage-*  
10          *ment, and communication systems for the timely*  
11          *integration and dissemination of data and infor-*  
12          *mation products from the System, including re-*  
13          *views of data collection procedures across regions*  
14          *and programs to make recommendations for data*  
15          *collection standards across the System to meet*  
16          *national ocean, coastal, and Great Lakes obser-*  
17          *vation, applied research, and weather forecasting*  
18          *needs;*

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

22          “(E) *a research and development program*  
23          *conducted under the guidance of the Council,*  
24          *consisting of—*

1                   “(i) basic and applied research and  
2                   technology development—

3                   “(I) to improve understanding of  
4                   coastal and ocean systems and their re-  
5                   lationships to human activities; and

6                   “(II) to ensure improvement of  
7                   operational assets and products, in-  
8                   cluding related infrastructure, observ-  
9                   ing technologies such as unmanned  
10                  maritime systems, and information  
11                  and data processing and management  
12                  technologies;

13                  “(ii) an advanced observing technology  
14                  development program to fill gaps in tech-  
15                  nology;

16                  “(iii) large scale computing resources  
17                  and research to advance modeling of ocean,  
18                  coastal, and Great Lakes processes;

19                  “(iv) models to improve regional  
20                  weather forecasting capabilities and re-  
21                  gional weather forecasting products; and

22                  “(v) reviews of data collection proce-  
23                  dures across regions and programs to make  
24                  recommendations for data collection stand-  
25                  ards across the System to meet national



1                   ocean, coastal, and Great Lakes observation,  
 2                   applied research, and weather forecasting  
 3                   needs.”.

4                   (2)     *AVAILABILITY     OF     DATA.*—Section  
 5                   12304(b)(3) of such Act (33 U.S.C. 3603(b)(3)) is  
 6                   amended by inserting “for research and for use in the  
 7                   development of products to address societal needs” be-  
 8                   fore the period at the end.

9                   (b) *POLICY OVERSIGHT, ADMINISTRATION, AND RE-*  
 10                  *GIONAL COORDINATION.*—Section 12304(c) of the Integrated  
 11                  Coastal and Ocean Observation System Act of 2009 (33  
 12                  U.S.C. 3603(c)) is amended by striking paragraphs (2), (3),  
 13                  and (4), and inserting the following:

14                   “(2) *INTERAGENCY OCEAN OBSERVATION COM-*  
 15                  *MITTEE.*—

16                   “(A) *ESTABLISHMENT.*—The Council shall  
 17                   establish or designate a committee, which shall  
 18                   be known as the ‘Interagency Ocean Observation  
 19                   Committee’.

20                   “(B) *DUTIES.*—The Interagency Ocean Ob-  
 21                   servation Committee shall—

22                   “(i) prepare annual and long-term  
 23                   plans for consideration and approval by the  
 24                   Council for the integrated design, operation,  
 25                   maintenance, enhancement, and expansion

1           *of the System to meet the objectives of this*  
2           *subtitle and the System Plan;*

3           “(ii) develop and transmit to Congress,  
4           along with the budget submitted by the  
5           President to Congress pursuant to section  
6           1105(a) of title 31, United States Code, an  
7           annual coordinated, comprehensive bud-  
8           get—

9                       “(I) to operate all elements of the  
10                      System identified in subsection (b);  
11                      and

12                     “(II) to ensure continuity of data  
13                     streams from Federal and non-Federal  
14                     assets;

15           “(iii) establish requirements for obser-  
16           vation data variables to be gathered by both  
17           Federal and non-Federal assets and iden-  
18           tify, in consultation with regional coastal  
19           observing systems, priorities for System ob-  
20           servations;

21           “(iv) establish and define protocols and  
22           standards for System data processing, man-  
23           agement, collection, configuration stand-  
24           ards, formats, and communication for new

1           *and existing assets throughout the System*  
2           *network;*

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

5                     “(I) *to establish eligibility for in-*  
6                     *tegration into the System;*

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

10                    “(III) *to ensure that regional ob-*  
11                    *servations are integrated into the Sys-*  
12                    *tem on a sustained basis;*

13           “(vi) *identify gaps in observation cov-*  
14           *erage or needs for capital improvements of*  
15           *both Federal assets and non-Federal assets;*

16           “(vii) *subject to the availability of ap-*  
17           *propriations, establish through 1 or more*  
18           *Federal agencies participating in the Inter-*  
19           *agency Ocean Observation Committee, in*  
20           *consultation with the System advisory com-*  
21           *mittee established under subsection (d), a*  
22           *competitive matching grant or other pro-*  
23           *grams—*

24                     “(I) *to promote intramural and*  
25                     *extramural research and development*

1 of new, innovative, and emerging ob-  
 2 servation technologies including testing  
 3 and field trials; and

4 “(II) to facilitate the migration of  
 5 new, innovative, and emerging sci-  
 6 entific and technological advances from  
 7 research and development to oper-  
 8 ational deployment;

9 “(viii) periodically—

10 “(I) review the System Plan; and

11 “(II) submit to the Council such  
 12 recommendations as the Interagency  
 13 Ocean Observation Committee may  
 14 have for improvements to the System  
 15 Plan;

16 “(ix) ensure collaboration among Fed-  
 17 eral agencies participating in the Inter-  
 18 agency Ocean Observation Committee; and

19 “(x) perform such additional duties as  
 20 the Council may delegate.

