

119TH CONGRESS
2D SESSION

S. 3881

To reauthorize the Tsunami Warning and Education Act, and for other purposes.

IN THE SENATE OF THE UNITED STATES

FEBRUARY 12, 2026

Ms. CANTWELL (for herself, Ms. MURKOWSKI, and Mr. SULLIVAN) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

A BILL

To reauthorize the Tsunami Warning and Education Act,
and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Tsunami Warning, Re-
5 search, and Education Act of 2026”.

6 **SEC. 2. REAUTHORIZATION OF THE TSUNAMI WARNING**
7 **AND EDUCATION ACT.**

8 (a) DEFINITIONS.—Section 802 of the Tsunami
9 Warning and Education Act (33 U.S.C. 3201) is amended
10 by adding at the end the following:

1 “(3) The term ‘Indian Tribe’ has the meaning
2 given the term in section 4 of the Indian Self-Deter-
3 mination and Education Assistance Act (25 U.S.C.
4 5304).

5 “(4) The term ‘Native Hawaiian organization’
6 has the meaning given the term in section 6207 of
7 the Elementary and Secondary Education Act of
8 1965 (20 U.S.C. 7517), except that the term in-
9 cludes the Department of Hawaiian Home Lands
10 and the Office of Hawaiian Affairs.

11 “(5) The term ‘Tribal organization’ has the
12 meaning given the term in section 4 of the Indian
13 Self-Determination and Education Assistance Act.”.

14 (b) PURPOSES.—Section 803 of the Tsunami Warn-
15 ing and Education Act (33 U.S.C. 3202) is amended—

16 (1) in paragraph (2), by inserting “timeliness
17 and” before “accuracy”;

18 (2) in paragraph (7), by striking “and” after
19 the semicolon;

20 (3) in paragraph (8)—

21 (A) by inserting “, and coordination with
22 Indian Tribes, Tribal organizations, and Native
23 Hawaiian organizations,” after “coordination”;
24 and

1 (B) by striking the period and inserting “;
2 and”; and

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

4 “(9) to ensure data and metadata are managed,
5 archived, and made fully available for operations, re-
6 search, education, and mitigation activities.”.

7 (c) TSUNAMI FORECASTING AND WARNING PRO-
8 GRAM.—

9 (1) IN GENERAL.—Section 804 of the Tsunami
10 Warning and Education Act (33 U.S.C. 3203) is
11 amended—

12 (A) in subsection (b)—

13 (i) in paragraph (4), by inserting “,
14 using scientific and industry best prac-
15 tices,” after “operational condition”;

16 (ii) in paragraph (5)—

17 (I) by redesignating subpara-
18 graphs (D) through (F) and subpara-
19 graph (G) as subparagraphs (E)
20 through (G) and subparagraph (I), re-
21 spectively;

22 (II) by inserting after subpara-
23 graph (C) the following:

24 “(D) the global navigation satellite system
25 network;”;

1 (III) in subparagraph (G), as so
 2 redesignated, by striking “; and” and
 3 inserting a semicolon; and

4 (IV) by inserting after subpara-
 5 graph (G), as so redesignated, the fol-
 6 lowing:

7 “(H) tidal gauges, water level gauges (in-
 8 cluding the National Water Level Observation
 9 Network and the National Water Monitoring
 10 Network), and buoys; and”;

11 (iii) in paragraph (6), by inserting be-
 12 fore the semicolon “and support data ac-
 13 cess and archiving pursuant to the Foun-
 14 dations for Evidence-Based Policymaking
 15 Act of 2018 (Public Law 115–435) and
 16 chapter 31 of title 44, United States
 17 Code”;

18 (iv) in paragraph (7)—

19 (I) in the matter preceding sub-
 20 paragraph (A), by striking “and the
 21 National Science Foundation” and all
 22 that follows through “shall—” and in-
 23 serting “the National Science Foun-
 24 dation, and the National Aeronautics
 25 and Space Administration under

1 which the Director of the United
2 States Geological Survey, the Director
3 of the National Science Foundation,
4 and the Administrator of the National
5 Aeronautics and Space Administration
6 shall—”;

7 (II) in subparagraph (A), by
8 striking “; and” and inserting a semi-
9 colon;

10 (III) by amending subparagraph
11 (B) to read as follows:

12 “(B) support, including with continued fi-
13 nancial assistance, operators of seismic stations
14 installed before the date of enactment of the
15 Tsunami Warning, Research, and Education
16 Act of 2026 that supplement coverage areas of
17 sparse instrumentation, with a focus on the
18 most seismically active States and on stations
19 with multi-State benefits;”; and

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

22 “(C) provide reliable and real-time support
23 for the global navigation satellite system net-
24 work data streams from the networks main-
25 tained by the National Science Foundation, the

United States Geological Survey, and the National Aeronautics and Space Administration and supplement instrumentation coverage for rapid earthquake assessment; and

“(D) assess data and information of the National Science Foundation, the United States Geological Survey, and the National Aeronautics and Space Administration for potential utilization in the warning system of the Administration, taking into consideration advancements in research and technology;”;

(v) by redesignating paragraphs (8) through (10) as paragraphs (9) through (11), respectively;

(vi) by inserting after paragraph (7) the following:

“(8) include a cooperative effort among the Administration and the United States Geological Survey under which the Director of the United States Geological Survey shall incorporate tsunami notifications and warnings in the United States Geological Survey Earthquake Early Warning System;”;

(vii) in paragraph (9), as so redesignated, by striking “graphical warning products, to at-risk States, territories, and

tsunami communities” and inserting
 “graphical warning products and decision
 support aids, to at-risk States, territories,
 Indian Tribes, Tribal organizations, Native
 Hawaiian organizations, and tsunami-
 prone communities”;

(viii) in paragraph (10), as so redesignated, by striking “and” after the semicolon;

(ix) in paragraph (11), as so redesignated, by striking the period and inserting “; and”; and

(x) by adding at the end the following:

“(12) initiate updates to maps, models, and other geographic products to support Federal agencies, State and local governments, Indian Tribes, Tribal organizations, and Native Hawaiian organizations with tsunami mitigation and recovery activities.”;

(B) in subsection (c)—

(i) by striking paragraph (1) and redesignating paragraphs (2) and (3) as paragraphs (1) and (2), respectively; and

(ii) in paragraph (1), as so redesignated—

1 (I) by inserting “timely and” be-
 2 fore “adequate warnings”;

3 (II) by striking “and inundation
 4 models” and inserting “, inundation
 5 models, and alert levels”;

6 (III) by striking “Atlantic Ocean,
 7 including” and inserting “Pacific,
 8 Arctic, and Atlantic Oceans, includ-
 9 ing”; and

10 (IV) by striking “that are deter-
 11 mined—” and all that follows through
 12 “; and” at the end of subparagraph
 13 (B) and inserting “that are deter-
 14 mined to pose significant risks of tsu-
 15 nami for the United States (including
 16 territories of the United States) along
 17 the coastal areas of the Pacific, Arc-
 18 tic, and Atlantic Oceans; and”;

19 (C) in subsection (d)—

20 (i) in paragraph (1)—

21 (I) in the matter preceding sub-
 22 paragraph (A), by striking “sub-
 23 section (c).” and inserting “subsection
 24 (c), which centers shall be responsible
 25 for geographic areas of the United

1 States (including territories of the
 2 United States), and international enti-
 3 ties as the Administrator determines
 4 appropriate.”;

5 (II) in subparagraph (A), by
 6 striking “, which is primarily respon-
 7 sible for Alaska and the continental
 8 United States”; and

9 (III) in subparagraph (B), by
 10 striking “, which is primarily respon-
 11 sible for Hawaii, the Caribbean, and
 12 other areas of the Pacific not covered
 13 by the National Center”;

14 (ii) in paragraph (2)—

15 (I) in subparagraph (A), by in-
 16 serting “current, water level” after
 17 “sea level,”;

18 (II) in subparagraph (B), by
 19 striking “and volcanic eruptions” and
 20 inserting “weather events, volcanic
 21 eruptions, and other sources”;

22 (III) in subparagraph (C), by
 23 striking “buoy data and tidal” and in-
 24 serting “and coastal”;

1 (IV) in subparagraph (F), by
 2 striking “Federal, State, tribal, and
 3 local government officials” and insert-
 4 ing “Federal, State, and local govern-
 5 ment officials, Indian Tribes, Tribal
 6 organizations, Native Hawaiian orga-
 7 nizations,”;

8 (V) by redesignating subpara-
 9 graphs (G) and (H) and subpara-
 10 graphs (I) and (J) as subparagraphs
 11 (H) and (I) and subparagraphs (K)
 12 and (L), respectively;

13 (VI) by inserting after subpara-
 14 graph (F) the following:

15 “(G) Providing a Tsunami Warning Coor-
 16 dinator at each center supported or maintained
 17 under paragraph (1) to coordinate with Fed-
 18 eral, State, and local partners, Indian Tribes,
 19 Tribal organizations, Native Hawaiian organi-
 20 zations, and emergency managers and to facili-
 21 tate the use of products and services provided
 22 by each such center.”;

23 (VII) in subparagraph (I), as so
 24 redesignated, by inserting “monitoring
 25 needs,” after “response,”; and

1 (VIII) by inserting after subpara-
2 graph (I), as so redesignated, the fol-
3 lowing:

4 “(J) In coordination with State and local
5 partners, Indian Tribes, Tribal organizations,
6 and Native Hawaiian organizations, updating,
7 as the Administrator considers appropriate,
8 forecast points, breakpoints, and special proce-
9 dure areas.”;

10 (iii) by amending paragraph (3) to
11 read as follows:

12 “(3) FAIL-SAFE WARNING CAPABILITY.—

13 “(A) IN GENERAL.—The Administrator
14 shall support and maintain fail-safe warning ca-
15 pability for the tsunami warning centers sup-
16 ported or maintained under paragraph (1).

17 “(B) DRILLS.—

18 “(i) SERVICE BACK-UP DRILLS.—Not
19 less than biannually, such centers shall
20 conduct a service back-up drill to ensure
21 they are able to perform back-up duties for
22 each other.

