Union Calendar No. 244

111TH CONGRESS 2D SESSION

H.R.3820

[Report No. 111-424, Part I]

To reauthorize Federal natural hazards reduction programs, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

OCTOBER 15, 2009

Mr. Wu (for himself, Mr. Smith of Nebraska, Mr. Grayson, and Mr. Moore of Kansas) introduced the following bill; which was referred to the Committee on Science and Technology, and in addition to the Committees on Natural Resources and Transportation and Infrastructure, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

February 26, 2010

Additional sponsors: Mr. GORDON of Tennessee and Mr. Schiff

February 26, 2010

Reported from the Committee on Science and Technology with an amendment [Strike out all after the enacting clause and insert the part printed in italic]

February 26, 2010

Committees on Natural Resources and Transportation and Infrastructure discharged; committed to the Committee of the Whole House on the State of the Union and ordered to be printed

[For text of introduced bill, see copy of bill as introduced on October 15, 2009]

A BILL

- Be it enacted by the Senate and House of Representa-1 tives of the United States of America in Congress assembled, 3 SECTION 1. SHORT TITLE. 4 This Act may be cited as the "Natural Hazards Risk Reduction Act of 2009". 6 SEC. 2. FINDINGS. Congress finds the following: 7 8 (1) The United States faces significant risks 9 from many types of natural hazards, including earthquakes, hurricanes, tornadoes, wildfires, and floods. 10 11 Increasing numbers of Americans are living in areas 12 prone to these hazards. 13 (2) Earthquakes occur without warning and can 14 have devastating effects. According to the U.S. Geo-15 logical Survey, two recent earthquakes, the Northridge 16 Earthquake in 1994, and the Loma Prieta Earth-17 quake in 1989, killed nearly 100 people, injured 18 12,757, and caused \$33 billion in damages. Nearly all 19 States face some level of seismic risk. Twenty-six 20 urban areas in 14 States have a significant seismic 21 risk. 22 (3) Severe weather is the most costly natural 23
 - hazard, measured on a per year basis. According to data from the National Weather Service over the last 10 years, tornadoes, thunderstorms, and hurricanes

- have caused an average of 226 fatalities and \$16 billion of property damage per year. The 2005 hurricane season was one of the most destructive in United States history, killing 1,836 people, and causing \$80 billion in damage.
 - (4) The United States Fire Administration reports that 38 percent of new home construction in 2002 was in areas adjacent to, or intermixed with, wildlands. Fires in the wildland-urban interface are costly. For example, the 2007 California Witch fire alone caused \$1.3 billion in insured property losses, according to the Insurance Services Office (ISO). In addition, Government Accountability Office reported in 2007 that the Federal spending for wildfire suppression between 2001 and 2005 was, on average, \$2.9 billion per year.
 - (5) Developing better knowledge about natural hazard phenomena and their effects is crucial to assessing the risks these hazards pose to communities. Instrumentation, monitoring, and data gathering to characterize earthquakes and wind events are important activities to increase this knowledge.
 - (6) Current building codes and standards can mitigate the damages caused by natural hazards. The Institute for Business and Home Safety estimated

- that the \$19 billion in damage caused by Hurricane
 Andrew in 1994 could have been reduced by half if
 such codes and standards were in effect. Research for
 the continuous improvement of building codes, standards, and design practices—and for developing methods to retrofit existing structures—is crucial to mitigating losses from natural hazards.
 - (7) Since its creation in 1977, the National Earthquake Hazards Reduction Program (NEHRP) has supported research to develop seismic codes, standards, and building practices that have been widely adopted. The NEHRP Recommended Provisions for Seismic Regulations for New Buildings and Other Structures and the Guidance for Seismic Performance Assessment of Buildings are two examples.
 - (8) Research to understand the institutional, social, behavioral, and economic factors that influence how households, businesses, and communities perceive risk and prepare for natural hazards, and how well they recover after a disaster, can increase the implementation of risk mitigation measures.
 - (9) A major goal of the Federal natural hazardsrelated research and development effort should be to reduce the loss of life and damage to communities and

infrastructure through increasing the adoption of haz-1 2 ard mitigation measures. 3 Research, development, and technology transfer to secure infrastructure is vitally important. Infrastructure that supports electricity, transpor-5 6 tation, drinking water, and other services is vital im-7 mediately after a disaster, and their quick return to 8 function speeds the economic recovery of a disasterimpacted community. 9 TITLE I—EARTHQUAKES 10 SEC. 101. SHORT TITLE. This title may be cited as the "National Earthquake 12 Hazards Reduction Program Reauthorization Act of 2009". 14 SEC. 102. FINDINGS. 15 Section 2 of the Earthquake Hazards Reduction Act of 1977 (42 U.S.C. 7701) is repealed. SEC. 103. DEFINITIONS. 18 Section 4 of the Earthquake Hazards Reduction Act of 1977 (42 U.S.C. 7703) is amended by striking para-19 graphs (8) and (9). 20 SEC. 104. NATIONAL EARTHQUAKE HAZARDS REDUCTION 22 PROGRAM. 23 Section 5 of the Earthquake Hazards Reduction Act of 1977 (42 U.S.C. 7704) is amended— 25 (1) in subsection (a)—

1	(A) by amending paragraph (2) to read as
2	follows:
3	"(2) Program activities of the
4	Program shall be designed to—
5	"(A) research and develop effective methods,
6	tools, and technologies to reduce the risk posed by
7	earthquakes to the built environment, especially
8	to lessen the risk to existing structures and life-
9	lines;
10	"(B) improve the understanding of earth-
11	quakes and their effects on households, businesses,
12	communities, buildings, structures, and lifelines,
13	through interdisciplinary and multidisciplinary
14	research that involves engineering, natural
15	sciences, and social sciences; and
16	"(C) facilitate the adoption of earthquake
17	risk reduction measures by households, busi-
18	nesses, communities, local, State, and Federal
19	governments, national standards and model
20	building code organizations, architects and engi-
21	neers, building owners, and others with a role in
22	planning for disasters and planning, con-
23	structing, retrofitting, and insuring buildings,
24	structures, and lifelines through—