21 “(3) LEAD FEDERAL AGENCY.—

22 “(A) IN GENERAL.—The National Oceanic  
 23 and Atmospheric Administration shall function  
 24 as the lead Federal agency for the implementa-  
 25 tion and administration of the System.

1           “(B) *CONSULTATION REQUIRED.*—*In car-*  
2           *rying out this paragraph, the Administrator*  
3           *shall consult with the Council, the Interagency*  
4           *Ocean Observation Committee, other Federal*  
5           *agencies that maintain portions of the System,*  
6           *and the regional coastal observing systems.*

7           “(C) *REQUIREMENTS.*—*In carrying out this*  
8           *paragraph, the Administrator shall—*

9                   “(i) *establish and operate an Inte-*  
10                  *grated Ocean Observing System Program*  
11                  *Office within the National Oceanic and At-*  
12                  *mospheric Administration that—*

13                           “(I) *utilizes, to the extent nec-*  
14                          *essary, personnel from Federal agencies*  
15                          *participating in the Interagency Ocean*  
16                          *Observation Committee; and*

17                           “(II) *oversees daily operations*  
18                          *and coordination of the System;*

19                           “(ii) *implement policies, protocols, and*  
20                          *standards approved by the Council and del-*  
21                          *egated by the Interagency Ocean Observa-*  
22                          *tion Committee;*

23                           “(iii) *promulgate program guide-*  
24                          *lines—*

1                   “(I) to certify and integrate re-  
2                   gional associations into the System;  
3                   and

4                   “(II) to provide regional coastal  
5                   and ocean observation data that meet  
6                   the needs of user groups from the re-  
7                   spective regions;

8                   “(iv) have the authority to enter into  
9                   and oversee contracts, leases, grants, or co-  
10                  operative agreements with non-Federal as-  
11                  sets, including regional coastal observing  
12                  systems, to support the purposes of this sub-  
13                  title on such terms as the Administrator  
14                  deems appropriate;

15                  “(v) implement and maintain a merit-  
16                  based, competitive funding process to sup-  
17                  port non-Federal assets, including the devel-  
18                  opment and maintenance of a national net-  
19                  work of regional coastal observing systems,  
20                  and develop and implement a process for  
21                  the periodic review and evaluation of the re-  
22                  gional associations;

23                  “(vi) provide opportunities for com-  
24                  petitive contracts and grants for demonstra-  
25                  tion projects to design, develop, integrate,

1 *deploy, maintain, and support components*  
2 *of the System;*

3 “(vii) *establish and maintain efficient*  
4 *and effective administrative procedures for*  
5 *the timely allocation of funds among con-*  
6 *tractors, grantees, and non-Federal assets,*  
7 *including regional coastal observing sys-*  
8 *tems;*

9 “(viii) *develop and implement a proc-*  
10 *ess for the periodic review and evaluation of*  
11 *the regional coastal observing systems;*

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

16 “(I) *identified by the regional as-*  
17 *sociations described in the System*  
18 *Plan, the Administrator, or other*  
19 *members of the System; and*

20 “(II) *submitted to the Interagency*  
21 *Ocean Observation Committee;*

22 “(x) *develop and be responsible for a*  
23 *data management and communication sys-*  
24 *tem, in accordance with standards and pro-*  
25 *ocols established by the Interagency Ocean*

1           *Observation Committee, by which all data*  
2           *collected by the System regarding ocean and*  
3           *coastal waters of the United States includ-*  
4           *ing the Great Lakes, are processed, stored,*  
5           *integrated, and made available to all end-*  
6           *user communities;*

7           “(xi) not less frequently than once each  
8           year, submit to the Interagency Ocean Ob-  
9           servation Committee a report on the accom-  
10          plishments, operational needs, and perform-  
11          ance of the System to contribute to the an-  
12          nual and long-term plans prepared pursu-  
13          ant to paragraph (2)(B)(i);

14          “(xii) develop and periodically update  
15          a plan to efficiently integrate into the Sys-  
16          tem new, innovative, or emerging tech-  
17          nologies that have been demonstrated to be  
18          useful to the System and which will fulfill  
19          the purposes of this subtitle and the System  
20          Plan; and

21          “(xiii) work with users and regional  
22          associations to develop products to enable  
23          real-time data sharing for decision makers,  
24          including with respect to weather fore-  
25          casting and modeling, search and rescue op-



erations, 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 observ-*

1 *ing and information programs within*  
2 *a region; and*

3 *“(III) reflecting the needs of State,*  
4 *local, and tribal governments, commer-*  
5 *cial interests, and other users and*  
6 *beneficiaries of the System and other*  
7 *requirements specified under this sub-*  
8 *title and the System Plan;*

9 *“(iv) identifies—*

10 *“(I) gaps in observation coverage*  
11 *needs for capital improvements of Fed-*  
12 *eral assets and non-Federal assets of*  
13 *the System; and*

14 *“(II) other recommendations to*  
15 *assist in the development of the annual*  
16 *and long-term plans prepared pursu-*  
17 *ant to paragraph (2)(B)(i) and trans-*  
18 *mits such information to the Inter-*  
19 *agency Ocean Observation Committee*  
20 *through the Program Office established*  
21 *under paragraph (3)(C)(i);*

22 *“(v) develops and operates under a*  
23 *strategic plan that will ensure the efficient*  
24 *and effective administration of programs*  
25 *and assets to support daily data observa-*

1            *tions for integration into the System, pur-*  
 2            *suant to the standards approved by the*  
 3            *Council;*

