

112TH CONGRESS  
1ST SESSION

# H. R. 2330

To establish a National Flood Research and Education Consortium to plan, coordinate, conduct, and share research on flooding, flood prevention, and other flood-related issues, and for other purposes.

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## IN THE HOUSE OF REPRESENTATIVES

JUNE 23, 2011

Mr. LOEBSACK introduced the following bill; which was referred to the Committee on Science, Space, and Technology, 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

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## A BILL

To establish a National Flood Research and Education Consortium to plan, coordinate, conduct, and share research on flooding, flood prevention, and other flood-related issues, 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 Flood Re-  
5 search and Education Act of 2011”.

6 **SEC. 2. FINDINGS.**

7 Congress finds the following:

1           (1) According to the National Oceanic and At-  
2           mospheric Administration (NOAA) three-fourths of  
3           all presidential disaster declarations are associated  
4           with flooding.

5           (2) According to NOAA, in most years flooding  
6           causes more damage in the United States than any  
7           other severe weather related event, an average of  
8           \$5.3 billion a year for the 30-year period, 1975–  
9           2004.

10          (3) Flooding, flood prevention, and flood-related  
11          socio-economic, environmental, health and policy  
12          issues are highly complex with implications for loss  
13          of life and billions in damage to all sectors of our  
14          economy.

15          (4) There is not currently a national-level com-  
16          prehensive effort to research flooding, flood preven-  
17          tion, and flood-related issues.

18          (5) Flooding, flood prevention, and flood-related  
19          issues require a national-level comprehensive and  
20          collaborative research effort to help advance under-  
21          standing of the variety of issues on causes of flood-  
22          ing, and implementation of prediction methods as  
23          well as policies that would help prevent future dam-  
24          age and natural disasters.

1           (6) A national-level effort should include part-  
2           nerships between the Federal Government and insti-  
3           tutions of higher education all with expertise in the  
4           areas of physical and environmental science, includ-  
5           ing hydrology, hydraulics, hydrometeorology, climate,  
6           as well as in engineering, sociology and economics.

7           (7) A national-level effort should include re-  
8           search on climate and weather and any other area  
9           related to flooding, flood prevention, and other flood-  
10          related issues, including—

11                 (A) analysis of the economic effects of  
12                 flooding;

13                 (B) evaluation and development of strate-  
14                 gies, techniques, and technologies to reduce,  
15                 manage, monitor, and prevent flooding;

16                 (C) analysis of Federal, State, regional,  
17                 and local flood policy;

18                 (D) and development of risk-assessment  
19                 tools, methods, and models.

20          (8) A national-level effort should also include  
21          development of recommendations and identification  
22          of best practices for predicting, preventing, and  
23          minimizing flooding and its effects, including—

24                 (A) risk-assessment tools, methods, and  
25                 models;

1 (B) strategies and techniques for moni-  
2 toring and predicting flooding;

3 (C) strategies and techniques for flood  
4 management and prevention;

5 (D) the adoption and use of relevant tech-  
6 nologies;

7 (E) Federal, State, regional, and local  
8 flood policies; and

9 (F) coordination and cooperation among  
10 local, State, and Federal flood-related efforts.

11 (9) Research, recommendations, and best prac-  
12 tices should be developed by taking into account re-  
13 gional differences in hydrology, weather, geography,  
14 economy, and population density while ensuring in-  
15 land and non-oceanic flooding situations, among oth-  
16 ers, are represented.

17 (10) Demonstration projects should be used to  
18 test the efficacy of new strategies, techniques and  
19 technologies for assessing flood risk, monitoring, and  
20 predicting and provide local governments the oppor-  
21 tunity to participate in areas where new strategies  
22 are needed.

23 (11) There are multiple areas of Federal, State,  
24 and local government responsibility for flooding and  
25 water-related issues. Thus, a national-level research

1 effort should involve the development of collaborative  
2 networks on regional flooding, flood prevention, and  
3 flood-related issues, including the following enti-  
4 ties—

5 (A) relevant Federal departments and  
6 agencies, including water-research efforts within  
7 NOAA and other Federal entities;

8 (B) State, county, and local governments;

9 (C) local Councils of Governments or re-  
10 gional and Metropolitan Planning Organiza-  
11 tions;

12 (D) State agriculture, natural resource, en-  
13 vironment, economic development, homeland se-  
14 curity, and water agencies;

15 (E) county disaster recovery coordinators,  
16 emergency management personnel, and first re-  
17 sponders;

18 (F) public or private colleges and univer-  
19 sities;

20 (G) floodplain managers;

21 (H) watershed organizations and boards;

22 (I) agriculture and commodity Organiza-  
23 tions;

24 (J) resource, conservation, preservation  
25 and environmental organizations;

1 (K) homeowners associations and organiza-  
2 tions; and

3 (L) business and development organiza-  
4 tions.

