

***In the Senate of the United States,***

*October 6, 2015.*

*Resolved,* That the bill from the House of Representatives (H.R. 34) entitled “An Act to authorize and strengthen the tsunami detection, forecast, warning, research, and mitigation program of the National Oceanic and Atmospheric Administration, and for other purposes.”, do pass with the following

**AMENDMENT:**

In lieu of the matter proposed to be inserted, add the following:

1 ***SECTION 1. SHORT TITLE.***

2 *This Act may be cited as the “Tsunami Warning, Edu-*  
3 *cation, and Research Act of 2015”.*

4 ***SEC. 2. REFERENCES TO THE TSUNAMI WARNING AND EDU-***  
5 ***CATION ACT.***

6 *Except as otherwise expressly provided, whenever in*  
7 *this Act an amendment or repeal is expressed in terms of*  
8 *an amendment to, or repeal of, a section or other provision,*  
9 *the reference shall be considered to be made to a section or*

1 *other provision of the Tsunami Warning and Education*  
2 *Act (Public Law 109–424; 33 U.S.C. 3201 et seq.).*

3 **SEC. 3. EXPANSION OF PURPOSES OF TSUNAMI WARNING**  
4 **AND EDUCATION ACT.**

5 *Section 3 (33 U.S.C. 3202) is amended—*

6 *(1) in paragraph (1), by inserting “research,”*  
7 *after “warnings,”;*

8 *(2) by amending paragraph (2) to read as fol-*  
9 *lows:*

10 *“(2) to enhance and modernize the existing*  
11 *United States Tsunami Warning System to increase*  
12 *the accuracy of forecasts and warnings, to ensure full*  
13 *coverage of tsunami threats to the United States with*  
14 *a network of detection assets, and to reduce false*  
15 *alarms;”;*

16 *(3) by amending paragraph (3) to read as fol-*  
17 *lows:*

18 *“(3) to improve and develop standards and*  
19 *guidelines for mapping, modeling, and assessment ef-*  
20 *forts to improve tsunami detection, forecasting, warn-*  
21 *ings, notification, mitigation, resiliency, response,*  
22 *outreach, and recovery;”;*

23 *(4) by redesignating paragraphs (4), (5), and (6)*  
24 *as paragraphs (5), (6), and (8), respectively;*

1           (5) by inserting after paragraph (3) the fol-  
2     *lowing:*

3           “(4) to improve research efforts related to im-  
4     *proving tsunami detection, forecasting, warnings, no-*  
5     *tification, mitigation, resiliency, response, outreach,*  
6     *and recovery;”;*

7           (6) in paragraph (5), as redesignated—

8           (A) by striking “and increase” and insert-  
9     *ing “, increase, and develop uniform standards*  
10    *and guidelines for”;* and

11          (B) by inserting “, including the warning  
12    *signs of locally generated tsunami” after “ap-*  
13    *proaching”;*

14          (7) in paragraph (6), as redesignated, by strik-  
15    *ing “, including the Indian Ocean; and” and insert-*  
16    *ing a semicolon; and*

17          (8) by inserting after paragraph (6), as redesign-  
18    *ated, the following:*

19          “(7) to foster resilient communities in the face of  
20    *tsunami and other similar coastal hazards; and”.*

21 **SEC. 4. MODIFICATION OF TSUNAMI FORECASTING AND**  
22 **WARNING PROGRAM.**

23          (a) *IN GENERAL.*—Subsection (a) of section 4 (33  
24 *U.S.C. 3203(a)) is amended by striking “Atlantic Ocean,*  
25 *Caribbean Sea, and Gulf of Mexico region” and inserting*

1 *“Atlantic Ocean region, including the Caribbean Sea and*  
2 *the Gulf of Mexico”.*

3 (b) *COMPONENTS.—Subsection (b) of section 4 (33*  
4 *U.S.C. 3203(b)) is amended—*

5 (1) *in paragraph (1), by striking “established”*  
6 *and inserting “supported or maintained”;*

7 (2) *by redesignating paragraphs (7) through (9)*  
8 *as paragraphs (8) through (10), respectively;*

9 (3) *by redesignating paragraphs (2) through (6)*  
10 *as paragraphs (3) through (7), respectively;*

11 (4) *by inserting after paragraph (1) the fol-*  
12 *lowing:*

13 *“(2) to the degree practicable, maintain not less*  
14 *than 80 percent of the Deep-ocean Assessment and Re-*  
15 *porting of Tsunamis buoy array at operational ca-*  
16 *capacity to optimize data reliability;”.*

17 (5) *by amending paragraph (5), as redesignated*  
18 *by paragraph (3), to read as follows:*

19 *“(5) provide tsunami forecasting capability*  
20 *based on models and measurements, including tsu-*  
21 *nami inundation models and maps for use in increas-*  
22 *ing the preparedness of communities and safe-*  
23 *guarding port and harbor operations, that incor-*  
24 *porate inputs, including—*

1           “(A) the United States and global ocean  
2           and coastal observing system;

3           “(B) the global Earth observing system;

4           “(C) the global seismic network;

5           “(D) the Advanced National Seismic sys-  
6           tem;

7           “(E) tsunami model validation using his-  
8           torical and paleotsunami data;

9           “(F) digital elevation models and bathym-  
10          etry;

11          “(G) newly developing tsunami detection  
12          methodologies using satellites and airborne re-  
13          mote sensing; and

14          “(H) any other data the Administrator de-  
15          termines is necessary;”;