4            *“(vi) works cooperatively with govern-*  
 5            *mental and nongovernmental entities at all*  
 6            *levels to identify and provide information*  
 7            *products of the System for multiple users*  
 8            *within the service area of the regional coast-*  
 9            *al observing system; and*

10           *“(vii) complies with all financial over-*  
 11           *sight requirements established by the Ad-*  
 12           *ministrator, including requirements relat-*  
 13           *ing to audits.*

14           *“(B) PARTICIPATION.—For the purposes of*  
 15           *this subtitle, employees of Federal agencies are*  
 16           *permitted to be members of the governing body*  
 17           *for the regional coastal observing systems and*  
 18           *may participate in the functions of the regional*  
 19           *coastal observing systems.”.*

20           *(c) SYSTEM ADVISORY COMMITTEE.—Section 12304(d)*  
 21           *of the Integrated Coastal and Ocean Observation System*  
 22           *Act of 2009 (33 U.S.C. 3603(d)) is amended—*

23           *(1) in paragraph (1), by striking “or the Inter-*  
 24           *agency Ocean Observing Committee.” and inserting*  
 25           *“or the Council under this subtitle”; and*

1           (2) in paragraph (2)—

2                   (A) in subparagraph (A), by inserting “,  
3           data sharing,” after “data management”;

4                   (B) in subparagraph (C), by striking “and”  
5           at the end;

6                   (C) by striking subparagraph (D) and in-  
7           serting the following:

8                   “(D) additional priorities, including—

9                           “(i) a national surface current map-  
10           ping network designed to improve fine scale  
11           sea surface mapping using high frequency  
12           radar technology and other emerging tech-  
13           nologies to address national priorities, in-  
14           cluding Coast Guard search and rescue op-  
15           eration planning and harmful algal bloom  
16           forecasting and detection that—

17                           “(I) is comprised of existing high  
18           frequency radar and other sea surface  
19           current mapping infrastructure oper-  
20           ated by national programs and re-  
21           gional coastal observing systems;

22                           “(II) incorporates new high fre-  
23           quency radar assets or other fine scale  
24           sea surface mapping technology assets,  
25           and other assets needed to fill gaps in

1                   *coverage on United States coastlines;*  
2                   *and*

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

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

15                  “(iii) an integrative survey program  
16                  for application of unmanned maritime sys-  
17                  tems to the real-time or near real-time col-  
18                  lection and transmission of sea floor, water  
19                  column, and sea surface data on biology,  
20                  chemistry, geology, physics, and hydrog-  
21                  raphy;

22                  “(iv) remote sensing and data assimi-  
23                  lation to develop new analytical methodolo-  
24                  gies to assimilate data from the System into  
25                  hydrodynamic models;

1                   “(v) integrated, multi-State moni-  
 2                   toring to assess sources, movement, and fate  
 3                   of sediments in coastal regions;

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

6                   “(I) planned in consultation with  
 7                   the Interagency Ocean Observation  
 8                   Committee, the National Oceanic and  
 9                   Atmospheric Administration, the De-  
 10                  partment of the Navy, and academic  
 11                  research institutions; and

12                  “(II) developed, installed, and op-  
 13                  erated in coordination with the Na-  
 14                  tional Oceanic and Atmospheric Ad-  
 15                  ministration, the Department of the  
 16                  Navy, and academic research institu-  
 17                  tions; and

18                  “(E) any other purpose identified by the  
 19                  Administrator or the Council.”;

20                  (D) in paragraph (3)(B), by inserting “The  
 21                  Administrator may stagger the terms of the Sys-  
 22                  tem advisory committee members.” before “Mem-  
 23                  bers”; and

24                  (E) in paragraph (4)—

1                   (i) in subparagraph (A), by striking  
2                   “and the Interagency Ocean Observing  
3                   Committee”; and

4                   (ii) in subparagraph (C), by striking  
5                   “Observing” and inserting “Observation”.

6           (d) *CIVIL LIABILITY*.—Section 12304(e) of the Inte-  
7   grated Coastal and Ocean Observation System Act of 2009  
8   (33 U.S.C. 3603(e)) is amended—

9                   (1) by striking “information coordination enti-  
10           ty” each place it appears and inserting “coastal ob-  
11           serving system”; and

12                   (2) by striking “contract, lease, grant, or cooper-  
13           ative agreement under subsection (c)(3)(D)” and in-  
14           serting “a memorandum of agreement of certification  
15           under subsection (c)(3)(C)(iii)”.

16           (e) *CONFORMING AMENDMENTS*.—The Integrated  
17   Coastal and Ocean Observation System Act of 2009 (33  
18   U.S.C. 3601 et seq.) is amended by striking “regional infor-  
19   mation coordination entities” each place it appears and in-  
20   serting “regional coastal observing systems”.