1	"(i) grants, contracts, cooperative
2	agreements, and technical assistance;
3	"(ii) development of standards, guide-
4	lines, voluntary consensus standards, and
5	other design guidance for earthquake haz-
6	ards risk reduction for buildings, structures,
7	and lifelines;
8	"(iii) outreach and information dis-
9	semination to communities on location-spe-
10	cific earthquake hazards and methods to re-
11	duce the risks from those hazards; and
12	"(iv) development and maintenance of
13	a repository of information, including tech-
14	nical data, on seismic risk and hazards re-
15	duction."; and
16	(B) by striking paragraphs (3) through (5);
17	(2) by amending subsection (b) to read as fol-
18	lows:
19	"(b) Responsibilities of Program Agencies.—
20	"(1) Lead agency.—The National Institute of
21	Standards and Technology (in this section referred to
22	as the 'Institute') shall be responsible for planning
23	and coordinating the Program. In carrying out this
24	paragraph, the Director of the Institute shall—

"(A) ensure that the Program includes the 1 2 necessary components to promote the implementation of earthquake hazards risk reduction 3 4 measures by households, businesses, communities, 5 local, State, and Federal governments, national 6 standards and model building code organiza-7 tions, architects and engineers, building owners, 8 and others with a role in preparing for disasters, 9 or the planning, constructing, retrofitting, and 10 insuring of buildings, structures, and lifelines; 11 "(B) support the development of perform-12 ance-based seismic engineering tools, and work 13 with the appropriate groups to promote the com-14 mercial application of such tools, through earth-15 quake-related building codes, standards, and con-16 struction practices; 17 "(C) ensure the use of social science research 18 19

"(C) ensure the use of social science research and findings in informing research and technology development priorities, communicating earthquake risks to the public, developing earthquake risk mitigation strategies, and preparing for earthquake disasters;

"(D) coordinate all Federal post-earthquake investigations; and

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1	"(E) when warranted by research or inves-
2	tigative findings, issue recommendations for
3	changes in model codes to the relevant code devel-
4	opment organizations, and report back to Con-
5	gress on whether such recommendations were
6	adopted.
7	"(2) National institute of standards and
8	TECHNOLOGY.—In addition to the lead agency re-
9	sponsibilities described under paragraph (1), the In-
10	stitute shall be responsible for carrying out research
11	and development to improve building codes and
12	standards and practices for buildings, structures, and
13	lifelines. In carrying out this paragraph, the Director
14	of the Institute shall—
15	"(A) work, in conjunction with other appro-
16	priate Federal agencies, to support the develop-
17	ment of improved seismic standards and model
18	codes;
19	"(B) in coordination with other appro-
20	priate Federal agencies, work closely with stand-
21	ards and model code development organizations,
22	professional societies, and practicing engineers,

1	"(i) developing technical resources for
2	practitioners on new knowledge and stand-
3	ards of practice; and
4	"(ii) developing methods and tools to
5	facilitate the incorporation of earthquake
6	engineering principles into design and con-
7	$struction\ practices;$
8	"(C) develop tools, technologies, methods,
9	and practitioner guidance to feasibly and cost-ef-
10	fectively retrofit existing buildings and structures
11	to increase their earthquake resiliency; and
12	"(D) work closely with national standards
13	organizations, and other interested parties, to de-
14	velop seismic safety standards and practices for
15	new and existing lifelines.
16	"(3) Federal emergency management agen-
17	CY.—
18	"(A) In general.—The Federal Emergency
19	Management Agency (in this paragraph referred
20	to as the 'Agency') shall be responsible for facili-
21	tating the development and adoption of stand-
22	ards, model building codes, and better seismic
23	building practices, developing tools to assess
24	earthquake hazards, promoting the adoption of
25	hazard mitigation measures, and carrying out a

1	program of direct assistance to States and local-
2	ities to mitigate earthquake risks to buildings,
3	structures, lifelines, and communities.
4	"(B) Director's duties.—The Director of
5	the Agency shall—
6	"(i) work closely with other relevant
7	Federal agencies, standards and model
8	building code development organizations,
9	architects, engineers, and other profes-
10	sionals, to facilitate the development and
11	adoption of standards, model codes, and de-
12	sign and construction practices to increase
13	the earthquake resiliency of new and exist-
14	ing buildings, structures, and lifelines in
15	the—
16	``(I) preparation, maintenance,
17	and wide dissemination of design guid-
18	ance, model building codes and stand-
19	ards, and practices to increase the
20	earthquake resiliency of new and exist-
21	ing buildings, structures, and lifelines;
22	"(II) development of performance-
23	based design guidelines and methodolo-
24	gies supporting model codes for build-
25	ings, structures, and lifelines; and

1	"(III) development of methods and
2	tools to facilitate the incorporation of
3	earthquake engineering principles into
4	design and construction practices;
5	"(ii) develop tools, technologies, and
6	methods to assist local planners, and others,
7	to model and predict the potential impact of
8	earthquake damage in seismically haz-
9	ardous areas; and
10	"(iii) support the implementation of a
11	comprehensive earthquake education and
12	public awareness program, including the
13	development of materials and their wide
14	dissemination to all appropriate audiences,
15	and support public access to locality-spe-
16	cific information that may assist the public
17	in preparing for, mitigating against, re-
18	sponding to, and recovering from earth-
19	quakes and related disasters.
20	"(C) State assistance grant pro-
21	GRAM.—The Director of the Agency shall operate
22	a program of grants and assistance to enable
23	States to develop mitigation, preparedness, and
24	response plans, compare inventories and conduct
25	seismic safety inspections of critical structures

