



DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
CIVIL WORKS
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MAR 25 2009

Honorable Barbara Boxer
Chairwoman
Committee on Environment and Public Works
410 Dirksen Senate Office Building
Washington, D.C. 20510-6175

Dear Madam Chairwoman:

This letter responds to a request you made during the Senate Environment and Public Works Committee hearing on "The Midwest Floods: What Happened and What Might Be Improved for Managing Risk and Responses in the Future" that was held July 23, 2008. In the hearing, you noted the creation of the Interagency Task Force on floodplain management under Brigadier General Gerald Galloway following the Midwest Flood of 1993 and the resulting report, known popularly as the "Galloway Report" and formally as "*Sharing the Challenge: Floodplain Management into the 21st Century.*" You asked and I committed to having the U.S. Army Corps of Engineers review the report and reaffirm its recommendations or put forth new ideas. You also asked which ones have been done. The Corps has since reviewed the report in coordination with the nine Federal agencies involved in floodplain management activities. The resulting assessment of the report's recommendations and our suggestions are summarized below.

The Galloway Report included 97 actions and recommendations in a number of areas including legislation, engineering, ecosystem management, research and development, and interagency cooperation. The majority of the recommendations and their supporting analyses remain valid and still warrant implementation. Eleven of the 97 actions and recommendations have been fully or substantially completed, and 65 are partially complete or are in progress. Twenty have had no substantial progress and only one is no longer required. I have enclosed a table that categorizes the status of each action and recommendation, and a second table that summarizes the status of each in more detail.

The more notable accomplishments include the establishment of the National Committee on Levee Safety by the Congress, the Federal Emergency Management Agency's ongoing Map Modernization Program, the Natural Resource Conservation Service's Rapid Watershed Assessment process, the U.S. Geological Service's National Streamflow Information Program, and the Corps' completion of the Upper Mississippi River Comprehensive Plan. Two of the most significant remaining recommendations are the passage of a National Floodplain Management Act to define governmental responsibilities, strengthen Federal-state coordination, and assure



accountability, and a new Executive Order to reaffirm the Federal government's commitment to floodplain management (i.e., replace Executive Order 11988, *Floodplain Management*).

These findings are consistent with the Interagency Performance Evaluation Taskforce (IPET) Report on the New Orleans and Southeast Louisiana Hurricane Protection System, which identified several of the Galloway Report suggestions, including map modernization, better data collection, and others for further implementation. Possibly more significant, the IPET report captures the evolving paradigm shift in water resources development and management thinking. Emphasis is shifting from controlling flood and storm effects, which rarely if ever meets public expectations for protection against the worst of nature's assaults, to managing the risks, which involves increasing the public's awareness of the risks that remain after a project is constructed. This shift will enable the public and governments to make more informed decisions about avoiding and mitigating the harm of floods and storms. The nation will be well served if we continue to promote this shift along with implementation of the remaining Galloway Report actions and recommendations.

In another key initiative to improve the Nation's ability to address flood and storm risks, we are currently revising the *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies* in accordance with Section 2031 of the Water Resources Development Act of 2007. These *Principles and Guidelines*, adopted in 1983, define the way the Corps formulates, evaluates and selects projects to recommend to Congress for authorization. The various revisions under consideration will increase the focus on ensuring public safety, particularly through the application of risk and uncertainty principles used in addressing flood and storm risk management issues.

A National Floodplain Management Act and a new Executive Order on floodplain management, along with the ongoing revision of the *Principles and Guidelines*, are keys to empowering Federal agencies to address flood and storm risks as expected by the citizens at risk. However, for these initiatives to be effective, we also need to develop an appropriate mechanism to facilitate better communication and coordination among the various Federal agencies involved with the reduction of flood damages. In my opinion, the implementation of these four actions – a National Floodplain Management Act, a new Executive Order, revision of *Principles and Guidelines*, and development of a Federal coordinating mechanism – are the priorities for significantly improving the effectiveness of our efforts to implement the Galloway Report initiatives and reduce the impacts of flooding nationwide. The implementation of these initiatives will form the basis for a needed National flood damage reduction policy that delineates federal, state, local, and tribal responsibilities, establishes priorities among programs, and provides a mechanism for periodic, holistic assessments of progress.

In summary, progress has occurred in addressing flood issues, but as a Nation, we have much left to accomplish. As demonstrated by the 2008 Midwest Flood, our success as a Nation in preparing for and dealing with the consequences of large floods and storms is not yet satisfactory. However, with your assistance, I am sure we can accelerate progress. Please accept my thanks for your interest and support for this important work. I am furnishing copies of this response to the various agencies that helped develop this assessment and/or may be involved in the implementation of the Galloway Report's remaining actions and recommendations.

Very truly yours,

A handwritten signature in cursive script that reads "John Paul Woodley, Jr." followed by a period.

John Paul Woodley, Jr.
Assistant Secretary of the Army
(Civil Works)

Enclosures

2 Enclosures

- 1. Status of Actions and Recommendations from “Sharing the Challenge”, March 16, 2009**
- 2. Status of Actions and Recommendations included in the report of the Midwest Flood of 1993 “Sharing the Challenge: Floodplain Management into the 21st Century”**

Copy furnished:

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**Status of Actions and Recommendations from “Sharing the Challenge”
March 16, 2009**

SUBSTANTIALY COMPLETED		
1	A8.2 Executive Branch	The Administration should reaffirm its support for the USACE criteria under the PL 84-99 levee repair program and send a clear message that future exceptions will not be made.
2	A8.9 Congress (FEMA)	The Administration should support insurance coverage for mitigation actions necessary to comply with local floodplain management regulations.
3	A8.10 FEMA	Develop a program to reduce losses to repetitively damaged insured properties through insurance surcharges, increased deductibles, mitigation insurance, and/or mitigation actions
4	A9.1 (Executive Branch, FEMA)	Hold an interagency strategic planning meeting for those Presidentially declared disasters that require a multi-agency recovery effort.
5	A9.7 FEMA	Increase the 5-day waiting period for flood insurance coverage to at least 15 days.
6	A10.6 DOI	DOI should complete an ecological needs investigation of the upper Mississippi River Basin and provide a report to the Administration within 30 months.
7	A11.1 (USGS)	The USGS should establish a federal clearinghouse for data gathered during preparation of the Review Committee report.
8	A11.2 FEMA	FEMA should investigate the costs and feasibility of completing a national inventory of flood prone structures.
9	A11.4 (Executive Branch)	The Hydrology Subcommittee of the Federal Interagency Advisory Committee on Water Data should review the current standards for computing discharge-frequency relationships in light of observations from the 1993 flood and other recent large floods in the upper Mississippi River Basin.
10	R11.2 (NWS, USGS)	Federal agencies, coordinated by NWS and USGS, should collaborate on an assessment of the effectiveness of the stream gauging network and flood forecasting during the 1993 Midwest flood.

SUBSTANTIALY COMPLETED		
11	R11.7 FEMA	FEMA should conduct research on the issue of NFIP market penetration to determine who buys flood insurance and who does not and why.