21   **SEC. 104. FINANCING AND AGREEMENTS.**

22           Section 12305(a) of the Integrated Coastal and Ocean  
23   Observation System Act of 2009 (33 U.S.C. 3604(a)) is  
24   amended to read as follows:

1       “(a) *IN GENERAL.*—*The Secretary of Commerce may*  
 2       *execute an agreement, on a reimbursable or nonreimburs-*  
 3       *able basis, with any State or subdivision thereof, any Fed-*  
 4       *eral agency, any public or private organization, or any in-*  
 5       *dividual to carry out activities under this subtitle.”.*

6       **SEC. 105. REPORTS TO CONGRESS.**

7       *Section 12307 of the Integrated Coastal and Ocean Ob-*  
 8       *servaion System Act of 2009 (33 U.S.C. 3606) is amended*  
 9       *to read as follows:*

10      **“SEC. 12307. REPORT TO CONGRESS.**

11      “(a) *REQUIREMENT.*—*Not later than March 30, 2022,*  
 12      *and every 5 years thereafter, the Administrator shall pre-*  
 13      *pare, and the President acting through the Council shall*  
 14      *approve and transmit to Congress, a report on progress*  
 15      *made in implementing this subtitle.*

16      “(b) *CONTENTS.*—*Each report required under sub-*  
 17      *section (a) shall include—*

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

20               “(2) *an evaluation of the effectiveness of the Sys-*  
 21               *tem, including an evaluation of progress made by the*  
 22               *Council to achieve the goals identified under the Sys-*  
 23               *tem Plan;*

24               “(3) *the identification of Federal and non-Fed-*  
 25               *eral assets as determined by the Council that have*



1        *been integrated into the System, including assets es-*  
 2        *sential to the gathering of required observation data*  
 3        *variables necessary to meet the respective missions of*  
 4        *Council agencies;*

5            *“(4) a review of procurements, planned or initi-*  
 6        *ated, by each department or agency represented on the*  
 7        *Council to enhance, expand, or modernize the observa-*  
 8        *tion capabilities and data products provided by the*  
 9        *System, including data management and communica-*  
 10       *tion subsystems;*

11           *“(5) a summary of the existing gaps in observa-*  
 12        *tion infrastructure and monitoring data collection,*  
 13        *including—*

14                *“(A) priorities considered by the System ad-*  
 15        *visory committee;*

16                *“(B) the national sea surface current map-*  
 17        *ping network;*

18                *“(C) coastal buoys;*

19                *“(D) ocean chemistry monitoring;*

20                *“(E) marine sound monitoring; and*

21                *“(F) unmanned maritime systems tech-*  
 22        *nology gaps;*

23                *“(6) an assessment regarding activities to inte-*  
 24        *grate Federal and non-Federal assets, nationally and*  
 25        *on the regional level, and discussion of the perform-*

1        *ance and effectiveness of regional coastal observing*  
 2        *systems to coordinate regional observation operations;*

3                *“(7) a description of benefits of the program to*  
 4        *users of data products resulting from the System (in-*  
 5        *cluding the general public, industries, scientists, re-*  
 6        *source managers, emergency responders, policy mak-*  
 7        *ers, and educators);*

8                *“(8) recommendations, if any, concerning—*

9                        *“(A) modifications to the System; and*

10                      *“(B) funding levels for the System in subse-*  
 11        *quent fiscal years; and*

12                *“(9) the results of a periodic external inde-*  
 13        *pendent programmatic audit of the System.”.*

14    **SEC. 106. PUBLIC-PRIVATE USE POLICY.**

15        *Section 12308 of the Integrated Coastal and Ocean Ob-*  
 16        *ervation System Act of 2009 (33 U.S.C. 3607) is amended*  
 17        *to read as follows:*

18    **“SEC. 12308. PUBLIC-PRIVATE USE POLICY.**

19                *“The Council shall maintain a policy that defines*  
 20        *processes for making decisions about the roles of the Federal*  
 21        *Government, the States, regional coastal observing systems,*  
 22        *the academic community, and the private sector in pro-*  
 23        *viding to end-user communities environmental information,*  
 24        *products, technologies, and services related to the System.*  
 25        *The Administrator shall ensure that the National Oceanic*

1 *and Atmospheric Administration adheres to the decision*  
 2 *making process developed by the Council regarding the roles*  
 3 *of the Federal Government, the States, the regional coastal*  
 4 *observing systems, the academic community, and the pri-*  
 5 *vate sector in providing end-user communities environ-*  
 6 *mental information, data products, technologies, and serv-*  
 7 *ices related to the System.”.*

8 **SEC. 107. REPEAL OF INDEPENDENT COST ESTIMATE.**

9       (a) *IN GENERAL.*—*The Integrated Coastal and Ocean*  
 10 *Observation System Act of 2009 (33 U.S.C. 3601 et seq.)*  
 11 *is amended by striking section 12309 (33 U.S.C. 3608).*

12       (b) *TABLE OF CONTENTS AMENDMENT.*—*The table of*  
 13 *contents in section 1(b) of the Omnibus Public Land Man-*  
 14 *agement Act of 2009 (Public Law 111–11; 123 Stat. 991)*  
 15 *is amended by striking the item related to section 12309.*

16 **SEC. 108. AUTHORIZATION OF APPROPRIATIONS.**

17       *Section 12311 of the Integrated Coastal and Ocean Ob-*  
 18 *servaion System Act of 2009 (33 U.S.C. 3610) is amended*  
 19 *to read as follows:*

20 **“SEC. 12311. AUTHORIZATION OF APPROPRIATIONS.**

21       *“There are authorized to be appropriated to the Sec-*  
 22 *retary of Commerce to support the integrated oceans obser-*  
 23 *vations under this subtitle—*

24               *“(1) \$48,000,000 for fiscal year 2021;*

25               *“(2) \$50,000,000 for fiscal year 2022;*

- 1 “(3) \$52,000,000 for fiscal year 2023;  
 2 “(4) \$54,000,000 for fiscal year 2024; and  
 3 “(5) \$56,000,000 for fiscal year 2025.”.