16          (6) by amending paragraph (7), as redesignated  
17          by paragraph (3), to read as follows:

18                 “(7) include a cooperative effort among the Ad-  
19                 ministration, the United States Geological Survey,  
20                 and the National Science Foundation under which  
21                 the Director of the United States Geological Survey  
22                 and the Director of the National Science Foundation  
23                 shall—

1           “(A) provide rapid and reliable seismic in-  
2 formation to the Administrator from inter-  
3 national and domestic seismic networks; and

4           “(B) support seismic stations installed be-  
5 fore the date of the enactment of the Tsunami  
6 Warning, Education, and Research Act of 2015  
7 to supplement coverage in areas of sparse instru-  
8 mentation;”;

9           (7) in paragraph (8), as redesignated by para-  
10 graph (2)—

11           (A) by inserting “, including graphical  
12 warning products,” after “warnings”;

13           (B) by inserting “, territories,” after  
14 “States”; and

15           (C) by inserting “and Wireless Emergency  
16 Alerts” after “Hazards Program”; and

17           (8) in paragraph (9), as redesignated by para-  
18 graph (2)—

19           (A) by inserting “provide and” before  
20 “allow”; and

21           (B) by inserting “and commercial and Fed-  
22 eral undersea communications cables” after “ob-  
23 serving technologies”.

24           (c) *TSUNAMI WARNING SYSTEM*.—Subsection (c) of  
25 section 4 (33 U.S.C. 3203(c)) is amended to read as follows:

1       “(c) *TSUNAMI WARNING SYSTEM.*—*The program*  
2 *under this section shall operate a tsunami warning system*  
3 *that—*

4               “(1) *is capable of forecasting tsunami, including*  
5 *forecasting tsunami arrival time and inundation esti-*  
6 *mates, anywhere in the Pacific and Arctic Ocean re-*  
7 *gions and providing adequate warnings;*

8               “(2) *is capable of forecasting and providing ade-*  
9 *quate warnings, including tsunami arrival time and*  
10 *inundation models where applicable, in areas of the*  
11 *Atlantic Ocean, including the Caribbean Sea and*  
12 *Gulf of Mexico, that are determined—*

13               “(A) *to be geologically active, or to have sig-*  
14 *nificant potential for geological activity; and*

15               “(B) *to pose significant risks of tsunami for*  
16 *States along the coastal areas of the Atlantic*  
17 *Ocean, Caribbean Sea, or Gulf of Mexico; and*

18               “(3) *supports other international tsunami fore-*  
19 *casting and warning efforts.”.*

20       “(d) *TSUNAMI WARNING CENTERS.*—*Subsection (d) of*  
21 *section 4 (33 U.S.C. 3203(d)) is amended to read as follows:*

22       “(d) *TSUNAMI WARNING CENTERS.*—

23               “(1) *IN GENERAL.*—*The Administrator shall*  
24 *support or maintain centers to support the tsunami*

1 *warning system required by subsection (c). The Cen-*  
2 *ters shall include—*

3 *“(A) the National Tsunami Warning Cen-*  
4 *ter, located in Alaska, which is primarily re-*  
5 *sponsible for Alaska and the continental United*  
6 *States;*

7 *“(B) the Pacific Tsunami Warning Center,*  
8 *located in Hawaii, which is primarily respon-*  
9 *sible for Hawaii, the Caribbean, and other areas*  
10 *of the Pacific not covered by the National Center;*  
11 *and*

12 *“(C) any additional forecast and warning*  
13 *centers determined by the National Weather*  
14 *Service to be necessary.*

15 *“(2) RESPONSIBILITIES.—The responsibilities of*  
16 *the centers supported or maintained under paragraph*  
17 *(1) shall include the following:*

18 *“(A) Continuously monitoring data from*  
19 *seismological, deep ocean, coastal sea level, and*  
20 *tidal monitoring stations and other data sources*  
21 *as may be developed and deployed.*

22 *“(B) Evaluating earthquakes, landslides,*  
23 *and volcanic eruptions that have the potential to*  
24 *generate tsunami.*



1           “(C) *Evaluating deep ocean buoy data and*  
2           *tidal monitoring stations for indications of tsu-*  
3           *nami resulting from earthquakes and other*  
4           *sources.*

5           “(D) *To the extent practicable, utilizing a*  
6           *range of models, including ensemble models, to*  
7           *predict tsunami, including arrival times, flood-*  
8           *ing estimates, coastal and harbor currents, and*  
9           *duration.*

10          “(E) *Using data from the Integrated Ocean*  
11          *Observing System of the Administration in co-*  
12          *ordination with regional associations to calculate*  
13          *new inundation estimates and periodically up-*  
14          *date existing inundation estimates.*

15          “(F) *Disseminating forecasts and tsunami*  
16          *warning bulletins to Federal, State, tribal, and*  
17          *local government officials and the public.*

18          “(G) *Coordinating with the tsunami hazard*  
19          *mitigation program conducted under section 5 to*  
20          *ensure ongoing sharing of information between*  
21          *forecasters and emergency management officials.*

22          “(H) *In coordination with the Coast Guard,*  
23          *evaluating and recommending procedures for*  
24          *ports and harbors at risk of tsunami inundation,*

1           *including review of readiness, response, and com-*  
2           *munication strategies, and data sharing policies.*

3           “(I) *Making data gathered under this Act*  
4           *and post-warning analyses conducted by the Na-*  
5           *tional Weather Service or other relevant Admin-*  
6           *istration offices available to the public.*

