

119TH CONGRESS  
1ST SESSION

# S. 320

To reauthorize the Earthquake Hazards Reduction Act of 1977, and for  
other purposes.

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IN THE SENATE OF THE UNITED STATES

JANUARY 29, 2025

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

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## A BILL

To reauthorize the Earthquake Hazards Reduction Act of  
1977, 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 “National Earthquake  
5       Hazards Reduction Program Reauthorization Act of  
6       2025”.

7       **SEC. 2. MODIFICATION OF FINDINGS.**

8       Section 2 of the Earthquake Hazards Reduction Act  
9       of 1977 (42 U.S.C. 7701) is amended—

10       (1) in paragraph (1)—

1 (A) by striking “50 States, and the Com-  
2 monwealth of Puerto Rico,” and inserting  
3 “States and Tribal jurisdictions”;

4 (B) by striking “of them” and inserting  
5 “States”; and

6 (C) by adding at the end the following:  
7 “Almost half of the United States population  
8 resides in areas that are at risk or experiencing  
9 a damaging earthquake during the 50-year pe-  
10 riod beginning on the date of the enactment of  
11 the National Earthquake Hazards Reduction  
12 Program Reauthorization Act of 2025”;

13 (2) in paragraph (2)—

14 (A) by inserting after the first sentence the  
15 following: “A 2023 report by the Federal Emer-  
16 gency Management Agency and the United  
17 States Geological Survey (FEMA P-366) esti-  
18 mates the annualized earthquake losses to the  
19 national building stock is \$14,700,000,000 per  
20 year and the total economic exposure to earth-  
21 quake losses (buildings and contents) across the  
22 nation is \$107,800,000,000,000.”; and

23 (B) in the third sentence—

1 (i) by striking “and construction” and  
 2 inserting “, construction, evaluation, and  
 3 retrofitting”; and

4 (ii) by striking “and (E)” and insert-  
 5 ing the following: “(E) inventories of build-  
 6 ings and infrastructure with high seismic  
 7 risk, especially those that are critical to  
 8 community resilience, (F) programs that  
 9 require or incentivize replacement or ret-  
 10 rofit of existing buildings and infrastruc-  
 11 ture with high seismic risk, especially those  
 12 that are critical to community resilience,  
 13 and (G)”;

14 (3) in paragraph (3), by inserting “Tribal,”  
 15 after “local,”;

16 (4) in paragraph (4), by striking “could pro-  
 17 vide” and all that follows through the period at the  
 18 end and inserting “is necessary to provide the sci-  
 19 entific understanding needed to improve and expand  
 20 the earthquake early warning system.”;

21 (5) in paragraph (8), by striking “cave-ins” and  
 22 inserting “collapse”;

23 (6) in paragraph (9)—

1 (A) in the first sentence, by striking “and  
 2 local” and inserting “local, and Tribal govern-  
 3 ment”;

4 (B) in the second sentence, by striking  
 5 “transfer knowledge and information to” and  
 6 inserting “exchange knowledge and information  
 7 between”; and

8 (C) in the third sentence, by striking  
 9 “specifications, criteria” and inserting “guide-  
 10 lines, codes, standards”;

11 (7) in paragraph (12)—

12 (A) in the second sentence—

13 (i) by striking “When earthquakes  
 14 occur, the built environment is generally”  
 15 and inserting “Relatively newer buildings  
 16 and infrastructure have generally been”;  
 17 and

18 (ii) by striking “and is” and inserting  
 19 “when earthquakes occur, but most are”;  
 20 and

21 (B) by adding at the end the following: “In  
 22 addition, buildings and infrastructure built to  
 23 older codes and standards may pose significant  
 24 risk of injury, loss of life, or irreparable dam-  
 25 age. A 2021 report submitted to Congress pur-