23 “(ii) ANNUAL DRILLS.—Not less than
24 annually, such centers shall conduct a tsu-
25 nami warning drill with Federal, State,

1 and local emergency managers, and emer-
2 gency managers of Indian Tribes, Tribal
3 organizations, and Native Hawaiian orga-
4 nizations.”;

5 (iv) in paragraph (4)—

6 (I) in the matter preceding sub-
7 paragraph (A)—

8 (aa) by inserting “weather”
9 before “forecast offices” each
10 place it appears;

11 (bb) by inserting “national
12 and regional” before “program
13 offices”; and

14 (cc) by striking “805(d)”
15 and inserting “805(b)”;

16 (II) in subparagraph (B), by
17 striking “and” after the semicolon;

18 (III) in subparagraph (C), by
19 striking the period and inserting “;
20 and”; and

21 (IV) by adding at the end the fol-
22 lowing:

23 “(D) conduct education and outreach ef-
24 forts to help prepare coastal communities for
25 tsunami hazards.”;

1 (v) in paragraph (5)—

2 (I) in the paragraph heading, by
3 striking “UNIFORM” and inserting
4 “STANDARDIZED”;

5 (II) in subparagraph (B), by re-
6 designating clauses (i) through (iii) as
7 subclauses (I) through (III), respec-
8 tively, and adjusting the margins ac-
9 cordingly;

10 (III) in subparagraph (C), by re-
11 designating clauses (i) and (ii) as sub-
12 clauses (I) and (II), respectively, and
13 adjusting the margins accordingly;

14 (IV) by redesignating subpara-
15 graphs (A) through (E) as clauses (i)
16 through (v), respectively, and adjust-
17 ing the margins accordingly;

18 (V) by striking “The Adminis-
19 trator” and inserting the following:

20 “(A) IN GENERAL.—The Administrator”;

21 (VI) in clause (i), as so redesign-
22 ated, by striking “uniform” and in-
23 serting “standardized”;

24 (VII) in clause (ii), as so redesign-
25 ated—

1 (aa) in subclause (II), as so
 2 redesignated, by striking “; and”
 3 and inserting a semicolon;

4 (bb) in subclause (III), as so
 5 redesignated, by striking the
 6 semicolon and inserting “; and”;
 7 and

8 (cc) by adding at the end
 9 the following:

10 “(VI) are consistent across all
 11 tsunami warning centers supported or
 12 maintained under paragraph (1);”;

13 (VIII) in clause (iii)(II), as so re-
 14 designated, by striking “uniform man-
 15 ner across such warning system” and
 16 inserting “standardized manner
 17 across such warning system and
 18 across the tsunami warning centers
 19 supported or maintained under para-
 20 graph (1)”; and

21 (IX) by adding at the end the
 22 following:

23 “(B) REGIONAL DIFFERENCES.—Notwith-
 24 standing subparagraph (A), the Administrator
 25 shall allow for regional differences with respect

1 to the communication methods and decision
 2 support tools used by the centers supported or
 3 maintained under paragraph (1) in order to
 4 meet the unique needs of the community served
 5 by such centers.”;

6 (vi) in paragraph (6), in the second
 7 sentence, by striking “ensuring supercom-
 8 puting” and all that follows through the
 9 period at the end and inserting “ensur-
 10 ing—

11 “(A) supercomputing resources are avail-
 12 able to run, as rapidly as possible, such com-
 13 puter models as are needed for purposes of the
 14 tsunami warning system operated under sub-
 15 section (c); and

16 “(B) adequate staff capacity is main-
 17 tained.”; and

18 (vii) by adding at the end the fol-
 19 lowing:

20 “(7) REPORTING.—Not later than 180 days
 21 after the date of enactment of this paragraph and
 22 annually thereafter, the Administrator shall provide
 23 to the Committee on Commerce, Science, and Trans-
 24 portation of the Senate and the Committee on
 25 Science, Space, and Technology of the House of

1 Representatives a report and briefing on the
2 progress and expected timelines of the following:

3 “(A) Standardizing procedures, processes,
4 products, and protocols under paragraph (5),
5 including tsunami assessments, forecast guid-
6 ance, and related products.

7 “(B) Migrating the message generation
8 systems of the centers supported or maintained
9 under paragraph (1) to the Advanced Weather
10 Interactive Processing System, or a successor
11 system.

12 “(C) Compliance with paragraph (1), in-
13 cluding any structural reorganization and up-
14 dated organizational charts as may be necessary
15 following the amendments to such paragraph by
16 the Tsunami Warning, Research, and Edu-
17 cation Act of 2026.

18 “(D) Hiring for such centers of Tsunami
19 Warning Coordinators under paragraph (2)(G)
20 and other additional employees.

21 “(E) Such centers conducting the drills re-
22 quired clauses (i) and (ii) of paragraph
23 (3)(B).”;

24 (D) in subsection (e)—

25 (i) in paragraph (1)—

1 (I) in the matter preceding sub-
 2 paragraph (A), by inserting “detect,
 3 measure, and” after “used to”; and

4 (II) in subparagraph (C), by
 5 striking “and the Advanced National
 6 Seismic System” and inserting “the
 7 Advanced National Seismic System,
 8 and the global navigation satellite sys-
 9 tem”; and

10 (ii) in paragraph (3), by inserting “in
 11 accordance with scientific and industry
 12 best practices” before the period; and

13 (E) in subsection (g)(2)—

14 (i) in subparagraph (A), by striking
 15 “accuracy of the tsunami model used” and
 16 inserting “accuracy and timeliness of the
 17 tsunami model and forecast used to issue
 18 the warning”; and

19 (ii) in subparagraph (C), by striking
 20 “local, and tribal partners” and inserting
 21 “and local partners, Indian Tribes, Tribal
 22 organizations, and Native Hawaiian orga-
 23 nizations”.

