

**A LEGISLATIVE HEARING ON THE WATER
RESOURCES DEVELOPMENT ACT OF 2012**

HEARING
BEFORE THE
COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE
ONE HUNDRED TWELFTH CONGRESS

SECOND SESSION

NOVEMBER 15, 2012

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ONE HUNDRED TWELFTH CONGRESS
SECOND SESSION

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A LEGISLATIVE HEARING ON THE WATER RESOURCES DEVELOPMENT ACT OF 2012

THURSDAY, NOVEMBER 15, 2012

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
Washington, DC.

The full Committee met, pursuant to notice, at 10 a.m. in room 406, Dirksen Senate Office Building, Hon. Barbara Boxer (Chairman of the full Committee), presiding.

Present: Senators Boxer, Inhofe, Carper, Lautenberg, Whitehouse, Merkley, Vitter, Barrasso, Johanns, and Boozman.

OPENING STATEMENT OF HON. BARBARA BOXER, U.S. SENATOR FROM THE STATE OF CALIFORNIA

Senator BOXER. Good morning, everybody. Welcome to this hearing.

Today we are going to examine a draft bill to reauthorize WRDA, the Water Resources Development Act. This hearing comes on the heels of Sandy, which killed more than 120 people, destroyed entire neighborhoods on the east coast, and cost billions of dollars in damage to property and businesses. Our thoughts and prayers go out to all the communities affected by this terrible storm. And I know, because I have talked to Senator Vitter, when he looks at this, he is still dealing with what happened down in his great State.

The devastation caused by Sandy puts an even brighter spotlight on the need to ensure that communities have critical flood protection, which is one of the primary goals of the WRDA bill. The bill before us I have drafted, based on the input of members of this Committee and many weeks of discussion with the Ranking Member, Senator Inhofe, the Chair and Ranking Member of the Transportation and Infrastructure Subcommittee. I believe they have been productive discussions. I got a very important letter that has been made public, and I ask unanimous consent to put it into the record at this time. Without objection, from all of the Republicans, I find this letter to be very important, very constructive. And I thank my colleagues for doing it.

[The referenced letter was not received at time of print.]

Senator BOXER. Clearly, the bill before us is my draft. And it is going to be changed, and we are going to work on it until we all agree. And I believe we will reach agreement, just as we were able to do in the highway bill.

So I look forward personally to working with every member of this Committee to refine this draft as we move forward. I have already spoken to a lot of you individually, and you have my commit-

ment, and my staff is ready, willing, and able. We start discussions from this moment forward.

As we discussed in September, WRDA authorizes the projects and programs of the Army Corps, provides many benefits to America's families and businesses, including maintaining navigation routes for commerce and reducing the risk of flooding. For example, U.S. ports and waterways, many of which are maintained by the Corps, moved \$2.3 billion tons of goods in fiscal year 2011. We are talking about an economic issue here. And Corps flood risk management projects are estimated to have prevented \$28 billion in damages in 2010. So even though we are looking at horrific damages from Sandy, we have to realize, in 2011, the Corps flood risk management projects prevented \$28 billion in damages, in 2010.

This bill recognizes the value of our nation's water resources infrastructure by authorizing projects that have been extensive reviewed, evaluated, and recommended to Congress for authorization. These projects represent all of the Corps of Engineers' primary mission areas, including flood risk and storm damage reduction, navigation, ecosystem restoration. They will protect life and property for thousands of people, restore significant ecosystems, and promote commerce.

Now, here is the thing. If we don't act, these projects can't go forward, even though there is an engineer's report for them, and all the work has been done. We don't act. And the House doesn't act, the President doesn't sign the bill, these projects are not going to move forward.

I will give you an example of just one project in my State where we are facing very critical challenges. The WRDA bill would authorize improvements to these projects that already have these engineers' reports. And they are all over the country. This particular one is around the Natomas Basin in Sacramento, to reduce flood risk for tens of thousands of people.

According to the Corps, these levees protect \$7 billion in property as well as critical Federal, State, and local infrastructure. I would like to enter into the record a letter from the Sacramento Area Flood Control Agency and Representative Matsui supporting this WRDA bill. Without objection.

[The referenced information follows:]



Sacramento
Area Flood
Control
Agency

November 13, 2012

Senator Barbara Boxer
Chairwoman, Committee on
Environment and Public Works
Rm. 410 Dirksen Building
United States Senate
Washington, DC 20510-6175

Senator James M. Inhofe
Ranking Member, Committee on
Environment and Public Works
Rm. 456 Dirksen Building
Washington, DC 20510-6175

Dear Chairwoman Boxer and Ranking Member Inhofe:

On behalf of the Board of Directors of the Sacramento Area Flood Control Agency (SAFCA), thank you for developing and making available the draft "Water Resources Development Act of 2012." This is a major and positive development in advancing national objectives for public safety, economic development and job creation.

There are many worthwhile and innovative provisions and policy initiatives in the draft and we look forward to working with you as this important legislation moves forward. We also applaud the convening of a second "WRDA" hearing on November 15th, which will serve to give greater public understanding and appreciation for the value of responsible infrastructure development and the urgent need to act on a WRDA in a timely manner. Lastly, we commend the Committee for its strong bipartisan leadership and focus in working collaboratively to move a WRDA forward.

I'd like to briefly mention several provisions of the draft bill that are especially important to us in the flood control community:

- o Section 1002, Project Authorization - this section reflects a very responsible approach to authorizing U.S. Army Corps of Engineers projects by assuring that they have completed the Federal review process and are found to be in the public interest.
- o Sections 2008 through 2011, Credits for Non-Federal Work - these sections reflect important steps in encouraging State and local initiative and accelerating flood

Office: 916-874-7508
Fax: 916-874-8289

1007 - 7th Street, 7th Floor
Sacramento, CA 95814-3407

www.safca.org

November 13, 2012
Page 2 of 2

control improvements by allowing appropriate crediting for work accomplished by Non-Federal interests.

- o Section 2017, Vegetation Management Policy - this section, which reflects provisions of H.R. 5831 championed by Congresswoman Doris Matsui, will assure a thoughtful, coordinated and open reassessment of Corps vegetation management policy.

Chairman Boxer and Senator Inhofe, thank you for your continued strong bipartisan leadership and public service. We urge you to move forward with this vitally important legislation as soon as possible. We look forward to working with this Committee to help make WRDA a reality in the very near future.

Sincerely,



Richard M. Johnson
Executive Director

DDRIS O. MATSUI
5th District, California
COMMITTEE ON ENERGY
AND COMMERCE

Congress of the United States
House of Representatives
Washington, DC 20515-0505

November 14, 2012

WASHINGTON OFFICE:
222 CANNON HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-0505
(202) 225-7183

DISTRICT OFFICE:
ROBERT T. MATSUI U.S. COURTHOUSE
501 I STREET, SUITE 12-000
SACRAMENTO, CA 95814
(916) 499-5500
<http://matsui.house.gov>

The Honorable Barbara Boxer
Chairwoman
Senate Committee on
Environment and Public Works
410 Dirksen Senate Office Building
Washington, DC 20510

The Honorable James Inhofe
Ranking Member
Senate Committee on
Environment and Public Works
456 Dirksen Senate Office Building
Washington, DC 20510

Dear Chairwoman Boxer and Ranking Member Inhofe:

I am writing to express my strong support for your legislative discussion draft that outlines your key legislative and policy proposals that should be included in the next Water Resources Development Act (WRDA). Your leadership on these issues is very much appreciated by my constituents. As you know, much of our nation's flood protection infrastructure is in dire need of improvement and Congressional action is necessary to prevent future floods. As the Senate's WRDA process moves forward, your discussion draft proposal includes a number of key policies that will be critical to improving flood protection in the Sacramento region.

I understand the constraints that the current earmark ban has placed on infrastructure projects, many of which are necessary to prevent future floods. I am pleased that the committee's WRDA discussion draft, through generic language, includes the authorization of the Natomas Levee Improvement Project (NLIP) in Sacramento. I introduced similar language in the House (H.R. 4353). This flood risk reduction project has been fully vetted and includes a Chief's Report, with an endorsement by the Assistant Secretary of the Army (Civil Works) on behalf of the Administration.

The area to be protected by the NLIP is heavily urbanized, home to over 100,000 people, two interstate highways and the Sacramento International Airport. Levee deficiencies were found in the area in 2006 and the area was remapped by FEMA in 2008. The Corps of Engineers has said the area has a level of flood protection of below 1 in 33 years, a third of the minimum national standard of 1 in 100 years. The Corps of Engineers has developed a levee improvement plan that would reduce 96 percent of expected flood damages, return an average of \$502 million in annual economic benefits and has a benefit to cost ratio of 6 to 1. Local taxpayers have voted to tax themselves on two separate occasions to pay for these improvements.

The state and local governments have already begun construction and will have spent upwards of \$350 million on 18 miles of levee improvements, with 24 miles of work remaining. Without federal authorization and further federal support, construction will come to a halt. Authorizing the NLIP is my highest priority and I applaud your leadership to help move this project forward.

I am also pleased that your committee's WRDA discussion draft includes legislative language to address the issues surrounding the Corps' vegetation on levees policy. As you know, the Army Corps of Engineers released a revised PGL regarding vegetation on levee policy. The State of California and a wide variety of stakeholders remain extremely concerned that the latest proposal does not provide enough flexibility that takes into account each region's unique challenges. For decades, the Corps' practice has been to protect and encourage woody vegetation on many levees in California and other parts of our country. This practice is in stark conflict with the Corps' current vegetation policy.

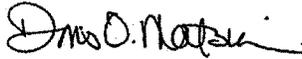
In a time of declining federal, state and local resources, public funds should be spent first on crucial levee fixes, rather than on removing the remaining vegetation from California's riparian environment without a site-specific, science-based evaluation. The Committee's WRDA discussion draft includes language, which is identical to legislation I introduced (H.R. 5831) in the House last Spring. I strongly support your language that would require the Corps to thoroughly review and reconsider their current position. Instead of a one-size fits all national standard, the bill would require the Corps to move to regional variances with input from the state and local entities that are most familiar with the unique challenges facing each community. Among other things, as part of its regional variance policy, the language provides the Corps with the flexibility to exempt areas from the policy, where deemed necessary by the Assistant Secretary of the Army Corps of Engineers. I applaud your committee for including levee vegetation language in your discussion draft and encourage you to continue to include this language as the WRDA process continues.

Lastly, I would like to express my support for the crediting language included in the committee's WRDA proposal. I was concerned with the Corps' recent decision to discontinue crediting under Section 104 of the 1986 WRDA. It has had a ripple effect across the country, including communities in the Sacramento area, making it more difficult for local stakeholders to invest in flood damage reduction projects. In some cases, the effect of this decision has already been to delay, and may eventually be to halt, local flood protection projects. The language included in your WRDA discussion draft is a step in the right direction, encouraging State and local initiatives and accelerating flood control improvements by allowing appropriate crediting for work accomplished by non-federal interests.

Again, I applaud the committee's leadership in crafting a WRDA discussion draft and for holding a subsequent hearing on legislative and policy goals to upgrade our nation's flood protection infrastructure. As the WRDA process moves forward in the Senate, I remain committed to assisting your efforts in any way possible.

Thank you in advance for your consideration and for any assistance you may provide.

Sincerely,



DORIS O. MATSUI
Member of Congress

Senator BOXER. Like Natomas, there are many more life saving flood control projects around the country that are ready to be built following passage of WRDA, projects in Kansas, Minnesota, North Dakota, Iowa, Kentucky, to name a few. Vital navigation projects and significant ecosystem restoration efforts are also ready to go once Congress acts. That is why I am so happy we all agree we must act.

In addition to authorizing vital projects to protect life and safety and maintain economically important navigation routes, this bill makes essential policy reforms—which I know Senator Vitter is particularly interested in—including increasing flexibility for non-Federal sponsors of Corps projects, encouraging the Corps to fully implement ongoing efforts to accelerate project delivery, urging the expenditure of funds collected in the Harbor Maintenance Trust Fund, reforming the process for delivery of inland waterway projects—again, very important to members of this Committee—and establishing a national levee safety program.

In light of the devastation caused by Sandy and other extreme floods, I have drafted a new title, I am very excited about getting my colleagues' advice on this title, to help us better prepare for and reduce the risk from these types of disasters. I have made this new provision available to all members of the Committee, and I ask unanimous consent to place this piece into the record at this time. Without objection.

[The referenced information follows:]

112TH CONGRESS
2D SESSION

S. _____

To provide for the conservation and development of water and related resources, to authorize the Secretary of the Army to construct various projects for improvements to rivers and harbors of the United States, and for other purposes. .

IN THE SENATE OF THE UNITED STATES

_____ introduced the following bill; which was read twice
and referred to the Committee on _____

A BILL

To provide for the conservation and development of water and related resources, to authorize the Secretary of the Army to construct various projects for improvements to rivers and harbors of the United States, 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; TABLE OF CONTENTS.**

4 (a) SHORT TITLE.—This Act may be cited as the

5 “Water Resources Development Act of 2012”.

6 (b) TABLE OF CONTENTS.—The table of contents of

7 this Act is as follows:

- Sec. 1. Short title; table of contents.
- Sec. 2. Definition of Secretary.

TITLE I—WATER RESOURCE PROJECTS

- Sec. 1001. Purposes.
- Sec. 1002. Project authorizations.
- Sec. 1003. Project review.

TITLE II—WATER RESOURCES POLICY REFORMS

- Sec. 2001. Purposes.
- Sec. 2002. Fish and wildlife mitigation.
- Sec. 2003. Independent peer review.
- Sec. 2004. Safety assurance review.
- Sec. 2005. Continuing authority programs.
- Sec. 2006. Operation and maintenance of navigation and hydroelectric facilities.
- Sec. 2007. Mitigation status report.
- Sec. 2008. Clarification of work-in-kind credit authority.
- Sec. 2009. Transfer of excess work-in-kind credit.
- Sec. 2010. Credit for in-kind contributions.
- Sec. 2011. Credit in lieu of reimbursement.
- Sec. 2012. Dam optimization.
- Sec. 2013. Implementation of biological opinions.
- Sec. 2014. Consideration of Federal land in feasibility studies.
- Sec. 2015. Planning assistance to States.
- Sec. 2016. Project acceleration.
- Sec. 2017. Vegetation management policy.
- Sec. 2018. Operation and maintenance of certain projects.
- Sec. 2019. Non-Federal project implementation pilot program.
- Sec. 2020. Tribal partnership program.
- Sec. 2021. Cooperative agreements with Columbia River Basin Indian tribes.
- Sec. 2022. Post-disaster watershed assessments.
- Sec. 2023. Levee certifications.
- Sec. 2024. Military munitions response actions at civil works shoreline protection projects.
- Sec. 2025. Beach nourishment.
- Sec. 2026. Project deauthorizations.

TITLE III—PROJECT MODIFICATIONS

- Sec. 3001. Purpose.
- Sec. 3002. **[To be supplied]**.

TITLE IV—WATER RESOURCE STUDIES

- Sec. 4001. Purpose.
- Sec. 4002. Initiation of new water resources studies.
- Sec. 4003. Applicability.

TITLE V—REGIONAL AND NONPROJECT PROVISIONS

- Sec. 5001. Purpose.
- Sec. 5002. Northeast Coastal Region ecosystem restoration.
- Sec. 5003. Improving management of flood and drought.
- Sec. 5004. Chesapeake Bay environmental restoration and protection program.

3

- Sec. 5005. Rio Grande environmental management program, Colorado, New Mexico, Texas.
- Sec. 5006. Lower Columbia River and Tillamook Bay ecosystem restoration, Oregon and Washington.

TITLE VI—LEVEE SAFETY

- Sec. 6001. Short title.
- Sec. 6002. Findings; purposes.
- Sec. 6003. Definitions.
- Sec. 6004. National levee safety program.
- Sec. 6005. National Levee Safety Advisory Board.
- Sec. 6006. Inventory and inspection of levees.
- Sec. 6007. Reports.
- Sec. 6008. Effect of title.
- Sec. 6009. Authorization of appropriations.

TITLE VII—INLAND WATERWAYS

- Sec. 7001. Purposes.
- Sec. 7002. Definitions.
- Sec. 7003. Project delivery process reforms.
- Sec. 7004. Major rehabilitation standards.
- Sec. 7005. Efficiency of revenue collection.

TITLE VIII—HARBOR MAINTENANCE

- Sec. 8001. Purposes.
- Sec. 8002. Funding for harbor maintenance programs.
- Sec. 8003. Harbor operation and maintenance.

TITLE IX—DAM SAFETY

- Sec. 9001. Short title.
- Sec. 9002. Purpose.
- Sec. 9003. Administrator.
- Sec. 9004. Inspection of dams.
- Sec. 9005. National Dam Safety Program.
- Sec. 9006. Public awareness and outreach for dam safety.
- Sec. 9007. Authorization of appropriations.

TITLE X—INNOVATIVE FINANCING PILOT PROJECTS

- Sec. 10001. Short title.
- Sec. 10002. Purposes.
- Sec. 10003. Definitions.
- Sec. 10004. Authority to provide assistance.
- Sec. 10005. Applications.
- Sec. 10006. Eligible entities.
- Sec. 10007. Projects eligible for assistance.
- Sec. 10008. Activities eligible for assistance.
- Sec. 10009. Determination of eligibility and project selection.
- Sec. 10010. Secured loans.
- Sec. 10011. Program administration.
- Sec. 10012. State and local permits.
- Sec. 10013. Regulations.

Sec. 10014. Funding.
 Sec. 10015. Report to Congress.

1 **SEC. 2. DEFINITION OF SECRETARY.**

2 In this Act, the term “Secretary” means the Sec-
 3 retary of the Army.

4 **TITLE I—WATER RESOURCE**
 5 **PROJECTS**

6 **SEC. 1001. PURPOSES.**

7 The purposes of this title are—

8 (1) to authorize projects that—

9 (A) are the subject of a completed report
 10 of the Chief of Engineers containing a deter-
 11 mination that the relevant project—

12 (i) is in the Federal interest;

13 (ii) results in benefits that exceed the
 14 costs of the project;

15 (iii) is environmentally acceptable; and

16 (iv) is technically feasible; and

17 (B) have been recommended to Congress
 18 for authorization by the Assistant Secretary of
 19 the Army for Civil Works; and

20 (2) to authorize the Secretary—

21 (A) to review projects that require in-
 22 creased authorization; and

23 (B) to increase those authorizations
 24 after—

1 (i) certifying that the increases are
2 necessary; and

3 (ii) submitting to Congress reports on
4 the proposed increases.

5 **SEC. 1002. PROJECT AUTHORIZATIONS.**

6 The Secretary is authorized to carry out water re-
7 sources development and conservation projects subject to
8 the conditions that—

9 (1) each project is carried out—

10 (A) substantially in accordance with the
11 plan for the project; and

12 (B) subject to any conditions described in
13 the report for the project; and

14 (2) a Report of the Chief of Engineers has been
15 completed and a referral by the Assistant Secretary
16 of the Army for Civil Works has been made to Con-
17 gress as of the date of enactment of this Act for the
18 project.

19 **SEC. 1003. PROJECT REVIEW.**

20 (a) IN GENERAL.—For a project that has been au-
21 thorized by Federal law before the date of enactment of
22 this Act and that is under construction as of the date of
23 enactment of this Act, the Secretary may modify the au-
24 thorized cost of a project by making the required certifi-

1 cation and submitting to Congress a cost recommendation
2 in accordance with subsection (b).

3 (b) REQUIREMENTS.—

4 (1) CERTIFICATION.—The certification to Con-
5 gress under subsection (a) shall include a certifi-
6 cation by the Secretary that—

7 (A) expenditures above the authorized cost
8 of the project are necessary to protect life and
9 safety, maintain critical navigation routes, or
10 restore ecosystems;

11 (B) the project provides significant na-
12 tional benefits;

13 (C) a temporary stop or delay resulting
14 from a failure to increase the authorized cost of
15 the project will increase costs to the Federal
16 Government; and

17 (D) the amount requested for the project
18 in the budget of the President or included in a
19 work plan for the expenditure of funds for the
20 fiscal year during which the certification is sub-
21 mitted will exceed the authorized cost of the
22 project.

23 (2) RECOMMENDATION.—The recommendation
24 to Congress under subsection (a) shall include, at a
25 minimum—

1 (A) a comprehensive review of the project
 2 costs and reasons for exceeding the limits set
 3 under section 902 of the Water Resources De-
 4 velopment Act of 1986 (33 U.S.C. 2280);

5 (B) the new funding level needed to com-
 6 plete the project; and

7 (C) a recommendation to increase the au-
 8 thorized funding level for the project to Con-
 9 gress.

10 (c) TERMINATION OF EFFECTIVENESS.—The author-
 11 ity of the Secretary under this section terminates effective
 12 on December 31, 2014.

13 **TITLE II—WATER RESOURCES**
 14 **POLICY REFORMS**

15 **SEC. 2001. PURPOSES.**

16 The purposes of this title are—

17 (1) to reform the implementation of water re-
 18 sources projects by the Corps of Engineers;

19 (2) to make other technical changes to the
 20 water resources policy of the Corps of Engineers;
 21 and

22 (3) to accomplish the following reforms:

23 (A) Enhance the ability of local sponsors
 24 to partner with the Corps of Engineers by en-
 25 suring the eligibility of the local sponsors to re-

1 ceive credit for work carried out by the spon-
2 sors and increasing flexibility of the sponsors in
3 applying that credit to a Corps of Engineers
4 project.

5 (B) Ensure continuing authority programs
6 can continue to meet important needs by in-
7 creasing the size and per-project limitations of
8 the programs.

9 (C) Encourage the continuation of efforts
10 to modernize feasibility studies and establish
11 targets for expedited completion of feasibility
12 studies.

13 (D) Seek efficiencies in the management of
14 dams and related infrastructure to reduce envi-
15 ronmental impacts while maximizing other ben-
16 efits and project purposes, such as flood con-
17 trol, water supply, and hydropower.

18 (E) Clarify mitigation requirements for
19 Corps of Engineers projects and ensure trans-
20 parency in the independent external review of
21 those projects.

22 (F) Deauthorize projects that have failed
23 to receive a minimum level of investment to en-
24 sure active projects can move forward while re-
25 ducing the backlog of authorized projects.

1 SEC. 2002. FISH AND WILDLIFE MITIGATION.

2 Section 906(d) of the Water Resources Development
3 Act of 1986 (33 U.S.C. 2283(d)(1)) is amended—

4 (1) in paragraph (1)—

5 (A) in the first sentence—

6 (i) by inserting “for damages to eco-
7 logical resources, including terrestrial and
8 aquatic resources, and” after “mitigate”;

9 (ii) by inserting “ecological resources
10 and” after “impact on”; and

11 (iii) by inserting “without the imple-
12 mentation of mitigation measures” before
13 the period; and

14 (B) by inserting before the last sentence
15 the following: “If the Secretary determines that
16 mitigation to in-kind conditions is not possible,
17 the Secretary shall identify in the report the
18 basis for that determination.”; and

19 (2) in paragraph (3)(A), by inserting “, at a
20 minimum,” after “complies with”.

21 SEC. 2003. INDEPENDENT PEER REVIEW.

22 (a) **TIMING OF PEER REVIEW.**—Section 2034(b) of
23 the Water Resources Development Act of 2007 (33 U.S.C.
24 2343(b)) is amended—

25 (1) by redesignating paragraph (3) as para-
26 graph (4); and

1 (2) by inserting after paragraph (2) the fol-
2 lowing:

3 “(3) REASONS FOR TIMING.—If the Chief of
4 Engineers does not initiate a peer review for a
5 project study at a time described in paragraph (2),
6 the Chief shall—

7 “(A) make publicly available, including on
8 the Internet, for each of those times, the rea-
9 sons for not conducting the review; and

10 “(B) include the reasons in the decision
11 document for the project study.”.

12 (b) ESTABLISHMENT OF PANELS.—Section 2034(e)
13 of the Water Resources Development Act of 2007 (33
14 U.S.C. 2343(e)) is amended by striking paragraph (4) and
15 inserting the following:

16 “(4) CONGRESSIONAL AND PUBLIC NOTIFICA-
17 TION.—Following the identification of a project
18 study for peer review under this section, but prior to
19 initiation of the review by the panel of experts, the
20 Chief of Engineers shall—

21 “(A) notify the Committee on Environment
22 and Public Works of the Senate and the Com-
23 mittee on Transportation and Infrastructure of the
24 the House of Representatives of the review; and

1 “(B) make publicly available, including on
2 the Internet, information on—

3 “(i) the dates scheduled for beginning
4 and ending the review;

5 “(ii) the entity that has the contract
6 for the review; and

7 “(iii) the names and qualifications of
8 the panel of experts.”.

9 (c) RECOMMENDATIONS OF PANEL.—Section 2034(f)
10 of the Water Resources Development Act of 2007 (33
11 U.S.C. 2343(f)) is amended by striking paragraph (2) and
12 inserting the following:

13 “(2) PUBLIC AVAILABILITY AND SUBMISSION
14 TO CONGRESS.—After receiving a report on a project
15 study from a panel of experts under this section, the
16 Chief of Engineers shall make available to the pub-
17 lic, including on the Internet, and submit to the
18 Committee on Environment and Public Works of the
19 Senate and the Committee on Transportation and
20 Infrastructure of the House of Representatives—

21 “(A) a copy of the report not later than 3
22 days after the date on which the report is deliv-
23 ered to the Chief of Engineers; and

24 “(B) a copy of any written response of the
25 Chief of Engineers on recommendations con-

1 tained in the report not later than 3 days after
2 the date on which the response is delivered to
3 the Chief of Engineers.

4 “(3) INCLUSION IN PROJECT STUDY.—A report
5 on a project study from a panel of experts under
6 this section and the written response of the Chief of
7 Engineers shall be included in the final decision doc-
8 ument for the project study.”.

9 (d) APPLICABILITY.—Section 2034(h)(2) of the
10 Water Resources Development Act of 2007 (33 U.S.C.
11 2343(h)(2)) is amended by striking “7 years” and insert-
12 ing “12 years”.

13 **SEC. 2004. SAFETY ASSURANCE REVIEW.**

14 Section 2035 of the Water Resources Development
15 Act of 2007 (33 U.S.C. 2344) is amended by adding at
16 the end the following:

17 “(g) NONAPPLICABILITY OF FACA.—The Federal
18 Advisory Committee Act (5 U.S.C. App.) shall not apply
19 to a safety assurance review conducted under this sec-
20 tion.”.

21 **SEC. 2005. CONTINUING AUTHORITY PROGRAMS.**

22 (a) SMALL RIVER AND HARBOR IMPROVEMENT
23 PROJECTS.—Section 107 of the River and Harbor Act of
24 1960 (33 U.S.C. 577) is amended—

1 (1) in subsection (a), by striking
2 “\$35,000,000” and inserting “\$50,000,000”; and

3 (2) in subsection (b), by striking “\$7,000,000”
4 and inserting “\$10,000,000”.

5 (b) SHORE DAMAGE PREVENTION OR MITIGATION.—
6 Section 111(c) of the River and Harbor Act of 1968 (33
7 U.S.C. 426i(c)) is amended by striking “\$5,000,000” and
8 inserting “\$10,000,000”.

9 (c) REGIONAL SEDIMENT MANAGEMENT.—Section
10 204 of the Water Resources Development Act of 1992 (33
11 U.S.C. 2326) is amended—

12 (1) in subsection (c)(1)(C), by striking
13 “\$5,000,000” and inserting “\$10,000,000”; and

14 (2) by redesignating subsection (g) as sub-
15 section (h);

16 (3) by inserting after subsection (f) the fol-
17 lowing:

18 “(g) APPLICABILITY.—This section does not apply to
19 a project authorized under the Water Resources Develop-
20 ment Act of 2007 (Public Law 110–114; 121 Stat. 1041)
21 if a report of the Chief of Engineers for the project was
22 completed prior to the date of enactment of that Act.”;
23 and

1 (4) in subsection (h) (as redesignated by para-
2 graph (2)), by striking “\$30,000,000” and inserting
3 “\$50,000,000”.

4 (d) SMALL FLOOD CONTROL PROJECTS.—Section
5 205 of the Flood Control Act of 1948 (33 U.S.C. 701s)
6 is amended in the third sentence by striking “\$7,000,000”
7 and inserting “\$10,000,000”.

8 (e) PROJECT MODIFICATIONS FOR IMPROVEMENT OF
9 ENVIRONMENT.—Section 1135(d) of the Water Resources
10 Development Act of 1986 (33 U.S.C. 2309a(d)) is amend-
11 ed—

12 (1) in the second sentence, by striking “Not
13 more than 80 percent of the non-Federal may be”
14 and inserting “The non-Federal share may be pro-
15 vided”; and

16 (2) in the third sentence, by striking
17 “\$5,000,000” and inserting “\$10,000,000”.

18 (f) AQUATIC ECOSYSTEM RESTORATION.—Section
19 206(d) of the Water Resources Development Act of 1996
20 (33 U.S.C. 2330(d)) is amended by striking “\$5,000,000”
21 and inserting “\$10,000,000”.

1 **SEC. 2006. OPERATION AND MAINTENANCE OF NAVIGATION**
 2 **AND HYDROELECTRIC FACILITIES.**

3 (a) IN GENERAL.—Section 314 of the Water Re-
 4 sources Development Act of 1990 (33 U.S.C. 2321) is
 5 amended—

6 (1) by striking the heading and inserting the
 7 following:

8 **“SEC. 314. OPERATION AND MAINTENANCE OF NAVIGATION**
 9 **AND HYDROELECTRIC FACILITIES.”;**

10 (2) in the first sentence, by striking “Activities
 11 currently performed” and inserting the following:

12 “(a) IN GENERAL.—Activities currently performed”;

13 (3) in the second sentence, by striking “This
 14 section” and inserting the following:

15 “(b) MAJOR MAINTENANCE CONTRACTS AL-
 16 LOWED.—This section”; and

17 (4) in subsection (a) (as designated by para-
 18 graph (2)), by inserting “navigation or” before “hy-
 19 droelectric”.

20 (b) CLERICAL AMENDMENT.—The table of contents
 21 contained in section 1(b) of the Water Resources Develop-
 22 ment Act of 1990 (104 Stat. 4604) is amended by striking
 23 the item relating to section 314 and inserting the fol-
 24 lowing:

“Sec. 314. Operation and maintenance of navigation and hydroelectric facili-
 ties.”.

1 **SEC. 2007. MITIGATION STATUS REPORT.**

2 Section 2036(b) of the Water Resources Development
3 Act of 2007 (33 U.S.C. 2283a) is amended—

4 (1) by redesignating paragraph (3) as para-
5 graph (4); and

6 (2) by inserting after paragraph (2) the fol-
7 lowing:

8 “(3) INFORMATION INCLUDED.—In reporting
9 the status of all projects included in the report, the
10 Secretary shall—

11 “(A) use a uniform methodology for deter-
12 mining the status of all projects included in the
13 report;

14 “(B) use a methodology that describes
15 both a qualitative and quantitative status for all
16 projects in the report; and

17 “(C) provide specific dates for and partici-
18 pants in the consultations required under sec-
19 tion 906(d)(4)(B) of the Water Resources De-
20 velopment Act of 1986 (33 U.S.C.
21 2283(d)(4)(B)).”.

22 **SEC. 2008. CLARIFICATION OF WORK-IN-KIND CREDIT AU-**
23 **THORITY.**

24 (a) NON-FEDERAL COST SHARE.—Section 7007 of
25 the Water Resources Development Act of 2007 (121 Stat.
26 1277) is amended—

1 (1) in subsection (a)—

2 (A) by inserting “, on, or after” after “be-
3 fore”; and

4 (B) by inserting “, program,” after
5 “study” each place it appears; and

6 (2) in subsections (b), (d), and (e), by inserting
7 “, program,” after “study” each place it appears.

8 (b) EFFECTIVE DATE.—The amendments made by
9 subsection (a) take effect on November 8, 2007.

10 **SEC. 2009. TRANSFER OF EXCESS WORK-IN-KIND CREDIT.**

11 (a) IN GENERAL.—Subject to subsection (b), the Sec-
12 retary may authorize a non-Federal project sponsor to
13 earn work-in-kind credit in excess of the required cost-
14 share for a study or project and apply that credit to the
15 required non-Federal cost-share for a different water re-
16 sources study or project.

17 (b) RESTRICTIONS.—

18 (1) IN GENERAL.—Credit in excess of the non-
19 Federal cost-share for a project authorized under
20 this section shall meet all applicable requirements of
21 section 221 of the Flood Control Act of 1970 (42
22 U.S.C. 1962d–5b) (as amended by section 2010),
23 except that subsection (a)(4)(D)(i) of that section
24 shall not apply.

1 (2) CONDITIONS.—Credit in excess of the non-
2 Federal cost-share for a project may only be author-
3 ized under this section if—

4 (A) the non-Federal sponsor prepares and
5 submits a comprehensive plan to the Secretary
6 that identifies—

7 (i) the projects for which the non-Fed-
8 eral sponsor seeks to earn the excess cred-
9 it; and

10 (ii) the projects with a Federal inter-
11 est to which that credit would be trans-
12 ferred; and

13 (B) the total amount of credit in excess of
14 the non-Federal cost-share authorized does not
15 exceed the total non-Federal cost-share for the
16 projects with a Federal interest identified in the
17 comprehensive plan.

18 (c) ADDITIONAL CRITERIA.—In evaluating a request
19 to apply excess credit earned under this section to a dif-
20 ferent study or project, the Secretary shall consider wheth-
21 er the transfer of the credit will—

22 (1) help to expedite the completion of a project
23 or group of projects;

24 (2) reduce costs to the Federal Government;
25 and

1 (3) aid the completion of a project that provides
2 significant flood risk reduction or environmental
3 benefits.

4 (d) TERMINATION OF AUTHORITY.—The authority
5 provided in this section shall terminate 5 years after the
6 date of enactment of this Act.

7 (e) REPORT.—

8 (1) DEADLINES.—

9 (A) IN GENERAL.—Not later than 2 years
10 after the date of enactment of this Act, the Sec-
11 retary shall submit to the Committee on Envi-
12 ronment and Public Works of the Senate and
13 the Committee on Transportation and Infra-
14 structure of the House of Representatives an
15 interim report on the use of the authority under
16 this section.

17 (B) FINAL REPORT.—Not later than 5
18 years after the date of enactment of this Act,
19 the Secretary shall submit to the Committee on
20 Environment and Public Works of the Senate
21 and the Committee on Transportation and In-
22 frastructure of the House of Representatives a
23 final report on the use of the authority under
24 this section.

1 (2) INCLUSIONS.—The reports described in
2 paragraph (1) shall include—

3 (A) a description of the use of the author-
4 ity under this section during the reporting pe-
5 riod;

6 (B) an assessment of the impact of the au-
7 thority under this section on the time required
8 to complete projects; and

9 (C) an assessment of the impact of the au-
10 thority under this section on other water re-
11 sources projects.

12 **SEC. 2010. CREDIT FOR IN-KIND CONTRIBUTIONS.**

13 (a) IN GENERAL.—Section 221(a)(4) of the Flood
14 Control Act of 1970 (42 U.S.C. 1962d-5b(a)(4)) is
15 amended—

16 (1) in subparagraph (A), in the matter pre-
17 ceding clause (i) by inserting “or a project under an
18 environmental infrastructure assistance program”
19 after “law”;

20 (2) in subparagraph (C)—

21 (A) by striking “In any case” and insert-
22 ing the following:

23 “(i) IN GENERAL.—In any case”;

24 (B) in clause (i) (as so designated), by
25 striking “, and only work carried out following

1 the execution of the agreement shall be eligible
2 for credit”; and

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

4 “(ii) ELIGIBLE WORK.—Only mitiga-
5 tion, construction, and construction serv-
6 ices work that is carried out pursuant to a
7 notice to proceed issued by the non-Fed-
8 eral interest following the execution of an
9 agreement under clause (i) shall be eligible
10 for credit under this subparagraph.

11 “(iii) PLANNING, DESIGN, AND MAN-
12 AGEMENT COSTS.—The costs of planning
13 (including data collection), design, and
14 management carried out for an element of
15 a project for which a non-Federal interest
16 has entered into an agreement under
17 clause (i) and for which the Secretary de-
18 termines the work to be integral to the
19 project under subparagraph (B) shall be
20 eligible for credit under this subparagraph,
21 regardless of whether the costs were in-
22 curred prior to the execution of that agree-
23 ment.

1 “(iv) COMBINATION OF CREDIT.—
2 Credit authorized under this subparagraph
3 shall be—

4 “(I) available for use by a non-
5 Federal interest on any separable ele-
6 ment of a project, including in com-
7 bination with credit authorized under
8 section 104 of the Water Resources
9 Development Act of 1986 (33 U.S.C.
10 2214) for the same separable element
11 of a project; and

12 “(II) transferable between sepa-
13 rable elements of the same project.”;

14 (3) in subparagraph (D)—

15 (A) by redesignating clauses (i) through
16 (iv) as subclauses (I) through (IV), respectively;

17 (B) by striking “Credit authorized” and
18 inserting the following:

19 “(i) IN GENERAL.—Credit author-
20 ized”;

21 (C) in subclause (II), by inserting “subject
22 to clause (ii)” before “shall not”; and

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

24 “(ii) RESTRICTION.—If implementa-
25 tion of clause (i)(II) increases the costs of

1 the non-Federal interest for a project to an
2 amount that exceeds the non-Federal cost-
3 share otherwise required for that project
4 under applicable law, the Secretary shall
5 reimburse the non-Federal interest for the
6 portion of the cost equal to the difference
7 between—

8 “(I) the cost to the non-Federal
9 interest of carrying out the project as
10 if the credit under this paragraph is
11 not provided; and

12 “(II) the total amount the non-
13 Federal interest would be required to
14 contribute under the applicable cost-
15 sharing requirement for the project as
16 if the credit under this paragraph is
17 provided.”;

18 (4) by redesignating subparagraph (E) as sub-
19 paragraph (F);

20 (5) by inserting after subparagraph (D) the fol-
21 lowing:

22 “(E) GUIDELINES.—

23 “(i) IN GENERAL.—Not later than 1
24 year after the date of enactment of the
25 Water Resources Development Act of

1 2012, the Secretary shall issue guidelines
2 for carrying out this paragraph.

3 “(ii) INCLUSIONS.—The guidelines
4 shall include—

5 “(I) criteria and procedures for
6 determining whether work carried out
7 by non-Federal interests is integral to
8 a project under subparagraph (B);

9 “(II) a milestone in the water re-
10 sources planning process by which an
11 agreement shall be signed under sub-
12 paragraph (C)(i), which milestone
13 shall be not later than the release of
14 the draft report of the District Engi-
15 neer for the project;

16 “(III) a process by which the re-
17 quirement under subclause (II) may
18 be waived, including any criteria for
19 granting the waiver; and

20 “(IV) a requirement that the
21 Secretary consider, in analyzing the
22 costs and benefits of a proposed
23 project, the costs and benefits of any
24 flood control work carried out by the
25 non-Federal interest that the Sec-

26

1 PROVISION.—In any case in
 2 which a specific provision of law
 3 authorizes credit for in-kind con-
 4 tributions provided by a non-Fed-
 5 eral interest before the date of
 6 execution of a partnership agree-
 7 ment, the Secretary may apply
 8 the authority provided in this
 9 paragraph to allow credit for in-
 10 kind contributions provided by
 11 the non-Federal interest on or
 12 after the date of execution of the
 13 partnership agreement.”.

14 (b) EFFECTIVE DATE.—The amendments made by
 15 this section take effect on November 8, 2007.

16 **SEC. 2011. CREDIT IN LIEU OF REIMBURSEMENT.**

17 Section 211(e)(2) of the Water Resources Develop-
 18 ment Act of 1996 (33 U.S.C. 701b–13(e)(2)) is amended
 19 by adding at the end the following:

20 “(C) STUDIES OR OTHER PROJECTS.—On
 21 the request of a non-Federal interest, in lieu of
 22 reimbursing a non-Federal interest the amount
 23 equal to the estimated Federal share of the cost
 24 of an authorized flood damage reduction project
 25 or a separable element of an authorized flood

1 damage reduction project under this subsection
 2 that has been constructed by the non-Federal
 3 interest under this section as of the date of en-
 4 actment of this Act, the Secretary may provide
 5 the non-Federal interest with a credit in that
 6 amount, which the non-Federal interest may
 7 apply to the share of the cost of the non-Fed-
 8 eral interest of carrying out other flood damage
 9 reduction projects or studies.”.

10 **SEC. 2012. DAM OPTIMIZATION.**

11 (a) DEFINITIONS.—In this section:

12 (1) ENVIRONMENTAL PROTECTION AND RES-
 13 TORATION ACTIVITIES.—The term “environmental
 14 protection and restoration activities” includes the
 15 maintenance and restoration of—

16 (A) water quality, water flows, and water
 17 levels;

18 (B) the health and movement of fish and
 19 other aquatic species; and

20 (C) floodplains, wetlands, estuaries, and
 21 other environmentally valuable areas.

22 (2) OTHER RELATED PROJECT BENEFITS.—

23 The term “other related project benefits” includes—

24 (A) enhanced water supply storage;

25 (B) increased hydropower generation;

1 (C) reduced flood risk; and

2 (D) improved recreation.

3 (b) PROGRAM.—

4 (1) IN GENERAL.—The Secretary may carry out
5 any activity that the Secretary determines to be nec-
6 essary—

7 (A) to improve the efficiency of dam oper-
8 ations and maintenance; and

9 (B) to maximize—

10 (i) authorized project purposes;

11 (ii) environmental protection and res-
12 toration activities for authorized projects;

13 and

14 (iii) other related project benefits.

15 (2) ELIGIBLE ACTIVITIES.—An activity author-
16 ized under this section is any activity that is de-
17 signed to improve environmental protection and res-
18 toration activities and other related project benefits
19 in a manner that is consistent with the authorized
20 purposes of the project, including—

21 (A) the review of project operations on a
22 regular and timely basis to determine the po-
23 tential for operational changes;

1 (B) carrying out any investigation or study
2 the Administrator determines to be necessary;
3 and

4 (C) the revision or updating of a water
5 control plan or other modification of the oper-
6 ation of a water resource project.

7 (e) POLICIES, REGULATIONS, AND GUIDANCE.—The
8 Secretary shall carry out a review of, and as necessary
9 modify, the policies, regulations, and guidance of the Sec-
10 retary to carry out the activities described in subsection
11 (b)(1).

12 (d) COORDINATION.—The Secretary shall coordinate
13 all planning and activities carried out under this section
14 with appropriate Federal, State, and local agencies and
15 those public and private entities that the Secretary deter-
16 mines may be affected by those plans or activities.

17 (e) REPORTS.—

18 (1) IN GENERAL.—Not later than 1 year after
19 the date of enactment of this Act, the Secretary
20 shall submit to Congress a report detailing any rec-
21 ommendations of the Secretary on changes that the
22 Secretary determines to be necessary—

23 (A) to carry out existing projection author-
24 izations, including the deauthorization of any
25 water resource project that the Secretary deter-

1 mines could more effectively be achieved
2 through other means;

3 (B) to improve the efficiency of dam oper-
4 ations; and

5 (C) to maximize authorized project pur-
6 poses, environmental protection and restoration
7 activities, and other related project benefits.

8 (2) UPDATED REPORT.—

9 (A) IN GENERAL.—Not later than 1 year
10 after the date of enactment of this Act, the Sec-
11 retary shall update the report entitled “Author-
12 ized and Operating Purposes of Corps of Engi-
13 neers Reservoirs” and dated July 1992, which
14 was produced pursuant to section 311 of the
15 Water Resources Development Act of 1990
16 (104 Stat. 4639).

17 (B) INCLUSIONS.—The updated report de-
18 scribed in subparagraph (A) shall include—

19 (i) the date on which the most recent
20 dam operations review was conducted and
21 any recommendations of the Secretary re-
22 lating to that review the Secretary deter-
23 mines to be significant;

1 (ii) the dates on which the rec-
2 ommendations described in clause (i) were
3 carried out; and

4 (iii) a schedule detailing a subsequent
5 operations review.

6 (f) FUNDING.—

7 (1) IN GENERAL.—Notwithstanding any other
8 provision of law, the Secretary may use to carry out
9 this section amounts made available to the Secretary
10 from—

11 (A) any account or program, including
12 continuing authority programs;

13 (B) the general purposes and expenses ac-
14 count;

15 (C) the operations and maintenance ac-
16 count; and

17 (D) any other amounts that are appro-
18 priated to carry out this section.

19 (2) FUNDING FROM OTHER SOURCES.—The
20 Secretary may accept and expend amounts from
21 non-Federal entities and other Federal agencies to
22 carry out this section.

23 (3) TRANSFER OF FUNDING.—The Secretary
24 may transfer amounts made available to the Sec-

1 ronmental challenges,” after “of such State”;
 2 and
 3 (2) in subsection (c)(1), by striking
 4 “\$10,000,000” and inserting “\$30,000,000”.

5 **SEC. 2016. PROJECT ACCELERATION.**

6 (a) SENSE OF CONGRESS.—It is the sense of Con-
 7 gress that—

8 (1) delays in the completion of feasibility stud-
 9 ies—

10 (A) increase costs for the Federal Govern-
 11 ment as well as State and local governments;
 12 and

13 (B) delay the implementation of water re-
 14 sources projects that provide critical benefits,
 15 including reducing flood risk, maintaining com-
 16 mercially important flood risk, and restoring
 17 vital ecosystems;

18 (2) the efforts undertaken by the Corps of En-
 19 gineers through the establishment of the “3-3-3”
 20 planning process should be continued; and

21 (3) the Corps of Engineers—

22 (A) to the maximum extent practicable,
 23 shall seek to complete new feasibility studies in
 24 the 18 month-period beginning on the date of
 25 enactment of this Act; and

1 (B) shall complete the new feasibility stud-
 2 ies not later than 3 years after the date of en-
 3 actment of this Act.

4 (b) REPORT.—Not later than 18 months after the
 5 date of enactment of this Act and each year thereafter,
 6 the Secretary shall submit to the Committee on Environ-
 7 ment and Public Works of the Senate and the Committee
 8 on Transportation and Infrastructure of the House of
 9 Representatives a report that describes—

10 (1) the status of the implementation of the “3-
 11 3-3” planning process, including the number of par-
 12 ticipating projects;

13 (2) the amount of time taken to complete all
 14 studies participating in the “3-3-3” planning pro-
 15 cess; and

16 (3) any recommendations for additional author-
 17 ity necessary to support efforts to expedite the feasi-
 18 bility study process for water resource projects.

19 **SEC. 2017. VEGETATION MANAGEMENT POLICY.**

20 (a) REVIEW.—Not later than 180 days after the date
 21 of enactment of this Act, the Secretary shall carry out a
 22 comprehensive review of the Corps of Engineers policy
 23 guidelines on vegetation management for levees (referred
 24 to in this section as “national guidelines”) in order to de-
 25 termine whether current Federal policy relating to levee

1 vegetation is appropriate for all regions of the United
2 States.

3 (b) FACTORS.—

4 (1) IN GENERAL.—In carrying out the review,
5 the Secretary shall examine the national guidelines
6 in view of—

7 (A) the varied interests and responsibilities
8 in managing flood risks, including the need to
9 provide the greatest levee safety benefit with
10 limited resources;

11 (B) preserving, protecting, and enhancing
12 natural resources, including the potential ben-
13 efit that vegetation on levees can have in pro-
14 viding habitat for species of concern;

15 (C) protecting the rights of Indian tribes
16 pursuant to treaties and statutes; and

17 (D) other factors relating to the factors de-
18 scribed in subparagraphs (A) through (C) that
19 the Secretary determines to be appropriate.

20 (2) REGIONAL AND WATERSHED VARIANCE
21 CONSIDERATIONS.—

22 (A) IN GENERAL.—In carrying out the re-
23 view, the Secretary shall specifically consider
24 whether the national guidelines can be amended
25 to promote and allow for consideration of poten-

1 tial variances from national guidelines on a re-
 2 gional or watershed basis, including on factors
 3 such as—

4 (i) regional or watershed soil condi-
 5 tions;

6 (ii) hydrologic factors;

7 (iii) vegetation patterns and charac-
 8 teristics;

9 (iv) environmental resources;

10 (v) levee performance history;

11 (vi) institutional considerations; and

12 (vii) other relevant factors.

13 (B) SCOPE.—The scope of a variance ap-
 14 proved by the Secretary may include a complete
 15 exemption to national guidelines, as the Sec-
 16 retary determines to be necessary.

17 (c) COOPERATION AND CONSULTATION; REC-
 18 COMMENDATIONS.—

19 (1) IN GENERAL.—The Secretary shall carry
 20 out the review under this section in consultation
 21 with other applicable Federal agencies, representa-
 22 tives of State, local, and tribal governments, appro-
 23 priate nongovernmental organizations, and the pub-
 24 lic.

1 (2) RECOMMENDATIONS.—The Chief of Engi-
2 neers shall submit to the Secretary any rec-
3 ommendations for vegetation management policies
4 for levees that conform with Federal and State laws
5 developed by the Chief of Engineers in consultation
6 with the Corps of Engineers Regional Integration
7 Teams and Federal, State, tribal, and local re-
8 sources agencies.

9 (d) PEER REVIEW.—

10 (1) IN GENERAL.—As part of the review, the
11 Secretary shall solicit and consider the views of the
12 National Academy of Engineering on the engineer-
13 ing, environmental, and institutional considerations
14 underlying the national guidelines.

15 (2) AVAILABILITY OF VIEWS.—The views of the
16 National Academy of Engineering obtained under
17 paragraph (1) shall be—

18 (A) made available to the public; and

19 (B) included in supporting materials issued
20 in connection with the revised national guide-
21 lines required under subsection (e).

22 (e) REVISION OF NATIONAL GUIDELINES.—

23 (1) IN GENERAL.—Not later than 2 years after
24 the date of enactment of this Act, the Secretary
25 shall—

1 (A) revise the national guidelines based on
2 the results of the review, including the results
3 of the peer review conducted under subsection
4 (d); and

5 (B) submit to Congress a report that con-
6 tains a summary of the activities of the Sec-
7 retary and a description of the findings of the
8 Secretary under this section.

9 (2) CONTENT; INCORPORATION INTO MAN-
10 UAL.—The revised national guidelines shall—

11 (A) provide a practical process for approv-
12 ing regional or watershed variances from the
13 national guidelines, reflecting due consideration
14 of measures to maximize public safety benefits
15 with limited resources, regional climatic vari-
16 ations, environmental quality, implementation
17 challenges, and allocation of responsibilities;
18 and

19 (B) be incorporated into the manual pro-
20 posed under section 5(c) of the Act entitled “An
21 Act authorizing the construction of certain pub-
22 lic works on rivers and harbors for flood con-
23 trol, and for other purposes”, approved August
24 18, 1941 (33 U.S.C. 701n(c)).

1 (f) CONTINUATION OF WORK.—Concurrent with the
2 completion of the requirements of this section, the Sec-
3 retary shall proceed without interruption or delay with
4 those ongoing or programmed projects and studies, or ele-
5 ments of projects or studies, that are not directly related
6 to vegetation variance policy.

7 **SEC. 2018. OPERATION AND MAINTENANCE OF CERTAIN**
8 **PROJECTS.**

9 The Secretary may assume operation and mainte-
10 nance activities for a navigation channel that is deepened
11 by a non-Federal interest prior to December 31, 2012,
12 if—

13 (1) the Secretary determines that the require-
14 ments under paragraphs (2) and (3) of section
15 204(f) of the Water Resources Development Act of
16 1986 (33 U.S.C. 2232(f)) are met;

17 (2) the Secretary determines that the activities
18 carried out by the non-Federal interest in deepening
19 the navigation channel are economically justified and
20 environmentally acceptable; and

21 (3) the deepening activities have been carried
22 out on a Federal navigation channel that—

23 (A) exists as of the date of enactment of
24 this Act; and

25 (B) has been authorized by Congress.

1 **SEC. 2019. NON-FEDERAL PROJECT IMPLEMENTATION**
2 **PILOT PROGRAM.**

3 (a) **IN GENERAL.**—The Secretary shall establish a
4 pilot program to evaluate the cost-effectiveness and
5 project delivery efficiency of allowing non-Federal inter-
6 ests to carry out authorized flood damage reduction, hurri-
7 cane and storm damage reduction, and navigation
8 projects.

9 (b) **PURPOSES.**—The purposes of the pilot program
10 are—

11 (1) to identify project delivery and cost-saving
12 alternatives that reduce the backlog of authorized
13 Corps of Engineers projects;

14 (2) to evaluate the technical, financial, and or-
15 ganizational efficiencies of a non-Federal interest
16 carrying out the design, execution, management, and
17 construction of 1 or more projects; and

18 (3) to evaluate alternatives for the decentraliza-
19 tion of the project planning, management, and oper-
20 ational decisionmaking process of the Corps of Engi-
21 neers.

22 (c) **ADMINISTRATION.**—

23 (1) **IN GENERAL.**—In carrying out the pilot
24 program, the Secretary shall—

25 (A) identify a total of not more than 12
26 flood damage reduction, hurricane and storm

1 damage reduction, and navigation projects, in-
2 cluding levees, floodwalls, flood control chan-
3 nels, water control structures, and navigation
4 locks and channels, authorized for construction
5 that—

6 (i) have received Federal funds and
7 have experienced delays or missed sched-
8 uled deadlines in the 5 fiscal years prior to
9 the date of enactment of this Act; or

10 (ii) for more than 2 consecutive fiscal
11 years, have an unobligated funding balance
12 for that project in the Corps of Engineers
13 construction account;

14 (B) notify the Committee on Environment
15 and Public Works of the Senate and the Com-
16 mittee on Transportation and Infrastructure of
17 the House of Representatives on the identifica-
18 tion of each project under the pilot program;

19 (C) in consultation with the non-Federal
20 interest, develop a detailed project management
21 plan for each identified project that outlines the
22 scope, budget, design, and construction resource
23 requirements necessary for the non-Federal in-
24 terest to execute the project, or a separable ele-
25 ment of the project;

1 (D) on the request of the non-Federal in-
2 terest, enter into a project partnership agree-
3 ment with the non-Federal interest for the non-
4 Federal interest to provide full project manage-
5 ment control for construction of the project, or
6 a separable element of the project, in accord-
7 ance with plans approved by the Secretary;

8 (E) following execution of the project part-
9 nership agreement, transfer to the non-Federal
10 interest to carry out construction of the project,
11 or a separable element of the project—

12 (i) if applicable, the balance of the un-
13 obligated amounts appropriated for the
14 project, except that the Secretary shall re-
15 tain sufficient amounts for the Corps of
16 Engineers to carry out any responsibilities
17 of the Corps of Engineers relating to the
18 project and pilot program; and

19 (ii) additional amounts, as determined
20 by the Secretary, from amounts made
21 available under subsection (h), except that
22 the total amount transferred to the non-
23 Federal interest shall not exceed the esti-
24 mate of the Federal share of the cost of

1 construction, including any required de-
2 sign; and

3 (F) regularly monitor and audit each
4 project being constructed by a non-Federal in-
5 terest under this section to ensure that the con-
6 struction activities are carried out in compli-
7 ance with the plans approved by the Secretary
8 and that the construction costs are reasonable.

9 (2) TECHNICAL ASSISTANCE.—On the request
10 of a non-Federal interest, the Secretary may provide
11 technical assistance to the non-Federal interest, if
12 the non-Federal interest contracts with the Sec-
13 retary for the technical assistance and compensates
14 the Secretary for the technical assistance, relating
15 to—

16 (A) any study, engineering activity, and
17 design activity for construction carried out by
18 the non-Federal interest under this section; and

19 (B) obtaining any permits necessary for
20 the project.

21 (d) COST SHARE.—Nothing in this section affects the
22 cost-sharing requirement applicable on the day before the
23 date of enactment of this Act to a project carried out
24 under this section.

25 (e) REPORT.—

1 (1) IN GENERAL.—Not later than 2 years after
2 the date of enactment of this Act, the Secretary
3 shall submit to the Committee on Environment and
4 Public Works of the Senate and the Committee on
5 Transportation and Infrastructure of the House of
6 Representatives a report detailing the results of the
7 pilot program carried out under this section, includ-
8 ing any recommendations of the Secretary con-
9 cerning whether the program or any component of
10 the program should be implemented on a national
11 basis.

12 (2) UPDATE.—Not later than 5 years after the
13 date of enactment of this Act, the Secretary shall
14 submit to the Committee on Environment and Pub-
15 lic Works of the Senate and the Committee on
16 Transportation and Infrastructure of the House of
17 Representatives an update of the report described in
18 paragraph (1).

19 (f) ADMINISTRATION.—All laws and regulations that
20 would apply to the Secretary if the Secretary were car-
21 rying out the project shall apply to a non-Federal interest
22 carrying out a project under this section.

23 (g) TERMINATION OF AUTHORITY.—The authority to
24 commence a project under this section terminates on the

1 date that is 5 years after the date of enactment of this
2 Act.

3 (h) AUTHORIZATION OF APPROPRIATIONS.—In addi-
4 tion to any amounts appropriated for a specific project,
5 there is authorized to be appropriated to the Secretary to
6 carry out the pilot program under this section
7 \$25,000,000 for each of fiscal years 2013 through 2017.

8 **SEC. 2020. TRIBAL PARTNERSHIP PROGRAM.**

9 Section 203 of the Water Resources Act of 2000 (33
10 U.S.C. 2269) is amended—

11 (1) in subsection (d)(1)(B)—

12 (A) by striking “The ability” and inserting
13 the following:

14 “(i) IN GENERAL.—The ability”; and

15 (B) by adding at the end the following:

16 “(ii) DETERMINATION.—Not later
17 than 180 days after the date of enactment
18 of the Water Resources Development Act
19 of 2012, the Secretary shall issue guidance
20 on the procedures described in clause (i).”;
21 and

22 (2) in subsection (e), by striking “2012” and
23 inserting “2017”.

1 **SEC. 2021. COOPERATIVE AGREEMENTS WITH COLUMBIA**
2 **RIVER BASIN INDIAN TRIBES.**

3 The Secretary may enter into a cooperative agree-
4 ment with 1 or more federally recognized Indian tribes (or
5 a designated representative of the Indian tribes) that are
6 located, in whole or in part, within the boundaries of the
7 Columbia River Basin to carry out activities within the
8 Columbia River Basin to protect fish, wildlife, water qual-
9 ity, and cultural resources.

10 **SEC. 2022. POST-DISASTER WATERSHED ASSESSMENTS.**

11 (a) **IN GENERAL.**—In an area that the President has
12 declared a major disaster in accordance with section 401
13 of the Robert T. Stafford Disaster Relief and Emergency
14 Assistance Act (42 U.S.C. 5170), the Secretary may carry
15 out a watershed assessment to identify appropriate flood
16 risk reduction, hurricane and storm damage reduction, or
17 ecosystem restoration projects to rehabilitate damaged in-
18 frastructure and reduce risks from future natural disas-
19 ters.

20 (b) **PROJECTS.**—The Secretary may carry out 1 or
21 more small projects identified in a watershed assessment
22 under subsection (a) that the Secretary would otherwise
23 be authorized to carry out under—

24 (1) section 205 of the Flood Control Act of
25 1948 (33 U.S.C. 701s);

1 (2) section 111 of the River and Harbor Act of
2 1968 (33 U.S.C. 426i);

3 (3) section 206 of the Water Resources Devel-
4 opment Act of 1996 (33 U.S.C. 2330); or

5 (4) section 1135 of the Water Resources Devel-
6 opment Act of 1986 (33 U.S.C. 2309a).

7 (e) REQUIREMENTS.—All requirements applicable to
8 a project under the Acts described in subsection (b) shall
9 apply to the project, except that the Federal share of the
10 cost of carrying out a project under this section shall not
11 exceed \$5,000,000.

12 (d) LIMITATIONS ON ASSESSMENTS.—

13 (1) IN GENERAL.—A watershed assessment
14 under subsection (a) shall be initiated not later than
15 2 years after the date on which the major disaster
16 declaration is issued.

17 (2) FEDERAL SHARE.—The Federal share of
18 the cost of carrying out a watershed assessment
19 under subsection (a) shall not exceed \$1,000,000.

20 (e) AUTHORIZATION OF APPROPRIATIONS.—There is
21 authorized to be appropriated to carry out this section
22 \$25,000,000 for each of fiscal years 2013 through 2017.

23 **SEC. 2023. LEVEE CERTIFICATIONS.**

24 (a) IN GENERAL.—On receipt of a request from a
25 non-Federal interest, the Secretary may carry out a levee

1 system evaluation and certification of a federally author-
2 ized levee for purposes of the national flood insurance pro-
3 gram established under chapter 1 of the National Flood
4 Insurance Act of 1968 (42 U.S.C. 4011 et seq.).

5 (b) REQUIREMENTS.—A levee system evaluation and
6 certification under subsection (a) shall—

7 (1) at a minimum, comply with section 65.10 of
8 title 44, Code of Federal Regulations (as in effect on
9 the date of enactment of this Act); and

10 (2) be carried out in accordance with such pro-
11 cedures as the Secretary, in consultation with the
12 Director of the Federal Emergency Management
13 Agency, may establish.

14 (c) COST SHARING.—

15 (1) NON-FEDERAL SHARE.—Subject to para-
16 graph (2), the non-Federal share of the cost of car-
17 rying out a levee system evaluation and certification
18 under this section shall be 35 percent.

19 (2) ADJUSTMENT.—The Secretary shall adjust
20 the non-Federal share of the cost of carrying out a
21 levee system evaluation and certification under this
22 section in accordance with section 103(m) of the
23 Water Resources Development Act of 1986 (33
24 U.S.C. 2213(m)).

1 **SEC. 2024. MILITARY MUNITIONS RESPONSE ACTIONS AT**
2 **CIVIL WORKS SHORELINE PROTECTION**
3 **PROJECTS.**

4 (a) **IN GENERAL.**—The Secretary may implement
5 any response action the Secretary determines to be nec-
6 essary at a site where—

7 (1) the Secretary has carried out a project
8 under civil works authority of the Secretary that in-
9 cludes placing sand on a beach;

10 (2) as a result of the project described in para-
11 graph (1), military munitions that were originally re-
12 leased as a result of Department of Defense activi-
13 ties are deposited on the beach, posing a threat to
14 human health or the environment.

15 (b) **RESPONSE ACTION FUNDING.**—A response action
16 described in subsection (a) shall be funded from amounts
17 made available to the agency within the Department of
18 Defense responsible for the original release of the muni-
19 tions.

20 **SEC. 2025. BEACH NOURISHMENT.**

21 Section 156 of the Water Resources Development Act
22 of 1976 (42 U.S.C. 1962d–5f) is amended to read as fol-
23 lows:

24 **“SEC. 156. BEACH NOURISHMENT.**

25 **“(a) IN GENERAL.**—The Secretary of the Army, act-
26 ing through the Chief of Engineers, may provide periodic

1 beach nourishment for each water resources development
2 project for which that nourishment has been authorized
3 for an additional period of time, as determined by the Sec-
4 retary, subject to the condition that the additional period
5 shall not exceed the later of—

6 “(1) 50 years after the date on which the con-
7 struction of the project is initiated; or

8 “(2) the date on which the last estimated peri-
9 odic nourishment for the project is to be carried out,
10 as recommended in the applicable report of the Chief
11 of Engineers.