1 suant to section 8(b), as amended by section 5  
2 of the National Earthquake Hazards Reduction  
3 Program Reauthorization Act of 2018 (Public  
4 Law 115–307), by the Federal Emergency  
5 Management Agency and the National Institute  
6 of Standards and Technology (FEMA P2090/  
7 NST SP–1254) provides recommendations for  
8 improving post-earthquake functional recovery  
9 time of the built environment to support com-  
10 munity resilience goals and many of these rec-  
11 ommendations still need to be implemented.”;  
12 and

13 (8) in paragraph (13)—

14 (A) in the first sentence, by inserting “in  
15 2011” after “a study”;

16 (B) in the second sentence, by inserting  
17 “(in 2011 dollars)” after “\$300,000,000”; and

18 (C) by adding at the end the following:  
19 “The cost of actual seismic retrofits to reduce  
20 known risks is not included in such valuation.”.

21 **SEC. 3. MODIFICATION OF PURPOSE.**

22 Section 3 of the Earthquake Hazards Reduction Act  
23 of 1977 (42 U.S.C. 7702) is amended—

24 (1) in paragraph (1)—

1 (A) by striking “and local” and inserting  
 2 “, local, and Tribal government”; and

3 (B) by striking “locations and structures”  
 4 and inserting “buildings and infrastructure”;  
 5 (2) in paragraph (2)—

6 (A) by striking “and construction” and in-  
 7 serting “, construction, evaluation, and retro-  
 8 fitting”; and

9 (B) by inserting “housing and care facili-  
 10 ties for vulnerable populations,” after “occu-  
 11 pancy buildings”; and

12 (3) in paragraph (4)—

13 (A) by striking “and local” and inserting  
 14 “, local, and Tribal government”; and

15 (B) by striking “encourage consideration  
 16 of” and inserting “incorporate”.

17 **SEC. 4. MODIFICATION OF DEFINITIONS.**

18 Section 4 of the Earthquake Hazards Reduction Act  
 19 of 1977 (42 U.S.C. 7703) is amended—

20 (1) in paragraph (3), by inserting “, including  
 21 secondary effects such as earthquake-caused  
 22 tsunamis”; and

23 (2) by adding at the end the following:

24 “(11) The term ‘Tribal government’ has the  
 25 meaning given the term ‘tribal government’ in sec-

1       tion 421 of the Congressional Budget Act of 1974  
2       (2 U.S.C. 658).

3               “(12) The term ‘functional recovery’ means a  
4       post-earthquake performance state in which a build-  
5       ing or lifeline infrastructure system is maintained,  
6       or restored, to safely and adequately support the  
7       basic intended functions associated with the pre-  
8       earthquake use or occupancy of a building, or the  
9       pre-earthquake service level of a lifeline infrastruc-  
10      ture system.

11              “(13) The term ‘earthquake forecast’ means a  
12      statement of probabilities that 1 or more earth-  
13      quakes within a clearly specified magnitude range  
14      may occur within a specified time interval and geo-  
15      graphic region.”.

16 **SEC. 5. IMPROVEMENTS TO NATIONAL EARTHQUAKE HAZ-**  
17 **ARDS REDUCTION PROGRAM.**

18       (a) PROGRAM ACTIVITIES.—Subsection (a)(2) of sec-  
19      tion 5 of the Earthquake Hazards Reduction Act of 1977  
20      (42 U.S.C. 7704) is amended—

21              (1) in subparagraph (B)—

22                      (A) in the matter before clause (i)—

23                              (i) by striking “and local” and insert-  
24                              ing “, local, and Tribal”; and

1 (ii) by striking “and constructing”  
 2 and inserting “, designing, constructing,  
 3 evaluating, and retrofitting”;

4 (B) by amending clause (ii) to read as fol-  
 5 lows:

6 “(ii) development of standards, guide-  
 7 lines, and voluntary standards, guidelines,  
 8 and consensus codes for earthquake haz-  
 9 ards reduction for buildings, structures,  
 10 and lifeline infrastructure, including post-  
 11 earthquake recovery-based performance ob-  
 12 jectives that address reoccupancy and  
 13 downtime of community-prioritized build-  
 14 ings, structures, and services provided by  
 15 lifeline infrastructure;”;