5 **SEC. 3. OFFICE OF FLOOD RESEARCH AND POLICY.**

6 (a) ESTABLISHMENT.—

7 (1) IN GENERAL.—There is hereby established  
8 within the National Oceanic and Atmospheric Ad-  
9 ministration (NOAA) an Office of Flood Research  
10 and Policy.

11 (2) DIRECTOR.—

12 (A) IN GENERAL.—The Office shall be  
13 headed by a Director, who shall be appointed by  
14 the Administrator of NOAA.

15 (B) SALARY.—The rate of pay for the Di-  
16 rector shall not exceed the rate payable for level  
17 IV of the Executive Schedule under section  
18 5316 of title 5, United States Code.

19 (3) STAFF.—

20 (A) IN GENERAL.—The Director may ap-  
21 point and fix the pay of personnel as the Direc-  
22 tor considers appropriate.

23 (B) DETAIL OF GOVERNMENT EMPLOY-  
24 EES.—Upon request of the Director, the head  
25 of any Federal department or agency may de-

1 tail, on a reimbursable basis, any of the per-  
2 sonnel of that department or agency to the Of-  
3 fice to assist the Director in carrying out his  
4 duties under this Act.

5 (C) EXPERTS AND CONSULTANTS.—The  
6 Director may procure temporary and intermit-  
7 tent services under section 3109(b) of title 5,  
8 United States Code.

9 (b) DUTIES.—The Director shall—

10 (1) establish and oversee the National Flood  
11 Research and Education Consortium described in  
12 section 4;

13 (2) make recommendations and identify best  
14 practices for predicting, preventing, and minimizing  
15 flooding and its effects in accordance with sub-  
16 section (c);

17 (3) submit to Congress an annual report in ac-  
18 cordance with subsection (d);

19 (4) establish and maintain a page on the public  
20 NOAA Web site in accordance with subsection (e);  
21 and

22 (5) review applications that have been approved  
23 by the Lead Partner Institution (LPI) and award  
24 grants for demonstration projects in accordance with  
25 section 6.

1 (c) RECOMMENDATIONS AND BEST PRACTICES.—

2 (1) IN GENERAL.—The Director, in consulta-  
3 tion with the Director of the United States Geologi-  
4 cal Survey, the Commanding General of the United  
5 States Army Corps of Engineers, and the heads of  
6 other relevant Federal agencies, shall develop rec-  
7 ommendations and identify best practices for pre-  
8 dicting, preventing, and minimizing flooding and its  
9 effects, including—

10 (A) risk-assessment tools, methods, and  
11 models;

12 (B) strategies and techniques for moni-  
13 toring and predicting flooding;

14 (C) strategies and techniques for flood  
15 management and prevention;

16 (D) the adoption and use of relevant tech-  
17 nologies;

18 (E) Federal, State, regional, and local  
19 flood policies; and

20 (F) coordination and cooperation among  
21 local, State, and Federal flood-related efforts.

22 (2) ADDITIONAL CONSIDERATIONS.—In devel-  
23 oping the recommendations and best practices de-  
24 scribed in paragraph (1), the Director shall con-  
25 sider—

1           (A) the annual report submitted by the  
2           LPI in accordance with section 4(f); and

3           (B) regional differences in hydrology,  
4           weather, geography, economy, and population  
5           density.

6           (d) REPORT.—The Director shall submit to Congress  
7           an annual report on the activities of the Office and the  
8           Consortium.

9           (e) WEB SITE.—The Director shall establish and  
10          maintain a page on the public NOAA Web site on which  
11          the Director shall publish—

12           (1) the recommendations and best practices de-  
13          scribed in subsection (c); and

14           (2) the annual report described in subsection  
15          (d).

16          (f) OVERSIGHT.—

17           (1) RESEARCH.—The Director shall establish  
18          procedures to ensure that there is full and effective  
19          review of the research conducted by the Consortium.

20           (2) PERIODIC REVIEW.—Periodically (and not  
21          less than every year), the Director shall review the  
22          activities of the Consortium to ensure that—

23           (A) Consortium members are fulfilling  
24          their duties under section 3; and

1 (B) funds received under this Act are used  
2 solely for such purposes.

3 (3) INFORMATION.—Consortium members shall  
4 provide the Director with any information that the  
5 Director considers necessary to carry out his respon-  
6 sibilities under this section.

