

106TH CONGRESS
2D SESSION

H. R. 5499

To reduce the impacts of hurricanes, tornadoes, and other windstorms through a program of research and development and technology transfer, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

OCTOBER 19, 2000

Mr. MOORE (for himself, Mr. JONES of North Carolina, Mrs. MORELLA, Mr. ETHERIDGE, Mr. CLEMENT, Mr. LAFALCE, and Mr. SNYDER) introduced the following bill; which was referred to the Committee on Science, and in addition to the Committee on 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

A BILL

To reduce the impacts of hurricanes, tornadoes, and other windstorms through a program of research and development and technology transfer, 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 “Windstorm Hazard
5 Reduction Research and Technology Transfer Act”.

6 **SEC. 2. FINDINGS.**

7 The Congress finds the following:

1 (1) Coastal States and many island States and
2 territories are vulnerable to the hazards of wind-
3 storms. All Midwest, Southern, and Mid-Atlantic
4 States are vulnerable to the hazards of tornadoes
5 and thunderstorms and increased building activity is
6 occurring in high-risk areas such as the seashore
7 and “tornado alley”.

8 (2) Hurricanes cause enormous loss of life, in-
9 jury, destruction of property, and economic and so-
10 cial disruption, as evidenced by the 56 deaths and
11 \$6,000,000,000 in property damage in 1999 from
12 Hurricane Floyd. From 1990 to 1999 hurricanes
13 caused an average of 14 deaths and \$4,970,000,000
14 in property losses annually while tornadoes and
15 other windstorms caused over 58 deaths and
16 \$871,000,000 in property losses annually.

17 (3) Improved windstorm hazard reduction
18 measures, including—

19 (A) cost-effective and affordable design
20 and construction methods and practices;

21 (B) informed land use decisions;

22 (C) impact prediction methodologies and
23 early warning systems; and

24 (D) public education and involvement pro-
25 grams,

1 have the potential over the next 10 years to reduce
2 these losses. Losses will increase if steps are not
3 taken to help communities reduce their vulnerability.

4 (4) Wind engineering research needs to address
5 both improving new structures and retrofitting exist-
6 ing ones.

7 (5) There is an appropriate role for the Federal
8 Government in the collection, preparation, coordina-
9 tion, and dissemination of windstorm hazards reduc-
10 tion information in order to protect public health
11 and safety and in increasing public awareness of the
12 dangers of windstorms and of affordable steps home-
13 owners can take to preserve life and property. Im-
14 proved mechanisms are needed to translate existing
15 information and research findings into usable, state-
16 of-the-art specifications, criteria, and cost-effective
17 practices.

18 (6) An effective Federal program in windstorm
19 hazard reduction will require interagency coordina-
20 tion, input from individuals and institutions outside
21 the Federal Government who are expert in the
22 sciences of natural hazards reduction and in the
23 practical application of mitigation measures, and im-
24 proved mechanisms for the transfer of new knowl-
25 edge to State and local officials, to homeowners, and

1 to the design and construction industry. Tax credits
2 are an appropriate means of helping homeowners
3 apply mitigation measures.

4 (7) Windstorms are a worldwide problem, and
5 international cooperation is desirable for mutual
6 learning and mitigation.

7 **SEC. 3. DEFINITIONS.**

8 In this Act:

9 (1) The term “Director” means the Director of
10 the Office of Science and Technology Policy.

11 (2) The term “State” means each of the States
12 of the United States, the District of Columbia, the
13 Commonwealth of Puerto Rico, the United States
14 Virgin Islands, Guam, American Samoa, the Com-
15 monwealth of the Northern Mariana Islands, and
16 any other territory or possession of the United
17 States.

18 (3) The term “windstorm” means any storm
19 with a damaging or destructive wind component,
20 such as a hurricane, tropical storm, tornado, or
21 thunderstorm.

22 **SEC. 4. NATIONAL WINDSTORM HAZARD REDUCTION PRO-**
23 **GRAM.**

24 (a) INTERAGENCY GROUP.—Not later than 30 days
25 after the date of the enactment of this Act, the Director

1 shall establish an Interagency Group, to be cochaired by
2 the Director or the Director's designee and the Director
3 of the Federal Emergency Management Agency or that
4 Director's designee, consisting of representatives of appro-
5 priate Federal agencies, including the National Science
6 Foundation, the National Oceanic and Atmospheric Ad-
7 ministration, the National Institute of Standards and
8 Technology, the Department of Energy, and other agen-
9 cies with jurisdiction over housing, construction, and nat-
10 ural disaster mitigation and relief, to be responsible for
11 the development and implementation of a coordinated
12 Federal windstorm hazard reduction research, develop-
13 ment, and technology transfer program. In establishing
14 the Interagency Group, the Director is encouraged where
15 appropriate to designate lead agencies and to preserve ex-
16 isting programs and functions of Federal agencies and or-
17 ganizations, and shall ensure regular agency coordination
18 and information sharing and where appropriate coordina-
19 tion with other agencies.