12 “(b) EXTENSION.—Before the end of the 50-year pe-
13 riod referred to in subsection (a)(1), the Secretary of the
14 Army, acting through the Chief of Engineers—

15 “(1) may, at the request of the non-Federal in-
16 terest and subject to the availability of appropria-
17 tions, carry out a review of a nourishment project
18 carried out under subsection (a) to evaluate the fea-
19 sibility of continuing Federal participation in the
20 project for a period not to exceed 15 years; and

21 “(2) shall submit to Congress any recommenda-
22 tions of the Secretary relating to the review.”.

23 **SEC. 2026. PROJECT DEAUTHORIZATIONS.**

24 Section 1001(b) of the Water Resources Development
25 Act of 1986 (33 U.S.C. 579a(b)) is amended—

1 (1) by striking paragraph (2) and inserting the
2 following:

3 “(2) LIST OF PROJECTS.—

4 “(A) IN GENERAL.—Notwithstanding sec-
5 tion 3003 of Public Law 104–66 (31 U.S.C.
6 1113 note; 109 Stat. 734), each year, after the
7 submission of the list under paragraph (1), the
8 Secretary shall submit to Congress a list of
9 projects or separable elements of projects that
10 have been authorized but that have received no
11 obligations during the 5 full fiscal years pre-
12 ceding the submission of that list.

13 “(B) ADDITIONAL NOTIFICATION.—On
14 submission of the list under subparagraph (A)
15 to Congress, the Secretary shall notify—

16 “(i) each Senator in whose State and
17 each Member of the House of Representa-
18 tives in whose district a project (including
19 any part of a project) on that list would be
20 located; and

21 “(ii) each applicable non-Federal in-
22 terest associated with a project (including
23 any part of a project) on that list.

24 “(C) DEAUTHORIZATION.—A project or
25 separable element included in the list under

1 subparagraph (A) is not authorized after the
 2 last date of the fiscal year following the fiscal
 3 year in which the list is submitted to Congress,
 4 if funding has not been obligated for the plan-
 5 ning, design, or construction of the project or
 6 element of the project during that period.”; and
 7 (2) by adding at the end the following:

8 “(3) MINIMUM FUNDING LIST.—At the end of
 9 each fiscal year, the Secretary shall submit to Con-
 10 gress a list of projects or separable elements of
 11 projects authorized for construction under this Act
 12 for which funding has been obligated in the 5 pre-
 13 vious fiscal years.”.

14 **TITLE III—PROJECT**
 15 **MODIFICATIONS**

16 **SEC. 3001. PURPOSE.**

17 The purpose of this title is to modify existing water
 18 resource project authorizations, subject to the condition
 19 that the modifications result in no additional cost.

20 **SEC. 3002. [TO BE SUPPLIED].**

21 **TITLE IV—WATER RESOURCE**
 22 **STUDIES**

23 **SEC. 4001. PURPOSE.**

24 The purpose of this title is to direct the Corps of En-
 25 gineers to study and recommend solutions for water re-

1 source issues relating to flood risk and storm damage re-
2 duction, navigation, and ecosystem restoration.

3 **SEC. 4002. INITIATION OF NEW WATER RESOURCES STUD-**
4 **IES.**

5 (a) IN GENERAL.—At the request of a non-Federal
6 interest, the Secretary may initiate a study—

7 (1) to determine the feasibility of carrying out
8 1 or more projects for flood risk management, storm
9 damage reduction, ecosystem restoration, navigation,
10 hydropower, water supply, or recreation; or

11 (2) to comprehensively evaluate multiple water
12 resource issues in a watershed.

13 (b) CRITERIA.—The Secretary shall develop criteria
14 for determining when to initiate a study under subsection

15 (a), which, at a minimum, shall require that—

16 (1) the study is for an area that is likely to in-
17 clude a project to be carried out by a Federal inter-
18 est; and

19 (2)(A) the study addresses a high priority water
20 resource issue for which local support exists for ad-
21 dressing the water resource issue; and

22 (B) a non-Federal sponsor is likely to partici-
23 pate in the implementation of a solution to the water
24 resource issue.

1 (c) LIMITATION.—Subsection (a) shall not apply to
 2 a project for which a study has been authorized prior to
 3 the date of enactment of this Act.

4 (d) TERMINATION.—The authority under subsection
 5 (a) expires on the date that is 2 years after the date of
 6 enactment of this Act.

7 **SEC. 4003. APPLICABILITY.**

8 (a) IN GENERAL.—Nothing in this title authorizes
 9 the construction of a water resources project.

10 (b) NEW AUTHORIZATION REQUIRED.—New author-
 11 ization from Congress is required before any project evalu-
 12 ated in a study under this title is constructed.

13 **TITLE V—REGIONAL AND**
 14 **NONPROJECT PROVISIONS**

15 **SEC. 5001. PURPOSE.**

16 The purpose of this title is to authorize regional,
 17 multistate authorities to address water resource needs and
 18 other non-project provisions that do not have additional
 19 costs.

20 **SEC. 5002. NORTHEAST COASTAL REGION ECOSYSTEM RES-**
 21 **TORATION.**

22 (a) IN GENERAL.—The Secretary shall plan, design,
 23 and construct projects for aquatic ecosystem restoration
 24 within the coastal waters of the Northeastern United
 25 States from the State of Virginia to the State of Maine,

1 including associated bays, estuaries, and critical riverine
2 areas.

3 (b) GENERAL COASTAL MANAGEMENT PLAN.—

4 (1) ASSESSMENT.—The Secretary, in coordina-
5 tion with the Administrator of the Environmental
6 Protection Agency, the heads of other appropriate
7 Federal agencies, the Governors of the coastal
8 States from Virginia to Maine, nonprofit organiza-
9 tions, and other interested parties, shall assess the
10 needs regarding, and opportunities for, aquatic eco-
11 system restoration within the coastal waters of the
12 Northeastern United States.

13 (2) PLAN.—The Secretary shall develop a gener-
14 al coastal management plan based on the assess-
15 ment carried out under paragraph (1), maximizing
16 the use of existing plans and investigation, which
17 plan shall include—

18 (A) an inventory and evaluation of coastal
19 habitats;

20 (B) identification of aquatic resources in
21 need of improvement;

22 (C) identification and prioritization of po-
23 tential aquatic habitat restoration projects; and

24 (D) identification of geographical and eco-
25 logical areas of concern, including—

- 1 (i) finfish habitats;
 2 (ii) diadromous fisheries migratory
 3 corridors;
 4 (iii) shellfish habitats;
 5 (iv) submerged aquatic vegetation;
 6 (v) wetland; and
 7 (vi) beach dune complexes and other
 8 similar habitats.

9 (e) ELIGIBLE PROJECTS.—The Secretary may carry
 10 out an aquatic ecosystem restoration project under this
 11 section if the project—

12 (1) is consistent with the management plan de-
 13 veloped under subsection (b); and

14 (2) provides for—

15 (A) the restoration of degraded aquatic
 16 habitat (including coastal, saltmarsh, benthic,
 17 and riverine habitat);

18 (B) the restoration of geographical or eco-
 19 logical areas of concern, including the restora-
 20 tion of natural river and stream characteristics;

21 (C) the improvement of water quality; or

22 (D) other projects or activities determined
 23 to be appropriate by the Secretary.

24 (d) COST SHARING.—

1 (1) MANAGEMENT PLAN.—The management
2 plan developed under subsection (b) shall be com-
3 pleted at Federal expense.

4 (2) RESTORATION PROJECTS.—The non-Fed-
5 eral share of the cost of a project carried out under
6 this section shall be 35 percent.

7 (e) COST LIMITATION.—Not more than \$10,000,000
8 in Federal funds may be allocated under this section for
9 an eligible project.

10 (f) AUTHORIZATION OF APPROPRIATIONS.—There is
11 authorized to be appropriated to carry out this section (in-
12 cluding funds for the completion of the management plan)
13 \$25,000,000 for each of fiscal years 2013 through 2017.

14 **SEC. 5003. IMPROVING MANAGEMENT OF FLOOD AND**
15 **DROUGHT.**

16 (a) IN GENERAL.—The Secretary shall enter into an
17 arrangement with the National Academy of Sciences
18 under which the Academy shall conduct an evaluation of
19 the strategies of the Corps of Engineers for managing
20 water resources in response to floods and droughts.

21 (b) CONSIDERATIONS.—The evaluation under sub-
22 section (a) shall address—

23 (1) the extent to which existing water manage-
24 ment activities of the Corps of Engineers can better

1 address and mitigate flood and drought impacts on
2 a national basis;

3 (2) whether a reevaluation of existing manage-
4 ment approaches of the Corps of Engineers could re-
5 sult in greater efficiencies in water management that
6 would enable the Corps of Engineers to better re-
7 spond to flood and drought conditions; and

8 (3) any recommendations for improving the
9 planning processes of the Corps of Engineers to
10 evaluate opportunities for comprehensive manage-
11 ment of water resources that increases efficiency and
12 improves response to flood and drought conditions.

13 **SEC. 5004. CHESAPEAKE BAY ENVIRONMENTAL RESTORA-**
14 **TION AND PROTECTION PROGRAM.**

15 Section 510 of the Water Resources Development Act
16 of 1996 (Public Law 104–303; 110 Stat. 3759; 121 Stat.
17 1202) is amended—

18 (1) in subsection (a)—

19 (A) in paragraph (1)—

20 (i) by striking “pilot program” and
21 inserting “program”; and

22 (ii) by inserting “across the basin
23 States described in subsection (f) and the
24 District of Columbia” after “interests”;
25 and

1 (B) by striking paragraph (2) and insert-
 2 ing the following:

3 “(2) FORM.—The assistance under paragraph
 4 (1) shall be in the form of a comprehensive environ-
 5 mental restoration and protection plan and design
 6 and construction assistance for water-related re-
 7 source protection and restoration projects affecting
 8 the Chesapeake Bay estuary, including projects
 9 for—

10 “(A) sediment and erosion control;

11 “(B) low-impact development;

12 “(C) restoration and protection of water
 13 quality and quantity;

14 “(D) protection of eroding shorelines;

15 “(E) protection of essential public works;

16 “(F) beneficial uses of dredged material;

17 “(G) restoration of submerged aquatic
 18 vegetation; and

19 “(H) other related projects that may en-
 20 hance the living resources of the estuary.”;

21 (2) by striking subsection (b) and inserting the
 22 following:

23 “(b) COMPREHENSIVE PLAN.—

24 “(1) IN GENERAL.—Not later than 2 years
 25 after the date of enactment of the Water Resources

1 Development Act of 2012, the Secretary, in coopera-
2 tion with State and local governmental officials and
3 affected stakeholders, shall design and implement a
4 comprehensive Chesapeake Bay restoration plan.

5 “(2) COORDINATION.—A project identified in
6 the restoration plan described in paragraph (1) shall
7 be designed to take advantage of any ongoing or
8 planned actions of other Federal, State, and local
9 agencies and nonprofit, nongovernmental organiza-
10 tions.

11 “(3) ADMINISTRATION.—The Federal share of
12 the costs of carrying out paragraph (1) shall be 100
13 percent.”;

14 (3) in subsection (c)—

15 (A) in paragraph (1), by striking “to pro-
16 vide” and all that follows through the period at
17 the end and inserting “for the design and con-
18 struction of a project identified in the com-
19 prehensive Chesapeake Bay restoration plan de-
20 scribed in subsection (b).”;

21 (B) in paragraph (2)(A), by striking “fa-
22 cilities or resource protection and development
23 plan” and inserting “resource protection and
24 restoration plan”; and

25 (C) by adding at the end the following:

1 “(3) PROJECTS ON FEDERAL LAND.—A project
2 identified in the comprehensive Chesapeake Bay res-
3 toration plan described in subsection (b) that is lo-
4 cated on Federal land shall be carried out in accord-
5 ance with a Memorandum of Agreement that—

6 “(A) is signed by all applicable Federal
7 agencies;

8 “(B) defines for each signatory to the
9 Memorandum of Agreement the responsibilities
10 of the signatory and any financial support re-
11 quired of the signatory; and

12 “(C) describes any Chesapeake Bay res-
13 toration benefits to be realized as a result of
14 the project.”;

15 (4) in subsection (d)—

16 (A) in paragraph (1)—

17 (i) by striking “Except as provided in
18 paragraph (2)(B),” and inserting the fol-
19 lowing:

20 “(A) IN GENERAL.—Except as provided in
21 subparagraphs (B) and (C) of paragraph (2),”;
22 and

23 (ii) by adding at the end the fol-
24 lowing:

1 “(B) CONTRIBUTIONS BY OTHER FEDERAL
2 AGENCIES.—The Federal share, or a portion of
3 the Federal share, required under subparagraph
4 (A) may be provided by other Federal agen-
5 cies.”; and

6 (B) in paragraph (2)—

7 (i) in subparagraph (B), by striking
8 “The non-Federal share” and inserting
9 “Except as provided in subparagraph (C),
10 the non-Federal share”; and

11 (ii) by adding at the end the fol-
12 lowing:

13 “(C) PROJECTS ON FEDERAL LAND.—For
14 a project that is carried out on Federal land
15 under this section, the Federal share of the
16 costs of carrying out the project shall be 100
17 percent.”;

18 (5) in subsection (e)—

19 (A) in paragraph (3), by striking “and”
20 after the semicolon;

21 (B) in paragraph (4), by striking the pe-
22 riod at the end and inserting “; and”; and

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

24 “(5) the Chesapeake Bay Commission.”;

1 (6) by striking subsection (f) and inserting the
2 following:

3 “(f) PROJECTS.—The Secretary shall establish, to
4 the maximum extent practicable, at least 1 project under
5 this section in—

6 “(1) each of the basin States of Delaware,
7 Maryland, New York, Pennsylvania, Virginia, and
8 West Virginia; and

9 “(2) the District of Columbia.”;

10 (7) by striking subsection (h); and

11 (8) by redesignating subsection (i) as subsection
12 (h).

13 **SEC. 5005. RIO GRANDE ENVIRONMENTAL MANAGEMENT**
14 **PROGRAM, COLORADO, NEW MEXICO, TEXAS.**

15 Section 5056 of the Water Resources Development
16 Act of 2007 (121 Stat. 1213) is amended—

17 (1) in subsection (b)(2)—

18 (A) in the matter preceding subparagraph

19 (A), by striking “2008” and inserting “2013”;

20 and

21 (B) in subparagraph (C), by inserting

22 “and an assessment of needs for other related

23 purposes in the Rio Grande Basin, including

24 flood damage reduction” after “assessment”;

25 (2) in subsection (c)(2)—

1 (A) by striking “an interagency agreement
2 with” and inserting “1 or more interagency
3 agreements with the Secretary of State and”;
4 and

5 (B) by inserting “or the U.S. Section of
6 the International Boundary and Water Com-
7 mission” after “the Department of the Inte-
8 rior”; and

9 (3) in subsection (f), by striking “2011” and
10 inserting “2021”.

11 **SEC. 5006. LOWER COLUMBIA RIVER AND TILLAMOOK BAY**
12 **ECOSYSTEM RESTORATION, OREGON AND**
13 **WASHINGTON.**

14 Section 536(g) of the Water Resources Development
15 Act of 2000 (114 Stat. 2661) is amended by striking
16 “\$30,000,000” and inserting “\$75,000,000”.

17 **TITLE VI—LEVEE SAFETY**

18 **SEC. 6001. SHORT TITLE.**

19 This title may be cited as the “National Levee Safety
20 Program Act”.

21 **SEC. 6002. FINDINGS; PURPOSES.**

22 (a) FINDINGS.—Congress finds that—

23 (1) there is a need to establish a national levee
24 safety program to provide national leadership and

1 encourage the establishment of State and tribal levee
2 safety programs;

3 (2) according to the National Committee on
4 Levee Safety, “the level of protection and robustness
5 of design and construction [of levees] vary consider-
6 ably across the country”;

7 (3) knowing the location, condition, and owner-
8 ship of levees, as well as understanding the popu-
9 lation and infrastructure at risk in leveed areas, is
10 necessary for identification and prioritization of ac-
11 tivities associated with levees;

12 (4) States and Indian tribes—

13 (A) are uniquely positioned to oversee, co-
14 ordinate, and regulate local and regional levee
15 systems; and

16 (B) should be encouraged to participate in
17 a national levee safety program by establishing
18 individual levee safety programs; and

19 (5) States, Indian tribes, and local governments
20 that do not invest in protecting the individuals and
21 property located behind levees place those individuals
22 and property at risk.

23 (b) PURPOSES.—The purposes of this Act are—

1 (1) to promote sound technical practices in
2 levee design, construction, operation, inspection, as-
3 sessment, security, and maintenance;

4 (2) to ensure effective public education and
5 awareness of risks involving levees;

6 (3) to establish and maintain a national levee
7 safety program that emphasizes the protection of
8 human life and property; and

9 (4) to implement solutions and incentives that
10 encourage the establishment of effective State and
11 tribal levee safety programs.

12 **SEC. 6003. DEFINITIONS.**

13 In this Act:

14 (1) **BOARD.**—The term “Board” means the Na-
15 tional Levee Safety Advisory Board established
16 under section 6005.

17 (2) **CANAL STRUCTURE.**—

18 (A) **IN GENERAL.**—The term “canal struc-
19 ture” means an embankment, wall, or structure
20 along a canal or manmade watercourse that—

21 (i) constrains water flows; and

22 (ii) is subject to frequent water load-
23 ing.

1 (B) EXCLUSION.—The term “canal struc-
2 ture” does not include a barrier across a water-
3 course.

4 (3) FEDERAL AGENCY.—The term “Federal
5 agency” means a Federal agency that designs, fi-
6 nances, constructs, owns, operates, maintains, or
7 regulates the construction, operation, or mainte-
8 nance of a levee.

9 (4) FLOOD DAMAGE REDUCTION SYSTEM.—The
10 term “flood damage reduction system” means a sys-
11 tem designed and constructed to have appreciable
12 and dependable effects in reducing damage by flood-
13 waters.

14 (5) FLOOD MITIGATION.—The term “flood miti-
15 gation” means any structural or nonstructural meas-
16 ure that reduces risks of flood damage by reducing
17 the probability of flooding, the consequences of
18 flooding, or both.

19 (6) INDIAN TRIBE.—The term “Indian tribe”
20 has the meaning given the term in section 4 of the
21 Indian Self-Determination and Education Assistance
22 Act (25 U.S.C. 450b).

23 (7) LEVEE.—

- 1 (A) IN GENERAL.—The term “levee”
2 means a manmade barrier (such as an embank-
3 ment, floodwall, or other structure)—
- 4 (i) the primary purpose of which is to
5 provide hurricane, storm, or flood protec-
6 tion relating to seasonal high water, storm
7 surges, precipitation, or other weather
8 events; and
- 9 (ii) that is normally subject to water
10 loading for only a few days or weeks dur-
11 ing a calendar year.
- 12 (B) INCLUSIONS.—The term “levee” in-
13 cludes a levee system, including—
- 14 (i) levees and canal structures that—
- 15 (I) constrain water flows;
- 16 (II) are subject to more frequent
17 water loading; and
- 18 (III) do not constitute a barrier
19 across a watercourse; and
- 20 (ii) roadway and railroad embank-
21 ments, but only to the extent that the em-
22 bankments are integral to the performance
23 of a flood damage reduction system.
- 24 (C) EXCLUSIONS.—The term “levee” does
25 not include—

- 1 (i) a roadway or railroad embankment
2 that is not integral to the performance of
3 a flood damage reduction system;
- 4 (ii) a canal constructed completely
5 within natural ground without any man-
6 made structure (such as an embankment
7 or retaining wall to retain water or a case
8 in which water is retained only by natural
9 ground);
- 10 (iii) a canal regulated by a Federal
11 agency in a manner that ensures that ap-
12 plicable Federal safety criteria meet or ex-
13 ceed the levee safety guidelines;
- 14 (iv) a levee or canal structure—
- 15 (I) that is not a part of a Fed-
16 eral flood damage reduction system;
- 17 (II) that is not recognized under
18 the National Flood Insurance Pro-
19 gram as providing protection from the
20 1-percent-annual-chance or greater
21 flood;
- 22 (III) that is not greater than 3
23 feet high;

1 (IV) the population in the leveed
2 area of which is less than 50 individ-
3 uals; and

4 (V) the leveed area of which is
5 less than 1,000 acres; or

6 (v) any shoreline protection or river
7 bank protection system (such as revet-
8 ments or barrier islands).

9 (8) LEVEE FEATURE.—The term “levee fea-
10 ture” means a structure that is critical to the func-
11 tioning of a levee, including—

12 (A) an embankment section;

13 (B) a floodwall section;

14 (C) a closure structure;

15 (D) a pumping station;

16 (E) an interior drainage work; and

17 (F) a flood damage reduction channel.

18 (9) LEVEE SAFETY GUIDELINES.—The term
19 “levee safety guidelines” means the guidelines estab-
20 lished by the Secretary under section 6004(c)(1).

21 (10) LEVEE SEGMENT.—The term “levee seg-
22 ment” means a discrete portion of a levee system
23 that is owned, operated, and maintained by a single
24 entity or discrete set of entities.

1 (11) LEVEE SYSTEM.—The term “levee sys-
2 tem” means 1 or more levee segments, including all
3 levee features that are interconnected and necessary
4 to ensure protection of the associated leveed areas—

5 (A) that collectively provide flood damage
6 reduction to a defined area; and

7 (B) the failure of 1 of which may result in
8 the failure of the entire system.

9 (12) LEVEED AREA.—The term “leveed area”
10 means the land from which flood water in the adja-
11 cent watercourse is excluded by the levee system.

12 (13) NATIONAL LEVEE DATABASE.—The term
13 “national levee database” means the levee database
14 established under section 9004 of the Water Re-
15 sources Development Act of 2007 (33 U.S.C. 3303).

16 (14) PARTICIPATING PROGRAM.—The term
17 “participating program” means a levee safety pro-
18 gram developed by a State or Indian tribe that in-
19 cludes the minimum components necessary for rec-
20 ognition by the Secretary.

21 (15) RISK.—The term “risk” means a measure
22 of the probability and severity of undesirable con-
23 sequences.

1 (16) SECRETARY.—The term “Secretary”
2 means the Secretary of the Army, acting through
3 the Chief of Engineers.

4 (17) STATE.—The term “State” means—

5 (A) each of the several States of the
6 United States;

7 (B) the District of Columbia;

8 (C) the Commonwealth of Puerto Rico;

9 (D) Guam;

10 (E) American Samoa;

11 (F) the Commonwealth of the Northern
12 Mariana Islands;

13 (G) the Federated States of Micronesia;

14 (H) the Republic of the Marshall Islands;

15 (I) the Republic of Palau; and

16 (J) the United States Virgin Islands.

17 **SEC. 6004. NATIONAL LEVEE SAFETY PROGRAM.**

18 (a) ESTABLISHMENT.—The Secretary, in consulta-
19 tion with the Administrator of the Federal Emergency
20 Management Agency, shall establish a national levee safe-
21 ty program to provide national leadership and consistent
22 approaches to levee safety, including—

23 (1) a national levee database;

24 (2) an inventory and inspection of Federal and
25 non-Federal levees;

- 1 (3) national levee safety standards;
- 2 (4) a hazard potential classification system for
3 Federal and non-Federal levees;
- 4 (5) research and development;
- 5 (6) a national public education and awareness
6 program, with an emphasis on communication re-
7 garding the risk associated with levees;
- 8 (7) coordination of levee safety, floodplain man-
9 agement, and environmental protection activities;
- 10 (8) development of State and tribal levee safety
11 programs; and
- 12 (9) the provision of technical assistance and
13 materials to States and Indian tribes relating to—
- 14 (A) developing levee safety programs; and
15 (B) rehabilitating, improving, replacing,
16 and removing levees.
- 17 (b) MANAGEMENT.—
- 18 (1) IN GENERAL.—The Secretary shall ap-
19 point—
- 20 (A) an administrator of the national levee
21 safety program; and
- 22 (B) such staff as is necessary to implement
23 the program.
- 24 (2) ADMINISTRATOR.—The sole duty of the ad-
25 ministrators appointed under paragraph (1)(A) shall

1 be the management of the national levee safety pro-
2 gram.

3 (c) LEVEE SAFETY GUIDELINES.—

4 (1) ESTABLISHMENT.—Not later than 1 year
5 after the date of enactment of this Act, the Sec-
6 retary shall establish a set of voluntary, compre-
7 hensive, national levee safety guidelines that—

8 (A) are available for common, uniform use
9 by all Federal, State, tribal, and local agencies;
10 and

11 (B) incorporate policies, procedures, stand-
12 ards, and criteria for a range of levee types,
13 canal structures, and related facilities and fea-
14 tures.

15 (2) REQUIREMENT.—The policies, procedures,
16 standards, and criteria under paragraph (1)(B) shall
17 be developed taking into consideration the levee haz-
18 ard potential classification system established under
19 subsection (d).

20 (3) ADOPTION BY FEDERAL AGENCIES.—All
21 Federal agencies shall consider the levee safety
22 guidelines in activities relating to the management
23 of levees.

24 (d) HAZARD POTENTIAL CLASSIFICATION SYSTEM.—

1 (1) ESTABLISHMENT.—The Secretary shall es-
2 tablish a hazard potential classification system for
3 use under the national levee safety program and
4 participating programs.

5 (2) REVISION.—The Secretary shall review and,
6 as necessary, revise the hazard potential classifica-
7 tion system not less frequently than once every 5
8 years.

9 (3) CONSISTENCY.—The hazard potential clas-
10 sification system established pursuant to this sub-
11 section shall be consistent with and incorporated
12 into the Levee Safety Action Classification tool de-
13 veloped by the Corps of Engineers.

14 (e) TECHNICAL ASSISTANCE AND MATERIALS.—

15 (1) ESTABLISHMENT.—The Secretary, in co-
16 ordination with the Board, shall establish a national
17 levee safety training program to develop and deliver
18 technical support and technical assistance materials,
19 curricula, and training in order to promote levee
20 safety and the voluntary development of State levee
21 safety programs.

22 (2) USE OF SERVICES.—In establishing the na-
23 tional levee safety training program under para-
24 graph (1), the Secretary may use the services of—

25 (A) the Corps of Engineers;

1 (B) the Federal Emergency Management
2 Agency;

3 (C) the Bureau of Reclamation; and

4 (D) other appropriate Federal agencies.

5 (f) COMPREHENSIVE NATIONAL PUBLIC EDUCATION
6 AND AWARENESS CAMPAIGN.—

7 (1) ESTABLISHMENT.—The Secretary, in co-
8 ordination with the Administrator of the Federal
9 Emergency Management Agency and the Board,
10 shall establish a national public education and
11 awareness campaign relating to the national levee
12 safety program.

13 (2) PURPOSES.—The purposes of the campaign
14 under paragraph (1) are—

15 (A) to educate individuals living in leveed
16 areas regarding the risks of living in those
17 areas;

18 (B) to promote consistency in the trans-
19 mission of information regarding levees among
20 government agencies; and

21 (C) to provide national leadership regard-
22 ing risk communication for implementation at
23 the State and local levels.

24 (g) COORDINATION OF LEVEE SAFETY, FLOODPLAIN
25 MANAGEMENT, AND ENVIRONMENTAL CONCERNS.—The

1 Secretary, in coordination with the Board, shall evaluate
2 opportunities to coordinate—

3 (1) public safety, floodplain management, and
4 environmental protection activities relating to levees;
5 and

6 (2) environmental permitting processes for op-
7 eration and maintenance activities at existing levee
8 projects in compliance with all applicable laws.

9 (h) LEVEE INSPECTION.—

10 (1) IN GENERAL.—The Secretary shall carry
11 out a one-time inventory and inspection of all levees
12 identified in the national levee database.

13 (2) NO FEDERAL INTEREST.—The inventory
14 and inspection under paragraph (1) does not create
15 a Federal interest in the construction, operation, or
16 maintenance any levee that is included in the inven-
17 tory or inspected under this subsection.

18 (3) INSPECTION CRITERIA.—In carrying out the
19 inventory and inspection, the Secretary shall use the
20 Levee Safety Action Classification criteria to deter-
21 mine whether a levee should be classified in the in-
22 ventory as requiring a more comprehensive inspec-
23 tion.

24 (i) STATE AND TRIBAL LEVEE SAFETY PROGRAM.—

25 (1) GUIDELINES.—

1 (A) IN GENERAL.—Not later than 1 year
2 after the date of enactment of this Act, in co-
3 ordination with the Board, the Secretary shall
4 issue guidelines that establish the minimum
5 components necessary for recognition of a State
6 or tribal levee safety program as a participating
7 program.

8 (B) GUIDELINE CONTENTS.—The guide-
9 lines under subparagraph (A) shall include pro-
10 visions and procedures requiring each partici-
11 pating State and Indian tribe to certify to the
12 Secretary that the State or Indian tribe, as ap-
13 plicable—

14 (i) has the authority to participate in
15 the national levee safety program;

16 (ii) can receive funds under this Act;

17 (iii) has adopted any national levee
18 safety guidelines developed under this Act;

19 (iv) will carry out levee inspections;

20 (v) will carry out, consistent with ap-
21 plicable requirements, any emergency ac-
22 tion planning procedures the Secretary de-
23 termines to be necessary relating to levees;
24 and

1 (vi) will collect and share information
2 regarding the location and condition of lev-
3 ees.

4 (2) GRANT PROGRAM.—

5 (A) ESTABLISHMENT.—The Secretary
6 shall establish a program under which the Sec-
7 retary shall provide grants to assist States and
8 Indian tribes in establishing participating pro-
9 grams, conducting levee inventories, and car-
10 rying out this Act.

11 (B) REQUIREMENTS.—To be eligible to re-
12 ceive grants under this section, a State or In-
13 dian tribe shall—

14 (i) meet the requirements of a partici-
15 pating program established by the guide-
16 lines issued under paragraph (1);

17 (ii) use not less than 25 percent of
18 any amounts received to identify and as-
19 sess non-Federal levees within the State or
20 on land of the Indian tribe; and

21 (iii) submit to the Secretary any infor-
22 mation collected by the State or Indian
23 tribe in carrying out this subsection for in-
24 clusion in the national levee safety data-
25 base.

1 **SEC. 6005. NATIONAL LEVEE SAFETY ADVISORY BOARD.**

2 (a) ESTABLISHMENT.—The Secretary, in coordina-
3 tion with the Administrator of the Federal Emergency
4 Management Agency, shall establish a board, to be known
5 as the “National Levee Safety Advisory Board”—

6 (1) to advise the Secretary and Congress re-
7 garding consistent approaches to levee safety;

8 (2) to monitor the safety of levees in the United
9 States; and

10 (3) to assess the effectiveness of the national
11 levee safety program.

12 (b) MEMBERSHIP.—

13 (1) VOTING MEMBERS.—The Board shall be
14 composed of the following 14 voting members, who
15 shall be appointed by the Secretary:

16 (A) 8 representatives of State levee safety
17 agencies, 1 from each of the civil works divi-
18 sions of the Corps of Engineers.

19 (B) 2 representatives of the private sector
20 who have expertise in levee safety.

21 (C) 2 representatives of local and regional
22 governmental agencies who have expertise in
23 levee safety.

24 (D) 2 representatives of Indian tribes who
25 have expertise in levee safety.

1 (2) NONVOTING MEMBERS.—The Secretary (or
2 a designee of the Secretary), the Administrator of
3 the Federal Emergency Management Agency (or a
4 designee of the Administrator), and the adminis-
5 trator of the national levee safety program appointed
6 under section 6004(b)(1)(A) shall serve as nonvoting
7 members of the Board.

8 (3) CHAIRPERSON.—The voting members of the
9 Board shall appoint a chairperson from among the
10 voting members of the Board, to serve a term of not
11 more than 2 years.

12 (c) QUALIFICATIONS.—

13 (1) INDIVIDUALS.—Each voting member of the
14 Board shall be knowledgeable in the fields of water
15 resources and risk management.

16 (2) AS A WHOLE.—The membership of the
17 Board, considered as a whole, shall represent the di-
18 versity of skills required to advise the Secretary re-
19 garding levee issues relating to—

20 (A) engineering;

21 (B) public communications;

22 (C) program development and oversight;

23 and

24 (D) public safety and the environment.

25 (d) TERMS OF SERVICE.—

1 (1) IN GENERAL.—A voting member of the
2 Board shall be appointed for a term of 3 years, ex-
3 cept that, of the members first appointed—

4 (A) 5 shall be appointed for a term of 1
5 year;

6 (B) 5 shall be appointed for a term of 2
7 years; and

8 (C) 4 shall be appointed for a term of 3
9 years.

10 (2) REAPPOINTMENT.—A voting member of the
11 Board may be reappointed to the Board, as the Sec-
12 retary determines to be appropriate.

13 (3) VACANCIES.—A vacancy on the Board shall
14 be filled in the same manner as the original appoint-
15 ment was made.

16 (e) STANDING COMMITTEES.—

17 (1) IN GENERAL.—The Board shall be sup-
18 ported by Standing Committees, which shall be com-
19 prised of volunteers from all levels of government
20 and the private sector, to advise the Board regard-
21 ing the national levee safety program.

22 (2) ESTABLISHMENT.—The Standing Commit-
23 tees of the Board shall include—

1 (A) the Standing Committee on Partici-
2 pating Programs, which shall advise the Board
3 regarding—

4 (i) the development and implementa-
5 tion of State and tribal levee safety pro-
6 grams; and

7 (ii) appropriate incentives (including
8 financial assistance) to be provided to
9 States, Indian tribes, and local and re-
10 gional entities;

11 (B) the Standing Committee on Technical
12 Issues, which shall advise the Board regard-
13 ing—

14 (i) the management of the national
15 levee database;

16 (ii) the development and maintenance
17 of levee safety guidelines;

18 (iii) processes and materials for devel-
19 oping levee-related technical assistance and
20 training; and

21 (iv) research and development activi-
22 ties relating to levee safety;

23 (C) the Standing Committee on Public
24 Education and Awareness, which shall advise
25 the Board regarding the development, imple-

1 mentation, and evaluation of targeted public
2 outreach programs—

- 3 (i) to gather public input;
- 4 (ii) to educate and raise awareness in
5 leveed areas of levee risks;
- 6 (iii) to communicate information re-
7 garding participating programs; and
- 8 (iv) to track the effectiveness of public
9 education efforts relating to levee risks;

10 (D) the Standing Committee on Safety and
11 Environment, which shall advise the Board re-
12 garding—

- 13 (i) operation and maintenance activi-
14 ties for existing levee projects;
- 15 (ii) opportunities to coordinate public
16 safety, floodplain management, and envi-
17 ronmental protection activities relating to
18 levees;
- 19 (iii) opportunities to coordinate envi-
20 ronmental permitting processes for oper-
21 ation and maintenance activities at existing
22 levee projects in compliance with all appli-
23 cable laws; and
- 24 (iv) opportunities for collaboration by
25 environmental protection and public safety

1 interests in leveed areas and adjacent
2 areas; and

3 (E) such other standing committees as the
4 Secretary determines to be necessary.

5 (3) MEMBERSHIP.—

6 (A) IN GENERAL.—The Board shall rec-
7 commend to the Secretary for approval individ-
8 uals for membership on the Standing Commit-
9 tees.

10 (B) QUALIFICATIONS.—

11 (i) INDIVIDUALS.—Each member of a
12 Standing Committee shall be knowledge-
13 able in the issue areas for which the Com-
14 mittee is charged with advising the Board.

15 (ii) AS A WHOLE.—The membership
16 of each Standing Committee, considered as
17 a whole, shall represent, to the maximum
18 extent practicable, broad geographical di-
19 versity.

20 (C) LIMITATION.—Each Standing Com-
21 mittee shall be comprised of not more than 10
22 members.

23 (f) DUTIES AND POWERS.—The Board—

24 (1) shall submit to the Secretary and Congress
25 an annual report regarding the effectiveness of the

1 national levee safety program in accordance with
2 section 6007; and

3 (2) may secure from other Federal agencies
4 such services, and enter into such contracts, as the
5 Board determines to be necessary to carry out this
6 subsection.

7 (g) TASK FORCE COORDINATION.—The Board shall,
8 to the maximum extent practicable, coordinate the activi-
9 ties of the Board with the Federal Interagency Floodplain
10 Management Task Force.

11 (h) COMPENSATION.—

12 (1) FEDERAL EMPLOYEES.—Each member of
13 the Board who is an officer or employee of the
14 United States shall serve without compensation in
15 addition to compensation received for the services of
16 the member as an officer or employee of the United
17 States, but shall be allowed a per diem allowance for
18 travel expenses, at rates authorized for an employee
19 of an agency under subchapter I of chapter 57 of
20 title 5, United States Code, while away from the
21 home or regular place of business of the member in
22 the performance of the duties of the Board.

23 (2) NON-FEDERAL EMPLOYEES.—To the extent
24 amounts are made available to carry out this section
25 in appropriations Acts, the Secretary shall provide to

1 each member of the Board who is not an officer or
2 employee of the United States a stipend and a per
3 diem allowance for travel expenses, at rates author-
4 ized for an employee of an agency under subchapter
5 I of chapter 57 of title 5, United States Code, while
6 away from the home or regular place of business of
7 the member in performance of services for the
8 Board.

9 (3) STANDING COMMITTEE MEMBERS.—Each
10 member of a Standing Committee shall—

11 (A) serve in a voluntary capacity; but

12 (B) receive a per diem allowance for travel
13 expenses, at rates authorized for an employee of
14 an agency under subchapter I of chapter 57 of
15 title 5, United States Code, while away from
16 the home or regular place of business of the
17 member in performance of services for the
18 Board.

19 (i) NONAPPLICABILITY OF FACCA.—The Federal Ad-
20 visory Committee Act (5 U.S.C. App.) shall not apply to
21 the Board or the Standing Committees.

22 **SEC. 6006. INVENTORY AND INSPECTION OF LEVEES.**

23 Section 9004(a)(2)(A) of the Water Resources Devel-
24 opment Act of 2007 (33 U.S.C. 3303(a)(2)(A)) is amend-
25 ed by striking “and, for non-Federal levees, such informa-

1 tion on levee location as is provided to the Secretary by
2 State and local governmental agencies” and inserting
3 “and updated levee information provided by States, Indian
4 tribes, Federal agencies, and other entities”.

5 **SEC. 6007. REPORTS.**

6 (a) STATE OF LEVEES.—

7 (1) IN GENERAL.—Not later than 1 year after
8 the date of enactment of this Act, and biennially
9 thereafter, the Secretary in coordination with the
10 Board, shall submit to Congress a report describing
11 the state of levees in the United States and the ef-
12 fectiveness of the national levee safety program, in-
13 cluding—

14 (A) progress achieved in implementing the
15 national levee safety program;

16 (B) State and tribal participation in the
17 national levee safety program;

18 (C) recommendations to improve coordina-
19 tion of levee safety, floodplain management, and
20 environmental protection concerns, including—

21 (i) identifying and evaluating opportu-
22 nities to coordinate public safety, flood-
23 plain management, and environmental pro-
24 tection activities relating to levees; and

1 (ii) evaluating opportunities to coordi-
2 nate environmental permitting processes
3 for operation and maintenance activities at
4 existing levee projects in compliance with
5 all applicable laws; and

6 (D) any recommendations for legislation
7 and other congressional actions necessary to en-
8 sure national levee safety.

9 (2) INCLUSION.—Each report under paragraph
10 (1) shall include a report of the Board that describes
11 the independent recommendations of the Board for
12 the implementation of the national levee safety pro-
13 gram.

14 (b) NATIONAL DAM AND LEVEE SAFETY PRO-
15 GRAM.—Not later than 3 years after the date of enactment
16 of this Act, to the maximum extent practicable, the Sec-
17 retary, in coordination with the Board, shall submit to
18 Congress a report that includes recommendations regard-
19 ing the advisability and feasibility of, and potential ap-
20 proaches for, establishing a joint national dam and levee
21 safety program.

22 (c) ALIGNMENT OF FEDERAL PROGRAMS TO PRO-
23 VIDE ADDITIONAL INCENTIVES AND DISINCENTIVES RE-
24 LATING TO LEVEES.—Not later than 2 years after the
25 date of enactment of this Act, the Comptroller General

1 shall submit to Congress a report on opportunities for
 2 alignment of Federal programs to provide incentives and
 3 disincentives to State, tribal, and local governments and
 4 individuals and entities—

5 (1) to promote shared responsibility for levee
 6 safety; and

7 (2) to encourage the development of strong
 8 State and tribal levee safety programs.

9 (d) **LIABILITY FOR CERTAIN LEVEE ENGINEERING**
 10 **PROJECTS.**—Not later than 1 year after the date of enact-
 11 ment of this Act, the Secretary shall submit to Congress
 12 a report that includes recommendations that identify and
 13 address any legal liability associated with levee engineer-
 14 ing projects that prevent—

15 (1) levee owners from obtaining needed levee
 16 engineering services; or

17 (2) development and implementation of a State
 18 or tribal levee safety program.

19 **SEC. 6008. EFFECT OF TITLE.**

20 Nothing in this title—

21 (1) establishes any liability of the United States
 22 or any officer or employee of the United States (in-
 23 cluding the Board and the Standing Committees of
 24 the Board) for any damages caused by any action or
 25 failure to act; or

1 (2) relieves an owner or operator of a levee of
2 any legal duty, obligation, or liability incident to the
3 ownership or operation of the levee.

4 **SEC. 6009. AUTHORIZATION OF APPROPRIATIONS.**

5 There are authorized to be appropriated to the Sec-
6 retary to carry out this title—

7 (1) for funding the administration and staff of
8 the national levee safety program, the Board, the
9 Standing Committees of the Board, and partici-
10 pating programs, \$7,500,000 for each of fiscal years
11 2013 and 2014;

12 (2) for technical programs, including the devel-
13 opment of levee safety guidelines, publications, train-
14 ing, and technical assistance—

15 (A) \$5,000,000 for each of fiscal years
16 2013 and 2014; and

17 (B) \$15,000,000 for each of fiscal years
18 2015 through 2017;

19 (3) for public involvement and education pro-
20 grams, \$3,000,000 for each of fiscal years 2013
21 through 2017;

22 (4) to carry out the levee inventory and inspec-
23 tions under section 9004 of the Water Resources
24 Development Act of 2007 (33 U.S.C. 3303),

1 \$30,000,000 for each of fiscal years 2013 through
2 2017; and

3 (5) for grants to State and tribal levee safety
4 programs, \$50,000,000 for each of fiscal years 2013
5 through 2017.

6 **TITLE VII—INLAND WATERWAYS**

7 **SEC. 7001. PURPOSES.**

8 The purposes of this title are—

9 (1) to improve program and project manage-
10 ment relating to the construction and major rehabili-
11 tation of navigation projects on inland waterways;

12 (2) to optimize inland waterways navigation
13 system reliability;

14 (3) to minimize the size and scope of inland wa-
15 terways navigation project completion schedules;

16 (4) to eliminate preventable delays in inland
17 waterways navigation project completion schedules;

18 and

19 (5) to make inland waterways navigation capital
20 investments through the use of prioritization criteria
21 that seek to maximize systemwide benefits and mini-
22 mize overall system risk.

23 **SEC. 7002. DEFINITIONS.**

24 In this title:

1 (1) INLAND WATERWAYS TRUST FUND.—The
2 term “Inland Waterways Trust Fund” means the
3 Inland Waterways Trust Fund established by section
4 9506(a) of the Internal Revenue Code of 1986.

5 (2) QUALIFYING PROJECT.—The term “quali-
6 fying project” means any construction or major re-
7 habilitation project for navigation infrastructure of
8 the inland and intracoastal waterways that is—

9 (A) authorized before, on, or after the date
10 of enactment of this Act;

11 (B) not completed on the date of enact-
12 ment of this Act; and

13 (C) funded at least in part from the Inland
14 Waterways Trust Fund.

15 (3) SECRETARY.—The term “Secretary” means
16 the Secretary of the Army, acting through the Chief
17 of Engineers.

18 **SEC. 7003. PROJECT DELIVERY PROCESS REFORMS.**

19 (a) REQUIREMENTS FOR QUALIFYING PROJECTS.—
20 With respect to each qualifying project, the Secretary shall
21 require—

22 (1) formal project management training and
23 certification for each project manager;

24 (2) assignment as project manager only of per-
25 sonnel fully certified by the Chief of Engineers; and

- 1 (3) for an applicable cost estimation, that—
- 2 (A) the estimation—
- 3 (i) is risk-based; and
- 4 (ii) has a confidence level of at least
- 5 80 percent; and
- 6 (B) a risk-based cost estimate shall be im-
- 7 plemented—
- 8 (i) for a qualified project that requires
- 9 an increase in the authorized amount in
- 10 accordance with section 902 of the Water
- 11 Resources Development Act of 1986 (Pub-
- 12 lic Law 99-662; 100 Stat. 4183), during
- 13 the preparation of a post-authorization
- 14 change report or other similar decision
- 15 document;
- 16 (ii) for a qualified project for which
- 17 the first construction contract has not been
- 18 awarded, prior to the award of the first
- 19 construction contract;
- 20 (iii) for a qualified project without a
- 21 completed Chief of Engineers report, prior
- 22 to the completion of such a report; and
- 23 (iv) for a qualified project with a com-
- 24 pleted Chief of Engineers report that has

1 not yet been authorized, during design for
2 the qualified project.

3 (b) ADDITIONAL PROJECT DELIVERY PROCESS RE-
4 FORMS.—Not later than 18 months after the date of en-
5 actment of this Act, the Secretary shall—

6 (1) establish a system to identify and apply on
7 a continuing basis lessons learned from prior or on-
8 going qualifying projects to improve the likelihood of
9 on-time and on-budget completion of qualifying
10 projects;

11 (2) evaluate early contractor involvement acqui-
12 sition procedures to improve on-time and on-budget
13 project delivery performance; and

14 (3) implement any additional measures that the
15 Secretary determines will achieve the purposes of
16 this title and the amendments made by this title, in-
17 cluding, as the Secretary determines to be appro-
18 priate—

19 (A) the implementation of applicable prac-
20 tices and procedures developed pursuant to
21 management by the Secretary of an applicable
22 military construction program;

23 (B) the establishment of 1 or more centers
24 of expertise for the design and review of quali-
25 fying projects;

1 (C) the development and use of a portfolio
2 of standard designs for inland navigation locks;

3 (D) the use of full-funding contracts or
4 formulation of a revised continuing contracts
5 clause; and

6 (E) the establishment of procedures for
7 recommending new project construction starts
8 using a capital projects business model.

9 (e) PILOT PROJECTS.—

10 (1) IN GENERAL.—Subject to paragraph (2),
11 the Secretary may carry out 1 or more pilot projects
12 to evaluate processes or procedures for the study,
13 design, or construction of qualifying projects.

14 (2) INCLUSIONS.—At a minimum, the Secretary
15 shall carry out pilot projects under this subsection to
16 evaluate—

17 (A) early contractor involvement in the de-
18 velopment of features and components;

19 (B) an appropriate use of continuing con-
20 tracts for the construction of features and com-
21 ponents; and

22 (C) applicable principles, procedures, and
23 processes used for military construction
24 projects.

1 (d) INLAND WATERWAYS USER BOARD.—Section
2 302 of the Water Resources Development Act of 1986 (33
3 U.S.C. 2251) is amended—

4 (1) by striking subsection (b) and inserting the
5 following:

6 “(b) DUTIES OF USERS BOARD.—

7 “(1) IN GENERAL.—The Users Board shall
8 meet not less frequently than semiannually to de-
9 velop and make recommendations to the Secretary
10 and Congress regarding the inland waterways and
11 inland harbors of the United States.

12 “(2) ADVICE AND RECOMMENDATIONS.—For
13 commercial navigation features and components of
14 the inland waterways and inland harbors of the
15 United States, the Users Board shall provide—

16 “(A) prior to the development of the budg-
17 et proposal of the President for a given fiscal
18 year, advice and recommendations to the Sec-
19 retary regarding construction and rehabilitation
20 priorities and spending levels;

21 “(B) advice and recommendations to Con-
22 gress regarding any report of the Chief of Engi-
23 neers relating to those features and compo-
24 nents;

1 “(C) advice and recommendations to Con-
2 gress regarding an increase in the authorized
3 cost of those features and components;

4 “(D) not later than 60 days after the date
5 of the submission of the budget proposal of the
6 President to Congress, advice and recommenda-
7 tions to Congress regarding construction and
8 rehabilitation priorities and spending levels; and

9 “(E) a long-term capital investment pro-
10 gram in accordance with subsection (d).

11 “(3) PROJECT DEVELOPMENT TEAMS.—The
12 chairperson of the Users Board shall appoint a rep-
13 resentative of the Users Board to serve on the
14 project development team for a qualifying project or
15 the study or design of a commercial navigation fea-
16 ture or component of the inland waterways and in-
17 land harbors of the United States.

18 “(4) INDEPENDENT JUDGMENT.—Any advice or
19 recommendation made by the Users Board to the
20 Secretary shall reflect the independent judgment of
21 the Users Board.”;

22 (2) by redesignating subsection (c) as sub-
23 section (f); and

24 (3) by inserting after subsection (b) the fol-
25 lowing:

1 “(c) DUTIES OF SECRETARY.—The Secretary shall—

2 “(1) communicate not less than once each quar-
3 ter to the Users Board the status of the study, de-
4 sign, or construction of all commercial navigation
5 features or components of the inland waterways or
6 inland harbors of the United States; and

7 “(2) submit to the Users Board a courtesy copy
8 of all reports of the Chief of Engineers relating to
9 a commercial navigation feature or component of the
10 inland waterways or inland harbors of the United
11 States.

12 “(d) CAPITAL INVESTMENT PROGRAM.—

13 “(1) IN GENERAL.—Not later than 1 year after
14 the date of enactment of this subsection, the Sec-
15 retary, in coordination with the Users Board, shall
16 develop, and submit to Congress a report describing,
17 a 20-year program for making capital investments
18 on the inland and intracoastal waterways, based on
19 the application of objective, national project selection
20 prioritization criteria.

21 “(2) CONSIDERATION.—In developing the pro-
22 gram under paragraph (1), the Secretary shall take
23 into consideration the 20-year capital investment
24 strategy contained in the Inland Marine Transpor-
25 tation System (IMTS) Capital Projects Business

1 Model, Final Report published on April 13, 2010, as
2 approved by the Users Board.

3 “(3) CRITERIA.—In developing the plan and
4 prioritization criteria under paragraph (1), the Sec-
5 retary shall ensure, to the maximum extent prac-
6 ticable, that investments made under the 20-year
7 program described in paragraph (1)—

8 “(A) are made in all geographical areas of
9 the inland waterways system; and

10 “(B) ensure efficient funding of inland wa-
11 terways projects.

12 “(4) STRATEGIC REVIEW AND UPDATE.—Not
13 later than 5 years after the date of enactment of
14 this subsection, and not less frequently than once
15 every 5 years thereafter, the Secretary, in conjunc-
16 tion with the Users Board, shall—

17 “(A) submit to Congress a strategic review
18 of the 20-year program in effect under this sub-
19 section, which shall identify and explain any
20 changes to the project-specific recommendations
21 contained in the previous 20-year program (in-
22 cluding any changes to the prioritization cri-
23 teria used to develop the updated recommenda-
24 tions); and

1 “(B) make such revisions to the program
2 as the Secretary and Users Board jointly con-
3 sider to be appropriate.

4 “(e) PROJECT MANAGEMENT PLANS.—The chair-
5 person of the Users Board and the project development
6 team member appointed by the chairperson under sub-
7 section (b)(3) shall sign the project management plan for
8 the qualifying project or the study or design of a commer-
9 cial navigation feature or component of the inland water-
10 ways and inland harbors of the United States.”.

11 **SEC. 7004. MAJOR REHABILITATION STANDARDS.**

12 (a) IN GENERAL.—The Secretary shall develop a
13 methodology for applying standard accounting principles
14 when classifying activities as major rehabilitation projects.

15 (b) EVALUATIONS.—The Secretary shall evaluate the
16 effect of applying the methodology developed under sub-
17 section (a) to not less than 3 qualifying projects.

18 (c) REPORT.—The Secretary shall submit to Con-
19 gress a report on the evaluation under subsection (b).

20 **SEC. 7005. EFFICIENCY OF REVENUE COLLECTION.**

21 Not later than 2 years after the date of enactment
22 of this Act, the Comptroller General shall prepare a report
23 on the efficiency of collecting the fuel tax for the Inland
24 Waterways Trust Fund, which shall include—

1 (1) an evaluation of whether current methods of
 2 collection of the fuel tax result in full compliance
 3 with requirements of the law;

4 (2) whether alternative methods of collection
 5 would result in increased revenues into the Inland
 6 Waterways Trust Fund; and

7 (3) an evaluation of alternative collection op-
 8 tions.

9 **TITLE VIII—HARBOR**
 10 **MAINTENANCE**

11 **SEC. 8001. PURPOSES.**

12 The purposes of this title are—

13 (1) to ensure revenues collected into the Harbor
 14 Maintenance Trust Fund are used for the intended
 15 purposes of the revenues;

16 (2) to increase investment in the operation and
 17 maintenance of United States ports, which are crit-
 18 ical for the economic competitiveness of the nation;

19 (3) to promote equity among ports nationwide;
 20 and

21 (4) to ensure United States ports are prepared
 22 to meet modern shipping needs, including the capa-
 23 bility to receive large ships that require deeper
 24 drafts.

1 **SEC. 8002. FUNDING FOR HARBOR MAINTENANCE PRO-**
2 **GRAMS.**

3 (a) DEFINITIONS.—In this section:

4 (1) HARBOR MAINTENANCE PROGRAMS.—The
5 term “harbor maintenance programs” means ex-
6 penditures under section 9505(e)(1) of the Internal
7 Revenue Code of 1986 (relating to expenditures
8 from the Harbor Maintenance Trust Fund).

9 (2) LEVEL OF RECEIPTS FOR HARBOR MAINTENANCE.—The term “level of receipts for harbor
10 maintenance” means the amount of taxes credited to
11 the Harbor Maintenance Trust Fund under section
12 9505(a)(1) of the Internal Revenue Code of 1986
13 for a fiscal year as set forth in the President’s bud-
14 get baseline projection as defined in section 257 of
15 the Balanced Budget and Emergency Deficit Control
16 Act of 1985 (2 U.S.C. 907) for that fiscal year sub-
17 mitted under section 1105 of title 31, United States
18 Code, reduced by the amount requested in the Presi-
19 dent’s budget for payments described in section
20 9505(e)(3) of the Internal Revenue Code of 1986.

22 (3) TOTAL BUDGET RESOURCES.—The term
23 “total budget resources” means the total amount
24 made available by appropriations Acts from the Har-
25 bor Maintenance Trust Fund for a fiscal year for

1 making expenditures under section 9505(c)(1) of the
2 Internal Revenue Code of 1986.

3 (b) HARBOR MAINTENANCE TRUST FUND GUAR-
4 ANTEE.—

5 (1) IN GENERAL.—Subject to paragraph (2),
6 the total budget resources for a fiscal year shall be
7 equal to the level of receipts for harbor maintenance
8 for that fiscal year, which amounts shall be used
9 only for harbor maintenance programs.

10 (2) RESTRICTION.—Paragraph (1) shall only
11 apply for a fiscal year if the guarantee under that
12 paragraph does not result in a reduction in the total
13 amounts made available under appropriations Acts
14 for that fiscal year for all programs, projects, and
15 activities of the Civil Works Program of the Corps
16 of Engineers other than the harbor maintenance
17 programs.

18 **SEC. 8003. HARBOR OPERATION AND MAINTENANCE.**

19 Section 101(b) of the Water Resources Development
20 Act of 1986 (33 U.S.C. 2211(b)) is amended—

21 (1) in paragraph (1), by striking “45 feet” and
22 inserting “50 feet”; and

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

24 “(3) OPERATION AND MAINTENANCE ACTIVI-
25 TIES DEFINED.—

1 that are eligible for the Federal cost share
2 under paragraph (1) in a State described
3 in clause (ii) have been funded.

4 “(ii) STATE LIMITATION.—For each
5 fiscal year, the operation and maintenance
6 activities described in subparagraph (A)
7 may only be carried out in a State that—

8 “(I) contributes not less than 2.5
9 percent annually of the total funding
10 of the Harbor Maintenance Trust
11 Fund established under section 9505
12 of the Internal Revenue Code of 1986;
13 and

14 “(II) received less than 50 per-
15 cent of the total amounts collected in
16 the State pursuant to section 9505 of
17 the Internal Revenue Code of 1986 in
18 the previous 3 fiscal years.

19 “(iii) PRIORITIZATION.—In allocating
20 amounts made available under this para-
21 graph, the Secretary shall give priority to
22 projects that have received the lowest rate
23 of funding from the Harbor Maintenance
24 Trust fund in previous fiscal years.”.

1 **TITLE IX—DAM SAFETY**

2 **SEC. 9001. SHORT TITLE.**

3 This title may be cited as the “Dam Safety Act of
4 2012”.

5 **SEC. 9002. PURPOSE.**

6 The purpose of this title and the amendments made
7 by this title is to reduce the risks to life and property from
8 dam failure in the United States through the reauthoriza-
9 tion of an effective national dam safety program that
10 brings together the expertise and resources of the Federal
11 Government and non-Federal interests in achieving na-
12 tional dam safety hazard reduction.

13 **SEC. 9003. ADMINISTRATOR.**

14 (a) **IN GENERAL.**—The National Dam Safety Pro-
15 gram Act (33 U.S.C. 467 et seq.) is amended by striking
16 “Director” each place it appears and inserting “Adminis-
17 trator”.

18 (b) **CONFORMING AMENDMENT.**—Section 2 of the
19 National Dam Safety Program Act (33 U.S.C. 467) is
20 amended—

21 (1) by striking paragraph (3);

22 (2) by redesignating paragraphs (1) and (2) as
23 paragraphs (2) and (3), respectively; and

24 (3) by inserting before paragraph (2) (as redesi-
25 gnated by paragraph (2)) the following:

1 “(1) ADMINISTRATOR.—The term ‘Adminis-
2 trator’ means the Administrator of the Federal
3 Emergency Management Agency.”.

4 **SEC. 9004. INSPECTION OF DAMS.**

5 Section 3(b)(1) of the National Dam Safety Program
6 Act (33 U.S.C. 467a(b)(1)) is amended by striking “or
7 maintenance” and inserting “maintenance, condition, or
8 provisions for emergency operations”.

9 **SEC. 9005. NATIONAL DAM SAFETY PROGRAM.**

10 (1) OBJECTIVES.—Section 8(c) of the National
11 Dam Safety Program Act (33 U.S.C. 467f(e)) is
12 amended by striking paragraph (4) and inserting the
13 following:

14 “(4) develop and implement a comprehensive
15 dam safety hazard education and public awareness
16 program to assist the public in preparing for, miti-
17 gating, responding to, and recovering from dam inci-
18 dents;”.

19 (2) BOARD.—Section 8(f)(4) of the National
20 Dam Safety Program Act (33 U.S.C. 467f(f)(4)) is
21 amended by inserting “, representatives from non-
22 governmental organizations,” after “State agencies”.

1 **SEC. 9006. PUBLIC AWARENESS AND OUTREACH FOR DAM**

2 **SAFETY.**

3 The National Dam Safety Program Act (33 U.S.C.
4 467 et seq.) is amended—

5 (1) by redesignating sections 11, 12, and 13 as
6 sections 12, 13, and 14, respectively; and

7 (2) by inserting after section 10 (33 U.S.C.
8 467g–1) the following:

9 **“SEC. 11. PUBLIC AWARENESS AND OUTREACH FOR DAM**

10 **SAFETY.**

11 “The Administrator, in consultation with other Fed-
12 eral agencies, State and local governments, dam owners,
13 the emergency management community, the private sec-
14 tor, nongovernmental organizations and associations, in-
15 stitutions of higher education, and any other appropriate
16 entities shall carry out a nationwide public awareness and
17 outreach program to assist the public in preparing for,
18 mitigating, responding to, and recovering from dam inci-
19 dents.”.

20 **SEC. 9007. AUTHORIZATION OF APPROPRIATIONS.**

21 (1) NATIONAL DAM SAFETY PROGRAM.—

22 (A) ANNUAL AMOUNTS.—Section 14(a)(1)
23 of the National Dam Safety Program Act (33
24 U.S.C. 467j(a)(1)) (as so redesignated) is
25 amended by striking “\$6,500,000” and all that
26 follows through “2011” and inserting

1 “\$9,200,000 for each of fiscal years 2013
2 through 2017”.

3 (B) MAXIMUM AMOUNT OF ALLOCATION.—
4 Section 14(a)(2)(B) of the National Dam Safe-
5 ty Program Act (33 U.S.C. 467j(a)(2)(B)) (as
6 so redesignated) is amended—

7 (i) by striking “The amount” and in-
8 serting the following:

9 “(i) IN GENERAL.—The amount”; and

10 (ii) by adding at the end the fol-
11 lowing:

12 “(ii) FISCAL YEAR 2013 AND SUBSE-
13 QUENT FISCAL YEARS.—For fiscal year
14 2013 and each subsequent fiscal year, the
15 amount of funds allocated to a State under
16 this paragraph may not exceed the amount
17 of funds committed by the State to imple-
18 ment dam safety activities.”.

19 (2) NATIONAL DAM INVENTORY.—Section 14(b)
20 of the National Dam Safety Program Act (33
21 U.S.C. 467j(b)) (as so redesignated) is amended by
22 striking “\$650,000” and all that follows through
23 “2011” and inserting “\$500,000 for each of fiscal
24 years 2013 through 2017”.

1 (3) PUBLIC AWARENESS.—Section 14 of the
2 National Dam Safety Program Act (33 U.S.C. 467j)
3 (as so redesignated) is amended—

4 (A) by redesignating subsections (c)
5 through (f) as subsections (d) through (g), re-
6 spectively; and

7 (B) by inserting after subsection (b) the
8 following:

9 “(c) PUBLIC AWARENESS.—There is authorized to be
10 appropriated to carry out section 11 \$1,000,000 for each
11 of fiscal years 2013 through 2017.”.

12 (4) RESEARCH.—Section 14(d) of the National
13 Dam Safety Program Act (as so redesignated) is
14 amended by striking “\$1,600,000” and all that fol-
15 lows through “2011” and inserting “\$1,450,000 for
16 each of fiscal years 2013 through 2017”.

17 (5) DAM SAFETY TRAINING.—Section 14(e) of
18 the National Dam Safety Program Act (as so redesi-
19 gnated) is amended by striking “\$550,000” and all
20 that follows through “2011” and inserting
21 “\$750,000 for each of fiscal years 2013 through
22 2017”.

23 (6) STAFF.—Section 14(f) of the National Dam
24 Safety Program Act (as so redesignated) is amended
25 by striking “\$700,000” and all that follows through

1 “2011” and inserting “\$1,000,000 for each of fiscal
2 years 2013 through 2017”.

3 **TITLE X—INNOVATIVE**
4 **FINANCING PILOT PROJECTS**

5 **SEC. 10001. SHORT TITLE.**

6 This title may be cited as the “Water Infrastructure
7 Finance and Innovation Act of 2012”.

8 **SEC. 10002. PURPOSES.**

9 The purposes of this title are—

10 (1) to promote increased development of critical
11 water resources infrastructure by establishing addi-
12 tional opportunities for financing water resources
13 projects;

14 (2) to attract new investment capital to infra-
15 structure projects that are capable of generating rev-
16 enue streams through user fees or other dedicated
17 funding sources;

18 (3) to complement existing Federal funding
19 sources and address budgetary constraints on the
20 Corps of Engineers civil works program; and

21 (4) to leverage private investment in water re-
22 sources infrastructure.