PARTIALLY COMPLETED or IN PROGRESS		
1	A5.4 Executive Branch	Issue a new Executive Order to reaffirm the federal government’s commitment to floodplain management with an expanded scope. Under the EO, federal agencies must: Demonstrate that no practicable alternative site exists outside of the floodplain If no alternative exists, take steps to minimize direct and indirect impacts of the proposed action and no restore and preserve the floodplain The FEMA will provide oversight of EO compliance
2	A5.7 Congress (FEMA)	For communities not participating in the NFIP, limit public assistance grants.
3	A5.8 (FEMA)	Encourage communities to obtain private affordable insurance for infrastructure as a prerequisite to receiving public assistance.
4	A5.9 Congress (FEMA)	Provide loans for the upgrade of infrastructure and other public facilities.
5	A5.10 Executive Branch	Establish as the new, co-equal objectives for planning water resources projects under Principles and Guidelines: To enhance national economic development by increasing the value of the Nation’s output of goods and services and improving national economic efficiency To enhance the quality of the environment by the management, conservation, preservation, creation, restoration, or improvement of the quality of natural and cultural resources and ecological systems

		PARTIALLY COMPLETED or IN PROGRESS
6	A5.11 (Executive Branch)	<p>Establish an interdisciplinary, interagency review of the P&G by affected agency representatives to address:</p> <ul style="list-style-type: none"> Structural versus nonstructural project bias; Inclusion of system of accounts or a similar mechanism for displaying impacts; Inclusion of collaborative planning in an ecosystems context for major studies; Expansion of the application of the revised P&G to water and land program, projects, and activities to include: <ul style="list-style-type: none"> All federally constructed watershed and water and land programs; National parks and recreation areas; Wild, scenic, recreational rivers and wilderness areas; Wetland and estuary projects and coastal zones; and National refuges
7	A6.1 Executive Branch, USDA, EPA	The administration should establish an interagency task force, jointly chaired by the USDA and EPA, to formulate a coordinated, comprehensive approach to multiple objective watershed management.
8	A6.2 (Executive Branch, USDA, EPA, DOI)	The DOI, USDA, and EPA should coordinate and support federal riverine and riparian area restoration.
9	A6.3 Congress (USDA)	The Administration's legislative proposals for the 1995 Farm Bill should support continuation and expansion of conservation and voluntary acquisition programs focused on critical lands within watersheds. The proposal should support technical and financial assistance for implementation of watershed management, riparian enhancement, wetland restoration, and upland treatment measures.
10	A6.4 FEMA	Promote the NFIP Community Rating System as a means of encouraging communities to develop floodplain management and hazard mitigation plans and incorporate floodplain management concerns into their ongoing community planning and decision making.
11	A6.5 Executive Branch	Provide funding for the development of state and community floodplain management and hazard mitigation plans.
12	A6.6 FEMA	Map all communities with flood hazard areas that are developed or could be developed.

		PARTIALLY COMPLETED or IN PROGRESS
13	A6.7 Executive Branch (FEMA)	To improve and accelerate delivery of NFIP map products, the Administration should propose supplementing those funds obtained for floodplain mapping from NFIP policyholders with appropriated funds
14	A6.8 FEMA	Utilize technology to improve floodplain mapping.
15	A7.7 Congress	Enact legislation allowing cost-share participation and eligibility requirements under Section 906 and 1135 of the 1986 WRDA to include federal, state, and non-governmental contributions as well as work in-kind.
16	A7.8 Executive Branch	Allocate funds for mitigation lands in concert with and at the same pace as project construction.
17	A8.1 Executive Branch	Establish the USACE as the principal federal levee construction agency.
18	A8.3 (Executive Branch, USACE)	Federal and state officials should restrict support of flood fighting to those levees that have been approved for flood fighting by the USACE.
19	A8.4 (Executive Branch, USACE, FEMA)	Establish a task force to develop common procedures for federal buyouts and mitigation programs.
20	A8.6 Congress (FEMA)	Provide funds in major disasters where supplemental appropriations are made for buyouts and hazard mitigation, through FEMA's Section 404 Hazard Mitigation Grant Program.
21	A8.7 Congress (FEMA, HUD)	Establish a programmatic buyout and hazard mitigation program with funding authorities independent of disaster declarations.
22	A8.8 FEMA	The FEMA should continue to enforce substantial damage requirements, but decide on a definition of substantial damage and stick to that definition.

		PARTIALLY COMPLETED or IN PROGRESS
23	A9.2 Congress (FEMA)	Increase NFIP market penetration through improved lender compliance with the mandatory purchase requirement.
24	A9.3 Congress (FEMA)	Provide for the escrow of flood insurance premiums or payment plans to help make flood insurance affordable.
25	A9.4 FEMA	Develop improved marketing techniques for NFIP.
26	A9.5 Congress (FEMA)	Reduce the amount of post-disaster support to those who could have bought flood insurance but did not, to that level needed to provide for immediate health, safety, welfare; provide a safety net for low-income victims.
27	A9.6 FEMA	Require actuarial-based flood insurance behind all levees that provide protection less than the standard protection.
28	A9.8 Congress (USDA)	The Administration should continue to support reform of Federal Crop Insurance that limits crop disaster assistance payments, increases participation, and makes the program more actuarially sound.
29	A10.7 USACE	Provide an early report in the USACE Upper Mississippi River - Illinois Waterway Navigation Study of environmental enhancement opportunities in the upper Mississippi River.
30	A10.8 USACE	Provide a report on the ecological effects of relocating navigation pool control points under the USACE Navigation Study.
31	A11.3 (Executive Branch, USACE, NWS, USGS)	The USACE, NWS, and USGS, with other collaborators, should continue development of basin-wide hydrologic, hydraulic, and hydrometeorologic models for the upper Mississippi River system.
32	A11.5 Executive Branch (USGS, USACE)	The Administration should support the USGS in development and acquisition of detailed digital topographic data and other land characteristics for use in floodplain management and other resources management activities. Existing DOD technologies should be leveraged to assist in the acquisition of these data.

		PARTIALLY COMPLETED or IN PROGRESS
33	A11.6 Executive Branch	The Administration should direct that scientific research be conducted to identify state-of-the-art techniques or applications for estimating and assessing environmental and social impacts.
34	A11.7 (Executive Branch, USACE, USDA, DOI)	The USACE and USDA, in collaboration with the DOI, should evaluate the effect of natural upland storage and floodplain storage in such areas as wetlands and forested wetlands on main stem flooding.
35	R4.1 (USACE, FEMA)	Reduce the vulnerability of population centers to damages from the standard project flood discharge.
36	R4.2 (FEMA)	Reduce the vulnerability of critical infrastructure to damage from the standard project flood discharge.
37	R5.2 (FEMA)	Increase the state role in all floodplain management activities including, but not limited to, flood fighting, recovery, hazard mitigation, buyout, floodplain regulation, levee permitting zoning, enforcement, and planning. Additionally, for all federally assisted or funded floodfight, repair and recovery, flood damage reduction, and other floodplain activities require: State sponsorship or co-sponsorship in conjunction with local sponsorship Prior state approval
38	R5.3 Congress (USACE, FEMA)	Restructure and refine the scope of federal technical services programs and increase funding for the USACE in the areas of Floodplain Management Services and Planning Assistance to the States programs and increase funding for states through the FEMA Community Assistance Program.
39	R5.4 Congress (FEMA)	Hold FEMA's existing disaster assistance cost-sharing requirements to no more than 75/25; seek to make other agencies disaster programs' cost-share requirements consistent at 75/25.
40	R5.5 Executive Branch	The Administration should seek increased funding for federal agencies to support collaborative planning participation with other federal agencies.
41	R5.6 Executive Branch	Promote the use of programmatic NEPA documents in the planning process.