20 (b) OBJECTIVE.—The objective of the windstorm
21 hazard reduction program is the achievement, within 10
22 years after the date of the enactment of this Act, of major
23 measurable reductions in losses that would otherwise have
24 occurred to life and property from windstorms. The objec-
25 tive is to be achieved through the creation of a program

1 involving cooperation among governments at all levels and
2 the private sector featuring—

3 (1) pertinent basic and applied research which
4 takes into account locality-specific weather, suscepti-
5 bility to other hazards, and design and construction
6 practices;

7 (2) better understanding of impediments and
8 disincentives to wind hazard reduction;

9 (3) inventorying of existing buildings and re-
10 lated data for use in developing and deploying wind
11 hazard mitigation measures;

12 (4) dissemination of information on cost-effec-
13 tive and affordable wind hazard reduction research
14 results, technology, and techniques to industry,
15 State and local governments, homeowners, and the
16 general public;

17 (5) improved technology for prediction, storm
18 warnings, advanced planning, and disaster response;

19 (6) increased public awareness of the dangers
20 of windstorms and of ways to preserve affected prop-
21 erty and life; and

22 (7) priority attention to critical lifelines, includ-
23 ing infrastructure and utilities, that are especially
24 needed in time of disaster.

1 (c) RESEARCH AND DEVELOPMENT ELEMENTS.—

2 The research and development elements of the program
3 may include—

4 (1) basic wind characterization and micro-cli-
5 mate research;

6 (2) development of methods to increase accu-
7 racy and reliability in the prediction of the track and
8 magnitude of windstorms;

9 (3) peer-reviewed research and development on
10 and demonstration of wind-resistant systems and
11 materials for new construction and retrofit, includ-
12 ing composite materials; building envelope compo-
13 nents, including windows, doors, and roofs; struc-
14 tural design; and design and construction tech-
15 niques, through physical testing and through com-
16 puter simulation when appropriate, taking into con-
17 sideration cost-effectiveness, affordability, and re-
18 gional differences including susceptibility to other
19 hazards;

20 (4) development of mechanisms for collecting
21 information on building systems and materials per-
22 formance in windstorms, information on mitigation
23 priorities, and other pertinent information from
24 sources such as the construction industry, insurance
25 companies, and building officials;

1 (5) development of updatable, cost-effective,
2 and affordable systems, both for new construction
3 and for retrofitting, and for inventorying informa-
4 tion on components and materials and their inter-
5 action;

6 (6) development of cost-effective and affordable
7 planning, design, construction, rehabilitation, and
8 retrofit methods and procedures, including utiliza-
9 tion of mitigation measures, for critical lifelines and
10 facilities such as hospitals, schools, public utilities,
11 and other structures that are especially needed in
12 time of disaster;

13 (7) research and development on techniques,
14 methodologies, and new technologies for the map-
15 ping in finer detail of windstorm hazard risks, to be
16 coordinated with the mapping of other natural and
17 manmade hazards;

18 (8) development of improved systems for pre-
19 dicting damaging windstorm impact and for identi-
20 fying, evaluating, and reliably characterizing wind-
21 storm hazards;

22 (9) development of improved approaches for
23 providing emergency services, reconstruction, and re-
24 development after a windstorm;

1 (10) development of quantitative assessment
2 techniques for the delineation and evaluation of the
3 socioeconomic effects of windstorms and their appli-
4 cation on a regional basis, including exploration of
5 adjustments that could be made to reduce windstorm
6 vulnerability and to effectively exploit existing and
7 developing mitigation techniques; and

8 (11) studies of impediments and disincentives
9 to effective wind hazard mitigation, preparedness,
10 and response policies and innovations.

11 (d) TECHNOLOGY TRANSFER.—The technology
12 transfer elements of the program shall include—

13 (1) the collection, classification, presentation,
14 and dissemination in a usable form to Federal,
15 State, and local officials, community leaders, the de-
16 sign and construction industry, contractors, home
17 owners, and the general public, of research results
18 and other pertinent information regarding wind-
19 storm phenomena, the identification of locations and
20 features which are especially susceptible to wind-
21 storm damage, ways to reduce the adverse con-
22 sequences of windstorms, and related matters;

23 (2) in coordination with the private sector, aca-
24 demia, and the States, curriculum development and
25 related measures to facilitate the training of employ-

1 ees of the design and construction industry, the in-
2 surance industry, and State and local governments,
3 and other interested persons; and

4 (3) efforts to increase public awareness and in-
5 formation related to windstorm hazard mitigation.

