

(iv) assess the feasibility and advisability of incorporating State-operated and other non-Federal radars into the operations of the National Weather Service;

(v) identify options to improve hazardous weather detection and forecasting coverage; and

(vi) provide the estimated cost of, and timeline for, each of the options identified under clause (v).

(3) REPORT.—Upon the completion of the study required under paragraph (1), the Secretary shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a report that includes the findings of the Secretary with respect to the study.

(b) RECOMMENDATIONS TO IMPROVE RADAR COVERAGE.—Not later than 90 days after the completion of the study under subsection (a)(1), the Secretary of Commerce shall submit to the congressional committees referred to in subsection (a)(3) recommendations for improving hazardous weather detection and forecasting coverage in the areas identified under subsection (a)(2)(A) by integrating additional observation solutions to the extent practicable and meteorologically justified and necessary to protect public safety.

(c) THIRD-PARTY CONSULTATION REGARDING RECOMMENDATIONS TO IMPROVE RADAR COVERAGE.—The Secretary of Commerce may seek reviews by, or consult with, appropriate third parties regarding the scientific methodology relating to, and the feasibility and advisability of implementing, the recommendations submitted under subsection (b), including the extent to which warning and forecast services of the National Weather Service would be improved by additional observations.

## TITLE V—TSUNAMI WARNING, EDUCATION, AND RESEARCH ACT OF 2017

### SEC. 501. SHORT TITLE.

This title may be cited as the “Tsunami Warning, Education, and Research Act of 2017”.

### SEC. 502. REFERENCES TO THE TSUNAMI WARNING AND EDUCATION ACT.

Except as otherwise expressly provided, whenever in this title an amendment or repeal is expressed in terms of an amendment to, or repeal of, a section or other provision, the reference shall be considered to be made to a section or other provision of the Tsunami Warning and Education Act enacted as title VIII of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 (Public Law 109–479; 33 U.S.C. 3201 et seq.).

### SEC. 503. EXPANSION OF PURPOSES OF TSUNAMI WARNING AND EDUCATION ACT.

Section 803 (33 U.S.C. 3202) is amended—

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

(2) by amending paragraph (2) to read as follows:

"(2) to enhance and modernize the existing United States Tsunami Warning System to increase the accuracy of forecasts and warnings, to ensure full coverage of tsunami threats to the United States with a network of detection assets, and to reduce false alarms;"

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

"(3) to improve and develop standards and guidelines for mapping, modeling, and assessment efforts to improve tsunami detection, forecasting, warnings, notification, mitigation, resiliency, response, outreach, and recovery;"

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

(5) by inserting after paragraph (3) the following:

"(4) to improve research efforts related to improving tsunami detection, forecasting, warnings, notification, mitigation, resiliency, response, outreach, and recovery;"

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

(A) by striking "and increase" and inserting "increase, and develop uniform standards and guidelines for"; and

(B) by inserting "including the warning signs of locally generated tsunami" after "approaching";

(7) in paragraph (6), as redesignated, by striking "including the Indian Ocean; and" and inserting a semicolon; and

(8) by inserting after paragraph (6), as redesignated, the following:

"(7) to foster resilient communities in the face of tsunami and other similar coastal hazards; and".

**SEC. 504. MODIFICATION OF TSUNAMI FORECASTING AND WARNING PROGRAM.**

(a) **IN GENERAL.**—Subsection (a) of section 804 (33 U.S.C. 3203(a)) is amended by striking "Atlantic Ocean, Caribbean Sea, and Gulf of Mexico region" and inserting "Atlantic Ocean region, including the Caribbean Sea and the Gulf of Mexico".

(b) **COMPONENTS.**—Subsection (b) of section 804 (33 U.S.C. 3203(b)) is amended—

(1) in paragraph (1), by striking "established" and inserting "supported or maintained";

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

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

(4) by inserting after paragraph (1) the following:

"(2) to the degree practicable, maintain not less than 80 percent of the Deep-ocean Assessment and Reporting of Tsunamis buoy array at operational capacity to optimize data reliability;"

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

"(5) provide tsunami forecasting capability based on models and measurements, including tsunami inundation models and maps for use in increasing the preparedness of communities and safeguarding port and harbor operations, that incorporate inputs, including—

"(A) the United States and global ocean and coastal observing system;

“(B) the global Earth observing system;

“(C) the global seismic network;

“(D) the Advanced National Seismic system;

“(E) tsunami model validation using historical and paleotsunami data;