4 **SEC. 109. REPORTS AND RESEARCH PLANS.**

5 *Section 12404(c) of the Federal Ocean Acidification*  
 6 *Research And Monitoring Act of 2009 (33 U.S.C. 3703(c))*  
 7 *is amended by adding at the end the following:*

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

9 “(A) *IN GENERAL.*—Not later than 2 years  
 10 after the date of the enactment of the Coordi-  
 11 nated Ocean Observations and Research Act of  
 12 2020, and every 6 years thereafter, the Sub-  
 13 committee shall transmit to the appropriate com-  
 14 mittees of Congress a report that—

15 “(i) is named the ‘Ocean Chemistry  
 16 Coastal Community Vulnerability Assess-  
 17 ment’;

18 “(ii) identifies gaps in ocean acidifica-  
 19 tion monitoring by public, academic, and  
 20 private assets in the network of regional  
 21 coastal observing systems;

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

24 “(iv) identifies United States coastal  
 25 communities, including island communities,

1        *fishing communities, low-population rural*  
2        *communities, tribal and subsistence commu-*  
3        *nities, and island communities, that may be*  
4        *impacted by ocean acidification;*

5                *“(v) identifies impacts of changing*  
6        *ocean carbonate chemistry on the commu-*  
7        *nities described in clause (iv), including*  
8        *impacts from changes in ocean and coastal*  
9        *marine resources that are not managed by*  
10        *the Federal Government;*

11                *“(vi) identifies gaps in understanding*  
12        *of the impacts of ocean acidification on eco-*  
13        *nomically or commercially important spe-*  
14        *cies, particularly those which support*  
15        *United States commercial, recreational, and*  
16        *tribal fisheries and aquaculture;*

17                *“(vii) identifies habitats that may be*  
18        *particularly vulnerable to corrosive sea*  
19        *water, including areas experiencing mul-*  
20        *tiple stressors such as hypoxia, sedimenta-*  
21        *tion, and harmful algal blooms;*

22                *“(viii) identifies areas in which exist-*  
23        *ing National Integrated Coastal and Ocean*  
24        *Observation System assets, including un-*  
25        *manned maritime systems, may be lever-*

aged as platforms for the deployment of new  
sensors or other applicable observing tech-  
nologies;

“(ix) is written in collaboration with  
Federal agencies responsible for carrying  
out this subtitle, including representatives  
of—

“(I) the National Marine Fish-  
eries Service and the Office for Coastal  
Management of the National Oceanic  
and Atmospheric Administration;

“(II) regional coastal observing  
systems established under section  
12304(c)(4);

“(III) regional ocean acidification  
networks; and

“(IV) sea grant programs (as de-  
fined in section 203 of the National  
Sea Grant College Program Act (33  
U.S.C. 1122)); and

“(x) is written in consultation with ex-  
perts, including subsistence users, academia,  
and stakeholders familiar with the eco-  
nomic, social, ecological, geographic, and re-

1 *source concerns of coastal communities in*  
 2 *the United States.*

3 *“(B) FORM OF REPORT.—*

4 *“(i) INITIAL REPORT.—The initial re-*  
 5 *port required under subparagraph (A) shall*  
 6 *include the information described in clauses*  
 7 *(i) through (viii) of that subparagraph on a*  
 8 *national level.*

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

12 *“(I) may describe the information*  
 13 *described in clauses (i) through (viii)*  
 14 *of that subparagraph on a national*  
 15 *level; or*

16 *“(II) may consist of separate re-*  
 17 *ports for each region of the National*  
 18 *Oceanic and Atmospheric Administra-*  
 19 *tion.*

20 *“(iii) REGIONAL REPORTS.—If the*  
 21 *Subcommittee opts to prepare a report re-*  
 22 *quired under subparagraph (A) as separate*  
 23 *regional reports under clause (ii)(II), the*  
 24 *Subcommittee shall submit a report for each*  
 25 *region of the National Oceanic and Atmos-*

1                    *pheric Administration not less frequently*  
 2                    *than once during each 6-year reporting pe-*  
 3                    *riod.*

4                    “(C) *APPROPRIATE COMMITTEES OF CON-*  
 5                    *GRESS DEFINED.*—*In this paragraph and in*  
 6                    *paragraph (5), the term ‘appropriate committees*  
 7                    *of Congress’ means the Committee on Commerce,*  
 8                    *Science, and Transportation of the Senate, the*  
 9                    *Committee on Science, Space, and Technology of*  
 10                    *the House of Representatives, and the Committee*  
 11                    *on Natural Resources of the House of Represent-*  
 12                    *atives.*

13                    “(5) *MONITORING PRIORITIZATION PLAN.*—*Not*  
 14                    *later than 180 days after the date of the submission*  
 15                    *of the initial report under paragraph (4)(A), the Sub-*  
 16                    *committee shall transmit to the appropriate commit-*  
 17                    *tees of Congress a report that develops a plan to de-*  
 18                    *ploy new sensors or other applicable observing tech-*  
 19                    *nologies such as unmanned maritime systems—*

20                    “(A) *based on such initial report;*

21                    “(B) *prioritized by—*

22                    “(i) *the threat to coastal economies and*  
 23                    *ecosystems;*

24                    “(ii) *gaps in data; and*

25                    “(iii) *research needs; and*



1                   “(C) that leverage existing platforms, where  
2                   possible.”.