1	and lifelines, update building and zoning codes
2	and ordinances to enhance seismic safety, in-
3	crease earthquake awareness and education, and
4	encourage the development of multistate groups
5	for such purposes. In order to qualify for assist-
6	ance under this subparagraph, a State must—
7	"(i) demonstrate that the assistance
8	will result in enhanced seismic safety in the
9	State;
10	"(ii) provide 50 percent of the costs of
11	the activities for which assistance is being
12	given, except that the Director may lower or
13	waive the cost-share requirement for these
14	activities in exceptional cases of economic
15	hardship; and
16	"(iii) meet such other requirements as
17	the Director of the Agency shall prescribe.
18	"(4) United States Geological Survey.—The
19	United States Geological Survey (in this paragraph
20	referred to as the 'Survey') shall conduct research and
21	other activities necessary to characterize and identify
22	earthquake hazards, assess earthquake risks, monitor
23	seismic activity, and provide real-time earthquake in-
24	formation. In carrying out this paragraph, the Direc-
25	tor of the Survey shall—

1	"(A) conduct a systematic assessment of the
2	seismic risks in each region of the Nation prone
3	to earthquakes, including, where appropriate, the
4	establishment and operation of intensive moni-
5	toring projects on hazardous faults, detailed seis-
6	mic hazard and risk studies in urban and other
7	developed areas where earthquake risk is deter-
8	mined to be significant, and engineering seis-
9	mology studies;
10	"(B) work with officials of State and local
11	governments to ensure that they are knowledge-
12	able about the specific seismic risks in their
13	areas;
14	"(C) develop standard procedures, in con-
15	sultation with the Director of the Federal Emer-
16	gency Management Agency, for issuing earth-
17	quake alerts, including aftershock advisories;
18	"(D) issue when justified, and notify the
19	Director of the Federal Emergency Management
20	Agency of, an earthquake prediction or other
21	earthquake advisory, which may be evaluated by
22	the National Earthquake Prediction Evaluation
23	Council;
24	"(E) operate, as integral parts of the Ad-
25	vanced National Seismic Research and Moni-

1	toring System, a National Earthquake Informa-
2	tion Center and a national seismic network, to-
3	gether providing timely and accurate informa-
4	tion on earthquakes world-wide;
5	"(F) support the operation of regional seis-
6	mic networks in areas of higher seismic risk;
7	"(G) develop and support seismic instru-
8	mentation of buildings and other structures to
9	obtain data on their response to earthquakes for
10	use in engineering studies and assessment of
11	damage;
12	"(H) monitor and assess Earth surface de-
13	formation as it pertains to the evaluation of
14	earthquake hazards and impacts;
15	"(I) work with other Program agencies to
16	maintain awareness of, and where appropriate
17	cooperate with, earthquake risk reduction efforts
18	in other countries, to ensure that the Program
19	benefits from relevant information and advances
20	in those countries;
21	$\lq\lq(J)$ maintain suitable seismic hazard maps
22	in support of building codes for structures and
23	lifelines, including additional maps needed for
24	performance-based design approaches;

1	"(K) conduct a competitive, peer-reviewed
2	process which awards grants and cooperative
3	agreements to complement and extend related in-
4	ternal Survey research and monitoring activi-
5	ties; and
6	"(L) operate, in cooperation with the Na-
7	tional Science Foundation, a Global Seis-
8	mographic Network for detection of earthquakes
9	around the world and research into fundamental
10	earth processes.
11	"(5) National science foundation.—The Na-
12	tional Science Foundation shall be responsible for
13	funding basic research that furthers the under-
14	standing of earthquakes, earthquake engineering, and
15	community preparation and response to earthquakes.
16	In carrying out this paragraph, the Director of the
17	National Science Foundation shall—
18	"(A) support multidisciplinary and inter-
19	disciplinary research that will improve the resil-
20	iency of communities to earthquakes, includ-
21	ing—
22	"(i) research that improves the safety
23	and performance of buildings, structures,
24	and lifelines, including the use of the large-
25	scale experimental and computational fa-

1	cilities of the George E. Brown, Jr. Network
2	$for \ Engineering \ Earth quake \ Simulation;$
3	"(ii) research to support more effective
4	earthquake mitigation and response meas-
5	ures, such as developing better knowledge of
6	the specific types of vulnerabilities faced by
7	segments of the community vulnerable to
8	earthquakes, addressing the barriers they
9	face in adopting mitigation and prepara-
10	tion measures, and developing methods to
11	better communicate the risks of earthquakes
12	and to promote mitigation; and
13	"(iii) research on the response of com-
14	munities, households, businesses, and emer-
15	gency responders to earthquakes;
16	"(B) support research to understand earth-
17	quake processes, earthquake patterns, and earth-
18	quake frequencies;
19	"(C) encourage prompt dissemination of
20	significant findings, sharing of data, samples,
21	physical collections, and other supporting mate-
22	rials, and development of intellectual property so
23	research results can be used by appropriate orga-
24	nizations to mitigate earthquake damage;

1 "(D) work with other Program agencies to 2 maintain awareness of, and where appropriate 3 cooperate with, earthquake risk reduction re-4 search efforts in other countries, to ensure that 5 the Program benefits from relevant information 6 and advances in those countries: and 7 "(E) include to the maximum extent prac-8 ticable diverse institutions, including Histori-9 cally Black Colleges and Universities, Hispanic-10 serving institutions, Tribal Colleges and Univer-11 sities, Alaska Native-serving institutions, and 12 Native Hawaiian-serving institutions."; and 13 (3) in subsection (c)(1) by inserting "on Natural 14 Hazards Risk Reduction established under section 301 15 of the Natural Hazards Risk Reduction Act of 2009" 16 after "Interagency Coordinating Committee". 17 SEC. 105. POST-EARTHQUAKE INVESTIGATIONS PROGRAM. 18 Section 11 of the Earthquake Hazards Reduction Act 19 of 1977 (42 U.S.C. 7705e) is amended by striking "There is established" and all that follows through "conduct of such 20 21 earthquake investigations." and inserting "The Program shall include a post-earthquake investigations program, the purpose of which is to investigate major earthquakes so as to learn lessons which can be applied to reduce the loss of lives and property in future earthquakes. The lead Program