		PARTIALLY COMPLETED or IN PROGRESS
42	R5.8 (OMB)	OMB should use only the benefit-cost ratio for damage reductions to existing development in establishing Administration funding priorities unless a standard project flood level of protection is provided.
43	R6.1 (FEMA)	Enhance pre-disaster planning and training.
44	R6.2 FEMA	The FEMA should review its policy of issuing revisions to flood insurance maps, which remove property from the floodplain based on fill.
45	R6.3 (FEMA, USACE)	Federal agencies involved in floodplain management should include information regarding floodplain management and past and probable future flood heights and extents in their education and public affairs initiatives.
46	R6.4 (FEMA)	State floodplain management officials should encourage local school districts to include natural hazard education in their curricula.
47	R7.1 Executive Branch, (DOI)	The Administration should support increased funding for the Refuge Revenue Sharing Act.
48	R8.1 (FEMA, USACE)	Federal agencies should capitalize on opportunities, within existing authorities and resources, to enhance the environment when reviewing operations or undertaking repairs or improvements to existing flood damage reduction programs.
49	R8.3 USACE	The USACE should investigate procedures to minimize impacts associated with levee overtoppings.
50	R8.4 USACE	The USACE should coordinate with the SCS to decide on appropriate criteria for evaluating the economics of levee repairs.
51	R8.5 (FEMA, USACE)	Maintain flexibility in hazard mitigation programs to promote cost-effective and appropriate mitigation techniques.
52	R8.6 (FEMA)	Encourage establishment of state-chaired forces to coordinate buyout and implementation of other hazard mitigation activities.
53	R8.7 Congress (HUD)	Encourage use of CDBG (Community Development Block Grant), EDA (Economic Development Administration), and other funding to acquire and relocate or take other mitigation actions where consistent with program objectives.

		PARTIALLY COMPLETED or IN PROGRESS
54	R9.1 Executive Branch	Integrate federal flood response and recovery under the FEMA.
55	R9.2 (FEMA)	Enhance the linkage among response, recovery, and floodplain management.
56	R9.3 (FEMA)	Continue to seek federal-state co-leadership of an interagency hazard mitigation team.
57	R9.4 (FEMA)	States should actively encourage flood insurance purchase by their citizens.
58	R10.1 Congress	Where they do not already do so, states should assume responsibility for regulating levee-related activities such as levee location, alignment, design, construction, upgrade, maintenance, repair, and floodlighting.
59	R10.2 USACE	The USACE should consider land acquisition as an alternative during planning and design of habitat rehabilitation and enhancement projects under the Upper Mississippi River Environmental Management Program.
60	R11.1 (FEMA, USGS, USACE)	Federal water agencies, in collaboration with state, tribal, and local entities, should review and update, as necessary, discharge-frequency relationships for streamflow gages in the upper Mississippi River Basin to reflect the 1993 flood data. The adequacy of the existing stream gauging network should also be reviewed.
61	R11.3 Executive Branch (USACE, USGS)	The USACE and USGS should investigate and better define relationships between high-energy erosion zones, other zones in flood prone areas, and levee failure.
62	R11.4 (USACE, USDA)	Federal agencies should conduct research on biotechnical engineering techniques and incorporate them into design manuals.
63	R11.5 OMB	OMB should review the current system of funding disaster relief; consideration should be given to encouraging the National Science Foundation to support a review.
64	R11.6 USDA	USDA should evaluate the impact of federal farm programs on agricultural land use decisions in and out of the floodplain.

		PARTIALLY COMPLETED or IN PROGRESS
65	R11.8 NSF	<p>The National Science Foundation should consider funding [basic] research on the following subjects: full accounting of all public private benefits and costs of floodplain occupancy and associated floodplain management measures, including both monetary and non-monetary methods of accounting,</p> <p style="padding-left: 40px;">Mapping and regulating areas with movable stream channels and storm drainage overflow and backup,</p> <p style="padding-left: 40px;">Special impacts of floods, including epidemiological and mental health factors, and</p> <p style="padding-left: 40px;">The feasibility and effectiveness of the use of meteorologic data and geomorphic and botanical evidence in conjunction with hydrologic and hydraulic models to estimate flood frequency.</p>

		NO SUBSTANTIAL PROGRESS
1	A5.1 Congress	Enact a National Floodplain Management Act to define governmental responsibilities, strengthen federal-state coordination, and assure accountability.
2	A5.2 Executive Branch	Revitalize the Water Resources Council.
3	A5.3 (Congress)	Reestablish basin commissions in a revised form reflecting current needs.
4	A5.5 Executive Branch	OMB should direct all federal agencies to assess the vulnerability of flooding using a scientific sample of federal facilities and those state and local facilities constructed wholly or in part with federal aid.
5	A5.6 Congress (Executive Branch)	Seek revision of Section 1134 of the Water Resources Development Act of 1986 to provide for phase-out of federal leases in the floodplain.
6	A7.1 Executive Branch (FEMA)	The Administration should establish a lead agency for coordinating acquisition of title and easements to lands acquired for environmental purposes.

		NO SUBSTANTIAL PROGRESS
7	A7.2 Executive Branch (FEMA, DOI)	The Administration should develop emergency implementation procedures to organize federal agencies for environmental land acquisitions.
8	A7.3 DOI (Executive Branch)	The DOI should formalize environmental considerations in multi-agency disaster recovery, land restoration activity through a coordinated Memorandum of Agreement.
9	A7.4 Congress	Seek legislative authority for flexibility in use of programmed funds in emergencies.
10	A7.5 DOI	The DOI should focus land acquisition efforts on river reaches and areas with significant habitat values or resource impacts.
11	A7.6 Executive Branch	Require agencies to co-fund ecosystem management using Operation and Maintenance funds.
12	A8.5 Congress (FEMA)	Provide states the option of receiving FEMA Section 404 Hazard Mitigation Grants as a block grant.
13	A10.1 Congress	Establish upper Mississippi and Missouri basin commissions with a charge to coordinate development and maintenance of comprehensive water resources management plans to include, among other purposes, ecosystem management, flood damage reduction, and navigation.
14	A10.2 Executive Branch	The Administration should expand the mission of the Mississippi River Commission to include the upper Mississippi and Missouri rivers. Further, to recognize ecosystem management as a co-equal federal interest with flood damage reduction and navigation, the Administration should request legislative change to expand commission membership to include the DOI.
15	A10.3 Executive Branch	Assign responsibility for development of an Upper Mississippi River and Tributaries (UMR&T) system plan and for a major maintenance and rehabilitation program for federally related levees to an expanded Mississippi River Commission, operating under the USACE.
16	A10.4 Executive Branch	Seek approval from the Congress to redirect the USACE Floodplain Management Assessment of the upper Mississippi River Basin to development of an UMR&T systems plan. Place this assessment under the Mississippi River Commission operating under USACE.