24 (2) TSUNAMI WARNING ALERT LEVEL EVALUA-
 25 TION.—

1 (A) IN GENERAL.—Not later than 60 days
2 after the date of enactment of this Act, the Ad-
3 ministrator, in collaboration with social sci-
4 entists, Federal, State, and local emergency
5 personnel, Indian Tribes, Tribal organizations,
6 Native Hawaiian organizations, and high-risk
7 communities, shall initiate a study to—

8 (i) evaluate terminology, timing, and
9 effectiveness with respect to tsunami alert
10 levels of the tsunami warning system under
11 section 804(c) of the Tsunami Warning
12 and Education Act (33 U.S.C. 3203(c));
13 and

14 (ii) determine if tsunami alerts of
15 such system produce the desired response
16 and understanding from possible tsunami-
17 prone communities.

18 (B) UPDATES AND REPORT TO CON-
19 GRESS.—Not later than 1 year after the date of
20 enactment of this Act, the Administrator
21 shall—

22 (i) update the alert level system of the
23 tsunami warning system under section
24 804(c) of the Tsunami Warning and Edu-
25 cation Act for increased effectiveness; and

1 (ii) provide to the Committee on Com-
2 merce, Science, and Transportation of the
3 Senate and the Committee on Science,
4 Space, and Technology of the House of
5 Representatives a briefing on the findings
6 of the study under subparagraph (A).

7 (3) REVIEW OF NOAA WEATHER RADIO COV-
8 ERAGE.—The Administrator shall—

9 (A) not later than 60 days after the date
10 of enactment of this Act, initiate a review of the
11 extent to which coverage by the National Oce-
12 anic and Atmospheric Administration Weather
13 Radio All Hazards Program extends to areas at
14 risk of tsunami; and

15 (B) not later than 1 year after such date
16 of enactment—

17 (i) develop recommendations for in-
18 creasing coverage by such Program in
19 areas at risk of tsunami;

20 (ii) make the results of the review
21 under subparagraph (A) available to the
22 public; and

23 (iii) provide to the Committee on
24 Commerce, Science, and Transportation of
25 the Senate and the Committee on Science,

1 Space, and Technology of the House of
2 Representatives a briefing on the findings
3 of the review required under subparagraph
4 (A) and the recommendations required
5 under clause (i).

6 (4) USE OF IPAWS TO DELIVER TSUNAMI
7 ALERTS.—

8 (A) IN GENERAL.—The Administrator, in
9 consultation with the Administrator of the Fed-
10 eral Emergency Management Agency and the
11 Federal Communications Commission, shall
12 clarify and document the responsibilities and
13 decision-making processes of the Administra-
14 tion, the Federal Emergency Management
15 Agency, and the Federal Communications Com-
16 mission with respect to the use of the Inte-
17 grated Public Alert and Warning System to de-
18 liver tsunami alerts to the Emergency Alert
19 System and the Wireless Emergency Alerts sys-
20 tem.

21 (B) MEMORANDUM OF UNDERSTANDING.—
22 Not later than 180 days after the date of enact-
23 ment of this Act, the Administrator shall—

24 (i) update its memorandum of under-
25 standing with the Federal Emergency

1 Management Agency and the Federal
2 Communications Commission to reflect the
3 responsibilities and processes clarified
4 under subparagraph (A); and

5 (ii) provide the Committee on Com-
6 merce, Science, and Transportation of the
7 Senate and the Committee on Science,
8 Space, and Technology of the House of
9 Representatives with a copy of such up-
10 dated memorandum of understanding.

11 (5) GAO TSUNAMI COORDINATION STUDY.—

12 (A) IN GENERAL.—Not later than 90 days
13 after the date of enactment of this Act, the
14 Comptroller General of the United States shall
15 initiate a comprehensive study to assess the co-
16 ordination efforts between the tsunami pro-
17 grams under the Tsunami Warning and Edu-
18 cation Act (33 U.S.C. 3201 et seq.) and the rel-
19 evant Federal agencies, State and local govern-
20 ments, Indian Tribes, Tribal organizations, and
21 Native Hawaiian organizations that could be af-
22 fected by tsunamigenic events regarding tsu-
23 nami forecasting and warning systems. Such
24 study shall identify—

1 (i) the effectiveness of the internal
2 collaboration, information sharing, and
3 communication protocols between—

4 (I) the tsunami forecasting and
5 warning program under section 804 of
6 such Act (33 U.S.C. 3203);

7 (II) the tsunami hazard mitiga-
8 tion program under section 805 of
9 such Act (33 U.S.C. 3204);

10 (III) the tsunami research pro-
11 gram under section 806 of such Act
12 (33 U.S.C. 3025);

13 (IV) the global tsunami warning
14 and mitigation network under section
15 807 of such Act (33 U.S.C. 3206);

16 (V) the Tsunami Science and
17 Technology Advisory Panel under sec-
18 tion 808 of such Act (33 U.S.C.
19 3206a); and

20 (VI) any other programs of the
21 Administration relevant to the func-
22 tions of the tsunami programs under
23 the Tsunami Warning and Education
24 Act;