7           “(J) *Integrating and modernizing the pro-*  
8           *gram operated under this section with advances*  
9           *in tsunami science to improve performance with-*  
10          *out compromising service.*

11          “(3) *FAIL-SAFE WARNING CAPABILITY.—The tsu-*  
12          *nami warning centers supported or maintained under*  
13          *paragraph (1) shall maintain a fail-safe warning ca-*  
14          *pability and perform back-up duties for each other.*

15          “(4) *COORDINATION WITH NATIONAL WEATHER*  
16          *SERVICE.—The Administrator shall coordinate with*  
17          *the forecast offices of the National Weather Service,*  
18          *the centers supported or maintained under paragraph*  
19          *(1), and such program offices of the Administration*  
20          *as the Administrator or the coordinating committee,*  
21          *as established in section 5(d), consider appropriate to*  
22          *ensure that regional and local forecast offices—*

23                 “(A) *have the technical knowledge and ca-*  
24                 *pability to disseminate tsunami warnings for the*  
25                 *communities they serve;*

1           “(B) leverage connections with local emer-  
2           gency management officials for optimally dis-  
3           seminating tsunami warnings and forecasts; and

4           “(C) implement mass communication tools  
5           in effect on the day before the date of the enact-  
6           ment of the *Tsunami Warning, Education, and*  
7           *Research Act of 2015* used by the National  
8           Weather Service on such date and newer mass  
9           communication technologies as they are devel-  
10          oped as a part of the Weather-Ready Nation pro-  
11          gram of the Administration, or otherwise, for the  
12          purpose of timely and effective delivery of tsu-  
13          nami warnings.

14          “(5) *UNIFORM OPERATING PROCEDURES.*—*The*  
15          *Administrator shall—*

16               “(A) develop uniform operational proce-  
17               dures for the centers supported or maintained  
18               under paragraph (1), including the use of soft-  
19               ware applications, checklists, decision support  
20               tools, and tsunami warning products that have  
21               been standardized across the program supported  
22               under this section;

23               “(B) ensure that processes and products of  
24               the warning system operated under subsection  
25               (c)—

1           “(i) reflect industry best practices  
2           when practicable;

3           “(ii) conform to the maximum extent  
4           practicable with internationally recognized  
5           standards for information technology; and

6           “(iii) conform to the maximum extent  
7           practicable with other warning products  
8           and practices of the National Weather Serv-  
9           ice;

10          “(C) ensure that future adjustments to oper-  
11          ational protocols, processes, and warning prod-  
12          ucts—

13                 “(i) are made consistently across the  
14                 warning system operated under subsection  
15                 (c); and

16                 “(ii) are applied in a uniform manner  
17                 across such warning system;

18          “(D) establish a systematic method for in-  
19          formation technology product development to im-  
20          prove long-term technology planning efforts; and

21                 “(E) disseminate guidelines and metrics for  
22                 evaluating and improving tsunami forecast mod-  
23                 els.

24          “(6) AVAILABLE RESOURCES.—The Adminis-  
25          trator, through the National Weather Service, shall

1     *ensure that resources are available to fulfill the obli-*  
2     *gations of this Act. This includes ensuring supercom-*  
3     *puting resources are available to run, as rapidly as*  
4     *possible, such computer models as are needed for pur-*  
5     *poses of the tsunami warning system operated under*  
6     *subsection (c).”.*

7     *(e) TRANSFER OF TECHNOLOGY; MAINTENANCE AND*  
8     *UPGRADES.—Subsection (e) of section 4 (33 U.S.C.*  
9     *3203(e)) is amended to read as follows:*

10     *“(e) TRANSFER OF TECHNOLOGY; MAINTENANCE AND*  
11     *UPGRADES.—In carrying out this section, the Adminis-*  
12     *trator shall—*

13             *“(1) develop requirements for the equipment used*  
14     *to forecast tsunami, including—*

15                     *“(A) provisions for multipurpose detection*  
16     *platforms;*

17                     *“(B) reliability and performance metrics;*  
18     *and*

19                     *“(C) to the maximum extent practicable, re-*  
20     *quirements for the integration of equipment with*  
21     *other United States and global ocean and coastal*  
22     *observation systems, the global Earth observing*  
23     *system of systems, the global seismic networks,*  
24     *and the Advanced National Seismic System;*

1           “(2) develop and execute a plan for the transfer  
2 of technology from ongoing research conducted as part  
3 of the program supported or maintained under sec-  
4 tion 6 into the program under this section; and

5           “(3) ensure that the Administration’s oper-  
6 ational tsunami detection equipment is properly  
7 maintained.”.

8           (f) *FEDERAL COOPERATION*.—Subsection (f) of section  
9 4 (33 U.S.C. 3203(f)) is amended to read as follows:

10          “(f) *FEDERAL COOPERATION*.—When deploying and  
11 maintaining tsunami detection technologies under the pro-  
12 gram under this section, the Administrator shall—

13           “(1) identify which assets of other Federal agen-  
14 cies are necessary to support such program; and

15           “(2) work with each agency identified under  
16 paragraph (1)—

17                   “(A) to acquire the agency’s assistance; and

18                   “(B) to prioritize the necessary assets in  
19 support of the tsunami forecast and warning  
20 program.”.

21           (g) *UNNECESSARY PROVISIONS*.—Section 4 (33 U.S.C.  
22 3203) is further amended—

23           (1) by striking subsection (g);

24           (2) by striking subsections (i) through (k); and

1           (3) by redesignating subsection (h) as subsection  
2           (g).