NO SUBSTANTIAL PROGRESS		
17	A10.5 Congress	Following completion of the survey, seek authorization from the Congress to establish the UMR&T project.
18	R5.1 Congress (EPA)	Revise the RCRA locational standards and contingency planning regulations for consideration of flood hazards in areas impacted by the Standard Project Flood.
19	R5.7 (OMB)	OMB should issue a directive that requires periodic reevaluation of federal water resources project to include potential operation and maintenance modifications.
20	R8.2 Executive Branch	The Administration should propose legislation that establishes consistent cost-sharing across agencies for non-federal participation in like activities.

NO LONGER REQUIRED		
1	A10.9 (Executive Branch, DOI)	The Administration Interagency Ecosystem Management Task Force should select an Ecosystem Management Demonstration Project within the upper Mississippi River Basin, and establish a cross-agency ecosystem management team under DOI to develop plans and budgets for the project.

**Status of Actions and Recommendations included in the report of the Midwest Flood of 1993
“Sharing the Challenge: Floodplain Management into the 21st Century”**

The report, “Sharing the Challenge”, was prepared by the Interagency Floodplain Management Review Committee and submitted to the Administration Floodplain Management Task Force in June of 1994. This interagency effort produced 97 suggested initiatives that are further divided into 61 “Actions” and 36 “Recommendations”. The distinction between “Action” versus “Recommendation” describes the urgency placed on implementation by the Committee.

This report serves as an overall assessment of National flood protection as provided by floodplain management legislation, policies, and practices existing in 1993. As such, it does not carry authority for action, but serves as a guide for those involved with management of the Nation’s floodplains. Also of significance is the lack of metrics that can be used to evaluate progress in flood damage reduction as a whole or for specifically cited “Actions” and “Recommendations“. The responsibility for designing such metrics was left to the implementing Federal agency. The lack of metrics and the magnitude in scope of the recommended initiatives makes quantitative descriptions of progress difficult. There are examples of specific initiative completions such as “increasing the 5-day waiting period for flood insurance to at least 15 days” (Action 9.7) and “the USGS should establish a Federal clearinghouse for data gathered during preparation of the Review Committee report” (Action 11.1), but these examples represent few of the suggested initiatives. Most of the initiatives are, in fact, difficult to complete because of the immensity of scale or they were not priorities within the Administration or Congress. It is noteworthy that the authors of the report recognized a shortcoming in systemic National floodplain management assessment and identified two remedies Action 5.1 “Enact a National Floodplain Management Act to define governmental responsibilities, strengthen Federal-state coordination, and assure accountability”, and Action 5.2 “Revitalize the Water Resources Council” (or similar body) to address these issues.

This status report was prepared by soliciting input from the nine Federal agencies cited in “Sharing the Challenge”: U.S. Army Corps of Engineers, Department of Interior (U.S. Geological Survey, Fish and Wildlife Service), U.S. Department of Agriculture (Natural Resources Conservation Service), Environmental Protection Agency, Department of Homeland Security (Federal Emergency Management Agency), National Oceanic and Atmospheric Administration (National Weather Service), National Science Foundation, Office of Management and Budget, and Department of Housing and Urban Development. Solicitations were requested by specific “Action” or “Recommendation” from the various agencies based on direct citation of responsibility by the Committee or implied responsibility based on the nature of the initiative. The first column in the following table lists responsible agencies for each “Action” and “Recommendation” with implied responsibilities indicated by parentheses.

The second column displays each initiative as stated in the report followed by text (italicized) from the report to provide context. The comments from each agency are presented verbatim with the responsible agency indicated in parentheses at the end of the response. It is noteworthy that for those initiatives with multiple agency responses none were in conflict. A majority of responses are reported as on-going programs that require additional time and/or funding to reach completion. However, a significant number of responses require Administration or Congressional action to initiate or move forward to the next level of implementation.

Responsible Agency (Parenthesis indicates implied responsibility)	ACTIONS PROPOSED BY REPORT (Italicized entries indicate explanatory text from Sharing the Challenge Report)
5.1 Congress	<p>Enact a National Floodplain Management Act to define governmental responsibilities, strengthen federal-state coordination, and assure accountability.</p> <p><i>“Management of the nation’s water resources is provided by several agencies. Yet water resources issues are inextricably linked and accomplishment of agency mandates requires coordination and collaboration among agencies.</i></p> <p><i>A major component of floodplain management is land-use control, which is the sole responsibility of state, tribal, and local entities. ... The federal responsibility rests with providing leadership, technical information, data, and advice to assist states in their pursuit of sound floodplain management.”</i></p> <p>The described lack of definition of responsibilities, federal-state coordination, and accountability continues to exist. The need for a National Floodplain Management Act remains. (USACE, Jan 09)</p>
5.2 Executive Branch	<p>Revitalize the Water Resources Council.</p> <p><i>“The 1965 federal Water Resource Planning Act established the U.S. Water Resources Council (WRC). However, while still authorized funding for the WRC was discontinued in the early 1980s. Lost with the WRC funding was its ability to provide interagency coordination, technology transfer, and data and information services. Deficiencies inherent in the original WRC which established a command-and-control, top-down approach to achieve consistency in federal water resources activities should not be repeated.”</i></p> <p>Ad-hoc approaches to improved coordination and need identification have had limited success. The lack of a mechanism to facilitate interagency coordination and collaboration across the spectrum of federal agency responsibilities remains a significant impediment to effectively dealing with flood risk reduction. (USACE, Jan 09)</p>
5.3 (Congress)	<p>Reestablish basin commissions in a revised form reflecting current needs.</p> <p><i>“Basin commissions provide a means of preserving and enhancing the state and local attention to floodplain management as well as broader water and natural resource issues, while providing a mechanism to involve or enroll appropriate federal agencies in state and local floodplain management activities. Because watersheds and associated ecosystems do not coincide with, nor do water resources and environmental protection problems respect, political boundaries, a vehicle is needed to integrate federal-multi-jurisdictional examinations of issues and solutions.”</i></p> <p>Basin commissions have not been established or reestablished since the publication of “Sharing the Challenge”. Although federal agencies and state organizations have moved toward integrated water resource management, the absence of regional coordinating bodies severely impedes progress. The need for basin commissions or some other regional/basin/watershed coordinating bodies remains. (USACE, Jan 09)</p>

Responsible Agency (Parenthesis indicates implied responsibility)	ACTIONS PROPOSED BY REPORT (Italicized entries indicate explanatory text from Sharing the Challenge Report)
5.4 Executive Branch	<p>Issue a new Executive Order to reaffirm the federal government’s commitment to floodplain management with an expanded scope</p> <ul style="list-style-type: none"> - Under the EO, federal agencies must <ul style="list-style-type: none"> o Demonstrate that no practicable alternative site exists outside of the floodplain o If no alternative exists, take steps to minimize direct and indirect impacts of the proposed action and no restore and preserve the floodplain o The FEMA will provide oversight of EO compliance <p><i>“In 1977 with issuance of Executive Order (EO) 11988, Floodplain Management, President Carter raised federal agency attention to issues of floodplain use. With time, however, it has become apparent that some federal agencies either are unaware of or misunderstand the requirements for the EO and either build or support building in floodplains.”</i></p> <p><i>“A new EO, built upon EO 11988, will reaffirm the federal commitment to floodplain management by addressing the full scope of federal activities, particularly critical infrastructure, acknowledging uncertainties of scientific information, stating the economic policy implications of floodplain development, and requiring an interagency consultative process. The EO would provide a means to clearly articulate and thereby institutionalize the new vision of floodplain management. It would emphasize avoidance of federal activities in the floodplain.”</i></p> <p>The U.S. Army Corps of Engineers and the Federal Emergency Management Agency are currently staffing a proposed revision to EO 11988. (USACE, Jan 09)</p>
5.5 Executive Branch	<p>OMB should direct all federal agencies to assess the vulnerability of flooding using a scientific sample of federal facilities and those state and local facilities constructed wholly or in part with federal aid.</p> <p><i>“This vulnerability assessment should identify and quantify the total federal investment subject to flood damage. The target flood for protecting critical infrastructure (i.e., SPF or 500-year) should be considered in the assessment. The assessment should also contain recommendations on mitigation measures to protect federal facilities currently at risk. The results of this study would guide decisions regarding the need, if any, of pre-flood mitigation measures. This vulnerability assessment should identify and quantify the total federal investment subject to flood damage.”</i></p> <p>The recommended action did not take place and there is no current federal policy requiring the assessment of flooding risk (or vulnerability) of any facilities constructed in whole or part using federal funds. The proposed revision to EO 11988 includes a requirement for flood damage, vulnerability assessments. (USACE, Jan 09)</p>