“(F) digital elevation models and bathymetry; and

“(G) newly developing tsunami detection methodologies using satellites and airborne remote sensing;”;

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

“(7) include a cooperative effort among the Administration, the United States Geological Survey, and the National Science Foundation under which the Director of the United States Geological Survey and the Director of the National Science Foundation shall—

“(A) provide rapid and reliable seismic information to the Administrator from international and domestic seismic networks; and

“(B) support seismic stations installed before the date of the enactment of the Tsunami Warning, Education, and Research Act of 2017 to supplement coverage in areas of sparse instrumentation;”;

(7) in paragraph (8), as redesignated by paragraph (2)—

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

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

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

(8) in paragraph (9), as redesignated by paragraph (2)—

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

(B) by inserting “and commercial and Federal undersea communications cables” after “observing technologies”.

(c) TSUNAMI WARNING SYSTEM.—Subsection (c) of section 804 (33 U.S.C. 3203(c)) is amended to read as follows:

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

“(1) is capable of forecasting tsunami, including forecasting tsunami arrival time and inundation estimates, anywhere in the Pacific and Arctic Ocean regions and providing adequate warnings;

“(2) is capable of forecasting and providing adequate warnings, including tsunami arrival time and inundation models where applicable, in areas of the Atlantic Ocean, including the Caribbean Sea and Gulf of Mexico, that are determined—

“(A) to be geologically active, or to have significant potential for geological activity; and

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

“(3) supports other international tsunami forecasting and warning efforts.”.

(d) TSUNAMI WARNING CENTERS.—Subsection (d) of section 804 (33 U.S.C. 3203(d)) is amended to read as follows:

“(d) TSUNAMI WARNING CENTERS.—

"(1) IN GENERAL.—The Administrator shall support or maintain centers to support the tsunami warning system required by subsection (c). The Centers shall include—

"(A) the National Tsunami Warning Center, located in Alaska, which is primarily responsible for Alaska and the continental United States;

"(B) the Pacific Tsunami Warning Center, located in Hawaii, which is primarily responsible for Hawaii, the Caribbean, and other areas of the Pacific not covered by the National Center; and

"(C) any additional forecast and warning centers determined by the National Weather Service to be necessary.

"(2) RESPONSIBILITIES.—The responsibilities of the centers supported or maintained under paragraph (1) shall include the following:

"(A) Continuously monitoring data from seismological, deep ocean, coastal sea level, and tidal monitoring stations and other data sources as may be developed and deployed.

"(B) Evaluating earthquakes, landslides, and volcanic eruptions that have the potential to generate tsunami.

"(C) Evaluating deep ocean buoy data and tidal monitoring stations for indications of tsunami resulting from earthquakes and other sources.

"(D) To the extent practicable, utilizing a range of models, including ensemble models, to predict tsunami, including arrival times, flooding estimates, coastal and harbor currents, and duration.

"(E) Using data from the Integrated Ocean Observing System of the Administration in coordination with regional associations to calculate new inundation estimates and periodically update existing inundation estimates.

"(F) Disseminating forecasts and tsunami warning bulletins to Federal, State, tribal, and local government officials and the public.

"(G) Coordinating with the tsunami hazard mitigation program conducted under section 805 to ensure ongoing sharing of information between forecasters and emergency management officials.

"(H) In coordination with the Commandant of the Coast Guard and the Administrator of the Federal Emergency Management Agency, evaluating and recommending procedures for ports and harbors at risk of tsunami inundation, including review of readiness, response, and communication strategies, and data sharing policies, to the maximum extent practicable.

"(I) Making data gathered under this Act and post-warning analyses conducted by the National Weather Service or other relevant Administration offices available to the public.

"(J) Integrating and modernizing the program operated under this section with advances in tsunami science to improve performance without compromising service.

"(3) FAIL-SAFE WARNING CAPABILITY.—The tsunami warning centers supported or maintained under paragraph (1) shall maintain a fail-safe warning capability and perform back-up duties for each other.

“(4) COORDINATION WITH NATIONAL WEATHER SERVICE.—The Administrator shall coordinate with the forecast offices of the National Weather Service, the centers supported or maintained under paragraph (1), and such program offices of the Administration as the Administrator or the coordinating committee, as established in section 805(d), consider appropriate to ensure that regional and local forecast offices—

“(A) have the technical knowledge and capability to disseminate tsunami warnings for the communities they serve;

“(B) leverage connections with local emergency management officials for optimally disseminating tsunami warnings and forecasts; and

“(C) implement mass communication tools in effect on the day before the date of the enactment of the Tsunami Warning, Education, and Research Act of 2017 used by the National Weather Service on such date and newer mass communication technologies as they are developed as a part of the Weather-Ready Nation program of the Administration, or otherwise, for the purpose of timely and effective delivery of tsunami warnings.