3           (h) CONGRESSIONAL NOTIFICATIONS.—Subsection (g)  
4 of section 4 (33 U.S.C. 3203(g)), as redesignated by sub-  
5 section (g)(3), is amended—

6           (1) in the matter before paragraph (1), by strik-  
7           ing “30” and inserting “90”;

8           (2) by redesignating paragraphs (1) and (2) as  
9           subparagraphs (A) and (B), respectively, and moving  
10           such subparagraphs 2 ems to the right;

11           (3) in the matter before subparagraph (A), as re-  
12           designated by paragraph (2), by striking “The Ad-  
13           ministrator” and inserting the following:

14           “(1) IN GENERAL.—The Administrator”;

15           (4) in paragraph (1), as redesignated by para-  
16           graph (3)—

17           (A) in subparagraph (A), as redesignated  
18           by paragraph (2), by striking “and” at the end;

19           (B) in subparagraph (B), as redesignated  
20           by paragraph (2), by striking the period at the  
21           end and inserting “; and”; and

22           (C) by adding at the end the following:

23           “(C) the occurrence of a significant tsunami  
24           warning.”; and

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

1           “(2) *CONTENTS.*—*In a case in which notice is*  
2           *submitted under paragraph (1) within 90 days of a*  
3           *significant tsunami warning described in subpara-*  
4           *graph (C) of such paragraph, such notice shall in-*  
5           *clude, as appropriate, brief information and analysis*  
6           *of—*

7                   “(A) *the accuracy of the tsunami model*  
8           *used;*

9                   “(B) *the specific deep ocean or other moni-*  
10           *toring equipment that detected the incident, as*  
11           *well as the deep ocean or other monitoring equip-*  
12           *ment that did not detect the incident due to mal-*  
13           *function or other reasons;*

14                   “(C) *the effectiveness of the warning com-*  
15           *munication, including the dissemination of*  
16           *warnings with State, territory, local, and tribal*  
17           *partners in the affected area under the jurisdic-*  
18           *tion of the National Weather Service; and*

19                   “(D) *such other findings as the Adminis-*  
20           *trator considers appropriate.”.*

21 **SEC. 5. MODIFICATION OF NATIONAL TSUNAMI HAZARD**  
22 **MITIGATION PROGRAM.**

23           (a) *IN GENERAL.*—*Section 5 (33 U.S.C. 3204) is*  
24 *amended by striking subsections (a) through (d) and insert-*  
25 *ing the following:*



1       “(a) *PROGRAM REQUIRED.*—*The Administrator, in co-*  
2 *ordination with the Administrator of the Federal Emer-*  
3 *gency Management Agency and the heads of such other*  
4 *agencies as the Administrator considers relevant, shall con-*  
5 *duct a community-based tsunami hazard mitigation pro-*  
6 *gram to improve tsunami preparedness and resiliency of*  
7 *at-risk areas in the United States and the territories of the*  
8 *United States.*

9       “(b) *PROGRAM COMPONENTS.*—*The Program con-*  
10 *ducted under subsection (a) shall include the following:*

11               “(1) *Technical and financial assistance to coast-*  
12 *al States, territories, tribes, and local governments to*  
13 *develop and implement activities under this section.*

14               “(2) *Integration of tsunami preparedness and*  
15 *mitigation programs into ongoing State-based hazard*  
16 *warning, resilience planning, and risk management*  
17 *activities, including predisaster planning, emergency*  
18 *response, evacuation planning, disaster recovery, haz-*  
19 *ard mitigation, and community development and re-*  
20 *development planning programs in affected areas.*

21               “(3) *Activities to promote the adoption of tsu-*  
22 *unami resilience, preparedness, warning, and mitiga-*  
23 *tion measures by Federal, State, territorial, tribal,*  
24 *and local governments and nongovernmental entities,*

1 *including educational and risk communication pro-*  
2 *grams to discourage development in high-risk areas.*

3 *“(4) Activities to support the development of re-*  
4 *gional tsunami hazard and risk assessments. Such re-*  
5 *gional risk assessments may include the following:*

6 *“(A) The sources, sizes, and other relevant*  
7 *historical data of tsunami in the region, includ-*  
8 *ing paleotsunami data.*

9 *“(B) Inundation models and maps of crit-*  
10 *ical infrastructure and socioeconomic vulner-*  
11 *ability in areas subject to tsunami inundation.*

12 *“(C) Maps of evacuation areas and evacu-*  
13 *ation routes, including, when appropriate, traffic*  
14 *studies that evaluate the viability of evacuation*  
15 *routes.*

16 *“(D) Evaluations of the size of populations*  
17 *that will require evacuation, including popu-*  
18 *lations with special evacuation needs.*

19 *“(E) Evaluations and technical assistance*  
20 *for vertical evacuation structure planning for*  
21 *communities where models indicate limited or no*  
22 *ability for timely evacuation, especially in areas*  
23 *at risk of near shore generated tsunami.*

24 *“(F) Evaluation of at-risk ports and har-*  
25 *bors.*

1           “(G) *Evaluation of the effect of tsunami*  
2           *currents on the foundations of closely-spaced,*  
3           *coastal high-rise structures.*

4           “(5) *Activities to promote preparedness in at-*  
5           *risk ports and harbors, including the following:*