- 1 agency, in consultation with each Program agency, shall
- 2 organize investigations to study the implications of the
- 3 earthquakes in the areas of responsibility of each Program
- 4 agency. The investigations shall begin as rapidly as possible
- 5 and may be conducted by grantees and contractors. The
- 6 Program agencies shall ensure that the results of the inves-
- 7 tigations are disseminated widely.".
- 8 SEC. 106. AUTHORIZATION OF APPROPRIATIONS.
- 9 (a) In General.—Section 12 of the Earthquake Haz-
- 10 ards Reduction Act of 1977 (42 U.S.C. 7706) is amended—
- 11 (1) by adding at the end of subsection (a) the fol-
- 12 lowing:
- 13 "(9) There are authorized to be appropriated to the
- 14 Federal Emergency Management Agency for carrying out
- 15 *this Act*—
- 16 "(A) \$10,238,000 for fiscal year 2010;
- 17 "(B) \$10,545,000 for fiscal year 2011;
- 18 "(C) \$10,861,000 for fiscal year 2012;
- 19 "(D) \$11,187,000 for fiscal year 2013; and
- 20 "(E) \$11,523,000 for fiscal year 2014.";
- 21 (2) by adding at the end of subsection (b) the fol-
- 22 lowing:
- 23 "(3) There are authorized to be appropriated to the
- 24 United States Geological Survey for carrying out this Act,

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including the Advanced National Seismic Research and
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 2
    Monitoring System—
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              "(A) $70,000,000 for fiscal year 2010;
              "(B) $72,100,000 for fiscal year 2011;
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 5
              "(C) $74,263,000 for fiscal year 2012;
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              "(D) $76,491,000 for fiscal year 2013; and
              "(E) $78,786,000 for fiscal year 2014.":
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              (3) by adding at the end of subsection (c) the fol-
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         lowing:
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         "(3) There are authorized to be appropriated to the
    National Science Foundation for carrying out this Act—
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              "(A) $64,125,000 for fiscal year 2010;
13
              "(B) $66,049,000 for fiscal year 2011:
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              "(C) $68,030,000 for fiscal year 2012;
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              "(D) $70,071,000 for fiscal year 2013; and
              "(E) $72,173,000 for fiscal year 2014."; and
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              (4) by adding at the end of subsection (d) the fol-
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         lowing:
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         "(3) There are authorized to be appropriated to the
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    National Institute of Standards and Technology for car-
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    rying out this Act—
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              "(A) $7,000,000 for fiscal year 2010;
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              "(B) $7,700,000 for fiscal year 2011;
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              "(C) $7,931,000 for fiscal year 2012;
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              "(D) $8,169,000 for fiscal year 2013; and
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1	"(E) \$8,414,000 for fiscal year 2014.".
2	(b) Conforming Amendment.—Section 14 of the Na-
3	tional Earthquake Hazards Reduction Act of 1977 (42
4	U.S.C. 7708) is amended—
5	(1) by striking "(a) Establishment.—"; and
6	(2) by striking subsection (b).
7	TITLE II—WIND
8	SEC. 201. SHORT TITLE.
9	This title may be cited as the "National Windstorm
10	Impact Reduction Act Reauthorization of 2009".
11	SEC. 202. PURPOSE.
12	Section 202 of the National Windstorm Impact Reduc-
13	tion Act of 2004 (42 U.S.C. 15701) is amended to read as
14	follows:
15	"SEC. 202. PURPOSE.
16	"It is the purpose of the Congress in this title to
17	achieve a major measurable reduction in losses of life and
18	property from windstorms through the establishment and
19	maintenance of an effective Windstorm Impact Reduction
20	Program. The objectives of such Program shall include—
21	"(1) the education of households, businesses, and
22	communities about the risks posed by windstorms,
23	and the identification of locations, structures, life-
24	lines, and segments of the community which are espe-
25	cially vulnerable to windstorm damage and disrup-

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- tion, and the dissemination of information on methods to reduce those risks;
 - "(2) the development of technologically and economically feasible design and construction methods and procedures to make new and existing structures, in areas of windstorm risk, windstorm resilient, giving high priority to the development of such methods and procedures for lifelines, structures associated with a potential high loss of life, and structures that are especially needed in times of disasters, such as hospitals and public safety and shelter facilities;
 - "(3) the implementation, in areas of major windstorm risk, of instrumentation to record and gather data on windstorms and the characteristics of the wind during those events, and continued research to increase the understanding of windstorm phenomena;
 - "(4) the development, publication, and promotion, in conjunction with State and local officials and professional organizations, of model building codes and standards and other means to encourage consideration of information about windstorm risk in making decisions about land use policy and construction activity; and

1	"(5) the facilitation of the adoption of wind-
2	storm risk mitigation measures in areas of windstorm
3	risk by households, businesses, and communities
4	through outreach, incentive programs, and other
5	means.".
6	SEC. 203. DEFINITIONS.
7	Section 203(1) of the National Windstorm Impact Re-
8	duction Act of 2004 (42 U.S.C. 15702(1)) is amended by
9	striking "Director of the Office of Science and Technology
10	Policy" and inserting "Director of the National Institute
11	of Standards and Technology".
12	SEC. 204. NATIONAL WINDSTORM IMPACT REDUCTION PRO-
13	GRAM.
14	Section 204 of the National Windstorm Impact Reduc-
15	tion Act of 2004 (42 U.S.C. 15703) is amended to read as
16	follows:
17	"SEC. 204. NATIONAL WINDSTORM IMPACT REDUCTION
18	PROGRAM.
19	"(a) Establishment.—There is established the Na-
20	$tional\ Windstorm\ Impact\ Reduction\ Program.$
21	"(b) Program Activities.—The activities of the Pro-
22	gram shall be designed to—
23	"(1) research and develop cost-effective, feasible
24	methods, tools, and technologies to reduce the risks
25	posed by windstorms to the built environment, espe-