3 **SEC. 110. STRATEGIC RESEARCH PLAN.**

4           (a) *CONTENTS.*—Section 12405(b) of the Federal  
5 *Ocean Acidification Research And Monitoring Act of 2009*  
6 *(33 U.S.C. 3704(b))* is amended—

7                   (1) in paragraph (8), by striking “and” at the  
8                   end;

9                   (2) in paragraph (9), by striking the period at  
10                  the end and inserting “; and”; and

11                  (3) by adding at the end the following:

12                   “(10) make recommendations for research to be  
13                  conducted, including in the social sciences and eco-  
14                  nomics, to address the key knowledge gaps identified  
15                  in the Ocean Chemistry Coastal Community Vulner-  
16                  ability Assessment conducted under section  
17                  12404(c)(4).”.

18           (b) *PROGRAM ELEMENTS.*—Section 12405(c) of the  
19 *Federal Ocean Acidification Research And Monitoring Act*  
20 *of 2009 (33 U.S.C. 3704(c))* is amended by adding at the  
21 end the following:

22                   “(6) Research to understand the combined im-  
23                  pact of changes in ocean chemistry and other  
24                  stressors, including sediment delivery, hypoxia, and  
25                  harmful algal blooms, on each other and on living

1        *marine resources, including aquaculture and coastal*  
 2        *ecosystems.*

3            “(7) *Applied research to identify adaptation*  
 4        *strategies for species impacted by changes in ocean*  
 5        *chemistry including vegetation-based systems, shell re-*  
 6        *cycling, species and genetic diversity, applied tech-*  
 7        *nologies, aquaculture methodologies, and management*  
 8        *recommendations.”.*

9        (c) *PARTICIPATION.—Section 12405(e) of the Federal*  
 10       *Ocean Acidification Research And Monitoring Act of 2009*  
 11       *(33 U.S.C. 3704(e)) is amended in the first sentence by in-*  
 12       *serting “, tribal governments, and subsistence users” after*  
 13       *“groups”.*

14       (d) *REVISED STRATEGIC RESEARCH PLAN.—Not later*  
 15       *than one year after the date of the enactment of this Act,*  
 16       *the Joint Subcommittee on Ocean Science and Technology*  
 17       *of the National Science and Technology Council shall sub-*  
 18       *mit to Congress a revised strategic research plan under sec-*  
 19       *tion 12405 of the Federal Ocean Acidification Research And*  
 20       *Monitoring Act of 2009 (33 U.S.C. 3704) that includes the*  
 21       *matters required by the amendments made by this section.*

22       **SEC. 111. STAKEHOLDER INPUT ON MONITORING.**

23       *Section 12406(a) of the Federal Ocean Acidification*  
 24       *Research And Monitoring Act of 2009 (33 U.S.C. 3705(a))*  
 25       *is amended—*

1           (1) in paragraph (2), by striking “and” at the  
2       end;

3           (2) in paragraph (3), by striking the period at  
4       the end and inserting “; and”; and

5           (3) by adding at the end the following:

6           “(4) includes an ongoing mechanism that allows  
7       industry members, coastal stakeholders, fishery man-  
8       agement councils and commissions, non-Federal re-  
9       source managers, community acidification networks,  
10      indigenous knowledge groups, and scientific experts to  
11      provide input on monitoring needs that are necessary  
12      to support on the ground management, decision mak-  
13      ing, and adaptation related to ocean acidification  
14      and its impacts.”.

15   **SEC. 112. RESEARCH ACTIVITIES.**

16       Section 12407(a) of the Federal Ocean Acidification  
17   Research And Monitoring Act of 2009 (33 U.S.C. 3706(a))  
18   is amended to read as follows:

19       “(a) **RESEARCH ACTIVITIES.**—The Director of the Na-  
20   tional Science Foundation shall continue to carry out re-  
21   search activities on ocean acidification which shall support  
22   competitive, merit-based, peer-reviewed proposals for re-  
23   search, observation, and monitoring of ocean acidification  
24   and its impacts, including—

1           “(1) *impacts on marine organisms, including*  
 2           *species cultured for aquaculture, and marine eco-*  
 3           *systems;*

4           “(2) *impacts on ocean, coastal, and estuarine*  
 5           *biogeochemistry;*

6           “(3) *the development of methodologies and tech-*  
 7           *nologies to evaluate ocean acidification and its im-*  
 8           *pacts; and*

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

12       ***TITLE II—NAMED STORM EVENT***  
 13       ***MODEL AND POST-STORM AS-***  
 14       ***SESSMENTS***

15       ***SEC. 201. NAMED STORM EVENT MODEL AND POST-STORM***  
 16       ***ASSESSMENTS.***

17       *(a) AMENDMENTS TO THE OMNIBUS PUBLIC LAND*  
 18       *MANAGEMENT ACT OF 2009.—Section 12312 of the Omni-*  
 19       *bus Public Land Management Act of 2009 (33 U.S.C. 3611)*  
 20       *is amended—*

21               *(1) in subsection (a)—*

22                       *(A) in paragraph (2), by striking the period*  
 23                       *at the end and inserting the following: “, except*  
 24                       *that the term shall not apply with respect to a*

1       *State or territory that has an operational wind*  
 2       *and flood loss allocation system.”;*

3               *(B) in paragraph (6), by inserting “sus-*  
 4       *tained” before “winds”; and*

5               *(C) in paragraph (7), by striking “that*  
 6       *threaten any portion of a coastal State” and in-*  
 7       *serting “for which post-storm assessments are*  
 8       *conducted”;*