6           “(A) *Evaluation and recommendation of*  
7           *procedures for ports and harbors in the event of*  
8           *a distant or near-field tsunami.*

9           “(B) *A review of readiness, response, and*  
10           *communication strategies to ensure coordination*  
11           *and data sharing with the Coast Guard.*

12           “(6) *Activities to support the development of*  
13           *community-based outreach and education programs to*  
14           *ensure community readiness and resilience, including*  
15           *the following:*

16           “(A) *The development, implementation, and*  
17           *assessment of technical training and public edu-*  
18           *cation programs, including education programs*  
19           *that address unique characteristics of distant*  
20           *and near-field tsunami.*

21           “(B) *The development of decision support*  
22           *tools.*

23           “(C) *The incorporation of social science re-*  
24           *search into community readiness and resilience*  
25           *efforts.*

1           “(D) *The development of evidence-based*  
2           *education guidelines.*

3           “(7) *Dissemination of guidelines and standards*  
4           *for community planning, education, and training*  
5           *products, programs, and tools, including—*

6           “(A) *standards for—*

7           “(i) *mapping products;*

8           “(ii) *inundation models; and*

9           “(iii) *effective emergency exercises; and*

10           “(B) *recommended guidance for at-risk port*  
11           *and harbor tsunami warning, evacuation, and*  
12           *response procedures in coordination with the*  
13           *Coast Guard.*

14           “(c) *AUTHORIZED ACTIVITIES.—In addition to activi-*  
15           *ties conducted under subsection (b), the program conducted*  
16           *under subsection (a) may include the following:*

17           “(1) *Multidisciplinary vulnerability assessment*  
18           *research, education, and training to help integrate*  
19           *risk management and resilience objectives with com-*  
20           *munity development planning and policies.*

21           “(2) *Risk management training for local officials*  
22           *and community organizations to enhance under-*  
23           *standing and preparedness.*

1           “(3) *Interagency, Federal, State, tribal, and ter-*  
2           *ritorial intergovernmental tsunami response exercise*  
3           *planning and implementation in high risk areas.*

4           “(4) *Development of practical applications for*  
5           *existing or emerging technologies, such as modeling,*  
6           *remote sensing, geospatial technology, engineering,*  
7           *and observing systems, including the integration of*  
8           *tsunami sensors into Federal and commercial sub-*  
9           *marine telecommunication cables if practicable.*

10          “(5) *Risk management, risk assessment, and re-*  
11          *silience data and information services, including—*

12               “(A) *access to data and products derived*  
13               *from observing and detection systems; and*

14               “(B) *development and maintenance of new*  
15               *integrated data products to support risk manage-*  
16               *ment, risk assessment, and resilience programs.*

17          “(6) *Risk notification systems that coordinate*  
18          *with and build upon existing systems and actively en-*  
19          *gage decisionmakers, State, local, tribal, and terri-*  
20          *torial governments and agencies, business commu-*  
21          *nities, nongovernmental organizations, and the*  
22          *media.*

23          “(d) *COORDINATING COMMITTEE.—*

24               “(1) *IN GENERAL.—The Administrator shall*  
25               *maintain a coordinating committee to assist the Ad-*

1        *administrator in the conduct of the program required by*  
2        *subsection (a).*

3            “(2) *COMPOSITION.—The coordinating committee*  
4        *shall be composed of members as follows:*

5            “(A) *Representatives from each of the States*  
6        *and territories most at risk from tsunami, in-*  
7        *cluding Alaska, Washington, Oregon, California,*  
8        *Hawaii, Puerto Rico, Guam, American Samoa,*  
9        *and the Northern Marianas Islands.*

10          “(B) *Such other members as the Adminis-*  
11        *trator considers appropriate to represent Fed-*  
12        *eral, State, tribal, territorial, and local govern-*  
13        *ments.*

14          “(3) *SUBCOMMITTEES.—The Administrator may*  
15        *approve the formation of subcommittees to address*  
16        *specific program components or regional issues.*

17          “(4) *RESPONSIBILITIES.—The coordinating com-*  
18        *mittee shall—*

19            “(A) *provide feedback on how funds should*  
20        *be prioritized to carry out the program required*  
21        *by subsection (a);*

22            “(B) *ensure that areas described in section*  
23        *4(c) in the United States and its territories have*  
24        *the opportunity to participate in the program;*

1           “(C) provide recommendations to the Ad-  
2           ministrators on how to improve and continuously  
3           advance the TsunamiReady program of the Na-  
4           tional Weather Service, particularly on ways to  
5           make communities more tsunami resilient  
6           through the use of inundation maps and models  
7           and other hazard mitigation practices;

8           “(D) ensure that all components of the pro-  
9           gram required by subsection (a) are integrated  
10          with ongoing State based hazard warning, risk  
11          management, and resilience activities, includ-  
12          ing—

13                 “(i) integrating activities with emer-  
14                 gency response plans, disaster recovery, haz-  
15                 ard mitigation, and community develop-  
16                 ment programs in affected areas; and

17                 “(ii) integrating information to assist  
18                 in tsunami evacuation route planning.

19          “(5) EXEMPTION FROM FACAs.—The provisions of  
20          the Federal Advisory Committee Act (5 U.S.C. App.)  
21          shall not apply to the committee established and  
22          maintained under paragraph (1).