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

“(A) develop uniform operational procedures for the centers supported or maintained under paragraph (1), including the use of software applications, checklists, decision support tools, and tsunami warning products that have been standardized across the program supported under this section;

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

“(i) reflect industry best practices when practicable;

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

“(iii) conform to the maximum extent practicable with other warning products and practices of the National Weather Service;

“(C) ensure that future adjustments to operational protocols, processes, and warning products—

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

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

“(D) establish a systematic method for information technology product development to improve long-term technology planning efforts; and

“(E) disseminate guidelines and metrics for evaluating and improving tsunami forecast models.

“(6) AVAILABLE RESOURCES.—The Administrator, through the National Weather Service, shall ensure that resources are available to fulfill the obligations of this Act. This includes ensuring supercomputing resources are available to run, as rapidly as possible, such computer models as are needed for purposes of the tsunami warning system operated under subsection (c).”

(e) TRANSFER OF TECHNOLOGY; MAINTENANCE AND UPGRADES.—Subsection (e) of section 804 (33 U.S.C. 3203(e)) is amended to read as follows:

“(e) TRANSFER OF TECHNOLOGY; MAINTENANCE AND UPGRADES.—In carrying out this section, the Administrator shall—

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

“(A) provisions for multipurpose detection platforms;

“(B) reliability and performance metrics; and

“(C) to the maximum extent practicable, requirements for the integration of equipment with other United States and global ocean and coastal observation systems, the global Earth observing system of systems, the global seismic networks, and the Advanced National Seismic System;

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

“(3) ensure that the Administration’s operational tsunami detection equipment is properly maintained.”

(f) FEDERAL COOPERATION.—Subsection (f) of section 804 (33 U.S.C. 3203(f)) is amended to read as follows:

“(f) FEDERAL COOPERATION.—When deploying and maintaining tsunami detection technologies under the program under this section, the Administrator shall—

“(1) identify which assets of other Federal agencies are necessary to support such program; and

“(2) work with each agency identified under paragraph

(1)—

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

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

(g) UNNECESSARY PROVISIONS.—Section 804 (33 U.S.C. 3203) is further amended—

(1) by striking subsection (g);

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

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

(h) CONGRESSIONAL NOTIFICATIONS.—Subsection (g) of section 804 (33 U.S.C. 3203(g)), as redesignated by subsection (g)(3), is amended—

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

(2) in the matter before subparagraph (A), as redesignated by paragraph (2), by striking “The Administrator” and inserting the following:

“(1) IN GENERAL.—The Administrator”;

(3) in paragraph (1), as redesignated by paragraph (3)—

(A) in subparagraph (A), as redesignated by paragraph

(2), by striking “and” at the end;

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

(C) by adding at the end the following:

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

and

(4) by adding at the end the following:

“(2) CONTENTS.—In a case in which notice is submitted under paragraph (1) within 30 days of a significant tsunami warning described in subparagraph (C) of such paragraph, such notice shall include, as appropriate, brief information and analysis of—

“(A) the accuracy of the tsunami model used;

“(B) the specific deep ocean or other monitoring equipment that detected the incident, as well as the deep ocean or other monitoring equipment that did not detect the incident due to malfunction or other reasons;

“(C) the effectiveness of the warning communication, including the dissemination of warnings with State, territory, local, and tribal partners in the affected area under the jurisdiction of the National Weather Service; and

“(D) such other findings as the Administrator considers appropriate.”.

**SEC. 505. MODIFICATION OF NATIONAL TSUNAMI HAZARD MITIGATION PROGRAM.**

(a) **IN GENERAL.**—Section 805(a) (33 U.S.C. 3204(a)) is amended to read as follows:

“(a) **PROGRAM REQUIRED.**—The Administrator, in coordination with the Administrator of the Federal Emergency Management Agency and the heads of such other agencies as the Administrator considers relevant, shall conduct a community-based tsunami hazard mitigation program to improve tsunami preparedness and resiliency of at-risk areas in the United States and the territories of the United States.”.