16 (C) in clause (iii), by striking “and haz-  
 17 ards reduction; and” and inserting “functional  
 18 recovery, and other hazards reduction topics;”;

19 (D) in clause (iv)—

20 (i) by inserting “and maintaining”  
 21 after “publishing”;

22 (ii) by inserting “in coordination with  
 23 the National Tsunami Hazards Mitigation  
 24 Program, tsunami susceptibility,” after  
 25 “liquefaction susceptibility,”; and



1 (iii) by striking “; and” and inserting  
2 a semicolon; and

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

4 “(v) subject to the availability of  
5 funds, development of best practices and  
6 guidelines to create an inventory of and  
7 conduct seismic performance evaluations of  
8 buildings, structures, and lifeline infra-  
9 structure with high seismic risk, especially  
10 those that are critical to community resil-  
11 ience; and

12 “(vi) subject to the availability of  
13 funds, the provision of technical assistance  
14 upon request by a State, local, or Tribal  
15 government regarding—

16 “(I) the creation of an inventory  
17 of buildings, structures, and lifeline  
18 infrastructure;

19 “(II) the performance of seismic  
20 performance evaluations; and

21 “(III) cost-effective best practices  
22 for retrofitting existing buildings,  
23 structures, and lifeline infrastruc-  
24 ture.”;

1           (2) in subparagraph (C), by striking “; and”  
2           and inserting a semicolon;

3           (3) by redesignating subparagraph (D) as sub-  
4           paragraph (E); and

5           (4) by inserting after subparagraph (C) the fol-  
6           lowing:

7                   “(D) improve the understanding of—

8                           “(i) the multiple hazards associated  
9                           with earthquakes, including liquefaction,  
10                           tsunamis, landslides, structural fires, and  
11                           the compounding effects of climate on  
12                           these hazards; and

13                           “(ii) potential mitigation measures for  
14                           such hazards; and”.

15           (b) DUTIES OF INTERAGENCY COORDINATING COM-  
16           MITTEE ON EARTHQUAKE HAZARDS REDUCTION.—Sub-  
17           section (a)(3)(D)(ii) of such section is amended—

18                   (1) in subclause (V), by inserting “and associ-  
19                   ated secondary hazards” before the period at the  
20                   end; and

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

22                           “(VIII) Coordinating with the  
23                           Chair of the Federal Communications  
24                           Commission on the timely broad-  
25                           casting of emergency alerts generated

1 by the earthquake early warning sys-  
2 tem.”.

3 (c) BIENNIAL REPORT.—Subsection (a)(4)(A) of  
4 such section is amended by striking “under paragraph  
5 (3)(D)(i)(I)” each place it appears and inserting “under  
6 paragraph (3)(D)(ii)(I)”.

7 (d) ADVISORY COMMITTEE.—Subsection (a)(5)(A) of  
8 such section is amended—

9 (1) by inserting “the Chair of the Scientific  
10 Earthquake Studies Advisory Committee and” after  
11 “including”;

12 (2) by striking “and local government” and in-  
13 serting “, local, and Tribal governments”; and

14 (3) by inserting “social,” after “scientific,”.

15 (e) LEAD AGENCY FOR RESPONSIBILITIES OF PRO-  
16 GRAM AGENCIES.—Subsection (b)(1) of such section is  
17 amended—

18 (1) in subparagraph (A)—

19 (A) by striking “and local” and inserting  
20 “local, and Tribal governments”; and

21 (B) by striking “plan and constructing”  
22 and inserting “planning, designing, con-  
23 structing, evaluating, and retrofitting”;

24 (2) by redesignating subparagraphs (C) and  
25 (D) as subparagraphs (F) and (G), respectively; and

1           (3) by inserting after subparagraph (B) the fol-  
 2       lowing:

3                   “(C) improve the understanding of earth-  
 4       quake-caused fires and support the development  
 5       of engineering tools and construction methods  
 6       that mitigate the risk of fire following earth-  
 7       quakes;

8                   “(D) develop, in coordination with the Ad-  
 9       ministrator of the Federal Emergency Manage-  
 10      ment Agency, best practices and guidelines for  
 11      a State, local, or Tribal government to create  
 12      an inventory of buildings, structures, or lifeline  
 13      infrastructure that are critical to community re-  
 14      silience or otherwise have high seismic risk;

15                  “(E) provide, in coordination with the Ad-  
 16      ministrator of the Federal Emergency Manage-  
 17      ment Agency, technical assistance to a State,  
 18      local, or Tribal government requesting such as-  
 19      sistance with respect to the creation of an in-  
 20      ventory of buildings, structures, or lifeline in-  
 21      frastructure;”.