23 **SEC. 10003. DEFINITIONS.**

24 In this title:

1 (1) ADMINISTRATOR.—The term “Adminis-
2 trator” means the Administrator of the Environ-
3 mental Protection Agency.

4 (2) COMMUNITY WATER SYSTEM.—The term
5 “community water system” has the meaning given
6 the term in section 1401 of the Safe Drinking Water
7 Act (42 U.S.C. 300f).

8 (3) FEDERAL CREDIT INSTRUMENT.—The term
9 “Federal credit instrument” means a secured loan
10 or loan guarantee authorized to be made available
11 under this title with respect to a project.

12 (4) INVESTMENT-GRADE RATING.—The term
13 “investment-grade rating” means a rating of BBB
14 minus, Baa3, bbb minus, BBB (low), or higher as-
15 signed by a rating agency to project obligations.

16 (5) LENDER.—

17 (A) IN GENERAL.—The term “lender”
18 means any non-Federal qualified institutional
19 buyer (as defined in section 230.144A(a) of
20 title 17, Code of Federal Regulations (or a suc-
21 cessor regulation), known as Rule 144A(a) of
22 the Securities and Exchange Commission and
23 issued under the Securities Act of 1933 (15
24 U.S.C. 77a et seq.)).

1 (B) INCLUSIONS.—The term “lender” in-
2 cludes—

3 (i) a qualified retirement plan (as de-
4 fined in section 4974(e) of the Internal
5 Revenue Code of 1986) that is a qualified
6 institutional buyer; and

7 (ii) a governmental plan (as defined in
8 section 414(d) of the Internal Revenue
9 Code of 1986) that is a qualified institu-
10 tional buyer.

11 (6) LOAN GUARANTEE.—The term “loan guar-
12 antee” means any guarantee or other pledge by the
13 Secretary or the Administrator to pay all or part of
14 the principal of, and interest on, a loan or other debt
15 obligation issued by an obligor and funded by a lend-
16 er.

17 (7) OBLIGOR.—The term “obligor” means an
18 eligible entity that is primarily liable for payment of
19 the principal of, or interest on, a Federal credit in-
20 strument.

21 (8) PROJECT OBLIGATION.—

22 (A) IN GENERAL.—The term “project obli-
23 gation” means any note, bond, debenture, or
24 other debt obligation issued by an obligor in
25 connection with the financing of a project.

1 (B) EXCLUSION.—The term “project obli-
2 gation” does not include a Federal credit in-
3 strument.

4 (9) RATING AGENCY.—The term “rating agen-
5 cy” means a credit rating agency registered with the
6 Securities and Exchange Commission as a nationally
7 recognized statistical rating organization (as defined
8 in section 3(a) of the Securities Exchange Act of
9 1934 (15 U.S.C. 78c(a))).

10 (10) SECURED LOAN.—The term “secured
11 loan” means a direct loan or other debt obligation
12 issued by an obligor and funded by the Secretary in
13 connection with the financing of a project under sec-
14 tion 10010.

15 (11) STATE.—The term “State” means—

16 (A) a State;

17 (B) the District of Columbia;

18 (C) the Commonwealth of Puerto Rico;

19 and

20 (D) any other territory or possession of the
21 United States.

22 (12) STATE INFRASTRUCTURE FINANCING AU-
23 THORITY.—The term “State infrastructure financing
24 authority” means the State entity established or des-
25 ignated by the Governor of a State to receive a cap-

1 italization grant provided by, or otherwise carry out
2 the requirements of, title VI of the Federal Water
3 Pollution Control Act (33 U.S.C. 1381 et. seq.) or
4 section 1452 of the Safe Drinking Water Act (42
5 U.S.C. 300j-12).

6 (13) **SUBSIDY AMOUNT.**—The term “subsidy
7 amount” means the amount of budget authority suf-
8 ficient to cover the estimated long-term cost to the
9 Federal Government of a Federal credit instrument,
10 as calculated on a net present value basis, excluding
11 administrative costs and any incidental effects on
12 governmental receipts or outlays in accordance with
13 the Federal Credit Reform Act of 1990 (2 U.S.C.
14 661 et seq.).

15 (14) **SUBSTANTIAL COMPLETION.**—The term
16 “substantial completion”, with respect to a project,
17 means the earliest date on which a project is consid-
18 ered to perform the functions for which the project
19 is designed.

20 (15) **TREATMENT WORKS.**—The term “treat-
21 ment works” has the meaning given the term in sec-
22 tion 212 of the Federal Water Pollution Control Act
23 (33 U.S.C. 1292).

1 **SEC. 10004. AUTHORITY TO PROVIDE ASSISTANCE.**

2 (a) IN GENERAL.—The Secretary and the Adminis-
3 trator may provide financial assistance under this title to
4 carry out not more than 10 pilot projects each, which shall
5 be selected to ensure a diversity of project types and geo-
6 graphical locations.

7 (b) RESPONSIBILITY.—

8 (1) SECRETARY.—The Secretary shall carry out
9 all pilot projects under this title that are eligible
10 projects under section 10007(1).

11 (2) ADMINISTRATOR.—The Administrator shall
12 carry out all pilot projects under this title that are
13 eligible projects under paragraphs (2) through (8) of
14 section 10007.

15 **SEC. 10005. APPLICATIONS.**

16 (a) IN GENERAL.—To receive assistance under this
17 title, an eligible entity shall submit to the Secretary or
18 the Administrator, as applicable, an application at such
19 time, in such manner, and containing such information as
20 the Secretary or the Administrator may require.

21 (b) COMBINED PROJECTS.—In the case of an eligible
22 project described in section 10007(8), the Administrator
23 shall require the eligible entity to submit a single applica-
24 tion for the combined group of projects.

1 **SEC. 10006. ELIGIBLE ENTITIES.**

2 The following entities are eligible to receive assistance
3 under this title:

4 (1) A corporation.

5 (2) A partnership.

6 (3) A joint venture.

7 (4) A trust.

8 (5) A Federal, State, or local governmental en-
9 tity, agency, or instrumentality.

10 (6) A State infrastructure financing authority.

11 **SEC. 10007. PROJECTS ELIGIBLE FOR ASSISTANCE.**

12 The following projects may be carried out with
13 amounts made available under this title:

14 (1) A project for flood control that the Sec-
15 retary has determined is technically sound, economi-
16 cally justified, and environmentally acceptable, in-
17 cluding—

18 (A) a structural or nonstructural measure
19 to reduce flood risk, enhance stream flow, or
20 protect natural resources; and

21 (B) a levee, dam, tunnel, aqueduct, res-
22 ervoir, or other related water infrastructure.

23 (2) 1 or more activities that are eligible for as-
24 sistance under section 603(c) of the Federal Water
25 Pollution Control Act (33 U.S.C. 1383(c)), notwith-

1 standing the public ownership requirement under
2 paragraph (1) of that subsection.

3 (3) 1 or more activities described in section
4 1452(a)(2) of the Safe Drinking Water Act (42
5 U.S.C. 300j-12(a)(2)).

6 (4) A project for enhanced energy efficiency in
7 the operation of a public water system.

8 (5) A project for accelerated repair and replace-
9 ment of an aging water distribution facility.

10 (6) A brackish or sea water desalination
11 project.

12 (7) Acquisition of real property or an interest
13 in real property for water storage, reclaimed or recy-
14 cled water, or wastewater, if the acquisition is inte-
15 gral to a project described in paragraphs (1)
16 through (6).

17 (8) A combination of projects, each of which is
18 eligible under paragraph (2) or (3), for which a
19 State infrastructure financing authority submits to
20 the Administrator a single application.

21 **SEC. 10008. ACTIVITIES ELIGIBLE FOR ASSISTANCE.**

22 For purposes of this title, an eligible activity with re-
23 spect to an eligible project includes the cost of—

24 (1) development-phase activities, including plan-
25 ning, feasibility analysis, revenue forecasting, envi-

1 ronmental review, permitting, preliminary engineer-
2 ing and design work, and other preconstruction ac-
3 tivities;

4 (2) construction, reconstruction, rehabilitation,
5 and replacement activities;

6 (3) the acquisition of real property (including
7 water rights, land relating to the project, and im-
8 provements to land), environmental mitigation, con-
9 struction contingencies, and acquisition of equip-
10 ment;

11 (4) capitalized interest necessary to meet mar-
12 ket requirements, reasonably required reserve funds,
13 capital issuance expenses, and other carrying costs
14 during construction; and

15 (5) refinancing interim construction funding,
16 long-term project obligations, or a secured loan or
17 loan guarantee made under this title.

18 **SEC. 10009. DETERMINATION OF ELIGIBILITY AND**
19 **PROJECT SELECTION.**

20 (a) **ELIGIBILITY REQUIREMENTS.**—To be eligible to
21 receive financial assistance under this title, a project shall
22 meet the following criteria, as determined by the Secretary
23 or Administrator, as applicable:

24 (1) **CREDITWORTHINESS.**—

1 (A) IN GENERAL.—Subject to subpara-
 2 graph (B), the project shall be creditworthy,
 3 which shall be determined by the Secretary or
 4 the Administrator, as applicable, who shall en-
 5 sure that any financing for the project has ap-
 6 propriate security features, such as a rate cov-
 7 enant, to ensure repayment.

8 (B) PRELIMINARY RATING OPINION LET-
 9 TER.—The Secretary or the Administrator, as
 10 applicable, shall require each project applicant
 11 to provide a preliminary rating opinion letter
 12 from at least 1 rating agency indicating that
 13 the senior obligations of the project (which may
 14 be the Federal credit instrument) have the po-
 15 tential to achieve an investment-grade rating.

16 (C) SPECIAL RULE FOR CERTAIN COM-
 17 BINED PROJECTS.—The Administrator shall de-
 18 velop a credit evaluation process for a Federal
 19 credit instrument provided to a State infra-
 20 structure financing authority for a project
 21 under section 10007(8), which may include re-
 22 quiring the provision of a preliminary rating
 23 opinion letter from at least 1 rating agency.

1 (2) ELIGIBLE PROJECT COSTS.—The eligible
2 project costs of a project shall be reasonably antici-
3 pated to be not less than \$20,000,000.

4 (3) DEDICATED REVENUE SOURCES.—The Fed-
5 eral credit instrument for the project shall be repay-
6 able, in whole or in part, from dedicated revenue
7 sources that also secure the project obligations.

8 (4) PUBLIC SPONSORSHIP OF PRIVATE ENTI-
9 TIES.—In the case of a project carried out by an en-
10 tity that is not a State or local government or an
11 agency or instrumentality of a State or local govern-
12 ment, the project shall be publicly sponsored.

13 (b) SELECTION CRITERIA.—

14 (1) ESTABLISHMENT.—The Secretary or the
15 Administrator, as applicable, shall establish criteria
16 for the selection of projects that meet the eligibility
17 requirements of subsection (a), in accordance with
18 paragraph (2).

19 (2) CRITERIA.—The selection criteria shall in-
20 clude the following:

21 (A) The extent to which the project is na-
22 tionally or regionally significant, with respect to
23 the generation of economic benefits.

24 (B) The extent to which assistance under
25 this section would foster innovative public-pri-

1 vate partnerships and attract private debt or
2 equity investment.

3 (C) The likelihood that assistance under
4 this section would enable the project to proceed
5 at an earlier date than the project would other-
6 wise be able to proceed.

7 (D) The extent to which the project uses
8 new or innovative approaches.

9 (E) The amount of budget authority re-
10 quired to fund the Federal credit instrument
11 made available under this title.

12 (F) The extent to which the project helps
13 maintain or protect the environment.

14 (G) The extent to which assistance under
15 this section reduce the contribution of Federal
16 grant assistance to the project.

17 (3) SPECIAL RULE FOR CERTAIN COMBINED
18 PROJECTS.—For a project described in section
19 10007(8), the Administrator shall only consider the
20 criteria described in subparagraphs (B) through (G)
21 of paragraph (2).

22 (e) FEDERAL REQUIREMENTS.—Nothing in this sec-
23 tion supersedes the applicability of other requirements of
24 Federal law (including regulations).

1 **SEC. 10010. SECURED LOANS.**

2 (a) AGREEMENTS.—

3 (1) IN GENERAL.—Subject to paragraphs (2)
 4 through (4), the Secretary or the Administrator, as
 5 applicable, may enter into agreements with 1 or
 6 more obligors to make secured loans, the proceeds of
 7 which shall be used—

8 (A) to finance eligible project costs of any
 9 project selected under section 10009;

10 (B) to refinance interim construction fi-
 11 nancing of eligible project costs of any project
 12 selected under section 10009; or

13 (C) to refinance long-term project obliga-
 14 tions or Federal credit instruments, if that refi-
 15 nancing provides additional funding capacity for
 16 the completion, enhancement, or expansion of
 17 any project that—

18 (i) is selected under section 10009; or

19 (ii) otherwise meets the requirements
 20 of section 10009.

21 (2) LIMITATION ON REFINANCING OF INTERIM
 22 CONSTRUCTION FINANCING.—A secured loan under
 23 paragraph (1) shall not be used to refinance interim
 24 construction financing under paragraph (1)(B) later
 25 than 1 year after the date of substantial completion
 26 of the applicable project.

1 (3) RISK ASSESSMENT.—Before entering into
2 an agreement under this subsection for a secured
3 loan, the Secretary or the Administrator, as applica-
4 ble, in consultation with the Director of the Office
5 of Management and Budget and each rating agency
6 providing a preliminary rating opinion letter under
7 section 10009(a)(1)(B), shall determine an appro-
8 priate capital reserve subsidy amount for the secured
9 loan, taking into account each such preliminary rat-
10 ing opinion letter.

11 (4) INVESTMENT-GRADE RATING REQUIRE-
12 MENT.—The execution of a secured loan under this
13 section shall be contingent on receipt by the senior
14 obligations of the project of an investment-grade rat-
15 ing.

16 (b) TERMS AND LIMITATIONS.—

17 (1) IN GENERAL.—A secured loan provided for
18 a project under this section shall be subject to such
19 terms and conditions, and contain such covenants,
20 representations, warranties, and requirements (in-
21 cluding requirements for audits), as the Secretary or
22 the Administrator, as applicable, determines to be
23 appropriate.

1 (2) **MAXIMUM AMOUNT.**—The amount of a se-
2 cured loan under this section shall not exceed the
3 lesser of—

4 (A) an amount equal to 49 percent of the
5 reasonably anticipated eligible project costs; and

6 (B) if the secured loan does not receive an
7 investment-grade rating, the amount of the sen-
8 ior project obligations of the project.

9 (3) **PAYMENT.**—A secured loan under this sec-
10 tion—

11 (A) shall be payable, in whole or in part,
12 from State or local taxes, user fees, or other
13 dedicated revenue sources that also secure the
14 senior project obligations of the relevant
15 project;

16 (B) shall include a rate covenant, coverage
17 requirement, or similar security feature sup-
18 porting the project obligations; and

19 (C) may have a lien on revenues described
20 in subparagraph (A), subject to any lien secur-
21 ing project obligations.

22 (4) **INTEREST RATE.**—The interest rate on a
23 secured loan under this section shall be not less than
24 the yield on United States Treasury securities of a

1 similar maturity to the maturity of the secured loan
2 on the date of execution of the loan agreement.

3 (5) MATURITY DATE.—

4 (A) IN GENERAL.—The final maturity date
5 of a secured loan under this section shall be not
6 later than 35 years after the date of substantial
7 completion of the relevant project.

8 (B) SPECIAL RULE FOR STATE INFRA-
9 STRUCTURE FINANCING AUTHORITIES.—The
10 final maturity date of a secured loan to a State
11 infrastructure financing authority under this
12 section shall be not later than 35 years after
13 the date on which amounts are first disbursed.

14 (6) NONSUBORDINATION.—A secured loan
15 under this section shall not be subordinated to the
16 claims of any holder of project obligations in the
17 event of bankruptcy, insolvency, or liquidation of the
18 obligor of the project.

19 (7) FEES.—The Secretary or the Adminis-
20 trator, as applicable, may establish fees at a level
21 sufficient to cover all or a portion of the costs to the
22 Federal Government of making a secured loan under
23 this section.

24 (8) NON-FEDERAL SHARE.—The proceeds of a
25 secured loan under this section may be used to pay

1 any non-Federal share of project costs required if
2 the loan is repayable from non-Federal funds.

3 (9) MAXIMUM FEDERAL INVOLVEMENT.—For
4 each project for which assistance is provided under
5 this title, the total amount of Federal assistance
6 shall not exceed 80 percent of the total project cost.

7 (c) REPAYMENT.—

8 (1) SCHEDULE.—The Secretary or the Admin-
9 istrator, as applicable, shall establish a repayment
10 schedule for each secured loan provided under this
11 section, based on the projected cash flow from
12 project revenues and other repayment sources.

13 (2) COMMENCEMENT.—

14 (A) IN GENERAL.—Scheduled loan repay-
15 ments of principal or interest on a secured loan
16 under this section shall commence not later
17 than 5 years after the date of substantial com-
18 pletion of the project.

19 (B) SPECIAL RULE FOR STATE INFRA-
20 STRUCTURE FINANCING AUTHORITIES.—Sched-
21 uled loan repayments of principal or interest on
22 a secured loan to a State infrastructure financ-
23 ing authority under this title shall commence
24 not later than 5 years after the date on which
25 amounts are first disbursed.

- 1 (3) DEFERRED PAYMENTS.—
- 2 (A) AUTHORIZATION.—If, at any time
- 3 after the date of substantial completion of a
- 4 project for which a secured loan is provided
- 5 under this section, the project is unable to gener-
- 6 ate sufficient revenues to pay the scheduled
- 7 loan repayments of principal and interest on the
- 8 secured loan, the Secretary or the Adminis-
- 9 trator, as applicable, subject to subparagraph
- 10 (C), may allow the obligor to add unpaid prin-
- 11 cipal and interest to the outstanding balance of
- 12 the secured loan.
- 13 (B) INTEREST.—Any payment deferred
- 14 under subparagraph (A) shall—
- 15 (i) continue to accrue interest in ac-
- 16 cordance with subsection (b)(4) until fully
- 17 repaid; and
- 18 (ii) be scheduled to be amortized over
- 19 the remaining term of the secured loan.
- 20 (C) CRITERIA.—
- 21 (i) IN GENERAL.—Any payment defer-
- 22 ral under subparagraph (A) shall be con-
- 23 tingent on the project meeting such cri-
- 24 teria as the Secretary or the Adminis-
- 25 trator, as applicable, may establish.

1 (ii) REPAYMENT STANDARDS.—The
 2 criteria established under clause (i) shall
 3 include standards for reasonable assurance
 4 of repayment.

5 (4) PREPAYMENT.—

6 (A) USE OF EXCESS REVENUES.—Any ex-
 7 cess revenues that remain after satisfying
 8 scheduled debt service requirements on the
 9 project obligations and secured loan and all de-
 10 posit requirements under the terms of any trust
 11 agreement, bond resolution, or similar agree-
 12 ment securing project obligations may be ap-
 13 plied annually to prepay a secured loan under
 14 this section without penalty.

15 (B) USE OF PROCEEDS OF REFI-
 16 NANCING.—A secured loan under this section
 17 may be prepaid at any time without penalty
 18 from the proceeds of refinancing from non-Fed-
 19 eral funding sources.

20 (d) SALE OF SECURED LOANS.—

21 (1) IN GENERAL.—Subject to paragraph (2), as
 22 soon as practicable after the date of substantial
 23 completion of a project and after providing a notice
 24 to the obligor, the Secretary or the Administrator, as
 25 applicable, may sell to another entity or reoffer into

1 the capital markets a secured loan for a project
2 under this section, if the Secretary or the Adminis-
3 trator, as applicable, determines that the sale or re-
4 offering can be made on favorable terms.

5 (2) CONSENT OF OBLIGOR.—In making a sale
6 or reoffering under paragraph (1), the Secretary or
7 the Administrator, as applicable, may not change the
8 original terms and conditions of the secured loan
9 without the written consent of the obligor.

10 (e) LOAN GUARANTEES.—

11 (1) IN GENERAL.—The Secretary or the Admin-
12 istrator, as applicable, may provide a loan guarantee
13 to a lender in lieu of making a secured loan under
14 this section, if the Secretary or the Administrator,
15 as applicable, determines that the budgetary cost of
16 the loan guarantee is substantially the same as that
17 of a secured loan.

18 (2) TERMS.—The terms of a loan guarantee
19 provided under this subsection shall be consistent
20 with the terms established in this section for a se-
21 cured loan, except that the rate on the guaranteed
22 loan and any prepayment features shall be nego-
23 tiated between the obligor and the lender, with the
24 consent of the Secretary or the Administrator, as
25 applicable.

1 **SEC. 10011. PROGRAM ADMINISTRATION.**

2 (a) **REQUIREMENT.**—The Secretary or the Adminis-
3 trator, as applicable, shall establish a uniform system to
4 service the Federal credit instruments made available
5 under this title.

6 (b) **FEES.**—

7 (1) **IN GENERAL.**—The Secretary or the Admin-
8 istrator, as applicable, may collect and spend fees,
9 contingent on authority being provided in appropri-
10 ations Acts, at a level that is sufficient to cover—

11 (A) the costs of services of expert firms re-
12 tained pursuant to subsection (d); and

13 (B) all or a portion of the costs to the
14 Federal Government of servicing the Federal
15 credit instruments provided under this title.

16 (c) **SERVICER.**—

17 (1) **IN GENERAL.**—The Secretary or the Admin-
18 istrator, as applicable, may appoint a financial entity
19 to assist the Secretary or the Administrator in serv-
20 icing the Federal credit instruments provided under
21 this title.

22 (2) **DUTIES.**—A servicer appointed under para-
23 graph (1) shall act as the agent for the Secretary or
24 the Administrator, as applicable.

25 (3) **FEE.**—A servicer appointed under para-
26 graph (1) shall receive a servicing fee, subject to ap-

1 proval by the Secretary or the Administrator, as ap-
2 plicable.

3 (d) ASSISTANCE FROM EXPERTS.—The Secretary or
4 the Administrator, as applicable, may retain the services,
5 including counsel, of organizations and entities with exper-
6 tise in the field of municipal and project finance to assist
7 in the underwriting and servicing of Federal credit instru-
8 ments provided under this title.

9 (e) APPLICABILITY OF OTHER LAWS.—Section 513
10 of the Federal Water Pollution Control Act (33 U.S.C.
11 1372) applies to the construction of a project carried out,
12 in whole or in part, with assistance made available through
13 a Federal credit instrument under this title in the same
14 manner that section applies to a treatment works for
15 which a grant is made available under that Act.

16 **SEC. 10012. STATE AND LOCAL PERMITS.**

17 The provision of financial assistance for project under
18 this title shall not—

19 (1) relieve any recipient of the assistance of any
20 obligation to obtain any required State or local per-
21 mit or approval with respect to the project;

22 (2) limit the right of any unit of State or local
23 government to approve or regulate any rate of re-
24 turn on private equity invested in the project; or

1 (3) otherwise supersede any State or local law
2 (including any regulation) applicable to the construc-
3 tion or operation of the project.

4 **SEC. 10013. REGULATIONS.**

5 The Secretary or the Administrator, as applicable,
6 may promulgate such regulations as the Secretary or Ad-
7 ministrator determines to be appropriate to carry out this
8 title.

9 **SEC. 10014. FUNDING.**

10 (a) IN GENERAL.—There is authorized to be appro-
11 priated to each of the Secretary and the Administrator
12 to carry out this title \$50,000,000 for each of fiscal years
13 2013 through 2017, to remain available until expended.

14 (b) ADMINISTRATIVE COSTS.—Of the funds made
15 available to carry out this title, the Secretary or the Ad-
16 ministrator, as applicable, may use for the administration
17 of this title not more than \$2,200,000 for each of fiscal
18 years 2013 through 2017.

19 **SEC. 10015. REPORT TO CONGRESS.**

20 Not later than 2 years after the date of enactment
21 of this Act, and every 2 years thereafter, the Secretary
22 or the Administrator, as applicable, shall submit to the
23 Committee on Environment and Public Works of the Sen-
24 ate and the Committee on Transportation and Infrastruc-
25 ture of the House of Representatives a report summa-

1 rizing the financial performance of the projects that are
2 receiving, or have received, assistance under this title, in-
3 cluding a recommendation as to whether the objectives of
4 this title are being met.

Senator BOXER. This provision directs the Corps to work with the National Academy of Sciences to evaluate the options to reducing risks associated with future disasters, identify the infrastructure investments we need and explore potential funding sources for these investments. We also ask for GAO review of Corps policies and practices related to flood control and to drought, to ensure that the Corps is taking appropriate measures to prepare for and respond to these events.

Very importantly, the provision also provides new authority to the Corps to conduct post-disaster watershed assessments and implementation of critical flood control without being stalled by bureaucratic delays and adherence to several different laws. This would allow them, in the wake of a disaster such as Katrina or Sandy, to move forward when there is clear evidence of a problem that we know how to fix.

So the last point that I want to make that I am excited about is we have set up something called WIFIA, which is based on TIFIA, which is a way to get the Federal Government to assist the localities that have funding for these important infrastructure projects, to get that funding up front, no risk to the Federal Government. And it really has about a 30 to 1 leverage. So we come in small on this, just as a way to see if it works. But we are excited about this concept.

So I hope my colleagues feel that this first draft is a good start. It is only a first draft; I want to underscore that. The final bill is going to be very different. It is going to reflect every member's views, I assure you that.

Again, I am very grateful to Senators Inhofe and Vitter for taking the lead in getting this letter to me. Because this letter says to me, we are ready to work; we are ready to cooperate. That is what the people want. We showed we could do it in the highway bill. Believe me, we all were together on that. And I think we are going to do it on WRDA. I am excited about it.

And with that, I turn to my Ranking Member.

**OPENING STATEMENT OF HON. JAMES M. INHOFE,
U.S. SENATOR FROM THE STATE OF OKLAHOMA**

Senator INHOFE. Thank you, Madam Chairman.

First, for a little clarification, a lot of people are not aware of the fact that Republicans have different regulations and rules than Democrats do. Because of that, we do have a 6-year limitation on being a Ranking Member or a Chairman, depending on whether a majority or minority. And of course, that is why you are seeking a change. But I want to make sure everyone understands, I plan to continue on this Committee and be very active. I have already talked to Senator Vitter, and we have seen some areas where I could probably take the leadership and work very well with him.

So anyway, as everyone knows, the Chairman and I have not seen eye to eye on a lot of issues. But we do on infrastructure. And I think back, we came together with our colleagues to pass the highway bill. Everybody said we couldn't do that; remember that?

Senator BOXER. That is right.

Senator INHOFE. But we did. We just stayed with it. Now this Committee is turning its attention to the nation's water resources

infrastructure. Like other types of infrastructure, water resources infrastructure provides a good return on our investment in the form of economic benefits, job creation, and helps provide protection from flooding and other natural disasters.

The Water Resources Development Act, the WRDA bill, authorizes the studies and projects and policies that change the nation's pressing needs. It is supposed to be done every 2 years. That was what we have done in the past; we have tried to do. Yet the last one was 5 years ago. It was in 2007. And at that time, I was in the minority and also back in the minority back in 2000, I just remembered.

But it didn't make any difference. Because when it gets to infrastructure, we all want the same thing. I often say that I have enjoyed the ranking of the most conservative member from time to time, and always hasten to say that I may be, but I am a big spender in two areas, national defense and infrastructure. Because if we don't do it, nobody else is going to do it.

In my home State of Oklahoma, we have our share of water resources challenges that run the gamut from flood control to inland navigation. That is kind of a best kept secret; people talk about their ports, well, we have the most inland port in my State of Oklahoma. It comes all the way to Tulsa, or to Catoosa.

So we are very much interested in that. And we know that there are others, such as Senator Alexander and certainly Senator Graham, who have interest in this, as well as Senator Vitter in some of our ports. We also have the inland water ports, and that is very significant.

So I am pleased that the Committee is taking up the critical step toward the development of a WRDA bill by having today's legislative hearing. It is a good idea to have this during this lame duck session because it lets people know, it reminds them that we are going to move forward with this. We are not just talking about it; we are going to do it.

So Chairman Boxer is to be commended for producing a draft. As many of us know, often putting pen to paper and kick starting this process can be a challenge. However, as with any legislative proposal, there are things that I like, things that need to be improved, and there are some things I am not so serious about.

Unfortunately, this election didn't go as I would have liked it, and I think the Chairman disagrees with me.

[Laughter.]

Senator INHOFE. Nonetheless, as far as this effort is concerned, it is not going to change that.

Senator BOXER. No.

Senator INHOFE. We are going to be working together, and certainly Senator Vitter has been my friend for a long time, he has a good grasp on all these issues. I can't think of any areas where we really have a strong disagreement. So we will continue forward as if the changes weren't made.

[The prepared statement of Senator Inhofe follows:]

STATEMENT OF HON. JAMES M. INHOFE,
U.S. SENATOR FROM THE STATE OF OKLAHOMA

I would like to start by commending you, Madam Chairman, for your leadership and dedication to addressing the nation's infrastructure challenges.

Everyone knows that the Chairman and I don't always see eye to eye, but infrastructure is one of the issues that we do agree on. As a result, the Chairman and I have formed a strong partnership to develop comprehensive, bipartisan infrastructure legislation. Most recently, we came together with our colleagues to pass a highway bill despite numerous challenges. Not everyone thought we could get it done, but we proved them wrong.

Now, this Committee is turning its attention to the nation's water resources infrastructure. Like other types of infrastructure, water resources infrastructure provides a good return on our investment in the form of economic benefits, job creation, and helping provide protection from flooding and other natural disasters.

A Water Resources Development Act (WRDA) authorizes studies, projects, and policy changes to address the nation's pressing water resources challenges. Ideally, Congress should pass a WRDA bill every 2 years. Unfortunately, WRDA was last enacted in November 2007—5 years ago. Since then, not only have our nation's water resources policy issues grown exponentially, but there are numerous studies and projects across the country awaiting congressional authorization.

In my home State of Oklahoma, we have our own share of water resources challenges. These run the gamut from flood control to inland navigation to water supply. Oklahoma's—and the nation's—water resources issues, studies, and projects cannot afford to be kept waiting due to congressional inaction.

So, I am pleased that the Committee is taking a critical step toward the development of the next WRDA bill by having today's legislative hearing on the Chairman's draft. I would like to thank our witnesses for testifying before us this morning.

I believe that this draft is a good start. Chairman Boxer is to be commended for producing a draft; as many of us know, often putting pen to paper and kick-starting this process can be challenging. However, as with any legislative proposal, there are things that I like, there are things that need to be improved, and there are things that I have serious concerns with. Our witnesses are here today to provide their feedback on the draft in order to inform our thinking on how to best address the nation's water resources challenges. I hope our witnesses will be candid in their commentary and point out anything they feel was left out of the draft. With the valuable information gained from this hearing, I expect that the Committee's work on this bill will continue into next year.

Unfortunately, this year's election did not go as I would have liked. I am sure the Chairman disagrees with me on this. However, infrastructure advocates can rest assured that they have a strong ally in my friend, Senator Vitter, who will become Ranking Member of this Committee next year. I am confident that he and the Chairman will continue the tradition of bipartisanship as they work to address the nation's infrastructure challenges. And I will continue to play a pivotal role as a senior member of this Committee.

Thank you, and I look forward to hearing the witnesses' testimony.

Senator BOXER. Well, my friend, thank you.

Senator INHOFE. Oh, yes, one last thing. Senator Alexander was planning to be here and has a rather lengthy statement. He asked that I include it in the record.

Senator BOXER. Without objection.

[The prepared statement of Senator Alexander follows:]

STATEMENT OF HON. LAMAR ALEXANDER,
U.S. SENATOR FROM THE STATE OF TENNESSEE

I want to thank Senator Boxer for working to draft a bill to reauthorize the Water Resources and Development Act (WRDA).

Passing a WRDA bill is something this country desperately needs in order to improve the way we operate our waterways, manage flooding, and protect our wetlands.

Although there are good things in this bill, unfortunately this bill does very little to address the real problems with either the Inland Waterways Trust Fund or the Harbor Maintenance Trust Fund.

At a time when we are struggling to help our economy grow, it's important to manage our infrastructure in a way that makes it easier and cheaper for Americans to run their businesses.

The President has stated that it's his goal to double U.S. exports by 2014. I think this is a smart goal, and I hope that it is shared by all of us in the Congress. However, to achieve the President's goal will require that we improve both of the water-

ways' trust funds so that we can support fiscally responsible investment in our nation's ports and waterways.

Any WRDA bill that Congress considers must address the issue that Olmstead Lock is consuming the vast majority of the nation's lock funding. The fact is while focusing on one lock project we are failing to adequately maintain and replace our other locks and we run the risk of shutting down huge sections of our country to inland navigation.

Without inland navigation, the number of heavy trucks on our nation's roads will increase dramatically. Those increases will further clog our country's interstates, result in more wear and tear on our highways, and increase road maintenance costs.

What this Committee should be doing is investing in our waterways, reducing transit time by barge, dramatically increasing fuel economy for heavy freight, and reducing the number of heavy trucks on our nation's interstates by investing in our waterways.

This bill also fails to allow for needed investment in American ports. In 2014 the newly expanded Panama Canal is set to open, paving the way for larger ships on the East Coast. These ships will be deeper, carry more cargo, and become a major part of international trade.

These larger ships are going to use the expanded Panama Canal regardless of whether or not our U.S. ports can accommodate them. If the U.S. ports aren't big enough, the post-Panama Canal expansion ships will simply offload in the Caribbean, and other countries will benefit, and U.S. ports will lose trade and jobs.

We know about this problem; we know that this bill is the place to address the problem—we should not avoid addressing the issue and put it off to another day.

I am concerned that this bill doesn't create a path to expanding our ports, and it doesn't address the problems with the Harbor Maintenance Trust Fund.

My hope is that before there is a vote on Senator Boxer's proposal there will be an opportunity to modify her bill to address some of the shortcomings with how our waterways operate.

Senator BOXER. We will turn to Senator Merkley, who I note has his own bill on WIFIA, and we are very excited about that, because we have included a very similar version into the draft.

Go ahead, Senator.

**OPENING STATEMENT OF HON. JEFF MERKLEY,
U.S. SENATOR FROM THE STATE OF OREGON**

Senator MERKLEY. Thank you very much, Madam Chair, and Senator Inhofe, thank you for your service as Ranking Member. And congratulations, Senator Vitter.

This particular bill is a great one to kind of start the conversations, because this emphasis on infrastructure is felt all around the country. We have so many counties and cities wrestling with either replacing aging infrastructure or upgrading infrastructure to meet modern standards, or preparing infrastructure to enable the economic expansion of the community. So in all three cases, the bill is often very, very high.

So I want to highlight two pieces of this legislation that I particularly appreciate. One is indeed the pilot project for WIFIA. The full bill is Senate Bill 3626, and I would love to work with Members to take a look at that.

As Chair Boxer mentioned, it is modeled on the successful TIFIA program. And whether it be water supply or water treatment, these are just critical infrastructure projects.

I am going to shorten this so we can get on with other opening statements and the hearing. But I also wanted to say that there are other aspects I hope we wrestle with as we consider the WIFIA pilot. Whether we should just keep a financial cap but not a number cap, because that may prove an artificial limit. There may be

well more than 10 projects around the country that would be useful pilot projects and still fit within the financial structure.

Also recognition of cost efficient green infrastructure in terms of wastewater management, stormwater management, which is proving very effective in expanded use around the country. And taking a look at including Buy America provisions that keep our taxpayer dollars here, right at home, so they circulate in our own economy rather than going overseas to create wealth and jobs overseas, rather than wealth and jobs here at home.

So I also wanted to spotlight the effort that Senator Baucus first introduced to allow Army Corps to perform levee certifications. The short version is it is 5 to 10 times more expensive for my small communities in Oregon to go through the private contractor route than to utilize the existing expertise of nearby Army Corps. That is a huge efficiency for our small towns and communities. I certainly appreciate the inclusion of a framework for that, and it is something I will continue to advocate for, because it is so critical that these levees get certified.

The uncertainty for the businesses, the uncertainty for the homeowners who might be selling their homes, is huge when you have these uncertified levees and the inability to afford to go the current route.

Thank you very much. I look forward to working with everyone on this bill.

Senator BOXER. Thank you for your help, as everybody has worked so hard, so far.

Senator Vitter.

**OPENING STATEMENT OF HON. DAVID VITTER,
U.S. SENATOR FROM THE STATE OF LOUISIANA**

Senator VITTER. Thank you, Chairman Boxer, for all your leadership, for calling this hearing, and for your draft. And special thanks to my Ranking Member for his very, very strong but practical and productive leadership as Ranking Member of this Committee. I know all of us, not only on the Republican side, but on the Committee, really, really appreciate that service, and are going to count on that continuing service and leadership on the Committee.

A lasting legacy of both of you on this Committee is to come together, to bridge partisan divides on important national priorities like WRDA bills, like transportation bills. That is exactly what we want to continue with this new WRDA. That is what helped pass a good, solid WRDA 2007. That is what passed a highway bill recently, against all odds, against all the predictions of the pundits. And that is what is going to pass this new WRDA bill. So we all want to look forward to continuing that tradition.

Senator BOXER. Absolutely.

Senator VITTER. That is part of what all of us on the Republican side wanted to communicate in this letter to you, Chairman, that you alluded to. We are very committed to continuing that tradition, to coming together, to getting full input and to producing a good, solid, responsible, bipartisan WRDA bill. In doing that, as you know, we also highlighted four overarching priorities of ours that

you have very graciously focused on and acknowledged. I just want to list those, because they are very important to all of us.

First, reforms that expedite and improve the Corps' project delivery process. That process is just downright broken in a lot of instances, where project delivery takes two decades or more in many instances.

Second—and Chairman Boxer, you talked about the solutions that address the policy and funding challenges facing the Inland Waterway Trust Fund and the Harbor Maintenance Trust Fund. We need to use those supposedly dedicated revenues for the purposes for which they are intended: dredging waterways, keeping commerce flowing. As everybody knows, there are regularly—much of it is regularly stolen from those so-called trust funds and used for unrelated purposes. And we need to stop that, because if we don't, that is a tax on commerce. That leads directly to short loading ships; that is basically just a tax on commerce.

Third, oversight of the Corps' implementation, guidance, and internal policies. We need to make sure that the Corps is acting appropriately there. And fourth, prioritization of water resources projects. Particularly in this environment of fiscal constraint and no earmarks, we need to give the Corps the appropriate criteria to prioritize water projects. I think that is going to be a big part of the new WRDA bill. So we look forward to following up on all of these priorities.

Also, Madam Chair, you mentioned the devastation of Hurricane Sandy. All of our hearts go out to all of those affected. I know a lot of folks will be visiting those areas today. And we certainly want to include those folks in this process, because Corps project delivery now impacts them more than ever before.

I am happy to be gaining allies in terms of helping streamline the Corps process. I never wanted it to happen this way, but I am happy to be gaining those allies. We lived through that in Katrina, even more recently, on an obviously much, much smaller scale with Isaac. So we will move forward together to improve and streamline that process.

Thank you.

Senator BOXER. Thank you, Senator.

I just want to say, we are going to have one more hearing in this so-called lame duck on Sandy, just to get input from those on the ground as to what happened there, which will help us. I am going to save my remarks about Senator Inhofe and my welcoming remarks to Senator Vitter for that particular occasion. Because I don't want to do that now. All I can say is that I have had a partner here who has just been amazing when it comes to working together on infrastructure. The rest of it is another story.

[Laughter.]

Senator BOXER. But we both agree to disagree with respect and admiration.

Senator INHOFE. But it shouldn't go unnoticed, Madam Chairman, that my replacement has his green tie on.

Senator BOXER. Oh, well, that is a good sign, David. Thank you. And I have my green sweater on. We did not call each other on a wardrobe selection today.

But anyway, I will save my remarks for that. Because it is a very, in many ways we have worked together so long as partners here. And it has been such an interesting experience for both of us, and a learning experience. I think most of all, it has benefited a lot of folks, this collaboration, in this Committee and of course as we hope, in the country from our work that we have all been able to do.

Well, we have a colleague who has gone through, as David is going through, just a horrific time right now. I am so proud that Frank is on this Committee, along with Kirsten Gillibrand, they have gone through this, just as David Vitter went through his experience. So we can really hear from them what is happening.

Senator.

**OPENING STATEMENT OF HON. FRANK R. LAUTENBERG,
U.S. SENATOR FROM THE STATE OF NEW JERSEY**

Senator LAUTENBERG. Thank you, Madam Chairman.

New Jersey was hit with a devastation that now, a debate exists, it is not important, but it does reflect something, and that is whether this was the worst storm in a decade or in the history of our State. That is how fierce it was. And this is the second in a series that we have had in just a couple of years. We had Hurricane Irene in 2011, and the President made his first visit there. He came again recently with Sandy. What we see is the devastation, not just of lots of homes, but the total infrastructure of the State. We are hard at work trying to fix what we can to make sure that life is reasonably livable for lots of people who were displaced.

As a matter of fact, at one point—now, my State I think is well known as the most densely populated State in the country. We had 2 and a half million people without power. And there is nothing worse than not having the power to light the way, to keep food reasonably fresh, to be able to get around. We have a very large senior population. And life became substantially more difficult.

And I thank you, Madam Chairman, for moving this legislation up to the front. The Water Resources Development Act is about strengthening our water infrastructure. Nowhere have we been more reminded of the need to improve it than in my State of New Jersey. Little more than 2 weeks ago Superstorm Sandy slammed into New Jersey with such massive force; could have never been anticipated. We saw railroad stations with 6 feet of water in the station. It crippled life as we know it substantially.

The storm claimed the lives of at least 119 people throughout the country, including 33 people from the State of New Jersey. Throughout my State, we have seen catastrophic damage caused by Superstorm Sandy, which collided with infrastructure unprepared for this force. For example, damage from Sandy caused the largest port on the east coast, serving more than one-third of the country, to be shut down for more than a week. And it is not just the economy. The economy includes work; the economy includes productivity. All of these things were totally impaired.

The storm sounded the alarm that the Federal Government must invest in infrastructure not to only recover from this storm, but to build the infrastructure in such a way, stronger, so that we are prepared for the next one, which seems inevitably will be on its

way. Up and down the New Jersey shore, storm surges have destroyed neighborhoods, ruined businesses, displaced families. The boardwalks that many of us grew up enjoying have been swept away along with the homes and the memories of New Jersey. We look at a placard here to show what happens in places along the way, so fierce it just tore off one part of this house. Of course, the building is no longer suitable for use. We have another one here.

However, the silver lining is that early assessments show that areas of the coast that had finished Army Corps' beach projects were not damaged as badly as the areas that did not have Army Corps projects in place. This shows that wider beaches and dunes reduce storm damage. We need to build more of these projects to reduce future losses. But some of the Army Corps projects themselves were damaged severely during the storm. Currently, the Corps only repairs these damaged projects to their previous condition. Well, we learned that the previous condition is not sufficient. And I believe that we need to give the Corps the authority to build those projects back better than they were before.

Now, during Sandy, we also saw outdated water infrastructure lead to two water treatment facilities breaking down, millions of gallons of sewage leaking into Newark Bay as a result. And Newark Bay also borders our largest city in New Jersey. Shouldn't happen. There is no excuse not to have modernized water infrastructure.

And as we move forward with WRDA, I want to work with you, Madam Chairman, and our colleagues. I think we learned a lesson in the last few weeks that goes beyond just looking at water infrastructure in the normal operation of politics. We are all in this together. And what we had in New Jersey by way of flood damage is something compared to volcano damage in other States, to droughts in other States. All of us—there isn't a State here that is immune from some kind of a natural disaster. And we have to face up to it. It is everybody's responsibility. We are all in this together. And we have to wake up to what is required, funding, in terms of movement on legislation, so that we can get along.

Superstorm Sandy was unprecedented. But scientists tell us that storms like this will become more and more frequent. A new WRDA bill must equip us with the tools to take on the enormous challenges ahead as we undertake this task.

I look forward to working together to pass a strong WRDA bill, so that New Jersey and other States have what they need to recover and our country is ready when the next storm strikes. And once again, I mention the fact that we work together. We were able to get over the chasm that keeps us fighting for the wrong kinds of things. And boy, I will tell you, I welcome it. The gesture that we saw, for instance, in the State of New Jersey, where a very strong Republican Governor, Chris Christie, and the President of the United States got together and showed that we are not each independent of the other, but that we must be together. It was a reassuring factor throughout, and a spiritual uplift for our people.

Thank you very much, Madam Chair.

Senator BOXER. Thank you so much.

I know people felt that way when they saw us together, too; it lifted their spirits.

So now we are going to turn to Senator Johanns.

**OPENING STATEMENT OF HON. MIKE JOHANN,
U.S. SENATOR FROM THE STATE OF NEBRASKA**

Senator JOHANN. Madam Chair, thank you. So much of what I wanted to say has been covered by Senator Inhofe and Senator Vitter very, very well. So I won't repeat that.

I think the Senator is absolutely right. WRDA is important to every single State in the United States. Not only to the members of this Committee, but every single State. You think about Nebraska, of course, we are in the center of the country. So the hurricane, the storm that just occurred of course isn't going to impact a State like Nebraska.

But we have massive flooding at times, and at other times, unbelievable drought. Two years ago, the entire Missouri River Valley was filled in historic flooding. It wiped out farms, wiped out homes, massive amount of damage. Last year, we went through unbelievable drought, heat and dry weather. So WRDA is just important to all of us.

There is one thing that I wanted to highlight, and I want to thank you, Madam Chair, because I do know that this is on your radar screen, and in your draft bill you have language that is an attempt to try to deal with this issue. We want to work with you to hopefully improve on that language.

I am referring to section 1003 in the draft bill. And it attempts to address the concern of projects that reach their statutory limit. We have a couple of those in Nebraska.

Senator BOXER. We all do.

Senator JOHANN. Yes, I think most States have this same problem.

So literally, the project can stall because the statutory language prevents any further expenditure in the area. We want to try to find a solution to that. And like I said, I appreciate your attempt to deal with that in this draft language. We will have some suggestions that we will work with your staff and with you, Madam Chair, to hopefully improve on that language.

Senator BOXER. Let me just say publicly what I told you privately: absolutely. Because we have the same goal. If your staff feels that the language doesn't do the job, absolutely. So we can get that done in the next couple of days.

Senator JOHANN. Great. I will wrap up with this. I was very, very pleased to be a supporter of that highway bill, not only in Committee, but on the floor. I have talked about it a number of times. I have pointed to that bill and said, notwithstanding all of the rancor and partisanship, here is a good example of how things can get done. It is my hope that we embrace WRDA with the same bipartisan enthusiasm, to get a bill done, get it to the floor and get it passed. It is important to all of us, and my hope is we can work together to get it done.

Thank you, Madam Chair.

Senator BOXER. Thank you so much.

Senator Boozman.

**OPENING STATEMENT OF HON. JOHN BOOZMAN,
U.S. SENATOR FROM THE STATE OF ARKANSAS**

Senator BOOZMAN. Thank you, Madam Chair. Certainly my spirits are uplifted when I see you and Senator Inhofe together. We appreciate you all together having this hearing today.

The civil works program of the U.S. Army Corps of Engineers is vital to the strength of our country. Recreation, navigation, hydro-power, flood control, irrigation, water supply, all of these things benefit not only the State of Arkansas, but our whole country. Our manufacturers, farmers, businesses, in order for them to succeed in a competitive world where 95 percent of all customers are competitors are overseas. The Water Resources Development Act is the tool that enables us to reshape the Corps' civil works program to meet the changing needs and conditions we need to get back to regular consideration of these bills.

In particular, I am interested in strengthening the Inland Waterways Trust Fund, so that we don't allow the deterioration of our incredible inland waterway system. We in Arkansas feel the pain of underfunding today. The consequences are certainly there in Arkansas. We have seen the Corps cutting back service on our inland waterways like the Washita River and the Arkansas River. We have to fix this. We also need a mechanism, and I think this is very important, to authorize new projects and existing authorizations. I know both of you all have been a real champion of that.

From water supply and irrigation projects to navigation and ecosystem restoration priorities, projects across Arkansas, but all across America, are not receiving the attention that they deserve. We need to protect the jurisdiction of the Committee and defend the oversight role of Congress. Congress as a whole should not surrender all authority over Federal spending to this Administration or to any other future Administration, whether it be Republican or Democrat. Hopefully we can work together and figure out a way, a bipartisan way forward to get us out from underneath that situation.

A WRDA bill can make the Corps more efficient while ensuring we have the resources to maintain and improve our water infrastructure. Again, I thank the witnesses very much for being here today. I look forward to your testimony.

Senator BOXER. Very good.

Senator Barrasso.

**OPENING STATEMENT OF HON. JOHN BARRASSO,
U.S. SENATOR FROM THE STATE OF WYOMING**

Senator BARRASSO. Thank you very much, Madam Chairman.

I would like to echo the comments heard on both sides of the aisle. I agree with my colleagues who believe that moving forward with the WRDA bill is important for our communities. The bill you have put forward is a good first step in that process. Issues such as flood mitigation are very important to my State of Wyoming. I believe we need to eliminate the barriers to constructing and maintaining levees and to completing flood control projects that keep our communities safe.

In 1985 the town of Baggs, Wyoming, faced a major flood. The entire town had to be evacuated, and it was over a million dollars'

worth of damage done. In mid-May 2008 Baggs faced another potential major flood. The Wyoming National Guard was called in to assist, as well as the Wyoming Department of Homeland Security.

At the request of the Department of Homeland Security, the Army Corps Sacramento office sent an official who was able to oversee the reinforcement of existing berms and the construction of new ones. This time, Baggs didn't need to be evacuated and the damage was minimal. Baggs isn't the only town in Wyoming to need assistance to protect itself from the threat of flooding. In the town of Greybull, there are levees that are Army Corps-built but locally maintained. In Diamondville, there are locally built levees that are locally maintained.

A lot of the levees in places like Worland, Laramie, Jackson Hole, are in one or the other category. The Sheridan flood control project on Goose Creek and the Greybull levees participate in the Corps' program called Rehabilitation and Inspection Program, RIP. By participating in this program, the Corps occasionally inspects these levees to ensure that the cities are keeping them in good order. But if catastrophic events occur, these levees will be eligible for Federal funds to rebuild them after the disaster.

So in Wyoming, we try to be as proactive as we can be. But in towns like Baggs and Greybull and Diamondville and Worland, repairs can be very expensive. Many of my colleagues in Wyoming, officials have praised the emergency assistance that Wyoming has received from the Corps during the floods of 2010 and 2011. They built several temporary flood walls and sent about 25 personnel to Lander, Wyoming, during the 2010 event.

It cost an estimated \$5 million to fight that flood. After the floods, the Popo Agie Conservation District, Fremont County Commission, the city of Lander all entered into an agreement with the Corps to do flood mitigation planning in and around the Middle Fork River, which runs through the town of Lander. This project would involve measures to reduce flooding in Lander and reduce the need for emergency response during times of high water.

So projects like this are in the planning phase. We need to move forward as expeditiously as possible. We must address priorities. I believe there are provisions in this bill that need to be reworked, strengthened, some eliminated. But this draft bill is an important first step, and I look forward, Madam Chairman, to working with you to move the bill diligently through a bipartisan process that respects regular order. Thank you so much for your efforts.

Senator BOXER. Senator Barrasso, let me just say I really appreciate your examples. Because in my opening statement, I pointed out that even though we have lots of problems with the Corps, and people could testify to that, where it didn't work as it was supposed to, in 2010, with all the problems nationwide, they figure that the Corps projects that were built prevented \$28 billion of damage nationwide. Yes.

So these investments that we make that are expensive, there is no doubt, look at what happened in Katrina. I was talking to Senator Vitter, asking him for a ballpark. I don't even want to say what he said, because he said, don't quote me on this, but it is in the tens of billions, let's put it that way, the upper end. And when we look at what happened in Sandy.

So for us, this WRDA bill is such an opportunity to help us save money at the end of the day. And this ban on earmarks that Senator Boozman alluded to, the power given to the Administration or any future Administration, is something that Senator Inhofe and I have agreed from the start was not the way to go. It is what it is.

But what we are trying to do in this bill, through many of the provisions, is make sure that the Corps goes the places where the money is needed. Eventually I think we are going to have to revisit this whole thing.

But let's work together in this bill to make sure that we have a check and balance on what projects get funded, and we are very clear in directing through standards where the money goes.

Senator BOOZMAN. And I agree with that, totally.

Senator BOXER. Good. I am really glad.

And let me say, we are going to go to the panel. Because of an airplane flight, I am going to have to leave earlier than I would like, around 20 of. And Senator Whitehouse has agreed to take the gavel for me. If he is not here, I will ask other Senators on our other side to take the gavel. But we are very interested in your comments, and we will move to Stephen Curtis, Board Member and At-Large Director, American Society of Civil Engineers.

Welcome.

STATEMENT OF STEPHEN A. CURTIS, P.E., M.ASCE, BOARD MEMBER AND AT-LARGE DIRECTOR, AMERICAN SOCIETY OF CIVIL ENGINEERS

Mr. CURTIS. Thank you, Madam Chairwoman, Ranking Member Inhofe, members of the Committee. It is an honor for me to appear before the Committee today on behalf of the American Society of Civil Engineers to discuss the Water Resources Development Act of 2012.

ASCE commends the Committee for moving forward on legislation for our nation's vital water resources infrastructure. Currently, the United States does not have a national safety program for levees. Many levees are deeded to local governments or associations who may not maintain them or even recognize the risks. Additionally, there is currently no dependable inventory of the significant number of levees in the United States.

While flooding from Hurricane Katrina demonstrated the need for consistent, up to date standards for levees, the nation still awaits a national levee safety program. The Federal Government must accept the responsibility for the safety of all federally funded levees, and should be working to create a national levee safety program modeled on the successful national dam safety program and the recommendations of the National Committee on Levee Safety.

ASCE commends the Committee for establishing nationwide requirements to protect the health and welfare of citizens from the effects of levee failures. Title VI would take the first steps toward establishing a national levee safety program. While ASCE has had some constructive comments about ways to improve the design of the program, the discussion draft is an excellent starting point.

Section 6003, which lays out definitions, needs to be clarified in order to make clear that the language does not exclude any levee structure that is not part of the Federal flood reduction system. As

written, the language might be mis-read to understand that a large number of levees in the United States are excluded, thus weakening the program.

ASCE strongly believes that a majority of levees in the United States need to be within the National Levee Safety Program. Therefore, a clarification on section 6003 would guarantee that no critical levee is excluded.

Section 6004 would require the establishment of a set of voluntary, comprehensive, national levee safety guidelines. However, States—not the Federal Government—should have primary authority for implementation of the national levee safety program within their borders. A levee safety program will be more effective if States tailor their programs to meet local needs. Federal laws should encourage State governments to create levee safety programs and complete the national inventory of levees.

One additional provision for a new levee safety program would be the inclusion of a maintenance of effort clause for the States. The National Dam Safety Program has benefited from such a clause because it has held States accountable for continuing to appropriate funding.

ASCE also commends the Committee for adding the Dam Safety Act of 2012 as a separate title in WRDA 2012. This bipartisan language in the draft bill would authorize a national dam safety program through 2016 at \$13.9 million annually, while providing grants to improve State dam safety programs. This legislation recognizes that the Federal Government plays a vital role in ensuring that States improve their dam safety programs.

Finally, the current trend toward reduced investment in our ports and harbors has led to ever greater balances in the Harbor Maintenance Trust Fund. By September 2013 the Office of Management and Budget estimates that the trust fund will have a balance of more than \$6 billion. ASCE applauds section 8002 for stating that “the total budget resources for a fiscal year shall be equal to the level of receipts for harbor maintenance that fiscal year, which amounts shall be used only for harbor maintenance.”

It is important that any legislation requires that all funds received by the Harbor Maintenance Trust Fund be appropriated each year to ensure that U.S. ports are prepared to meet modern shipping needs. Including language that appropriations are not taken from other Corps of Engineer programs is also critical. However, while the EPW Committee does not have the tax jurisdiction for the trust fund, ASCE would like to make clear our concern that we have not yet seen language creating a financing mechanism which will guarantee funds are used for harbor maintenance.

One last note before I conclude. ASCE strongly supports the creation of the WIFIA program as one financing mechanism for water resources projects. We look forward to working with this Committee as such a program is analyzed.

Thank you, Senator Boxer. I would be pleased to answer any questions.

[The prepared statement of Mr. Curtis follows:]



Washington Office
101 Constitution Ave., N.W.
Suite 375 East
Washington, D.C. 20001
(202) 789-7850
Fax: (202) 789-7859
Web: <http://www.asce.org>

TESTIMONY OF
STEPHEN CURTIS, P.E.
ON BEHALF OF
THE AMERICAN SOCIETY OF CIVIL ENGINEERS
BEFORE THE
ENVIRONMENT AND PUBLIC WORKS COMMITTEE
UNITED STATES SENATE
FOR A LEGISLATIVE HEARING ON
THE WATER RESOURCES DEVELOPMENT ACT OF 2012
NOVEMBER 15, 2012

Madam Chairwoman, Senator Inhofe, and Members of the Committee:

It is an honor for me to appear before this committee on behalf of the American Society of Civil Engineers (ASCE)¹ to discuss the importance of water resources projects to our nation's overall economic health.

ASCE commends the Environment and Public Works Committee for holding a hearing today on the Water Resources Development Act (WRDA) of 2012 and for moving forward in the legislative process. The Society is pleased to present to the Committee our views on investing in the nation's water resources infrastructure and the impact that this infrastructure has on the nation's ability to compete in a global economy. A Water Resources Development Act that fosters economic growth and job creation through policies that strengthen U.S. infrastructure will allow the nation to remain competitive in the Twenty-First Century.

THE IMPACT OF UNDER-INVESTING IN OUR NATION'S PORTS AND INLAND WATERWAYS

Aging infrastructure for marine ports and inland waterways threatens more than 1 million U.S. jobs according to ASCE's latest *Failure to Act*² economic study on the nation's ports released on September 13, 2012. Between now and 2020, investment needs in the nation's marine ports and inland waterways sector total \$30 billion, while planned expenditures are about \$14 billion, leaving a total investment gap of nearly \$16 billion. This investment gap is for what would be considered the federal responsibility. The ASCE report does not address the landside connections or the "inside the fence" infrastructure that is the responsibility of the port authority.

The nation's marine ports and inland waterways are critical links that make international commerce possible. However, with the scheduled expansion of the Panama Canal by 2015, the average size of container ships is likely to increase significantly, affecting the operations at most of the major U.S. ports that handle containerized cargo and requiring both sectors to modernize. Needed investment in marine ports includes harbor and channel dredging, while inland waterways require new or rehabilitated lock and dam facilities.

The United States has 300 commercial ports, 12,000 miles of inland and intra-coastal waterways and about 240 lock chambers, which carry more than 70 percent of U.S. imports by tonnage and just over half of our imports by value. To remain competitive on a global scale, U.S. marine ports and inland waterways will require investment in the coming decades beyond the \$14.4 billion currently expected. ASCE reports that with an additional investment of \$15.8 billion between now and 2020, the U.S. can eliminate this drag on economic growth and protect:

- \$270 billion in U.S. exports.
- \$697 billion in GDP.
- 738,000 jobs in 2020.
- \$872 billion in personal income, or \$770 per year for households.

¹ ASCE was founded in 1852 and is the country's oldest national civil engineering organization. It represents 141,000 civil engineers individually in private practice, government, industry, and academia who are dedicated to the advancement of the science and profession of civil engineering. ASCE is a non-profit educational and professional society organized under Part 1.501(c) (3) of the Internal Revenue Code.

² www.asce.org/failuretoact

Unless America's infrastructure investment gaps are filled, transporting goods will become costlier, prices will rise, and the United States will become less competitive in the global market. As a result, employment, personal income, and GDP will all fall due to inaction.

We now discuss the specific provisions of the Committee draft bill in the order of importance that we have assigned to the reforms we believe are necessary to Corps' Civil Works program approach to water resources projects. The foremost among them is a national levee safety program.

A. LEVEE SAFETY (TITLE VI)

SECTION 6003—Definitions

Currently, there is no national safety program for federal or state levees. Many privately built levees are deeded to local governments or associations who do not maintain them or even recognize the risks. There is no dependable catalog of the location, ownership, condition, or hazard potential of most levees in the United States. Flooding from Hurricane Katrina, which devastated the city of New Orleans in August 2005, demonstrated the need for consistent, up-to-date standards for levees based upon reliable engineering data on their location, function, and condition.

As a matter of policy, ASCE supports the enactment of federal and state legislation and regulations to establish minimum nationwide requirements to protect the health and welfare of citizens from the catastrophic effects of levee failures. The national levee safety program should be modeled on the successful National Dam Safety Program. The federal government must accept the responsibility for the safety of all federally funded and regulated levees.

Title VI of the draft bill would establish an incomplete National Levee Safety Program. ASCE believes title VI needs to be revised to improve the vigor of the proposed levee safety program.

It appears that section 6003(7) (C) (IV) (I), the bill would exclude from the definition of a levee any structure "that is not part of a federal flood damage reduction system." At present the U.S. Army Corps of Engineers (USACE) has specific authorities for approximately 2,000 levees, or 14,000 miles nationwide.³

"There is still a large universe of private and other non-USACE levees that have not been inventoried or inspected. The National Committee on Levee Safety (NCLS) [sic] has estimated that there may be more than 100,000 miles of levees nationwide, many of which have not been inspected or inventoried. The precise size of this 'universe of levees,' where the levees are located, their condition, or the consequences of poor performance is currently unknown."⁴

Section 6003 may omit the vast majority of levees in the United States from the levee safety program by defining the majority of all levees out of existence. Eliminating a large portion of the nation's levees would be unacceptable to ASCE, and we would like further clarification if this is in fact the case. While we agree that the federal government must accept responsibility only for federally built levees, we strongly believe that all levees in the United States—federal, state, and local—need to be within the ambit of a national levee safety program. Such a program needs to address the physical condition of every

³ U.S. Army Corps of Engineers, Levee Myths and Facts, <http://www.usace.army.mil/Missions/CivilWorks/LeveeSafetyProgram/LeveeMythsandFacts.aspx>

⁴ Ibid.

known mile of federal, state, and local levees to be truly effective. Therefore section 6003(7) (C) (iv) (I) should be amended to include all levees in the definition of a levee.

We concur, however, in the provisions (section 6003(C) (iv) (IV)-(V)) that limit the definition of a levee to areas with a population of fewer than 50 individuals and 1,000 acres.

Federal law should require the federal and state governments to conduct mandatory safety programs for all levees and complete the national inventory of levees begun by the USACE.⁵ State governments should be encouraged to enact legislation under a national safety program requirement to establish an appropriate entity to undertake a program of levee safety for non-federal levees. The National Flood Insurance Program should map all areas potentially flooded by a levee breach and identify these as special flood areas to better communicate risks and encourage affected property owners to seek appropriate protection.

The nation must use all the tools available to reduce damages from hurricanes and major storms. This means the use of structural methods, such as levees, floodwalls, and dams, but also non-structural approaches, such as flood-resistant design, voluntary relocation of homes and businesses from flood-prone areas, the revitalization of wetlands for storage, and the use of natural barriers to storm surges.