1 (ii) the effectiveness of the collabora-
2 tion, information sharing, and communica-
3 tion protocols between the tsunami pro-
4 grams described in clause (i) and the
5 United States Geological Survey, the Fed-
6 eral Emergency Management Agency, the
7 Coast Guard, the National Science Foun-
8 dation, the National Aeronautics and
9 Space Administration, and any other Fed-
10 eral agencies, institutions of higher edu-
11 cation, including Tribal Colleges or Univer-
12 sities, and other research institutions, de-
13 termined relevant by the Comptroller Gen-
14 eral to the functions of such tsunami pro-
15 grams;

16 (iii) the effectiveness of the collabora-
17 tion, information sharing, and communica-
18 tion protocols between such tsunami pro-
19 grams and the State and local govern-
20 ments, Indian Tribes, Tribal organizations,
21 and Native Hawaiian organizations in tsu-
22 nami-prone areas, with a focus on outreach
23 activities, warning dissemination, and evac-
24 uation guidance; and

1 (iv) recommendations for enhancing
2 coordination efforts to strengthen the tsu-
3 nami warning capabilities of the United
4 States.

5 (B) COMPLETION.—Not later than 15
6 months after the date of enactment of this Act,
7 the Comptroller General shall complete the
8 study under this paragraph.

9 (C) REPORT TO CONGRESS; PUBLIC AVAIL-
10 ABILITY.—Not later than 180 days after com-
11 pletion of the study under this paragraph, the
12 Comptroller General shall—

13 (i) submit a detailed report of the
14 findings of the study to the Committee on
15 Commerce, Science, and Transportation of
16 the Senate and the Committee on Science,
17 Space, and Technology of the House of
18 Representatives; and

19 (ii) make such findings publicly avail-
20 able.

21 (D) RECOMMENDATIONS.—Not later than
22 1 year after completion of the study under this
23 paragraph, the Administrator shall submit to
24 the Committee on Commerce, Science, and
25 Transportation of the Senate and the Com-

mittee on Science, Space, and Technology of
the House of Representatives a report that out-
lines for each recommendation in such study
under subparagraph (A)(iv)—

(i) a description of the actions taken,
or to be taken, to implement such rec-
ommendation; or

(ii) an explanation for why the Ad-
ministrator considers the implementation
of such recommendation as infeasible or
inadvisable.

(d) NATIONAL TSUNAMI HAZARD MITIGATION PRO-
GRAM.—Section 805 of the Tsunami Warning and Edu-
cation Act (33 U.S.C. 3204) is amended—

(1) in subsection (b)—

(A) in the matter preceding paragraph

(1)—

(i) by inserting “and maintain” after
“establish” each place it appears; and

(ii) by striking “Federal, State, local,
and tribal government officials” and in-
serting “Federal, State, local, and Tribal
government officials and representatives of
Native Hawaiian organizations”; and

1 (B) in paragraph (3), by inserting before
 2 the semicolon “, including vertical evacuation
 3 structures, sirens, and other potentially life-sav-
 4 ing measures to ensure that communities des-
 5 ignated as TsunamiReady have sufficient tsu-
 6 nami response options”;

7 (2) in subsection (c)—

8 (A) in paragraph (1), by striking “tribes,”
 9 and inserting “Indian Tribes, Tribal organiza-
 10 tions, and Native Hawaiian organizations,”;

11 (B) in paragraph (4), by striking “tribal,
 12 and local governments” and inserting “and
 13 local governments, Indian Tribes, Tribal organi-
 14 zations, Native Hawaiian organizations,”;

15 (C) in paragraph (5)—

16 (i) in subparagraph (A), by inserting
 17 “for seismic and non-seismic sources, in-
 18 cluding subduction zones, crustal faults,
 19 landslides, meteotsunamis, and volcanic ac-
 20 tivity” before the period;

21 (ii) by redesignating subparagraph
 22 (B) and subparagraphs (C) through (G) as
 23 subparagraph (C) and subparagraphs (E)
 24 through (I), respectively;

1 (iii) by inserting after subparagraph

2 (A) the following:

3 “(B) Coastal digital elevation models to
4 support the development of inundation maps.”;

5 (iv) by inserting after subparagraph

6 (C), as so redesignated, the following:

7 “(D) Probabilistic tsunami hazard analysis
8 maps.”; and

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

10 “(J) Evaluation of the variation of inunda-
11 tion impact resulting from tsunami-driven sedi-
12 ment transport.

13 “(K) Evaluation of tsunami debris impact
14 on critical infrastructure (as defined in sub-
15 section (e) of the Critical Infrastructures Pro-
16 tection Act of 2001 (42 U.S.C. 5195c(e))) and
17 lifelines.

18 “(L) High-resolution and high-quality dig-
19 ital elevation models needed for at-risk water-
20 ways, ports, and harbors, particularly for re-
21 gions with outdated or low-quality data, not
22 covered by existing inundation maps, or identi-
23 fied as a priority by the Administrator.”;

24 (D) in paragraph (7)—

1 (i) in subparagraph (C), by inserting
 2 “and behavioral” after “social”; and

3 (ii) by adding at the end the fol-
 4 lowing:

5 “(E) The development and continued
 6 maintenance of a user-friendly and up-to-date
 7 repository of inundation and evacuation maps
 8 for States, local governments, Indian Tribes,
 9 Tribal organizations, and Native Hawaiian or-
 10 ganizations on the website of the program con-
 11 ducted under subsection (a).