22       (f) RESPONSIBILITIES OF FEDERAL EMERGENCY  
 23      MANAGEMENT AGENCY.—Subsection (b)(2) of such sec-  
 24      tion is amended—

25                  (1) in subparagraph (A)—

1 (A) in clause (i)—

2 (i) by inserting “and Tribal govern-  
3 ments” after “States”;

4 (ii) by inserting “and performance  
5 evaluations” after “safety inspections”;  
6 and

7 (iii) by inserting “and improve post-  
8 earthquake functional recovery” after  
9 “seismic safety”;

10 (B) in clause (ii), by inserting “, including  
11 Tribal entities,” after “appropriate audiences”;

12 (C) in clause (iii)—

13 (i) by striking “of seismic resistant”  
14 and inserting “to all appropriate audi-  
15 ences, including Tribal governments, of”;  
16 and

17 (ii) by inserting “that enhance seismic  
18 safety, improve post-earthquake functional  
19 recovery, and reduce losses from earth-  
20 quakes” after “and lifeline infrastructure”;

21 (D) in clause (iv)—

22 (i) in striking “and local” and insert-  
23 ing “, local, and Tribal”; and

24 (ii) by striking “; and” and inserting  
25 a semicolon;

1 (E) by redesignating clause (v) as clause  
2 (vi); and

3 (F) by inserting after clause (iv) the fol-  
4 lowing:

5 “(v) shall provide technical assistance  
6 to State, local, or Tribal governmental en-  
7 tities in the creation of evacuation plans in  
8 the event of an earthquake, landslide, tsu-  
9 nami, or other earthquake-related hazard;  
10 and”; and

11 (2) in subparagraph (B)—

12 (A) in the subparagraph heading, by in-  
13 serting “AND TRIBAL” after “STATE”;

14 (B) in the matter before clause (i), by in-  
15 serting “or Tribal government” after “State”;  
16 and

17 (C) in clause (i), by striking “safety” and  
18 inserting “performance, community resilience,  
19 or public awareness”.

20 (g) RESPONSIBILITIES OF UNITED STATES GEOLOGI-  
21 CAL SURVEY.—Subsection (b)(3) of such section is  
22 amended—

23 (1) in subparagraph (B), by striking “and  
24 local” and inserting “, local, and Tribal”;

1           (2) in subparagraph (C), by inserting “, the  
2       Chair of the Federal Communications Commission,”  
3       after “Agency”;

4           (3) by redesignating subparagraphs (D)  
5       through (K) as subparagraphs (L) through (Q), re-  
6       spectively;

7           (4) by inserting after subparagraph (C) the fol-  
8       lowing:

9           “(D) coordinate with the Administrator of  
10       the National Oceanic and Atmospheric Admin-  
11       istration and the Administrator of the Federal  
12       Emergency Management Agency on data shar-  
13       ing and resource allocation to support a timely  
14       response to oceanic earthquakes and tsunamis;

15          “(E) in consultation with the Chair of the  
16       Federal Communications Commission, ensure  
17       that earthquake alerts and early warnings are  
18       broadcast as rapidly and reliably as possible, in  
19       the predominant languages in the affected re-  
20       gion, to ensure maximum warning time for  
21       nearby persons;

22          “(F) expand the earthquake early warning  
23       system within and to additional high risk haz-  
24       ard areas, including making improvements as  
25       practicable to improve detection and increase

1 the time between warning messages and percep-  
 2 tible ground motion;