23          “(e) NO PREEMPTION WITH RESPECT TO DESIGNA-  
24          TION OF AT-RISK AREAS.—The establishment of national  
25          standards for inundation models under this section shall

1 *not prevent States, territories, tribes, and local governments*  
2 *from designating additional areas as being at risk based*  
3 *on knowledge of local conditions.*

4 “(f) *NO NEW REGULATORY AUTHORITY.—Nothing in*  
5 *this Act may be construed as establishing new regulatory*  
6 *authority for any Federal agency.*”.

7 (b) *REPORT ON ACCREDITATION OF TSUNAMIREADY*  
8 *PROGRAM.—Not later than 180 days after the date of enact-*  
9 *ment of this Act, the Administrator of the National Oceanic*  
10 *and Atmospheric Administration shall submit to the Com-*  
11 *mittee on Commerce, Science, and Transportation of the*  
12 *Senate and the Committee on Science, Space, and Tech-*  
13 *nology of the House of Representatives a report on which*  
14 *authorities and activities would be needed to have the*  
15 *TsunamiReady program of the National Weather Service*  
16 *accredited by the Emergency Management Accreditation*  
17 *Program.*

18 **SEC. 6. MODIFICATION OF TSUNAMI RESEARCH PROGRAM.**

19 *Section 6 (33 U.S.C. 3205) is amended—*

20 (1) *in the matter before paragraph (1), by strik-*  
21 *ing “The Administrator shall” and all that follows*  
22 *through “establish or maintain” and inserting the fol-*  
23 *lowing:*

24 “(a) *IN GENERAL.—The Administrator shall, in con-*  
25 *sultation with such other Federal agencies, State, tribal,*



1 *and territorial governments, and academic institutions as*  
2 *the Administrator considers appropriate, the coordinating*  
3 *committee under section 5(d), and the panel under section*  
4 *8(a), support or maintain”;*

5           (2) *in subsection (a), as designated by para-*  
6 *graph (1), by striking “and assessment for tsunami*  
7 *tracking and numerical forecast modeling. Such re-*  
8 *search program shall—” and inserting the following:*  
9 *“assessment for tsunami tracking and numerical fore-*  
10 *cast modeling, and standards development.*

11 *“(b) RESPONSIBILITIES.—The research program sup-*  
12 *ported or maintained under subsection (a) shall—”;* and

13           (3) *in subsection (b), as designated by paragraph*  
14 *(2)—*

15           (A) *by amending paragraph (1) to read as*  
16 *follows:*

17           “(1) *consider other appropriate and cost effective*  
18 *solutions to mitigate the impact of tsunami, includ-*  
19 *ing the improvement of near-field and distant tsu-*  
20 *nami detection and forecasting capabilities, which*  
21 *may include use of a new generation of the Deep-*  
22 *ocean Assessment and Reporting of Tsunamis array,*  
23 *integration of tsunami sensors into commercial and*  
24 *Federal telecommunications cables, and other real-*  
25 *time tsunami monitoring systems and supercomputer*

1 *capacity of the Administration to develop a rapid*  
2 *tsunami forecast for all United States coastlines;*”;

3 (B) *in paragraph (3)—*

4 (i) *by striking “include” and inserting*  
5 *“conduct”; and*

6 (ii) *by striking “and” at the end;*

7 (C) *by redesignating paragraph (4) as*  
8 *paragraph (5);*

9 (D) *by inserting after paragraph (3) the fol-*  
10 *lowing:*

11 “(4) *develop the technical basis for validation of*  
12 *tsunami maps, numerical tsunami models, digital ele-*  
13 *vation models, and forecasts; and”;* and

14 (E) *in paragraph (5), as redesignated by*  
15 *subparagraph (C), by striking “to the scientific*  
16 *community” and inserting “to the public and*  
17 *the scientific community”.*

18 **SEC. 7. GLOBAL TSUNAMI WARNING AND MITIGATION NET-**

19 **WORK.**

20 *Section 7 (33 U.S.C. 3206) is amended—*

21 (1) *by amending subsection (a) to read as fol-*  
22 *lows:*

23 “(a) *SUPPORT FOR DEVELOPMENT OF AN INTER-*  
24 *NATIONAL TSUNAMI WARNING SYSTEM.—The Adminis-*  
25 *trator shall, in coordination with the Secretary of State and*

1 *in consultation with such other agencies as the Adminis-*  
 2 *trator considers relevant, provide technical assistance, oper-*  
 3 *ational support, and training to the Intergovernmental*  
 4 *Oceanographic Commission of the United Nations Edu-*  
 5 *cational, Scientific, and Cultural Organization, the World*  
 6 *Meteorological Organization of the United Nations, and*  
 7 *such other international entities as the Administrator con-*  
 8 *siders appropriate, as part of the international efforts to*  
 9 *develop a fully functional global tsunami forecast and*  
 10 *warning system comprised of regional tsunami warning*  
 11 *networks.”;*

12           (2) *in subsection (b), by striking “shall” each*  
 13 *place it appears and inserting “may”; and*

14           (3) *in subsection (c)—*

15                   (A) *in paragraph (1), by striking “estab-*  
 16 *lishing” and inserting “supporting”; and*

17                   (B) *in paragraph (2)—*

18                           (i) *by striking “establish” and insert-*  
 19 *ing “support”; and*

20                           (ii) *by striking “establishing” and in-*  
 21 *serting “supporting”.*

22 **SEC. 8. TSUNAMI SCIENCE AND TECHNOLOGY ADVISORY**  
 23 **PANEL.**

24           (a) *IN GENERAL.—The Act is further amended—*

1           (1) *by redesignating section 8 (33 U.S.C. 3207)*  
2           *as section 9; and*