7 **SEC. 4. NATIONAL FLOOD RESEARCH AND EDUCATION**  
8 **CONSORTIUM.**

9 (a) ESTABLISHMENT.—

10 (1) IN GENERAL.—The Director shall establish  
11 a National Flood Research and Education Consor-  
12 tium.

13 (2) MEMBERS.—

14 (A) COMPOSITION.—The Consortium shall  
15 consist of—

16 (i) a LPI selected by the Director as  
17 described in section 5(a); and

18 (ii) additional partner institutions se-  
19 lected by the Director and LPI as de-  
20 scribed in section 5(b).

21 (B) LIMITATION TO INSTITUTIONS OF  
22 HIGHER EDUCATION.—Members of the Consor-  
23 tium shall be institutions of higher education.

24 (b) DUTIES OF CONSORTIUM MEMBERS.—Each Con-  
25 sortium member shall—

1           (1) conduct research on flooding, flood preven-  
2           tion, and other flood-related issues, including—

3                   (A) analysis of the economic effects of  
4           flooding;

5                   (B) evaluation and development of strate-  
6           gies, techniques, and technology to reduce,  
7           manage, monitor, and prevent flooding;

8                   (C) analysis of Federal, State, regional,  
9           and local flood policy; and

10                  (D) development of risk-assessment tools,  
11           methods, and models; and

12           (2) develop undergraduate and graduate  
13           courses on flooding, flooding prevention, and other  
14           flood-related issues.

15           (c) ADDITIONAL DUTIES OF LEAD PARTNER INSTI-  
16           TUTION.—In addition to fulfilling the duties described in  
17           subsection (b), the LPI shall—

18                  (1) establish a center to plan, coordinate, and  
19           facilitate research and information sharing among  
20           the Consortium members;

21                  (2) review and approve applications for grants  
22           under section 6;

23                  (3) oversee demonstration projects funded by  
24           grants awarded under section 6;

1           (4) submit to the Director an annual report in  
2 accordance with subsection (f); and

3           (5) establish and maintain an Internet Web site  
4 in accordance with subsection (g).

5           (d) IMPROVEMENT OF LEAD PARTNER INSTITUTION  
6 FACILITIES.—

7           (1) IN GENERAL.—Subject to the requirements  
8 of paragraph (2), the LPI may use funds authorized  
9 pursuant to section 7(a)(2) to improve facilities used  
10 by the LPI in carrying out its duties under this sec-  
11 tion.

12           (2) REQUIREMENTS.—In order for the LPI to  
13 be eligible to receive funds under this subsection—

14           (A) the LPI shall submit to the Director a  
15 plan detailing the proposed improvements, in-  
16 cluding—

17           (i) the projected cost of such improve-  
18 ments;

19           (ii) a description of engineering, de-  
20 sign, staffing, and equipment needs; and

21           (iii) such additional information as  
22 the Director shall require; and

23           (B) the Director shall approve such plan.

24           (e) ANNUAL REPORT.—

1           (1) CONTENTS.—For each fiscal year in which  
2 the Consortium is funded under this Act, the LPI  
3 shall prepare a report that includes—

4           (A) a summary of the research and activi-  
5 ties—

6           (i) conducted by each Consortium  
7 member during the fiscal year in accord-  
8 ance with this Act; and

9           (ii) planned by each Consortium mem-  
10 ber for the next fiscal year in accordance  
11 with this Act;

12          (B) a detailed accounting of the  
13 amounts—

14          (i) expended by each Consortium  
15 member during the fiscal year in carrying  
16 out this Act; and

17          (ii) planned to be expended by each  
18 Consortium member for the next fiscal  
19 year in carrying out this Act;

20          (C) the number of applications for grants  
21 under section 5 received during the fiscal year,  
22 a list of such grants awarded during the fiscal  
23 year, and the status of demonstration projects  
24 funded by such grants; and

1 (D) such additional information as the Di-  
2 rector shall require.

3 (2) FINAL REPORT.—In the case of the final  
4 annual report, the LPI may exclude the information  
5 described in paragraph (1)(A)(ii) and paragraph  
6 (1)(B)(ii).

7 (3) TIMING.—The LPI shall submit the report  
8 described in paragraph (1) to the Director no later  
9 than 30 days after the end of the fiscal year.