12 “(F) The development of regularly updated
 13 standardized evacuation mapping guidelines
 14 using social and behavioral science and current
 15 best practices.”; and

16 (E) in paragraph (8)(A)—

17 (i) by redesignating clauses (ii) and
 18 (iii) as clauses (iii) and (iv), respectively;
 19 and

20 (ii) by inserting after clause (i) the
 21 following:

22 “(ii) tsunami source parameters;”;

23 (3) in subsection (d)—

24 (A) in paragraph (3), by striking “tribal”
 25 and inserting “Tribal”; and

1 (B) in paragraph (6), by striking “tribal,
 2 and territorial governments and agencies,” and
 3 inserting “and territorial governments and
 4 agencies, Indian Tribes, Tribal organizations,
 5 Native Hawaiian organizations,”; and

6 (4) in subsection (e), by striking “tribes,” and
 7 inserting “Indian Tribes, Tribal organizations, Na-
 8 tive Hawaiian organizations,”.

9 (e) TSUNAMI RESEARCH PROGRAM.—Section 806 of
 10 the Tsunami Warning and Education Act (33 U.S.C.
 11 3205) is amended—

12 (1) in subsection (a)—

13 (A) by striking “State, tribal, and terri-
 14 torial governments, and academic institutions”
 15 and inserting “State and territorial govern-
 16 ments, Indian Tribes, Tribal organizations, Na-
 17 tive Hawaiian organizations, and academic in-
 18 stitutions (including Tribal Colleges or Univer-
 19 sities)”;

20 (B) by striking “section 805(d)” and in-
 21 serting “section 805(b)”;

22 (C) by inserting “and management” after
 23 “data collection”;

24 (2) in subsection (b)—

1 (A) in paragraph (1), by striking “, which
 2 may include” and inserting “for tsunamis with
 3 seismic and non-seismic sources, which may in-
 4 clude deployment and”;

5 (B) in paragraph (3), by striking “social
 6 science research” and inserting “social and be-
 7 havioral science research, including data collec-
 8 tion,”;

9 (C) in paragraph (4), by striking “and”
 10 after the semicolon;

11 (D) by redesignating paragraph (5) as
 12 paragraph (7);

13 (E) by inserting after paragraph (4) the
 14 following:

15 “(5) develop and maintain a data portal for ad-
 16 vancing research and model development;

17 “(6) develop decision support tools; and”;

18 (F) in paragraph (7), as so redesignated,
 19 by inserting before the period “consistent with
 20 law and policy”; and

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

22 “(c) RESEARCH AND DEVELOPMENT PLAN.—Not
 23 later than 12 months after the date of the enactment of
 24 this subsection and not less frequently than every 36
 25 months thereafter, the Administrator, in consultation with

1 the Interagency Council for Advancing Meteorological
2 Services, shall develop a research plan to improve tsunami
3 detection and forecasting capabilities that—

4 “(1) identifies and prioritizes research and de-
5 velopment priorities to satisfy section 804;

6 “(2) identifies key research needs for better de-
7 tecting and monitoring tsunamis that may occur in
8 open ocean and along the coastlines of the United
9 States and its territories, improving forecasting of
10 tsunamis that are not seismically driven, and other
11 opportunities determined appropriate by the Admin-
12 istrator, in consultation with the Interagency Coun-
13 cil for Advancing Meteorological Services;

14 “(3) develops plans for transitioning research to
15 operations; and

16 “(4) identifies collaboration opportunities that
17 may further and align tsunami research, warnings,
18 and operations between the centers supported or
19 maintained under section 804(d), the tsunami haz-
20 ard mitigation program under section 805, the Na-
21 tional Oceanic and Atmospheric Administration Cen-
22 ter for Tsunami Research, the National Science
23 Foundation, the United States Geological Survey,
24 the Federal Emergency Management Agency, State
25 and local governments, Indian Tribes, Tribal organi-

1 zations, Native Hawaiian organizations, institutions
 2 of higher education, private entities, stakeholders,
 3 and others determined appropriate by the Adminis-
 4 trator, in consultation with the Interagency Council
 5 for Advancing Meteorological Services.”.

6 (f) GLOBAL TSUNAMI WARNING AND MITIGATION
 7 NETWORK.—Section 807(d) of the Tsunami Warning and
 8 Education Act (33 U.S.C. 3206(d)) is amended by insert-
 9 ing “and management” after “data sharing”.

10 (g) TSUNAMI SCIENCE AND TECHNOLOGY ADVISORY
 11 PANEL.—Section 808(b)(1) of the Tsunami Warning and
 12 Education Act (33 U.S.C. 3206a(b)(1)) is amended by in-
 13 serting “and behavioral” after “social”.