(b) **NATIONAL TSUNAMI HAZARD MITIGATION PROGRAM.**—Section 805 (33 U.S.C. 3204) is amended by striking subsections (c) and (d) and inserting the following:

“(c) **PROGRAM COMPONENTS.**—The Program conducted under subsection (a) shall include the following:

“(1) Technical and financial assistance to coastal States, territories, tribes, and local governments to develop and implement activities under this section.

“(2) Integration of tsunami preparedness and mitigation programs into ongoing State-based hazard warning, resilience planning, and risk management activities, including predisaster planning, emergency response, evacuation planning, disaster recovery, hazard mitigation, and community development and redevelopment planning programs in affected areas.

“(3) Coordination with other Federal preparedness and mitigation programs to leverage Federal investment, avoid duplication, and maximize effort.

“(4) Activities to promote the adoption of tsunami resilience, preparedness, warning, and mitigation measures by Federal, State, territorial, tribal, and local governments and nongovernmental entities, including educational and risk communication programs to discourage development in high-risk areas.

“(5) Activities to support the development of regional tsunami hazard and risk assessments. Such regional risk assessments may include the following:

“(A) The sources, sizes, and other relevant historical data of tsunami in the region, including paleotsunami data.

“(B) Inundation models and maps of critical infrastructure and socioeconomic vulnerability in areas subject to tsunami inundation.

“(C) Maps of evacuation areas and evacuation routes, including, when appropriate, traffic studies that evaluate the viability of evacuation routes.

“(D) Evaluations of the size of populations that will require evacuation, including populations with special evacuation needs.

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

“(F) Evaluation of at-risk ports and harbors.

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

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

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

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

“(7) Activities to support the development of community-based outreach and education programs to ensure community readiness and resilience, including the following:

“(A) The development, implementation, and assessment of technical training and public education programs, including education programs that address unique characteristics of distant and near-field tsunami.

“(B) The development of decision support tools.

“(C) The incorporation of social science research into community readiness and resilience efforts.

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

“(8) Dissemination of guidelines and standards for community planning, education, and training products, programs, and tools, including—

“(A) standards for—

“(i) mapping products;

“(ii) inundation models; and

“(iii) effective emergency exercises; and

“(B) recommended guidance for at-risk port and harbor tsunami warning, evacuation, and response procedures in coordination with the Coast Guard and the Federal Emergency Management Agency.

“(d) AUTHORIZED ACTIVITIES.—In addition to activities conducted under subsection (c), the program conducted under subsection (a) may include the following:

“(1) Multidisciplinary vulnerability assessment research, education, and training to help integrate risk management and resilience objectives with community development planning and policies.

“(2) Risk management training for local officials and community organizations to enhance understanding and preparedness.

“(3) In coordination with the Federal Emergency Management Agency, interagency, Federal, State, tribal, and territorial intergovernmental tsunami response exercise planning and implementation in high risk areas.

“(4) Development of practical applications for existing or emerging technologies, such as modeling, remote sensing, geospatial technology, engineering, and observing systems, including the integration of tsunami sensors into Federal and commercial submarine telecommunication cables if practicable.

“(5) Risk management, risk assessment, and resilience data and information services, including—

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

“(B) development and maintenance of new integrated data products to support risk management, risk assessment, and resilience programs.

“(6) Risk notification systems that coordinate with and build upon existing systems and actively engage decision-makers, State, local, tribal, and territorial governments and agencies, business communities, nongovernmental organizations, and the media.

“(e) **NO PREEMPTION WITH RESPECT TO DESIGNATION OF AT-RISK AREAS.**—The establishment of national standards for inundation models under this section shall not prevent States, territories, tribes, and local governments from designating additional areas as being at risk based on knowledge of local conditions.

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

(c) **REPORT ON ACCREDITATION OF TSUNAMIREADY PROGRAM.**—Not later than 180 days after the date of enactment of this Act, the Administrator of the National Oceanic and Atmospheric Administration shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a report on which authorities and activities would be needed to have the TsunamiReady program of the National Weather Service accredited by the Emergency Management Accreditation Program.

**SEC. 506. MODIFICATION OF TSUNAMI RESEARCH PROGRAM.**

Section 806 (33 U.S.C. 3205) is amended—

(1) in the matter before paragraph (1), by striking “The Administrator shall” and all that follows through “establish or maintain” and inserting the following:

“(a) **IN GENERAL.**—The Administrator shall, in consultation with such other Federal agencies, State, tribal, and territorial governments, and academic institutions as the Administrator considers appropriate, the coordinating committee under section 805(d), and the panel under section 808(a), support or maintain”;

(2) in subsection (a), as designated by paragraph (1), by striking “and assessment for tsunami tracking and numerical forecast modeling. Such research program shall—” and inserting the following: “assessment for tsunami tracking and numerical forecast modeling, and standards development.