SECTION 6004—National Levee Safety Program

Section 6004(c) (1) would require the Secretary of the Army to establish “a set of voluntary, comprehensive, national levee safety guidelines.” We concur with the Committee on Levee Safety⁶ that that “states, not the federal government, should have primary authority for implementation of a National Levee Safety Program within their borders, and a National Levee Safety Program will be more effective if states tailor their levee safety programs to meet local needs and allow for regional and state variations, while meeting national standards and objectives.”⁷

But while states are able to organize and oversee their own levee safety programs under state legal authorities, WRDA should enact mandatory minimum national guidelines and safeguards for the states to follow.

An additional provision that would be beneficial for a newly created Levee Safety Program would be the inclusion of maintenance of effort clause for the states. The National Dam Safety Program has benefited from such a clause, because it has held states accountable for continuing to appropriate funding for their state dam safety program. One success of the clause for the Dam Safety Program was in Michigan when the governor wanted to zero out funding for the dam safety program. Once Michigan was notified that federal funding was contingent on the state maintaining funding for the program the state appropriated funds back to dam safety. Levees could benefit from the same funding assurance. While ASCE commends the Committee for taking steps to create a National Levee Safety Program, states will need a strong federal partner as programs develop.

⁵ <http://nld.usace.army.mil/egis/?p=471:1>:

⁶ Often erroneously referred to as the “National Committee on Levee Safety.”

⁷ Recommendations for a National Levee Safety Program, http://www.leveesafety.org/rec_statelevee.cfm

B. DAM SAFETY (TITLE IX)

ASCE commends the Committee for adding the Dam Safety Act of 2012 as a separate title in WRDA 2012. The bipartisan language, originally introduced by Senators Akaka, Boozman, Whitehouse, and Crapo, would reauthorize the National Dam Safety Program through 2016 at \$13.9 million annually, while providing grants to improve state dam safety programs through training, technical assistance, public awareness, inspection, and research.

Only about 11 percent of the nation's dams are owned, operated, or regulated by the federal government. State governments are responsible for ensuring the safety of most dams. Unfortunately, many state programs are underfunded and understaffed. This legislation recognizes that the federal government plays a vital role in maintaining and inspecting dams wherever they may be located. Under FEMA's leadership, the National Dam Safety Program is dedicated to protecting the lives of American citizens and their property from the risks associated with the development, operation, and maintenance of America's dams.

C. HARBOR MAINTENANCE (TITLE VIII)

The dredging of the nation's ports and harbors has suffered from years of under investment in a system that is critical to America's ability to compete in the global marketplace. For Fiscal Year 2013 the administration has requested \$839 million be appropriated from the Harbor Maintenance Trust Fund (HMTF)—only 50 percent of total estimated revenues. Total revenues are now estimated at \$1.659 billion for FY 2013. The FY 2013 budget request does not come close to meeting the requirements of the nation's ports and harbors, which have an annual need for maintenance dredging of between \$1.3 billion and \$1.6 billion, according to the Army Corps of Engineers.

This trend toward reduced investments in our ports and harbors has led to ever greater balances in the HMTF, and the unexpended balance in the Trust Fund is growing, with a bookkeeping balance of more than \$6 billion by September 30, 2013, the Office of Management and Budget reports.

Therefore, ASCE is pleased to see that the Committee included language that will restore trust to the Harbor Maintenance Trust Fund.

SECTION 8002 – Funding for Harbor Maintenance Programs

ASCE applauds Section 8002(b) (1) stating that "the total budget resources for a fiscal year shall be equal to the level of receipts for harbor maintenance for that fiscal year, which amounts shall be used only for harbor maintenance." By providing a provision requiring the total of all appropriations from the HMTF each fiscal year be equal to all revenues received by the HMTF each year the nation can work toward ensuring that US ports are prepared to meet modern shipping needs.

Paragraph Section 8002(b)(2) is also a critical inclusion since it will guarantee that appropriations are not taken from other Corps of Engineers programs due to the potential increased funding for the HMTF.

SECTION 8003 – Harbor Maintenance and Operations

Finally, ASCE supports the deepening and widening of ship channels, as necessary, to accommodate new, larger ships and the continued maintenance dredging of ship channels for the efficient handling of maritime commerce. ASCE also supports programs that limit erosion and sedimentation in ports, harbors and waterways.

D. INNOVATIVE FINANCING PILOT PROJECTS (TITLE X)

ASCE has been an advocate for a Water Infrastructure Finance Innovations Authority (WIFIA), modeled after the successful Transportation Infrastructure Finance and Innovation Act, for years and is happy to see such language included in WRDA 2012. A WIFIA account that would access funds from the U.S. Treasury at Treasury rates and use those funds to support loans and other credit mechanisms for water projects provides states and public and private entities with another alternative for funding our growing water infrastructure needs.

Providing \$50 million annually for fiscal years 2013 through 2017 for water resources and wastewater projects, which could be leveraged for perhaps \$500 million to \$1 billion annually, would allow for major improvements to the nation's water infrastructure. Additionally, the inclusion of a report to Congress after two years is a positive way to reassess the program and see if it could be updated in a way that would better benefit projects.

E. INLAND WATERWAYS (TITLE VII)**SECTION 7003 – Project Delivery Process Reforms**

According to the Inland Waterways Users Board, large project cost overruns and delays in project schedules on the waterways have drawn down the Inland Waterways Trust Fund balance. Section 7003 is taking steps in the right direction by working to improve the “likelihood of on-time and on-budget completion of qualifying projects.” Developing pilot projects which could evaluate more efficient processes or procedures for the benefit of the nation's inland waterways has the ability to gather information on faster project completion.

ASCE, however, would also argue that project completion delays also result from a federal budgeting and appropriations model that provides funding in annual and often-insufficient increments rather than a more reliable multi-year funding mechanism that would provide the certainty needed to more efficiently contract and build these capital projects. Creating a system which would allow water resources projects not to be reliant on the often unreliable annual appropriations process could cut some of the red tape standing in the way of inland waterways projects.

Next, ASCE approves of language in Section 7003(d)(1), which calls on the Inland Waterways User Board to “develop and submit to Congress a report describing, a 20-year program for making capital improvements on the inland and intracoastal waterways, based on the application of objective, national, project selection prioritization criteria.” Creating a long term priority list for the inland waterways projects will allow for a systematic approach for making the necessary repairs.

SECTION 7005 – Efficiency of Revenue Collection

ASCE is disappointed to see that WRDA 2012 will not directly address the declining revenues in the trust fund. While assessing the efficiency of collecting the current fuel tax and deciding whether alternative methods of collection would result in increased revenue does hint at a problem in current Inland Waterways Trust Fund revenues, overall it essentially punts making a decision on a new revenue raiser for two years.

The tax rate for the trust fund has been 20 cents per gallon since 1995. ASCE believes that an increase in the waterways user fee is long overdue, and we concur in the recommendation from the Inland Waterways User Board that the current fee be increased to between six and nine cents a gallon. ASCE also stresses that any increase in the Inland Waterways User fee includes a provision to index that fee to

the consumer price index (CPI) and be adjusted every two years. We further recommend that any diesel fuel tax revenues received by the IWTF be “firewalled” to establish discretionary spending limits and to reserve the IWTF revenues exclusively for the reconstruction of the system’s aging infrastructure.

F. WATER RESOURCES POLICY REFORMS (TITLE II)

SECTION 2022 – Post Disaster Watershed Assessments

ASCE strongly supports Section 2022 on post disaster watershed assessment. America’s coastal states—those states bordering on the Atlantic, Pacific, or Arctic Ocean, the Gulf of Mexico, Long Island Sound, and one or more of the Great Lakes—contain vital ecological and economic resources. We support the provision that would allow for assessments identifying future flood risk reduction projects or to rehabilitate damaged infrastructure that can reduce future risks, will allow for stronger, more resilient, coastlines.

SECTION 2003—Independent Peer Review

In 2007, Congress enacted the most recent Water Resources Development Act. Section 2034 of that Act provided that project studies must be subject to peer review by an independent panel of experts. Section 2003 of the draft bill makes certain changes to section 2034 of WRDA 2007. The amendments would require the Corps’ to publish (1) its reasons for not requiring an independent peer review and (2) the completed project reviews themselves.

The proposed legislation ignores significant weaknesses in the current law. The 2007 Act established two categories for independent peer review—project studies for which independent peer review is mandatory, and project studies for which such review is discretionary. It also limited the mandatory review of projects having an estimated total cost of more than \$45 million, project studies for which the governor of an affected state requests an independent peer review, and project studies that the Chief of Engineers determined are controversial. In determining whether a project is controversial, the Chief of Engineers must consider whether there is significant public dispute as to the size, nature, or effects of the proposed project, and whether there is significant public dispute as to the economic or environmental costs or benefits of the proposed project.

ASCE objected to the provisions that allowed the Corps to determine that certain project studies are exempt from an independent peer review and to the requirement that limits peer reviews to projects costing at least \$45 million. In January 2010, the Corps issued guidelines to implement the outside peer review requirement. The guidelines followed the law and limited peer review to select projects. In addition, the guidelines continue the Corps practice of subjecting all projects to a Corps-only review called an “agency internal review.”

All peer reviews of civil works projects must be independent from the USACE. ASCE believes that independent peer reviews should be conducted on every water resources project built by Corps of Engineers in which performance is critical to the public health, safety and welfare; the reliability of performance under emergency conditions is critical; innovative materials or techniques are used; for projects lacking redundancy in the design; or for projects that have unique construction sequencing or a short or overlapping design and construction schedule.

The Committee should amend section 2003 of the draft bill to repeal the cost limitation in section 2034 and to require that every water resources project carried out by the Corps undergo an independent peer review. Moreover, the bill should prohibit all use of the “agency internal review” procedure now in Corps policy.

SECTION 2016 – Project Acceleration

Project delays can significantly increase the cost of water resources projects. Continuing the 3-3-3 process at the Corps of Engineers will be an effective way to continue to move projects ahead in an 18 month period.

SECTION 2023 - Levee Certification

Section 2023 of the draft bill would give the Corps of Engineers the discretion to carry out an evaluation of non-federal levee systems and “certify” that these systems meet the prescribed designs for those levees. The certification requirements would be carried out under the Federal Emergency Management Agency (FEMA) program in 44 C.F.R. § 65.10.

ASCE has recommended that FEMA amend its National Flood Insurance Program (NFIP) regulation at 44 C.F.R. § 65.10 that requires a Professional Engineer (P.E.) to certify a levee’s compliance with its design to require only that a P.E. make a “compliance determination” in the development of NFIP insurance rates.

FEMA ought to adopt a hazard-ranking system for NFIP rating maps that is based on either the maximum flood that will likely be experienced in an area (the Probable Maximum Flood), or a locally established plan for development, land use, building codes, emergency preparedness (especially warning, evacuation, and risk communication), as well as an efficient and orderly system of indemnification for the inevitable losses when levees fail or are overtopped.

In order for FEMA to accredit a levee on its NFIP maps, a Professional Engineer must certify that the system complies with all the requirements established by FEMA at 44 CFR 65.10 or a federal agency with levee design and construction qualifications may certify that the levee has been adequately designed and constructed to provide protection against the base flood elevation.

The FEMA rule mandating certification of non-federal levees requires a Professional Engineer to certify a document that inadvertently might mislead the public with respect to public safety and place the engineer in serious ethical and legal jeopardy is contrary to the ASCE Canon of Ethics and good public policy.

The Committee should amend section 2023 of the draft bill to change the reference to “levee certification” to “compliance determination.” This will avoid giving the false impression that a Professional Engineer has guaranteed that the levee will not fail—a guarantee no engineer can ethically render as such a guarantee is beyond the engineer’s ability to predict the future.

A fundamental canon of the Code of Ethics of ASCE declares that engineers shall hold paramount the safety, health, and welfare of the public. The solution to levee safety and flood-risk reduction must be developed within the complex context of community development, land use, building codes, emergency preparedness (especially warning, evacuation, and risk communication). Levee accreditation under the FEMA regulation is a technical finding for the NFIP that is not in any way a representation that any accredited levee will provide for the safety, health, and welfare of the public.

CONCLUSION

In conclusion, ASCE applauds the Senate Environment and Public Works Committee for taking strides to address our nation's aging water resources. Deferring water resource projects creates costs that reverberate throughout our economy, causing exports and GDP to fall, threatening U.S. jobs, causing a drop in personal income, and putting those who live behind a dam or levee at increased risk. Including the creation of a national levee safety program, the reauthorization of the national dam safety program and correcting spending shortfalls out of the Harbor Maintenance Trust Fund are critical elements to a final WRDA package. ASCE looks forward to working with the Senate Environment and Public Works Committee as you move forward on this legislation.

Thank you, Senator Boxer. This concludes my testimony. I would be pleased to answer any questions.



Washington Office
 101 Constitution Ave., N.W. Ste. 375 East
 Washington, D.C. 20001
 (202) 789-7850
 Fax: (202) 789-7859

Questions from Senator Boxer

1. *The draft bill includes provisions for a WIFIA program for drinking water and wastewater infrastructure projects. Do you believe this would be a useful tool for advancing construction of important water infrastructure projects?*

The United States is facing a more than \$400 billion shortfall in water infrastructure funding over the next 20 years according to the Congressional Budget office. Therefore, it will take innovation and increased funding at all levels of government to effectively address the nation's water infrastructure funding needs. For this reason ASCE strongly supports the creation of a WIFIA program for drinking water and wastewater projects.

Since FY 2005, the TIFIA program for transportation projects has leveraged \$122 million in annual funding into \$2.2 billion annually. With water and wastewater revenue collection systems already in place through usage rates and charge fees on their customers, water would be a natural fit for a WIFIA program. In fact, over 90 percent of water projects across the nation have the appropriate financing profile to participate in a WIFIA program.

2. *In your testimony you support the creation of the National Levee Safety Program and have made suggestions for improving the program. Can you expand on what additional features you feel will be most important to strengthening this new program?*

ASCE has been a strong advocate for the creation of a National Levee Safety Program that is modeled on the successful Dam Safety Program. Seven years after Hurricane Katrina the nation still does not have a National Levee Safety Program that can assist states with levee safety efforts and the national levee database is far from completion.

The nation must use all the tools available to reduce damages from hurricanes and major storms. This means the use of structural methods, such as levees, floodwalls, and dams, but also non-structural approaches, such as flood-resistant design, voluntary relocation of homes and businesses from flood-prone areas, the revitalization of wetlands for storage, and the use of natural barriers to storm surges.

WRDA 2012 should also require the Comptroller General, in consultation with the Secretary of the Army, to study the potential benefits of formally uniting the National Dam Safety Program with the National Levee Safety Program. The study should examine:

- The potential to improve the protection of the general public health, safety, and welfare from dam and levee failures through a unified dam and levee safety program;
 - The administrative and budgetary efficiencies to be achieved in the unification of the national dam and levee safety programs; and
 - Any other factors the Comptroller determines will assist the Congress in assessing the benefits of the integration of the two programs.
3. *The draft bill includes provisions for helping ensure the complete expenditures of the HMTF. Can you explain the importance of the HMTF to the operations and maintenance of our Nation's ports and harbors and the consequences of not adequately investing in port infrastructure?*

The dredging of the nation's ports and harbors has suffered from years of under investment in a system that is critical to America's ability to compete in the global marketplace. For Fiscal Year 2013 the administration has requested \$839 million be appropriated from the HMTF—only 50 percent of total estimated revenues. Total revenues are now estimated at \$1.659 billion for FY 2013. The busiest U.S. harbors are presently under maintained. The Corps of Engineers estimates that full channel dimensions at the nation's busiest 59 ports are available less than 35 percent of the time. This situation can increase the cost of shipping as vessels carry less cargo in order to reduce their draft or wait for high tide before transiting a harbor. It could also increase the risk of a ship grounding or collision.

The FY 2013 budget request does not come close to meeting the requirements of the nation's ports and harbors, which have an annual need for maintenance dredging of between \$1.3 billion and \$1.6 billion, according to the Army Corps of Engineers.

This trend toward reduced investments in our ports and harbors has led to ever greater balances in the HMTF, and the unexpended balance in the Trust Fund is growing with a bookkeeping balance of more than \$6 billion by September 30, 2013, the Office of Management and Budget reports.

Therefore, ASCE supports the language in the draft WRDA bill that requires the total of all appropriations from the HMTF each fiscal year be equal to all revenues received by the HMTF each year. Such legislation would require Congress to create a mechanism to ensure the equitable distribution of HMTF monies so that federal assistance would go to the ports in greatest need. This provision would establish a policy for increased expenditures from the Harbor Maintenance Trust Fund to ensure that annual revenues collected are utilized to meet the nation's navigation maintenance dredging needs.

In ASCE's recent *Failure to Act* report on the nation's marine ports, inland waterways, and airports costs attributable to delays in the nation's inland waterways system were \$33 billion in 2010, and it is expected to increase to nearly \$49 billion by 2020. With an additional investment of \$15.8 billion between now and 2020, the U.S. can protect:

- \$270 billion in U.S. exports;
- \$697 billion in GDP;
- 738,000 jobs in 2020; and
- \$872 billion in personal income, or \$770 per year for households through 2020.

Questions from Senator Inhofe

1. *What, if any, policy priorities of change to current law that are important to your organization are not addressed in this draft? How would you suggest we modify the draft to reflect your concerns?*

ASCE was pleased with the initial draft WRDA language, however there are some additional water resources issues we would like to see addressed.

First, forty-seven percent of all locks maintained by the U.S. Army Corps of Engineers were classified as functionally obsolete in 2006. Assuming that no new locks are built within the next 20 years, by 2020, another 93 existing locks will be obsolete—rendering more than 8 out of every 10 locks now in service outdated. The need for increased investment at the federal level is compelling.

However, the tax rate for the trust fund has been 20 cents per gallon since 1995. ASCE believes that an increase in the waterways user fee is long overdue, and we concur in the recommendation that the current fee be increased to between six and nine cents a gallon. We must also stress that any increase in the Inland Waterways User fee include a provision to index that fee to the consumer price index (CPI) and be adjusted every two years. We further recommend that any diesel fuel tax revenues received by the IWTF be “firewalled” to establish discretionary spending limits and to reserve the IWTF revenues exclusively for the reconstruction of the system’s aging infrastructure.

Next, ASCE has been a strong advocate for the creation of a National Dam Rehabilitation and Repair Act for the nation’s non-federal, high-hazard, dams. There are currently nearly 14,000 high-hazard dams in this country, and nearly 2,000 of those are classified as deficient. Creating a national program, which can provide funding for those high-hazard dams in greatest need, can protect the public by preventing dam failures in the future. ASCE urges the creation of a program that will provide a stable, long-term funding source for the repair and rehabilitation of dams, as well as legislation that will protect the public health, safety, and welfare from the catastrophic effects of levee or dam failures.

Finally, ASCE would recommend that the Senate urge the federal government to complete revisions on the Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies of 1983 (Principles and Guidelines or P&G), the central planning document employed by the U.S. Army Corps of Engineers (USACE) for justifying major

civil works projects. ASCE strongly recommends that the federal government pursue an interagency, multi-disciplined, collaborative effort to revise the current P&G to incorporate risk assessment for public health and safety, improved quantification of environmental benefits and a watershed or systems approach.

2. *I am pleased the Chair included a Sense of Congress on Project Acceleration. However, I would like to take this a step further and include legislative language. What does your organization recommend?*

Project delays can significantly increase the cost of water resources projects. Therefore, ASCE urges the creation of strategies to expedite the regulatory review process for infrastructure projects at federal, state and local levels. The goal must be to allow critical infrastructure projects to proceed in a timely manner, while protecting the environment.

ASCE would recommend looking at the legislative language included in MAP-21 on project acceleration. MAP-21 includes program reforms designed to reduce project delivery time and costs while protecting the environment. Examples of improvements include: expanding the use of innovative contracting methods; creating dispute resolution procedures; reducing bureaucratic hurdles for projects with no significant environmental impact; encouraging early coordination between relevant agencies to avoid delays later in the review process; and accelerating project delivery decisions within specified deadlines.

3. *Some have suggested that the Civil Works Program needs to be transformed to ensure it continues to effectively address the nation's water resources challenges. Do you have any recommendations that the Committee can consider for this WRDA bill in order to lay a foundation for future challenges to the Civil Works Program?*

The foundation of the Corps of Engineers Civil Works program rests on projects related to navigation, environmental restoration, and flood mitigation. Each of these project types is critical to our nation's ability to compete in a global marketplace, however appropriations from Congress do not equal the importance of the work that the Corps does. The current instability in funding leads to large project delays, doubling or tripling the time it takes to complete a project and therefore significantly increasing the price tag.

Currently the U.S. Army Corps of Engineers has been faced with reduced appropriations over the past several years. In fact, the Office of Management and Budget (OMB) reported recently that the Civil Works program faces a reduction of \$505 million in FY 2013 under the sequestration authority of the Budget Control Act of 2011, which would be across the board cuts of roughly eight percent.

WRDA 2012 can be used as a vehicle to increase authorization levels for vital Civil Works programs and ensure that programs are authorized over the upcoming years.

Senator BOXER. Thank you very much for your constructive advice to us.

Next, Terry Sullivan, State Director, Rhode Island Chapter, The Nature Conservancy.

Welcome, Mr. Sullivan.

**STATEMENT OF TERRY SULLIVAN, STATE DIRECTOR,
RHODE ISLAND CHAPTER, THE NATURE CONSERVANCY**

Mr. SULLIVAN. Thank you.

Madam Chairman, Ranking Member Inhofe, and members of the Committee, thank you for the opportunity to testify on the Water Resources Development Act of 2012. The bill can improve the health and security of our nation's water resources and the diverse benefits that they provide to all Americans. We appreciate your leadership, along with the Ranking Minority Member and other members of the Committee for moving this important piece of legislation forward.

As the Director of the Rhode Island State Chapter of The Nature Conservancy, I appreciate the change to express our thoughts as Rhode Island and neighboring States recover from the devastating effects of Hurricane Sandy. First and foremost, my thoughts and prayers are with those people throughout the region who continue to suffer from a lack of adequate shelter, heat for their home, and running water. Sandy was a mighty storm, and it hurt a lot of people.

The provisions of this bill, if enacted, will make a difference in a number of important ways, including helping to reduce the impacts of increasingly violent weather events now affecting the lives of so many Americans. This bill also takes important steps toward modernizing our water resource infrastructure and putting it on a more sustainable financial footing.

The Nature Conservancy is an international non-profit whose mission is to conserve the lands and waters upon which all life depends. We have been engaged in water resource issues across the U.S. for many years. In fact, we sponsor more projects with the U.S. Army Corps of Engineers than any other non-profit organization.

My comments today will focus on four areas of particular interest to the Conservancy: improving the ability to address water resources in an integrated and comprehensive manner as the best way to cost effectively manage our water resource infrastructure; strengthening support for the restoration of natural systems so Americans can continue to enjoy the economic and social benefits these systems provide, including their ability to help deal with the threats of intensified storms, floods, and droughts; finding new ways to finance and fund water resource investments that allow a wide range of partners to participate in developing and managing these projects; and making a number of important changes to existing policies that will improve the Corps' ability to achieve our national water resource goals, as articulated by this Congress.

We have reached a critical point in how this nation is going to plan and manage investments in our nation's water resources. On the one hand, the impacts of changing weather patterns are making the importance of sound water management clearer than ever.

At the same time, the tremendous backlog of funding for authorized projects and the fiscal limitations on future spending compel us to find more cost effective ways of doing business. This WRDA bill can be an important step in addressing those challenges.

While our country has built water resource projects usually one at a time, we now recognize that it is the cumulative effects of our investment in many projects that determine their environmental and economic benefits and impacts. We are pleased to see this bill more comprehensively address the implementation and funding of projects related to navigation, flood control, environmental restoration, dam operations, and safety. This means planning and managing on a watershed basis and making investment based on broader collective needs of many stakeholders in a watershed.

Toward this end, we support the provisions of Section 2012 Dam Optimization, which would facilitate evaluation of dam operations in a watershed context and allow reoperation of dams to better take into account their multiple purposes and benefits in conjunction with functions of flood plains, wetlands, and estuaries that are part of those watersheds. In addition, we support the authorization of the NAS, National Academy of Sciences, to undertake a study on how we can be more effective in managing our water resources related to floods and droughts and support the new authority to undertake watershed scale studies related to post-disaster emergencies.

We must integrate the role of healthy and functioning natural features into river and coastal management. Restoring natural flood plains and wetlands can improve water storage practices and help reduce the impacts of floods while increasing the flexibility and the management of reservoirs and other water infrastructure. On our coasts, it is now clear that restoration and conservation of coastal features, marshes, barrier beaches, coastal ponds, oyster reefs, and seagrass beds are [unclear] important in reducing the impacts of storms.

Given this, we strongly support reauthorization of the restoration projects in the Everglades, the Louisiana wetlands, coastal Mississippi, and Chesapeake Bay. The Nature Conservancy also supports increasing the authority for continuing authority programs contained in title II of the draft bill. And we support the new authority for a North Atlantic coastal planning project contained in section 5002 of the draft WRDA bill that would provide the Corps with the ability to plan and implement restoration projects in the whole North Atlantic Coast, from Maine to Virginia. This new authority can serve as a model for region-wide coastal planning from the Corps.

The Nature Conservancy's public opinion polls show that virtually all Americans, regardless of their political affiliation, believe strongly that care of the nation's water resources is an important priority. In these difficult fiscal times, we can only make progress on this priority by organizations, Government agencies, and the private sector working together. We believe the WRDA 2012 bill is an important step in this direction. We look forward to working with the Committee, the Corps, with navigation, flood safety, and other organizations in advancing its provisions.

Thank you for the opportunity to testify here today, and we look forward to submitting more detailed written comments.
[The prepared statement of Mr. Sullivan follows:]



Worldwide Office
4245 North Fairfax Drive, Suite 100
Arlington, VA 22203

Tel (703) 841-5300 nature.org
Fax (703) 555-1111

**Testimony from Terrence Sullivan
Director, Rhode Island Chapter
The Nature Conservancy
For A Hearing On
Water Resources Development Act 2012: Legislative Issues
Before
The Committee on Environment and Public Works
United States Senate**

November 15, 2012

Introduction

Madam Chairman and members of the Committee, thank you for the opportunity to testify on the Water Resources Development Act (WRDA) of 2012. This bill can improve the health and security of our nation's water resources and the diverse benefits that they provide to all Americans. We appreciate your leadership, along with the ranking minority member and the other members of the committee, for moving this important piece of legislation forward.

As the Director of the Rhode Island state chapter of The Nature Conservancy, I appreciate the chance to express our thoughts as Rhode Island and neighboring states recover from the devastating effects of Hurricane Sandy. The provisions of this bill, if enacted, will make a difference in a number of important ways; including helping reduce the impacts of the increasingly violent weather events now affecting the lives of so many Americans.

This bill takes important steps toward modernizing our water resource infrastructure and putting it on a more sustainable financial footing.

The Nature Conservancy is an international, nonprofit organization whose mission is to conserve the lands and waters on which all life depends. We have been engaged in water resources issues across the U.S. for many years. In fact, we sponsor more projects with the US Army Corps of Engineers than any other non-profit organization.

My comments today will focus on four areas of particular interest to TNC:

- Improving the ability to address water resources in an integrated and comprehensive manner as the best way to cost-effectively manage our water resource infrastructure.
- Strengthening support for the restoration of natural systems so Americans can continue to enjoy the economic and social benefits these systems provide including their ability to help deal with the threats of intensifying storms, floods, and droughts.
- Finding new ways to finance and fund water resources investments that allow a wide range of partners to participate in developing and building these projects.

- Making a number of important changes to existing policies that will improve their ability to achieve our national water resource goals as articulated by this Congress.

We have reached a critical point in how this nation is going to plan for and manage investments in our nation's water resources. On the one hand the impacts of changing weather patterns are making the importance of sound water management clearer than ever. At the same time the tremendous backlog of funding for authorized projects and the fiscal limitations on future spending compel us to find more cost-effective ways of doing business. This WRDA bill can be an important step in addressing these challenges.

Managing infrastructure in a more comprehensive way

While our country has built water resource projects usually one at a time, we now recognize that it's the cumulative effect of our investment in many projects that determine their environmental and economic benefits and impacts. We are pleased to see this bill more comprehensively address the implementation and funding of projects related to navigation, flood control, environmental restoration and dam operations and dam safety. This means planning and managing on a watershed basis and making investments based on broader, collective needs of the many stakeholders in a watershed.

Toward this end, we support the provisions of Section 2012, Dam Optimization, which would facilitate evaluation of dam operations in a watershed context and allow re-operation of dams to better take into account their multiple purposes and benefits in conjunction with the function of floodplains, wetlands and estuaries that are part of those larger watersheds. In addition, we support the authorization for the National Academy of Science to undertake a study on how we can more effectively manage our water resources related to floods and droughts and support the new authority to undertake watershed scale studies related to post disaster emergencies.

Restoring natural systems to benefit people and nature

We must integrate the role of healthy and functioning natural features into river and coastal management. Restoring natural floodplain and wetlands areas can improve water storage practices and help reduce the impacts of floods while increasing the flexibility in the management of reservoirs and other water infrastructure. On our coasts, it is now clear that restoration and conservation of coastal features—marshes, barrier beach, coastal ponds, oyster reefs and sea grass beds are critically important in reducing the impacts of storms. These natural systems also provide important economic benefits, like support of coastal fisheries and sustaining recreational fishing and hunting.

Given this, we strongly support re-authorization of the restoration projects in the Everglades, the Louisiana Wetlands, Coastal Mississippi and Chesapeake Bay. The Nature Conservancy also supports the increases in authority for the Continuing Authorities Programs contained in Title II of the draft bill.

And we support the new authority for a North Atlantic coastal planning project contained in Sec. 5002 of the draft WRDA bill that would provide the Corps with the ability to plan and implement restoration projects in the whole North Atlantic coast from Maine to Virginia. This new authority can serve as a model for region-wide coastal planning throughout the Corps.

Financing water resources investments and welcoming a wider range of partners to participate in developing and building these projects

The Nature Conservancy supports identifying new ways of financing water resource projects including both traditional and green infrastructure. The innovative finance provisions in the bill provide a good foundation on which to build such approaches.

We also support the sections that would allow non-federal entities to be more effective partners. The Nature Conservancy has been a non-federal cost-share sponsor on a number of Section 1135 and Section

206 ecosystem restorations. We endorse those provisions in Title II of the bill that make such partnerships easier, that make private contributions to projects less cumbersome and that address the special concerns of natural system restoration. Similarly, Section 2019 of the bill has very good provisions that allow for a Non-Federal Project Implementation Pilot Program. The draft also has provisions to evaluate alternatives for the decentralization of the project planning, management and decision-making process for certain kinds of corps projects.

Changing existing policies

The Nature Conservancy is working increasingly with the US Army Corps of Engineers in its international mission. The Corps is the largest manager of water resources in the world and as such is recognized as a leader whose advice and expertise are often sought around the world.

The Conservancy recommends the committee consider including new language to increase the utility of section 234 of the Water Resources Development Act of 1996 (33 U.S.C. 2323a). This authority addresses interagency and international support, and enables the Corps to participate with Federal or international organizations and foreign governments to address problems of national significance related to water resources, infrastructure development, and environmental protection.

There are, finally, many other important policy initiatives in this bill, including the requirement that the Corps revisit its levee vegetation management policy, improvements to the mitigation policy related to Corps civil works projects, and related to implementation of biological opinions. All make important improvements to the existing policies.

Conclusion

The Nature Conservancy's public opinion surveys show that virtually all Americans, regardless of their political affiliations, believe strongly that care of the nation's water resources is an important priority. In these difficult fiscal times, we can only make progress on this priority by organizations, government agencies and the private sector working together. We believe the WRDA 2012 bill is an important step in this direction. We look forward to working with the Committee, the Corps, with navigation, flood safety and other organizations in advancing its provisions. Thank you for the opportunity to testify here today.

We look forward to submitting more detailed written comments.

Senator Boxer Question #1

Question: In your testimony you discuss the fact that ecosystem restoration projects can also have other important benefits especially related to extreme weather events. Can you elaborate on some of these other benefits and how they can mitigate extreme weather impacts?

Answer: By strengthening support for the restoration of natural systems, Americans can continue to enjoy the economic and social benefits these systems provide including their ability to help deal with the threats of intensifying storms, floods, and droughts.

1) The use of natural infrastructure is an effective long-term solution to make people, infrastructure and natural systems less vulnerable. While risk reduction strategies will vary based on location, natural infrastructure can provide a cost effective means of reducing overall risk to infrastructure and people. Utilizing natural infrastructure for climate resilience can include augmenting existing habitats through conservation strategies; protecting and restoring habitats to enhance flood mitigation and ecosystem services; creating new habitat such as oyster reefs and artificial wetlands; and integrating natural systems into hard infrastructure (and vice versa) to provide long-term ecological and climate benefits. In addition to flood control, ecosystems provide many economically beneficial services that support and protect humans and nature such as filtering pollutants, erosion control, production of fish and shellfish, and clean drinking water. They also provide recreational, aesthetic and potential property value benefits. Moreover, natural infrastructure has lower long-term maintenance costs than “grey” infrastructure.

2) Restoring natural floodplain areas for the purposes of flood attenuation and water storage are two important strategies for meeting flood control needs and mitigating against drought while increasing the flexibility in the management of our reservoirs and other water infrastructure. Allowing floodplains to receive flood waters during high water events reduces the stress on all flood control structures. Also, by allocating flood storage to the floodplain instead of reservoirs, space capacity in the reservoirs currently allocated to flood control or drought response can be converted into storing water to supply cities and farms, generating hydroelectric power, and releasing improved environmental flows into downstream ecosystems. Moreover, floods that are allowed to return to their natural floodplains recharge underlying aquifers, which slowly release higher quality groundwater back to the river as cool, steady base flows. Similar approaches are needed that evaluate all needs in a coastal area or river basin and seek to incorporate the value of intact natural ecosystems into meeting human needs.

Senator Boxer Question #2

Question: In your testimony you support the comprehensive management of our water infrastructure. Can you explain how the dam optimization provision in the draft might be used for enhancing water infrastructure operations and benefits? What efficiencies can be gained by reevaluating the management of existing infrastructure?

Answer: Most of the nation's multi-purpose dams were authorized, designed, and constructed more than a half century ago, with modest to no changes in operations since, despite considerable shifts in water and energy demands, food production, and land use patterns. The provision for dam optimization contained in Title II, Section 2012 will greatly support modernizing the use of these legacy assets, and provide for increased socioeconomic benefits.

1) Based on more than a decade of science-based, collaboration with the US Army Corps of Engineers, we believe the dam optimization provision would enable changes in dam operations and downstream floodplain management that would significantly reduce flood risk, enhance water supply, increase hydropower generation, expand recreation, and restore ecosystem health and services on tens of thousands of river miles across the nation. Select examples include:

- (a) Green River (Kentucky): The Louisville District re-designed their releases to both improve mussel populations, water quality and other environmental benefits and in the process achieved six weeks per year of additional reservoir recreation access and an increase in related jobs, resulting in a 40% increase in direct economic activity since dam reoperation in 2002.
- (b) Mokelumne River (California): We undertook a study which showed the potential to increase water supply storage by up to 50,000 acre-feet, enough when full to meet the annual water needs of 450,000 people in the region, while also maintaining flood protection, increasing hydropower generation, and supporting endangered species recovery.
- (c) Savannah River (Georgia/South Carolina): A related study showed the potential to modify dam operations to increase hydropower revenue by \$12M per year, reservoir recreation value by \$3M per year, and time spent above drought reservoir levels by 55 days per year, while also improving downstream environmental conditions.

Benefits such as these would be more readily achieved if this new authority on dam optimization was combined with improved protection of floodplains and extended the ability of the Corps to obtain downstream flood easements from willing land-owners.

Senator Boxer Question #3

Question: The draft bill includes provisions increasing per project funding levels for some Continuing Authority Programs. Can you describe why these increases are important and how they will benefit the Corps' ecosystem restoration work?

Answer: The increased per project funding levels proposed in Title II, sec. 2005 would diminish risk for Non-Governmental Organizations (NGO) and other non-federal sponsors. Risk reduction is a significant challenge for the non-profit sector. This increase in federal contribution will permit NGO's to commit more funds while understanding that the risk of unforeseen cost overruns may be equitably shared. It also provides the opportunity for greater leverage of private funding in completing important ecosystem restoration and protection, as well as improving the environment in areas where US Army Corps of Engineer projects contributed to the degradation. It invites more private sector participation in these important programs.

The additional funding level opens opportunities for larger scale projects that may also deliver enhanced ecosystem benefits. This is particularly useful if these projects are combined in a manner that supports a watershed scale approach to restoration.

As the US Army Corps of Engineers largest non-profit sponsor of projects, The Nature Conservancy has over a decade of experience in partnering to restore important ecosystems across the country. We are proud of this work, and would strive to learn from this exemplary relationship so that other NGO's might also endeavor to engage in similar opportunities. We recommend several additional provisions in the WRDA that will allow non-federal entities to be more effective partners. We believe changes are needed to address the sponsorship challenges to non-profit organizations, and the unique requirements of ecosystem restoration. Please see our detailed recommendation in our response to Senator Inhofe's first question (paragraph 5).

Senator Boxer Question #4

Question: Your testimony supported modifications in the bill to the requirements for mitigation of civil works projects. Can you please expand on what improvements are necessary to mitigation practices? Also, how can these improvements help more quickly advance civil works projects?

Answer: The Nature Conservancy believes that the key aspects of a successful mitigation program for civil works projects include:

- 1) Clarity of legislative requirements and alignment between legislative language and Corps guidance and regulations;
- 2) Strong and effective oversight by Congress of the implementation of mitigation by the Corps to ensure compliance with applicable provisions of law;
- 3) Selection, design, and implementation of mitigation actions on a watershed basis that reflects the best science and best data regarding the status and needs of the watershed and that fully conforms to the mitigation standards and policies established by the Corps' regulatory program;
- 4) Early planning for mitigation as an integral aspect of project planning and accomplishing mitigation in advance of or concurrently with project construction.

A mitigation program that fully reflects those key aspects will result in greatly enhanced ecological outcomes, reduced cost and fewer delays in completing civil works projects, and more informed and effective Congressional oversight.

The Nature Conservancy supports the provisions of section 2002 of the Discussion Draft (amending section 2283 of title 33 of the US Code). However, we believe that similar and parallel changes in section 2283 would avoid the potential confusion and ambiguity that could be created by modifying the provisions of section 2283(d)(1) without making conforming changes elsewhere in the section. We also suggest several other changes to clarify the existing requirement to adopt a watershed approach to mitigation planning and action and to clearly state that mitigation is a valuable means of achieving the interim and long term goals reflected in section 2317 of title 33, US Code. See the attached for the specific additional changes to section 2283 of title 33, US Code that we recommend.

The Nature Conservancy also supports the provisions of section 2007 of the Discussion Draft that would amend the provisions of section 2283a of title 33, US Code and that would further clarify and strengthen the requirements for reports to Congress detailing the status of mitigation associated with civil works projects. The changes proposed in section 2007 would enhance the information available to Congress in performing Congress' vital oversight role, the second key

aspect of a successful mitigation program. However, we believe that additional specificity with regard to the information relating to the status of mitigation that is required to be submitted to Congress (and available to the public) would even further strengthen oversight, which would improve the planning for and implementation of mitigation and assist in ensuring full compliance with applicable laws and regulations. Such improvements will in turn reduce the cost of and reduce delays in completing civil works projects. See the attached for the specific additional changes to section 2283a of title 33, US Code that we recommend.

Contemporary understanding of the science of mitigation strongly suggests that the most effective way to ensure that mitigation is effective and sustainable is to use a watershed approach, the third key element of a successful mitigation program. That basic approach was adopted in the amendments to section 2283 of title 33, US Code adopted as section 2036(a) of WRDA 2007, and would be further strengthened by adoption of section 2002 of the Discussion Draft and the additional changes to that section that we recommend above.

However, successful application of the watershed approach depends on having sufficient data on the current status of and needs of the watershed. Accordingly, The Nature Conservancy recommends several changes to the provisions of section 2267a of title 33, US Code relating to watershed assessments conducted or assisted by the Corps. See the attached for the specific recommended changes, including a cost-saving requirement to consider existing assessments prepared by or with the participation of federal, state, tribal, or local governments and a requirement that such assessments address aspects especially relevant to the design and implementation of an effective watershed approach to mitigation.

The remaining key aspect of a successful mitigation program involves adopting advance or concurrent mitigation measures as required by the current provisions of section 2283 of title 33, US Code. We have been advised by officials of the Corps that the timing of the availability of construction funds makes accomplishing advance mitigation infeasible as a practical matter. We note that section 2285 of title 33, US Code, enacted as section 908 of WRDA 1986, establishes an "Environmental Protection and Mitigation Fund" designed to provide funding for advance mitigation for civil works projects, with provisions for reimbursement to the fund from the "first appropriation made for construction, including planning and designing, of such project[s]." We understand that this fund has never been capitalized. In order to allow this fund to serve the purpose intended, and to allow the Corps to take advantage of the cost reduction and time savings associated with the use of advance mitigation, we suggest one possible approach to the capitalization of the fund through the amendments to section 2283 reflected in the attached.

Research and pilot projects in other contexts involving the requirement to mitigate for the impact of projects on wetlands and other ecological resources support a conclusion that adoption of the recommendations discussed above would help more quickly advance civil works projects and lower the costs associated with such mitigation. For example, in North Carolina, the state's Ecosystem Enhancement Program (EEP) was established to expedite Department of Transportation (DOT) projects. EEP undertakes watershed planning, which is used to guide siting of compensation for transportation projects. North Carolina reports that, since 2003, there have been no delays in DOT projects because of a lack of mitigation, facilitating over \$10 billion in project implementation. Advanced mitigation planning has also been used in San Diego to

meet the mitigation demand for projects that impact wetlands and species. The San Diego Association of Governments notes that a recent acquisition project will yield considerable costs savings. In Oregon, the state Department of Transportation (ODOT) used these concepts to assist in the implementation of an over \$1.3 billion dollar program to repair or replace over 300 bridges in the state. ODOT reports that it achieved an almost 20 percent savings in project implementation cost.

Senator Inhofe Question #1:

Question: What, if any, policy priorities or changes are important to your organization are not addressed in this draft? How would you suggest we modify the draft to reflect your concerns?

Answer: The Nature Conservancy advocates a number of policy changes to current law as detailed in our response below. We should, however, start by assuring that projects are being implemented that are consistent with existing national water resources policy.

1) The next WRDA should ensure all federal investments in water resources meet the national water policy established in the WRDA 2007 which require all projects to reflect national priorities, encourage economic development, and protect the environment by:

- (a) Seeking to maximize sustainable economic development;
- (b) Seeking to avoid the unwise use of floodplains and flood-prone areas;
- (c) Protecting and restoring the functions of natural systems and mitigating any unavoidable damage to natural systems (sec 2031, WRDA 2007).

This WRDA should include language requiring the Chief of Engineers reports explicitly evaluate project and project alternatives to demonstrate they meet this three part test. Changes that will *enhance* the way the nation manages its vital water resources include the following:

2) Modernize Flood Recovery Options - while quick recovery from floods is critical we shouldn't be spending funds on replacing flood control structures that actually worsen downstream floods. We recommend modifying PL 84-99 (33 U.S.C. 701n) to allow the consideration realignment or setting back of existing levees in addition to replacing levees. Often realigning an existing levee can eliminate pinch points in the floodway that are the location of levee failures, and can raise flood stages downstream. Also, in cases of repeated levee failures or where existing levee alignments create significant pinch points or other risks, the Chief of Engineers (rather than just the landowner as is the case now) should be able to initiate consideration of options to reduce long-term risks and repair costs. We have attached some suggested language changes.

3) National Levee Safety Program - We are pleased to see the inclusion of a national levee safety program in the draft bill (Title VI) and agree that the structural integrity and safety of levees across the country is a pressing need. We increasingly understand the role that natural features like floodplains, beaches and dunes play in attenuating flood risks. Therefore, we recommend that the scope and context of the proposed program be broadened to include a more holistic approach to flood risk reduction. Specifically, we recommend:

- (a) The evaluation and criteria (Sec. 6004) of levees should be broadened to include an assessment of the context in which a specific levee is sitting (e.g. protecting a city, a suburb or an agricultural area), and whether its alignment and position are appropriate. Some levees fail or are damaged on a repeated basis because of how and where they were built. Others may unnecessarily raise flood stages and flood risks downstream. Nature-based solutions may be an important element of flood risk reduction. Therefore, the inventory of levees should evaluate these factors and identify those whose location, position or necessity may need to be re-considered.
- (b) The technical assistance (Sec 6004) to States and tribes should be broadened to include information and assistance on how to evaluate all options, including structural and non-structural options, to reduce flood risks. Community safety involves more than the structural integrity of levees.
- (c) The advisory board (Sec. 6005) is narrowly constituted and scoped. Currently the Board includes only levee safety experts and no representation from risk management, river management, coastal or environmental experts. In addition, the scope of review is too limited. We are concerned that it doesn't adequately address issues related to environmental improvement and management that are integral to levee performance.

4) Mitigation for Civil Works Projects -Additional authority is required in order to allow the Corps to fully participate in watershed-level planning for advanced mitigation, funded through general O&M funding not tied to specific projects or locations. Second, the Corps needs additional authority, applicable generally to all Corps civil works projects, that allows the Corps to apply the mitigation approaches specified in the Corps' 2008 rule implementing section 404 of the Clean Water Act, which calls for mitigation to be based on a watershed approach, and establishes a hierarchy of preference among available options for such mitigation. Please see our response to Senator Boxer's question #4 on mitigation policy for further elaboration.

5) Non-profit Entity Project Sponsorship (Continuing Authorities Program) - We recommend additional provisions that will allow non-federal entities to be more effective partners. While we support those provisions in Title II of the bill that make such partnerships easier, and make private contributions to projects less cumbersome, we believe a new WRDA should consider rectification of the following issues:

- (a) Liability and Indemnification - The current requirements place all liability for damages arising from the implementation and operation of the project and for environmental contamination on the non-federal sponsor.
- (b) Operations and Maintenance- The non-federal sponsors are required to operate, maintain, repair, replace and rehabilitate (OMRR&R) the project in perpetuity. The goal for many ecosystem restoration projects is to establish conditions that won't need continual repair, replacement or rehabilitation.

- (c) Regulatory Activities- Current agreements require non-federal sponsors to prevent encroachments on a project including prescribing and enforcing regulations. Nonprofit organizations, which have no regulatory powers, cannot make or enforce regulations and, if nonprofits do not own real estate interests for the project, they will have no authority to prevent encroachments.
- (d) Total Project Costs- Currently total project costs are not known until after a Project Partnership Agreement (PPA) is signed. Also, since CAP programs have statutory limits, increased costs above this limit are borne solely by the non-federal sponsor. We recommend changes to ensure project costs continue to be shared; changes proposed in Title II, sec. 2005 should help in this matter.
- (e) Non-Cash Cost-Share for "In-Water" Restoration Projects- We recommend expanding the ability to use the protection of lands critical to protection of 'in-water' projects like oyster reef restoration for consideration as in-kind contributions to the cost-share requirements of projects. Congress has specifically addressed the eligibility of non-cash match in WRDA authorizing language at least once before for the Passaic River Main stem project. WRDA 1992 allowed state or other non-federal interests to acquire adjacent lands or those which provided drainage and allowed the value of those lands to count towards the non-federal share. Qualified land conservation or restoration projects that are near (but not necessarily adjacent) to oyster restoration sites could qualify as the non-federal cost share for a U.S. Army Corps of Engineers' Chesapeake Bay Oyster Recovery construction project.

6) Interagency & International Support

We recommend including new language to increase the ability of the Corps to provide interagency and international support through changes to section 234 of the Water Resources Development Act of 1996 (33 U.S.C. 2323a). These changes will further enable the Corps to participate with Federal or international organizations and foreign governments to address problems of international significance related to water resources, infrastructure development, and environmental protection. Actions pursuant to this authority have been valuable in bringing the expertise of the Corps to projects addressing freshwater management issues in a variety of circumstances, including, for example, a project funded by USAID for the Magdalena River in Colombia. We have attached some specific language changes.

Senator Inhofe Question #2

Question: I am pleased that the Chair included a Sense of Congress on Project Acceleration. However, I would like to take this a step further and include legislative language. What does your organization recommend?

Answer: We agree that shortening the time from feasibility studies to project implementation is a high priority – delays can be wasteful, costing taxpayers and impeding the completion of vital water infrastructure. At the same time, we don't want to short-circuit the scoping and evaluation of alternatives that will produce projects that will best meet the needs of our nation today, and for our children and grandchildren. We think tying project acceleration to defining and meeting identified watershed needs and priorities would ensure these projects meet the most pressing needs of our nation.

1) Integrated Project Review-The US Army Corps of Engineers has indicated that as part of their plan to transform Civil Works, the planning phase can be shortened by utilizing a method being referred to as 3X3X3. We encourage this approach and believe use of joint teams of Headquarters, Division and District staff early in project development can accelerate final project delivery.

2) Alternative Financing Pilot Projects-We recommend including an additional provision to promote innovative finance approaches to project delivery that authorizes and directs the Secretary to undertake up to 3 pilot projects that demonstrate the potential for alternative approaches to project delivery, funding, and finance. A similar demonstration of alternative approaches for transportation projects was authorized in Congress in 1996 Transportation Equity Act for the 21st Century (Sec. 1216 of TEA - 21) and led to the highly successful program. The pilots should focus on priority projects with completed Chief of Engineer's reports that would otherwise not receive adequate funding to ensure completion within 10 years. These pilots would facilitate the development of the financing mechanism outlined in the discussion draft of WRDA 2012 (Sec. X) which provides for low interest loans and other credit assistance to projects. The pilots proposed in this section would ensure that the USACE has the ability to clearly define sources of revenues to repay these loans, and to apply effective practices in project delivery. We have attached some language modeled on the 1996 TEA-21 statute.

3) Private Hydropower on USACE structures-We believe there is significant potential for non-federal entities, both public and private, to develop clean, carbon-free hydropower at existing Corps facilities. We recommend the Committee look at how the Sec. 408 reviews are conducted to consider addition of private hydropower to USACE dams. We recommend including changes that make development of such projects a priority for the Corps, and establish accelerated and reasonable timelines for review of such projects in coordination with the other approvals such projects require.

Senator Inhofe Question #3

Question: Some have suggested that it is time to transform the Civil Works Program in order to ensure that it continues to effectively and efficiently provide and manage water resources projects. What are some forward-looking recommendations that the Committee can consider incorporating into this WRDA bill in order to lay a foundation for future changes?

Answer: Instituting Watershed Based Management - We need to firmly establish watersheds as the foundation for addressing our nation's infrastructure management challenges. Central to this approach is setting clear goals and desired outcomes at the watershed scale and developing clear measures that help us make sure we achieve these goals. Where such plans exist or can be created, projects should be evaluated on their ability to help achieve these defined watershed scale goals and outcomes. The following actions will lay a foundation for future changes in the Civil Works Program, and we believe the WRDA bill should include provisions that will facilitate moving to an integrated watershed-based approach to infrastructure management:

1) Complete an inventory of all existing and authorized Corps projects and use the criteria listed below to place them in the following categories:

- (a) Existing projects that should be maintained and operated as currently designed
- (b) Existing projects that should be maintained but should be modified/operated to better achieve multiple benefits; what are the major changes that are required?
- (c) Existing projects that should be abandoned or conveyed to others without financial support as no longer having federal interest.
- (d) Proposed/authorized projects that should proceed based on the currently authorized purposes and design
- (e) Proposed/authorized projects that should proceed based on changed purposes and design
- (f) Proposed/authorized projects that should be abandoned as no longer cost-effective
- (g) Criteria
 - i. Is the project fulfilling its authorized purposes?
 - ii. Are there other purposes that the project could fulfill if its construction or operation were modified?
 - iii. Is the project a safety hazard in its current condition?

- iv. Do changing external conditions affect the viability/purposes of the project?
- v. Does the project continue to have local/public support?
- vi. Can revenues from the project be increased? As currently designed and operated? With modified operations?
- vii. Does the project have adverse or positive environmental impacts?
- viii. Can construction or renovation produce revenues that could allow private financing?
- ix. Is there some other responsible party who could operate the project?

2) Modernizing Infrastructure Operations- Establish a “dam optimization” initiative that takes those projects identified in “b”, above, which include existing Corps dams, and analyzes whether the dam could be physically modified or operated differently to produce greater benefits for multiple purposes without incurring greater adverse environmental impacts.

3) Alternative Financing Options-Establish a framework for new financing that would provide greater flexibility to the US Army Corps of Engineers to seek private or other financing for all or parts of projects. Without reliable and sustainable funding we will not be able to meet the challenges in water infrastructure as outlined by the American Society of Civil Engineers. We recommend the Corps move toward a sustainable funding structure whereby revenues generated by USACE facilities and project users are reinvested in our water resources and water infrastructure. Currently the Corps infrastructure and associated user fees, including hydropower, harbor maintenance, inland waterways and recreation, generate almost \$6 billion annually for the US treasury. These funds should be available for recapitalization of economically and environmentally critical projects. Finally, we should look at innovative finance mechanisms that use the federal investment to leverage private capital. See our proposal regarding pilot projects in response to Senator Inhofe’s question # 2 above. Together with continued appropriations at current levels we could provide predictable and sustainable funding to enhance the Corps ability to meet the nation’s water resource needs.

Attachment to Responses to Questions from the US Senate Environment and Public Works Committee
December 14, 2012

Proposed Legislative Additions and Amendments.

In Response to Senator Boxer's Question #4

Mitigation Policy: Please see separate redline proposals on modification to 33 USC Section 2267a; 33 USC Section 2283; 33 USC Section 2283a and 33 USC Section 2285 (attached)

In Response to Senator Inhofe's Question #1

2) Modernize Flood Recovery Options

We propose the following language changes to ensure PL84-99 provides the USACE and local sponsors with flexibility to allow for certain improvements to existing structures during repair and rehabilitation following damage from a flood to reduce future risks and costs associated with those projects.

EMERGENCY RESPONSE.—Section 5(a)(1) of the Act entitled “An Act authorizing the construction of certain public works on rivers and harbors for flood control, and for other purposes”, approved August 18, 1941 (33 U.S.C. 701n(a)(1)), as amended, is further amended by adding to the first sentence after the word extending the words “setting back, re-alignment” and adding after the words non-structural alternative the phrase “or levee set-backs and re-alignments,”. We also propose the addition of language to further assure the Chief of Engineers considers non-structural options related to hurricane and coastal damage where warranted.

The amended section would read:

§ 701n. Emergency response to natural disasters

(a) Emergency fund

(1) There is authorized an emergency fund to be expended in preparation for emergency response to any natural disaster, in flood fighting and rescue operations, or in the repair or restoration of any flood control work threatened or destroyed by flood, including the strengthening, raising, extending, setting back, re-alignment or other modification thereof as may be necessary in the discretion of the Chief of Engineers for the adequate functioning of the work for flood control, or in implementation of nonstructural alternatives or levee set-backs and re-alignments, to the repair or restoration of such flood control work if requested or approved by the non-Federal sponsor;

(2) in the repair and restoration of any federally authorized hurricane or shore protective structure damaged or destroyed by wind, wave, or water action of other than an ordinary nature or in implementation of nonstructural alternatives when in the discretion of the Chief of Engineers such

repair and restoration or implementation of nonstructural alternatives is warranted for the adequate functioning of the structure for hurricane or shore protection.”

(a) Emergency fund

The amended section would read:

33 USC Sec. 701b-11. Flood, hurricane, and shore protection projects

(a) General considerations; nonstructural alternatives

In the survey, planning, or design by any Federal agency of any project involving flood, hurricane, and shore protection, including protection from coastal storm surge, consideration shall be given to nonstructural alternatives to prevent or reduce flood damages including, but not limited to, levee set-backs and realignments, flood proofing of structures; flood plain regulation; acquisition of flood plain lands for recreational, fish and wildlife, restoration of coastal wetlands and other natural systems, restoration of oyster reefs, and other public purposes; and relocation with a view toward formulating the most economically, socially, and environmentally acceptable means of reducing or preventing flood damages.

(b) Non-Federal participation through nonstructural alternatives; limitation

Where a nonstructural alternative is recommended, non-Federal participation shall be comparable to the value of lands, easements, and rights-of-way which would have been required of non-Federal interests under section 701c of this title, for structural protection measures, but in no event shall exceed 20 per centum of the project costs.

In Response to Senator Inhofe’s Question #1

6) Corps Partnerships on International Water Resources Efforts

33 USC § 2323a. Interagency and international support authority

(Section 234, WRDA 1996)

(a) In general

The Secretary may engage in activities (including contracting) in support of any Federal department or agency, non-governmental organizations, international organizations, or foreign governments to address problems of national significance to the United States.

(b) Consultation

The Secretary may engage in activities in support of international organizations or foreign governments only after consulting with the Department of State.

(c) Use of Corps' expertise

The Secretary may use the technical and managerial expertise of the Corps of Engineers to address domestic and international problems related to water resources, infrastructure development, and environmental protection and restoration.

(d) Funding

There are authorized to be appropriated \$10,000,000 to carry out this section for fiscal year 2013 and each fiscal year thereafter. The Secretary may accept and expend additional funds from Federal departments or agencies, non-governmental organizations, international organizations, or foreign governments to carry out this section.

In Response to Senator Inhofe's Question #2

2) Water Resource Project Construction, Reconstruction and Rehabilitation Pilot Program

The purpose of this section is to authorize and direct the Secretary to undertake up to 3 pilot projects that demonstrate the potential for alternative approaches to project delivery, funding, and finance to meet the water resource needs of the nation. The section authorizes the Secretary to identify an innovative and efficient means of project delivery for select projects which already have an approved Chief of Engineer's report. A similar demonstration of alternative approaches for transportation projects was authorized in Congress in 1996 Transportation Equity Act for the 21st Century (Sec. 1216 of TEA - 21).

The pilots focus on priority projects that would otherwise not receive adequate funding to ensure completion within 10 years and would focus on high value and high intensity systems, including navigation, hydropower, and flood control systems. These pilots would facilitate and provide additional value to the financing mechanism outlined in the discussion draft of WRDA 2012 (Sec. X) which provides for low interest loans and other credit assistance to projects. The pilots proposed in this section would ensure that the USACE has the ability to clearly define sources of revenues to repay these loans, and to apply effective practices in project delivery. Established sources of revenue together with investment-grade project delivery structures would work to attract private equity to invest in these projects leveraging Federal investment through Public Private Partnerships. These pilots would also demonstrate cost savings through engaging private partners, investing in lower-cost green infrastructure alternatives, or both.

In Response to Senator Inhofe's Question #1

6) Corps Partnerships on International Water Resources Efforts

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(d) Funding

There are authorized to be appropriated \$10,000,000 to carry out this section for fiscal year 2012 and each fiscal year thereafter. The Secretary may accept and expend additional funds from Federal departments or agencies, non-governmental organizations, international organizations, or foreign governments to carry out this section.

Flood

33 USC Sec. 701b-11. Flood, hurricane, and shore protection projects (TNC proposed new language in our September input to EPW highlighted in yellow, proposed additional changes shown in red but not highlighted.)

(a) General considerations; nonstructural alternatives

In the survey, planning, or design by any Federal agency of any project involving flood, hurricane, and shore protection, including protection from coastal storm surge, consideration shall be given to nonstructural alternatives to prevent or reduce damages including, but not limited to, levee set-backs and realignments, flood proofing of structures; flood plain regulation; acquisition of flood plain lands for recreational, fish and wildlife, restoration of coastal wetlands and other natural systems, restoration of oyster reefs, and other public purposes; and relocation with a

view toward formulating the most economically, socially, and environmentally acceptable means of reducing or preventing damages.

(b) Non-Federal participation through nonstructural alternatives; limitation

Where a nonstructural alternative is recommended, non-Federal participation shall be comparable to the value of lands, easements, and rights-of-way which would have been required of non-Federal interests under section 701c of this title, for structural protection measures, but in no event shall exceed 20 per centum of the project costs.

-EXPCITE-

TITLE 33 - NAVIGATION AND NAVIGABLE WATERS

CHAPTER 36 - WATER RESOURCES DEVELOPMENT

SUBCHAPTER IV - WATER RESOURCES STUDIES

Sec. 2267a. Watershed and river basin assessments

(a) In general

The Secretary may assess the water resources needs of river basins and watersheds of the United States, including needs relating to -

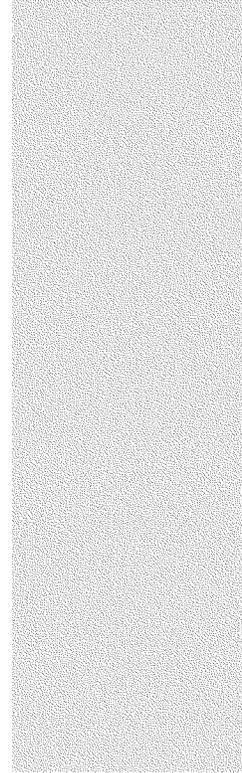
- (1) ecosystem protection and restoration;
- (2) flood damage reduction;
- (3) navigation and ports;
- (4) watershed protection;
- (5) water supply;
- (6) drought preparedness;

~~(7) sources of watershed impairment, and~~

~~(8) the needs of fish and wildlife.~~

(b) Cooperation

An assessment under subsection (a) of this section shall be carried out in cooperation and coordination with -



- (1) the Secretary of the Interior;
- (2) the Secretary of Agriculture;
- (3) the Secretary of Commerce;
- (4) the Administrator of the Environmental Protection Agency; and
- (5) the heads of other appropriate agencies.

(c) Consultation and identification of potential mitigation areas

In carrying out an assessment under subsection (a) of this section, the Secretary shall:

- (1) consult with Federal, tribal, State, interstate, and local governmental entities;
- (2) consider existing watershed assessments and plans prepared by or with the participation of such entities; and
- (3) identify areas where actions under section 2083 of this title to mitigate the adverse impacts of water resource projects and actions to mitigate the adverse impacts of actions requiring the issuance of a permit by the Secretary under any provision of law would be most effective in meeting the hydrologic and ecological needs of the watershed.

(d) Priority river basins and watersheds

In selecting river basins and watersheds for assessment under this section, the Secretary shall give priority to -

- (1) the Delaware River basin;
- (2) the Kentucky River basin;
- (3) the Potomac River basin;
- (4) the Susquehanna River basin;
- (5) the Willamette River basin;
- (6) Tuscarawas River Basin, Ohio;
- (7) Sauk River Basin, Snohomish and Skagit Counties, Washington;
- (8) Niagara River Basin, New York;
- (9) Genesee River Basin, New York; and
- (10) White River Basin, Arkansas and Missouri.

(e) Acceptance of contributions

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In carrying out an assessment under subsection (a) of this section, the Secretary may accept contributions, in cash or in kind, from Federal, tribal, State, interstate, and local governmental entities to the extent that the Secretary determines that the contributions will facilitate completion of the assessment.

(f) Cost-sharing requirements

(1) Non-Federal share

The non-Federal share of the costs of an assessment carried out under this section on or after December 11, 2000, shall be 25 percent.

(2) Credit

(A) In general

Subject to subparagraph (B), the Secretary may credit toward the non-Federal share of an assessment under this section the cost of services, materials, supplies, or other in-kind contributions provided by the non-Federal interests for the assessment.

(B) Maximum amount of credit

The credit under subparagraph (A) may not exceed an amount equal to 25 percent of the costs of the assessment.