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5.6 Congress (Executive Branch)	<p>Seek revision of Section 1134 of the Water Resources Development Act of 1986 to provide for phase-out of federal leases in the floodplain.</p> <p><i>The federal government leases some of its property in floodplains for both seasonal and full-time recreational cottage uses. In St. Charles County, Missouri, 13 percent of the repetitive NFIP claims are from properties on land leased from the federal government.</i></p> <p><i>These leases appear to contradict the EO 11988 mandate that the government “take action to reduce the risk of flood loss to minimize the impact of floods on human safety, health, and welfare”. However, Section 1134 of the Water Resourced Development Act of 1986 directed the Secretary of the Army to extend the leases until such time as they are terminated by the leaseholder or their assignees.</i></p> <p>Many leases remain and continue to provide federal support of activity in the floodplain. Modification of Section 1134 is required to phase-out these leases. (USACE, Jan 09)</p>
5.7 Congress (FEMA)	<p>For communities not participating in the NFIP, limit public assistance grants.</p> <p><i>“Create additional incentives for communities to participate in the NFIP by limiting public assistance given to on-NFIP communities to rescue and emergency operations only. Participation in the NFIP will help assure that new infrastructure complies with basic floodplain management requirements and does not adversely impact other development.”</i></p> <p>Community participation in the NFIP is currently not a requirement for eligibility for repair assistance under the Public Assistance Program. Such a requirement would require regulatory action. However, applicants that receive such assistance from FEMA must purchase and maintain insurance to cover the assistance they received for the type of damages they incurred. This includes flood insurance for flood related damages. Additionally, for facilities located in an identified Special Flood Hazard Area (SFHA), Public Assistance for repairs is reduced by the amount of NFIP insurance that would have been carried. Further, FEMA will not provide repair assistance for facilities located in a SFHA in an NFIP sanctioned community. However, if the community complies with NFIP requirements after the disaster, the facility will become eligible, but subject to the reduction in assistance for the amount of NFIP insurance that should have been carried. (FEMA, Jan 09)</p>

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5.8 (FEMA)	<p>Encourage communities to obtain private affordable insurance for infrastructure as a prerequisite to receiving public assistance.</p> <p><i>“Require a community desiring public assistance to demonstrate that it had done all it could to secure affordable private insurance for public facilities. This would help to increase community responsibility and accountability and would reduce the federal taxpayer burden associated with risky behavior in floodplains.”</i></p> <p>FEMA continues to work through ASFP, the National Conference of Insurance Legislators, and the National Association of Insurance Commissioners to highlight the importance of flood insurance for public structures (FEMA, Jan 09)</p>
5.9 Congress (FEMA)	<p>Provide loans for the upgrade of infrastructure and other public facilities.</p> <p><i>“A loan program would encourage and enable communities to undertake action during recovery to reduce future damages to public facilities by relocating or protecting those facilities rather than repairing the facility at its current location. In addition, such a program would assist communities to upgrade undersized storm sewer systems or other flood control facilities. Because upgrades are capital improvements that have long term benefits for the community, loans are more appropriate than grants. The loan program can be established to allow flexible terms based on the communities’ ability to pay (e.g., zero or low interest rates and long repayment period). The Administration should seek Congressional action to establish such a program.”</i></p> <p>The Public Assistance Program can providing funding for cost-effective measures that would reduce or eliminate the threat of future similar damage to a facility damaged during a disaster, under the guidelines and procedures established in regulation and policy. The measures must apply only to the damaged elements of a facility rather than to other, undamaged parts of the facility or to the entire system. The Public Assistance Program does not have authority under the Stafford Act to provide loans for upgrading facilities. (FEMA, Jan 09)</p>
5.10 Executive Branch	<p>Establish as the new, co-equal objectives for planning water resources projects under Principles and Guidelines:</p> <ul style="list-style-type: none"> - To enhance national economic development by increasing the value of the Nation’s output of goods and services and improving national economic efficiency - To enhance the quality of the environment by the management, conservation, preservation, creation, restoration, or improvement of the quality of natural and cultural resources and ecological systems <p><i>“Calculations of National Economic Development (NED) are meant to include all environmental and social benefits and costs from which monetary values can be obtained. The monetary focus on NED, however, does not provide adequate consideration to unquantifiable environment and social values. Because of their non-market nature, environmental quality, ecosystem health, the existence of endangered species, and other social effects, are not easily quantified in monetary</i></p>

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	<p><i>values. This difficulty limits formulation and acceptance of projects capable of striking a better balance between flood damage reduction, other forms of water resources development, and the environment.”</i></p> <p>As directed by Section 2031 of WRDA 2007, the Secretary of the Army is preparing a revised 'Principles and Guidelines' and will submit these to the Congress in the near future. WRDA 2007 established new objectives for USACE planning. While the above recommendation addressed the application of 'Principals and Guidelines' to other federal agencies beyond USACE, the revisions directed by WRDA 2007 only apply to USACE.</p> <p>USACE has already adopted planning guidelines that have expanded their consideration of environmental objectives in the assessment of proposed projects to the extent of their authorized authority. (USACE, Jan 09)</p>
5.11 (Executive Branch)	<p>Establish an interdisciplinary, interagency review of the P&G by affected agency representatives to address:</p> <ul style="list-style-type: none"> - Structural versus nonstructural project bias; - Inclusion of system of accounts or a similar mechanism for displaying impacts; - Inclusion of collaborative planning in an ecosystems context for major studies; - Expansion of the application of the revised P&G to water and land program, projects, and activities to include: <ul style="list-style-type: none"> o All federally constructed watershed and water and land programs; o National parks and recreation areas; o Wild, scenic, recreational rivers and wilderness areas; o Wetland and estuary projects and coastal zones; and National refuges <p>The ongoing revision of 'Principles and Guidelines' required by Section 2031 of WRDA 2007, is being coordinated with other federal agencies and the team developing the revisions is interdisciplinary. (USACE, Jan 09)</p>
6.1 Executive Branch, USDA, EPA	<p>The administration should establish an interagency task force, jointly chaired by the USDA and EPA, to formulate a coordinated, comprehensive approach to multiple objective watershed management.</p> <p><i>“The recommended task force would provide an overview of federal watershed management programs to ascertain their effectiveness and identify areas for improvements. The task force will necessarily also include the USACE and the DOI due to their missions and jurisdictions in water resources activities. Task force members could identify areas in which interagency missions coincide and are achievable through watershed management on a collaborative level. The task force should also follow up on the demonstration project discussed in Chapter 11 under the section on hydrologic and hydraulic benefits of natural floodplain functions.”</i></p> <p>On June 26, 2008, NRCS Chief Arlen Lancaster, and staff met with the United</p>