1	cially to lessen the risk to existing structures and life-
2	lines;
3	"(2) improve the understanding of windstorms
4	and their impacts on households, businesses, commu-
5	nities, buildings, structures, and lifelines, through
6	interdisciplinary and multidisciplinary research that
7	involves engineering, natural sciences, and social
8	sciences; and
9	"(3) facilitate the adoption of windstorm risk re-
10	duction measures by households, businesses, commu-
11	nities, local, State and Federal governments, national
12	standards and model building code organizations, ar-
13	chitects and engineers, building owners, and others
14	with a role in planning for disasters and planning,
15	constructing, retrofitting, and insuring buildings,
16	structures, and lifelines through—
17	"(A) grants, contracts, cooperative agree-
18	ments, and technical assistance;
19	"(B) development of hazard maps, stand-
20	ards, guidelines, voluntary consensus standards,
21	and other design guidance for windstorm risk re-
22	duction for buildings, structures, and lifelines;
23	"(C) outreach and information dissemina-
24	tion to communities on site specific windstorm

1	hazards and ways to reduce the risks from those
2	hazards; and
3	"(D) development and maintenance of a re-
4	pository of information, including technical
5	data, on windstorm hazards and risk reduction;
6	"(c) Responsibilities of Program Agencies.—
7	"(1) Lead agency.—The National Institute of
8	Standards and Technology (in this section referred to
9	as the 'Institute') shall be responsible for planning
10	and coordinating the Program. In carrying out this
11	paragraph, the Director of the Institute shall—
12	"(A) ensure that the Program includes the
13	necessary components to promote the implemen-
14	tation of windstorm risk reduction measures by
15	households, businesses, communities, local, State,
16	and Federal governments, national standards
17	and model building code organizations, archi-
18	tects and engineers, building owners, and others
19	with a role in planning and preparing for disas-
20	ters, and planning constructing, and retrofitting,
21	and insuring buildings, structures, and lifelines;
22	"(B) support the development of perform-
23	ance-based engineering tools, and work with the
24	appropriate groups to promote the commercial
25	application of such tools, through wind-related

1	building codes, standards, and construction prac-
2	tices;
3	"(C) ensure the use of social science research
4	and findings in informing the development of
5	technology and research priorities, in commu-
6	nicating windstorm risks to the public, in devel-
7	oping windstorm risk mitigation strategies, and
8	in preparing for windstorm disasters;
9	"(D) coordinate all Federal post-windstorm
10	investigations; and
11	"(E) when warranted by research or inves-
12	tigative findings, issue recommendations for
13	changes in model codes to the relevant code devel-
14	opment organizations, and report back to Con-
15	gress on whether such recommendations were
16	adopted.
17	"(2) National institute of standards and
18	TECHNOLOGY.—In addition to the lead agency re-
19	sponsibilities described under paragraph (1), the In-
20	stitute shall be responsible for carrying out research
21	and development to improve model codes, standards,
22	design guidance and practices for the construction
23	and retrofit of buildings, structures, and lifelines. In
24	carrying out this paragraph, the Director of the Insti-
25	tute shall—

1	"(A) support the development of instrumen-
2	tation, data processing, and archival capabili-
3	ties, and standards for the instrumentation and
4	its deployment, to measure wind, wind loading,
5	and other properties of severe wind and structure
6	response;
7	"(B) coordinate with other appropriate
8	Federal agencies to make the data described in
9	subparagraph (A) available to researchers, stand-
10	ards and code developers, and local planners;
11	"(C) support the development of tools and
12	methods for the collection of data on the loss of
13	and damage to structures, and data on surviving
14	structures after severe windstorm events;
15	"(D) improve the knowledge of the impact
16	of severe wind on buildings, structures, lifelines,
17	and communities;
18	"(E) develop cost-effective windstorm im-
19	pact reduction tools, methods, and technologies;
20	"(F) work, in conjunction with other appro-
21	priate Federal agencies, to support the develop-
22	ment of wind standards and model codes; and
23	"(G) in conjunction with other appropriate
24	Federal agencies, work closely with standards
25	and model code development organizations, pro-

1	fessional societies, and practicing engineers, ar-
2	chitects, and others involved in the construction
3	of buildings, structures, and lifelines, to promote
4	better building practices, including by—
5	"(i) supporting the development of
6	technical resources for practitioners to im-
7	plement new knowledge; and
8	"(ii) supporting the development of
9	methods and tools to incorporate wind engi-
10	neering principles into design and construc-
11	tion practices.
12	"(3) Federal emergency management agen-
13	CY.—The Federal Emergency Management Agency
14	shall support the development of risk assessment tools
15	and effective mitigation techniques, assist with wind-
16	storm-related data collection and analysis, and sup-
17	port outreach, information dissemination, and imple-
18	mentation of windstorm preparedness and mitigation
19	measures by households, businesses, and communities,
20	including by—
21	"(A) working to develop or improve risk-as-
22	sessment tools, methods, and models;
23	"(B) work closely with other appropriate
24	Federal agencies to develop and facilitate the

1	adoption of windstorm impact reduction meas-
2	ures, including by—
3	"(i) developing cost-effective retrofit
4	measures for existing buildings, structures,
5	and lifelines to improve windstorm per-
6	formance;
7	"(ii) developing methods, tools, and
8	technologies to improve the planning, de-
9	sign, and construction of new buildings,
10	structures, and lifelines;
11	"(iii) supporting the development of
12	model wind codes and standards for build-
13	ings, structures, and lifelines; and
14	"(iv) developing technical resources for
15	practitioners that reflect new knowledge and
16	standards of practice; and
17	"(C) develop and disseminate guidelines for
18	the construction of windstorm shelters.
19	"(4) National oceanic and atmospheric ad-
20	MINISTRATION.—The National Oceanic and Atmos-
21	pheric Administration shall support atmospheric
22	sciences research and data collection to improve the
23	understanding of the behavior of windstorms and
24	their impact on buildings, structures, and lifelines,
25	including by—