9       *(2) in subsection (b)—*

10              *(A) in paragraph (1)—*

11                      *(i) in subparagraph (A)—*

12                              *(I) by striking “540 days after the*  
 13                              *date of the enactment of the Consumer*  
 14                              *Option for an Alternative System to*  
 15                              *Allocate Losses Act of 2012” and in-*  
 16                              *serting “December 31, 2020”; and*

17                              *(II) by striking “by regulation”;*

18                              *(ii) in subparagraph (B), by striking*  
 19                              *“every” and inserting “an”; and*

20                              *(iii) by adding at the end the fol-*  
 21                              *lowing:*

22                              *“(C) PUBLIC REVIEW.—The Administrator*  
 23                              *shall seek input and suggestions from the public*  
 24                              *before the Named Storm Event Model, or any*

modification to the Named Storm Event Model,  
takes effect.”; and

(B) in paragraph (2)—

(i) by redesignating subparagraphs (B)  
and (C) as subparagraphs (D) and (E), re-  
spectively;

(ii) by inserting after subparagraph  
(A) the following:

“(B) DATA COLLECTION.—

“(i) IN GENERAL.—Upon identifica-  
tion of a named storm under subparagraph  
(A), and pursuant to the protocol estab-  
lished under subsection (c), the Adminis-  
trator may deploy sensors to enhance the  
collection of covered data in the areas in  
coastal States that the Administrator deter-  
mines are at the highest risk of experiencing  
geophysical events that would cause indeter-  
minate losses.

“(ii) RULE OF CONSTRUCTION.—If the  
Administrator takes action under clause (i),  
that action may not be construed as indi-  
cating that a post-storm assessment will be  
developed for any coastal State in which  
that action is taken.

1                   “(C) *IDENTIFICATION OF INDETERMINATE*  
 2                   *LOSSES IN COASTAL STATES.*—Not later than 30  
 3                   days after the first date on which sustained  
 4                   winds of not less than 39 miles per hour are  
 5                   measured in a coastal State during a named  
 6                   storm identified under subparagraph (A), the  
 7                   Secretary of Homeland Security shall notify the  
 8                   Administrator with respect to the existence of  
 9                   any indeterminate losses in that coastal State re-  
 10                  sulting from that named storm.”;

11                  (iii) in subparagraph (D), as so redes-  
 12                  ignated—

13                         (I) by striking “identification of a  
 14                         named storm under subparagraph (A)”  
 15                         and inserting “confirmation of indeter-  
 16                         minate losses identified under subpara-  
 17                         graph (C) with respect to a named  
 18                         storm”; and

19                         (II) by striking “assessment for  
 20                         such named storm” and inserting “as-  
 21                         sessment for each coastal State that  
 22                         suffered such indeterminate losses as a  
 23                         result of the named storm”;

24                  (iv) in subparagraph (E), as so redes-  
 25                  ignated—

1                   (I) by striking “an identification  
2                   of a named storm is made under sub-  
3                   paragraph (A)” and inserting “any  
4                   indeterminate losses are identified  
5                   under subparagraph (C)”; and

6                   (II) by striking “for such storm  
7                   under subparagraph (B)” and insert-  
8                   ing “under subparagraph (D) for any  
9                   coastal State that suffered such indeter-  
10                  minate losses”; and

11                  (v) by adding at the end the following:

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

14                         “(i) IN GENERAL.—The Administrator  
15                         may conduct a separate post-storm assess-  
16                         ment for each coastal State in which inde-  
17                         terminate losses are identified under sub-  
18                         paragraph (C).

19                         “(ii) TIMELINE.—If the Administrator  
20                         conducts a separate post-storm assessment  
21                         under clause (i), the Administrator shall  
22                         complete the assessment based on the dates  
23                         of actions that the Administrator takes  
24                         under subparagraph (D).”; and

25                  (3) in subsection (c)—



1           (A) in paragraph (1), by striking “540 days  
2           after the date of the enactment of the Consumer  
3           Option for an Alternative System to Allocate  
4           Losses Act of 2012” and inserting “December 31,  
5           2020”;

6           (B) in paragraph (2), by inserting “, in the  
7           discretion of the Administrator,” after “of sen-  
8           sors as may”; and

9           (C) in paragraph (4)(B), by inserting “and  
10          expend” after “receive”.

11          (b) AMENDMENTS TO THE NATIONAL FLOOD INSUR-  
12          ANCE ACT OF 1968.—Section 1337 of the National Flood  
13          Insurance Act of 1968 (42 U.S.C. 4057) is amended—

14           (1) in subsection (a)—

15           (A) in paragraph (3), by striking the period  
16           at the end and inserting the following: “, except  
17           that the term shall not apply with respect to a  
18           State or territory that has an operational wind  
19           and flood loss allocation system.”; and

20           (B) in paragraph (5), by inserting “sus-  
21           tained” after “maximum”;

22           (2) in subsection (b)—

23           (A) in paragraph (1), by striking “establish  
24           by rule” and inserting “publish for comment in  
25           the Federal Register”; and

1           (B) in paragraph (2)(B), by inserting after  
 2           “Elevation Certificate” the following: “, or other  
 3           data or information used to determine a prop-  
 4           erty’s current risk of flood, as determined by the  
 5           Administrator,”;

6           (3) in subsection (c)(3)(A)(i), by striking “the  
 7           issuance of the rule establishing the COASTAL For-  
 8           mula” and inserting “publication of the COASTAL  
 9           Formula in the Federal Register as required by sub-  
 10          section (b)(1)”;