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	<p>States Army Corps of Engineers (USACE) to concur on the NRCS and USACE National Partnership Agreement Action Plan. Included in this plan is an action item for Natural Disaster Recovery. The intent of this action is to enhance collaboration between these agencies when it comes to natural disaster recovery.</p> <p>On July 22, 2008, NRCS received a memorandum from the Department Of The Army, inviting NRCS to participate in an Interagency Levee Task Force (ILTF) for the Midwest Floods of June 2008. This Task force will consist of senior representatives from the agencies and will oversee the establishment of joint Federal-State partnership teams designated as Federal Levee Work Groups (FLWG) within the impacted Joint Field Office (JFO) structures. The ILTF will approve the basic process to be used by the FLWG and participate in the approval process of any viable non-structural alternatives that may be proposed. The FLWG located within the JFO structures will assist in the rapid and effective recovery of flood control systems protecting the communities and areas affected before the next flood season. The recovery effort, encompassing Federal, state, tribal, and local programs and authorities, will strive to minimize risk to life and improved property, while ensuring a reasonable, cost-effective approach to flood risk management efforts, systemic flood plain management, and opportunities for ecosystem restoration.</p> <p>NRCS has established nationally a Rapid Watershed Assessment (RWA) process. The RWAs provide initial estimates of where conservation investments would best address the Natural Resource concerns of landowners, conservation districts, and other community organizations and stakeholders within a watershed. These assessments provide a quick and inexpensive source of information on which to base decisions about conservation priorities, allocation of resources, funding implementation, and how to report outcomes/results, for multiple objective watershed management.</p> <p>The United States Department of Agriculture (USDA), including NRCS is involved in numerous partnerships. USDA has joined other federal agencies in establishment of multiple agreements, task forces and boards where they work together on watershed type activities.</p> <p>The following attachments are example of agreements USDA has entered into:</p> <ul style="list-style-type: none"> • USACE/NRCS Partnership Agreement • NRCS/EPA Water Quality Credit Trading Partnership Agreement • NRCS/EPA Bi-monthly Meetings - Principles of Collaboration • Mississippi River/Gulf of Mexico Hypoxia Task Force • Environmental Services Board • Environmental Services Board Coordination Committee <p>(USDA, Jan 09)</p> <p>An interagency task force jointly chaired by USDA and EPA to formulate a coordinated, comprehensive approach to multiple objective watershed management was, to the best of our knowledge not commissioned or established. Many in the field of water resource management have called for such an</p>

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	interagency commission or task force to be established and meanwhile much advancement of integrated watershed management has occurred since the 1994 report. (EPA, Jan 09)
6.2 (Executive Branch, USDA, EPA, DOI)	<p>The DOI, USDA, and EPA should coordinate and support federal riverine and riparian area restoration.</p> <p><i>“Stream and riparian restoration vital to watershed management holds, for a relatively small investment, promise of improved water quality, wildlife habitat, and reduced runoff. Federal efforts designed to restore nonurban stream and riparian areas include those of the Bureau of Land Management, the National Park Service, the Natural Resources Conservation Service, and the Forest Service. Nonprofit groups and private and local interests have also focused on similar activities. Increasingly many stream and riparian sites located within urban and suburban areas are also being identified as degraded.”</i></p> <p>USDA administers a number of conservation programs that support riverine and riparian restoration. The Environmental Quality Incentives Program (EQIP) provides cost share assistance to landowners to voluntarily install conservation practices on their land, which reduce the loss of nutrients and sediment from the farm to the river systems. Many of these practices also improve the water holding capacity of the soil. USDA delivers the Conservation Reserve Program (CRP), which provides payments to farmers who agree to temporarily remove their highly erodible and other sensitive lands from agricultural production. CRP also has an enhancement program, the Conservation Reserve Enhancement Program (CREP) that provides funding for riparian buffers and other land treatment practices that contribute to the health of riverine systems. The Wetlands Reserve Program (WRP) acquires conservation easements from voluntary sellers and restores wetlands and associated eligible riparian areas on the encumbered lands. The Emergency Watershed Protection Program-Floodplain Easement Program (EWPP-FPE) acquires conservation easements on floodplain and restores floodplain functions and values.</p> <p>All of these programs are coordinated utilizing a systems approach to watershed management with partnering agencies such as State governments, the Department of the Interior’s Fish and Wildlife Service, the Corps of Engineers and the Federal Emergency Management Agency. This ensures that a wide range of environmental objectives are included within the enrollment criteria.</p> <p>NRCS is currently coordinating with the Interagency Levee Task Force (ILTF). The ILTF is evaluating the potential for non-structural alternatives to the repair of levees that were damaged in the flooding last spring. The nonstructural alternative they are proposing (basically setback levees) will leave some areas unprotected. The ILTF wants to coordinate with NRCS to ensure conservation easement programs are available to share the cost of floodplain acquisition on these unprotected areas.</p> <p>Multiple benefits could potentially be realized by this project, including reducing flood damage risk to the area and restoring natural riverine and riparian</p>

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	<p>habitats. (USDA, Jan 09)</p> <p>There are many examples of riverine and riparian area restoration projects supported through grants and technical assistance from DOI, USDA's Natural Resource Conservation Service, and EPA. DOI, USDA/NRCS, and EPA often coordinate on specific projects and project plans as well as in the formulation and distribution of technical guidance. (EPA, Jan 09)</p> <p>The DOI contributed to the development of the Upper Mississippi River Comprehensive Plan that addresses riverine and riparian area restoration. The plan is available from www2.mvr.usace.army.mil/umrcp/. (DOI, Jan 09)</p> <p>This action called for the Administration to establish a stream and riparian program with the DOI, USDA, and EPA cooperating to provide technical assistance for state, tribal, local, and private restoration. Currently, there is coordination between the DOI and USDA through the USFWS Partners for Fish and Wildlife Program (Partners Program). The Partners Program is a voluntary private lands initiative developed to provide technical and financial assistance to private landowners and other partners who conduct habitat restoration and improvement activities on their land. The Partners Program also provides technical assistance to USDA and to landowners participating in conservation programs administered by USDA under the Farm Bill (e.g., Wetlands Reserve Program, Wildlife Habitat Incentives Program, and Conservation Reserve Program). The FWS is not aware of any Administration action since distribution of the Galloway report that specifically establishes a program that includes DOI, USDA, and USEPA. (FWS, Feb 09)</p>
6.3 Congress (USDA)	<p>The Administration's legislative proposals for the 1995 Farm Bill should support continuation and expansion of conservation and voluntary acquisition programs focused on critical lands within watersheds. The proposal should support technical and financial assistance for implementation of watershed management, riparian enhancement, wetland restoration, and upland treatment measures.</p> <p><i>"The Food Security Act of 1985, and the Food, Agriculture, Conservation, and Trade Act of 1990, the last comprehensive congressional actions on agricultural policy, contained strong conservation measures to reduce soil loss and improve water quality by creating incentives and disincentives, primarily through cross-compliance with other agricultural programs."</i></p> <p>The Administration provided guidance to Congress through the "1995 Farm Bill Guidance of the Administration" book, which includes guidance on continued enhancement of Agricultural Conservation Programs. Guidance provided includes:</p> <ul style="list-style-type: none"> * "An open and inclusive process would be used at the state level to identify priority areas and issues, consistent with the national guidelines, that can be addressed on a watershed or some other geographical basis." * "Broaden the types of land eligible for the Wetland Reserve Program (WRP) to include critical environmentally sensitive acres associated with