10 (f) WEB SITE.—The LPI shall establish and main-  
11 tain an Internet Web site for the Consortium on which  
12 the LPI shall publish—

13 (1) information about the purpose of the Con-  
14 sortium;

15 (2) the location and contact information of Con-  
16 sortium members;

17 (3) a link to the page of the Office on the pub-  
18 lic NOAA Web site;

19 (4) a detailed description of all research con-  
20 ducted by Consortium members in accordance with  
21 this Act;

22 (5) articles on flooding, flood prevention, and  
23 flood-related issues published in peer-reviewed aca-  
24 demic journals by professors of Consortium mem-  
25 bers;

1 (6) information about the grant program de-  
2 scribed in section 6, including the application and  
3 criteria for selection;

4 (7) the status of demonstration projects funded  
5 by the grant program described in section 6; and

6 (8) such additional information as the Director  
7 shall require.

8 (g) INFORMATION.—Consortium members shall pro-  
9 vide the LPI with any information the LPI considers rel-  
10 evant to carry out its responsibilities under this section.

11 **SEC. 5. SELECTION OF CONSORTIUM MEMBERS.**

12 (a) LEAD PARTNER INSTITUTION.—

13 (1) IN GENERAL.—Not later than 90 days after  
14 the date of enactment of this Act, the Director shall  
15 select an institution of higher education to serve as  
16 the lead partner institution to head the Consortium.

17 (2) APPLICATION.—An institution of higher  
18 education desiring to be selected as the LPI of the  
19 Consortium shall submit an application to the Direc-  
20 tor at such time, in such form, and containing such  
21 information and assurances as the Director shall  
22 reasonably require. Such application shall include—

23 (A) a comprehensive prospectus for the op-  
24 eration of the Consortium;

25 (B) a research proposal;

1 (C) a description of relevant current and  
2 past research conducted by the institution;

3 (D) a plan to develop undergraduate and  
4 graduate courses on flooding, flooding preven-  
5 tion, and other flood-related issues;

6 (E) a plan to incorporate undergraduate  
7 and graduate students in the work of the Con-  
8 sortium;

9 (F) a proposed budget; and

10 (G) a certification that the applicant will  
11 provide non-Federal matching funds in an  
12 amount that is at least equal to 20 percent of  
13 any funds received under this Act.

14 (3) PRIORITY.—In selecting the LPI, the Direc-  
15 tor shall give priority to an applicant that—

16 (A) has significant research expertise in  
17 the areas of physical and environmental science,  
18 flooding, hydraulics, hydroscience, engineering,  
19 and meteorology;

20 (B) is located in a State that frequently  
21 experiences non-oceanic and inland flooding;

22 (C) has previously partnered with or re-  
23 ceived funds from the Federal Government to  
24 research flooding, hydrology, and watershed  
25 issues;

1           (D) has experience operating a flood re-  
2 search center serving the State or region in  
3 which the institution is located;

4           (E) has the capability to take a leading  
5 role in coordinating and fulfilling the purposes  
6 of the Consortium; and

7           (F) has the capacity to administer the  
8 demonstration project grant program described  
9 in section 6.

10 (b) ADDITIONAL MEMBERS.—

11           (1) IN GENERAL.—Not later than 90 days after  
12 the selection of the LPI, the Director, in coordina-  
13 tion with the LPI, shall select additional institutions  
14 of higher education to participate in the Consortium.

15           (2) APPLICATION.—An institution of higher  
16 education desiring to be selected as a member of the  
17 Consortium shall submit an application to the Direc-  
18 tor at such time, in such form, and containing such  
19 information and assurances as the Director shall  
20 reasonably require. Such application shall include—

21                   (A) a research proposal;

22                   (B) a description of relevant current and  
23 past research conducted by the institution;

1 (C) a plan to develop undergraduate and  
2 graduate courses on flooding, flooding preven-  
3 tion, and other flood-related issues;

4 (D) a plan to incorporate undergraduate  
5 and graduate students in the work of the Con-  
6 sortium;

7 (E) a proposed budget; and

8 (F) a certification that the applicant will  
9 provide non-Federal matching funds in an  
10 amount that is at least equal to 20 percent of  
11 any funds received under this Act.

12 (3) PRIORITY.—In selecting additional members  
13 of the Consortium, the Director shall give priority to  
14 an applicant that—

15 (A) has demonstrated research expertise in  
16 an area or areas related to flooding; and

17 (B) has the ability to plan, coordinate, and  
18 conduct research related to flooding, flood pre-  
19 vention, and flood-related issues.

20 **SEC. 6. GRANT PROGRAM FOR DEMONSTRATION**  
21 **PROJECTS.**

22 (a) ESTABLISHMENT.—From funds made available  
23 under section 7(a), the Director shall award grants to  
24 States and units of local government for the purpose of  
25 funding eligible demonstration projects.

1       (b) APPLICATION.—To be eligible to receive a grant  
2 under this section, a State or unit of local government  
3 shall submit an application to the LPI at such time and  
4 in such manner as the LPI, in consultation with the Direc-  
5 tor, shall reasonably require.