“(b) RESPONSIBILITIES.—The research program supported or maintained under subsection (a) shall—”; and

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

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

“(1) consider other appropriate and cost effective solutions to mitigate the impact of tsunami, including the improvement of near-field and distant tsunami detection and forecasting capabilities, which may include use of a new generation of the Deep-ocean Assessment and Reporting of Tsunamis array, integration of tsunami sensors into commercial and Federal telecommunications cables, and other real-time tsunami monitoring systems and supercomputer capacity of the Administration to develop a rapid tsunami forecast for all United States coastlines.”;

(B) in paragraph (3)—

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

(ii) by striking “and” at the end;

(C) by redesignating paragraph (4) as paragraph (5);

(D) by inserting after paragraph (3) the following:

“(4) develop the technical basis for validation of tsunami maps, numerical tsunami models, digital elevation models, and forecasts; and”;

(E) in paragraph (5), as redesignated by subparagraph

(C), by striking “to the scientific community” and inserting “to the public and the scientific community”.

**SEC. 507. GLOBAL TSUNAMI WARNING AND MITIGATION NETWORK.**

Section 807 (33 U.S.C. 3206) is amended—

(1) by amending subsection (a) to read as follows:

“(a) SUPPORT FOR DEVELOPMENT OF AN INTERNATIONAL TSUNAMI WARNING SYSTEM.—The Administrator shall, in coordination with the Secretary of State and in consultation with such other agencies as the Administrator considers relevant, provide technical assistance, operational support, and training to the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific, and Cultural Organization, the World Meteorological Organization of the United Nations, and such other international entities as the Administrator considers appropriate, as part of the international efforts to develop a fully functional global tsunami forecast and warning system comprised of regional tsunami warning networks.”;

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

(3) in subsection (c)—

(A) in paragraph (1), by striking “establishing” and inserting “supporting”; and

(B) in paragraph (2)—

(i) by striking “establish” and inserting “support”; and

(ii) by striking “establishing” and inserting “supporting”.

**SEC. 508. TSUNAMI SCIENCE AND TECHNOLOGY ADVISORY PANEL.**

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

(1) by redesignating section 808 (33 U.S.C. 3207) as section 809; and

(2) by inserting after section 807 (33 U.S.C. 3206) the following:

**"SEC. 808. TSUNAMI SCIENCE AND TECHNOLOGY ADVISORY PANEL.**

**"(a) DESIGNATION.**—The Administrator shall designate an existing working group within the Science Advisory Board of the Administration to serve as the Tsunami Science and Technology Advisory Panel to provide advice to the Administrator on matters regarding tsunami science, technology, and regional preparedness.

**"(b) MEMBERSHIP.**—

**"(1) COMPOSITION.**—The Panel shall be composed of no fewer than 7 members selected by the Administrator from among individuals from academia or State agencies who have academic or practical expertise in physical sciences, social sciences, information technology, coastal resilience, emergency management, or such other disciplines as the Administrator considers appropriate.

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

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

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

**"(2)** submit to the Administrator and such others as the Administrator considers appropriate—

**"(A)** the findings of the working group with respect to the most recent review conducted under paragraph (1); and

**"(B)** such recommendations for legislative or administrative action as the working group considers appropriate to improve Federal tsunami research, detection, forecasting, warning, mitigation, resiliency, and preparation.

**"(d) REPORTS TO CONGRESS.**—Not less frequently than once every 4 years, the Administrator shall submit to the Committee on Commerce, Science, and Transportation of the Senate, and the Committee on Science, Space, and Technology of the House of Representatives a report on the findings and recommendations received by the Administrator under subsection (c)(2)."

**(b) TABLE OF CONTENTS AMENDMENT.**—The table of contents in section 1(b) of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 (Public Law 109-479; 120 Stat. 3575) is amended by striking the item relating to section 808 and inserting the following:

"Sec. 808. Tsunami Science and Technology Advisory Panel.

"Sec. 809. Authorization of appropriations."

**SEC. 509. REPORTS.**

**(a) REPORT ON IMPLEMENTATION OF TSUNAMI WARNING AND EDUCATION ACT.**—

**(1) IN GENERAL.**—Not later than 1 year after the date of the enactment of this Act, the Administrator of the National Oceanic and Atmospheric Administration shall submit to Congress a report on the implementation of the Tsunami Warning and Education Act enacted as title VIII of the Magnuson-

Stevens Fishery Conservation and Management Reauthorization Act of 2006 (Public Law 109-479; 33 U.S.C. 3201 et seq.), as amended by this Act.