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	<p>wetlands and riparian zones that the Secretary determines are suitable for protection with long-term or permanent easements."</p> <p>* "A conservation investment initiative would provide cost-sharing and loans to help farmers, ranchers, non-industrial private foresters, and other land users implement conservation practices."</p> <p>The Administration was involved in providing guidance to Congress for the 2002 and 2008 Farm Bills. The Administration's support for Agricultural Conservation Programs was highlighted in "USDA 2007 Farm Bill Proposal." The guidance included incorporating the floodplain easements function into WRP. (USDA, Jan 09)</p>
<p>6.4 FEMA</p>	<p>Promote the NFIP Community Rating System as a means of encouraging communities to develop floodplain management and hazard mitigation plans and incorporate floodplain management concerns into their ongoing community planning and decision making.</p> <p><i>"The NFIP Community Rating System (CRS) credits many of the more restrictive floodplain management requirements suggested by states and communities currently. The CRS provides discounts on flood insurance premiums in those communities that implement floodplain management programs exceeding the NFIP minimum."</i></p> <p>The Community Rating System (CRS) has grown extensively since the 1993 Midwest floods. 1990 was the first year of the CRS. The CRS has grown to 1,094 CRS participating communities as of October 2008. These communities contain approximately 2/3 of all flood insurance policies, resulting in the CRS playing a major role in the NFIP as a voluntary best-practices incentive program.</p> <p>The CRS provides credit to communities to develop and implement a floodplain management plan. The CRS Floodplain Management plan requirements are deliberately designed to compliment the requirements of the Disaster Mitigation Act of 2000. This allows communities to meet both CRS planning requirements and the hazard mitigation plan requirements of DMA 2000 though preparing a single plan. Approximately one-third of all CRS communities receive credit for floodplain management planning with additional communities seeking credit each year. (FEMA, Jan 09).</p>
<p>6.5 Executive Branch</p>	<p>Provide funding for the development of state and community floodplain management and hazard mitigation plans.</p> <p><i>"The development and implementation of state and community floodplain management and hazard mitigation plans can reduce significantly federal expenditures of future disasters."</i></p> <p>1) One source of additional funding could be a mitigation fund established using NFIP premiums (such as that provided for in S. 1405 and H.R. 3191 both entitled by the National Flood Insurance Reform Act of 1994).</p> <p>2) Another source of funding could be a portion of the monies appropriated for</p>

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	<p>the FEMA Disaster Fund or other appropriated funds.</p> <p>3) FEMA receives about \$40M to provide grants each year for floodplain management activities.</p> <p>4) Post disaster, FEMA automatically provides Hazard Mitigation Grant Program (HMGP) funding when a disaster has been declared. HMGP funding is allocated using a “sliding scale” formula based on the percentage of the funds spent on Public and Individual Assistance programs for each Presidentially declared disaster. For states with a Standard State Mitigation Plan, the formula provides 15 % of the first \$2B of estimated aggregate amounts of disaster assistance; 10 % for the next portion of amounts between \$2B and \$10B; and 7.5 % for the next portion of amounts between \$10B and \$35.333B. 7 % of this funding can be used for mitigation planning.</p> <p>5) Over \$300M a year in is devoted to flood mapping activities.</p> <p>6) There are additional monies available for repetitive and severe repetitive loss properties for buyouts and mitigation activities. (USACE, Jan 09)</p> <p>Not Recommended by FEMA. This is a duplication of services that FEMA already provides. Providing funding for USACE to perform these functions would cause overlaps and confuse the public. An alternative to what is proposed would be to increase funding and staff levels for FEMA to more effectively engage the USACE in these areas to better leverage their expertise. (FEMA, Jan 09)</p>
<p>6.6 FEMA</p>	<p>Map all communities with flood hazard areas that are developed or could be developed.</p> <p><i>“The FEMA should review flood prone communities that have never been mapped, and map those communities with flood hazard areas that are developed or have potential for development. NFIP communities then would have the information necessary to enforce floodplain management regulations and to ensure that individuals at risk purchase flood insurance. Mapping the floodplain will provide an incentive for non-participating communities to join the program because federal assistance for acquisition and construction of buildings is not available in designated flood hazard areas unless a community is participating in the NFIP.”</i></p> <p>FEMA’s Flood Map Modernization program is on track to provide digital, updated flood maps for 92% of the U.S. population. This represents nearly all the communities with flood hazard areas that are developed or could be developed. The prioritization for these updates was based on flood risk and accounted for projected population growth. FEMA’s new Risk Mapping Assessment and Planning (MAP) program will continue to improve the mapping of flood hazards in communities where there is flood risk. (FEMA, Jan 09)</p>
<p>6.7 Executive Branch</p>	<p>To improve and accelerate delivery of NFIP map products, the Administration should propose supplementing those funds obtained for floodplain mapping from NFIP policyholders with appropriated funds.</p> <p><i>“Current NFIP funding derived from the \$25 federal policy charge is not adequate</i></p>

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(FEMA)	<p><i>for maintaining and updating floodplain management maps. Raising this surcharge may undermine efforts to market flood insurance and would not be equitable since policyholders are only one user of these maps. Since the maps are critical for floodplain and emergency management, Congress should supplement policyholder dollars with appropriated funds.”</i></p> <p>The Flood Map Modernization program was made possible by significant funding appropriations. In addition to funding from NFIP policyholder fees, the mapping program has received \$1 Billion in appropriated funding over the past 5 years. This trend is expected to continue (FEMA, Jan 09)</p>
6.8 FEMA	<p>Utilize technology to improve floodplain mapping.</p> <p><i>“The FEMA should investigate alternative methods of expediting the conversion of FIRMs to digital format. Digital conversion will result in a long-term cost savings because of reduced ongoing map maintenance requirements. The digital format will enable the efficient accommodation of large as well as small changes and will result in more accurate maps.”</i></p> <p>The Flood Map Modernization program has been primarily about the use of technology to improve the Nation’s flood hazard maps. The program has leveraged Geographic Information Systems (GIS) technology to improve the flood hazard analyses and to deliver more powerful tools for understanding the results of the hazard analysis. The program has also leveraged LiDAR and IFSAR, new technologies for mapping land surface elevations, to improve the data used for flood hazard analyses. The program has also utilized the internet to transform the distribution and use of the flood hazard products from paper to digital.</p> <p>Risk MAP goes even further to use GIS technology to assess and quantify flood risk, improve the communication of risk and enable more effective flood risk mitigation. (FEMA, Jan 09)</p>
7.1 Executive Branch (FEMA)	<p>The Administration should establish a lead agency for coordinating acquisition of title and easements to lands acquired for environmental purposes.</p> <p><i>“During the early post-flood response period, land acquisition did not emerge as a viable risk-reduction option for a number of reasons: limited funds, lack of a participatory mechanism for mixing funds from different agencies, and lack of a focal point within the government for such action. Part of the problem is that no single federal agency has authority to coordinate existing land buyout or easement programs for environmentally related acquisitions, such as the USDA Wetland Reserve Program, Emergency Wetland Reserve Program, FS forest acquisition program, the USACE Missouri River Mitigation Project, and the FWS National Wildlife Refuge acquisition program.</i></p> <p><i>Federal acquisitions and easement programs share capabilities to restore habitats for native fish and wildlife species of special federal interest. Such programs can address the needs of landowners who may wish to discontinue row cropping or may simply wish to sell fee title interest altogether.”</i></p>