11          (4) in subsection (d), by striking “section  
 12          12312(b)(2)(C)” and inserting “section  
 13          12312(b)(2)(E)”;

14          (5) in subsection (h)—

15               (A) by inserting “that issues a standard  
 16               flood insurance policy under the national flood  
 17               insurance program” after “company”; and

18               (B) by striking “or the COASTAL For-  
 19               mula” and inserting “, the COASTAL Formula,  
 20               or any other loss allocation or post-storm assess-  
 21               ment arising under the laws or ordinances of  
 22               any State”;

23          (6) in subsection (i), by striking “after the date  
 24          on which the Administrator issues the rule estab-  
 25          lishing the COASTAL Formula under subsection (b)”

and inserting “60 days after publication of the  
COASTAL Formula in the Federal Register as re-  
quired by subsection (b)(1)”; and

(7) by adding at the end the following:

“(k) *RULE OF CONSTRUCTION.*—Nothing in this sec-  
tion shall be construed to create a cause of action under  
this Act.”.

## **TITLE III—WATER PREDICTION AND FORECASTING**

### **SEC. 301. WATER PREDICTION AND FORECASTING.**

(a) *NATIONAL WATER CENTER.*—

(1) *ESTABLISHMENT.*—

(A) *IN GENERAL.*—The Under Secretary of  
Commerce for Oceans and Atmosphere shall es-  
tablish a center—

(i) to serve as the research and oper-  
ational center of excellence for hydrologic  
analyses, forecasting, and related decision  
support services within the National Oce-  
anic and Atmospheric Administration and  
the National Weather Service; and

(ii) to facilitate collaboration across  
Federal and State departments and agen-  
cies, academia, and the private sector on  
matters relating to water resources.

1                   (B) *DESIGNATION.*—*The center established*  
 2                   *under subparagraph (A) shall be known as the*  
 3                   *“National Water Center”.*

4                   (2) *FUNCTIONS.*—*The functions of the National*  
 5                   *Water Center shall include the following:*

6                   (A) *Improving understanding of water re-*  
 7                   *sources, stakeholder needs regarding water re-*  
 8                   *sources, and identifying science and services*  
 9                   *gaps relating to water resources.*

10                  (B) *Developing and implementing advanced*  
 11                  *water resources modeling capabilities.*

12                  (C) *Facilitating the transition of hydrologic*  
 13                  *research into operations.*

14                  (D) *Delivering analyses, forecasts, and in-*  
 15                  *undation information and guidance for all hy-*  
 16                  *drologic events in the United States, including*  
 17                  *flash flooding, riverine flooding, and water re-*  
 18                  *sources outlooks.*

19                  (E) *In coordination with warning coordi-*  
 20                  *nation meteorologists, providing decision-support*  
 21                  *services to inform emergency management and*  
 22                  *water resources decisions.*

23                  (b) *NATIONAL INSTRUCTIONS.*—

24                  (1) *IN GENERAL.*—*Not later than one year after*  
 25                  *the date of the enactment of this Act, the Under Sec-*

1        *retary, acting through the Director of the National*  
 2        *Weather Service, shall make public an operations and*  
 3        *services policy directive for the National Water Cen-*  
 4        *ter.*

5            (2) *CONTENTS.—The directive required by para-*  
 6        *graph (1) shall include national instructions to per-*  
 7        *form the functions of the National Water Center, in-*  
 8        *cluding the following:*

9            (A) *Operational staff responsibilities.*

10          (B) *Guidelines for content, format, and pro-*  
 11        *vision of hydrologic and inundation products de-*  
 12        *veloped by the National Water Center.*

13          (C) *Procedures for cooperation and coordi-*  
 14        *nation between the National Water Center, the*  
 15        *National Weather Service National Centers for*  
 16        *Environmental Prediction, National Weather*  
 17        *Service River Forecast Centers, and National*  
 18        *Weather Service Weather Forecast Offices.*

19        (c) *TOTAL WATER PREDICTION.—The Under Sec-*  
 20        *retary, acting through the Director of the Office of Water*  
 21        *Prediction of the National Weather Service, shall—*

22            (1) *initiate and lead research and development*  
 23        *activities to develop operational water resource pre-*  
 24        *diction and related decision support products;*

(2) *collaborate with, and provide decision support regarding total water prediction to—*

(A) *the relevant Federal agencies represented on the National Science and Technology Council, Committee on Environment, Natural Resources, and Sustainability and the Subcommittee on Disaster Reduction;*

(B) *State water resource agencies; and*

(C) *State and local emergency management agencies; and*

(3) *in carrying out the responsibilities described in paragraphs (1) and (2), collaboratively develop capabilities necessary for total water predictive capacity, including observations, modeling, data management, supercomputing, social science, and communications.*

(d) *AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out the activities under this section amounts as follows:*

(1) *\$44,500,000 for fiscal year 2021.*

(2) *\$45,000,000 for fiscal year 2022.*

(3) *\$45,500,000 for fiscal year 2023.*

(4) *\$46,000,000 for fiscal year 2024.*

(e) *DERIVATION OF FUNDS.—Funds to carry out this section shall be derived from amounts authorized to be ap-*

1 *propriated to the National Weather Service and the Na-*  
2 *tional Ocean Service that are enacted after the date of the*  
3 *enactment of this Act.*

Attest:

*Clerk.*

116TH CONGRESS  
2D SESSION

**S. 914**

---

**AMENDMENT**