"(A) working with other appropriate Fed-
eral agencies to develop and deploy instrumenta-
tion to measure speed and other characteristics
of wind, and to collect, analyze, and make avail-
able such data;
"(B) working with officials of State and
local governments to ensure that they are knowl-
edgeable about, and prepared for, the specific
windstorm risks in their area;
"(C) supporting the development of suitable
wind speed maps and other derivative products
that support building codes and other hazard
mitigation approaches for buildings, structures,
and lifelines;
"(D) conducting a competitive, peer-re-
viewed process which awards grants and cooper-
ative agreements to complement the National
Oceanic and Atmospheric Administration's
wind-related and storm surge-related research
and data collection activities;
"(E) working with other appropriate Fed-
eral agencies and State and local governments to
develop or improve risk-assessment tools, meth-

ods, and models; and

1	"(F) working with other appropriate Fed-
2	eral agencies to develop storm surge models to
3	better understand the interaction between wind-
4	storms and bodies of water.
5	"(5) National Science Foundation.—The Na-
6	tional Science Foundation shall be responsible for
7	funding basic research that furthers the under-
8	standing of windstorms, wind engineering, and com-
9	munity preparation and response to windstorms. In
10	carrying out this paragraph, the Director of the Na-
11	tional Science Foundation shall—
12	"(A) support multidisciplinary and inter-
13	disciplinary research that will improve the resil-
14	iency of communities to windstorms, including—
15	"(i) research that improves the safety
16	and performance of buildings, structures,
17	and lifelines;
18	"(ii) research to support more effective
19	windstorm mitigation and response meas-
20	ures, such as developing better knowledge of
21	the specific types of vulnerabilities faced by
22	segments of the community vulnerable to
23	windstorms, addressing the barriers they
24	face in adopting mitigation and prepara-
25	tion measures, and developing methods to

1	better communicate the risks of windstorms
2	and to promote mitigation; and
3	"(iii) research on the response of com-
4	munities to windstorms, including on the
5	effectiveness of the emergency response, and
6	the recovery process of communities, house-
7	holds, and businesses;
8	"(B) support research to understand wind-
9	storm processes, windstorm patterns, and wind-
10	$storm\ frequencies;$
11	"(C) encourage prompt dissemination of
12	significant findings, sharing of data, samples,
13	physical collections, and other supporting mate-
14	rials, and development of intellectual property so
15	research results can be used by appropriate orga-
16	nizations to mitigate windstorm damage;
17	"(D) work with other Program agencies to
18	maintain awareness of, and where appropriate
19	cooperate with, windstorm risk reduction re-
20	search efforts in other countries, to ensure that
21	the Program benefits from relevant information
22	and advances in those countries; and
23	"(E) include to the maximum extent prac-
24	ticable diverse institutions, including Histori-
25	cally Black Colleges and Universities, Hispanic-

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1
             serving institutions, Tribal Colleges and Univer-
 2
             sities, Alaska Native-serving institutions, and
 3
             Native Hawaiian-serving institutions.".
    SEC. 205. AUTHORIZATION OF APPROPRIATIONS.
 5
        Section 207 of the National Windstorm Impact Reduc-
 6
    tion Program of 2004 (42 U.S.C. 15706) is amended to read
 7
    as follows:
 8
    "SEC. 207. AUTHORIZATION OF APPROPRIATIONS.
 9
         "(a) Federal Emergency Management Agency.—
10
    There are authorized to be appropriated to the Federal
    Emergency Management Agency for carrying out this
12
   title—
13
             "(1) $9,682,000 for fiscal year 2010;
14
             "(2) $9,972,500 for fiscal year 2011;
15
             "(3) $10,271,600 for fiscal year 2012;
             "(4) $10,579,800 for fiscal year 2013; and
16
17
             "(5) $10,897,200 for fiscal year 2014.
18
         "(b) National Science Foundation.—There are au-
19
    thorized to be appropriated to the National Science Foun-
20
    dation for carrying out this title—
21
             "(1) $9,682,000 for fiscal year 2010;
22
             "(2) $9,972,500 for fiscal year 2011;
23
             "(3) $10,271,600 for fiscal year 2012;
24
             "(4) $10,579,800 for fiscal year 2013; and
25
             "(5) $10,897,200 for fiscal year 2014.
```

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"(c) National Institute of Standards and Tech-
 1
   NOLOGY.—There are authorized to be appropriated to the
   National Institute of Standards and Technology for car-
 3
 4
   rying out this title—
 5
             "(1) $4,120,000 for fiscal year 2010;
             "(2) $4,243,600 for fiscal year 2011;
 6
             "(3) $4,370,900 for fiscal year 2012;
 7
             "(4) $4,502,000 for fiscal year 2013; and
 8
 9
             "(5) $4,637,100 for fiscal year 2014.
10
         "(d) National Oceanic and Atmospheric Adminis-
   TRATION.—There are authorized to be appropriated to the
   National Oceanic and Atmospheric Administration for car-
12
13
   rying out this title—
14
             "(1) $2,266,000 for fiscal year 2010;
             "(2) $2,334,000 for fiscal year 2011;
15
             "(3) $2,404,000 for fiscal year 2012;
16
17
             "(4) $2,476,100 for fiscal year 2013; and
18
             "(5) $2,550,400 for fiscal year 2014.".
```

1	TITLE III—INTERAGENCY CO-
2	ORDINATING COMMITTEE ON
3	NATURAL HAZARDS RISK RE-
4	DUCTION
5	SEC. 301. INTERAGENCY COORDINATING COMMITTEE ON
6	NATURAL HAZARDS RISK REDUCTION.
7	(a) In General.—There is established an Interagency
8	Coordinating Committee on Natural Hazards Risk Reduc-
9	tion, chaired by the Director of the National Institute of
10	Standards and Technology.
11	(1) Membership.—In addition to the chair, the
12	Committee shall be composed of—
13	(A) the directors of—
14	(i) the Federal Emergency Manage-
15	$ment\ Agency;$
16	(ii) the United State Geological Sur-
17	vey;
18	(iii) the National Oceanic and Atmos-
19	$pheric\ Administration;$
20	(iv) the National Science Foundation;
21	(v) the Office of Science and Tech-
22	nology Policy; and
23	(vi) the Office of Management and
24	Budget; and