14 (h) ANNUAL REPORTS; GOVERNMENT-TO-GOVERN-
 15 MENT CONSULTATION WITH INDIAN TRIBES.—

16 (1) IN GENERAL.—The Tsunami Warning and
 17 Education Act (33 U.S.C. 3201 et seq.) is amend-
 18 ed—

19 (A) by redesignating section 809 as section
 20 811; and

21 (B) by inserting after section 808 the fol-
 22 lowing:

23 **“SEC. 809. ANNUAL REPORTS.**

24 “Not later than September 30 of each fiscal year, the
 25 Administrator shall provide the Committee on Commerce,

1 Science, and Transportation of the Senate, the Committee
 2 on Appropriations of the Senate, the Committee on
 3 Science, Space, and Technology of the House of Rep-
 4 resentatives, and the Committee on Appropriations of the
 5 House of Representatives a report with an accounting of
 6 funds spent in such fiscal year for the programs author-
 7 ized under this title, that includes—

8 “(1) the amount of funds allocated for the tsu-
 9 nami hazard mitigation program under section 805;
 10 and

11 “(2) the amount of funds allocated for the tsu-
 12 nami research program under section 806.

13 **“SEC. 810. GOVERNMENT-TO-GOVERNMENT CONSULTATION**
 14 **WITH INDIAN TRIBES.**

15 “The Administrator shall conduct government-to-gov-
 16 ernment consultation with Indian Tribes in implementing
 17 this title.”.

18 (2) TABLE OF CONTENTS AMENDMENT.—The
 19 table of contents in section 1(b) of the Magnuson-
 20 Stevens Fishery Conservation and Management Re-
 21 authorization Act of 2006 (Public Law 109–479;
 22 120 Stat. 3575) is amended by striking the item re-
 23 lating to section 809 and inserting the following:

“Sec. 809. Annual reports.

“Sec. 810. Government-to-government consultation with Indian Tribes.

“Sec. 811. Authorization of appropriations.”.

1 (i) AUTHORIZATION OF APPROPRIATIONS.—Section
 2 811 of the Tsunami Warning and Education Act, as redes-
 3 ignated by subsection (h), is amended to read as follows:

4 **“SEC. 811. AUTHORIZATION OF APPROPRIATIONS.**

5 “There are authorized to be appropriated to the Ad-
 6 ministrator to carry out this title \$35,000,000 for each
 7 of fiscal years 2027 through 2031, of which—

8 “(1) not less than 27 percent of the amount ap-
 9 propriated shall be for the tsunami hazard mitiga-
 10 tion program under section 805; and

11 “(2) not less than 8 percent of the amount ap-
 12 propriated shall be for the tsunami research pro-
 13 gram under section 806.”.

14 **SEC. 3. OUTREACH RESPONSIBILITIES.**

15 Section 511 of the Weather Research and Fore-
 16 casting Innovation Act of 2017 (33 U.S.C. 3208) is
 17 amended—

18 (1) in the manner preceding paragraph (1), by
 19 inserting “and Indian Tribes, Tribal organizations,
 20 and Native Hawaiian organizations (as such terms
 21 are defined for purposes of this section in section
 22 802 of the Tsunami Warning and Education Act (33
 23 U.S.C. 3201))” after “managers”;

24 (2) in paragraph (1), by striking “and emer-
 25 gency managers” and inserting “, emergency man-

1 agers, Indian Tribes, Tribal organizations, and Na-
 2 tive Hawaiian organizations”;

3 (3) in paragraph (2), by striking “; and” and
 4 inserting a semicolon;

5 (4) in paragraph (3), by striking the period and
 6 inserting a semicolon; and

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

8 “(4) working with tsunami-prone, rural commu-
 9 nities to assess and enhance emergency planning and
 10 response efforts; and

11 “(5) educating tsunami-prone communities
 12 about the TsunamiReady program.”.

13 **SEC. 4. REPORT ON CERTAIN TSUNAMI THREATS.**

14 (a) DEFINITIONS.—In this section:

15 (1) COVERED EVENT.—The term “covered
 16 event” means a tsunami or combined earthquake
 17 and tsunami event that impacts the United States.

18 (2) CRITICAL INFRASTRUCTURE.—The term
 19 “critical infrastructure” has the meaning given such
 20 term in subsection (e) of the Critical Infrastructures
 21 Protection Act of 2001 (42 U.S.C. 5195c(e)).

22 (b) REPORT.—

23 (1) IN GENERAL.—Not later than 18 months
 24 after the date of enactment of this Act, the Comp-
 25 troller General of the United States, in consultation

1 with the entities described in subsection (d), shall
2 produce a report on how the United States should
3 prepare for, mitigate against, respond to, and re-
4 cover from each of the following types of covered
5 events:

6 (A) A covered event in the Cascadia
7 Subduction Zone.

8 (B) A covered event that impacts Alaska,
9 including in the Alaska-Aleutian Subduction
10 Zone.

11 (C) A covered event in the Kuril-
12 Kamchatka Subduction Zone.

13 (2) REQUIREMENTS.—The report under this
14 subsection shall, with respect to each type of covered
15 event described in paragraph (1)—

16 (A) consider the assessment required under
17 section (c); and

18 (B) include each of the following:

19 (i) A description of a command struc-
20 ture plan, including the roles of Federal
21 agencies, State and local governments, In-
22 dian Tribes, Tribal organizations, and Na-
23 tive Hawaiian organizations for during and
24 following the covered event.

1 (ii) A description of how Federal
2 agencies can improve coordination to en-
3 hance the ability to prepare and plan for,
4 mitigate against, provide warning of, re-
5 spond to, and recover from the covered
6 event.