(2) ELEMENTS.—The report required by paragraph (1) shall include the following:

(A) A detailed description of the progress made in implementing sections 804(d)(6), 805(b), and 806(b)(4) of the Tsunami Warning and Education Act the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 (Public Law 109-479; 33 U.S.C. 3201 et seq.).

(B) A description of the ways that tsunami warnings and warning products issued by the Tsunami Forecasting and Warning Program established under section 804 of the Tsunami Warning and Education Act (33 U.S.C. 3203), as amended by this Act, may be standardized and streamlined with warnings and warning products for hurricanes, coastal storms, and other coastal flooding events.

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

(1) IN GENERAL.—Not later than 1 year after the date of the enactment of this Act, the Administrator and the Secretary of Homeland Security shall jointly, in coordination with the Director of the United States Geological Survey, Administrator of the Federal Emergency Management Agency, the Chief of the National Guard Bureau, and the heads of such other Federal agencies as the Administrator considers appropriate, submit to the appropriate committees of Congress a report on the national efforts in effect on the day before the date of the enactment of this Act that support and facilitate rapid emergency response following a domestic near-shore tsunami event to better understand domestic effects of earthquake derived tsunami on people, infrastructure, and communities in the United States.

(2) ELEMENTS.—The report required by paragraph (1) shall include the following:

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

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

(C) Identification and evaluation of Federal, State, local, tribal, territorial, and military first responder and search and rescue operation centers, bases, and other facilities as well as other critical response assets and infrastructure, including search and rescue aircraft, located within near-shore and distant tsunami inundation areas on the day before the date of the enactment of this Act.

(D) An evaluation of near-shore tsunami response plans in areas described in subparagraph (C) in effect on the day before the date of the enactment of this Act, and how those response plans would be affected by the loss of search and rescue and first responder infrastructure described in such subparagraph.

(E) A description of redevelopment plans and reports in effect on the day before the date of the enactment of this Act for communities in areas that are at high-risk for near-shore tsunami, as well identification of States or communities that do not have redevelopment plans.

(F) Recommendations to enhance near-shore tsunami preparedness and response plans, including recommended responder exercises, predisaster planning, and mitigation needs.

(G) Such other data and analysis information as the Administrator and the Secretary of Homeland Security consider appropriate.

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

(A) the Committee on Commerce, Science, and Transportation and the Committee on Homeland Security and Governmental Affairs of the Senate; and

(B) the Committee on Science, Space, and Technology, the Committee on Homeland Security, and the Committee on Transportation and Infrastructure of the House of Representatives.

**SEC. 510. AUTHORIZATION OF APPROPRIATIONS.**

Section 809 of the Act, as redesignated by section 08(a)(1) of this Act, is amended—

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

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

(3) by adding at the end the following:

“(6) \$25,800,000 for each of fiscal years 2016 through 2021, of which—

“(A) not less than 27 percent of the amount appropriated for each fiscal year shall be for activities conducted at the State level under the tsunami hazard mitigation program under section 805; and

“(B) not less than 8 percent of the amount appropriated shall be for the tsunami research program under section 806.”

**SEC. 511. OUTREACH RESPONSIBILITIES.**

The Administrator of the National Oceanic and Atmospheric Administration, in coordination with State and local emergency managers, shall develop and carry out formal outreach activities to improve tsunami education and awareness and foster the development of resilient communities. Outreach activities may include—

(1) the development of outreach plans to ensure the close integration of tsunami warning centers supported or maintained under section 804(d) of the Tsunami Warning and Education Act (33 U.S.C. 3203(d)), as amended by this Act, with local Weather Forecast Offices of the National Weather Service and emergency managers;

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

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

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**SEC. 512. REPEAL OF DUPLICATE PROVISIONS OF LAW.**

(a) **REPEAL.**—The Tsunami Warning and Education Act enacted by Public Law 109–424 (120 Stat. 2902) is repealed.

(b) **CONSTRUCTION.**—Nothing in this section may be construed to repeal, or affect in any way, the Tsunami Warning and Education Act enacted as title VIII of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 (Public Law 109–479; 33 U.S.C. 3201 et seq.).

*Speaker of the House of Representatives.*

*Vice President of the United States and  
President of the Senate.*