1	(B) the head of any other Federal agency				
2	the Committee considers appropriate.				
3	(2) Meetings.—The Committee shall not meet				
4	less than 2 times a year at the call of the Director				
5	of the National Institute of Standards and Tech-				
6	nology.				
7	(3) General purpose and duties.—The Com-				
8	mittee shall oversee the planning and coordination of				
9	the National Earthquake Hazards Reduction Pro-				
10	gram and the National Windstorm Impact Reduction				
11	Program, and shall make proposals for planning and				
12	coordination of any other Federal research for natural				
13	hazard mitigation that the Committee considers ap-				
14	propriate.				
15	(4) Strategic plans.—The Committee shall de-				
16	velop and submit to Congress, not later than one year				
17	after the date of enactment of this Act—				
18	(A) a Strategic Plan for the National				
19	Earthquake Hazards Reduction Program that				
20	includes—				
21	(i) prioritized goals for such Program				
22	that will mitigate against the loss of life				
23	and property from future earthquakes;				

1	(ii) short-term, mid-term, and long-
2	term research objectives to achieve those
3	goals;
4	(iii) a description of the role of each
5	Program agency in achieving the
6	prioritized goals;
7	(iv) the methods by which progress to-
8	wards the goals will be assessed;
9	(v) an explanation of how the Program
10	will foster the transfer of research results
11	onto outcomes, such as improved building
12	codes;
13	(vi) a description of the role of social
14	science in informing the development of the
15	prioritized goals and research objectives;
16	and
17	(vii) a description of how the George
18	E. Brown, Jr. Network for Earthquake En-
19	gineering Simulation and the Advanced Na-
20	tional Seismic Research and Monitoring
21	System will be used in achieving the
22	prioritized goals and research objectives;
23	and

1	(B) a Strategic Plan for the National					
2	Windstorm Impact Reduction Program that in-					
3	cludes—					
4	(i) prioritized goals for such Program					
5	that will mitigate against the loss of life					
6	and property from future windstorms;					
7	(ii) short-term, mid-term, and long-					
8	term research objectives to achieve those					
9	goals;					
10	(iii) a description of the role of each					
11	Program agency in achieving the					
12	$prioritized\ goals;$					
13	(iv) the methods by which progress to-					
14	wards the goals will be assessed;					
15	(v) an explanation of how the Program					
16	will foster the transfer of research results					
17	onto outcomes, such as improved building					
18	codes; and					
19	(vi) a description of the role of social					
20	science in informing the development of the					
21	prioritized goals and research objectives.					
22	(5) Progress reports.—Not later than one					
23	year after the date of enactment of this Act, and at					
24	least once every two years thereafter, the Committee					
25	shall submit to the Congress—					

1	(A) a report on the progress of the National						
2	Earthquake Hazards Reduction Program that						
3	includes—						
4	(i) a description of the activities fund-						
5	ed for the previous two years of the Pro-						
6	gram, a description of how these activities						
7	align with the prioritized goals and re-						
8	search objectives established in the Strategic						
9	Plan, and the budgets, per agency, for these						
10	activities;						
11	(ii) the outcomes achieved by the Pro-						
12	gram for each of the goals identified in the						
13	Strategic Plan;						
14	(iii) a description of any recommenda-						
15	tions made to change existing building codes						
16	that were the result of Program activities;						
17	and						
18	(iv) a description of the extent to						
19	which the Program has incorporated rec-						
20	ommendations from the Advisory Committee						
21	on Earthquake Hazards Reduction; and						
22	(B) a report on the progress of the National						
23	Windstorm Impact Reduction Program that in-						
24	cludes—						

1	(i) a description of the activities fund-
2	ed for the previous two years of the Pro-
3	gram, a description of how these activities
4	align with the prioritized goals and re-
5	search objectives established in the Strategic
6	Plan, and the budgets, per agency, for these
7	activities;
8	(ii) the outcomes achieved by the Pro-
9	gram for each of the goals identified in the
10	$Strategic\ Plan;$
11	(iii) a description of any recommenda-
12	tions made to change existing building codes
13	that were the result of Program activities;
14	and
15	(iv) a description of the extent to
16	which the Program has incorporated rec-
17	ommendations from the Advisory Committee
18	on Windstorm Impact Reduction.
19	(6) Coordinated Budget.—The Committee
20	shall develop a coordinated budget for the National
21	Earthquake Hazards Reduction Program and a co-
22	ordinated budget for the National Windstorm Impact
23	Reduction Program. These budgets shall be submitted
24	to the Congress at the time of the President's budget
25	submission for each fiscal year.

- 1 (b) Advisory Committees on Natural Hazards
 2 Reduction.—
- 3 (1) In GENERAL.—The Director of the National
 4 Institute of Standards and Technology shall establish
 5 an Advisory Committee on Earthquake Hazards Re6 duction, an Advisory Committee on Windstorm Im7 pact Reduction, and other such advisory committees
 8 as the Director considers necessary to advise the Insti9 tute on research, development, and technology transfer
 10 activities to mitigate the impact of natural disasters.
 - (2) Advisory Committee on Earthquake Hazards Reduction shall be composed of at least 11 members, none of whom may be employees of the Federal Government, including representatives of research and academic institutions, industry standards development organizations, State and local government, and business communities who are qualified to provide advice on earthquake hazards reduction and represent all related scientific, architectural, and engineering disciplines. The recommendations of the Advisory Committee shall be considered by Federal agencies in implementing the National Earthquake Hazards Reduction Program.