(Pub. L. 99-662, title VII, Sec. 729, Nov. 17, 1986, 100 Stat.4164; Pub. L. 106-541, title II, Sec. 202, Dec. 11, 2000, 114 Stat.2587; Pub. L. 110-114, title II, Sec. 2010, Nov. 8, 2007, 121 Stat.1074.)

AMENDMENTS

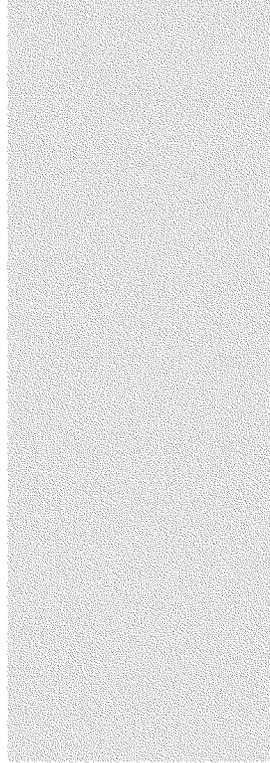
2007 - Subsec. (d)(6) to (10). Pub. L. 110-114, Sec. 2010(1), added pars. (6) to (10). Subsec. (f)(1). Pub. L. 110-114, Sec. 2010(2), added par. (1) and struck out heading and text of former par. (1). Text read as follows: "The non-Federal share of the costs of an assessment carried out under this section shall be 50 percent." Subsec. (g). Pub. L. 110-114, Sec. 2010(3), struck out heading and text of subsec. (g). Text read as follows: "There is authorized to be appropriated to carry out this section \$15,000,000."

2000 - Pub. L. 106-541 amended section catchline and text generally. Prior to amendment, section read as follows:

"(a) The Secretary, in coordination with the Secretary of the Interior and in consultation with appropriate Federal, State, and local agencies, is authorized to study the water resources needs of river basins and regions of the United States. The Secretaries shall report the results of such study to Congress not later than October 1, 1988.

"(b) In carrying out the studies authorized under subsection (a) of this section, the Secretaries shall consult with State, interstate, and local governmental entities.

"(c) There is authorized to be appropriated \$5,000,000 for fiscal years beginning after September 30, 1986, to carry out this section."



33 USC Sec. 2283. ~~Fish and wildlife mitigation for the impacts of water resources projects~~

(a) Steps to be taken prior to or concurrently with construction

(1) In the case of any water resources project which is authorized to be constructed by the Secretary before, on, or after November 17, 1986, construction of which has not commenced as of November 17, 1986, and which necessitates the mitigation of ~~damages to ecological resources, including~~ recreational and aquatic resources, and habitat for fish and wildlife, ~~including the acquisition of lands or interests in lands to mitigate such damages to fish and wildlife, as a result of such project, such mitigation, including acquisition of the lands or interests -~~

(A) shall be undertaken or acquired before any construction of the project (other than such acquisition) commences, or

(B) shall be undertaken or acquired concurrently with lands and interests in lands for project purposes (other than mitigation of ~~such damage to fish and wildlife resources~~), whichever the Secretary determines is appropriate, except that any physical construction required for the purposes of mitigation may be undertaken concurrently with the physical construction of such project.

(2) For the purposes of this subsection, any project authorized before November 17, 1986, on which more than 50 percent of the land needed for the project, exclusive of mitigation lands, has been acquired shall be deemed to have commenced construction under this subsection.

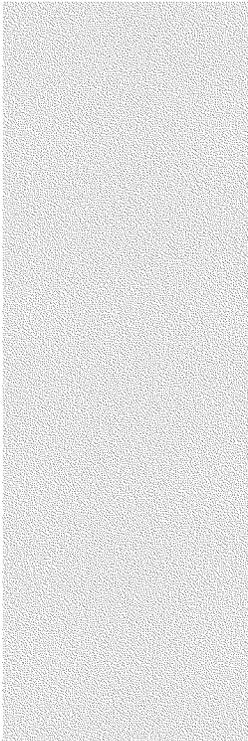
(b) Acquisition of lands or interests in lands for mitigation

(1) After consultation with appropriate Federal and non-Federal agencies, the Secretary is authorized to mitigate damages to ecological resources, including terrestrial and aquatic resources, and habitat for fish and wildlife ~~fish and wildlife~~ resulting from any water resources project under his jurisdiction, whether completed, under construction, or to be constructed. Such mitigation may include the acquisition of lands, or interests therein, except that -

(A) acquisition under this paragraph shall not be by condemnation in the case of projects completed as of November 17, 1986, or on which at least 10 percent of the physical construction on the project has been completed as of November 17, 1986; and

(B) acquisition of water, or interests therein, under this paragraph, shall not be by condemnation.

~~The Secretary shall, under the terms of this paragraph, obligate no more than \$50,000,000 in any five-year period. With respect to any water resources project, the authority under this subsection shall not apply to measures that cost more than \$7,500,000 or 10 percent of the cost of the project, whichever is greater.~~



(2) Whenever, after his review, the Secretary determines that such mitigation features under this subsection are likely to require condemnation under subparagraph (A) or (B) of paragraph (1) of this subsection, the Secretary shall transmit to Congress a report on such proposed modification, together with his recommendations.

(c) Allocation of mitigation costs

Costs incurred after November 17, 1986, including lands, easements, rights-of-way, and relocations, for implementation and operation, maintenance, and rehabilitation to mitigate damages to ecological resources, including terrestrial and aquatic resources, and habitat for fish and wildlife ~~fish and wildlife~~ shall be allocated among authorized project purposes in accordance with applicable cost allocation procedures, and shall be subject to cost sharing or reimbursement to the same extent as such other project costs are shared or reimbursed, except that when such costs are covered by contracts entered into prior to November 17, 1986, such costs shall not be recovered without the consent of the non-Federal interests or until such contracts are complied with or renegotiated.

(d) Mitigation plans as part of project proposals

(1) In general

After November 17, 1986, the Secretary shall not submit any proposal for the authorization of any water resources project to Congress in any report, and shall not select a project alternative in any report, unless such report contains (A) a recommendation with a specific plan to mitigate for ~~damages to ecological resources, including terrestrial and aquatic resources, and habitat for fish and wildlife~~ created by such project, or (B) a determination by the Secretary that such project will have negligible adverse impact on ~~ecological resources and habitat for fish and wildlife~~. Specific mitigation plans shall ensure that impacts to bottomland hardwood forests are mitigated in-kind, and other habitat types are mitigated to not less than in-kind conditions, to the extent possible ~~without the implementation of mitigation measures~~. If the Secretary determines that mitigation to in-kind conditions is not possible, the Secretary shall identify in the report the ~~basis for that determination~~. In carrying out this subsection, the Secretary shall consult with appropriate Federal and non-Federal agencies.

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(2) Selection and design of mitigation projects

The Secretary shall select and design mitigation projects using a watershed approach that ~~reflects~~ reflects contemporary understanding of the science of mitigating the adverse environmental impacts of water resources projects.

(3) Mitigation requirements

(A) In general

To mitigate for damages to ecological resources, including ~~terrestrial and aquatic resources, and habitat for fish and wildlife~~ ~~to fish and wildlife~~ resulting from a water resources project, the Secretary shall ensure that the mitigation plan

for each water resources project complies ~~at a minimum~~ with the mitigation standards and policies established pursuant to the regulatory programs administered by the Secretary, and will assist in achieving the interim and long-term goals specified in section 2317 of this title.

(B) Inclusions

A specific mitigation plan for a water resources project under paragraph (1) shall include, at a minimum -

(i) a plan for monitoring the implementation and ecological success of each mitigation measure, including the cost and duration of any monitoring, and, to the extent practicable, a designation of the entities that will be responsible for the monitoring;

(ii) the criteria for ecological success by which the mitigation will be evaluated and determined to be successful based on replacement of lost functions and values of the habitat, including hydrologic and vegetative characteristics;

(iii) a description of the land and interests in land to be acquired for the mitigation plan and the basis for a determination that the land and interests are available for acquisition;

(iv) a description of -

(I) the types and amount of restoration activities to be conducted;

(II) the physical action to be undertaken to achieve the mitigation objectives within the watershed in which such losses occur and, in any case in which the mitigation will occur outside the watershed, a detailed explanation for undertaking the mitigation outside the watershed; and

(III) the functions and values that will result from the mitigation plan; and

(v) a contingency plan for taking corrective actions in cases in which monitoring demonstrates that mitigation measures are not achieving ecological success in accordance with criteria under clause (ii).

(C) Responsibility for monitoring

In any case in which it is not practicable to identify in a mitigation plan for a water resources project the entity responsible for monitoring at the time of a final report of the Chief of Engineers or other final decision document for the project, such entity shall be identified in the partnership agreement entered into with the non-Federal interest under section 1962d-5b of title 42.

(4) Determination of success

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(A) In general

A mitigation plan under this subsection shall be considered to be successful at the time at which the criteria under paragraph (3)(B)(ii) are achieved under the plan, as determined by monitoring under paragraph (3)(B)(i).

(B) Consultation

In determining whether a mitigation plan is successful under subparagraph (A), the Secretary shall consult annually with appropriate Federal agencies and each State in which the applicable project is located on at least the following:

- (i) The ecological success of the mitigation as of the date on which the report is submitted.
- (ii) The likelihood that the mitigation will achieve ecological success, as defined in the mitigation plan.
- (iii) The projected timeline for achieving that success.
- (iv) Any recommendations for improving the likelihood of success.

(5) Monitoring

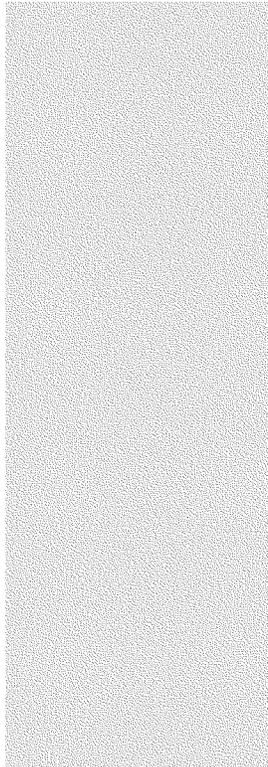
Mitigation monitoring shall continue until it has been demonstrated that the mitigation has met the ecological success criteria.

(e) First enhancement costs as Federal costs

In those cases when the Secretary, as part of any report to Congress, recommends activities to enhance fish and wildlife resources, the first costs of such enhancement shall be a Federal cost when -

- (1) such enhancement provides benefits that are determined to be national, including benefits to species that are identified by the National Marine Fisheries Service as of national economic importance, species that are subject to treaties or international convention to which the United States is a party, and anadromous fish;
- (2) such enhancement is designed to benefit species that have been listed as threatened or endangered by the Secretary of the Interior under the terms of the Endangered Species Act, as amended (16 U.S.C. 1531, et seq.), or as a candidate for such listing;
- (3) such activities are located on lands managed as a national wildlife refuge.

When benefits of enhancement do not qualify under the preceding sentence, 25 percent of such first costs of enhancement shall be provided by non-Federal interests under a schedule of reimbursement determined by the Secretary. Not more than 80 percent of the non-Federal share of such first



costs may be satisfied through in-kind contributions, including facilities, supplies, and services that are necessary to carry out the enhancement project. The non-Federal share of operation, maintenance, and rehabilitation of activities to enhance fish and wildlife resources shall be 25 percent.

(f) National benefits from enhancement measures for Atchafalaya Floodway System and Mississippi Delta Region projects

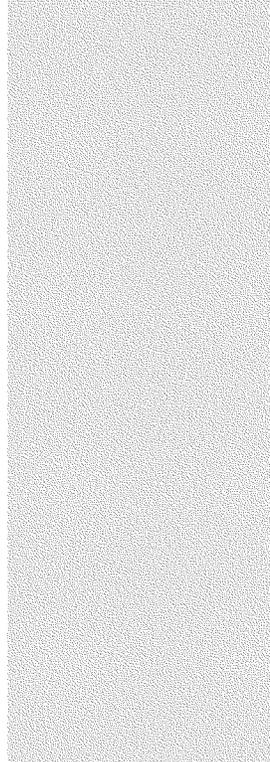
Fish and wildlife enhancement measures carried out as part of the project for Atchafalaya Floodway System, Louisiana, authorized by Public Law 99-88, and the project for Mississippi Delta Region, Louisiana, authorized by the Flood Control Act of 1965, shall be considered to provide benefits that are national for purposes of this section.

(g) Fish and Wildlife Coordination Act supplementation

The provisions of subsections (a), (b), and (d) of this section shall be deemed to supplement the responsibility and authority of the Secretary pursuant to the Fish and Wildlife Coordination Act [16 U.S.C. 661 et seq.], and nothing in this section is intended to affect that Act.

-SOURCE-

(Pub. L. 99-662, title IX, Sec. 906, Nov. 17, 1986, 100 Stat. 4186; Pub. L. 102-580, title III, Sec. 333(a), Oct. 31, 1992, 106 Stat. 4852; Pub. L. 106-53, title II, Sec. 221, Aug. 17, 1999, 113 Stat. 295; Pub. L. 106-541, title II, Sec. 224(a), Dec. 11, 2000, 114 Stat. 2597; Pub. L. 110-114, title II, Sec. 2036(a), Nov. 8, 2007, 121 Stat. 1092.)



33 USC Sec. 2283a. Status report

(1) In general

Concurrent with the President's submission to Congress of the President's request for appropriations for the Civil Works Program for a fiscal year, the Secretary shall submit to the Committee of Transportation and Infrastructure of the House of Representatives and the Committee on Environment and Public Works of the Senate a report on the status of construction of projects that require mitigation under section 2283 of this title, the status of such mitigation, and the results of the consultation under subsection (d)(4)(B) of such section.

(2) Projects included

The status report shall include the status of -

(A) all projects that are under construction as of the date of the report;

(B) all projects for which the President requests funding for the next fiscal year; and

(C) all projects that have undergone or completed construction, but have not completed the mitigation required under section 2283 of this title;

~~(D) all projects for which mitigation actions required under section 2283 of this title have been completed, but a determination pursuant to section 2283(d)(4) of this title that ecological success has been achieved has not been made; and~~

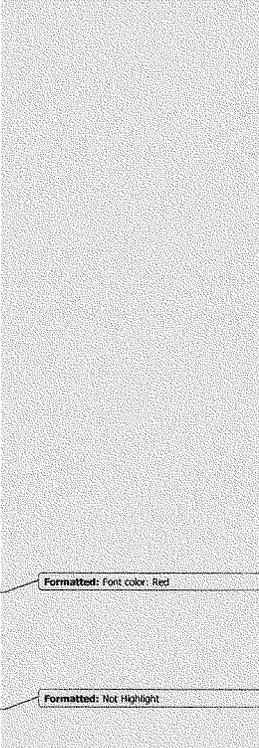
~~(E) all projects for which a determination pursuant to section 2283(d)(4) of this title that ecological success has been achieved since the date of the previous status report submitted under this section, along with a summary of the consultations upon which such a determination was made.~~

~~(3) INFORMATION INCLUDED.—In reporting the status of all projects included in the report, the Secretary shall—~~

~~(A) use a uniform methodology for determining the status of all projects included in the report;~~

~~(B) use a methodology that describes both a qualitative and quantitative status for all projects in the report; and~~

~~(C) specify for each project which compensatory mitigation mechanism (mitigation bank, in-lieu-fee program, or permittee-responsible mitigation) was used to satisfy the compensatory mitigation requirement.~~



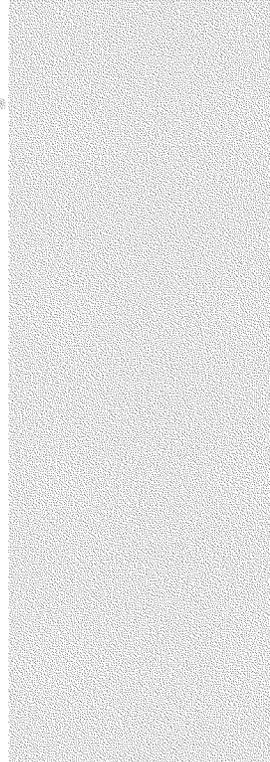
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(D) identify for each project the entity or entities that are responsible for providing all aspects of long-term protection of the project;
(E) provide for each project the location of the impact site and compensation site in a geospatial format; and
(FC) provide specific dates for and participants in the consultations required under section 906(d)(4)(B) of the Water Resources Development Act of 1986 (33 U.S.C. 2283(d)(4)(B)).

(4) Availability of information

The Secretary shall make all information contained in the status report available to the public, including on the Internet, and shall ensure that geospatial information is provided in a digital mapping format widely used in the public and private sectors.



Sec. 2285. Environmental Protection and Mitigation Fund

- (a) There is established in the United States Treasury an Environmental Protection and Mitigation Fund (hereinafter "the Fund").
- (b) The Secretary is authorized and directed to transfer to the Fund one percent of any funds made available after January 1, 2011 for the construction of water resource projects until the balance in the Fund has been exhausted to be appropriated to such Fund \$100,000,000 for fiscal years beginning after September 30, 2009.
- (c) Amounts in the fund shall be available without further appropriation until expended for undertaking, in advance of construction of any water resources project authorized to be constructed by the Secretary, such measures authorized as part of such project, including the acquisition of lands and interests therein, as may be necessary to ensure that project-induced damages to ecological resources, including terrestrial and aquatic resources and habitat for fish and wildlife losses to fish and wildlife production and habitat will be mitigated in accordance with the provisions of section 2287 of this title.
- (d) The Secretary shall reimburse the Fund for any amounts expended under this section for a water resources project from the first appropriations made for construction, including planning and designing, of such project.

(Pub. L. 99-662, title IX, Sec. 908, Nov. 17, 1986, 100 Stat. 4188.)

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Senator BOXER. Thank you so much.

Our next speaker is Amy Larson, Esq., President, National Waterways Conference, Inc.

**STATEMENT OF AMY W. LARSON, ESQ., PRESIDENT AND CEO,
NATIONAL WATERWAYS CONFERENCE, INC.**

Ms. LARSON. Chairman Boxer and Ranking Member Inhofe, and distinguished members of the Committee, thank you for the opportunity to be here today to discuss the Water Resources Development Act of 2012. The Conference would like to thank Chairman Boxer for her leadership in developing WRDA 2012 as well as Senator Inhofe and this Committee for its long tradition of cooperation and collaboration in addressing the nation's critical water resources needs.

There is much in the draft to support in furtherance of a comprehensive and robust program. But in the interest of time and given the depth and detail, rather than go through section by section, my goal today will be to offer some comments on the overarching policies. We look forward to working with the Committee as it further delves into this process.

You will note in my written statement comments on why we believe the Corps projects should not be considered earmarks. In the interest of time, I had deleted that section from my testimony this morning. But I would like to take the opportunity to support the comments made already and encourage the Congress that this is the opportunity to rethink how our nation invests in our nation's water resources.

Turning to title VI, the Levee Safety program. The importance of well built and well maintained levees cannot be understated. Levees are both abundant and integral to economic development and flood risk reduction in hundreds of large and small communities, industrial zones, urban areas, agricultural regions, and vitally strategic zones in the United States. To that end, we strongly support the legislation's call for a one-time inventory and inspection of all levees identified in the National Levee Data Base as a critical first step to the establishment of a successful levee safety program.

The baseline information garnered from such an inventory, including much of the non-Federal stock of levees, should then be included and maintained in an expanded data base in order to address critical safety issues, the true cost of good levee stewardship and the state of individual levees. And that can inform our priorities and provide data for a much needed assessment and decision-making.

We agree with the proviso that the States and Indian tribes are uniquely positioned to oversee, coordinate, and regulate both local and regional levee systems. And we recommend that levee safety guidelines developed pursuant to this legislation preserve State and local government prerogatives, so that these guidelines truly do serve as guides.

We support the appointment of an administrator for a program within the Corps of Engineers whose sole duty is the management of that program. And while we appreciate the intent behind the creation of a national levee safety advisory board, at this point we

suggest that perhaps it is premature to stand up that board. Let's first do the full assessment to frame our understanding of system locations, conditions, and the national risk situation, and then determine how to frame and focus the work of such a board.

The draft calls for the Comptroller General to prepare a report on possibilities for alignment of Federal programs to provide incentives and disincentives to promote shared responsibility. While we support efforts to enhance levee safety, we are very concerned about what disincentives might mean under this directive. We cannot penalize people who live in communities near the water or behind levees. Rather, we should fully identify and assess the problems through the completion of the inventory discussed above and then work through an open, informed, and systematic approach to bring deficient flood control structures to a level of protection we can live with and afford.

In that regard, the theme of shared responsibility between Federal, State, and local government is threaded through the discussion draft. We share the sentiment but believe that for hundreds of leveed areas and millions of Americans, shared responsibility must mean more than simply increased Government oversight and standard setting. It must also include shared responsibility for actual infrastructure improvements and support of comprehensive flood safety.

Turning to inland waterways, as we previously discussed this morning, ensuring the reliability of our inland waterways is essential to maintaining the nation's economic and environmental well-being and competitive position within the global economy. To that end, we generally support the proposed reforms for project delivery applicable to the construction and major rehab of these projects, consistent with the process set forth by the Inland Waterways Users Board in the Capital Development Plan.

Also integral to the project delivery reforms is the need to ensure sufficient funding for these important projects. While a proposal to increase the revenue in the Inland Waterways Trust Fund is not considered as part of this draft legislation, we would encourage the Committee, along with the Finance Committee and the Senate as a whole, to give careful consideration to the other proposals under development, to ensure a long-term funding mechanism to ensure the continued reliability of the nation's inland waterway system.

I see that I am just about out of time. But before ending, I would like to turn to the Harbor Maintenance Trust Fund.

Senator BOXER. I am going to ask you to summarize that piece.

Ms. LARSON. We urge support for legislation that ensures that revenues collected are used for their intended purposes. That is a good summary, and I will save project acceleration to the question time.

Thank you very much.

[The prepared statement of Ms. Larson follows:]



Testimony of
Amy W. Larson, Esq.
President and CEO
National Waterways Conference, Inc.
1100 North Glebe Road
Suite 1010
Arlington, VA 22201
703-224-8007

Before the
United States Senate
Committee of Environment and Public Works

Hearing on the Water Resources Development Act of 2012
Thursday, November 15, 2012
10:30 AM EST
406 Dirksen Senate Office Building

Introduction

Chairman Boxer, Ranking Member Inhofe, and distinguished members of the Senate Committee on Environment and Public Works, thank you for the opportunity to be here today to discuss the "Water Resources Development Act of 2012."

My name is Amy Larson and I am the President of the National Waterways Conference. The Conference would like to thank Chairman Boxer for her leadership in developing WRDA 2012, as well as Ranking Member Inhofe and this Committee, for its long tradition of cooperation and collaboration in addressing the nation's critical water resources needs.

Established in 1960, the Conference is the only national organization to advocate in favor of national policy and laws that recognize the vital importance of America's water resources infrastructure to our nation's well-being and quality of life. Supporting a sound balance between economic and human needs and environmental and ecological considerations, our mission is to effect common sense policies and programs, recognizing the public value of our nation's water resources and their contribution to public safety, a competitive economy, national security, environmental quality and energy conservation. Conference membership is comprised of the full spectrum of water resources stakeholders, including flood control associations, levee boards, waterways shippers and carriers, industry and regional associations, port authorities, shipyards, dredging contractors, regional water supply districts, engineering consultants, and state and local governments. In that regard, our membership is keenly interested in the enactment of comprehensive water resources legislation and we look forward to working with the Committee as we move forward in this process.

As this Committee well knows, reliable, well-maintained water resources infrastructure is fundamental to America's economic and environmental well-being, and is essential to maintaining our nation's competitive position within the global economy. Our water resources infrastructure provides life-saving flood control, abundant water supplies, shore protection, water-based recreation, environmental restoration, and hydropower production, essential to our

economic well-being. Moreover, waterways transportation is the safest, most energy-efficient and environmentally sound mode of transportation.

With that in mind, I would like to offer a general, over-arching comment on the draft legislation, before addressing specific provisions. It would appear that the drafting of various provisions throughout the bill has been hampered by the moratorium on earmarks. While efforts in Congress to eliminate wasteful spending are laudable, and especially important given today's fiscal challenges, deferring to the Executive Branch complete decision-making as to which projects should be authorized or receive funding, how much (if any) funding should be allotted to each, and all related priority decisions, has resulted in the stoppage or delay of critical projects. Moreover, the Administration's priorities, as articulated in the budget, have not been established through an open, deliberative process, in contrast to the open process used by this Committee in developing past WRDAs.

Projects such as those undertaken by the U.S. Army Corps of Engineers are different from other Federal programs in several respects: each project is formulated separately to address a separate and discrete problem; projects are individually considered and recommended by the Administration and are authorized separately by the Congress based on the benefits accruing from each one; each project comprises a separate and distinct Federal investment decision generally independent of other projects and is, therefore, subject to individual appropriations; and, each project also comprises a separate and distinct non-Federal investment decision since non-Federal sponsors agree to pay significant portions of project costs.

It is important to note that water resources projects are scrutinized, arguably, to a greater extent than any other capital investment program in the government through highly detailed studies. Proposed projects are subjected to comprehensive analyses using merit-based criteria, an integral component of which includes extensive public involvement wherein public input is widely sought and incorporated at frequent intervals. The Water Resources Development Act of 1986 imposed significant increases in non-Federal cost-sharing and other items of local cooperation, and the 1996 WRDA increased these non-Federal cost-sharing responsibilities still further. The water resources project approval process was strengthened in WRDA 07 through a

series of reforms, including the requirement that each project be subjected to an external independent peer review.

Historically, Congress authorizes projects that meet very rigorous tests, specifically, those that survive very detailed analyses and which non-Federal governments support through contributions of substantial shares of project costs. These decisions have been made in a collaborative manner, subject to a consultative, deliberative process, involving all stakeholders – and their representatives. We would respectfully suggest that this Committee, by means of its open and deliberative process, and whose members have the benefit of first-hand knowledge of the importance of particular projects to their states, is the appropriate forum in which to make these major investment decisions, and we would encourage the Congress to reconsider how this country invests in the nation’s water resources infrastructure.

Analysis of the Discussion Draft

We appreciate the opportunity to offer these initial comments on the draft legislation. Given the complexity of the draft, particularly the numerous policy reforms in Title II, my testimony first looks at major program proposals, and then offers some preliminary comments on Title II at the end. We look forward to working with the Committee to provide additional input as it works to refine this legislation.

Title I

As previously mentioned, we believe that the Congress is best suited to make the individual, discrete investment decisions regarding our nation’s water resources.

Title IV would similarly grant to the Secretary the discretion whether to initiate water resources studies. We believe it is in the best interest of the nation that these decisions be made in the open and transparent legislative process that has traditionally been used in the development of water resources legislation.

Title VI – Levee Safety

Title VI of the bill, a furtherance of the Levee Safety Act passed by Congress as part of the 2007 WRDA, would begin the actual establishment of a comprehensive levee safety program. This part of the Chairman's discussion draft also takes into account draft recommendations made to Congress by the National Committee on Levee Safety in 2009.

The importance of well-built and well-maintained levees cannot be understated. Levees are both abundant and integral to economic development and flood risk reduction in hundreds of large and small communities, industrial zones, urban areas, agricultural regions, and vitally strategic zones around the United States. The National Committee on Levee Safety estimates that tens of millions of people live and work in leveed areas. By some estimates, nearly 50 percent of Americans live in counties with levees or related flood protection infrastructure. Corps of Engineers' levee systems provide a 6:1 return ratio on flood damages prevented compared to initial costs, and the Mississippi River and Tributaries system provides a 34:1 return on investment ratio.

Levees also serve an important role in our nation's energy framework by protecting many power plant facilities, as well as the oil, gas and petrochemical industries along the Texas and Louisiana Gulf coast and the agri-business economy throughout California's Central Valley, the Mississippi Delta Region and the Midwest. Well-conceived levees, floodwalls and appurtenant infrastructure protect fire and police departments, hospitals, and schools. They are critical to the viability of our overall public infrastructure network, protecting other infrastructure, including roads, bridges, railroads, port facilities and wastewater treatment plants.

Levee infrastructure, like our aviation, water and wastewater, transit, dams and waterways transport, is in need of attention. Effective and improved management of levees is necessary for the continued enjoyment of the economic, societal and cultural benefits yielded by this public works investment. For that reason, we applaud the Chairman for including a levee safety proposal to begin a critical public dialogue.

As the legislation calls for, a one-time inventory and inspection of all levees identified in the national levee database is a critical first step to the establishment of a successful levee safety program. The baseline information garnered from such an inventory, including much of the non-federal stock of levees, should then be included and maintained in an expanded national levee database in order that critical safety issues, true costs of good levee stewardship, and the state of individual levees can inform priorities and provide data for needed assessments and decision-making.

The draft stipulates that the states and Indian tribes are uniquely positioned to oversee, coordinate and regulate local and regional levee systems. Our organization and many others are still thinking through delegated authority, but we would recommend that any levee safety guidelines developed pursuant to the legislation must preserve state and local government prerogatives, so that such guidelines could properly serve as a “guide” for states, but the decisions on whether to adopt and implement should be left to the discretion of the states. Further, the provisions requiring the Secretary to establish such guidelines should be amended to require that they be developed consistent with the public notice and due process requirements of the Administrative Procedure Act. Given that participation in the grant program to be established under this title calls for adherence to the guidelines, principles of fairness would dictate that those guidelines be developed through an open and transparent process.

Given the critical importance of levees throughout the country, we support the appointment of an administrator of the levee safety program, within the Corps of Engineers, whose sole duty is the management of that program. We also appreciate the intent behind the creation of the National Levee Safety Advisory Board to provide advice on consistent approaches to levee safety, to monitor levee safety and to assess the effectiveness of the national program. However, given the fiscal constraints facing the nation, we believe it would be premature to stand up the Board before completion of the inventory and inspection of the nation’s levees. The results of the inspection, which will increase our understanding of levee system locations, conditions, and the national flood risk situation, could then be used to determine whether such a Board is necessary, and if so, to help frame and focus its work.

The draft calls for the Comptroller General to prepare a report on the possibilities for alignment of Federal programs to provide incentives and “disincentives” to promote shared responsibility for levee safety and to encourage the development of strong levee safety programs. While we support efforts to enhance levee safety, we are concerned about what possible “disincentives” might be contemplated by this directive.

Water resource development for transportation, manufacturing, irrigation, and recreation has always been a part of this country’s heritage and will continue to be for future generations. We cannot penalize people who live in communities near the water or behind levees. Rather, we should fully identify and assess the problems through completion of the inventory discussed above, and then work through an open, informed, systematic approach to bring deficient flood control structures to a level of protection we can live with and afford.

The National Flood Insurance Program (NFIP) reauthorization, enacted over the summer as a part of this committee’s MAP-21 transportation reauthorization, was stripped of a provision that would have mandated flood insurance purchase and imposed land use restrictions for all property owners behind levees and dams, regardless of their federal rating. Our organization worked closely with numerous members of the Senate, including members of this committee, to eliminate this arbitrary and punitive “residual risk” provision. It should not be the policy of the United States to discourage existing and future economic activity in areas protected by sound levees, dams and other flood control infrastructure. Many of our Nation’s most fertile lands and economically strategic assets lie in areas now protected by well-conceived levees and dams. Rather than identify disincentives that would result in significant economic harm, we would instead suggest the adoption of incentivized approaches to provide direct assistance and conditional flexibility to “good actor” communities who are diligently working to bring their deficient levees into compliance with changed Federal requirements. The Army Corps’ “SWIF” program to allow non-federal sponsors the opportunity to maintain PL 84-99 eligibility, for example, is the sort of post-Katrina transitioning that we are convinced works best to protect lives, property, and federal taxpayer interests. We understand that the National Levee Issues Alliance has provided committee staff with draft language to facilitate these incentivized approaches and we would support this kind of initiative.

Finally, the theme of “shared responsibility” between the Federal, state and local governments is threaded through the discussion draft. We share this sentiment, but believe that for hundreds of leveed areas and millions of Americans, “shared responsibility” must mean more than just increased government oversight and standard-setting for levees. It must also include shared responsibility for the financing of actual infrastructure improvements in support of comprehensive flood safety.

Title VII – Inland Waterways

Title VII of the draft legislation sets forth various provisions designed to improve the reliability of the inland waterways to ensure our nation’s river system continues to operate as an affordable, reliable, energy-efficient and environmentally friendly mode of transport.

Our inland waterways serve as the backbone of the nation’s transportation system, ensuring domestic and international trade opportunities, and low-cost, environmentally sound movement of goods. More than 600 million tons of cargo – including agricultural products, petroleum, chemicals, coal, iron, steel, and other raw materials – moves on the waterways at a cost that is typically 2 to 3 times lower than other modes of transportation, translating into an annual savings of \$7 billion for America’s economy. A typical 15-barge tow carries the equivalent of 216 rail cars or 1,050 large semi tractor-trailer trucks, and generates fewer emissions than the other modes.

As this Committee knows, ensuring the reliability of our inland waterways is essential to maintaining the nation’s economic and environmental well-being and competitive position in the global economy. To that end, we generally support the proposed reforms to the project delivery process applicable to the construction and major rehabilitation of the nation’s aging locks and dams, based upon the Capital Development Plan endorsed by the Inland Waterways Users Board. The details of many of the proposed reforms would need to be further clarified and refined, including what kind of formal training and certification would be required for project managers, on what basis the Chief of Engineers would certify project managers, and the duties

and responsibilities of the users board representative appointed to serve on a project development team. We would recommend that the Secretary be directed to consult with the Users Board in implementing these requirements. We would also recommend that the required report on the study, design or construction of navigation projects be semi-annually rather than quarterly, given the various provisions elsewhere in the draft legislation concerning both the need to streamline the planning and project delivery process along with the possible imposition of additional burdens prolonging the process.

Integral to the project delivery reforms is the need to ensure sufficient funding for these important projects. While a proposal to increase the revenue in the Inland Waterways Trust Fund is not considered in the draft legislation, we would encourage this Committee, along with the Finance Committee and the Senate as a whole, to give careful consideration to other proposals under development to enact a long-term funding solution to ensure the continued reliability of the nation's inland waterways. Revitalization of the Inland Waterways Trust Fund, together with the reforms to the Harbor Maintenance Trust Fund discussed below, would position America's ports and waterways to take advantage of the tremendous opportunities offered by the Panama Canal Expansion.

Title VIII – Harbor Maintenance

Title VIII of the draft addresses harbor maintenance. As this Committee knows, the nation's ports and harbors are critical components of our transportation infrastructure, and regular maintenance is required to ensure their efficient use. The Harbor Maintenance Tax is intended for that specific purpose, and annual revenues from the tax are generally about \$1.5 billion annually. However, only about \$800 million – half of the revenue collected – is used for its intended purpose.

As a consequence, the nearly 1,000 federal ports and harbors have not been adequately maintained, and indeed, those ports that handle nearly 90 percent of commercial traffic are dredged to their authorized depths and widths only 35 percent of the time. This chronic failure to provide sufficient funding has resulted in channels getting narrower and shallower due to

inadequate dredging, which has resulted in ships having to light-load, increasing the cost of shipping, the risk of vessel groundings, collisions, and pollution incidents.

With 13 million jobs and \$4 trillion in economic activity dependent on these ports and harbors, we cannot let them fall into further disrepair. Because waterborne transportation is often the least expensive means of transporting vital commodities and goods, maintaining this essential infrastructure bolsters our economic competitiveness and strengthens the economy.

We strongly support legislation that would ensure that the revenues collected into the Harbor Maintenance Trust Fund are used for their intended purposes. We agree that the proper expenditure of such receipts should not result in a reduction in funding for other projects and programs in the Corps of Engineers' civil works program. We would further caution against any expansion of the activities that would be eligible for funding under this proposal until such time as there is a mechanism that ensures that the revenues collected will be used for the intended purposes. Otherwise, simply shifting the already scarce resources in a chronically underfunded program would only serve to further undermine the stability of our critical water resources infrastructure. The draft Senate legislation we were asked to review includes a conditional guarantee regarding HMTF spending, but it is not clear how this language would work.

Title II

Section 2016, Project Acceleration

We appreciate the Committee's concerns about the Corps' planning process in Section 2016, Project Acceleration. Many of our members are local sponsors who have been frustrated with increased costs and delays in the completion of feasibility studies. We applaud the Corps' efforts to streamline this process through its "3x3x3" program, (feasibility studies completed in no more than 3 years, at a cost of no more than \$3 million, and three levels of engagement). We would also recommend, as the Corps continues to refine its planning process, that it develop additional guidance on what elements can be eliminated from the current process and still produce a valuable study, because simply mandating a shorter time-frame and a lower cost will not reform the process. In that regard, we would be concerned that imposing a requirement to

complete studies within 3 years irrespective of the availability of funds, previous statutory requirements, new requirements in this legislation, and without consideration of the appropriate scope of a study (including economic, environmental and engineering requirements), would undermine the planning process rather than improve it.

Our non-Federal sponsors are exploring various alternatives that may help to streamline the planning process, while still producing a report that is sufficient to stand up to legal, environmental and economic challenges. Fundamentally, in order to effectuate meaningful reforms, the Corps must be relieved of the burden of examining any issue or permutation that could possibly arise, regardless of how realistic or unrealistic. This would help curtail the excessive data collection and analysis that have significantly hampered the process. These threshold, and systemic reforms, must be implemented in order for other refinements to the process, including for example, eliminating duplication during the reconnaissance and feasibility phases, to be successful.

Given the significant focus on reforming the planning and project delivery processes, I would like to highlight some of the proposed policy reforms which we are concerned could add requirements to both the project justification and project implementation processes, resulting in additional cost and delay. For instance, Section 2002 would add a requirement for mitigation for ecological resources, including terrestrial and aquatic resources. Section 2003 would extend by 5 years the independent peer review provisions contained in WRDA 2007 and impose additional reporting requirements on the Chief of Engineers, and Section 2004 would modify the safety assurance review provisions of WRDA 2007. Both of these provisions could impose additional cost and time on Corps' feasibility studies, without increasing their efficiency.

Section 2012, Dam Optimization, grants to the Secretary very broad authority to undertake any activity deemed necessary to increase efficiency of dam operations and maintenance. This authority would include undertaking any activity related to the authorized project purposes, as well as environmental protection and restoration activities for authorized projects and other related project benefits. As a general principle, we would suggest that this provision should establish a clear policy of allocating total storage of a reservoir to the purposes

that result in highest and best use. Further, any reallocation would provide for compensation for adversely affected parties.

The role of the non-Federal sponsors is not included in this provision, and we would recommend an amendment to require that any action under this section may occur only after consultation with the non-Federal sponsors. We would also suggest that the section be amended to clarify whether the Secretary would be granted authority to carry out “any” activity (section b(1)) or only those enumerated in section b(2). The applicable reporting requirements would need similar clarification.

Section 2013, Implementation of Biological Opinions, also grants to the Secretary broad authority to carry out any activity deemed necessary to comply with a biological opinion “that directly relates to impacts from an authorized water resources project.” We are concerned that this provision could be interpreted as significantly expanding the Corps’ authority in ways that are beyond, or even contrary to, the Corps’ mission. For example, does this provision intend that the Endangered Species Act provides supplemental statutory authority? Or does the ESA only authorize whatever conservation measures are possible within the authority granted by an agency’s organic statutes?

Conclusion

Thank you for the opportunity to appear before the Committee today to discuss the draft Water Resources Development Act of 2012. We look forward to working with the Committee as it moves this bill forward.

United States Senate
Environment and Public Works Committee
November 15, 2012
Follow-up Questions for Written Submission

Submitted by Amy W. Larson, Esq.
National Waterways Conference, Inc.

Questions from Senator Barbara Boxer

1. In your testimony, you discuss the significant and careful review that projects undergo in development of a Chief's Report.

a. Can you elaborate on the process and criteria for a project with a completed Chief's Report?

The U.S. Army Corps of Engineers' (USACE) planning process, set forth in its Planning Guidance Notebook, ER 1105-2-100, is based upon the Principles and Guidelines (P&G) promulgated in 1983, along with numerous laws applicable to the Corps' missions and the Civil Works program. The P&G were set forth to provide for the formulation of reasonable plans responsive to National, state and local concerns.

The Principles and Guidelines state that the Federal objective of water and related land resources planning is to contribute to national economic development consistent with protecting the Nation's environment, in accordance with national environmental statutes, applicable executive orders, and other Federal planning requirements. In general, the plans recommended for implementation are to reasonably maximize net national benefits.

The Planning Notebook sets forth a six-step process established in the P&G to provide for a structured approach to problem solving, utilizing a rational framework for sound decision making. The six steps are:

- Step 1 - Identifying problems and opportunities
- Step 2 - Inventorying and forecasting conditions
- Step 3 - Formulating alternative plans
- Step 4 - Evaluating alternative plans
- Step 5 - Comparing alternative plans
- Step 6 - Selecting a plan

The six steps are explained in great detail in the Planning Notebook. On top of the requirements contained therein, Corps' studies are also subject to an extensive systematic review process. This includes internal reviews, including quality control and agency technical reviews; external reviews, including National Environmental Policy Act reviews, independent external peer reviews, and state and agency reviews; and other policy and legal reviews.

Overall, the process is extraordinarily rigorous and thorough, indeed to a much greater degree than is found in any other example of infrastructure planning. However, the process has grown to being overly burdensome, resulting in it becoming impracticable. For instance, current requirements have accreted due to the growth of law and policy, as a result of legal and technical challenges, and with individual requirements added to address some sort of shortcoming identified in a previous project.

Similarly, the extensive reviews can be quite costly and time-consuming. For example, the independent external peer reviews, initiated by Section 2034 of WRDA 07, may include economic and environmental assumptions and projections, project evaluation data, economic analyses, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, models used in evaluation of economic or environmental impacts of proposed projects, and any biological opinions of the project study.

A report containing the recommendations of the Chief of Engineers is completed only after the study and review processes are completed, comments have been resolved to the extent possible and the Chief has made a determination on the merits of the proposed project after considering all available input.

b. Would you be confident that the 18 projects with completed Chief's Reports and referred to Congress by the Assistant Secretary of the Army have been thoroughly reviewed and worthy of being authorized?

Yes, I am very confident that all 18 projects with positive recommendations on Chief Reports are worthy investments for the Nation.

In addition to the Chief's Reports, there may, in all likelihood, be other worthy projects that Congress may want to consider as well. The Congress has a vital role to play in these important – and independent – investment decisions and should assure that the decisions are reached through an open and inclusive process where the needs and priorities of all are considered.

2. In your testimony you support the creation of the National Levee Safety Program. Can you expand on the couple of features you feel will be most important to starting this new program?

Our organization is amenable to the idea, broadly, that if state governments want USACE to partner with their localities to strengthen flood damage reduction capability, then the states will have to develop and implement levee safety programs that meet certain minimum guidelines. Regional circumstances and variations will have to be considered as this concept advances. In any case, the legislation must guarantee that the program guidelines are: (1) the product of co-equal input from Federal and non-Federal representatives; (2) voluntary at the State level; and (3) developed consistent with the public notice and due process requirements of the Administrative Procedure Act. Similar to other public safety aspects of most law enforcement activities in the United States, the basic life and limb safety burden is most

appropriately handled at the state and local levels. Surveillance, evacuations, land use practices, building codes, public outreach, and other risk reduction measures should be left and/or clarified in the bill as state and local domain. While the Federal sponsor does have an interest and responsibility for life safety concerns, its primary consideration has been and should continue to be based on economic return (National Economic Development benefits). To the degree that we can more explicitly state, in law and policy, what the clear Federal, state, and local roles are regarding flood damage reduction and flood safety, the better off we will be.

By using future WRDA legislation to more clearly delineate Federal and non-Federal risk reduction responsibilities, we would bring many critical project delivery and operational benefits to the forefront. Mandatory national levee safety standards are neither desirable nor practicable. The case-by-case variables are just too great, in our estimation, for any effective development and application of top-down regulations. Universal standard setting will have a chilling and costly impact on an already overburdened USACE project delivery process. The current controversy over USACE levee vegetation management, dealt with in another part of the Chairman's Discussion Draft, is instructive on the difficulties associated with overly prescriptive national standard-setting in this policy area. Peer-reviewed models for levee safety programs, however, can serve to shore-up life safety risk concerns by informing case-by-case design and maintenance guidelines with "best practices" knowledge while cost-effectively reaffirming responsibility for life and limb safety at the appropriate non-Federal levels.

Voluntary adoption and implementation of effective, peer-reviewed state levee safety programs must be premised upon the inclusion of cost-shared levee project improvement and rehabilitation funding for Federal program projects, including prioritized remedial design and construction modifications at federally built projects.

Since 2009, USACE has completed a substantial portion of its nationwide Inspection/Inventory for USACE program levees, and late last year the agency organized much of this field data within the National Levee Database authorized by the 2007 WRDA. Both initiatives, appropriately, have been focused, first, on the Federal program levees. Non-Federal levees, for the most part, are unstudied and uncharacterized at this stage and, thus, should not be covered by legislative directives at this time. Baseline information on these non-Federal levees would be obtained from the Inspection/Inventory called for in the Discussion Draft, after which time it would make more sense to contemplate their inclusion in a comprehensive Levee Safety Program.

Finally, we would be concerned about overly summarized project rating tools contemplated under the Hazard Potential Classification System (and related USACE Levee Safety Classification System (L-SAC)). The goal of categorizing "worst first" to prioritize national needs and funding decisions is an understandable public policy aim, but it isn't clear to us that the L-SAC process is doing a good job on that goal. However, public dissemination of this summary, potentially arbitrary data could present extraordinary, unintended economic challenges at the local level. L-SAC type summary ratings have the potential to strike widespread blows against regional property values, local revenue collection, job creation, area reinvestment, and overall regional economic outputs.

3. The draft bill includes provisions for helping ensure the complete expenditures of the HMTF. Can you explain why full spending of the HMTF is necessary and important to our national commerce?

We appreciate Chairman Boxer's recognition of the importance of fully spending the revenues from the Harbor Maintenance Trust Fund for their intended purposes. However, we do not agree that the provisions in the discussion draft would ensure those expenditures. While the text of subsection 8002(a) is consistent with the text of S.412, the Harbor Maintenance Act, the text of subsection 8002(b) does not include the point of order that would enforce the guarantee in paragraph 8002(b)(1). Without the point of order, that guarantee is not enforceable in the House or the Senate.

As stated in my testimony, we agree that the proper expenditure of receipts from the HMTF should not result in a reduction of funding for other projects and programs in the Corps' civil works program. We believe that overall investments in our nation's water resources infrastructure are woefully inadequate. To that end, we are concerned that paragraph 8002 appears to the casual reader to address the inadequate funding of harbor maintenance programs, but it actually does not fix the problem.

Similarly, it is not clear how paragraph 8002(b)(2) as drafted would operate. It is not clear whether the baseline for determining whether the amount of appropriations in question is a reduction compared to the previous fiscal year's appropriation or the Administration's request for the fiscal year in question. Also, it does not specify who would be empowered to make a determination of whether a reduction in appropriations for such programs was the result of an increase in appropriations from the HMTF or due to another reason. If the Administration forwarded to the Congress an annual budget request that would increase appropriations from the HMTF while slightly decreasing total non-HMTF funding from the previous fiscal year and explained that such reduction is based on other factors, would that render paragraph 8002(b)(2) inoperative?

Subsection 8003(a) of the draft bill would expand the authorized uses of HMTF revenue to include 100% of the cost of maintaining navigation channel depth greater than 45 feet, but not greater than 50 feet. Subsection 8003(b) of the draft bill would authorize under certain circumstances the HMTF to reimburse the costs of maintaining harbor berths and disposing of associated dredged materials. Currently, both of these costs would be paid for by the nonfederal interest. It is difficult to determine how great an additional demand on the HMTF these provisions would impose. Given that there is a tremendous backlog of unmet currently authorized harbor maintenance needs, we cannot support legislation expanding the authorized uses of the HMTF that does not also effectively ensure that annual HMTF revenues are fully provided to the Army Corps of Engineers for currently authorized purposes.

Section 2018 appears to be targeted at harbor deepening projects that are completed using non-federal funds and it is reasonable to assume that some nonfederal interests would do so due to inadequate federal funding of authorized Army Corps of Engineers navigation construction projects. Since the operations and maintenance of such deepened channels would otherwise be reimbursed with HMTF revenue, we have no objection to this provision.

To understand why full spending of the HMTF is necessary and important to our national commerce, it is important to recognize that our ports and harbors are gateways to domestic and international trade, connecting the United States to the world. U.S. ports and harbors handle more than 2.5 billion tons of domestic and international trade annually. These ports are responsible for moving more than 99 percent of the country's overseas cargo, and that volume is projected to double within the next 15 years. With the expansion of the Panama Canal in 2015, many of our ports will realize substantial volume growth. In 2007, there were 13.3 million port-related jobs – 9% of all jobs in the US – that accounted for \$649 billion in personal income. A \$1 billion increase in exports creates an estimated 15,000 new jobs. The navigation channels maintained by the Army Corps of Engineers allow for the most efficient transportation of these goods and help keep U.S. exports competitive in the world market. The vast majority of U.S. harbors and navigation channels experience a loss of channel depth due to deposits of silt that must be removed by maintenance dredging that is reimbursed by the HMTF. Failure to keep up with this maintenance dredging results in a loss of channel depth, light loading of large cargo vessels, lost competitiveness of U.S. ports and exports, and loss of jobs.

Full expenditure of the HMTF supports to the Administration's *We Can't Wait* initiative, a government-wide effort to streamline the permitting and review process for nationally and regionally significant infrastructure projects, under which 7 projects at 5 major ports were expedited earlier this year. Post-Panamax vessels today make up 16 percent of the world's container fleet, but account for 45 percent of the fleet's capacity. Those numbers are projected to grow significantly over the next 20 years, and full expenditure of HMTF will be critical to ensure that the nation's ports are prepared to accommodate those new vessels. In addition, the National Export Initiative, which strives to increase overseas trading opportunities for U.S. businesses, will benefit from better maintained ports and harbors.

Full expenditure of the HMTF makes economic sense.

Questions from Senator James Inhofe

1. What, if any, policy priorities or changes to current law that are important to your organization are not addressed in this draft?

a. How would you suggest we modify the draft to reflect your concerns?

1. We would urge the Congress to take this opportunity to rethink how our nation invests in its infrastructure. While efforts in Congress to eliminate wasteful spending are laudable, and especially important given today's fiscal challenges, deferring to the Executive Branch complete decision-making as to which projects should receive funding, how much (if any) funding should be allotted to each and all related priority decisions, has resulted in the stoppage or delay of critical projects. Moreover, the Administration's priorities, as articulated in the budget, have not been established through an open, deliberative process.

Federal water resources projects are different from other Federal programs, projects and activities in the following important ways: each project is formulated separately to address a separate and discrete problem; projects are separately analyzed, are recommended by the Executive Branch and are authorized and funded separately by the Congress based on the benefits accruing individually from each one; each project comprises a separate and distinct Federal investment decision generally independent of other projects and is, therefore, subject to individual appropriations; and, each project also comprises a separate and distinct non-Federal investment decision since non-Federal sponsors agree to pay significant portions of project costs.

The Congress has a vital role to play in these important – and independent – investment decisions and should assure that the decisions are reached through an open and inclusive process where the needs and priorities of all are considered.

2. Legislation that ensures the full expenditure of annual HMTF revenues for authorized purposes is a policy priority of NWC. Section 8002 of the draft bill does not adequately address this priority because it does not include any language enforcing the HMTF spending guarantee. Without the point of order, that guarantee is not enforceable in the House or the Senate. We recommend replacing paragraph 8002(b)(2) with the text of subsection (c) of S.412.
3. Make Section 214 of the Water Resources Development Act of 2000 (P.L. 106-541) permanent. That provision allows the Secretary of the Army to accept funds from non-Federal public entities, like ports, to hire additional regulatory staff to expedite the permitting process. It not only reduces permit wait times for the funding entity, but for any individual or organization that

makes an application with that District of the Corps. Section 214 authority, currently used by over 41 public agencies in 20 Corps districts, has allowed local governments to move forward with vital infrastructure and ecosystem restoration projects.

4. Provide a dedicated funding stream for the nation's small ports and harbors. With full expenditure of the HMTF, coastal ports may be eligible for funding. However, inland ports not under the HMTF program would not be included by full expenditure of the HMTF and need a dedicated funding stream to ensure their continued viability. In recent years, without Congressionally directed spending, some of these ports have paid for their own dredging, which comes with a variety of operational challenges; others have shut down for periods of time; and others expect to shut down permanently, closing down local industry.

2. I am pleased that the Chair included a Sense of the Congress on Project Acceleration. However, I would like to take this a step further and include legislative language. What does your organization recommend?

In order to effectuate meaningful reforms to the planning and project delivery process, we would encourage the Committee to review, and eliminate as warranted, the numerous cumbersome legislative and policy requirements that have accumulated over the years, significantly increasing the cost and time of studies. Without a fundamental overhaul, designed to reduce the number of issues and alternatives that the Corps is required to study, there cannot be effective change. Two particularly important actions would be to streamline the NEPA compliance process and expand the ability of local sponsors to participate in the process.

Similarly, we would suggest that the Committee consider new and/or modified policy reforms with an eye towards their impact on the planning process. We would be concerned that efforts to streamline the process would be thwarted by the implementation of new requirements. Coupled with the efforts to reform the planning process should be an extension and expansion of the provisions in Section 2003 of WRDA 2007 to simplify Project Partnership Agreements (PPAs) to make them easier to approve and execute.

3. Some have suggested that the Civil Works Program needs to be transformed to ensure it continues to effectively and efficiently address the nation's water resources challenges. Do you have any recommendations that the Committee can consider for this WRDA bill in order to lay a foundation for future changes to the Civil Works Program?

We have been engaged with the Corps of Engineers on its "Civil Works Transformation" initiative, in furtherance of our mutual goals of ensuring a long-term robust water resources infrastructure program for the nation. We continue our collaborative efforts, including stakeholder outreach and communications.

In terms of legislative provisions to support this transformation, we offer the following suggestions:

- Authorize and implement only the highest priority investments:
 - Restore and reinforce the historic standard of the Chief's Report as a principal basis for determining worthwhile investments for the Nation. Projects meeting the economic, engineering and environmental tests leading to a Chief's Report – and proceeding through "normal order" in the Congress – would not be considered earmarks.
 - The Authorizing Committees could invite the Administration to indicate priorities for projects that would be included in the Act.
 - Set up a specific process for the Corps to report on anticipated 902 issues and for them to be considered as reauthorized without specific Congressional action
 - Limit the pace of authorizations by progress in reducing the backlog, and expand authorizations at a pace consistent with the reduction in the backlog
- Create the opportunity for more dynamic Corps-State-and-Interstate partnerships for a contemporary reservoir management vision
 - Enhance the role of the Corps in water supply, preferably through Corps/state partnerships
- Establish a means to create public-partnerships
 - Provide for a pilot program for a variety of projects

Senator BOXER. Thank you so much for that. Very good advice. All of you have been so helpful. I have been telling my staff that these ideas are really important.

And now it is certainly my honor to introduce someone from my home State, my home county, actually, and that is Warren Dusty Williams, President of the National Association of Flood and Storm Management Agencies. He is the General Manager and Chief Engineer of the Riverside County Flood Control and Water Conservation District.

We are very pleased that you are here, Mr. Williams. Please proceed.

**STATEMENT OF WARREN DUSTY WILLIAMS, PRESIDENT,
NAFSMA, AND GENERAL MANAGER AND CHIEF ENGINEER,
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CON-
SERVATION DISTRICT**

Mr. WILLIAMS. Thank you, Madam Chair. Members of the Committee, Madam Chair, my name is Dusty Williams. I am the President of NAFSMA, the National Association of Flood and Stormwater Management Agencies.

I am pleased to appear before you today to present this testimony addressing proposals for WRDA 2012. NAFSMA appreciates the difficulty of drafting this much needed bill in light of the serious economic issues facing the nation and the constraints of earmark limitations. We thank you for taking on this challenge and offer to work with you to address these critical issues as you continue your efforts.

NAFSMA is a public agency driven organization with a focus on effective flood and stormwater management in urban areas. For 35 years NAFSMA's mission has been to advocate public policy and encourage technologies in watershed management that focus on flood protection, stormwater and flood plain management.

The organization is keenly aware that flood damage reduction activities and projects are a wise and necessary investment that reduce loss of life and ensure the safety of our citizens. They have also proven to be an investment that more pay for themselves by preserving life and property and thereby reducing recurring requests for Federal disaster assistance.

To that end, NAFSMA has several recommendations for the WRDA 2012 bill. While our formal written testimony discusses more than a dozen recommendations, I would like to spend just a few moments on highlighting a handful of the more significant proposals.

First, we applaud the enactment of a WRDA. The reauthorization of WRDA is critical. In the wake of the enormous devastation and suffering caused by Sandy, moving our nation's flood risk management initiatives forward is more important than ever. Local, regional, and State agencies depend on WRDAs for reauthorization.

Exclude Corps of Engineers water resources projects from definition of earmarks. Federal funds used to reduce the loss of life and property damages from floods are an investment in improving the resiliency of a community and the nation. The Corps of Engineers' process and associated legislative requirements for identifying, vet-

ting, and funding potential projects is an example of a transparent and public process which does not belong in the earmark category.

The enactment of a national levee safety program. As a member of the National Committee on Levee Safety, I am especially pleased that the NAFSMA membership approved a resolution in support of the National Levee Safety Program. NAFSMA's resolution notes that the nation lacks a complete understanding of levee location, ownership, and condition, and that Federal funding participation is required for the rehabilitation and repair of levees, many of which were constructed in partnership with the Corps.

NAFSMA urges Congress to move forward with a voluntary and incentive-based national levee safety program that includes qualified States and local and regional flood control agencies. In the spirit of shared responsibility, NAFSMA urges Congress to enact a repair, rehabilitation, and flood mitigation program to address critical levee repairs and authorize Federal cost sharing with owners and operators of levee systems.

Develop and implement measures to more closely harmonize levee operation and maintenance activities with environmental protection requirements. This National Committee on Levee Safety recommendation is particularly important to NAFSMA members, who are currently trying to maintain the integrity and strength of their existing levees so they provide the flood reduction capabilities expected by the public. NAFSMA urges Congress to clarify routine Maintenance of flood damage reduction channels and basins and to improve the regulatory process for obtaining the necessary permits for routine maintenance of these facilities.

NAFSMA generally supports the establishment of a water infrastructure finance and innovation initiative for projects that are capable of producing revenue streams as an additional funding tool that would complement existing Corps cost shared project funding. Project selection criteria under this program should consider job creation and economics, ecological, and social benefits. NAFSMA also urges loan repayment options to include local taxes, user fees, and private sources, and also secured non-Federal loans.

Levee vegetation policy. NAFSMA strongly supports language included in the draft bill that directs the Assistant Secretary to conduct a comprehensive review of Corps policy guidelines regarding vegetation on levees. NAFSMA has raised concerns about the one size fits all nature of this policy, which we are concerned is not supported by conclusive research.

Provide incentives for sound flood plain management. NAFSMA supports the current Federal cost share of 65 percent Federal, 35 percent local, but urges that the 35 percent local cost share be reduced for non-Federal sponsors where the community is carrying out sound flood plain management activities.

Increase the limit for requiring independent peer review. NAFSMA recommends raising the floor that triggers external independent peer review to \$100 million or more. Setting the level at \$45 million brings in smaller water resource projects, and we are concerned that the benefits are not proven for addressing projects of this scale.

In closing, NAFSMA very much appreciates this opportunity to testify, and our members look forward to working with the Com-

mittee in producing a viable WRDA 2012. I would be happy to answer any questions the Committee may have.
[The prepared statement of Mr. Williams follows:]



National Association of Flood & Stormwater Management Agencies

1333 H Street, NW, 10th Floor West Tower, Washington, DC 20005

Phone: 202-289-8625 www.nafsmā.org

**Testimony of the National Association of Flood
And Stormwater Management Agencies**

Presented by Dusty Williams
NAFSMA President and
General Manager/Chief Engineer
Riverside County Flood Control and Water Conservation District

Water Resources Development Act of 2012

U.S. Senate
Committee on Environment and Public Works
Sen. Barbara Boxer, Chairwoman

November 15, 2012

The National Association of Flood and Stormwater Management Agencies (NAFSMA) is very pleased to testify on proposals for the Water Resources Development Act of 2012. On behalf of our membership, many of whom are non-federal partners on flood damage reduction and environmental restoration projects with the U.S. Army Corps of Engineers, we thank you for your leadership and efforts to move a Water Resources Development Act forward this year.

NAFSMA appreciates the difficulty of drafting this much-needed bill in light of the serious economic issues facing the nation, at all levels of government, and the constraints of earmark limitations on this national authorization debate. We thank you for taking on this challenge to develop an approach to move critical flood damage reduction and other water resources projects forward and offer to work with you to address these critical issues as you continue your efforts to enact a comprehensive water resources development bill this year.

Background on NAFSMA

NAFSMA is a public agency driven organization based in the nation's capital, with a focus on effective flood and stormwater management in urban areas. Our mission for close to 35 years has been to advocate public policy and encourage technologies in watershed management that focus on flood protection, stormwater and floodplain management. Through this mission, NAFSMA enhances the ability of its member agencies to protect lives, property and economic activity from the adverse impacts of storm and flood waters.

Formed in 1978, NAFSMA works closely with the Corps of Engineers, the Federal Emergency Management Agency and the U.S. Environmental Protection Agency, as well as other federal agencies and national water resource organizations to carry out its mission. NAFSMA members are on the front line protecting their communities and regions from loss of life and property and are responsible for flood mitigation, flood water and emergency management activities as well as the water quality protection.

Therefore, the organization is keenly aware that flood damage reduction activities and projects are a wise and necessary investment required to first reduce loss of life and ensure the safety of our citizens. In addition, our members are charged with reducing damages to peoples' homes and businesses and critical infrastructure, while also protecting the environment and preventing economic disruption. Flood management has proven to be a wise investment that more than pays for itself by preserving life and property, thereby reducing recurring requests for federal disaster assistance.

Especially since WRDA 1986, this protection has been provided through a strong and well-tested federal-nonfederal partnership which NAFSMA values and will continue to work to improve and strengthen as we move forward in such critical flood management discussions as WRDA 2012. As a result, we are dedicated to ensuring that the nation's flood management systems can be operated and maintained properly and any needed inventory, assessments and repairs to flood damage reduction structures can be implemented smoothly.

Intergovernmental Flood Risk Management Efforts

Beginning in August 2005, just prior to Hurricane Katrina's devastating impact on the Gulf Coast, NAFSMA convened a discussion between our members, Corps leadership, FEMA, the Association of State Floodplain Managers, and other levee experts to discuss the need to inventory and assess the nation's levees due to issues that would definitely develop in this area as FEMA's flood map modernization process continued to move forward. This meeting and numerous subsequent joint

interagency discussions has led to a much stronger working relationship in the flood damage reduction arena between the Corps of Engineers and FEMA. These interagency partnerships at the federal, as well as at the state, regional and local levels are critical to reducing the nation's risks from flooding.

NAFSMA very much appreciates the strong initiatives of both agencies and their leaders to speak with one federal voice on these critical issues. Many strides have been made in this effort at the federal level and we hope that this continued commitment will result in better communications and partnerships at the District and regional levels of both agencies.