3           (2) *by inserting after section 7 (33 U.S.C. 3206)*  
4           *the following:*

5   **“SEC. 8. TSUNAMI SCIENCE AND TECHNOLOGY ADVISORY**  
6           **PANEL.**

7           “(a) *DESIGNATION.—The Administrator shall des-*  
8           *ignate an existing working group within the Science Advi-*  
9           *sory Board of the Administration to manage the Tsunami*  
10           *Science and Technology Advisory Panel to provide advice*  
11           *to the Administrator on matters regarding tsunami science,*  
12           *technology, and regional preparedness.*

13           “(b) *MEMBERSHIP.—*

14           “(1) *COMPOSITION.—The Panel shall be com-*  
15           *posed of no fewer than 7 members selected by the Ad-*  
16           *ministrator from among individuals from academia*  
17           *or State agencies who have academic or practical ex-*  
18           *pertise in physical sciences, social sciences, informa-*  
19           *tion technology, coastal resilience, emergency manage-*  
20           *ment, or such other disciplines as the Administrator*  
21           *considers appropriate.*

22           “(2) *FEDERAL EMPLOYMENT.—No member of the*  
23           *Panel may be a Federal employee.*

24           “(c) *RESPONSIBILITIES.—Not less frequently than*  
25           *once every 4 years, the Panel shall—*

1           “(1) review the activities of the Administration,  
2           and other Federal activities as appropriate, relating  
3           to tsunami research, detection, forecasting, warning,  
4           mitigation, resiliency, and preparation; and

5           “(2) submit to the Administrator and such others  
6           as the Administrator considers appropriate—

7           “(A) the findings of the working group with  
8           respect to the most recent review conducted under  
9           paragraph (1); and

10           “(B) such recommendations for legislative  
11           or administrative action as the working group  
12           considers appropriate to improve Federal tsu-  
13           nami research, detection, forecasting, warning,  
14           mitigation, resiliency, and preparation.

15           “(d) *REPORTS TO CONGRESS.*—Not less frequently  
16           than once every 4 years, the Administrator shall submit to  
17           the Committee on Commerce, Science, and Transportation  
18           of the Senate, and the Committee on Science, Space, and  
19           Technology of the House of Representatives a report on the  
20           findings and recommendations received by the Adminis-  
21           trator under subsection (c)(2).”.

22   **SEC. 9. REPORTS.**

23           (a) *REPORT ON IMPLEMENTATION OF TSUNAMI WARN-*  
24           *ING AND EDUCATION ACT.*—

1           (1) *IN GENERAL.*—Not later than 1 year after  
2           the date of the enactment of this Act, the Adminis-  
3           trator of the National Oceanic and Atmospheric Ad-  
4           ministration shall submit to Congress a report on the  
5           implementation of the Tsunami Warning and Edu-  
6           cation Act (33 U.S.C. 3201 et seq.).

7           (2) *ELEMENTS.*—The report required by para-  
8           graph (1) shall include the following:

9                   (A) A detailed description of the progress  
10                  made in implementing sections 4(d)(6), 5(b)(6),  
11                  and 6(b)(4) of the Tsunami Warning and Edu-  
12                  cation Act.

13                  (B) A description of the ways that tsunami  
14                  warnings and warning products issued by the  
15                  Tsunami Forecasting and Warning Program es-  
16                  tablished under section 4 of the Tsunami Warn-  
17                  ing and Education Act (33 U.S.C. 3203) can be  
18                  standardized and streamlined with warnings  
19                  and warning products for hurricanes, coastal  
20                  storms, and other coastal flooding events.

21           (b) *REPORT ON NATIONAL EFFORTS THAT SUPPORT*  
22           *RAPID RESPONSE FOLLOWING NEAR-SHORE TSUNAMI*  
23           *EVENTS.*—

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

1 *trator and the Secretary of Homeland Security shall*  
2 *jointly, in coordination with the Director of the*  
3 *United States Geological Survey, Administrator of the*  
4 *Federal Emergency Management Agency, the Chief of*  
5 *the National Guard Bureau, and the heads of such*  
6 *other Federal agencies as the Administrator considers*  
7 *appropriate, submit to the appropriate committees of*  
8 *Congress a report on the national efforts in effect on*  
9 *the day before the date of the enactment of this Act*  
10 *that support and facilitate rapid emergency response*  
11 *following a domestic near-shore tsunami event to bet-*  
12 *ter understand domestic effects of earthquake derived*  
13 *tsunami on people, infrastructure, and communities*  
14 *in the United States.*

15 (2) *ELEMENTS.—The report required by para-*  
16 *graph (1) shall include the following:*

17 (A) *A description of scientific or other*  
18 *measurements collected on the day before the date*  
19 *of the enactment of this Act to quickly identify*  
20 *and quantify lost or degraded infrastructure or*  
21 *terrestrial formations.*

22 (B) *A description of scientific or other*  
23 *measurements that would be necessary to collect*  
24 *to quickly identify and quantify lost or degraded*  
25 *infrastructure or terrestrial formations.*

1           (C) *Identification and evaluation of Fed-*  
2           *eral, State, local, tribal, territorial, and military*  
3           *first responder and search and rescue operation*  
4           *centers, bases, and other facilities as well as*  
5           *other critical response assets and infrastructure,*  
6           *including search and rescue aircraft, located*  
7           *within near-shore and distant tsunami inunda-*  
8           *tion areas on the day before the date of the en-*  
9           *actment of this Act.*