1	(3) Advisory committee on windstorm im-						
2	PACT REDUCTION.—The Advisory Committee on						
3	Windstorm Impact Reduction shall be composed of an						
4	least 7 members, none of whom may be employees of						
5	the Federal Government, including representatives of						
6	research and academic institutions, industry stand-						
7	ards development organizations, State and local gov-						
8	ernment, and business communities who are qualified						
9	to provide advice on windstorm impact reduction and						
10	represent all related scientific, architectural, and en-						
11	gineering disciplines. The recommendations of the Ad-						
12	visory Committee shall be considered by Federal agen-						
13	cies in implementing the National Windstorm Impact						
14	Reduction Program.						
15	(4) Assessments.—The Advisory Committee on						
16	Earthquake Hazards Reduction and the Advisory						
17	Committee on Windstorm Impact Reduction shall						
18	offer assessments on—						
19	(A) trends and developments in the natural,						
20	social, and engineering sciences and practices of						
21	earthquake hazards or windstorm impact mitiga-						
22	tion;						
23	(B) the priorities of the Programs' Strategic						
24	Plans;						
25	(C) the coordination of the Programs: and						

1	(D) and any revisions to the Programs
2	which may be necessary.
3	(5) Reports.—At least every two years, the Ad-
4	visory Committees shall report to the Director of the
5	National Institute of Standards and Technology on
6	the assessments carried out under paragraph (4) and
7	their recommendations for ways to improve the Pro-
8	grams. In developing recommendations for the Na-
9	tional Earthquake Hazards Reduction Program, the
10	Advisory Committee on Earthquake Hazards Reduc-
11	tion shall consider the recommendations of the United
12	States Geological Survey Scientific Earthquake Stud-
13	$ies\ Advisory\ Committee.$
14	(c) Coordination of Federal Disaster Re-
15	SEARCH, DEVELOPMENT, AND TECHNOLOGY TRANSFER.—
16	Not later than 2 years after the date of enactment of this
17	Act, the Subcommittee on Disaster Reduction of the Com-
18	mittee on Environment and Natural Resources of the Na-
19	tional Science and Technology Council shall submit a re-
20	port to the Congress identifying—
21	(1) current Federal research, development, and
22	technology transfer activities that address hazard
23	mitigation for natural disasters, including earth-
24	quakes, hurricanes, tornados, wildfires, floods, and the
25	current budgets for these activities:

1	(2) areas of research that are common to two or					
2	more of the hazards identified in paragraph (1); and					
3	(3) opportunities to create synergies between the					
4	research activities for the hazards identified in para-					
5	graph (1).					
6	TITLE IV—NATIONAL CONSTRUC-					
7	TION SAFETY TEAM ACT					
8	AMENDMENTS					
9	SEC. 401. NATIONAL CONSTRUCTION SAFETY TEAM ACT					
10	AMENDMENTS.					
11	The National Construction Safety Team Act (15					
12	U.S.C. 7301 et seq.) is amended—					
13	(1) in section 2(a)—					
14	(A) by striking "a building or buildings"					
15	and inserting "a building, buildings, or infra-					
16	structure"; and					
17	(B) by striking "To the maximum extent					
18	practicable, the Director shall establish and de-					
19	ploy a Team within 48 hours after such an					
20	event." and inserting "The Director shall make					
21	a decision whether to deploy a Team within 72					
22	hours after such an event.";					
23	(2) in section 2(b)(1), by striking "buildings"					
24	and inserting 'buildings or infrastructure';					

1	(3) in section $2(b)(2)(A)$, by striking 'building'
2	and inserting "building or infrastructure";
3	(4) in section 2(b)(2)(D), by striking "buildings"
4	and inserting "buildings or infrastructure";
5	(5) in section $2(c)(1)$, by striking "the United
6	States Fire Administration and";
7	(6) in section $2(c)(1)(G)$, by striking "building"
8	and inserting 'building or infrastructure';
9	(7) in section $2(c)(1)(J)$ —
10	(A) by striking "building" and inserting
11	'building or infrastructure'; and
12	(B) by inserting "and the National Wind-
13	storm Impact Reduction Act of 2004" after "Act
14	of 1977";
15	(8) in section 4(a), by striking "investigating a
16	building" and inserting "investigating building and
17	in frastructure";
18	(9) in section $4(a)(1)$ —
19	(A) by striking "a building" and inserting
20	"a building or infrastructure"; and
21	(B) by striking "building" both of the other
22	places it appears and inserting "building or in-
23	frastructure'';

1	(10) in section 4(a)(3), by striking "building"
2	both places it appears and inserting "building or in-
3	frastructure";
4	(11) in section 4(b), by striking "building" both
5	places it appears and inserting "building or infra-
6	structure";
7	(12) in section $4(c)(1)$ and (2), by striking
8	"building" both places it appears and inserting
9	"building or infrastructure";
10	(13) in section $4(d)(3)$ and (4), by striking
11	"building" both places it appears and inserting
12	"building or infrastructure";
13	(14) in section 7(a), by striking "on request and
14	at reasonable cost";
15	(15) in section 7(c), by striking "building" and
16	inserting "building or infrastructure";
17	(16) in section 8(1) and (4), by striking 'build-
18	ing" both places it appears and inserting "building
19	or infrastructure";
20	(17) in section 9, by striking "the United States
21	Fire Administration and";
22	(18) in section 9(2)(C), by striking "building"
23	and inserting 'building or infrastructure';
24	(19) in section 10(3), by striking "building" and
25	inserting "building and infrastructure";

1	(20) in section 11(a), by striking "the United
2	States Fire Administration and"; and
3	(21) by striking section 12.
4	TITLE V—FIRE RESEARCH
5	PROGRAM
6	SEC. 501. FIRE RESEARCH PROGRAM.
7	Section 16(a)(1) of the National Institute of Standards
8	and Technology Act (15 U.S.C. 278f(a)(1)) is amended—
9	(1) in subparagraph (D), by inserting "fires at
10	the wildland-urban interface," after 'but not limited
11	to,"; and
12	(2) in subparagraph (E), by inserting "fires at
13	the wildland-urban interface," after "types of fires,
14	including".

Union Calendar No. 244

111TH CONGRESS H. R. 3820

[Report No. 111-424, Part I]

BILL

To reauthorize Federal natural hazards reduction programs, and for other purposes.

February 26, 2010

Reported from the Committee on Science and Technology with an amendment

February 26, 2010

Committees on Natural Resources and Transportation and Infrastructure discharged; committed to the Committee of the Whole House on the State of the Union and ordered to be printed