3 “(G) coordinating with affected State and  
 4 Tribal governments on earthquake early warn-  
 5 ing system improvements;

6 “(H) issue earthquake forecasts, when ap-  
 7 propriate, for aftershocks associated with sig-  
 8 nificant earthquakes in the United States;”;

9 (5) in subparagraph (I), as redesignated by  
 10 paragraph (3), by inserting “the Chair of the Fed-  
 11 eral Communications Commission,” after “Agency,”;

12 (6) in subparagraph (L), as redesignated by  
 13 paragraph (3), by striking “; and” and inserting a  
 14 semicolon;

15 (7) in subparagraph (M), as redesignated by  
 16 paragraph (3), by striking the period at the end and  
 17 inserting a semicolon; and

18 (8) in subparagraph (O), as redesignated by  
 19 paragraph (3), by inserting “maps of natural haz-  
 20 ards associated with earthquakes and”.

21 (h) RESPONSIBILITIES OF NATIONAL SCIENCE  
 22 FOUNDATION.—Subsection (b)(4)(A) of such section is  
 23 amended—

24 (1) in clause (iii), by inserting “including up-  
 25 dated tsunami and liquefaction risk maps,”; and



1           (2) in clause (vii), by striking “Historically  
 2       Black Colleges and Universities and those serving  
 3       large proportions of Hispanics, Native Americans,  
 4       Asian-Pacific Americans, and other underrep-  
 5       resented populations” and inserting “institutions de-  
 6       scribed in section 371(a) of the Higher Education  
 7       Act of 1965 (20 U.S.C. 1067q(a))”.

8   **SEC. 6. SEISMIC PERFORMANCE PROPERTY STANDARDS.**

9       Section 947 of the Cranston-Gonzales National Af-  
 10      fordable Housing Act (42 U.S.C. 7704a) is amended—

11           (1) in subsection (a), by striking “safety” both  
 12      places it appears and inserting “performance”; and

13           (2) in subsection (b), by striking “shake-related  
 14      property damage” and inserting “seismic-related  
 15      property damage to improve the post-earthquake  
 16      functional recovery time”.

17   **SEC. 7. SEISMIC STANDARDS.**

18       Section 8 of the Earthquake Hazards Reduction Act  
 19      of 1977 (42 U.S.C. 7705b) is amended—

20           (1) in subsection (b), by striking “under para-  
 21      graph (1)” and inserting “under subsection (a)”;  
 22      and

23           (2) by adding at the end the following:

24       “(c) IMPLEMENTATION OF RECOMMENDATIONS.—  
 25      Each Program agency, as part of their Program respon-

1 sibilities, shall execute research, projects, grants, and  
 2 other activities that support, promote, advance, or other-  
 3 wise implement the recommendations in the report sub-  
 4 mitted pursuant to subsection (b) to improve the perform-  
 5 ance of the built environment in terms of post-earthquake  
 6 reoccupancy and functional recovery time.

7 “(d) BIENNIAL REPORTS.—

8 “(1) BIENNIAL REPORTS TO INTERAGENCY CO-  
 9 ORDINATING COMMITTEE.—No later than September  
 10 30, 2025, and not less frequently than once every 2  
 11 years thereafter, each Program agency shall submit  
 12 to the Interagency Coordinating Committee a report  
 13 on activities and progress made to support, promote,  
 14 or advance the implementation of the recommenda-  
 15 tions included in the report submitted pursuant to  
 16 subsection (b).

17 “(2) INCLUSION IN BIENNIAL REPORTS OF  
 18 INTERAGENCY COORDINATING COMMITTEE.—The  
 19 Interagency Coordinating Committee shall include  
 20 the information received under paragraph (1) in  
 21 each biennial report submitted under section 5(a)(4),  
 22 including consideration of a prioritized work plan to  
 23 coordinate activities among the Program agencies  
 24 and the necessary Program budget to fully imple-

1       ment the recommendations described in paragraph  
2       (1).”.