10           (D) *An evaluation of near-shore tsunami re-*  
11           *sponse plans in areas described in subparagraph*  
12           *(C) in effect on the day before the date of the en-*  
13           *actment of this Act, and how those response*  
14           *plans would be affected by the loss of search and*  
15           *rescue and first responder infrastructure de-*  
16           *scribed in such subparagraph.*

17           (E) *A description of redevelopment plans*  
18           *and reports in effect on the day before the date*  
19           *of the enactment of this Act for communities in*  
20           *areas that are at high-risk for near-shore tsu-*  
21           *unami, as well identification of States or commu-*  
22           *nities that do not have redevelopment plans.*

23           (F) *Recommendations to enhance near-shore*  
24           *tsunami preparedness and response plans, in-*



1           *cluding recommended responder exercises,*  
2           *pre-disaster planning, and mitigation needs.*

3           *(G) Such other data and analysis informa-*  
4           *tion as the Administrator and the Secretary of*  
5           *Homeland Security consider appropriate.*

6           (3) *APPROPRIATE COMMITTEES OF CONGRESS.—*  
7           *In this subsection, the term “appropriate committees*  
8           *of Congress” means—*

9           *(A) the Committee on Commerce, Science,*  
10           *and Transportation and the Committee on*  
11           *Homeland Security and Governmental Affairs of*  
12           *the Senate; and*

13           *(B) the Committee on Science, Space, and*  
14           *Technology and the Committee on Homeland Se-*  
15           *curity of the House of Representatives.*

16 **SEC. 10. AUTHORIZATION OF APPROPRIATIONS.**

17           *Section 9 of the Act, as redesignated by section 8(a)(1)*  
18           *of this Act, is amended—*

19           (1) *in paragraph (4)(B), by striking “and” at*  
20           *the end;*

21           (2) *in paragraph (5)(B), by striking the period*  
22           *at the end and inserting “; and”; and*

23           (3) *by adding at the end the following:*

24           “(6) \$27,000,000 for each of fiscal years 2016  
25           through 2021, of which—

1           “(A) not less than 27 percent of the amount  
2           appropriated for each fiscal year shall be for ac-  
3           tivities conducted at the State level under the  
4           tsunami hazard mitigation program under sec-  
5           tion 5; and

6           “(B) not less than 8 percent of the amount  
7           appropriated shall be for the tsunami research  
8           program under section 6.”.

9 **SEC. 11. OUTREACH RESPONSIBILITIES.**

10        *The Administrator of the National Oceanic and At-*  
11 *mospheric Administration, in coordination with State and*  
12 *local emergency managers, shall develop and carry out for-*  
13 *mal outreach activities to improve tsunami education and*  
14 *awareness and foster the development of resilient commu-*  
15 *nities. Outreach activities may include—*

16           (1) *the development of outreach plans to ensure*  
17 *the close integration of tsunami warning centers sup-*  
18 *ported or maintained under section 4(d) of the Tsu-*  
19 *nami Warning and Education Act (33 U.S.C.*  
20 *3203(d)) with local Weather Forecast Offices of the*  
21 *National Weather Service and emergency managers;*

22           (2) *working with appropriate local Weather*  
23 *Forecast Offices to ensure they have the technical*  
24 *knowledge and capability to disseminate tsunami*  
25 *warnings to the communities they serve; and*

1           (3) *evaluating the effectiveness of warnings and*  
2           *of coordination with local Weather Forecast Offices*  
3           *after significant tsunami events.*

4 **SEC. 12. MODIFICATION OF COASTAL OCEAN PROGRAM.**

5           *Section 201(c) of the National Oceanic and Atmos-*  
6           *pheric Administration Authorization Act of 1992 (Public*  
7           *Law 102–567; 106 Stat. 4280) is amended—*

8                     (1) *by inserting “(1) IN GENERAL.—” before “Of*  
9           *the sums” and indenting appropriately; and*

10                    (2) *by adding at the end the following:*

11                    “(2) **REGIONAL COASTAL RISK MANAGEMENT**  
12           *COALITIONS.—The Administrator of the National Oce-*  
13           *anic and Atmospheric Administration may form re-*  
14           *gional coastal risk management coalitions comprised*  
15           *of representatives of Federal, State, local, and tribal*  
16           *governments, community groups, academic institu-*  
17           *tions, and nongovernmental groups to advance the*  
18           *goals of this section for communities facing common*  
19           *coastal hazards and risks. Such coalitions may enter*  
20           *into an agreement with an organization described in*  
21           *section 501(c)(3) of the Internal Revenue Code of*  
22           *1986 to establish a nonprofit foundation in order to*  
23           *accept gifts and donations to support the goals of this*  
24           *subsection.”.*

1 **SEC. 13. REPEAL OF DUPLICATE PROVISIONS OF LAW.**

2       (a) *REPEAL.*—*The Magnuson-Stevens Fishery Con-*  
3 *servation and Management Reauthorization Act of 2006*  
4 *(Public Law 109–479) is amended by striking title VIII*  
5 *(relating to tsunami warning and education).*

6       (b) *CONSTRUCTION.*—*Nothing in this section shall be*  
7 *construed to repeal, or affect in any way, Public Law 109–*  
8 *424.*

Attest:

*Secretary.*



114<sup>TH</sup> CONGRESS  
1<sup>ST</sup> SESSION

**H.R. 34**

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**AMENDMENT**