NAFSMA Recommendations for WRDA 2012

Enact WRDA 2012

The reauthorization of the Water Resources Development Act is critical. In the wake of the enormous devastation caused by Sandy, moving our nation's flood risk management initiatives forward to protect life, property and the economy from flood and storm disasters is more important than ever. Local, regional and state agencies depend on WRDA's reauthorization.

Crucial flood damage reduction, environmental restoration and watershed planning projects face significant cost increases and missed opportunities for safety, economic, and environmental improvements while waiting for Congressional authorization. During these tough economic times, we must all find ways to reduce costs, expedite studies, and minimize reviews and permitting so we can build projects that reduce the loss of life and property from the flood threat and put people to work.

Exclude Corps of Engineers Water Resources Projects from the Definition of Earmarks

Federal funds used to reduce the loss of life and property damages from floods are an investment in improving the resiliency of a community and the nation. The Corps of Engineers' process and associated legislative requirements for identifying, vetting, and funding potential projects is an example of a transparent and public process which does not belong in the earmark category. NAFSMA urges Congress to exclude Corps of Engineers water resources projects from the earmark category.

Allow Increasing Authorized Cost Limit for Flood Risk Management Projects

NAFSMA supports allowing the Secretary to modify the authorized cost of a project subject to certain requirements and conditions (Section 1003). One of the requirements of the Secretary is to certify that "...expenditures above the authorized cost of the project are necessary to protect life and safety, maintain critical navigation routes, or restore ecosystems;"

NAFSMA recommends adding "*provide significant flood risk reduction*" to the list so flood risk management projects would be eligible, as well.

Enactment of a National Levee Safety Program

Having had the privilege to serve as a member of the National Committee on Levee Safety, which was established by WRDA 2007, I am pleased that the NAFSMA membership approved a resolution

in support of enactment of a National Levee Safety Program in November 2011. A copy of that resolution is provided with this testimony.

In adopting the resolution, NAFSMA noted that the nation lacks of a complete understanding of levee location, ownership and condition throughout the country, and further that federal funding participation is required for the rehabilitation and repair of levees, many of which were constructed in partnership with the U.S. Army Corps of Engineers. NAFSMA's resolution also recognizes that levee owners and operators should implement flood risk management activities such as emergency preparedness and planning, as well as education and outreach components as part of a flood risk management program.

NAFSMA urges Congress to move forward with a voluntary and incentive based National Levee Safety Program that includes qualified states, and local and regional flood control districts. NAFSMA further recommends that a levee rehabilitation and repair fund with incentives for sound flood risk management be established as part of WRDA 2012.

Other Critical Levee Safety Recommendations

Authorize Completion of the National Levee Inventory

NAFSMA urges Congress to authorize the completion of the National Levee Inventory (also known as the national levee database), including non-federal, as well as federal levees.

Authorize Corps, When Requested, to Carry Out Levee Certifications

With many flood damage reduction projects built through partnerships with the Corps, the Corps District offices are in many cases uniquely suited to carry out levee certification activities. NAFSMA strongly believes that the original national interest that was determined to exist in order for federally-partnered flood damage reduction projects to move forward, still remains, and in most cases is even stronger. It follows then that there is a shared responsibility for the Corps to participate in FEMA's certification process. If the federal government is asking private engineering firms to take on this responsibility, the federal government's engineering branch should be engaged to also help perform these activities as well.

Establish National Levee Rehabilitation, Improvement, and Flood Mitigation Fund

In the spirit of shared responsibility, NAFSMA strongly endorses the recommendation of the National Committee on Levee Safety and urges Congress to establish a repair, rehabilitation and flood mitigation program to address critical levee repairs and authorize federal cost-sharing with owners and operators of levee systems.

Include New, and Amendments to, Flood Damage Reduction Projects

As you move forward with drafting WRDA 2012, it is important to recall that many existing and potential non-federal sponsors and their congressional delegations held critical projects back from consideration in WRDA 2007 at the request of committee leadership and staff in an effort to move that bill forward. These projects now need to be considered as they are necessary to protect lives, public safety and critical infrastructure, and provide new jobs critical to the economy. In addition, some existing project authorizations require amendments to move forward, as well.

Explore Expanding Credit Incentives for Levee Safety Activities

NAFSMA urges that full credit for work performed by a non-federal sponsor, or cost sharing partner, for identified levee strengthening or retrofit activities not be limited to the nonfederal cost of the project. In instances where major activity is needed to repair federally-partnered flood management projects, the nonfederal sponsor needs the ability to advance these activities with the knowledge that the work will be eligible for appropriate credit. NAFSMA offers to work with the Committee and the Corps to amend these applicable sections.

Crediting for Ecosystem Restoration Activities Linked with Levee Safety Strengthening and Retrofits

NAFSMA urges that credit or reimbursement be allowable for environmental mitigation or restoration activities that may be needed as the result of work performed to repair or improve existing flood damage reduction systems.

Develop and Implement Measures to More Closely Harmonize Levee Operation and Maintenance Activities with Environmental Protection Requirements

This National Committee on Levee Safety recommendation is particularly important to NAFSMA members who are currently trying to maintain the integrity and strength of their existing levees so they provide the flood reduction capabilities expected by the public. Currently, there is a lack of consistency by federal regulators and environmental agencies in the permitting and guidance of levee maintenance that is resulting in unpredictable requirements and timelines. Specifically, the management of deep-rooted vegetation on levees has become controversial.

Conflicting regulatory and environmental agencies' views are resulting in long delays or inability to perform needed infrastructure maintenance. NAFSMA concurs with the National Committee on Levee Safety that acceptable operation and maintenance practices need to be developed in conjunction with and coordination with state and federal environmental agencies so lives and property can be protected, and significant environmental and natural resources are not impacted.

NAFSMA urges Congress to clarify routine maintenance of flood damage reduction channels and basins and to improve the regulatory process for obtaining the necessary permits for routine maintenance of the facilities.

Recommendations for All Flood Risk Management ProjectsWater Infrastructure Finance and Innovation Act of 2012

NAFSMA generally supports the establishment of a Water Infrastructure Finance and Innovation initiative for projects that are capable of producing revenue streams as an additional funding tool that would complement existing Corps of Engineers flood damage reduction, environmental restoration cost-shared project funding.

Project selection criteria under this program should consider job creation, and economic, ecological and social benefits. NAFSMA also urges loan repayment options to include local taxes, user fees and private sources, and also secured non-federal loans.

Make Section 214 of WRDA 2000 Permanent

Section 214 of WRDA 2000 allows the Secretary of the Army to accept and expend funds contributed by non-Federal public entities to expedite the processing of permits. The Section 214 program has

been valuable in allowing local governments to move forward with vital infrastructure projects and maintenance with minimal or no impact to the environment that might have otherwise been held up while waiting for permits to be processed. By funding additional staff to work on permit evaluations, existing Corps staffers are able to process permits more quickly, resulting in a reduction of permit wait times not only for the funding entity, but for any individual or organization that makes an application with that Corps District. The Section 214 program has been reauthorized for limited terms repeatedly and NAFSMA urges Congress to permanently authorize the program.

Levee Vegetation Policy

NAFSMA strongly supports language included in the draft bill to direct the Assistant Secretary of the Army (Civil Works) to conduct a comprehensive review of Corps policy guidelines on vegetation on levees. NAFSMA has raised concerns about the one size fits all nature of this policy, which we are concerned is not supported by conclusive research. Many of the flood damage reduction projects now faced with vegetation removal requirements were constructed in partnership with the Corps, with vegetation included in the projects to provide habitat benefits.

Provide Incentives for Sound Floodplain Management

NAFSMA supports the current federal cost sharing of 65 percent federal/35 percent local, but would support options to provide for a sliding cost share formula for federally-partnered flood damage reduction projects. We would urge that the 35% local cost share be reduced for non-federal sponsors where the community is carrying out sound floodplain management activities and have or would achieved a strong rating from FEMA as part of the Community Rating System program, or are taking special actions to preserve natural areas and increase community resiliency. Such incentives have been successful at the state level.

Address Crediting Issues

NAFSMA supports the Committee's efforts in Section 2010 of the draft bill to address concerns of non-federal partners relating to Section 104 credit eligibility and its availability to sponsors for advance construction of flood protection works. With the current economic strain faced by non-federal sponsors and their federal counterparts alike, the ability to address critical flood damage reduction and public safety needs by promoting earlier construction of these essential projects represents a sound investment of federal and local resources.

Increase the Limit for Requiring Independent Peer Review to Larger Projects

NAFSMA recommends raising the floor that triggers External Independent Peer Reviews to \$100 million or more. Setting the level at \$45 million brings in smaller water resource projects. NAFSMA is concerned that the benefits from reviewing projects on this scale have not been proven and are concerned about using limited federal resources to address these reviews. If a project under the \$100 million limit has been deemed controversial by the District Commander, it could be moved into the Independent Peer Review Process.

Improve the Corps Planning Process

The Corps in recent months has moved forward on plans to transform the civil works process and to improve the project planning process, which has been a long, complex and costly planning exercise

that does not necessarily yield better flood reduction projects. NAFSMA requests the Committee to support any and all means to expedite the planning process including authorization changes, if needed. NAFSMA supports non-federal sponsors receiving full credit for all legitimate project related expenses, similar to credit received by the Corps of Engineers for project related expenses.

Project Partnership Agreement - NAFSMA urges the Committee to explore non-federal and federal concerns about issues related to federally-partnered projects once they reach or exceed their design life.

NAFSMA supports changes to the Project Partnership Agreement (PPA) that would limit the contractual liability of operation, maintenance, repair, replacement and rehabilitation (OMRR&R) requirements on the local sponsor to the design life of the project. If there is not financial commitment by the federal government to recapitalize and rehabilitate projects then more of the long term service and/or decommissioning decision making should reside with the local sponsors.

Closing

NAFSMA very much appreciates this opportunity to testify and our members look forward to working with the Committee on WRDA 2012. Please feel free to contact me or NAFSMA Executive Director Susan Gilson at 202-289-8625 with questions.



Association of Flood & Stormwater Management Agencies
1333 H Street, NW, 10th Floor West Tower, Washington, DC 20005
202-289-8625 Fax: 202-530-3389 www.nafisma.org

Support For A National Levee Safety Program

Resolution 2011-02

Approved by the Membership on November 3, 2011

WHEREAS many members of the National Association of Flood and Stormwater Management Agencies are owners and operators of flood control structures, including levees, and are charged with responsibility for the protection of lives, property and the environment from flood risk;

WHEREAS, Congress through the authorization of the Water Resources Development Act of 2007 established the National Levee Safety Committee charged with the task of developing recommendations for a National Levee Safety Program;

WHEREAS, the National Committee on Levee Safety delivered a set of draft recommendations to Congress on January 15, 2009;

WHEREAS the nation is currently lacking a complete understanding of the location, ownership and condition of levees throughout the country;

WHEREAS there is clearly a need for federal funding for the rehabilitation and repair of levees throughout the country, many of which were constructed in partnership with the U.S. Army Corps of Engineers;

WHEREAS the responsibility of levee owners and operators, in addition to maintaining flood control structures, includes flood risk management activities such as emergency preparedness and planning, as well as education and outreach components;

NOW THEREFORE BE IT RESOLVED, the National Association of Flood and Stormwater Management Agencies urges Congress to move forward with a National Levee Safety Program that is voluntary and incentive based and includes qualified states, local and regional flood control districts. A levee rehabilitation and repair fund and incentives for sound flood risk management at all levels of government are critical elements of a National Levee Safety Program.


James Fiedler, President

November 3, 2011



Association of Flood & Stormwater Management Agencies
1333 H Street, NW, 10th Floor West Tower, Washington, DC 20005
202-289-8625 Fax: 202-530-3389 www.nafsmā.org

Regulations and Policies – A Reasonable and Sustainable Approach

Resolution 2011-01

Approved by the Membership on November 3, 2011

WHEREAS many members of the National Association of Flood and Stormwater Management Agencies are charged with responsibility for the protection of lives, property and the environment from flood and stormwater risk;

WHEREAS, many local, regional and state governments are facing significant economic and funding challenges;

WHEREAS, local flood, floodplain and stormwater management agencies are responsible for meeting numerous local, state and federal regulations as part of their responsibilities;

WHEREAS the number and requirements associated with these regulations requires significant funding and staff resources;

WHEREAS the members of the National Association of Flood and Stormwater Management Agencies are committed to carrying out responsible and reasonable flood management, floodplain and stormwater management requirements;

WHEREAS members of the National Association of Flood and Stormwater Management Agencies are charged with providing adequate support for infrastructure at the local and regional levels;

NOW THEREFORE BE IT RESOLVED, that the National Association of Flood and Stormwater Management Agencies urges Congress and the federal agencies to only consider legislation and regulations that respect local authority and regional differences; are reasonable with the current technical and economic environment; protect local and regional flood, floodplain and stormwater management agencies from unfunded mandates; streamline state and federal environmental permitting processes; provide support for sustainable programs at all levels of government and provide for adequate investment of public infrastructure.


James Fiedler, President

November 3, 2011



National Association of Flood & Stormwater Management Agencies

PO Box 56764, Washington, DC 20040

Phone: 202-289-8625 www.nafisma.org

Questions for Dusty Williams from Senator Barbara Boxer

1. In your testimony, you discuss the importance of establishing a National Levee Safety Program. You also mention the need for some additional elements including a levee rehabilitation program. Can you elaborate on the need for a levee rehabilitation, improvement and flood mitigation fund and what problems the fund would address?

Although much work has been done in recent years to develop a National Levee Inventory, there is still a great deal that is unknown about the state of the more than 100,000 miles of levees estimated to exist in the United States. With average U.S. annual flood losses estimated to be nearly \$6 billion and continuing to grow, the need for a National Levee Safety program also continues to grow.

Levees reduce the risk of flooding in cities large and small throughout the nation. More than 14 million people have been reported to live behind levees and at least one-third of communities with a population of 50,000 or higher have some portion of their community protected by levees. If demographic trends hold, it is expected that more and more people will be living in flood prone areas and behind levees, increasing the importance of their reliability and level of protection.

It is critical that a national picture of the state of the levees throughout the country be developed and that the rehabilitation and repair needs of our aging flood damage reduction structures be addressed. Many of the nation's levees are more than 50 years old and are showing their age. While there are newer or reconstructed levees, a large number of levees were built in response to the widespread flooding on the Mississippi River in 1927 and 1937, or in California after catastrophic flooding in 1907 and 1909. Many of these levees have exceeded their original design life. According to the American Society of Civil Engineers, the five-year funding needed to address levee issues is estimated to be \$50 billion. Some type of fund is desperately needed to address these overwhelming needs to be established at the federal level as soon as possible - before we face a levee-related flooding catastrophe.

NAFSMA believes that levee rehabilitation, repair and improvement funds need to be made available to qualified owners and operators so that flood risk can be reduced and public safety can be improved in the regions where it is needed most. NAFSMA members understand that cost-sharing requirements may need to be part of this rehab fund and that criteria need to be established so that this fund serves as an incentive for levee owners and operators to implement a strong levee safety program, which is part of their larger flood risk management initiatives. NAFSMA members stand ready to assist the Committee in the development of such criteria.

2. Your testimony raises the issue of the current Corps of Engineers policy on levee vegetation. Can you expand on the challenges being faced by this policy and suggest how this policy can be improved?

A rose by any other name may still be a rose, but the same cannot be said for levees.

Although most levees tend to perform a similar function – an artificial or supplemental river bank – they vary in size, shape and makeup as much as the various regions of the country in which they exist. The weather, topography, geology and hydrology of New Orleans, Louisiana and Anchorage, Alaska couldn't be more different - so too are the levees that safeguard these communities. And this is not a unique example. California, for instance, has the bay-delta area where dredged levees set atop peat bogs and are subject to the runoff from major Sierra Nevada winter storms alternating with tidal influences. But that same California is home to massive rock levees designed to withstand the flashy August thunderstorms typical of the lower Mojave Desert.

Levees are sometimes mounds of loosely compacted sand dredged from adjacent river bottoms; sometimes they are well engineered earthen structures with clay cores and rip rap erosion protection; sometimes they are massive soil-cement monoliths; sometimes they are reinforced concrete walls with enormous T and L shaped footings. Levees are often single purpose structures, intended only to control water flow, but sometimes they also serve as highway/railroad embankments; piers; pedestrian, bike and equestrian trails; and even as golf course fairways.

It is therefore unrealistic to think that a policy, or policies, governing levee function, design and maintenance can be any less diverse.

Is the existence of vegetation on levees good or bad? The answer is quite simply, it depends. No one would argue that an unsafe levee is not desirable. Rather, the argument is whether or not the existence of vegetation on a levee diminishes its safety.

Current research does not support a universal claim that all vegetation on levees is detrimental. Therefore, a (one size fits all) policy that universally prohibits its existence is unfounded and needs to be reexamined.

The diversity of levees across the country can only be addressed by allowing those that are the most knowledgeable of the geology, geography and hydrology of a region to determine the needs of levee in that region.

A national policy that is more goal based (i.e. no vegetation on levees that compromises safety), with specific implementation determined by local Corps Districts working with appropriate stake holders would be a more workable solution; In short, centralized oversight with decentralized execution.

3. The draft bill includes provisions for a WIFIA program for levee construction. Do you believe this would be a useful tool for advancing construction of important flood damage reduction projects?

NAFSMA believes that this proposed WIFIA program could be useful as a complement to traditional USACE funding approaches for flood damage reduction projects and as a result, the association generally supports the establishment of a WIFIA. NAFSMA members believe this may allow some flood control agencies and sponsors to move out on projects where federal funding has been delayed for various reasons. Repayment of loans under this program should be allowed be paid through local taxes and user fees, or private sources.

NAFSMA does have some questions about how federal loan guarantees might work with the annual appropriations process. Will these guarantees be outside of the traditional appropriations scope, or will they be subject to annual appropriations?

Questions from Senator James Inhofe

1. What, if any, policy priorities or changes to current law that are important to your organization are not addressed in this current draft? How would you suggest we modify the draft to reflect your concerns?

Establishment of National Rehabilitation, Repair and Improvement Fund

NAFSMA strongly believes that some type of fund needs to be established at the federal level to address critical repairs and rehabilitations for levees across the nation, many of which have exceeded their design life. The National Committee on Levee Safety has recommended the creation of a fund for the Rehabilitation, Repair and Improvement of levees throughout the country. NAFSMA understands that cost-sharing will probably be required for such a program and that criteria needs to be established to make this program truly an incentive for good levee safety and flood risk management behavior. This fund should be available as an incentive to owners and operators of levees meeting criteria set for the program.

NAFSMA recommends that such a fund be included in this WRDA bill either in the section establishing a National Levee Safety Program, or in another appropriate place in the legislation. NAFSMA believes that if included as part of the National Levee Safety Program and if funded appropriately, this fund could serve as a key incentive to build support for a voluntary National Levee Safety Program.

While NAFSMA members understand that the constraint of the current funding environment, at all levels of government, the possible loss of life and economic damages from ignoring this need on a national level will only continue to grow. NAFSMA members offer their assistance in helping to shape a program and funding criteria that would be critical to moving the nation forward in its levee safety and flood risk management efforts.

Section 404 Permitting For Maintenance of Flood Damage Reduction Facilities and Channels

NAFSMA member agencies serving as owners and operators of flood damage reduction systems are frustrated by the time, cost, mitigation requirements, and inability to obtain permits to carry out

regularly-needed operation and maintenance activities on flood damage reduction structures and associate channels, which are part of the flood damage reduction systems.

NAFSMA supports the inclusion of federal permits in an operations and maintenance manual, or in a watershed or watercourse plan that allows the owner and operator of a flood damage reduction system to perform the required maintenance without the need to obtain federal permits. A legislative extension of permit terms for operation and maintenance of flood damage reduction facilities could also help with these issues as would legislative language to clarify that mitigation requirements are to be implemented on a one-time basis. NAFSMA also supports the inclusion of language to streamline the process for operations and maintenance activities on flood damage reduction structures and channels.

Section 214

NAFSMA supports language being included in WRDA to make Section 214, which allows non-federal public entities to provide funding for additional regulatory personnel at Corps District offices to expedite the processing of permits for vital infrastructure projects and maintenance with minimal or no impact to the environment.

Crediting

NAFSMA supports non-federal sponsors receiving full-credit for project expenses, similar to that received by the Corps of Engineers for project-related expenses. NAFSMA urges that full credit for work performed by a non-federal sponsor, or cost sharing partner, for identified levee strengthening or retrofit activities not be limited to the nonfederal cost of the project.

In instances where major activity is needed to repair federally-partnered flood management projects, the nonfederal sponsor needs the ability to advance these activities with the knowledge that the work will be eligible for appropriate credit. NAFSMA offers to work with the Committee and the Corps to amend these applicable sections. NAFSMA also urges that credit or reimbursement be allowable for certain environmental mitigation or restoration activities that may be needed as the result of work performed to repair or improve existing flood damage reduction facilities.

2. I am pleased that the Chair included a Sense of Congress on Project Acceleration. However, I would like to take this a step further and include legislative language. What does your organization recommend?

While NAFSMA is also pleased that language has been included to move projects forward, NAFSMA urges that USACE-partnered water resource projects be excluded from the definition of "earmarks." Federal funds used to reduce the loss of life and property damages from floods are an investment in improving the resiliency of a community and the nation. The Corps of Engineers' process and associated legislative requirements for identifying and funding potential projects is an example of an open and public process which does not belong in the earmark category. Project funding that follows the rigorous and transparent Corps authorization process shouldn't be considered earmarks. Appropriations requests of projects of national interest identified by a Corps of Engineers Chief of Engineers' report should not be considered an earmark.

Although the organization does not have a formal position on the issue of project acceleration as outlined in the WRDA Discussion Draft, I expect that NAFSMA would be supportive of developing additional legislative language that helps either set criteria for moving projects forward, or provides a means for Congress in an expeditious manner to determine which projects should move forward. NAFSMA would very much like to work with the Committee to help develop such language.

3. Some have suggested that the Civil Works Program needs to be transformed to ensure it continues to effectively and efficiently address the nation's water resources challenges. Do you have any recommendations that the Committee can consider for this WRDA bill in order to lay a foundation for future changes in the Civil Works Program?

NAFSMA supports the current Corps of Engineers Civil Works Transformation effort, including expediting the completion of feasibility studies.

NAFSMA also recommends the elimination of Preconstruction Engineering and Design cost sharing agreements.

NAFSMA offers to work with the Committee to develop any legislative language needed to implement the transformation of the Corps Civil Works process.

Senator BOXER. Thank you so much, Mr. Williams, and the entire panel.

What I am going to do now is ask unanimous consent to enter the following letters into the record. They have endorsed aspects of the discussion draft we are considering today and they support moving forward with the WRDA bill in addition to the comments made today. National Association of Home Builders, the U.S. Chamber of Commerce, the American Water Works Association, the Water Environment Federation, the Association of Metropolitan Water Agencies, the Water Infrastructure Network, the Association of State Flood Plain Managers, the Central Valley Flood Protection Board, Municipal Water District of Orange County, Sutter Butte Flood Control Agency, San Joaquin Area Flood Control Agency. This is just a start.

And this reminds me of what happened, without objection, put those in the record.

[The referenced information follows:]



National Association of Home Builders

1201 15th Street NW
Washington, DC 20005

T 800 368 5242
F 202 268 8400

www.nahb.org

Government Affairs

James W. Tobin III
Senior Vice President & Chief Lobbyist

November 14, 2012

The Honorable Barbara Boxer
Chairwoman
Senate Committee on Environment and Public Works
410 Dirksen Senate Office Building
Washington, DC 20510-6175

Dear Chairwoman Boxer:

On behalf of the 140,000 members of the National Association of Home Builders (NAHB), I would like to commend you for the scheduling of a hearing on the reauthorization of the Water Resources Development Act (WRDA). As a WRDA reauthorization bill has not been passed since 2007, NAHB is hopeful Congress will act either during the lame duck session or move early in the next Congress to consider the legislation.

NAHB wishes to endorse provisions of the legislation that would authorize water resources development and conservation projects that are the subject of a completed report from the Army Corps' Chief of Engineers. At a time when the government should display fiscal restraint, NAHB applauds the inclusion of criteria that would limit the authorization of water resource projects to those that are environmentally acceptable, technically feasible, and where the benefits exceed the costs.

NAHB looks forward to working with you in hopes of securing passage of this WRDA reauthorization bill. Please feel free to consider us a resource as the Committee moves forward to consider the legislation.

Sincerely,

James W. Tobin III

cc: Senator James M. Inhofe, Ranking Minority Member, Committee on Environment and Public Works

CHAMBER OF COMMERCE
OF THE
UNITED STATES OF AMERICA

R. BRUCE JOSTEN
EXECUTIVE VICE PRESIDENT
GOVERNMENT AFFAIRS

1615 H STREET, N.W.
WASHINGTON, D.C. 20062-2000
202463-5310

November 14, 2012

The Honorable Barbara Boxer
Chairman
Committee on Environment
and Public Works
United States Senate
Washington, DC 20510

The Honorable James Inhofe
Ranking Member
Committee on Environment
and Public Works
United States Senate
Washington, DC 20510

Dear Chairman Boxer and Ranking Member Inhofe:

The U.S. Chamber of Commerce, the world's largest business federation representing the interests of more than three million businesses and organizations of every size, sector, and region, strongly supports improving and increasing investment in the nation's water resources infrastructure through a Water Resources Development Act (WRDA).

The Chamber applauds this committee's bipartisan efforts and leadership to ensure the viability of the U.S. Marine Transportation System. It is an important part of the nation's economic strength, moving goods to domestic and international markets and supporting economic growth and jobs all across America. Waterborne cargo and associated activities contribute more than \$649 billion annually to U.S. Gross Domestic Product, sustaining more than 13 million jobs.

However, inadequate investment and insufficient improvements to the marine transportation system threaten its ability to support domestic economic development, interstate commerce, international trade, and future growth. The lack of a coordinated strategy, a backlog of needs, a lack of predictable investment levels and deteriorating project delivery performance creates uncertainty about the marine transportation system's overall ability to reliably, safely and efficiently transport goods to international and domestic markets, which translates to under utilization and increases costs throughout threatening U.S. competitiveness.

Investment in a world-class, 21st century water resources infrastructure needs to happen now and be guided by robust, thoughtful, and comprehensive plans for construction, maintenance and operations, and financing. The Chamber is strongly encouraged at the steps forward the Committee had made to address the nation's decaying water infrastructure. The Chamber looks forward to working with you on this important issue.

Sincerely,



R. Bruce Josten

cc: Members of the Committee on Environment and Public Works



November 15, 2012

The Honorable Barbara Boxer
Chair

The Honorable James M. Inhofe
Ranking Member

Committee on Environment and Public Works
United States Senate
410 Dirksen
Washington, DC 20510

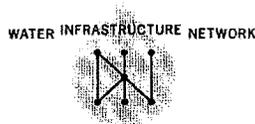
Dear Senators Boxer and Inhofe:

The American Water Works Association (AWWA), Association of Metropolitan Water Agencies (AMWA), and the Water Environment Federation (WEF) deeply appreciate the inclusion of a "Water Infrastructure Finance and Innovation Act" (WIFIA) pilot program as Title X of your committee's draft Water Resources Development Act (WRDA) legislation. Just as the committee's WRDA bills have historically enjoyed strong bipartisan support, we believe that well-crafted WIFIA legislation that creates jobs as well as promoting public health, fire protection, environmental protection, and economic growth will attract similar widespread backing.

A recent study commissioned by AWWA has found that restoring our existing drinking water systems and expanding them to serve a growing population will cost at least \$1 trillion in the next 25 years. Wastewater infrastructure needs roughly parallel those for drinking water. In addition, many communities face serious affordability problems as they struggle to address the twin challenges of crumbling infrastructure and additional regulatory requirements.

Our own studies of water infrastructure finance options have identified a WIFIA as a particularly innovative and effective finance tool, which is important in the current fiscal climate. As you know, WIFIA would offer low-cost financing to major water infrastructure projects, and require loans to be repaid in their entirety to the U.S. Treasury. This approach will help local water systems stretch their dollars further, with limited or no long-term federal budgetary impact due to the historically low default rate of local water and water utilities. In addition, under the provisions of the Federal Credit Reform Act, a WIFIA would leverage a large volume of lending for a relatively small federal investment.

A WIFIA's ability to offer loans for large water infrastructure projects is crucial. Large projects, particularly those costing more than \$20 million, are often beyond the means of most drinking water and clean water state revolving loan fund programs, which tend to focus on small to



November 14, 2012

The Honorable Barbara Boxer
 Chair,
 Environment & Public Works Committee
 112 Hart Senate Office Building
 Washington, D.C. 20210-0505

The Honorable James Inhofe
 Ranking Member,
 Environment & Public Works Committee
 205 Russell Senate Office Building
 Washington, D.C. 20510-3603

Re: WIN's Support for Innovative Water Infrastructure Finance - WRDA 2012

Dear Senator Boxer and Senator Inhofe,

The Water Infrastructure Network (WIN), a coalition of the nation's leading construction, engineering, municipal, public works, conservation, labor and manufacturing organizations, strongly supports your continued bipartisan work to address our nation's water infrastructure funding crisis. The innovative financing pilot projects established in Title X of the draft Water Resources Development Act of 2012 (WRDA 2012), represent a thoughtful and timely approach to establishing and testing a new financing tool for our nation's water and wastewater infrastructure. WIN and its Members are committed to working with you to secure broad bipartisan support for WRDA 2012.

WIN believes that the development of a "TIFIA - Like" program for water infrastructure may make sense as we look to leverage limited federal resources to address the dramatic short fall in water infrastructure funding -- projected by EPA, WIN and CBO to be in excess of \$500 B over the next two decades. However, it is essential that the existing State Revolving Funds for water and wastewater construction not be cannibalized to finance the innovative finance projects envisioned in WRDA and that we continue to pursue long-term dedicated funding for water and wastewater infrastructure. WIN has testified before Congress and worked closely with your staff to outline the opportunities and limitations of a TIFIA Program for water infrastructure and we appreciate your efforts to incorporate WIN's recommendations into Title X of the WRDA 2012.

Your continued leadership on water infrastructure funding and finance is greatly appreciated and WIN is committed to working with you to perfect and enact into law the innovative financing measures in the Water Resources Development Act of 2012.

Sincerely,

The WIN Executive Committee

American Council of Engineering Companies, American Public Works Association, American Society of Civil Engineers, Associated General Contractors of America, International Union of Operating Engineers, National Association Clean Water Agencies, National Rural Water Association, United Association of Plumbers and Pipefitters



Association of State Floodplain Managers, Inc.
2809 Fish Hatchery Road, Suite 204 Madison WI 53713

Phone: 608-274-0123 | Fax: 608-274-0696 | Email: asfpm@floods.org | Web: www.floods.org

Executive Director: Chad M. Berginnis, CFM
 Associate Director-Operations: Ingrid D. Danler, CFM
 Director Emeritus: Lary A. Larson, P.E., CFM

November 14, 2012

Honorable Barbara Boxer
 Chairman, Senate Committee on Environment and Public Works
 410 Dirksen Senate Office Building
 Washington, DC 20510-6175

Honorable James M. Inhofe
 Ranking Member, Senate Committee on Environment and Public Works
 456 Dirksen Senate Office Building
 Washington, DC 20510-6175

Dear Madam Chairman and Ranking Member Inhofe,

On behalf of the Association of State Floodplain Managers (ASFPM), its 34 State Chapters, and more than 15,000 members, we want to thank you for your leadership in holding tomorrow's Full Committee Legislative Hearing on the Water Resources Development Act of 2012. We are writing to express our support for components of the draft Water Resources Development Act that help address the Nation's flood risk associated with levees through creation of state levee safety programs, completion of the inventory of levees throughout the nation, promotion of public awareness of levee-related risk, and technical assistance for addressing levee-related hazards. Additionally, we support adjustments to important technical assistance programs that increase the capacity of states, regional entities, and local governments to take the lead in reducing flood risk, and in particular the Planning Assistance to States and Floodplain Management Services programs.

We recognize that much more needs to be done. ASFPM stands ready to work with you to ensure the success of a Water Resources Development Act that helps to identify and reduce the risk of loss of life and property in floods. Please contact us anytime we can be of assistance.

Sincerely,

Sally McConkey, P.E., CFM
 ASFPM Chair

Chad Berginnis, CFM
 ASFPM Executive Director

cc: Honorable John L. Mica, Chairman, House Committee on Transportation and Infrastructure
 Honorable Nick J. Rahall, II, Ranking Member, House Committee on Transportation and Infrastructure

Dedicated to reducing flood risk and losses in the nation.

Chair
 Sally McConkey, P.E., CFM
 Water Resources Engineer
 Illinois State Water Survey
 217-333-5482
sally@illinois.edu

Vice Chair
 William Necham, CFM
 State Floodplain Manager
 NY State Dept. Env. Conserv.
 518-402-8146
wnecham@gov.dec.state.ny.us

Secretary
 Joy L. Duperault, CFM
 State Floodplain Manager
 Florida Div. Emergency Mgmt.
 850-922-4518
joy.duperault@em.myflorida.com

Treasurer
 Joseph Ruggeri, P.E., CFM
 State Floodplain Manager
 NJ Dept. of Env. Protection
 609-292-2296
joseph.ruggeri@dep.state.nj.us

STATE OF CALIFORNIA - CALIFORNIA NATURAL RESOURCES AGENCY

Edmund G. Brown JR., GOVERNOR

CENTRAL VALLEY FLOOD PROTECTION BOARD

3310 El Camino Ave., Rm. 151
 SACRAMENTO, CA 95821
 (916) 574-0609 FAX: (916) 574-0682
 PERMITS: (916) 574-2380 FAX: (916) 574-0682



November 13, 2012

Senator Barbara Boxer
 Chairman, Environment and Public Works
 Committee
 United States Senate
 410 Dirksen Senate Office Bldg.
 Washington, DC 20510-6175

Senator James M. Inhofe
 Ranking Member, Environment and Public
 Works Committee
 United States Senate
 456 Dirksen Senate Office Bldg.
 Washington, DC 20510-6175

Dear Senators Boxer and Inhofe:

The Central Valley Flood Protection Board has reviewed the proposed language of the Water Resources Development Act (WRDA) published by the Environment and Public Works Committee staff on November 8, 2012, and wishes to inform you that we support key sections of the draft bill. This proposed draft addresses important public safety and local fiscal issues.

Our Board, the Department of Water Resources, and several local flood control agencies in the California's Central Valley have engaged in an aggressive flood risk reduction program, which includes locally sponsored levee improvements, as well as partnering with the U.S. Army Corps of Engineers (USACE) on multiple General Reevaluation Reports and feasibility studies. However, certain constraints in Federal law or policy inhibit levee improvements from being made as quickly and cost effectively as possible.

We support section 2009 of the draft bill. This section would allow the acceleration of flood damage reduction projects in the Central Valley of California, while maintaining or decreasing the Federal costs associated with such construction. As you may know, most of the Federally authorized projects in the valley were originally authorized as part of the Sacramento or San Joaquin River Flood Control Projects as integrated systems. However, due to the multiple separate hydraulic basins which make up our valley, many of these levees are now studied and authorized for construction as separate projects. Section 2009 would allow the movement of excess work-in-kind credit to be moved from one basin to another as long as such movement was part of a comprehensive plan.

We also support section 2010 of the draft bill. In light of the stagnant economy and lives at risk, we think Federal law should promote fast construction of flood protection projects by non-Federal interests. We firmly believe that the additional certainty that would come with this legislation would promote early construction of these essential projects. For these reasons, we strongly support the language contained in section 2010 of the draft bill.

Senators Boxer and Inhofe
November 13, 2012
Page 2 of 3

We also write in support of section 2017 of the draft bill. This section would direct the ASA to conduct a comprehensive review of USACE policy guidelines on vegetation on levees. This is a vital issue in our region, as compliance with a national one-size-fits-all policy ignores the habitat needs in our region. This approach also fails to acknowledge that, in order to maximize flood risk reduction, our region must prioritize where limited local funds are to be spent.

Finally, we write in support of Section 2019 of the draft bill. This section would create a non-Federal implementation pilot program to explore ways of promptly reducing flood risk through alternative project management structures. This program has the potential to utilize many best management practices which have been developed in our valley and have resulted in cost effective levee construction. For these reasons, we believe this program brings tremendous value to the mission of flood risk reduction.

For all of these reasons, we urge your committee to support the draft bill and to share your support with the House Transportation and Infrastructure Committee. We will continue to provide our input and support for the WRDA bill as it progresses forward.

If you have further questions regarding this matter, please call me, or your staff may contact Jay S. Punia, the Board's Executive Officer, at (916) 574-0609.

Sincerely,

William H. Edgar

William H. Edgar
President

cc: (See attached list)

cc: Colonel William J. Leady, P.E.
Sacramento District
U.S. Army Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

Ms. Kristina Mulline
Sacramento District
U.S. Army Corps of Engineers
1325 J Street
Sacramento, California 95814

Mr. Rick Johnson
Sacramento Area Flood Control Association
1007 7th Street, 7th Floor
Sacramento, California 95814

Ms. Melinda Terry
Central Valley Flood Control Association
910 K Street, Suite 310
Sacramento, California 95814

Mr. Mike Inamine
Sutter Butte Flood Control Agency
1227 Bridge Street, Suite C
Yuba City, California 95991

Mr. Jim Giotoninni
San Joaquin Area Flood Control Agency
22 E. Weber Avenue, Room 301
Stockton, California 95202

Mr. Dave Shpak
City of West Sacramento/WSAFOA
1110 West Capitol Avenue
West Sacramento, California 95691

cc: (sent by electronic mail)

Department of Water Resources
Mark Cowin
Gary Bardini
Keith Swanson
Rod Mayer

Central Valley Flood Protection Board
Jay Punia
Len Marino
Board members



Street Address:
12700 Ward Street
Four Oaks Valley, California 92708

Mailing Address:
P.O. Box 20885
Four Oaks Valley, CA 92728-0885

(714) 963-3058
Fax (714) 964-5389
www.mwdoc.com

Jeffery M. Thomas
President

Wayne A. Clark
Vice President

Brett R. Barnes
Director

Larry D. Dick
Director

Alan C. Finnegan
Director

Shawn Hansen
Director

Wayne S. Osborne
Director

Kyle F. Hunt, P.E.
General Manager

MEMBER AGENCIES

- City of Brea
- City of Buena Park
- East Orange County Water District
- El Tijo Water District
- Ernesto Bay Service District
- City of Folsom Valley
- City of Garden Grove
- Orange State Water Co.
- City of Huntington Beach
- Orange Beach Water District
- Laguna Beach County Water District
- City of La Habra
- City of La Habra
- Metropolitan Water District
- Mission Viejo Water District
- City of Newport Beach
- City of Orange
- Orange County Water District
- City of San Clemente
- City of San Juan Capistrano
- Santa Margarita Water District
- City of Surf Beach
- Serrano Water District
- South Coast Water District
- Troyes Canyon Water District
- City of Tustin
- City of Westminster
- Yorba Linda Water District

October 31, 2012

Senator Barbara Boxer
Chairwoman
Environment and Public Works Committee
United States Senate
Washington, DC 20510

Dear Senator Boxer,

As you consider different proposals for inclusion in the Committee's Water Resources Development Act (WRDA) authorization bill, the Municipal Water District of Orange County, California, urges you to include a financing provision designed for water infrastructure projects known as the Water Infrastructure Finance and Investment Authority (WIFIA).

A reliable water supply is critical to the economy of Orange County, California and throughout the nation. California, as you know, has experienced reductions in Colorado River water deliveries in recent years and a combination of regulatory and climate related drought conditions can affect our State Water Project supplies in Southern California. Developing additional local supplies will help to improve water supply reliability.

MWDOC is the regional provider of wholesale imported water to its 28 member agencies and more than two million Orange County residents. We have been working to increase and diversify water supplies through investments in reliable, long-term local projects and programs, and have made the development of an ocean desalination plant at Dana Point a top priority for Orange County's water future.

The South Orange Coastal Ocean Desalination Project is located near Boheny State Beach in Dana Point, California. It has strong community support from surrounding cities, water districts, state legislative leaders, and local environmental groups. It will provide a new, local water supply for south Orange County, which is currently about 95 percent dependent on imported water to meet demand. The project will improve local water reliability and help to reduce dependence on imported water.

CAW-12-05 96

Senator Barbara Boxer
Page 2
October 31, 2012

We believe that creating a WIFIA Program, patterned after the Transportation TIFIA Program which was recently included in the Transportation Reauthorization Bill, is a viable funding mechanism to help qualified water agencies develop new water supply sources and repair aging infrastructure. WIFIA is not a grant program but rather a low-cost loan program that would allow water districts to borrow funds at low interest rates, thereby providing significant financial savings to the local taxpayer and allowing improvements to be made immediately. Importantly, the federal taxpayer is made "whole" because the entire loan is repaid. However, in the off chance there is a default, the borrower must have insurance to protect the federal interest. The borrower also pays a federal administrative fee to process the clerical and managerial aspects of the loan.

We are nearing a critical decision point on the South Orange Coastal Ocean Desalination Project. The inclusion of the WIFIA Program in the upcoming WRDA Legislation would provide our District with an important funding option.

We respectfully request your consideration of including the WIFIA Program in the upcoming WRDA Bill.

Should you have questions, please feel free to contact me or Karl Seckel, MWDOC's Assistant General Manager, at (714) 593-5024 or kseckel@mwdoc.com.

Sincerely,



Jeffery M. Thomas
President



Sutter Butte Flood Control Agency
 1227 Bridge Street, Suite C
 Yuba City, CA 95991
 (530) 870-4425
sutterbutteflood.org

Counties

Butte County
 Sutter County

Cities

City of Biggs
 City of Gridley
 City of Live Oak
 City of Yuba City

Levee Districts

Levee District 1
 Levee District 9

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 Chairman, Environment & Public
 Works Committee
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 410 Dirksen Senate Office Bldg.
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Senator James M. Inhofe
 Ranking Member, Environment &
 Public Works Committee
 United States Senate
 456 Dirksen Senate Office Bldg.
 Washington, DC 20510-6175

November 9, 2012

Dear Senators Boxer and Inhofe:

I write today to support key sections of the draft Water Resources Development Act (WRDA) published by committee staff on November 8, 2012. This proposal addresses important public safety and local fiscal issues.

The Sutter Butte Flood Control Agency (SBFCA) has engaged in an aggressive flood risk reduction program which includes locally-sponsored levee improvements as well as partnering with the U.S. Army Corps of Engineers on a Feasibility Report. In both of these cases, SBFCA is seeking to reduce the risk of flooding through levee improvements, while also keeping new growth out of deep floodplains. In this way, we can provide protection for nearly 100,000 existing residents in 150-year old communities and limit future risk associated with new development. SBFCA's funding is based on a 2010 self-imposed property assessment which passed with over a 70% vote despite being an economically disadvantaged area. Thus, even with these limitations, the residents are willing to pay to quickly minimize flood risk. However, certain constraints in Federal law or policy inhibit levee improvements from being made as quickly and cost effectively as possible.

We support section 2010 of the draft bill because of our concerns that the Secretary of the Army (Civil Works) is declining to utilize Section 104 of WRDA 1986 in considering requests from non-Federal interests for credit eligibility to be made available for advance construction of flood protection works. We believe her decision is delaying decisions by non-Federal interests to construct urgently needed flood damage reduction projects. Instead of utilizing Section 104, the Secretary has elected to process credit eligibility requests under Section 221 of the Flood Control Act of 1970 (as amended by Section 2003 of WRDA 2007). Section 221 as implemented by the Secretary does not appear to promote construction by non-Federal interests. While we agree that the Secretary must exercise judgment as to the calculation and eventual determination of credit which should be given, in light of the stagnant economy and lives at risk we think Federal law should promote fast construction of flood protection projects by non-Federal interests.

We firmly believe that the additional certainty that would come with legislation would promote early construction of these essential projects. For these reasons, we strongly support the language contained in section 2010 of the draft bill.

We also write in support of section 2009 of the draft bill. This section would allow the acceleration of flood damage reduction projects in the Central Valley of California, while maintaining or decreasing the Federal costs associated with such construction. As you may know, most of the Federally authorized projects in the valley were originally authorized as part of the Sacramento or San Joaquin River Flood Control Projects as integrated systems. However, due to the multiple separate hydraulic basins which make up our valley, many of these levees are now studied and authorized for construction as separate projects. Section 2009 would allow the movement of excess work-in-kind credit to be moved from one basin to another as long as such movement was part of a comprehensive plan.

We also write in support of section 2017 of the draft bill. This section would direct the ASA to conduct a comprehensive review of Corps policy guidelines on vegetation on levees. This is a vital issue in our region, as compliance with a national one-size-fits all policy ignores the habitat needs in our region. This approach also fails to acknowledge that in order to maximize flood risk reduction, our region must prioritize where limited local funds are to be spent.

Finally, we write in support of Section 2019 of the draft bill. This section would create a non-Federal implementation pilot program to explore ways of promptly reducing flood risk through alternative project management structures. This program has the potential to utilize many best management practices which have been developed in our valley and have resulted in cost effective levee construction. For these reasons we believe this program brings tremendous value to the mission of flood risk reduction.

For all of these reasons, we urge your committee to support the draft bill and to share your support with the House Transportation and Infrastructure Committee.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Inamine", written over a light blue horizontal line.

Mike Inamine, P.E.
Executive Director



November 14, 2012

Senator Barbara Boxer
Chairman, Environment and Public Works
Committee
United States Senate
410 Dirksen Senate Office Bldg.
Washington, DC 20510-6175

Senator James M. Inhofe
Ranking Member, Environment and Public
Works Committee
United States Senate
456 Dirksen Senate Office Bldg.
Washington, DC 20510-6175

DRAFT WATER RESOURCES DEVELOPMENT ACT (WRDA)

Dear Senators Boxer and Inhofe:

I write today to support key sections of the draft Water Resources Development Act (WRDA) published by committee staff on November 8, 2012. This proposal addresses important public safety and local fiscal issues.

The San Joaquin Area Flood Control Agency has engaged in an aggressive flood risk reduction program which includes locally-sponsored levee improvements as well as partnering with the U.S. Army Corps of Engineers (Corps) on a Feasibility Report. However, certain constraints in Federal law or policy inhibit levee improvements from being made as quickly and cost effectively as possible.

First, we support section 2011. This section would allow non-Federal interests who are owed reimbursement from the Corps to instead take that reimbursement as a credit toward future work. This is ideal because it prioritizes new flood damage risk reduction work.

We also support section 2010 of the draft bill because of our concerns that the Secretary of the Army (Civil Works) is declining to utilize Section 104 of WRDA 1986 in considering requests from non-Federal interests for credit eligibility to be made available for advance construction of flood protection works. We believe the Secretary's decision is delaying assessments by non-Federal interests to construct urgently needed flood damage reduction projects. Instead of utilizing Section 104, the Secretary has elected to process credit eligibility requests under Section 221 of the Flood Control Act of 1970 (as amended by Section 2003 of WRDA 2007). Section 221 as implemented by the Secretary does not appear to promote construction by non-Federal interests. While we agree that the Secretary must exercise judgment as to the calculation and eventual determination of credit which should be given, in light of the stagnant economy and lives at risk we think Federal law should promote fast construction of flood protection projects by non-Federal interests. We firmly believe that the additional certainty that would come with legislation would promote early construction of these essential projects. For

Senator Barbara Boxer and Senator James M. Inhofe
November 14, 2012
Page 2

these reasons, we strongly support the language contained in section 2010 of the draft bill.

We also write in support of section 2009 of the draft bill. This section would allow the acceleration of flood damage reduction projects in the Central Valley of California, while maintaining or decreasing the Federal costs associated with such construction. As you may know, most of the Federally authorized projects in the valley were originally authorized as part of the Sacramento or San Joaquin River Flood Control Projects as integrated systems. However, due to the multiple separate hydraulic basins which make up our valley, many of these levees are now studied and authorized for construction as separate projects. Section 2009 would allow the movement of excess work-in-kind credit to be moved from one basin to another as long as such movement was part of a comprehensive plan.

We also write in support of section 2017 of the draft bill. This section would direct the Secretary to conduct a comprehensive review of Corps policy guidelines on vegetation on levees. This is a vital issue in our region, as compliance with a national one-size-fits all policy ignores the habitat needs in our region. This approach also fails to acknowledge that in order to maximize flood risk reduction, our region must prioritize where limited local funds are to be spent.

Finally, we write in support of Section 2019 of the draft bill. This section would create a non-Federal implementation pilot program to explore ways of promptly reducing flood risk through alternative project management structures. This program has the potential to utilize many best management practices which have been developed in our valley and have resulted in cost effective levee construction. For these reasons we believe this program brings tremendous value to the mission of flood risk reduction.

For all of these reasons, we urge your committee to support the draft bill and to share your support with the House Transportation and Infrastructure Committee.

Sincerely,



JAMES B. GIOTTONINI
EXECUTIVE DIRECTOR

JBG:SS:md

cc: Tom Gau, Director, San Joaquin County Public Works
Fritz Buchman, Deputy Director, San Joaquin County Public Works
John Maguire, Engineering Services Manager, San Joaquin County Public Works

Senator BOXER. What happened, colleagues, when we did the highway bill, the outside support, the wind at our backs, is beginning to develop for this bill. I wanted to say to Senators Whitehouse and Carper, who weren't here for the opening statements, that our colleagues on the other side could not have been more cooperative and more willing to work with us.

So I have some very good feelings. And when you add all of that up and a very constructive criticisms of the draft, which I hope you will continue to do, because I laid it out there just to have a starting place, and we added a new section that deals with—dealing with extreme weather events, which was really brought home to us by Senator Lautenberg.

I think we have an opportunity here to make tremendous progress in the short term. And I wanted to say to the staffs of the Republicans that we are so ready to work with everyone. This coming week we are going to have a hearing, with the cooperation of Senator Inhofe and his wonderful staff, and with these here, we are going to have a hearing on the report that you started, Senator, on what happened on the ground with Hurricane Sandy, which is going to feature my colleague, Senator Lautenberg, and Senator Menendez, and the Senators from New York, maybe Connecticut. And we hope some State representatives.

With all that behind us, we are really ready to go. I just want to urge staff on both sides to please work with Jason and with Bettina and others who are here working every day on this. They have been working every day on this.

Let's get this done. Because as you know, once we get it out of here, and I envision a very good vote out of here, we then have to go to the leaders and say, let's move it through. And I have a very good feeling. So at this time, I have arranged, because Senator Whitehouse was so kind to take the gavel, stay here as long as it takes, handing him that gavel. He said he could do that. I am very appreciative, I have to catch an airplane.

The order now will be Senator Whitehouse will do his opening and questions, as I understand it, and then the other, Senator Carper can make an opening and Senator Lautenberg can have the floor for his questions. I will leave it up to you, as long as it takes, and as long as our witnesses are ready to stay.

Thank you very much, everybody.

**OPENING STATEMENT OF HON. SHELDON WHITEHOUSE,
U.S. SENATOR FROM THE STATE OF RHODE ISLAND**

Senator WHITEHOUSE [presiding]. Thank you.

What I will do is give a brief summary of my opening statement and then yield to Senator Lautenberg to do his questions. I think he has been here the longest. And then to Senator Carper.

Senator CARPER. I haven't given an opening statement. If I could, once you have said your opening, if I could just mention one thing.

Senator WHITEHOUSE. OK, with Senator Lautenberg's permission.

Senator LAUTENBERG. Yes, absolutely.

Senator WHITEHOUSE. Let me first recognize Terry Sullivan, from Rhode Island. I am delighted to have a Rhode Islander here. He is the head of The Nature Conservancy, which does terrific work in

Rhode Island. And I am very grateful that he is here, along with the other witnesses.

We obviously have this hearing in the wake of Hurricane Sandy, which did not hit my State, thankfully, as hard as it hit Senator Lautenberg's. But it hit pretty hard. It was the second costliest Atlantic storm in U.S. history, and reached up and down the Atlantic seaboard. It swept Rhode Island houses like this one right off their foundation. It is kind of nice to be showing this picture in this hearing room, because the fellow in the green jacket was a member of this Committee, Senator Lincoln Chaffee, who is now the Governor of the State, surveying the damage there in Matunuck. We had roads completely overwhelmed. This is digging out Atlantic Avenue in Misquamicut, and now at least emergency vehicles and construction vehicles could get through. But you can see the amount of dislocation that took place there. A hundred and thirty thousand Rhode Islanders lost power. Eight cities and towns implemented evacuation plans. Four out of our five counties were declared disaster areas.

And this is not the first time that significant weather events have hit Rhode Island hard. Here is beautiful downtown West Warwick, with folks being evacuated from their homes by Jet Ski down what would ordinarily be the main road as a result of our 2010 flooding, which was not ocean-based, but rain-based. That flooding exceeded anything we have seen in Rhode Island since we started keeping records in the 1870s. So it is clear that a warming planet increases the severity of these storms and that it loads the dice for extreme weather. So it is really important in this bill that we meet the infrastructure responsibilities that we have to keep communities safe and prosperous in a changing climate.

So I am delighted that Chairman Boxer included provisions that would help communities prepare for and mitigate the effects of storms like Sandy. I am delighted that there is a northeast coastal ecosystem restoration program, which is something that the damage that Sandy has created highlights. I am delighted that there is a reauthorization of the National Dam Safety Program. Rhode Island has more than 700 dams. We are not a big State, but we have a lot of dams. Many of them are very old. The famous Slater Mill Dam that ushered in the industrial revolution across this country was built in 1793. And it is still there.

Many of these dams are in poor condition. One hundred and seventy-nine are rated high or significant risk dams. And that is not a unique tale to Rhode Island. Our nation's dams received a D grade from the American Society of Civil Engineers in their 2009 Report Card, which cited more than 4,000 deficient dams, including more than 1,800 below which people were living that risked loss of life if they failed.

Another provision I requested to provide grant assistance to dams for the rehabilitation and repair of deficient dams is not included in this draft, but I promise to keep working hard to make sure that it gets into the final bill. I think that is an important piece of legislation.

I will close by saying that there is a lot of frustration about the Army Corps and its backlog and the pace at which projects go forward. We hope to look at perhaps creating a fast track for disaster

related Army Corps work that needs to be done. And I think it is noteworthy that the Corps has not published a list of de-authorized projects since 2009, which makes the whole backlog process non-transparent and vague. And that the fiscal transparency report that was required of the Corps by Congress in the 2007 WRDA reauthorization has never been, here we are in 2012, never been provided.

So I think there is a lot of great work that we have to do, and I will turn to Senator Carper for his opening statement before going to Senator Lautenberg for his questions.

**OPENING STATEMENT OF HON. THOMAS R. CARPER,
U.S. SENATOR FROM THE STATE OF DELAWARE**

Senator CARPER. Thanks so much, Mr. Chairman.

Thank you all for joining us today and for your comments. I want to commend our Chair and Ranking Member for the spirit in which they approaching this legislation. I thank our staffs—Democrat and Republican—for the good work that has been going on already and for the opportunity that has been afforded to all of us to provide input to the shaping of this legislation which we continue to this day.

Though the subject of today's hearing is investing in water infrastructure, including ports and navigation, waterways, flood control, and environmental restoration, I think what this hearing is really more about is job creation and economic growth, protection of life and property but also helping to establish a more nurturing environment for job creation and job preservation. My colleagues have heard me say from time to time that a major responsibility of ours is to create that nurturing environment for job creation. That includes investing in work force, a world class work force, the skills that we need to be competitive, investing in research and development and technology that can create goods and products that can be sold all over the world.

And also investing in infrastructure broadly defined, by broadly defined. Now is a critical time to be focused on infrastructure investment. However, it is a particularly challenging time, as we know, as both our Federal and State governments are facing daunting deficits.

But in this context, I think that the WRDA bill, the right WRDA bill, could be a good prescription for addressing several points in an economic recovery plan. We can create a more nurturing environment for jobs by investing in water infrastructure which in turn boosts trade and helps us sell American products around the globe. And we can do so in a way that is fiscally responsible.

I believe that each of the three Corps missions, and there are some excellent examples of each type, projects around Delaware, and I am sure my colleagues can find those projects in their States, but in the Delaware River, we are in the process of deepening the main channel in the Delaware River from 40 feet to 45 feet. This will help ports up and down the river, including the Port of Wilmington, to accommodate the newer, bigger ships that will begin arriving on the east coast when the Panama Canal expansion is completed. A deeper channel in the Delaware River means more

trade, and that is a message that I heard from businesses at the Port of Wilmington, which I recently visited.

Flood control projects along Delaware's Atlantic Coast are another great example. These projects protected the lives of our coastal population during Superstorm Sandy and prevented billions of dollars in damage. These projects protected a region that is vital to our State's economy. Tourism is the fifth largest private sector employer in Delaware. It represents about 15,000 full-time jobs, a lot more part-time jobs, and some \$750 million in annual revenue, which is a lot of money for a little State.

So that has been critical. However, as important as projects like these are, we also need to be mindful of provisions that can make sure our investments are smart, that they are strategic, and that they are prioritized. That is why I am proud to support key reforms. In our last WRDA bill in 2007, it was a pleasure to work with this Committee, Democrats and Republicans, to pass these provisions in 2007. And since we have worked to ensure that they are well implemented and having the desired impact.

As we move forward, I want us to keep these reforms in mind. Some of the best advice I have ever received since I came here was, find out what works and do more of that. And be focused on how to get better results for less money or better results for the same amount of money. Now is the time to examine how reforms are working that we adopted 5 years ago, but to do more of what works and to revisit and improve any policies that don't work as they were intended.

If I could shift gears for just a moment, I would like to take maybe a minute to talk about a recent feature in our State's newspaper, the Delaware News Journal papers. The feature included more than a dozen articles over the course of an entire week that showed that the sea level along Delaware's coast is rising, and communities are facing major challenges as a result. Whatever you believe may be the cause of this, it is fact that in Delaware and in other States, every year the water line is higher. And we need to take steps to ensure that the people and communities who depend on Corps projects and have confidence that those projects are built with rising seas in mind and are built to withstand the stresses of stronger, more frequent storms.

This is not just an issue for coastal States. Record flooding in the Midwest and Northeast last summer, and the droughts that we are still suffering from across this country are both evident that we need to be developing projects with the changing climate in mind. This Committee has tackled big issues several times already this year. I am confident that, working together, we can find agreement on a path forward on this legislation.

If you doubt for a minute, all you have to do is look back at the Committee's leadership, Democrat and Republican, who defied the naysayers to pass a multi-year transportation bill. So in closing, let me just say that I am delighted that our Chair and Ranking Member are using every last minute of this lame duck session to address some of these important priorities of our country. I want to commend our leaders of the Environment and Public Works Committee for putting such a high priority on moving this bill, and I

hope that we can continue to work on this important legislation when Congress returns after the session.

I thank you, and I thank my friend from New Jersey, my neighbor across the Delaware River, for allowing me to give that statement.

Thank you, sir.

Senator WHITEHOUSE. I will now recognize Senator Lautenberg for questions, then Senator Carper for questions, then I will close out myself.

Senator LAUTENBERG. A little question arises. You are looking at the three smallest States in the country. And that doesn't mean we don't have power. And it doesn't mean that we are spare of people. We make lots of use of our coastline. Each one of these States has a particular exposure to coastline. We are coastal States, and we enjoy that position. It brings in lots of business, lots of port opportunities, lots of recreation interest, and lots of second homes.

And so when we look at what abilities we have to finance these projects that are necessary, one thing strikes me that threads through the discussion here is that when it is dome, when a berm, a beach construction, or a dam is built by the Federal Government typically, the engineers, it is a far more reliable kind of structure than we will have if we depend on local funding and design to be able to do the right thing for the area. Because wherever you put a dam, wherever you turn a river flow, it may be an advantage to the community in which it is structured as opposed to the long-term value of something like that. And it is little more philosophical than I think we might deal with right now. But it certainly has to be considered as part of where we are going in the future.

When we look at the destruction that Sandy—and I resent that name, Sandy has kind of a nice feel to it, but it doesn't have the ominous threat that this Sandy brought along. So early reports show that communities with previously constructed Army Corps beach project experienced far less damage than those without the beach projects. So as we prepare for future storms, what might we have done? What could we do to get more Army Corps projects in place to prevent the kind of damage to beachfront communities and businesses and public infrastructure? Anybody among you, you are all experienced people, have any views on how we can change the structuring, the formula for design and Development of these things?

Mr. SULLIVAN. Senator, I don't know if it addresses it directly, but I think the proposal on the northeast ecosystem restoration approach is one way to look at this. I think those of us who live in coastal communities, and we have, in Rhode Island, we have a little over 350 miles of shoreline, understand the importance of the question you are asking. One of the things we believe is that you have to take a whole system approach in thinking about this, that sediment management is a big part of that larger approach of thinking about how natural resources can help buffer our communities from these extreme events.

So seagrass, beaches, dune structures, oyster reefs, which at one time we had many oyster reefs in our coastal waters, 85 percent of oyster reefs have now been extracted or died off because of pollu-

tion. They help to lessen the impacts. These natural resources help to lessen the impacts of storm events, particularly seawater surges.

So I think the idea of asking the Army Corps of Engineers to look at good science and taking a regional approach to how to manage these ecosystems in a way that delivers multiple benefits for our communities. Safer communities, economies, particularly our tourist economies that are more assured that in long run will have these natural features that people want to come and enjoy. I think that is one way.

I would just mention the Cape May Meadows project in your State, which is a wonderful project that the Army Corps of Engineers and the State and The Nature Conservancy participated together in implementing. We know—we have seen that folks in New Jersey went and took a look at that project. It was a beach re-nourishment plus an ecosystem restoration project. It was a combined project. And we know that that project held up very well under the winds and the surge and the strength of Sandy. So we believe there are other opportunities along the coast to do those kind of combined restoration projects that can protect communities and our economies.

Senator LAUTENBERG. Mr. Chairman, there are other questions, and I would suggest, because we have been here a long time, that the record be kept open and responded to with requests from any one of you, please. So with that, Mr. Chairman, I relinquish the opportunity to ask other questions right now, and we will send out inquiries to each one of these people.

Senator WHITEHOUSE. I am informed by Committee staff that there will be a way to have such a request made to the witnesses and to get the answers into the record that needs to be coordinated with the minority staff.

Senator LAUTENBERG. Thank all of you for your testimony.

Senator WHITEHOUSE. Senator Carper.

Senator CARPER. Thanks, Mr. Chairman.

Two questions, if I could, the first two to Ms. Larson. And it is regarding job creation at our ports.

There was a recent article—I believe it was in the New York Times—about the new wave of the super Panamax ships that will be shipping cargo when the renovation of the Panama Canal is complete. And dredging the Delaware River to 45 feet will certainly help the Port of Wilmington to compete for some of that business, along with other ports up and down the river.

I believe that one of the key roles of government, as I said earlier in my opening statement, is to create a nurturing environment for job creation and job preservation. We don't create jobs, as Senators, Governors, Presidents, Mayors, we don't create them, we help create a more nurturing environment for jobs. Could you tell me how you think this legislation will help you prepare for this opportunity?

Ms. LARSON. With respect to the Harbor Maintenance Trust Fund and ensuring that our deep draft ports are ready for the super tankers that will come in after the expansion of the Panama Canal, the legislation must provide a mechanism for full expenditure of the Harbor Maintenance Trust Fund for its intended purposes, making sure that the nation's ports and harbors are dredged

to their authorized depths and widths. I think making sure that our trade infrastructure is robust will enhance that job creation.