3 **SEC. 8. IMPROVEMENTS TO POST-EARTHQUAKE INVES-**  
4 **TIGATIONS PROGRAM.**

5       Section 11 of the Earthquake Hazards Reduction Act  
6 of 1977 (42 U.S.C. 7705e) is amended, in the matter be-  
7 fore paragraph (1)—

8           (1) in the first sentence, by inserting “domestic  
9       and international” after “investigate major”; and

10          (2) in the fifth sentence, by inserting “Federal  
11       Emergency Management” before “Agency”.

12 **SEC. 9. AUTHORIZATION OF APPROPRIATIONS.**

13       (a) GENERAL AUTHORIZATION FOR PROGRAM.—Sub-  
14 section (a)(8) of section 12 of the Earthquake Hazards  
15 Reduction Act of 1977 (42 U.S.C. 7706) is amended—

16          (1) in subparagraph (I), by striking “, and”  
17       and inserting a comma; and

18          (2) by inserting after subparagraph (J) the fol-  
19       lowing:

20               “(K) \$10,590,000 for fiscal year 2024,

21               “(L) \$10,590,000 for fiscal year 2025,

22               “(M) \$10,590,000 for fiscal year 2026,

23               “(N) \$10,590,000 for fiscal year 2027,

24               and

25               “(O) \$10,590,000 for fiscal year 2028,”.

1 (b) UNITED STATES GEOLOGICAL SURVEY.—Sub-  
2 section (b)(2) of such section is amended—

3 (1) in subparagraph (I), by striking “; and”  
4 and inserting a semicolon;

5 (2) in subparagraph (J), by striking the period  
6 at the end and inserting a semicolon; and

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

8 “(K) \$100,900,000 for fiscal year 2024, of  
9 which not less than \$36,000,000 shall be made  
10 available for completion of the Advanced Na-  
11 tional Seismic System established under section  
12 13;

13 “(L) \$100,900,000 for fiscal year 2025, of  
14 which not less than \$36,000,000 shall be made  
15 available for completion of the Advanced Na-  
16 tional Seismic System established under section  
17 13;

18 “(M) \$100,900,000 for fiscal year 2026, of  
19 which not less than \$36,000,000 shall be made  
20 available for completion of the Advanced Na-  
21 tional Seismic System established under section  
22 13;

23 “(N) \$100,900,000 for fiscal year 2027, of  
24 which not less than \$36,000,000 shall be made  
25 available for completion of the Advanced Na-

1            tional Seismic System established under section  
2            13; and

3            “(O) \$100,900,000 for fiscal year 2028, of  
4            which not less than \$36,000,000 shall be made  
5            available for completion of the Advanced Na-  
6            tional Seismic System established under section  
7            13.”.

8            (c) NATIONAL SCIENCE FOUNDATION.—Subsection  
9            (c)(2) of such section is amended—

10            (1) in subparagraph (I), by striking “, and”  
11            and inserting a comma;

12            (2) in subparagraph (J), by striking the period  
13            at the end and inserting a comma; and

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

15            “(K) \$58,000,000 for fiscal year 2024,

16            “(L) \$58,000,000 for fiscal year 2025,

17            “(M) \$58,000,000 for fiscal year 2026,

18            “(N) \$58,000,000 for fiscal year 2027,

19            and

20            “(O) \$58,000,000 for fiscal year 2028.”.

21            (d) NATIONAL INSTITUTE OF STANDARDS AND  
22            TECHNOLOGY.—Subsection (d)(2) of such section is  
23            amended—

24            (1) in subparagraph (I), by striking “, and”  
25            and inserting a comma;

1           (2) in subparagraph (J), by striking the period  
2       at the end and inserting a comma; and

3           (3) by inserting after subparagraph (J) the fol-  
4       lowing:

5                   “(K) \$5,900,000 for fiscal year 2024,

6                   “(L) \$5,900,000 for fiscal year 2025,

7                   “(M) \$5,900,000 for fiscal year 2026,

8                   “(N) \$5,900,000 for fiscal year 2027, and

9                   “(O) \$5,900,000 for fiscal year 2028,”.

○