6       (c) APPROVAL OF GRANT.—

7           (1) IN GENERAL.—The award of a grant under  
8 subsection (a) shall require the approval of both the  
9 LPI and the Director.

10          (2) TIMING.—

11           (A) LPI.—The LPI shall approve or reject  
12 an application for a grant under subsection (a)  
13 not later than 60 days after receiving the com-  
14 pleted application.

15           (B) DIRECTOR.—If the LPI approves an  
16 application for a grant under subsection (a),  
17 the Director shall approve or reject such appli-  
18 cation not later than 30 days after approval by  
19 the LPI.

20       (d) ELIGIBLE DEMONSTRATION PROJECTS.—A State  
21 or unit of local government that receives a grant under  
22 subsection (a) shall use such grant to fund demonstration  
23 projects that—

24           (1) implement the recommendations and best  
25 practices described in section 3(c); or

1           (2) test new or improved techniques, strategies,  
2 technologies, methods, tools, and models for pre-  
3 dicting, preventing, and minimizing flooding and its  
4 effects.

5 (e) GRANT AMOUNT.—

6           (1) LIMIT.—Except as provided in paragraph  
7 (2), a grant under this section shall not exceed  
8 \$250,000.

9           (2) EXCEPTION.—A grant under this section  
10 may exceed \$250,000 if—

11                   (A) all Consortium members waive the lim-  
12 itation of paragraph (1);

13                   (B) the Director waives the limitation of  
14 paragraph (1); and

15                   (C) the demonstration project involves  
16 multiple watersheds or jurisdictions and bene-  
17 fits multiple communities.

18           (3) MATCHING FUNDS.—States and units of  
19 local government that receive funds under this sec-  
20 tion shall contribute non-Federal funds in an  
21 amount equal to or greater than 20 percent of the  
22 amount received.

23 **SEC. 7. FUNDING.**

24 (a) AUTHORIZATION OF APPROPRIATIONS.—

1           (1) IN GENERAL.—In addition to the funds au-  
2           thorized to be appropriated under paragraph (2), for  
3           each of the fiscal years 2012 through 2017, there is  
4           authorized to be appropriated to the Administrator  
5           of NOAA \$11,000,000 to carry out this Act.

6           (2) IMPROVEMENT OF LPI FACILITIES.—There  
7           is authorized to be appropriated to the Adminis-  
8           trator of NOAA such sums as may be necessary for  
9           payments to the LPI for the purposes described in  
10          section 4(e).

11          (b) AVAILABILITY OF FUNDS.—

12           (1) OFFICE OF FLOOD RESEARCH AND POL-  
13           ICY.—Of the amounts made available under sub-  
14           section (a)(1) for a fiscal year, not more than  
15           \$2,000,000 may be used to fund the activities of the  
16           Office.

17           (2) LEAD PARTNER INSTITUTION.—Of the  
18           amounts made available under subsection (a)(1) for  
19           a fiscal year, not more than \$3,000,000 may be used  
20           to fund the activities of the LPI.

21           (3) ADDITIONAL MEMBERS OF THE CONSOR-  
22           TIUM.—

23           (A) IN GENERAL.—Of the amounts made  
24           available under subsection (a)(1) for a fiscal  
25           year, not more than \$3,000,000 may be used to

1 fund the activities of the members of the Con-  
2 sortium other than the LPI.

3 (B) LIMIT PER MEMBER.—Of the amounts  
4 made available under subparagraph (A), not  
5 more than \$500,000 may be used to fund the  
6 activities of a member of the Consortium other  
7 than the LPI.

8 (4) GRANT PROGRAM.—Of the amounts made  
9 available under subsection (a)(1) for a fiscal year,  
10 not more than \$3,000,000 may be used to fund the  
11 grant program described in section 6.

12 **SEC. 8. DEFINITIONS.**

13 In this Act:

14 (1) CONSORTIUM.—The term “Consortium”  
15 means the National Flood Research and Education  
16 Consortium established in section 3.

17 (2) DIRECTOR.—The term “Director” means  
18 the Director of the Office of Flood Research and  
19 Policy established within NOAA in section 2.

20 (3) INSTITUTION OF HIGHER EDUCATION.—The  
21 term “institution of higher education” has the  
22 meaning given such term in section 101(a) of the  
23 Higher Education Act of 1965 (20 U.S.C. 1001(a)).

24 (4) LPI.—The term “LPI” means the Lead  
25 Partner Institution described in section 4(a).

1           (5) OFFICE.—The term “Office” means the Of-  
2           fice of Flood Research and Policy established in sec-  
3           tion 2.

○