I will say that while we support the provision calling for the full expenditure of the Harbor Maintenance Trust Fund for its intended purposes, there is no guarantee provision in there. So we will continue to work with the staff to ensure that that guarantee is in there. We need to also make sure that it doesn't burden the rest of the civil works program.

Senator CARPER. Good. Thank you.

And my second question would be to Dusty Williams. I understand you are the President of the National Association of Flood and Storm Management Agencies.

Mr. WILLIAMS. Yes.

Senator CARPER. I mentioned earlier that one of our two statewide newspapers, the Delaware News Journal, featured more than a dozen articles over the course of a week that showed how rising sea levels along the Delaware coast are presenting communities and State agencies, families and businesses with some major challenges. Whatever people may think is the cause of this, it is a fact that in Delaware, and I know in other States, every year the water line is higher. It is not just an issue, as it turns out, for coastal States, but the Midwest and the Northeast of our country have faced record flooding in recent years as well.

What steps do you believe the Corps should take to ensure that the people in the communities who depend on flood control projects are protected from flooding, that those projects are built to withstand stronger and maybe more frequent storms, and that the Corps is prepared to respond to disasters when they do occur?

Mr. WILLIAMS. Thank you for the question, sir. It is a wide open one, I agree.

First, I guess as an engineer, and I am an engineer, we understand that Mother Nature will always win out in the end. So we have to recognize that. How to build better, bigger, and stronger, that is what engineers do. And we try to plan for the future; we try not to plan and build for today's condition, but we try to look into the future. It is a very difficult crystal ball. And the Corps is very proactive in that in looking at ranges of numbers, not just a single number, when they design. They look at factors of safety, trying to predict what climate change will do, among a bunch of other things.

But probably the best thing we can do as a nation, in addition to the engineering part of that, is community awareness, public awareness of where people live, where they will expect to have flooding, what the danger is and what they can do about it in the meantime. Even with the most robust program we can put together, there will still be areas that will be subject to flooding for quite some time. People that are aware of their surroundings and know what to do, as simple as an evacuation plan, or know where they might go for help and who they might call, is a very proactive step to get that way. The Corps certainly, among all the Federal agencies, is looking in that direction to improve the public awareness in addition to infrastructure. I think that is a very key part of that.

Senator CARPER. Good. Thank you. Thank you both, and again, thank you all for joining us today and for your input and your willingness to continue to respond to other questions that we might. Thanks so much.

Thanks, Mr. Chairman.

Senator WHITEHOUSE. Thank you all. As I wrap up the hearing, I just had a couple of questions I wanted to ask. The first is for Mr. Sullivan. I was at the Coastal Resources Management Council gathering, their retreat the other day. Grover Fugate, who is, for the record, the Executive Director of our CRMC, was saying that the rate of change that is being experienced along the Rhode Island coast is accelerating and has accelerated to such a point that is actually running ahead of the capacity of the science and the observers to keep up. And in light of that, could you comment on the Northeast Coastal Region Coastal Ecosystem Restoration provision and its importance and value?

Mr. SULLIVAN. The overriding idea is that, and the change we hope to see this WRDA bring about is to ensure that we begin to take a whole systems or a larger system approach to designing infrastructure and also using soft solutions to address some of these problems. Clearly, our globe is becoming more dynamic, and we are having more extreme storm events. The 100-year flood, or the 2010 flood, in Rhode Island was a major economic hit to Rhode Island, with \$100 million worth of damage. These kinds of events we expect will happen more frequently.

And so what we hope to see in this Northeast Ecosystem Restoration proposal is the Corps begin to use the best available science that we have today, to understand how these larger systems work, and then to apply that knowledge to restoration programs in a way that ensures that we are doing the most cost effective thing and the most effective approach to addressing the threats at a regional scale.

Senator WHITEHOUSE. Are you worried, Mr. Sullivan, that given the backlog at the Corps and the glacial pace at which many Corps-authorized projects proceed, you could be in a situation in which by the time the Corps actually gets around to doing the project, the situation has changed enough that is now no longer up to date, and now you have to go back and start again?

Mr. SULLIVAN. Yes.

Senator WHITEHOUSE. And the glacial pace of getting to that, they kind of never catch up because they are not nimble enough to get the work done in time to have the effect, while the conditions—

Mr. SULLIVAN. I do think that is always a concern. And I think that some of the provisions in this bill are meant to get at that. We would welcome the opportunity to work with the Committee to suggest other ways for expediting some of these studies and project implementation. So that is absolutely a concern.

But I think the idea that we need to move forward away from a project by project way of doing things, to understand how these systems work and to really bring the best science available to the table, and to implement projects that are going to address some of these major issues that we are now facing on our coastline is imperative.

Senator WHITEHOUSE. And Mr. Curtis, I have over and over again referred to your Society of Civil Engineers Report Card. I think the one that I referenced in my earlier statement was from a few years ago. What is your update, postcard, elevator speech of the summary of the status of our water and wastewater infrastructure in the country as of today?

Mr. CURTIS. Actually, it is the same report card that you probably looked at back in 2009. However, we have another update coming out in February 2013.

Senator WHITEHOUSE. Any previews of coming attractions for us?

Mr. CURTIS. I cannot give you the specific grades for the infrastructure rankings. I can say that not many of the infrastructure elements in this country have improved. There are a couple.

Senator WHITEHOUSE. My recollection is the Environmental Protection Agency has done a study that shows that we have \$600 billion worth of water and wastewater infrastructure work that needs to be done in order to reach that goal. We have \$6 billion of that into the Recovery Act. So we have 1 percent of what we needed to get done done and the Recovery Act, which leaves a huge gap still to work on.

Mr. CURTIS. Correct. And you are referring to the Failure To Act impact on water and wastewater that was issued just probably around a year ago. Yes. And the particulars associated with that report will be part of the 2013 infrastructure report card.

Senator WHITEHOUSE. I would invite the other witnesses to comment. One of my most intense frustrations around here is that we have these immense infrastructure needs. They are not going to get better. They are going to get worse. The old Yankee saying that a stitch in time saves nine implies that if you do it now, it will actually cost less than later. Cost of capital is probably not going to be lower than it is right now for a very long time for our country.

And yet we have banged up against an unwillingness to invest in our infrastructure. To me, that is just, to use another phrase, penny-wise and pound-foolish. Because we are going to have to build this infrastructure sooner or later, we are going to have to repair it sooner or later. The work needs to be done, the waterworks need to be built, the repairs to the shorelines and so forth need to be done.

And you end up, unless you built a bridge to nowhere, with a valuable asset that was worth spending the money on. So the wealth of the nation is actually enhanced by it, even though it is now a capital asset rather than cash in your budget. And yet we seem jammed up on it. So if there is any way that your associations can continue to push to get this done, we need the jobs now still. My State is still at a very high unemployment level. And we need the work to be done for the sake of the infrastructure.

So if anybody has a final comment on that point, I would love to hear from you.

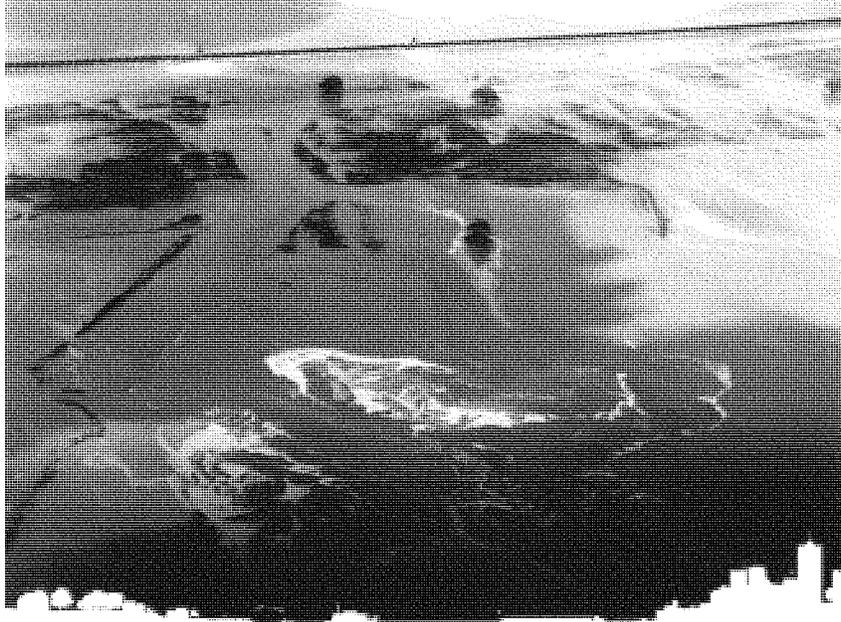
Ms. Larson and Mr. Williams.

Ms. LARSON. I agree completely that we are not making the needed investments. If we look at any variety of projects across the water resources spectrum, whether it is our aging infrastructure, inland locks and dams, whether it is flood control structures, the Mississippi River and Tributaries project has a 34 to 1 return on

investment ratio. It is critical, I think, that we find ways to invest, whether it is the alternative financing that is suggested through the course of the bill, but also for the Congress to re-engage in these investment decisions and to take back some of the control that it has ceded to the executive branch.

But you are correct; we need to find ways to invest in this critical infrastructure, for jobs, for the economy, for the environment, and to maintain our position in the global economy.

[The referenced information follows:]



ROOM FOR THE R I V E R

Summary Report of the 2011 Mississippi River Flood and
Successful Operation of the Mississippi River and Tributaries System

PREPAREDNESS / RESPONSE / RECOVERY / MITIGATION



US Army Corps
of Engineers.



MISSISSIPPI RIVER COMMISSION
VICKSBURG, MISSISSIPPI

November 13, 2012

MISSISSIPPI RIVER COMMISSION
P.O. Box 80
Vicksburg, Mississippi 39181-0080

PRESIDENT and MEMBER
Maj. Gen. John W. Peabody
Commander, Mississippi
Valley Division
Vicksburg, Mississippi

MEMBERS
Honorable Sam E. Angel
Sr. Counsel
Lake Village, Arkansas

*Honorable R. D. James
Civilian/Civil Engineer
New Madrid, Missouri

*Honorable Wm. Clifford Smith
Civilian/Civil Engineer
Houma, Louisiana

*Brig. Gen. Margaret W. Surcham
Commander, Great Lakes &
Ohio River Division
Cincinnati, Ohio

*RADM Gerd F. Glang
National Oceanic and
Atmospheric Administration
Silver Spring, Maryland

*Col. Anthony C. Funkhouser
Commander, Northwestern
Division
Portland, Oregon

SECRETARY
Col. John C. Dvoracek
Vicksburg, Mississippi

EXECUTIVE DIRECTOR
Mr. T. Stephen Gambrell
Vicksburg, Mississippi
(501) 634-5766

Email: cermd-ea@usace.army.mil
Web site: www.mrd.usace.army.mil/mrc

** nominee
* designee

The Mississippi River and Tributaries (MR&T) project is one of the world's most comprehensive and successful flood control and navigation systems. More than a dozen significant floods have tested the MR&T over the past 80 years, but none as extensively as the 2011 record flood. In 2011, the MR&T system performed as designed by accommodating the river while using only 85 percent of its design capacity. Yet at the same time, not a single life was lost. Additionally, more than \$230 billion in flood damages were prevented in a single year. Since its inception, the MR&T system is credited with preventing \$612 billion, or in excess of half a trillion dollars, in cumulative flood damages. At an investment level of \$14 billion, those savings result in a \$44 return on every \$1 invested.

We owe a debt of gratitude for the wisdom, tenacity, and efforts of our forbearers who devised, funded, constructed, and maintained this innovative system that has proven so beneficial to so many for so long. We extend our sincere appreciation to the thousands of local land owners, levee boards, cities, states, and other partners who desperately fought the flood fight alongside us and who continue to stand with us during the path to recovery. The region and the nation are grateful beneficiaries of those endeavors.

After more than a year of evaluation and documentation, the expansive MR&T 2011 Post Flood Report and the condensed "Room for the River" booklet will serve as educational tools and reference points for our citizens, decision makers, and future flood fighters. Facts, figures, and lessons learned from the 2011 flood serve to hasten and guide our endeavors to rebuild and improve the MR&T project, ensuring continued safety and security of our citizen's lives and livelihoods.

The U.S. Army Corps of Engineers and Mississippi River Commission, working hand-in-hand with our strong partners, continue to keep an ear to the past, maintain a hand on the present, and project a steady voice for our nation's bright and productive future. We continue to be generational beneficiaries of the God-given world's third largest watershed.

Essays and Building Strong!

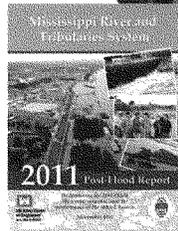
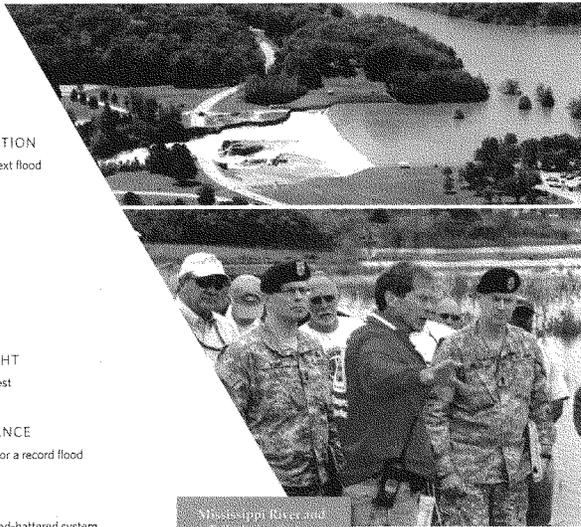
John W. Peabody
Major General, U.S. Army
Commander, Mississippi Valley Division
President, Mississippi River Commission

Since 1879, the seven-member Presidentially appointed Mississippi River Commission has developed and matured plans for the general improvement of the Mississippi River from the Head of Passes to the Headwaters. The Mississippi River Commission brings critical engineering representation to the drainage basin, which impacts 41% of the United States and includes 1.25 million square miles, over 250 tributaries, 31 states, and 2 Canadian provinces.

Listening, Inspecting, Partnering and Engineering since 1879

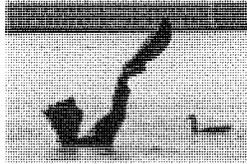
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FROM TOP: The flood overtops the Wappapello Reservoir Spillway, damaging a county highway and the spillway itself. Maj. Gen. Michael Wolfsh (right) and Maj. Gen. John Paulbody (left) inspect flood damages. This publication is a summary of the comprehensive 2011 Post-Flood Report.

INTRODUCTION: WINNING THE NEXT FLOOD



This post-flood evaluation seeks to answer three main questions. How did the Mississippi River & Tributaries System perform during the record Mississippi River flood of 2011? How might it perform in its post-flood condition? What might it need to protect life and livelihoods into the future?

FROM THE EARLIEST DAYS OF MISSISSIPPI RIVER SETTLEMENT, the need to protect river towns and industries from floods has proven a daunting and often controversial challenge. When natural levees couldn't provide enough protection, residents, local levee boards and eventually the Federal government would build them ever higher, using horse-drawn equipment that evolved into increasingly sophisticated engineering designs and construction methods.

More than construction methods changed in the 1920s, spurred in part by the thinking of then Chief of Engineers Maj. Gen. Edgar Jadwin. A tragic flood in 1927 was sending shockwaves through the valley—right behind the raging floodwaters that inundated 16 million acres of cities and farms—when Jadwin instructed the Mississippi River Commission to change its flood prevention philosophy.

Levees would remain the system's backbone, but the proposed system authorized by the Flood Control Act of 1927 would also make room for the river and its natural tendencies. In extreme flood years, and only then, floodways would divert flows into areas designed to be inundated—areas in some cases populated by homes, farms and wildlife but where flooding has been negotiated through purchased easements—and thus keep even peak floods contained in the main channel.

“We have developed a roadmap here for future leaders and decision makers.”

The Mississippi River and Tributaries Project, the name given to the resulting system, has become one of the world's most comprehensive and successful flood control and navigation systems.

The enhanced levees and floodwalls—along with new floodways, reservoirs, cutoffs, tributary improvements, pumping stations and more—were designed to operationally complement one another and significantly augment the capacity of the river to safely convey floodwaters. (SEE SCHEMATICS, PPS. 20).

The new system also veered from long-held practices in another key way. Instead of planning and designing from the perspective of the last great flood, the integrated system was developed to contain the “Project Design Flood,” the largest flood considered to have a reasonable probability of occurrence.

That, to some minds, was perilously close to what hit in early spring 2011, when torrential rains fell in the central Mississippi River valley, adding fury to a river swollen from a massive upper river snow melt. The timing could not have been worse. It is significant to note that the Mississippi River drainage basin encompasses all or part of 41 percent of the contiguous 48 states, and that rainwaters and snow melt from 31 states and two Canadian provinces make their way into the main stem of the Mississippi, gaining force en route to the Gulf of Mexico.

That spring, the rapidly melting record snows and unprecedented 600 to 1,000 percent above average rainfall in late April created a convergence of floodwaters that delivered the system's largest test to date, damaging property and the flood control system itself. Yet that flood control system prevented hundreds of billions of dollars in damages and confronted a record flood without the loss of a single human life. That compares to the 500 killed and 700,000 left homeless in the comparable 1927 flood. All told, experts estimate the 2011 flood was approximately 85 percent of the project design flood.

Leading the flood fight were Maj. Gen. Michael Walsh, then president of the Mississippi River Commission and Commanding General of the Corps' Mississippi Valley Division, and Maj. Gen. John Peabody, also a river commission member and then Commanding General of the Corps' Great Lakes and Ohio River Division.

As Maj. Gen. Peabody sought to hold floodwaters back through reservoirs on the Ohio River tributaries, Walsh relied heavily on the wisdom of the system's creators. He followed carefully prescribed operational manuals built around lessons hard-learned from repeated flooding. Just as those past lessons have been integrated into the system's development and operation, this report similarly seeks to inform those who will be at the decision-making helm in future flood fights.

A COMMISSION WITH A RIVER MISSION

The Mississippi River Commission, which directly oversees the Mississippi River & Tributaries Project, first met some 130 years ago, with Benjamin Harrison—who'd go on to serve as the country's 23rd president—as one of its charter members. The seven member group, appointed by the President, oversaw the river's transformation from one in which boats were regularly caught on snags, sandbars and uncharted shoals to a successful conglomeration of levees, spillways and reservoirs credited with protecting many lives in the 2011 flood. Two members are required to hold civil engineering degrees. All seek to find solutions not just to flood control but to all water resource challenges facing the watershed, working with other agencies and groups to develop a sustainable long-term term and collaborative vision for the balanced and appropriate use of the nationally significant resource.

"As changes happen in the system, from the ever-changing river and changing land use patterns, we need to track and learn from them in order to know if we have to modify the system to address those changes," said Hank DeHaan, Regional Project Manager for the Mississippi River and Tributaries (MR&T) Post-Flood Evaluation. "If we just operate the system as we've done in the past, we won't be doing the best we can to fight floods in the future."

Post-flood evaluation in brief

Since its inception in 1928, the Mississippi River and Tributaries Project has evolved into one of the most comprehensive and successful flood control and navigation systems in the world. Its backbone lies in the 3,787 miles of levees and floodwalls on the river's main stem, backwaters and tributaries, all of which dwarf those build in the early to middle part of the 20th century.

The Flood of 2011 tested the system like none before. Flow and stage (height) levels broke records at dozens of river gages from Cape Girardeau, Mo., to Gulf of Mexico. And, for the first time, three of four floodways—Birds Point–New Madrid, Murgoma and Bonnet Carré, were all operated during a single flood event.

The analysis that follows indicates success by most any measure. River stages and flow levels were comparable to the major floods of 1927, 1937 and 1973, but the flood was contained within the system to a much greater extent. And although the 2011 flood caused extensive damages to many MR&T components, the system performed as designed, and no recorded deaths were attributed to the event.

Collaborations with local and state partners were key in both planning and execution of flood fight measures—ringing sand boils, constructing water berms, blocking culverts and ditches, and even raising deficient sections of the Mississippi River levees to authorized and safer grade. Floodwaters still weakened or damaged the flood control system itself, requiring some \$2 billion in estimated repairs. The flood also deposited sediment in unwanted places, restricting the nation's economically critical navigation system and some of its most fertile agricultural lands. Although harm occurred, the system prevented more than \$237 billion in damages that would have resulted due to flooding of large portions of the Mississippi River Valley.

A dedicated, multidisciplinary team of engineers, biologists, economists, GIS technicians, project and emergency managers and other scientists worked on the post-flood evaluation effort via MR&T component teams assigned to areas like levees, reservoirs and floodways. Through Operation Watershed, work began immediately to fix critical high-risk damages and will shift to less critical items until the system is brought back to pre-2011 conditions. This report documents their dedicated efforts to not only identify system repair needs but also identify ways to improve system operation and performance.

"What we're trying to look at is how well we did in fighting the 2011 flood, how well the system performed, and what we can do better next time," DeHaan said. "We have developed a roadmap here for future leaders and decision makers."

2011 FLOOD BY THE NUMBERS

21,000

Residential and commercial structures damaged by the 2011 flood

1,500,000

Residential and commercial structures reported to have been impacted had the Mississippi River & Tributaries System not been in place

\$2.8 billion

Value of damage from the 2011 flood

\$237 billion

Value of damage prevented by the MR&T System

\$612 billion

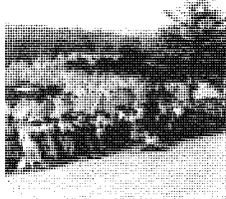
Generative damage prevented by the MR&T System

\$14 billion

Natural gas demand in the MR&T system

HISTORY: FLOOD BY FLOOD

Flood management philosophy evolves, flood by flood.



ABOVE: Refuge camp set up following the 1927 flood. OPPOSITE: Greenville, Miss., one of many river towns devastated by that flood.

WHO CAN BLAME THE MISSISSIPPI RIVER'S EARLY SETTLERS for taking their clues from nature? Nearly all civilizations have settled along rivers first, due to the natural source of transportation and water supply, often relying for flood protection on banks raised a meter or two by the rivers' natural processes.

Then in 1717, the French sought to protect their investment in the then-new settlement of New Orleans by ordering construction of the first man-made levee (derived from the French, "to raise") along the Mississippi River. It was three feet high and 5,400 feet long.

Under French law, landowners on the Mississippi's west bank were required to keep those levees maintained or forfeit valuable land, and compliance hastened even more development. The Louisiana Purchase, and then the coming of the steamboat, opened the doors to more people. Residents built homes and farms and industries until, by the 1850s, New Orleans was the nation's fourth largest city. It was booming with port trade and Parisian fashion—growth mainly attributed to the mighty river along whose banks it sat.

But the city still flooded regularly, as did others across the Mississippi River Valley. In 1849, major flooding prompted the Swamp Act, which transferred low-lying lands to the states, funded levee construction and set up levee boards. A valley survey followed, and findings would prompt a lively debate over whether levees alone could control the river or if man-made outlets and spillways were a necessary addition.

The levee system eventually came under the purview of the seven-member Mississippi River Commission, appointed by the President. Over the next 40 years, the commission worked with states and local levee districts to set standards and improve the system. For half of that time, federal law prohibited the expenditure of funds for the protection of private property for flood control. Then, after deadly back-to-back floods in 1912, 1913 and 1916, Congress passed the Flood Control Act of 1917, authorizing flood control on the Mississippi River and elsewhere as a federal mission, and hundreds of miles of levees were raised and strengthened as a result. By the mid-1920s, the commission believed the levee system to be "now in condition to prevent the destructive effects of floods."

Then it started raining in the spring of 1927, and to quote one flood observer at the time, "it just never did stop."

The flood overwhelmed the levee system, and within days, the river flowed unabated through too many system leaks to count. When the damage was tallied, more than 40,000 buildings were destroyed and many times that rendered unlivable. Also destroyed were industries, transportation systems, crops and other farm products—1.2 million chickens, 271,000 livestock and more than 6 million muskrats, those a key income source for the Louisiana Cajun population. The estimated loss of \$1 billion was a third of the federal budget at the time.

The tragedy drove home the fact that walls of earth would never completely keep the river completely constrained, no matter how high. With the Flood Control Act of 1928, Congress directed the Corps to develop a flood control system that would prevent a repeat of the tragedy.

Of the 300 competing plans put forth, Congress preferred and adopted the one known as the Jadwin Plan and its two principal innovations. Floodways would make room for the river by diverting peak flows and holding down stages in the main channel. The system also would be designed to protect

FLOOD HISTORY on the MISSISSIPPI RIVER

EVENT	RESPONSE	EVENT	RESPONSE	EVENT	RESPONSE	EVENT	RESPONSE	EVENT	RESPONSE
1782	1782	1849, 1850	1849	1861–1865	1879	1890	1890	1927	1928
Greatest flood in the first century of Louisiana settlement.	Crevasse repaired, no serious loss by planters.	Repeated flooding along Mississippi Valley.	Swamp Act represents first steps toward federalizing flood control.	Civil War leaves levees in disrepair.	Mississippi River Commission (MRC) created. Flood control, through levee-only policy, seen as integral part of river navigation.	Flood	Many levees raised from 38 to 46 feet.	Great Flood: 27,000 square miles of lower river flooded, up to 500 dead, \$1 billion economic losses equaled a third of federal budget.	Flood Control Act implements Jadwin Plan/ adds floodways to supplement levees. Project flood developed by MRC and Weather Bureau.



The lower river was basically a funnel for the world's third largest drainage basin—exceeded in size by only the Amazon and the Congo.

against a "project" flood, the largest hypothetical flood likely to occur based on a meteorological examination of historic rainfall and runoff patterns.

As noted in 1928, the Mississippi River and Tributaries System developed from the act was "designed to conform to the natural tendencies of the river; it is not forced or driven."

Levees remained the system's first line of defense in protecting the vast river valley from periodic overflows of the Mississippi. Defense certainly was needed in the world's third largest drainage basin—exceeded in size by only the Amazon and the Congo. Runoff from as far east as New York and as far west as Montana contributes to flows that make their way down the river, into the Gulf of Mexico.

Under the plan, though, water would be moved laterally as opposed to vertically, through floodways used in tandem with the levees. But floodways would only be operated according to precisely prescribed conditions, in the case of the Birds Point–New Madrid Floodway, when river gages reach a certain height on the Cairo gage.

That location, near the confluence of the Ohio and Mississippi, is the system's first check. When the river reaches a critical stage on the Cairo gage, the Birds Point–New Madrid—one of four system floodways—would be activated to divert up to 550,000 cubic feet per second (cfs) and prevent floods from overtopping levees in the Mississippi-Ohio confluence area, along and immediately downstream of the Birds Point–New Madrid Floodway.

Across a broad geographical landscape, the MR&T system uses a combination of flood control reservoirs, backwater areas and channel improvements to help the levee system manage floods. In the upper

TO DIVERT OR NOT TO DIVERT

The 1927 flood demonstrated that the confined channel along the Mississippi River didn't have the capacity to pass great floods without considerably increasing levee height. Original plans for the Mississippi River and Tributaries Project thus provided for five floodways designed to safely divert excess floodwaters past critical reaches in the levee system to keep major floods from overtopping the most vulnerable levees.

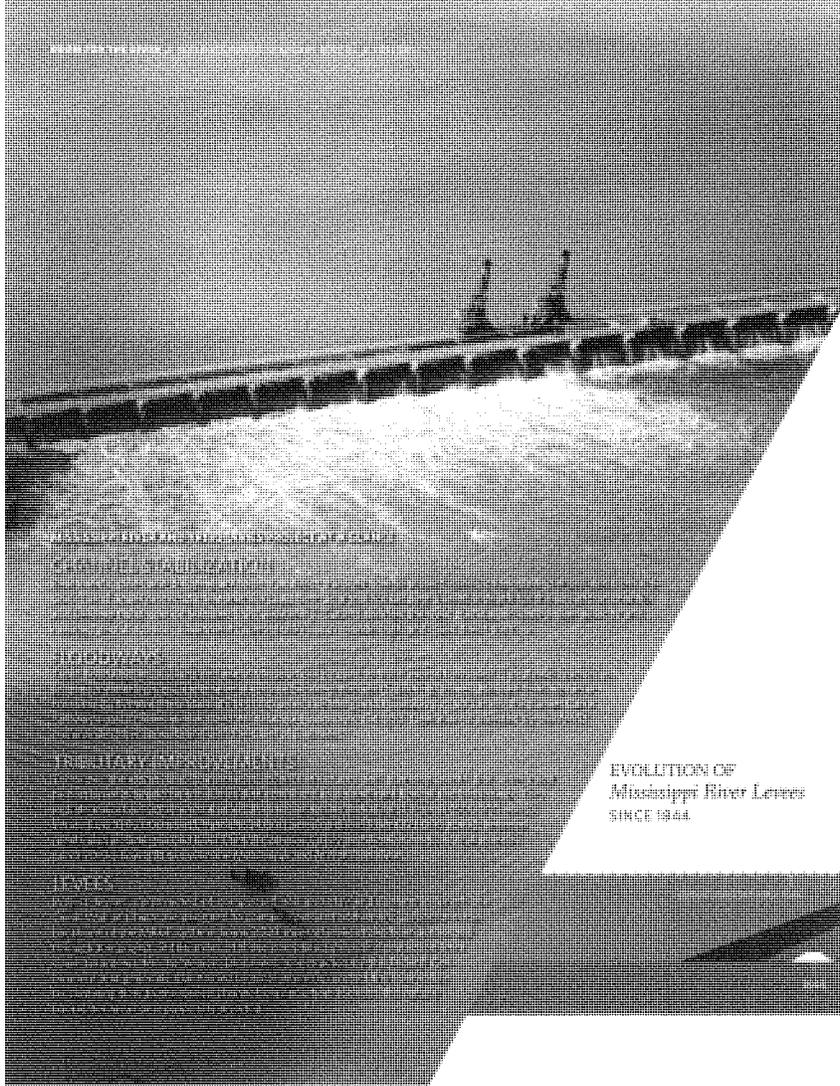
The five floodways were Birds Point–New Madrid (SE Mo.), Boeuf (SE Ark./N. La.), the East and West Atchafalaya (paralleling the Atchafalaya River), and the Bonnet Carré (near New Orleans).

It was generally accepted that floodway inclusion was a necessary turnaround in pre-1927 engineering policy, but the reality of their implementation proved a tough political sell. Private land once protected by levees would in some cases be subject to inundation to benefit private landowners elsewhere in the valley. It was a controversial concept, though less so where the government was agreeing to compensate floodway landowners.

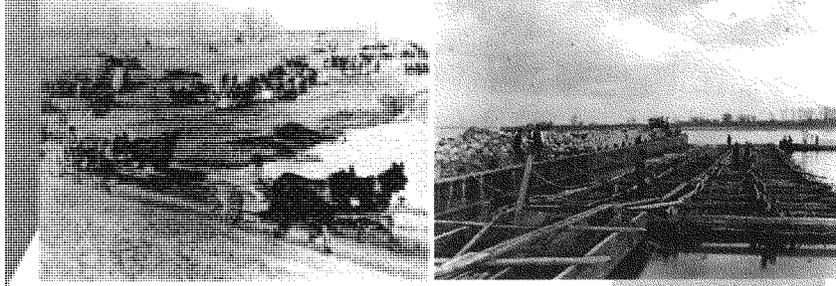
President Calvin Coolidge approved the federal acquisition of land and flowage rights within the Bonnet Carré Floodway and Birds Point–New Madrid. Controversy arose when Coolidge acquired a right of way for construction in the Boeuf and Atchafalaya floodways but didn't include similar flowage easements, limiting the protection level wouldn't change.

In the midst of court cases, construction of those two floodways was delayed, nearly leading to a return to pre-1927 flood control policy.

EVENT	RESPONSE	EVENT	RESPONSE	EVENT	RESPONSE	EVENT	RESPONSE	EVENT	RESPONSE
1929–1932	1932	1937	1938	1940s	1963	1973	1973	2011	2011
Boeuf and Atchafalaya floodways challenged in court.	Cutoffs added; significantly lowered flood stages in 1937, beyond.	Flood 365 die, \$500 million in losses; New Madrid and Bonnet Carré Floodways opened for first time.	Flood Control Act adds reservoir construction and headwaters projects.	Studies indicate potential of Atchafalaya capturing Mississippi River flow.	Old River Control Complex construction completed.	Largest water volume flows down Mississippi since 1927 flood; Bonnet Carré and Morganza spillways both activated.	Flood Disaster Protection Act makes purchase of flood insurance mandatory in some cases; floodway mapping gets more sophisticated.	Great Flood of 2011 flows largest on record; 3 of 4 spillways open for first time in history.	Disaster appropriation funds flood damage repairs; post-flood report documents system performance/ improvements.



EVOLUTION OF
Mississippi River Levees
SINCE 1944



ABOVE, FROM LEFT: Early levee construction, around 1910. Workers construct a willow mat that will be loaded with rock for channel protection or wing dike formation.

stretch, the backwaters of the St. Francis, White, Yazoo and Red Rivers assist the Birds Point–New Madrid Floodway in making extra room for the Mississippi River. From the Red River to the Gulf of Mexico, the plan is more elaborate, starting with the Old River Control Complex, which was constructed in 1954 to prevent the Atchafalaya River from capturing the Mississippi on its way to the Gulf. The Control Complex maintains a consistent 70/30 split in flow between the two rivers.

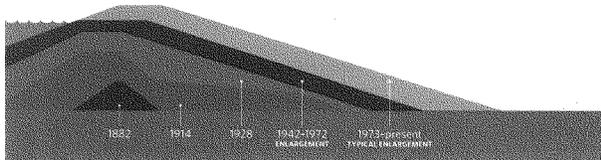
Thirty miles further downstream, the Morganza Floodway stands ready to divert up to 600,000 cfs from the Mississippi River to the Atchafalaya basin, when flows are projected to exceed 1,500,000 cfs or a rate that would fill a major football stadium every 82 seconds. Additional control is offered through the floodway in the West Atchafalaya basin and the Bonnet Carré Spillway, located 30 miles upstream from New Orleans. The six-mile-long Bonnet Carré Floodway empties into Lake Pontchartrain and is designed to ensure that peak flows at New Orleans don't pass 1,250,000 cfs.

Testing the system

A flood in 1929 tested the new system, and for the first time, all mainline levees held. One of the system's largest floods followed in the winter of 1937, due to record flows from the Ohio. The combined flows of the Ohio and Mississippi rivers then surpassed the highest flood stages ever experienced between Cairo and Helena, Ark., and on Jan. 24 and 25, 1937, the newly-established Birds Point–New Madrid Floodway was used for the first time.

The Bonnet Carré Spillway operated for floods that followed in 1945, 1950, 1973, 1979, 1983, 1997 and 2008. While the Bonnet Carré was operated for each of these floods, the Morganza Floodway, which sends diversions into the Atchafalaya Basin at up to 600,000 cfs, was operated only in 1973. Birds Point–New Madrid was not needed again until 2011's flood set records with its flows. ■

Levees are man-made structures, usually an earthen embankment, designed and constructed with sound engineering practices to contain, control or divert the flow of water in order to reduce risk from temporary flooding. A levee is built parallel to a body of water (most often a river) to protect the lives and properties behind it. No levee provides full protection from flooding, but efforts are continually made to reduce risk and keep levees operating efficiently.



The Pittsburgh Press

EDITORIAL, AUGUST 12, 1929

An uneasy compromise

"So much has been written in criticism of the Jadwin plan since the Mississippi flood control was adopted that a certain amount of uneasiness exists regarding its feasibility.

"The Jadwin plan is simple in theory. It recognizes that during flood periods all the water cannot go down the main channel of the river without causing widespread inundation of surrounding territory. To relieve the main channel, several artificial channels, or spillways, are created to divert the water.

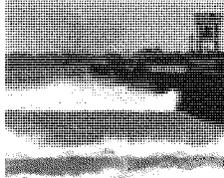
"Some civilian engineers assert that the Jadwin plan is unworkable, that the government expenditure far in excess of \$400,000,000 will be wasted. Other criticism is directed against the manner in which landowners in the artificial spillways are to be reimbursed for flood damages. But additional legislation can be enacted, if necessary, to correct this.

"We cannot see this is the time to rebash the old engineering dispute, which so long delayed any kind of plan being put through. Coolidge approved the Jadwin plan. Congress approved it. Work has begun. Already some \$70,000,000 has been allotted and much of it spent.

"Considering these facts, and the additional fact that an engineer is in the White House to guard people's interests, it does not seem that any good purpose can be served by this periodic professional opposition to the official flood control project."

ROOM FOR THE RIVER / 2011 POST-FLOOD SUMMARY REPORT

2011: A RECORD FLOOD



The 2011 Mississippi River flood played out over the course of several weeks in April and May, but U.S. Army Corps of Engineers officials already suspected in late March there might be trouble ahead.

THE MAIN INGREDIENTS OF THE GREAT FLOOD OF 2011 were an unseasonably wet autumn of 2010 and a record snowfall in Iowa, Minnesota and Wisconsin.

Frigid cold followed, and severe winter storms piled even more snow across the Upper Mississippi River states and the Ohio River Valley. By mid-February, far more snow cover than typical extended across large sections of the Mississippi River basin, upstream of Cairo, Ill., where the Ohio River joins the Mississippi. Up to 40 inches of snow fell in some areas in a single month.

In essence, nature had created a massive reservoir of frozen water, one that would quickly make its presence felt as soon as temperatures started to rise.

That wouldn't be long. Spring thaw began in February in the middle Mississippi and Ohio River valleys. Unseasonably warm temperatures and heavy rainfall rapidly melted the remaining Ohio Valley snowpack in less than 48 hours, releasing up to four additional inches of water as runoff. The one-two punch—rapidly melted snow, combined with sudden new rainstorms—caused widespread but minor flooding along the Ohio River and middle Mississippi. It was but a glimpse of what lay ahead.

As a rainstorm tracked over the upper Mississippi River basin, it had the same effect on Minnesota and Wisconsin that it had on the Ohio River Valley. Heavy rainfall caused the thick snowpack to melt rapidly, sending torrents of water into streams across the region that carried water to the Mississippi. On March 29, the Mississippi River at St. Paul, Minn., exceeded major flood stage and reached its eighth highest crest ever—19.01 feet.

By mid-April, flood waters on the upper Mississippi and Ohio rivers were bearing down on Cairo, Ill. Complicating matters, another massive storm system packing torrential rains was heading toward the region. It was a recipe for trouble.

Reducing the crest

On April 21, forecasters predicted the Mississippi River could rise to 61.1 feet at the Cairo gage—21.1 feet above flood stage—by the first week of May.

That forecast prompted Army Corps officials to take the first of what would become a series of bold actions to manage a massive river that was growing larger by the day.

As the first line of protection, Corps-operated reservoirs along tributaries of the Ohio and Mississippi Rivers were used to capture as much of the stormwater runoff as possible. Filling some reservoirs to historic or near-historic levels helped keep the lower river's crests from overtopping the flood control structures authorized in 1928 as part of the ambitious Mississippi River & Tributaries project.

GLOSSARY OF FLOOD TERMS

Flowline: The MR&T Project Flowline is the level or stage of the water surface for the project's design flood at every point along the system, i.e., the maximum flood event for which the project is designed. When plotted on a graph of stage versus river length, it shows as a flowline.

Revetment: A hard substrate like rock or concrete that helps 'revet' or retain an embankment to protect it from getting eaten away by a strong river current.

Sand boil: An eruption of water through a bed of sand, such as occurs when pressurized water penetrates beneath a levee and comes out on the landward side.

Scour: The erosive force of moving water when velocity exceeds what a riverbed can tolerate, making it give way and create a hole or "scour." River engineers make use of the erosive forces of moving water to provide desired navigation and flood risk management channels.

Stages: Relative river (water) elevations, tied to a fixed point monitored through a network of river gages.

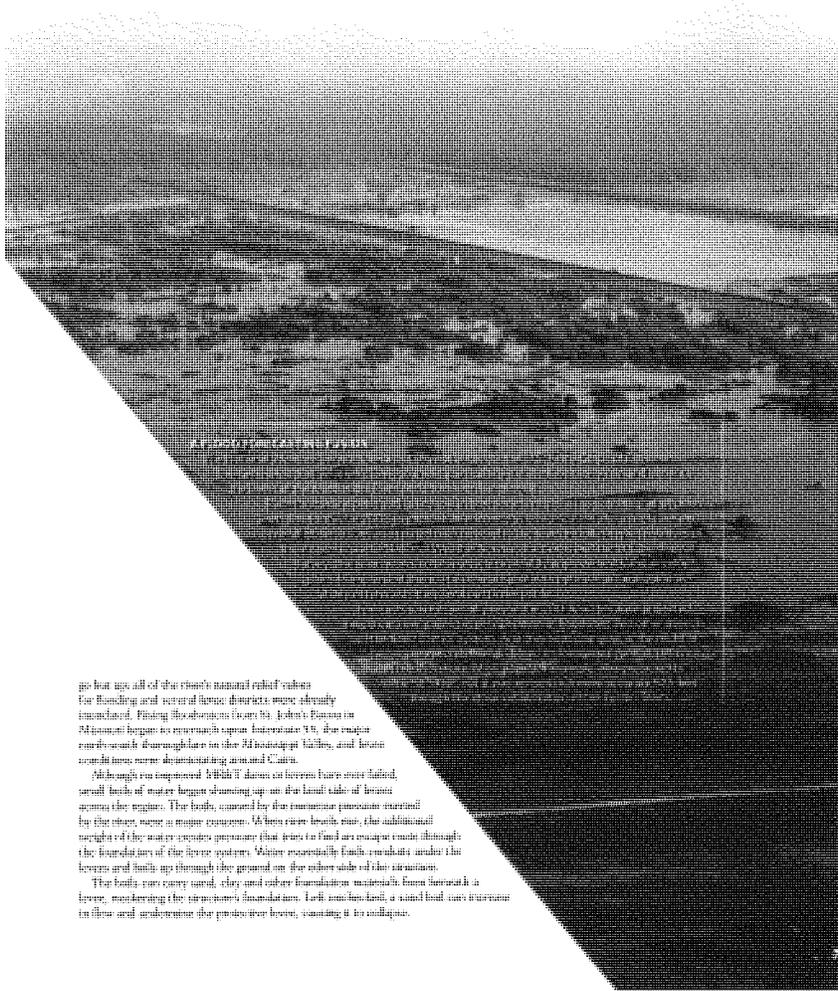
It was a tall order: The city of Cairo, at the confluence of the Ohio and Mississippi rivers, was nearly an island.

Convinced that the flood had the potential to reach record levels, Maj. Gen. John W. Peabody issued overarching guidance to senior leaders and district commanders in the Ohio basin. Peabody directed that flood duty missions took priority over everything else his staff was working on; he also wanted his staff to consider all alternatives, including those outside of the division's normal operating procedures, to contain the flood on the Ohio River and its tributaries.

"We must do every single thing we possibly can do—no matter how small or seemingly insignificant—to reduce the projected maximum crest at Cairo," Maj. Gen. Peabody wrote in his order. "It is essential that we pull out the stops to fight the peak river crest for this event."

It was a tall order: The city of Cairo, at the confluence of the Ohio and Mississippi rivers, was nearly an island because a vast area of land around Cairo was underwater. Standing water already covered low-lying farmland in the four-state area of Illinois, Missouri, Kentucky and Tennessee.

Water levels were so high in the Mississippi River's main stem that excess water had nowhere to



go for up all of the river's natural relief values for flooding and several huge structures were already in place. Finding the obstructions (some 100 John's Rivers in Missouri) began to reveal the same features: 13. The major construction developments in the Mississippi Valley, and from conditions were documented in and China.

Although the important 1911 U.S. dams on rivers have been failed, small bits of water began showing up on the land side of levees across the region. The levees, caused by the numerous processes started by the river, were a major concern. When river levels rose, the additional weight of the water creates pressure that tries to find an escape route through the boundaries of the levee system. Water eventually finds a route into the levee and built up through the ground on the other side of the structure.

The built-up levee carry sand, clay and other foundation materials from beneath it levee, maintaining the structure's foundation. Like sand, which is a sand that can erode in flow and undermine the protective levee, causing it to collapse.

ROOM FOR THE RIVER / 2011 POST-FLOOD SUMMARY REPORT / 2011 FLOOD



The magnitude of water was almost bey

ABOVE, FROM LEFT: Deer flee to higher ground in the Acheafalua basin, following the opening of the Morganza Floodway. A mid-flood algae bloom in Lake Pontchartrain. Flooded grain bins in a barge loading terminal.

Staving off catastrophe

Faced with the prospect of a bad flood potentially becoming a catastrophic event, Maj. Gen. Peabody and Deborah Lee, chief of water management in the Corps' Great Lakes and Ohio River Division, sought to hold back the worst of the Ohio River flood waters with flood control reservoirs under their control.

Gen. Peabody directed that many of the Ohio basin dams hold additional water above their normal operating levels but still within their safe operating bands. While this provided some relief downstream, it would not be enough.

The river's level at Cairo was at 57.9 feet on April 26, and the rising waters were projected to stop at a height of 60.5 feet within five days. The goal was to keep the river from rising above 60 feet, a level that signaled a trigger point for activation of the Birds Point–New Madrid floodway.

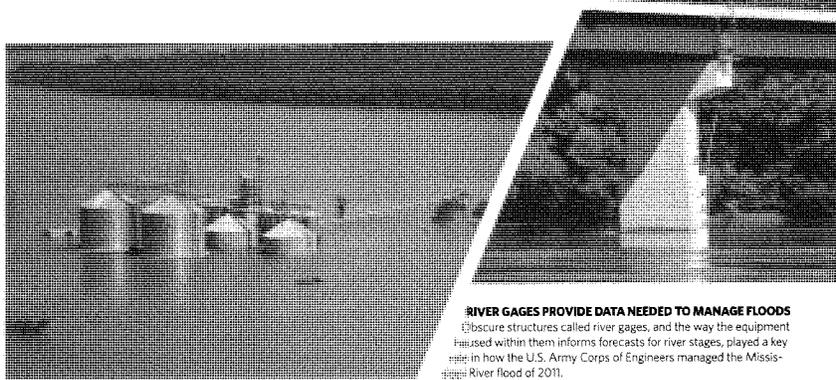
Army Corps officials who participated in a surveillance flight over the region around Cairo on April 26 were stunned by what they saw: Water was everywhere and, in some areas, extended as far as the eye could see. The volume of water was almost beyond comprehension.

Between April 20 and April 27, at least six inches of rain had fallen over a huge section of Illinois, Indiana, Kentucky, Tennessee, Arkansas and Mississippi. That was the minimum amount. Most areas received a foot or more and, in some cases, 10 times the typical rainfall. The town of Springdale, Ark., recorded the most rainfall at 19.7 inches.

But the rains stopped on April 27, and there was a glimmer of hope. Members of the Mississippi River Commission believed that if the rain held off, and Gen. Peabody could continue to hold back flows at the flood control reservoirs along the Ohio and associated tributaries, the flood might be manageable. But the weather didn't cooperate. Heavy rains returned on April 30, and water levels began to rise again across the Mississippi River valley.

Uncharted territory

By May 1 it was obvious that reservoirs alone would not stem the steadily rising river. The river gauge at Cairo, Ill., had passed 61 feet, a tipping point that signaled the need to call into use a rarely used flood relief valve: the Birds Point–New Madrid Floodway. It would need to be activated for the first time since 1937, a decision that meant the unfortunate flooding of farmland and homes lying in the floodway.



RIVER GAGES PROVIDE DATA NEEDED TO MANAGE FLOODS

Obscure structures called river gages, and the way the equipment housed within them informs forecasts for river stages, played a key role in how the U.S. Army Corps of Engineers managed the Mississippi River flood of 2011.

Gages throughout the Mississippi River Valley are operated and maintained through cooperative efforts between the Corps, U.S. Geological Survey (USGS) and NOAA/National Weather Service. (<http://waterdata.usgs.gov/nwis/rt>) The National Weather Service then uses the data in concert with weather patterns to make forecasts that inform the public, emergency managers, and some of the Corps' most important river management decisions.

Some 50 gages are located on the main stem of the Mississippi River and near the mouths of major tributaries to the Mississippi, south of the confluence of the Ohio River. Each gage measures stream stage, in most cases flow, and in some cases water quality as well, at that strategic river point.

Traditional gages are stone or concrete structures, generally located above the 100- or 200-year floodplain so they don't become inundated by the floods they're designed to monitor. They're connected to the river by pipes (or intakes), and the movement of floats and wires within the stilling well turns wheels and dials that measure water surface elevation and flow, according to Robert Hainly, Acting Deputy Chief of the USGS Office of Surface Water. Newer gages use more advanced electronic and pressure sensing systems to make similar readings. Rapid deployment gages also were used during the flood when there was need for additional measurement at an ungaged location if there was a question about the reliability of a given reading.

The gage readings are provided in real time, allowing anyone—including those who live along the river—to monitor actual and forecasted flood stages. The Corps site, rivergages.com, includes a custom reference table that equates stage and flow to potential inundation of affected local landmarks like highways. The readings are also key to the operation of the MR&T System, where specific river elevation and flows determine when to operate floodways or other components. Without them, the Corps and other agencies "would essentially be operating blindly," Hainly said, unaware both of the river's stage at a certain point or flood-control structure and also of what's coming downstream.

The long-developed flood management plan, for example, calls for the operation of the Birds Point–New Madrid Floodway when a certain level is reached on the gage in Cairo, Ill. That was surpassed on May 2, 2011, when the river reached 61.7 feet, or 21.7 feet above flood stage. On May 9, flows approaching 1.25 million cubic feet per second at New Orleans triggered a partial opening of the Bonnet-Carré Spillway. Five days later, the key flow of 1.5 million cfs at Red River Landing prompted activation of the Morganza Spillway.

ond comprehension.

The Corps was in uncharted territory. Never before had water levels at the Cairo gauge risen to 61 feet. The volume of water flowing down the middle Mississippi River in 2011 surpassed even the historic floods of 1927, 1937 or 1973.

The river continued to rise on May 2 as heavy rains pelted the Mississippi River Valley. That day, Maj. Gen Michael Walsh, the president of the Mississippi River Commission and Mississippi Valley Division commander, was surrounded by MRC commissioners and his command staff aboard the MVD command flagship, the *NV Mississippi*, and pondered what lay ahead for the river and the communities that lined its banks.

During that somber moment of reflection, Walsh said he told himself, "This is the big one, the flood we've always feared."

The Corps of Engineers had spent several decades designing and building the Mississippi River & Tributaries system, an elaborate network of levees, reservoirs, relief wells and flood control structures. It was designed to handle more water than had ever flowed down the Mississippi River in recorded history. And then nature upped the ante in 2011 with an unprecedented amount of precipitation on top of already swollen rivers. Rainfall measured 600 percent to 1,000 percent above average.

Near the end of the flood, Mississippi Gov. Haley Barbour said the bulge of floodwater that passed through the Mississippi River system was like "a pig moving through a python."

As the flood progressed, the big question remained: Could the Army Corps safely shepherd that proverbial pig (the floodwaters) through the proverbial python (the MR&T System) and out to sea without tremendous loss of life and property? The stakes could not have been higher. □

ROOM FOR THE RIVER / 2011 POST-FLOOD SUMMARY REPORT

FLOOD FIGHT: THE ULTIMATE TEST



A system successfully passes a record flood—and its ultimate test.

THE 2011 MISSISSIPPI RIVER FLOOD tested the Mississippi River & Tributaries system—and those who manage it—as never before.

River stages and flow rates broke records up and down the river during what was the largest flood in recorded history on the Mississippi River. The flood was contained within the system to a greater extent than earlier comparable floods, but not without a battle fought on numerous fronts, by a multitude of partners.

The flood fight began early with the implementation of Emergency Operation and Action Plans maintained by each district within the Mississippi River & Tributary System—St. Louis, Memphis, Vicksburg and New Orleans.

The staff at each U.S. Army Corps of Engineers District and levee board knew from past floods where trouble spots might pop up, and that's where monitoring started. Action plans also detailed the specific operational requirements of the components within each district. Those plans outline a district's roles and responsibilities, decision criteria for operating various aspects of the system, communications guidance and detailed information addressing trouble spots. Similarly, local levee districts, states, counties and other authorities—working in close coordination with the Corps and each other—relied on their flood plans, which were used, adapted and adjusted for each flood event to ensure appropriate warnings and evacuations or flood fight measures.

Still, it took a determined and coordinated effort by thousands of individuals to guide the severely swollen river from Cairo, Ill., to the Gulf of Mexico—through the MR&T System's thousands of miles of authorized embankments, levees and floodwalls—while preventing the loss of life, maintaining navigation on the river and limiting property damage. Working with local and state agencies across the lower Mississippi River basin, the Corps fought the 2011 flood for six months, from March to August. The Corps Memphis District declared a flood emergency on March 14. Others further downriver soon followed suit. By early April, it was obvious that the 2011 flood could reach record-setting proportions.

As the first line of protection, Corps-operated flood control reservoirs along tributaries of the Ohio and Mississippi rivers captured as much of the flow as possible. Maximizing the holding capacity of the reservoirs helped delay and lower the river crests as they met the lower Mississippi. But the reservoirs alone would not control the steadily rising river.

Hundreds of sand boils, ranging from the size of a baseball to one that was large enough to swallow a large sedan, were developing all along the Mississippi River, on the landward side of levees. It was a major concern, particularly near Cairo, Ill., located at the lowest elevation of any location within Illinois and totally surrounded by levees.

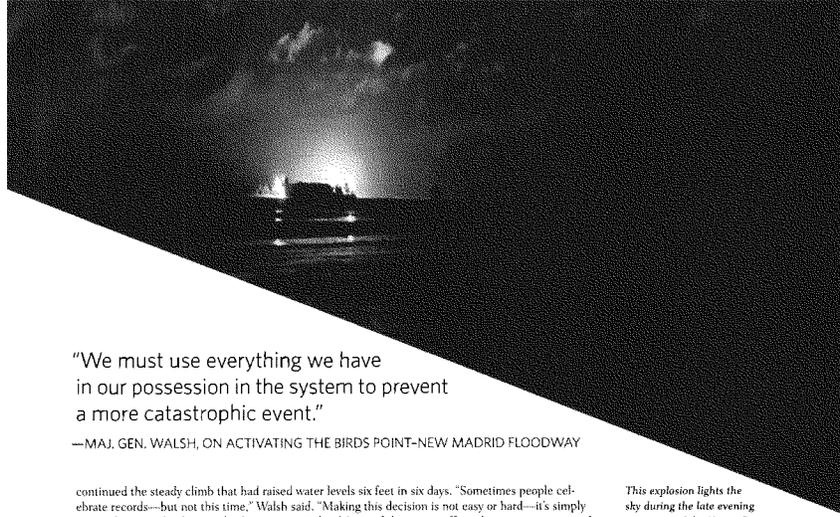
Crews fought thousands of sand boils along the river, using sandbags and fill dirt to build circular rings around the boils. Encircling the sand boils halted the movement of sand and soil, thereby reducing the risk of the boils collapsing a levee. The strategy worked; not one mainline MR&T levee along the Mississippi failed.

In late April, the Army Corps' division commanders—Maj. Gen. Michael Walsh and Maj. Gen. John Peabody—went to Cairo to inspect a mega boil that had developed near the floodwall where the Ohio River joins the Mississippi. They were stunned by what they saw. It was the largest sand boil ring that they, or even the most seasoned and experienced flood fighters, had ever seen.

The river rose six feet in six days at Cairo, Ill. On the morning of May 2, the river gauge at Cairo passed 61 feet, a tipping point that signaled the need to use explosives and intentionally breach another key feature in the flood control project. The Birds Point–New Madrid Floodway would need to be activated for the first time since 1937, a decision that meant intentionally increasing the flooding farmland and homes lying in the spillway.

That afternoon (May 2), Walsh issued the order to breach the Birds Point Levee. It wasn't an order hastily made. In his brief the day before, Col. Vernon Reichling had requested permission to move into position barges laden with explosives needed to fill pipes within the earthen levee, an 18-hour process, saying the situation had become a "when" and no longer an "if."

But Gen. Walsh was still holding a slim hope that rains would subside. They didn't, and the river



“We must use everything we have in our possession in the system to prevent a more catastrophic event.”

—MAJ. GEN. WALSH, ON ACTIVATING THE BIRDS POINT-NEW MADRID FLOODWAY

continued the steady climb that had raised water levels six feet in six days. “Sometimes people celebrate records—but not this time,” Walsh said. “Making this decision is not easy or hard—it’s simply grave—because the decision leads to economic hardship and damage to affected property owners ... I don’t have to like it, but we must use everything we have in our possession in the system to prevent a more catastrophic event.”

Over the course of several hours, crews working in a driving rain pumped 115 tons of explosives into 27,000 linear feet of buried pipes within the center of the levee. The project was delayed for several hours by a powerful storm that huffed the region with 70 mph winds and numerous lightning strikes, conditions that made a potentially dangerous operation even more challenging.

At 10 p.m. on May 2, after the thunderstorm cleared, the order was given to explosively remove the upper fuseplug (nearly one mile in length). A series of massive explosions shook the ground and lit up the night sky. People reported hearing the explosions 50 miles away, in Cape Girardeau, Mo.

Earlier that day, the National Weather Service predicted the Ohio River would crest at 63.5 feet on the Cairo gage on May 5. But on May 5, three days after the Birds Point levee was breached, the Cairo gage read 59.6 feet—several feet lower than it would have read without operation of the levee.

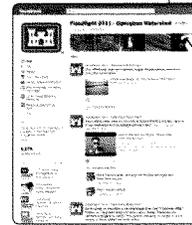
This explosion lights the sky during the late evening activation of the Upper Crevasse at Birds Point-New Madrid. High winds and lightning prevented daytime activation.

Technology key in flood risk sharing

There are a few refinements yet to be worked out, but social media, smart phones and custom-designed apps that allow for instant field reporting are clearly here to stay after offering valuable and real-time communication sharing for river managers and decision-makers during the 2011 flood fight.

The Mississippi Valley Division Public Affairs Offices and the Joint Information Center used Facebook, Twitter, YouTube and Flickr as ways to post information updates as flood waters both grew and subsided, as well as to dispel rumors. A Facebook page devoted to the Birds Point-New Madrid floodway, for example, peaked at 16,500 fans who turned to the site to learn about operation timing, condition of setback levees and current floodway status.

But one of the most promising technologies was developed by the U.S. Army Corps Engineer Research and Development Center in Vicksburg, Miss. A new smart phone application provided real-time GPS pinpointing of flood progress and related issues in the field, giving trained floodfighters the ability to use a phone to upload images, descriptions of flood damage and other critical data to the Command Center. The experimental technology was employed by the Memphis District in the flood’s early stages as one of the first true field tests of this technology. These devices were later transferred to New Orleans and Missouri flood fighters. Enhancements and refinements of this new flood fight tool were made from these field tests, ensuring this tool will be even more useful for the next flood fight.



**THE BATTLE RHYTHM**

During the month of May, Maj. Gen. Michael W. Walsh led what could have been called the Battle of the Mississippi. That he was in a conference room rather than a bunker, or that his "soldiers" were local flood fighters armed with sandbags, plastic sheeting and bulldozers as weapons of defense, doesn't change one fact: the complexities of decisions and potential consequences to human life make a flood fight as close to a real battle as one can come in civil works.

From a flood fight command center, run around the clock, the Major General and his senior advisers held twice-daily regional teleconferences with his front line commanders to gauge the "battle rhythm" and key decision points. These important meetings discussed weather forecasts, reservoir releases, projected river stages, inundation scenarios, trigger points, floodway activation timing, yield points, interagency coordination and more. The in-between times were filled with more focused evaluations and decision making, coupled with regular communications and personal calls—to governors, members of congress, Corps headquarters, levee districts, mayors and members of the media.

The MR&T project was performing as designed: It gave the river room to move sideways, which reduced flooding downstream.

With the Birds Point–New Madrid Floodway in operation, some 130,000 acres of farmland and a limited number of buildings and homes were inundated with floodwaters, but the mighty river began to recede. The MR&T System was performing as designed: It gave the river room to move laterally, which reduced flooding downstream and eased pressure on the mainline levees.

By May 4, river levels on the Cairo gage dropped below 60 feet, and flood fight teams in the Memphis District began reporting that conditions in all sectors, though still grave, had stabilized. But the flood fight was far from over. Much work remained downstream to prevent flooding in the many river-based industries, property and cities lining the river's floodplain to the Gulf.

In Mississippi, the mainline levee at Buck Chute (near Eagle Lake) threatened rich farmland and numerous occupants of the Yazoo Delta. If that levee failed, the delta would see flooding not experienced since 1927. About 3,000 homes and 1,450 square miles of land faced inundation.

To reduce pressure on the levee, the Corps deviated from its usual Muddy Bayou water control plan, intentionally allowing water to be diverted into Eagle Lake. That allowed floodfighters to add water atop the berm for additional weight and counterpressure. The strategy resulted in the successful passage of the floodwaters through that section of the MR&T system.

Large natural dike at Cairo, Mo.



Key Actions

MEMPHIS DISTRICT

A: Cairo, Ill.

Action: Contained numerous sand boils that threatened the integrity of levees; river water seeping under levees causes sand boils.

B: Near Cairo, Ill.

Action: Activated the Birds Point-New Madrid Floodway to reduce flooding and relieve pressure on levees downstream.

VICKSBURG DISTRICT

C: Near Yazoo City, Miss.

Action: Placed four miles of plastic sheeting on the Yazoo Backwater levee to protect from landside levee erosion and reduce risk of levee failure.

D: Eagle Lake, Miss.

Action: Stabilized the Buck Chute levee and allowed water levels to rise in Eagle Lake to reduce pressure differential causing underseepage and sand boils.

NEW ORLEANS DISTRICT

E: Morganza, La.

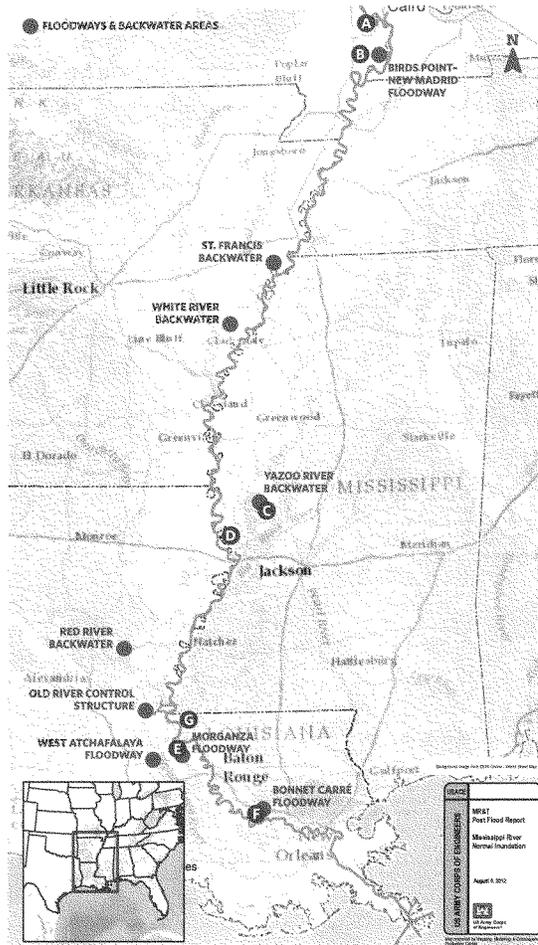
Action: Activated the Morganza Floodway, alleviating pressure on mainline levees and reducing flood risk in Baton Rouge and New Orleans.