6 (e) IMPLEMENTATION PLAN.—The Interagency
7 Group established under subsection (a) shall refine, in
8 conjunction with appropriate representatives of State and
9 local units of government and private sector organizations,
10 the objective stated in subsection (b), develop measure-
11 ments related to the objective, including emphasis on cost-
12 effectiveness and affordability, and develop a 10-year im-
13 plementation plan for achieving the objective, deferring to
14 the private sector and State and local government for im-
15 plementation in all appropriate instances. Not later than
16 210 days after the date of the enactment of this Act, the
17 Interagency Group shall submit to the Congress the imple-
18 mentation plan. The plan shall include—

19 (1) a statement of research and development
20 goals and priorities;

21 (2) plans for the development of improved fore-
22 casting techniques for windstorms, early warning
23 systems, and systems for comprehensive response;

1 (3) plans for the development of an inventory of
2 buildings, building components, and damage to
3 buildings from windstorms;

4 (4) plans for transfer of technology and infor-
5 mation to State, county, local, and regional govern-
6 mental units and the private sector for appropriate
7 application of research and development results;

8 (5) provisions for dissemination, on a timely
9 basis, of—

10 (A) delivery of information and technology
11 in a form that is of use to the design profes-
12 sions, the construction industry, and other in-
13 terested parties; and

14 (B) other information and knowledge of in-
15 terest to the public to reduce vulnerability to
16 windstorm hazards;

17 (6) a description of how Federal disaster relief
18 and emergency assistance programs will incorporate
19 research and development results;

20 (7) establishment, consistent with this Act, of
21 goals, priorities, and target dates for implementation
22 of the program;

23 (8) assignment of responsibilities with respect
24 to each element of the program that does not al-
25 ready have a Federal lead agency;

1 improvements that should be made to that program, and
2 report to the Congress on actions that have been taken
3 to advance the Nation's capability to reduce the impacts
4 of windstorm hazards.

5 (b) MEMBERSHIP.—The Advisory Committee shall be
6 composed of 21 members to be appointed by the President
7 (one of whom shall be designated by the President as
8 chair). The members shall include representatives of a
9 broad cross-section of interests such as the research, tech-
10 nology transfer, architectural, engineering, and financial
11 communities; materials and systems suppliers; State,
12 county, and local governments concerned with the reduc-
13 tion of windstorm hazards; the residential, multifamily,
14 and commercial sectors of the construction industry; and
15 the insurance industry, and other representatives (not in-
16 cluding members of Federal agencies) from areas im-
17 pacted by windstorm hazards.

18 (c) COORDINATION.—The Advisory Committee shall
19 coordinate with existing advisory committees of the Fed-
20 eral Government and of the National Academies of Science
21 and Engineering. As appropriate, the work and reports of
22 the Advisory Committee may be done in conjunction with
23 or replace the work of other advisory committees.

24 (d) ANNUAL REPORT.—The Advisory Committee
25 shall provide a summary report to Congress each year.

1 (e) EXEMPTION.—Section 14 of the Federal Advisory
2 Committee Act shall not apply to the Advisory Committee
3 established under this section.

4 **SEC. 6. ANNUAL REPORT.**

5 (a) REPORT.—The Interagency Group established
6 under section 4(a) shall, within 90 days after the end of
7 each fiscal year, submit a report to the Congress describ-
8 ing the status of the windstorm hazard reduction program,
9 describing progress achieved during the preceding fiscal
10 year, by government at all levels and by the private sector,
11 toward achieving the objective stated in section 4(b) and
12 implementing the plan developed under section 4(e), and
13 including any amendments to the implementation plan.
14 Each such report shall include any recommendations for
15 legislative and other action the Interagency Group con-
16 sidered necessary and appropriate.

17 (b) CONFERENCE.—In order to disseminate the re-
18 search findings of the windstorm hazard reduction pro-
19 gram established under section 4(a), the Interagency
20 Group is encouraged to arrange for an annual conference
21 where research findings and mitigation efforts can be pre-
22 sented. Those invited to the conference shall include rep-
23 resentatives of a broad cross-section of interests such as
24 the research, technology transfer, architectural, engineer-
25 ing, and financial communities; materials and systems

1 suppliers; State, county, and local governments concerned
2 with the reduction of windstorm hazards; the residential,
3 multifamily, and commercial sectors of the construction
4 industry; and the insurance industry, and other represent-
5 atives from areas impacted by windstorm hazards.

6 **SEC. 7. AUTHORIZATION OF APPROPRIATIONS.**

7 There are authorized to be appropriated to carry out
8 activities under this Act \$50,000,000 for fiscal year 2001,
9 \$100,000,000 for fiscal year 2002, and \$150,000,000 for
10 fiscal year 2003.

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