7 (iii) A strategy to ensure collaboration
8 between relevant Federal agencies for pur-
9 poses of—

10 (I) completing a risk assessment
11 of Federal facilities to identify such
12 facilities that may need improvements
13 to withstand the covered event; and

14 (II) developing a strategic plan
15 to—

16 (aa) support mitigation ef-
17 forts for and retrofitting of Fed-
18 eral, State, local, and Tribal crit-
19 ical infrastructure; and

20 (bb) help save lives during
21 and immediately after the cov-
22 ered event.

23 (iv) A strategy to improve Federal
24 guidance and assistance to State and local
25 governments, Indian Tribes, Tribal organi-

1 zations, and Native Hawaiian organiza-
2 tions in developing and implementing com-
3 prehensive plans to develop the ability to
4 prepare and plan for, mitigate against,
5 provide warning of, respond to, and recover
6 from the covered event.

7 (v) In the case the covered event is
8 large scale, an interagency search and res-
9 cue strategy for such covered event, which
10 strategy shall include—

11 (I) a command structure plan,
12 including the roles of Federal agen-
13 cies, State and local governments, In-
14 dian Tribes, Tribal organizations, and
15 Native Hawaiian organizations if such
16 command structure would differ from
17 the structure under clause (i);

18 (II) the sources of personnel and
19 assets that can be utilized to support
20 search and rescue efforts;

21 (III) an estimation of the re-
22 quired personnel and assets and an
23 identification of any gaps in personnel
24 and assets; and

1 (IV) an identification of and a
2 strategy to address the vulnerabilities
3 of existing infrastructure that will be
4 necessary for search and rescue ef-
5 forts.

6 (vi) A strategy for addressing the im-
7 pacts of the covered event to critical infra-
8 structure, including the responsibilities of
9 Federal agencies, State and local govern-
10 ments, Indian Tribes, Tribal organizations,
11 Native Hawaiian organizations, and pri-
12 vate entities.

13 (vii) Recommendations on how Fed-
14 eral agencies can develop a mitigation
15 strategy, including providing financial as-
16 sistance to State, local, and Tribal opera-
17 tors, for any infrastructure that provides
18 information to support or issue warnings
19 for the covered event.

20 (viii) Recommendations on adminis-
21 trative or legislative changes required to
22 implement the report for the covered event.

23 (3) PUBLIC AVAILABILITY.—Not later than 1
24 month after completing the report under this sub-

1 section, the Comptroller General shall make such re-
2 port available to the public.

3 (c) ASSESSMENT.—

4 (1) IN GENERAL.—Not later than 180 days
5 after the date of enactment of this Act, to inform
6 the report under section (b), the Comptroller Gen-
7 eral, in consultation with the entities described in
8 subsection (d), shall conduct an assessment, with re-
9 spect to each type of covered event described in sub-
10 section (b)(1), of the potential impact of the covered
11 event on—

12 (A) the loss of life;

13 (B) critical infrastructure, including for
14 transportation, health care, energy, communica-
15 tion, and search and rescue capacity;

16 (C) secondary events, such as landslides,
17 dam and levee failures, and fires;

18 (D) pollution or other discharges; and

19 (E) ports and navigational channels.

20 (2) SUBMISSION TO CONGRESS.—Upon comple-
21 tion of the assessment under paragraph (1), the
22 Comptroller General shall provide a copy of the as-
23 sessment to the Committee on Commerce, Science,
24 and Transportation of the Senate and the Com-

1 mittee on Science, Space, and Technology of the
2 House of Representatives.

3 (d) ENTITIES DESCRIBED.—The entities described in
4 this subsection are—

5 (1) the Administration, the Federal Emergency
6 Management Agency, the United States Geological
7 Survey, the National Guard Bureau, the Coast
8 Guard, the United States Transportation Command,
9 the Department of Transportation, and other Fed-
10 eral agencies as determined appropriate by the
11 Comptroller General;

12 (2) the States of Alaska, California, Hawaii,
13 Oregon, and Washington;

14 (3) Indian Tribes, Tribal organizations, and
15 Native Hawaiian organizations;

16 (4) local governments;

17 (5) institutions of higher education and other
18 research institutions with relevant expertise; and

19 (6) private sector representatives that may be
20 impacted by the applicable type of covered event de-
21 scribed in subsection (b)(1).

22 (e) STRATEGY.—Not later than 6 months after the
23 completion of the report required under subsection (b), the
24 Administrator, in consultation with the Chief of the Na-
25 tional Guard Bureau, the Commandant of the Coast

1 Guard, the Commander of the United States Transpor-
2 tation Command, the Administrator of the Federal Emer-
3 gency Management Agency, the Director of the United
4 States Geological Survey, the Secretary of Transportation,
5 and other heads of Federal agencies as determined appro-
6 priate by the Administrator, shall provide the Committee
7 on Commerce, Science, and Transportation of the Senate
8 and the Committee on Science, Space, and Technology of
9 the House of Representatives a written strategy and brief-
10 ing on how the Administration will implement such report
11 with respect to each type of covered event described in
12 subsection (b)(1).

13 **SEC. 5. DEFINITIONS.**

14 In this Act, the terms “Administration”, “Adminis-
15 trator”, “Indian Tribe”, “Native Hawaiian organization”,
16 and “Tribal organization” have the meanings given such
17 terms in section 802 of the Tsunami Warning and Edu-
18 cation Act (33 U.S.C. 3201).

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