F: Norco, La.

Action: Activated the Bonnet Carré Floodway, which diverted floodwater to Lake Ponchartrain and reducing flood risk in New Orleans.

G: Angoia, La.

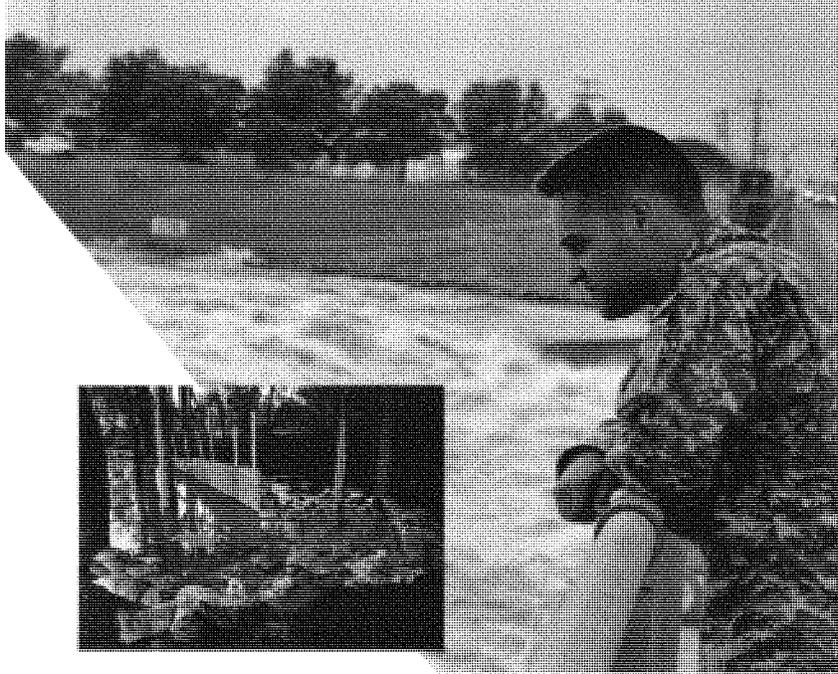
Action: Contained 87 of 190 sand boils that threatened the integrity of levees upstream of Baton Rouge.



Key Operational Decisions

Complex situations required tough decisions during the 2011 flood event. Flood fight procedures and past experience helped inform key decisions. But they still weren't easy. Here's a sampling of what decision-makers evaluated, faced and ultimately decided.

LOCATION	Birds Point-New Madrid Floodway	Muddy Bayou	Yazoo Backwater Levee	Morganza Floodway
KEY DECISION	When to operate the Birds Point-New Madrid Floodway	Whether to deviate from the Muddy Bayou Water Control Plan to help protect the Buck Chute Mainline levee	Whether or not to perform flood fight measures at the Yazoo Backwater Levee	When to operate the Morganza Floodway in conjunction with conditions at Bird's Point spillway and Old River control structure
BACKGROUND	Located in SE Missouri below the confluence of the Mississippi and Ohio rivers and designed to be operated at specific conditions to pass extreme floods that would otherwise exceed system capacity. Prior to 2011, operated only once during severe flooding in 1937. It's operated by detonating explosives within launch pipes installed in three sections of the front-line river levee. Explosives create crevasses to divert up to 550,000 cfs from the Mississippi River through the floodway. When operated, inundates 130,000 acres along the west flank of the Mississippi River. Operation lowers the flood stage by up to 7 feet near Cairo, Ill. and lowers the risk of catastrophic failure or overtopping of mainline levees protecting more than 2.5 million acres.	The mainline levee at Buck Chute is located near Eagle Lake, Miss., 15 miles northwest of Vicksburg, part of a sub-system that protects over 1,400 square miles in the lower Mississippi River Delta from flooding but is a chronic problem area with underseepage and sand boils commonly forming at low flood stages. Massive sinkholes were detected, and sand boils developed at low flood stages, indicating a significant problem. Repairs from prior floods had not yet begun, and temporary measures installed in March 2011 were not sufficient for forecasted flood stages. By April, Buck Chute was considered a critical flood fight area and deviation from the Muddy Bayou Water Control plan was considered as an emergency measure to keep the mainstem levee from failing in the 2011 flood.	Located 10 miles north of Vicksburg, Miss. and extending 28 miles from the Mississippi River mainline levee along the west bank of the Yazoo River to Yazoo City. It's one of four backwater levees in the MB&T System designed to slowly overtop and ease pressure off the system during extremely high flood stages (Approaching Project Design Flood elevations). The 1941 Flood Control Act authorized the Yazoo Backwater Levee to be built to a height equivalent to 56.5 feet on the Vicksburg gage (which is what exists today), as long as the levee did not push river levels to within five feet of the top of mainline MB&T levees. Subsequent authorization allows for an additional six feet of height on mainline and Yazoo Backwater levees.	Located in central Louisiana near river mile 280 on the western bank of the Mississippi River, the Morganza Floodway begins at the river, extends southward to the East Atchafalaya River levee and joins the Atchafalaya River Basin Floodway near Kinz Springs, La. The purpose of the floodway, in conjunction with the Atchafalaya Basin Floodway, is to operate during extreme flood events to carry flood water from the Mississippi River to the Gulf of Mexico via the lower Atchafalaya River and the Wax Lake Outlet. Designed to pass up to 600,000 cfs of water to the Gulf, alleviating stress for mainline levees downstream along the Mississippi River. Prior to 2011, operated only once during severe flooding in 1973, passing approximately 170,000 to 180,000 cfs at its peak operation.
OPERATING PLAN	Per the 1966 Operating Plan, the floodway normally will not be operated until flood stages exceeding 50 feet (or 58.4 if the system is in danger of failing) are predicted on the Mississippi River gage at Cairo. Then, the upper launch pipe section will be prepared for operation, with the lower launch pipe section to follow. Operation requires 100 people, specialized equipment.	Developed as a fish and wildlife mitigation feature for the Yazoo Basin Project to prevent agricultural runoff from Shreve Bayou from entering Eagle Lake. The operating plan allows for water level management of Eagle Lake January to June to support fish and wildlife. Raising water higher than the prescribed level in Eagle Lake to protect the Buck Chute Levee required plan deviation.	Backwater levee systems are meant to take pressure off the MB&T System mainline levee by overtopping during extreme flood events. The Yazoo Backwater Levee was designed to overtop when the Vicksburg gage reached 56.2 to 56.6 feet. Further analysis by the Vicksburg District refined this estimate to 56.3 feet using updated data collected during the 2008 Mississippi River flood.	The plan is based on the Morganza Floodway design and Water Control Plan. Through that, the central Louisiana Floodway is slated to be operated when the flow of the Mississippi River at Red River Landing, La., located 20 miles north of Morganza reaches 150,000 cfs and rising.
DILEMMA FACED	Operating the floodway requires evacuating 230 residents and explosively removing the crevasse portions of the front-line levee which would then need to be repaired after the flood. Operation also inundates homes, structures, and increases the level of flooding in up to 130,000 acres of agricultural land. Not operating the floodway, on the other hand, can result in other mainline levees overtopping or failing with much more significant damages and potential loss of life.	Deviating from the water control plan to raise the level of Eagle Lake would reduce the risk of levee failure at Buck Chute, but it would also potentially impact 800 residents and properties along Eagle Lake. Not deviating from the plan would result in much higher flood differential between the wet/dry sides of the degraded Buck Chute mainline levee and high risk of levee failure, potentially inundating 1,450 square miles and impacting up to 3,000 homes.	Forecasted flood stages in early May indicated possibility of levee overtopping by a foot of water for up to 10 days, putting the levee at high risk of failure. If levee were overtopped and did not fail, some 450 square miles would be inundated. If it failed, that would increase to 1,900 square miles and affect 3,000 people. Flood fighting could reduce failure risk but might increase risk to mainline MB&T levees. In addition, there was a question as to type and extent of authorized flood fighting options.	Up to 300,000 cfs of water would need to be diverted through the floodway based on the water control plan and forecasted Mississippi River flow. Forecasted flow conditions on the Atchafalaya River (780,000 cfs) combined with floodway operation could impact 22,500 people and 2,000 homes and up to 22,500 people in the floodway and 11,000 homes in backwater areas. Not operating could mean other mainline levees overtopping or failing with more significant damages and potential loss of life.
THE DECISION	Operation began April 25 with the loading of barges with material, equipment and personnel and culminated with floodway activation on May 2 and successful passage of the flood through this constructed reach. Factors considered included the floodway operating plan, actual and forecasted flood crests at Cairo, Ill. potential damages caused by operating the floodway and effects on future MB&T System performance; significant precipitation/saturated hydraulic conditions throughout the basin; use of all available reservoir storage capacity to reduce the flood crest at Cairo; deteriorating conditions of levees near Cairo, Ill. and in Fulton County, Ky; and the time needed to prepare the floodway for operation.	Approval to deviate from the Muddy Bayou Operating Plan was given by the MWD commander on April 28 and resulted in successful passage of the 2011 flood waters through this part of the MB&T System. Many factors were considered in making this key operational decision. Some of the most prominent include: actual and forecasted flood crests at Vicksburg, Miss.; the poor condition of the Buck Chute Mainline levee and impacts of levee failure; potential emergency measures to reduce the risk of failure of the Buck Chute levee and the possible impacts of deviating from the Muddy Bayou Operating Plan.	Approval to perform flood fight measures along a four-mile stretch of the Yazoo Backwater Levee (forecasted to overtop) was given by the MWD commander on May 4. Approved flood fight measures included filling deficient low spots to authorized levels and arming the landside of the levee with polyethylene plastic sheeting to reduce the risk of erosion and potential levee failure. Considered factors included authorized flood fight activities for this backwater levee; actual and forecasted flood crests at Vicksburg, Miss.; potential impacts of full levee failure compared to levee overtopping and/or failure; 2008 flood data and observations; additional flood fight measure effects on mainstem levels.	Operation was initiated at 3 p.m. on May 14 and resulted in successful passage of 2011 flood waters through this part of the MB&T System with a peak flow of 186,000 cfs through the floodway. Many factors considered, including the floodway water control plan; discharges at Red River Landing, La.; stages and remaining freeboard at the Morganza Spillway structure; flow conditions at the Old River Control Complex; potential impacts of activating the structure on the floodway; potential impacts of not activating the structure on MB&T mainline levees and the areas they protect; and potential impacts based on how quickly the floodway is operated.



In Louisiana, the operation of the Morganza and Bonnet Carré floodways lowered the flood crest at New Orleans and Baton Rouge by 2.5 feet, protecting a 200-mile-long corridor of levees and floodwalls and sparing those cities from a massive flood. Before floodway activation, flood fighters in the New Orleans District found 190 sand boils in just the Angola area; 122,000 sandbags were placed at Duncan Point to form a berm and address seepage.

Some of the flood fight's greatest drama unfolded on May 12 in Mississippi, when a high-energy sand boil threatened a critically important levee near Greenville, Miss. The sand boil sat at an extremely critical location under the Mississippi Levee Board's jurisdiction. A levee break there would have unleashed a torrent of water that could have endangered thousands of people and engulfed the Yazoo River delta region.

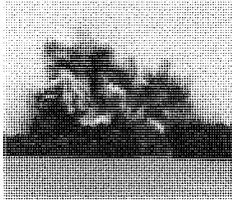
Upon discovering the sand boil, Corps and local officials quickly assembled a flood fight team — comprised mainly of inmate labor — and formed a human conveyor belt. The workers passed sandbags from the levee, through the knee-deep water, into an adjacent ditch to construct a sandbag and plywood dike to trap the seepage and create a water berm. Crews also dumped tons of stone over the sand boil to create a filter that stopped erosion under the levee. The levee held.

The Mississippi River finally crested in Vicksburg, Miss., on May 19, setting a record at 57.1 feet but not overtopping the Yazoo backwater levee. The flood crest completed its pass through the MR&T System on June 1. By then, the bulk of the flood fight was over.

Soon, the Corps would turn its attention to a new battle: Repairing the levees and other structures that bore the brunt of the floodwater. 

ABOVE, FROM LEFT: A high-energy sand boil threatened the Greenville, Miss., levee. Capt. Todd Mainwaring said he could feel the Mississippi River's power and energy beneath him here near the Old River Control Structure, where floodwaters were diverted down the Atchafalaya River.

PERFORMANCE: MAKING ROOM FOR A RECORD FLOOD



FLOODWAY ACTIVATION A LAST RESORT

A lot changed in the 74 years between the first activation of the Birds Point–New Madrid Floodway and the second. The first year, 1937, hand-written U.S. Army field notes dropped from the sky reading “Levee has broken. Get out at once!” were a main communication source.

In 2011, floodway residents were evacuated by more modern means: updates broadcast via news media, Facebook, Twitter and town hall meetings called by the area’s congresswoman. But while communicating was easier, the decision to activate was not.

Birds Point–New Madrid is one of three floodways in which the Corps purchased flowage easements, giving the government the right to activate when called for by extreme flooding and specific flows or stages. Operation requires 150 personnel, it inundates 130,000 acres of farmland and requires evacuation of 230 residents.

Among those whose land would be flooded was MRC member R.D. James, who nonetheless lent his support when realizing there was no choice but to activate. Within an hour after activation, the river dropped by six inches. By the next morning, it was more than a foot lower and the risk of system failure was reduced.

Should Divine Providence ever send a flood of the maximum predicted by meteorological and flood experts as a remote probability (but not beyond the bounds of ultimate possibility), the floodways provided in the plan are still normally adequate for its passage without having its predicted heights exceed those of the strengthened levees. —MAJ. GEN. EDGAR JADWIN, DEC. 1, 1927

THE 2011 FLOOD may have come as close as the Mississippi River has reached to the act of Divine Providence prophesied in 1927 by Maj. Gen. Edgar Jadwin, then Chief of Engineers.

Were those provided floodways adequate for floodwater passage? Did it succeed in its ultimate test?

By all accounts, yes. But the flood nonetheless left significant economic, environmental and structural damages and exposed vulnerabilities in portions of system components. It also identified areas for improvement in some decision-making tools, process documents and emergency action, water control and communications plans.

Passing the Project Design Flood

Assessing performance requires a little history on the basis of design and operation plans. The Mississippi River & Tributaries Project was constructed to reduce the risk from the “Project Design Flood” (PDF) or maximum flood with a reasonable chance of occurrence. Even when not reached (the 2011 flood peak flows were about 85 percent of the Project Design flows), the Project Design Flood remains key to system operation by dictating levee heights and requirements as well as dozens of trigger points for activation of various MR&T System features.

Those trigger points were originally established based on a hypothetical “super storm” modeled in 1954 by the U.S. Weather Bureau and Corps hydrologists. System components and activation points were based on that hypothetical storm and related flows.

How much flow each MR&T component could handle safely during such a storm prompts activation of floodway and backwater storage areas and balances risks across the system. Operating a floodway basically floods an area designed and compensated for that likelihood to lower the risk of more catastrophic damages elsewhere.

For the first time in the MR&T project’s history, the Birds Point–New Madrid and Morganza Floodways and the Bonnet Carré Spillway were placed into operation during a single flood event. Emergency

... for the first time, all three floodways would be activated in the same flood event.

flood fight measures, synchronized with partner agencies, levee districts and municipalities, were also needed, primarily at weak points identified before 2011 or spots where the MR&T System is not yet complete. Communication with those other agencies was accomplished via direct liaison, new internal and external websites, social media and regular meetings and conference calls.

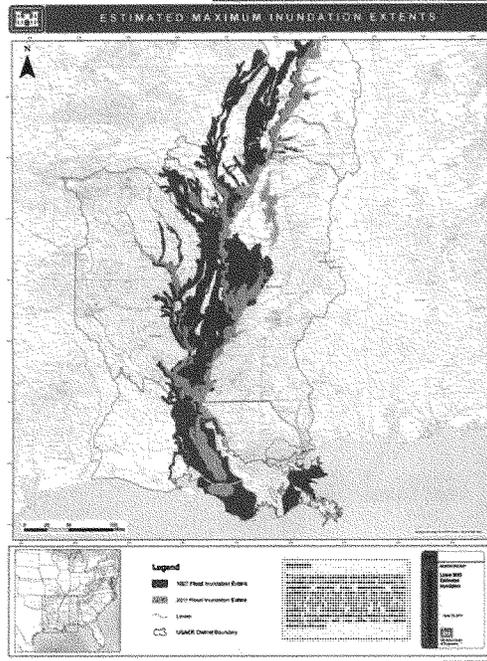
Floodways: Activating 3 of the system’s 4

The Birds Point–New Madrid Floodway was operated as the system’s upper floodway which directly impacts the area around the Mississippi and Ohio River junction or “confluence area.” If not operated when needed here, a mainline levee break or overtopping would inundate 2.5 million acres across parts of Missouri and Arkansas, as it did in 1927.

While the other floodways are designed to be opened in a slow, sequential manner, Birds Point—due to its infrequent usage—is designed with earthen fuseplugs instead of gates. Originally designed to degrade naturally by the river’s forces at a certain flood stage, the floodway is now activated by detonating explosives within fuseplug wells and lateral pipes installed in the 1980s at three sections of the frontline levee. The floodway creates a 30-mile bypass which diverts up to 350,000 cfs from the river, inundating about 130,000 acres for which the Corps had secured permanent flowage easements from landowners.

Experts concluded that the Commerce mainline levee would have also been overtopped without the operation of Birds Point–New Madrid. Using lessons learned from 2011, operational features are under study, including potential activation without explosives, which are requiring an extensive repair effort.

Lessons also were learned from the opening of the Morganza Floodway, operated only one other time in



1927 vs. 2011

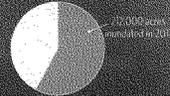


1927 Levees only

2011 Floodways & backwaters make room for the river

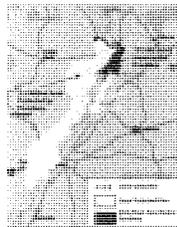
2011 Floodways

366,000 acres



2011 Backwaters

1,652,000 acres



BIRDS POINT-NEW MADRID FLOODWAY
at a glance

- Completed in 1933
- Operated in 1937 and 2011
- 3-10 miles wide; 36 miles long
- 133,000-acre floodway, when activated, provides protection to 2.5 million acres
- Diverts 550,000 cfs
- Activated by removing fuseplug levee sections with explosives
- Evaluation of alternate methods of operation currently being evaluated to improve performance

FLOODWAY TIMELINE SAMPLE:

Bonnet Carré Spillway

MAY 5

Mississippi Valley Division commander concurred with request to operate the Bonnet Carré Spillway and consulted with the Mississippi River Commission, which concurred with the decision. MVD commander contacted Louisiana and Mississippi officials to inform them of the possibility of operation.

MAY 9

The first bays were opened at the Bonnet Carré Spillway based on a computed discharge of 1,240,000 cfs at Red River Landing on May 8 and an assumed one-day lag time between Red River Landing and New Orleans.

MAY 14

The discharge through the spillway was increased above the design discharge of 250,000 cfs to preserve a desired level of freeboard on these levees, in accordance with the Water Control Manual. This increase above the design discharge was approved by the district commander and a white paper was written titled "Commander's Assessment" to document the reasons for this increase.

MAY 17

At peak operation, 330 of the 350 bays were open and 316,000 cfs passed through the spillway.

JUNE 11

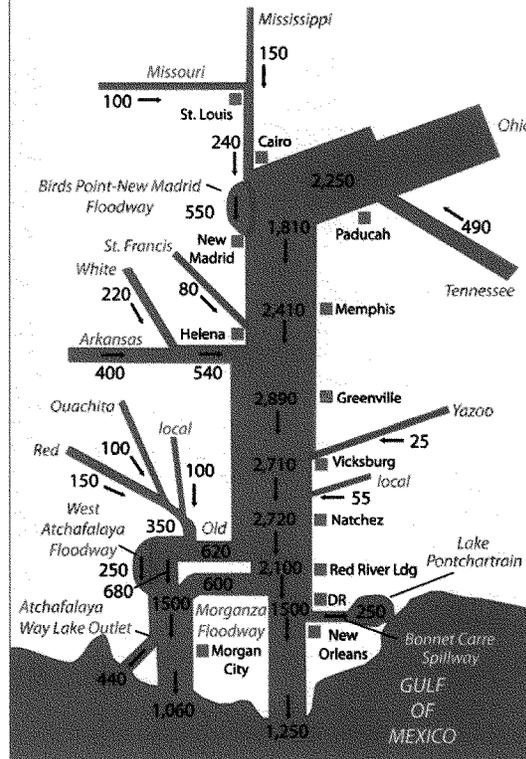
The New Orleans District began closing the Bonnet Carré Spillway.

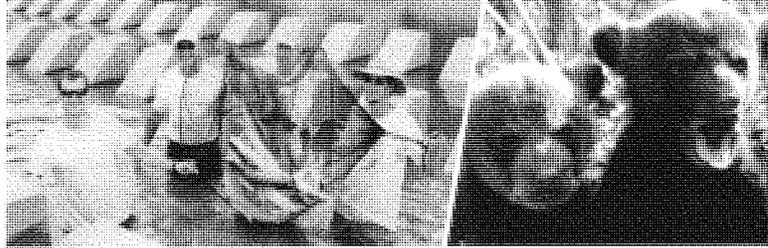
JUNE 20

The final gates were closed at the spillway. Neither the Bonnet Carré structure nor the spillway was significantly damaged during the flood of 2011.

PROJECT DESIGN FLOOD

This graphic represents the Project Design Flood, developed to depict worst-case-scenario flows generated from a hypothetical superstorm conceived by the Weather Bureau (now National Weather Service). The current Project Design Flood was adopted in 1956 and used as the basis for operation of the various features of the MR&T System. Starting with 35 hypothetical combinations of storms and related runoff, the Weather Bureau ended up combining three severe storms (from 1937, 1950 and 1938) and related flood flows to determine the peak discharge at key locations. A post-1973 flood review determined the Project Design Flood metrics and trigger points were further validated.





Spillway changes benefit region's wildlife

Lessons learned from the first opening of the Morganza Floodway were incorporated into this year's operation plan. The first operation, in 1973, proved problematic for the eastern Atchafalaya basin, a prized wetland that's home to deer, bobcat, beaver, coyote, mink, armadillo and the endangered Louisiana black bear. This year's goal was to offer the creatures a chance to escape spillway water, intentionally flooding their home through a slower opening. Wildlife officials say the controlled opening at 25 percent capacity generally worked, with animals for the most part reaching higher ground in time.

Deer squeezed under fences and hopped through floodwaters, leaving the greatest impact on fawns, due to the stress on pregnant deer. Adult bears for the most part were able to climb trees or reach higher ground, but the impact was similarly highest on cubs. Earlier lessons learned were also applied to the federally-endangered pallid sturgeon. The Bonnet Carré Spillway was of particular concern for this ancient species of fish, more closely related to the shark than any freshwater fish. The peak discharge of 300,000 cfs created a huge side channel that sucked sturgeon in with it. Crews helped collect, tag and return many of them to the mainstem of the river. Oyster populations, however, suffered unavoidable damage from the influx of fresh water from the Bonnet Carré spillway, leading to disaster declarations for the oyster industries of Louisiana and Mississippi.

floodway history (1973). An extensive public notification and coordination effort ensued in this floodway, where operation affects some 22,000 residents including nearby Butte La Rose and Morgan City. It also inconvenienced a variety of wildlife, including the endangered Louisiana black bear. Detailed maps were generated to show residents how much floodwater they could expect, and were also useful in planning potential evacuation. Extensive coordination was also done with state/local officials and other federal agencies, including the Fish and Wildlife Service and U.S. Environmental Protection Agency, to limit effects on wildlife and fisheries. The 2011 flood resulted in minimal damage in communities protected by the floodway.

The operation of Bonnet Carré (SEE TIMELINE, PAGE 20) similarly prevented catastrophic flooding of river communities and cities, such as Baton Rouge and New Orleans, and offers a peek into the tricky intricacies of floodway operations.

Navigation

Navigation continued largely uninterrupted by the 2011 flood with only minor brief restrictions in certain stretches of the river. Important trade commodities were able to reach their export or import locations nearly unimpeded. Ports and harbors and some channel crossings (areas where sediments accumulate during high water) were identified in damage assessments and addressed without any further delays to traffic.

Cultural and environmental factors

The strongest environmental concerns centered around water quality, sedimentation and wildlife impact issues.

Interagency teams convened in the midst of rising floodwaters, established monitoring protocols and made contacts to initiate background research and sampling during the flood. Two types of water quality studies were conducted, one focused at several sites along the Atchafalaya and Mississippi, the second on movement of water from the Bonnet Carré Spillway through Lake Pontchartrain. There, despite the high amounts of nutrient-rich water that created swirls of duckweed, no anticipated nutrient-infused algal blooms were observed.

Monitoring teams from the U.S. Geological Survey also surveyed for oil and grease in the Atchafalaya Basin, where spillway waters rushed over hundreds of gas and oil wells. Only a few samples showed any hydrocarbons and they were at very low concentrations. Some sport fish species could also potentially benefit from added nutrients carried by river water.

Cultural concerns centered around the activation of the Bids Point--New Madrid Floodway, well

ABOVE, FROM LEFT: Biologists rescue endangered pallid sturgeons trapped by spillway operation. Louisiana black bears, another endangered species, fared well during flooding as they moved out of harm's way or climbed trees for periodic rests in their evacuation of flooded areas.



“By operating the MR&T System as designed, including the floodways, the value of this investment to our nation can be counted by what we have not lost— lives, critical infrastructure for the energy industry and more than 50 billion dollars in damages to homes and businesses.”

—COL. ED FLEMING, COMMANDER, NEW ORLEANS DISTRICT

known as an area with a high density of Native American sites on the National Register of Historic Places. Federally recognized tribes were notified of the possibility of activation and periodically briefed, while county coroners and area sheriffs were advised of procedures which would include full tribal consultation and monitoring, should activation inadvertently expose buried artifacts or human remains.

OPPOSITE: Cranes lift gate “needles,” one by one, to allow for a controlled spillway opening at Bonnet Carré.

Flood damages prevented

Project effectiveness is primarily measured by the magnitude of flood risk reduction, also referred to as the “degree of protection” offered by the project, and it is in this calculation that the greatest success of the 2011 flood operation can be measured.

To calculate this, performance evaluation teams ran various scenarios looking at the expected magnitude of damage if various MR&T System components hadn’t been in place. Results of this analysis were then compared to the actual happenings with full system use.

Calculations factor in an estimated \$2.8 billion in actual flood-related damage to urban and agricultural areas, noting the levees protect one of the most productive agricultural areas in the world. With the project, about 1.2 million acres of unprotected farmland were impacted, compared to the 10 million that would have been flooded without the system. Without the project, an estimated 1.4 million residential and commercial structures would have been impacted. With the MR&T project, that decreased to 21,203 structures.

Based on post-flood calculations, the system prevented \$234 billion in total flood damages during the 2011 flood event. This brings the cumulative damages prevented to a total of \$612 billion, a \$44 return on every \$1 invested.

Perhaps even more significant, hydrologic models showed that without the system, an estimated 3.6 million people would have been impacted by the 2011 flood event. That compares to the 43,358 people actually impacted.

In total, the system protected 98 percent of property within the system. 

PROVING ITS VALUE

Summary of MR&T System Performance in 2011

- The 2011 flood was one of the largest on record, particularly in the lower reaches of the Mississippi River.
- Flood-fighting techniques employed at the tactical level were generally successful in maintaining the integrity of the primary Flood Risk Management System.
- The operation of the MR&T System, as a whole, was adequate to minimize flood impacts. This includes the operation of gates, reservoirs, spillways and diversions located throughout the system. This was particularly evident in New Orleans where the operation of the Bonnet Carré Spillway and Morganza Floodway kept river levels very close to design levels and prevented widespread flooding in the area.
- For the first time, Morganza, Bonnet Carré and Birds Point–New Madrid were operated during the same flood. Each of the floodway operations reduced stages by several feet, both downstream of the floodways and for varying distances upstream, while operations at many reservoirs also provided stage reduction benefits.
- Although backwater effect occurred on several rivers, none of the MR&T authorized backwater areas were operated during the flood of 2011 because river stages remained below their operation level and the backwater levees did not overtop.
- No significant breaches occurred in the primary flood risk management system. Minor breaches occurred in a private spur levee.
- New technologies presented opportunities to use enhanced tools not fully considered in pre-flood plans. These tools were quickly applied and used successfully to improve internal and external communications during the flood. But poor cell phone access in remote areas caused frustration, as did the need for more training on the most effective use of social media.
- The system prevented \$234 billion in flood damages in the single flood, and \$612 billion cumulatively, with a \$14 billion investment.

ROOM FOR THE RIVER / 2011 POST-FLOOD SUMMARY REPORT

RECOVERY: RESTORING A FLOOD-BATTERED SYSTEM



ABOVE: A dead alligator found after high waters receded. BELOW: The St. Francis sand boil.

A winning performance still comes at a cost. The Mississippi River & Tributaries Project emerged from the record 2011 flood a winner but, as one commander put it, like Rocky Balboa after his title match with Apollo Creed.

AS FLOODWATERS WERE STILL RISING, teams of engineering specialists started walking the thousands of miles of levees and floodwalls that make up the Mississippi River & Tributaries System, identifying seeps, boils, slides and other anomalies that marked the system's damages and vulnerabilities needing repair and attention.

They knew there'd be no time to waste.

The flood came on so fast and forcefully that while there were no levee (or human) casualties, there would be a certain need for infrastructure triage. When waters receded, teams continued the intensive post-flood damage assessments to identify the location, nature and extent of needed repairs and preliminary costs. That information was uploaded into a comprehensive database and documented in 44 regionally explicit Damage Assessment Reports. Hundreds of one-page project information papers were prepared for critical and non-critical projects to allow decision-makers comparative data for classification, prioritization and funding of damaged areas.

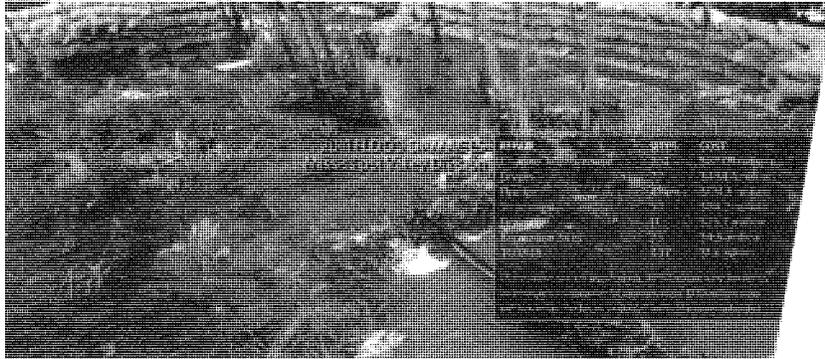
A recovery unit was, in fact, already working during the flood to identify immediate needs based on near-term threats to the system: the damage assessments, post-flood evaluations, interagency collaboration and construction repair needs to get the system back up to at least a basic level of flood protection.

What inspectors found was often dangerous—in ways not exactly expected.

"We knew we needed to start developing our recovery strategy even in the midst of still-rising flood waters," said Scott Whitney, the Mississippi Valley Division's Regional Flood Risk Manager. As damage assessment teams worked in the field, state and federal partners were assembled into an interagency recovery task force that helped formulate a comprehensive and collaborative regional recovery strategy.

The Mississippi Valley Division grouped repair projects into four categories, based on risk posed to human life and the river economy, with Class 1 representing the highest human life/safety threat. While some seeps and boils were expected and treated as routine, others—particularly those demonstrating the movement of "material"—were signs of a potentially dangerous situation that needed to be addressed.

The immediate questions and concerns, Whitney said, were "Can we flood light it again?" and "What are the life/safety and economic risks and consequences of failure?" The answers to those ques-





Scour and bankline erosion at Merriwether-Cherokee Bend, a nine-mile bend where the Corps had invested approximately \$60 million in channel improvements to maintain the meander pattern needed for navigation. During the flood, the river attempted to straighten out the bend and create a new channel. Repairs recreated the protective shoreline where the river scoured out the previous bank, creating a huge opening. This one repair costs an estimated \$30 million.

tions helped differentiate between repairs deemed critical (requiring immediate action) and noncritical (deferring actions for several months).

Through this framework, the division identified 143 projects requiring critical repairs at a cost of \$1.04 billion, plus another 262 non-critical projects at another \$543 million. The top 29 critical projects were initiated in summer and early fall of 2011 using \$170 million borrowed from ongoing Corps projects elsewhere in the country. (SEE "THE FUNDING SCRAMBLE," PAGE 26.) After Congress passed The Disaster Relief Appropriations Act of 2012 on Dec. 24, 2011, the Corps was able to aggressively schedule and secure services needed to attack all critical repairs and the majority of non-critical repairs.

Damage leaders

Initial "make-safe/make stable" work at the Birds Point-New Madrid Floodway topped restoration priorities, followed by other Cairo-area levee problems. Also ranking high were four areas of uncontrolled seepage and sand boils recorded at the Mississippi and Ohio River levees at Cairo and vicinity, along with cracks, leaking joints and possible stability issues in the floodwall. There, high-energy boils measuring 8 to 15 feet dwarfed hundreds more small-to-medium boils located throughout the system.

Riverbanks suffered too. At the Merriwether-Cherokee Bend in the Memphis District, the river attempted to cut through a mile-wide bend, shortening the river by some nine miles. River shortening acts to destabilize the navigation channel and unravel some \$60 million in channel improvements invested in this nine-mile bend over the years.

Areas of seepage required emergency fixes, mid-flood, with permanent fixes launched at many of the most severe sites as part of the Phase 1 critical repairs. Many scour and erosion repairs were critical as well, consisting primarily of slope paving and protection above water lines and the addition of Articulated Concrete Mattresses below the water line.

Most efforts were expected to be completed in 2012 and 2013. Completion of several expansive critical repair projects had to be divided into construction stages, the latter stages extending out into 2015. Some vulnerabilities and possible operational changes have been identified and are recommended for further investigation and action.

Damage & recovery highlights:

FLOODWAYS

Damages were centered around scour and sediment deposition in inflow and outflow channels, wave wash erosion, and loss of some monitoring equipment, all being repaired through appropriate repair methodologies.

RESERVOIRS

The only MR&T reservoir experiencing damage was Wappapello, and it was still able to function despite damage to the emergency spillway, roads and utilities. Immediately after the flood, the Corps and Missouri

REGIONAL TASK FORCE COORDINATES EFFORTS

"It is unfortunate that it has taken a natural disaster to bring us all together in such a collaborative fashion. We should have been doing this years ago!"

"The experiences shared at the meetings helped me see how each agency was connected (and sometimes disconnected) to and from the flood response and recovery process."

"The CorpsMap and NWS extended 28-day forecasts are two products that would likely not have come about, or been shared as extensively, without the IRTF discussion and dialogue."

Those are just a few responses from members of an Interagency Recovery Task Force (IRTF), formed under a new charter, to collaborate on solutions for short- and long-term restoration efforts and ongoing flood risk issues throughout the Lower Mississippi River Valley.

Team members were federal and state-appointed members with expertise in assessing, documenting and repairing flood risk management and related systems. The multi-agency forum was set up to solve regional issues and challenges that would be presented by the flood and work to consider traditional and non-traditional repair alternatives, better communication on flood risk issues, and work toward actions that would reduce future flooding vulnerability.

ROOM FOR THE RIVER / 2011 POST-FLOOD SUMMARY REPORT / RECOVERY



FAR LEFT: Post-flood cracking of the concrete at the Baton Rouge waterfront. LEFT: The same shot after stabilization with rock.

Department of Transportation worked together to construct a temporary by-pass for Highway T, a main thoroughfare which was washed out during the flood.

CHANNEL IMPROVEMENT FEATURES
Unlike many other components of the MR&T, damage to channel improvement structures was not entirely visible since much of this protection largely remains underwater. Sonar systems were used to evaluate damages occurring below the water's

surface. Some 44 sites were identified that, if not repaired, could impact future system performance. The most critical were revetments located in close proximity to the mainline Mississippi River Levee, since revetment failure could compromise levee integrity and seriously damage the navigation channel. Relocation of the Mississippi River channel nearly occurred at Merrivether-Cherokee and Presidents Island where, at both sites, the river scoured the bank to such a degree that the river attempted to carve a new channel and basically change its historic course. At Merrivether-Cherokee, the volume of material that eroded away is estimated at 8 million cubic yards.

LEVEES AND FLOODWALL SYSTEMS

Construction classified as critical began immediately on many levees and floodwalls, with first phase fixes repairing levees to a degree needed to sustain a 25-year flood event. The critical mass of construction priorities were centered around the "confluence area" of Cairo, Ill., where extensive underseepage and massive sand boils highlighted very serious vulnerability. In months following flood recession, inspectors began to record a number of "slides" where saturated levee face would simply slide off, creating a serious levee integrity concern. At Buck Chute near Eagle Lake, Miss., boils and seepage discovered in a 2010 flood were so worrisome that crews patched together an emergency fix as the flood crest made its way down river. The permanent fix of several "pressure relief wells" were included in the phase 1 list of critical sites. 

AT FLOODING RISK?

CHECK CORPSMAP!

A flood is coming, and you know that the levee just upstream of your home or business was severely damaged in the last one. Has it been fixed? Are you still at elevated risk?

Along the Mississippi River, finding that information is now possible via the web, through a site called CorpsMap. The geospatial web platform was, until recently, available through internal Corps systems only. However, the 2011 flood prompted the Mississippi Valley Division's GIS team to work with regional and national experts to establish one of the first public CorpsMap sites, at: www.mvd.usace.army.mil.

The site provides general background information on MR&T component flood damages, potential consequences of failure, repair schedule and monthly status updates. Users can zero in on specific locations of concern and select the desired layers of information.

The funding scramble

Coming up with an immediate multi-billion dollar source of funding to fix a vulnerable system key to holding back Mississippi River floodwaters is, as one might expect, a tricky challenge. During and immediately following the flood, the Corps "self-funded" the 29 repairs deemed too critical to delay due to the high potential loss of life. That essentially involved working closely with Corps districts nationwide, putting other projects on hold, to find \$170 million for those critical repairs.

In December 2011, Congress authorized \$802 million in supplemental funding for the Mississippi River & Tributaries Project repairs. That, plus emergency supplemental funding for Operation & Maintenance and PLB4-99 projects, allowed for another 118 critical repair projects to proceed, as well as 100 more deemed non-critical.

Lesson Learned: The process of regional and national prioritization and self-funding proved to be very challenging. Identifying where to draw the line for these initial projects required balancing the severity of the life safety risks with the level of funding that could be found within the Corps' budgets. A significant effort was invested in explaining to stakeholders and the public why certain projects were funded and others would be put on hold until funding was available. Identifying and pulling existing Corps funding from other districts throughout the country was also difficult since it involved evaluating the financial status of thousands of projects. Transferring funds from other Corps projects also caused work stoppages, completion delays and other inefficiencies.

PREPAREDNESS: COPING WITH RISK

Man has yet to create a flood control system that is 100 percent effective against the potential fury of nature, but the MR&T System is about as close as it gets.

THERE'S ALWAYS RISK. And that's never truer than after a major flood event destabilizes levees, changes flows and weakens water control structures. So while \$802 million in MR&T flood repair construction is underway, attention has turned to managing risks for when flooding threatens again. This is the "preparedness" phase of the Corps's four-stage flood risk life cycle, where residual risk is assessed by experts so that flood fight and other actions, including communications, coordination and collaboration, can augment the protection offered by the existing flood control system.

In the case of the Mississippi River & Tributaries Project, risks are exacerbated by the fact that the system was only 89 percent complete prior to the flood. Risks also remain in the system due to the inability to fully address certain levee, structural and channel improvement repairs over the next several years while 2011 damage repairs continue.

Development drives up risk

There's increasing development in floodplain lands, which drives up both economic and human risk. Damages—if they occur—are naturally larger in highly developed areas than they would have been pre-development. Throughout the nation, both existing and new development is locating in flood prone areas, a topic being increasingly addressed as part of a broader flood risk management strategy.

In the meantime, the Corps has further cemented relationships with other federal, state and local government agencies with whom it shares responsibility for reducing flood risks. Creation of a regional Interagency Recovery Task Force has led to closer working relationships as well as a specific list of flood preparedness actions.

The Corps, in part through the task force, took additional steps to reduce risk prior to the 2012 flood season, developing construction fact sheets, educational videos and an extensive regional flood risk management website. Other highlights of the risk reduction strategy included, for example:

A Flood Season Preparedness and Emergency Response Summary Report

In general terms, this report captured efforts the Corps has taken to manage and mitigate risks associated with, and in preparation for, the next flood event. It included the damage, repair and recovery needs and interim plans for reservoir/floodway operations and was distributed via website and directly to federal and state partners.

Risk Management Information Papers

These described how risks at 45 damaged and high-risk locations within the MR&T were being addressed through construction, interim measures and flood fight preparation. They also identified flood fight activation stages and included a link to the National Weather Service site for stage forecasts.

Inundation Mapping

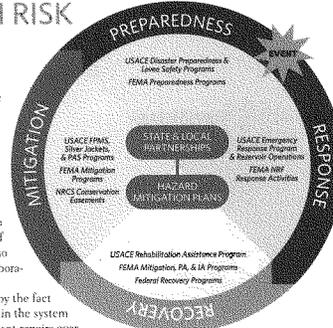
A process standardized across the region was developed to produce inundation maps that display potential timing, depth and inundation consequences to better prepare for the 2012 flood season. Maps were generated for eight high risk areas, with a regional team quickly poised to prepare inundation maps as needed.

Regional Communication Plan

Established in March 2012, this gave guidance for sharing of flood risk information via CorpsMap, fact sheets, social media and more. It also highlighted key groups with whom regular communication is required.

A Flood Preparedness Workshop

Preparing for the worst is the best protection when repairs are still underway and a new flood season approaching. That was the philosophy behind the 2012 Flood Preparedness workshop held in Memphis on Feb. 23, 2012. The meeting brought together more than 80 state and federal agency representatives for a day-long series of case studies presented, by district, and an overall look at the vulnerable spots within the Mississippi River & Tributaries Project, coupled with the National Weather Service spring forecast. 



A CYCLE OF FLOOD RISK MANAGEMENT

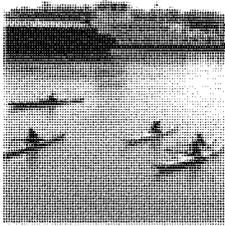
In its early days, the U.S. Army Corps of Engineers worked on "controlling" floods to reduce "flood damages." However, the Corps' philosophy has evolved, just as has the technology available for flood protection. In the absence of a national flood risk management strategy, the Corps is taking the lead on better management of "flood risk" with the understanding that flood risk management projects cannot completely eliminate all flood risk, particularly as we experience more extreme flood events.

Effective flood risk management requires the integration of four steps—preparedness, response, recovery, and mitigation programs—into a coordinated life cycle framework. The Corps' major role in driving down flood risk focuses on: planning of structural and nonstructural projects to manage risks; inspecting of existing flood infrastructure; technical and planning support to communities and states; and rehabilitation of levees and other flood risk management structures damaged by flooding. However, managing flood risks doesn't lie exclusively with the Corps or any other single entity but instead across multiple federal, state and local government agencies and the choices/actions of private citizens.

ROOM FOR THE RIVER / 2011 POST-FLOOD SUMMARY REPORT

RECOMMENDATIONS: A SECURE FUTURE

Moving toward a safe, secure river future.



THE MISSISSIPPI RIVER & TRIBUTARIES SYSTEM was, by any definition, highly successful in passing the Great Flood of 2011. But while the system performed as designed, the powerful flood both caused and revealed weaknesses and vulnerabilities in both the physical system and its operation. Multi-district Corps teams, divided by topic area, compiled and ranked improvement recommendations intended as starting points for further analysis, refinement, prioritization and decision-making. Most of the recommendations fall under one of these six overarching categories:

- **Use the information from the Post Flood Report to inform future MR&T System repair**

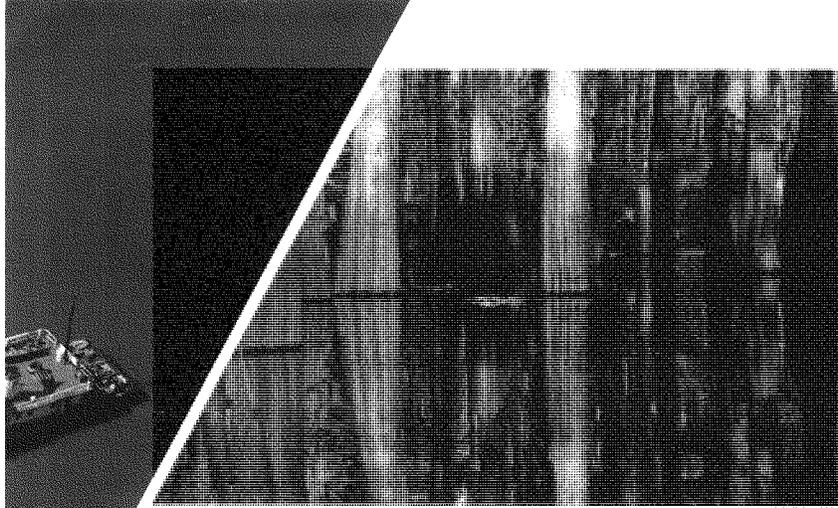
The 2011 MR&T System performance, damage and risk assessment information developed through the Post-Flood Report and other efforts should be used to help establish appropriate repair processes. This includes efforts focused on improving levee resiliency, confirming level of protection, sharing best practices, and developing system repair plans using risk-informed decision making.

- **Use the information from this report to guide completion of the MR&T System**

Information from the Post-Flood Report effort should be used to aid in the completion of the remaining 11 percent of the MR&T System not yet constructed. Information that would provide insights into this include MR&T performance, changing river hydraulics, improved levee engineering, economics and associated risks, environmental and other stakeholder considerations.







- **Update Operation Plans/Manuals, Communications Plans, and Standard Operating Procedures using information from this report, external inputs, After Action Reviews, etc.**

Use information developed through the Post-Flood Report effort, after action reviews, external inputs, and further studies to inform the update and enhancement of MR&T operation and flood fight plans/manuals, procedures and regionally standardized communication plans. These efforts would focus on improving both internal and external MR&T related operations during major flood events and would involve refinement of existing processes and utilization of new technologies. Sample efforts may include enhancing flood fight operations with newly developed tools and examining the potential need to update operations plans for key MR&T flood risk management structures.

- **Regionally standardize communication approach and products with MR&T System floodway backwater area stakeholders**

Use feedback from stakeholders, lessons learned, best practices and new technologies to develop regionally consistent communication approaches, tools and products to improve understanding, reduce impacts and improve collaboration during future floods. The Interagency Recovery Task Force offers great potential to make this a coordinated multi-agency effort.

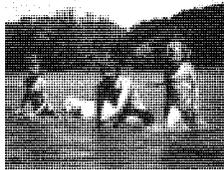
- **Evaluate the need to conduct an updated flow line study for the MR&T System**

Use 2011 hydraulic flood data and associated MR&T component performance to evaluate the need for an updated flow line study for the MR&T System. Physical and hydraulic changes in the river system and complex flow patterns at Morganza, Bonnet Carré, and Old River Control Complex should be examined to determine if a change in flow line data or water control plans is warranted.

- **Coordinate a regional "triage" effort to prioritize, refine and implement the recommendations identified in the MR&T System Post Flood Report**

The next steps in advancing the preliminary MR&T recommendations in this report will utilize the existing regional program management structure and process to further screen, combine, prioritize, refine and develop detailed scopes for recommendation implementation. This process is vitally important due to the need to establish coordinated MR&T improvement, regional priorities, and because there is limited funding available to accomplish these tasks. ☐

FUTURE: APPLYING HARD-LEARNED LESSONS

**READING LIST**

The evolution of flood control on the Mississippi is a complex mix of cultural and political issues, weather pattern changes and technological advancements.

Read more:

Upon Their Shoulders (2004) by Corps historian Charles A. Camillo and Matthew T. Percy details historic attempts to tame the river through the history of the Mississippi River Commission.

Divine Providence (2012), also by Charles A. Camillo, includes the historian's first-hand observations of the flood and often heart-wrenching decisions made by those fighting it.

Rising Tide: The Great Mississippi Flood of 1927 and How it Changed America by John M. Barry (1998) explores how that flood not only inundated the homes of a million people but also ushered in new political regimes and transformed society.

Designing the Bayous: The Control of Water in the Atchafalaya Basin, 1800-1995 by Martin Reuss (1998), originally published by the Corps, shows the integral link between the basin and flood control.

America's Great Watershed Initiative, bringing together diverse watershed interests to collaboratively manage the river for multiple uses, features papers by leading thinkers on water issues on its website.

In economic terms alone, the Mississippi River and Tributaries Project is a success—one of the most successful flood risk reduction systems in the world.

IN PURE ECONOMIC TERMS, the Mississippi River and Tributaries Project is a success—one of the most successful flood risk reduction systems in the world. In the 2011 flood alone, the system is credited with the prevention of \$234 billion in flood damages. Since its inception, it has cumulatively prevented \$612 billion, and that's with an investment over the years of \$14 billion.

"The return on taxpayer investment is an astonishing 44:1 ratio," noted Maj. Gen. John Peabody, commander of the Corps' Mississippi Valley Division, "more than 10 times better than the average project funded today."

Much of the success can be attributed to the wisdom of the Jadwin Plan of the 1920s, its underlying "make room for the river" philosophy and the many improvements that followed. In addition to the property damage averted, not a single life was lost in the record flood of 2011.

But while the nation owes much to those who conceived, built and maintained the system, it's important to consider what this system needs to ensure successful performance for our children and future generations. This analysis of system performance and recommendations for future study and development is a starting point for paying the wisdom forward.

Many of the report's findings and recommendations help meet the goals of the Corps' 200-year vision for the Mississippi River watershed. Successful flood risk management requires an intergenerational commitment and complements a national vision. The long-term intergenerational commitment must also balance national security and comprehensive flood damage reduction with environmental sustainability and recreation, infrastructure and energy policy, water supply and water quality and movement of agricultural and manufacturing goods.

Post-flood reports have been prepared following other floods, some of them small, others major disasters. This one can be of particular value because it tested the system and its components like no flood before it and also offered the chance to test innovative tools never before implemented, or on such a scale.

Delegations representing several of the world's other major river systems have already traveled to the watershed, looking for ways to implement the components that protected so much life and property into their own flood risk reduction systems. The successful organizational structure created for the post-flood recovery work is also serving as a national model for emergency flood and hurricane response operations. Old models were proven effective as well. The Mississippi River Commission's process of "listening, inspecting, partnering and engineering"—in part through regular public meetings on the MV Mississippi—was attributed to public cooperation that often required personal sacrifices for the benefit of those living elsewhere in the floodplain.

The history of the Mississippi River and attempts to tame it, however, show there's no such thing as a "final solution." Today's river managers must adaptively and strategically integrate lessons learned into their operational plans in a way that minimizes risk and enhances resiliency. Regular investments to operate, maintain, inspect, repair or enhance existing flood risk management structures will continue to be some of the most critical and challenging responsibilities by current and future generations. Prioritizing how, when and where to invest limited resources will require multidisciplinary and interagency collaboration and resource leveraging.

As Harvard Professor John Briscoe, director of the Harvard Water Security Initiative, wrote in a recent analysis about Mississippi River management: "With every intervention in a hydrological system, there are reactions to every action, and each generation has to learn how to respond to a new set of challenges while not jettisoning the benefits derived from prior actions."

This flood, as others, underscored the fact that there will always be risk in a floodplain, risk that's growing as those areas are further developed. We can't be complacent about those risks if we want to meet the bottom line of that long-term vision: that all residents of the Mississippi River and its tributaries experience unmatched security and quality of life. **■**

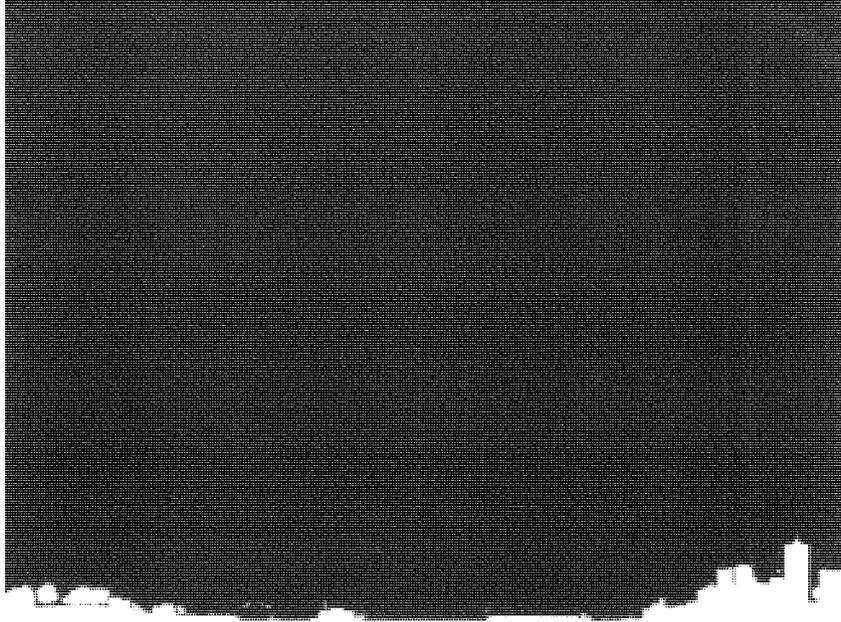
This document ...
is a starting point
for paying the
wisdom forward.



Man must not try
to restrict the
Mississippi River
too much in
extreme floods.

The river will
break any plan
which does this.
*It must have the
room it needs.*

—EDGAR JADWIN



**US Army Corps
of Engineers.**

For more information, contact USACE Mississippi
Valley Division public affairs office: 601-634-5760
or mvd.usace.army.mil.

Senator WHITEHOUSE. I am captivated by your 34 to 1 return on investment ratio, and would invite you and any of the other witnesses who have return on investment valuations for water, wastewater, public safety, shoreline protection infrastructure to please share that with my office. I would be delighted to add that to my armamentarium for argument on this issue.

Mr. Williams.

Mr. WILLIAMS. Just to follow up, sir, NAFSMA agrees with you entirely. And the numbers that I would like to get to you, I do not have them at hand, for an example, is Hurricane Katrina. The numbers I have heard about the investment that the Federal Government ended up putting into the area in disaster recovery, compared to what the cost would have been to prevent that, is astonishing. The problem, as you have noted, would be, how do you talk the American people into spending that much money on something that only has a chance of occurring, even though, as an engineer, I know it will occur. It is a matter of when.

So I agree, and NAFSMA supports your statement, and we will do everything we can to further that and give you the information you need.

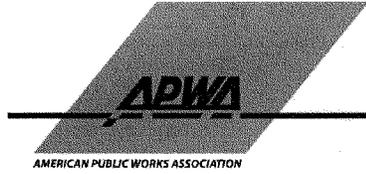
Senator WHITEHOUSE. Well, I appreciate it. I thank all the witnesses for their testimony and the organizations that you represent for your support and effort behind this bill. I am completely supportive of Chairman Boxer's effort to try to get this moving before we end this session. I think there is a good chance that that could happen. But we will all have to push together to make it happen, and I appreciate very much that you and others are here to get that done.

In terms of the record, the record will remain open for a time to be determined by agreement between the majority and the minority. But the witnesses should expect to receive questions, and if you could turn them around relatively quickly, I would appreciate it.

So subject to that, the hearing is adjourned.

[Whereupon, at 12:18 p.m., the hearing was adjourned.]

[Additional material submitted for the record follows:]



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www.apwa.org
2345 Grand Blvd., Suite 200
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Washington, DC 20002-4682
202-438-9541
fax 202-438-9542

Hearing on the *Water Resources Development Act of 2012*

Senate Environment and Public Works Committee

Statement of
Elizabeth Treadway, PWLF
President of the American Public Works Association

November 15, 2012

Madam Chair, Ranking Member Inhofe and members of the Committee, thank you for the opportunity to submit testimony relating to the recent hearing on the Water Resources Development Act of 2012. My name is Elizabeth Treadway, President of the American Public Works Association (APWA). I submit this statement reaffirming APWA's support for action that creates increased funding for capital investment in water and wastewater infrastructure on behalf of the more than 28,500 public works professionals who are members of APWA.

Background

APWA is an organization dedicated to providing sustainable public works infrastructure and services to millions of people in rural and urban communities, both small and large. Working in the public interest, APWA members plan, design, build, operate and maintain transportation, water supply and wastewater treatment systems, stormwater management, drainage and flood control infrastructure, waste and refuse disposal systems, public buildings and grounds and other structures and facilities essential to the economy and quality of life nationwide.

APWA members take a lead role in the effective management of facilities protecting water quality and are too familiar with the challenges local jurisdictions face keeping up with the demand for clean safe water. The current infrastructure system is deteriorating and strains under the increasing demands for sound flood control, efficiency waterway transportation systems and for clean and safe water. According to the EPA's most recent clean water and drinking water needs assessment surveys, local communities will need \$300 billion in wastewater and \$335 billion in drinking water infrastructure improvements for capital expenditures over the next 20 years. Studies show that up to 25 percent of treated water is lost. Sufficient funding of water and wastewater facilities will increase sustainability by ensuring that water loss is kept to a minimum. Additionally, the Water Infrastructure Network estimates that every \$1 billion invested in waster infrastructure capital creates nearly 28,000 jobs. Local jurisdictions struggle to fund these infrastructure capital projects. The state of the nation's water resources infrastructure is dire.

APWA Position on the Water Resources Development Act (WRDA)

Robust federal investment in water infrastructure can address important public health and environmental concerns while also improving economic competitiveness and creating much needed jobs. We applaud the committee's leadership and continued focus on working with local partners to see that vital water infrastructure projects receive adequate funding.

APWA supports the reauthorization of The Water Resources Development Act of 2012 (WRDA). A WRDA has not been authorized since 2007. In the face of the current deteriorating state of water infrastructure, it is clear a new authorization is necessary to continue approved flood control, navigation, and environmental projects and studies by the United States Army Corps of Engineers.

As you consider this legislation, we offer some recommendations to improve the bill. Specifically, we recommend a revision to Section 214 which has been reauthorized for limited terms in the past. APWA supports the Section 214 program initially authorized in WRDA 2000 and recommends that this program be made permanent to allow the Army Corp to continue using funds contributed by state or local governments to expedite permitting for infrastructure projects with minimal environmental impact. The reduction in permit waiting times is beneficial to local governments because it removes unnecessary bureaucratic impediments and allows them to move forward with integral infrastructure projects, saving time, money and the environment.

Levee and Dam Safety

APWA also supports the establishment of a National Levee Safety Program and increased funding of the Dam Safety Program. Both programs support critical infrastructure systems which are vital to this country's disaster mitigation efforts. Public works has a central role in flood protection and impact mitigation and plays a key role in emergency planning, response and recovery from flooding. Operating and maintaining critical infrastructure services, such as pumping mechanisms and drainage systems, levees and dams directly impact the ability to respond to a flood.

We believe that in order to create a more resilient nation, adequate flood mitigation funding is needed and must remain in place to address the preventative measures necessary to protect communities. In 2005, the Multi-Hazard Mitigation Council, a council of the National Institute of Building Sciences, published a study which found that every dollar the Federal Emergency Management Agency invested into mitigation yields approximately \$4 in cost savings to the taxpayer.

Implementing mitigation plans and projects—such as the National Levee Safety Program and Dam Safety Program—reduces loss of life, personal property damage and reliance on funding from actual disaster declarations. Effective mitigation efforts can not only break the cycle of repeated damage and reconstruction that can paralyze communities but also improve recovery time from such disasters. APWA encourages greater cooperation and coordination among agencies responsible for levee funding, construction, operation, maintenance and assessment. Enhanced coordination among federal, state and local governments is vitally important to mitigation efforts, especially in cases of overlapping jurisdiction.

Additionally, APWA supports language included in the draft bill that authorizes a comprehensive review of Corps policy guidelines on vegetation on levees. The current “one size fits all” policy disregards the diversity of local environmental needs. Many of the flood damage reduction projects now faced with vegetation removal requirements as a result of this universal policy were initially constructed in partnership with the Corps. A revision of the levee vegetation policy will ensure that variations in local climates and the potential benefits of vegetation are taken into account.

Water Infrastructure Finance and Innovation Act (WIFIA)

APWA supports the new WIFIA provision within WRDA as not only a complement to existing Corps of Engineers flood damage reduction, environmental restoration cost-shared project funding but also as a funding mechanism for water and wastewater infrastructure. APWA supports WIFIA because it establishes an innovative financing program that will provide local

government agencies access to low cost funds for many types of water resources projects including flood control, levees and dams, environmental restoration and water infrastructure projects and will be integral to closing the water infrastructure funding gap. Modeled after the popular Transportation Infrastructure Finance and Innovation Act or TIFIA plan, the WIFIA plan will lower the cost of borrowing funds for municipal water/wastewater agencies. This will be accomplished by leveraging funds directly from the U.S. Treasury which would subsidize borrowing costs and lend the money at lower interest rates than have historically been available in the municipal bond market.

Additionally, APWA is in support of a simplified and streamlined administration of WIFIA. A simplified process would get WIFIA funds out and quickly address current infrastructure challenges and create much needed jobs.

APWA recommends lowering the threshold to ensure that all communities in need of funding for water infrastructure will not be denied access. While APWA supports the WIFIA proposal, the current proposal raises some concerns. The proposal states that only projects that cost \$20 million or more will be eligible for WIFIA funding. Small cities and rural communities have critical needs and should have access to this new tool, if approved. Regions with a predominance of smaller more rural communities tend to have lower cost projects and will consequentially be deprived of much needed funding if this threshold is kept in place. Moreover, while the legislation includes provisions allowing local governments to group several projects into one proposal, this will not eliminate the hurdles facing small cities and rural communities.

APWA supports all efforts to establish increased funding opportunities for water, wastewater, storm water treatment and drainage system enhancements. WIFIA should be one of the many tools that local government agencies can use to finance water capital projects.

State Revolving Funds

We stress that WIFIA should not supplant the existing funding resources such as the State Revolving Fund (SRF). State Revolving Funds (SRFs) have proven to be successful mechanisms that provide local jurisdictions with needed funds for water infrastructure capital

and APWA supports continued federal support for this program. Clean and Safe Drinking Water SRFs have provided \$111 billion to local governments for water infrastructure since their inception. SRFs are a vital resource for financial support especially for small and rural communities. The Clean Water SRF provides 23 percent of water infrastructure funding for localities with fewer than 10,000 residents and the Drinking Water SRF provides 37 percent.

APWA supports continued federal support for this program such as the State Revolving Funds (SRFs) that have proven to be successful mechanisms for providing local jurisdictions with necessary funds for water infrastructure capital.

Conclusion

The consequences of inadequate investment in water infrastructure are dismal. Without increased funding in water infrastructure, local communities will not be able to keep pace with growing demands for flood control, waterways transportation, and clean and safe drinking water. Economic opportunities will be lost. Water infrastructure funding should be a national priority; the stakes are too high to neglect this problem.

Madam Chair and Ranking Member Inhofe and members of the Committee, thank you for holding this hearing and continuing to pursue a solution to the nation's looming water infrastructure funding crisis. We are especially grateful to you and Committee members for the opportunity to submit this statement. APWA stands ready to assist you and your Congressional colleagues as you work to craft a solution to this critical problem.