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	<p>FEMA's authorities do not provide a capability to acquire lands for environmental purposes. FEMA's land acquisition authority focuses on reducing future disaster losses. A requirement of this authority is that the land acquired be managed as open space, in perpetuity, which has environmental benefits. (FEMA, Jan 09)</p> <p>No agency has emerged or been designated to be the lead for coordinating the acquisition of titles or easements to lands for environmental purposes. (USACE, Jan 09)</p> <p>The intent of the Interagency Floodplain Management Review Committee (IFMRC) was to improve the efficiency of existing programs within DOT, USDA, and the Corps of Engineers. We are not aware of any Administration or Executive Branch initiatives since distribution of the Galloway Report to assign a lead role to any agency with authority to acquire real estate interests. However, since the 1993 Flood, the FWS and USDA Forest Service have acquired over 45,000 acres of flood distressed land from willing sellers and donations in the basin. The following table summarizes lands acquired for environmental purposes through existing institutional architectures.</p>																																											
	<table border="1"> <thead> <tr> <th data-bbox="412 959 591 1024"><u>River</u></th> <th data-bbox="591 959 721 1024"><u>State(s)</u></th> <th data-bbox="721 959 1256 1024"><u>Management Agency</u></th> <th data-bbox="1256 959 1432 1024"><u>Post 1993 Acquisition</u></th> </tr> </thead> <tbody> <tr> <td data-bbox="412 1024 591 1089">Mississippi</td> <td data-bbox="591 1024 721 1089">IA, IL, MN, WI</td> <td data-bbox="721 1024 1256 1089">Upper Mississippi River NW&FR (FWS)</td> <td data-bbox="1256 1024 1432 1089">2,128*</td> </tr> <tr> <td data-bbox="412 1089 591 1123">Mississippi</td> <td data-bbox="591 1089 721 1123">MO, IL</td> <td data-bbox="721 1089 1256 1123">Middle Mississippi NWR (FWS)</td> <td data-bbox="1256 1089 1432 1123">7296</td> </tr> <tr> <td data-bbox="412 1123 591 1157">Mississippi</td> <td data-bbox="591 1123 721 1157">MO</td> <td data-bbox="721 1123 1256 1157">Great River NWR (FWS)</td> <td data-bbox="1256 1123 1432 1157">1,100</td> </tr> <tr> <td data-bbox="412 1157 591 1190">Illinois</td> <td data-bbox="591 1157 721 1190">IL</td> <td data-bbox="721 1157 1256 1190">Emiquon NWR (FWS)</td> <td data-bbox="1256 1157 1432 1190">1,838</td> </tr> <tr> <td data-bbox="412 1190 591 1224">Illinois</td> <td data-bbox="591 1190 721 1224">IL</td> <td data-bbox="721 1190 1256 1224">Meredosia NWR (FWS)</td> <td data-bbox="1256 1190 1432 1224">517</td> </tr> <tr> <td data-bbox="412 1224 591 1257">Iowa</td> <td data-bbox="591 1224 721 1257">IA</td> <td data-bbox="721 1224 1256 1257">Port Louisa NWR (FWS)</td> <td data-bbox="1256 1224 1432 1257">11,721</td> </tr> <tr> <td data-bbox="412 1257 591 1291">Missouri</td> <td data-bbox="591 1257 721 1291">MO, IA</td> <td data-bbox="721 1257 1256 1291">Big Muddy NWR (FWS)</td> <td data-bbox="1256 1257 1432 1291">11,198</td> </tr> <tr> <td data-bbox="412 1291 591 1325">Cache</td> <td data-bbox="591 1291 721 1325">IL</td> <td data-bbox="721 1291 1256 1325">Cypress Creek NWR (FWS)</td> <td data-bbox="1256 1291 1432 1325">5,967</td> </tr> <tr> <td data-bbox="412 1325 591 1358">Mississippi</td> <td data-bbox="591 1325 721 1358">IL</td> <td data-bbox="721 1325 1256 1358">Inahgeh Unit Shawnee NF (USFS)</td> <td data-bbox="1256 1325 1432 1358">3,864</td> </tr> </tbody> </table>				<u>River</u>	<u>State(s)</u>	<u>Management Agency</u>	<u>Post 1993 Acquisition</u>	Mississippi	IA, IL, MN, WI	Upper Mississippi River NW&FR (FWS)	2,128*	Mississippi	MO, IL	Middle Mississippi NWR (FWS)	7296	Mississippi	MO	Great River NWR (FWS)	1,100	Illinois	IL	Emiquon NWR (FWS)	1,838	Illinois	IL	Meredosia NWR (FWS)	517	Iowa	IA	Port Louisa NWR (FWS)	11,721	Missouri	MO, IA	Big Muddy NWR (FWS)	11,198	Cache	IL	Cypress Creek NWR (FWS)	5,967	Mississippi	IL	Inahgeh Unit Shawnee NF (USFS)	3,864
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Mississippi	IL	Inahgeh Unit Shawnee NF (USFS)	3,864																																									
	<p>*Does not include approximately 10,000 acres of upland in DOD property transfer. Does include pending addition of Root River Confluence. (FWS, Feb 09)</p>																																											

Responsible Agency (Parenthesis indicates implied responsibility)	ACTIONS PROPOSED BY REPORT (Italicized entries indicate explanatory text from Sharing the Challenge Report)
7.2 Executive Branch (FEMA, DOI)	<p>The Administration should develop emergency implementation procedures to organize federal agencies for environmental land acquisitions.</p> <p><i>“Uncertainty among landowners concerning the ability of federal agencies to execute timely real estate actions limited their interest in full or partial land sale or easement acquisition. Statutory features of easement-acquisition authorities for federal agencies prevent spending without first completing full procedural cycles. In a disaster response situation, procedural flexibility would be advantageous for federal agencies and economically distressed landowners.”</i></p> <p>FEMA’s authorities do not provide a capability to acquire lands for environmental purposes. FEMA’s land acquisition authority focuses on reducing future disaster losses. A requirement of this authority is that the land acquired be managed as open space, in perpetuity, which has environmental benefits. (FEMA, Jan 09)</p> <p>The IFMRC suggested an approach similar to that used by the FWS for acquisition of lands within Waterfowl Production Areas. The FWS is not aware of any Administration or Executive Branch initiatives to focus multiple agency resources on land acquisition. (FWS, Feb 09)</p>
7.3 DOI (Executive Branch,)	<p>The DOI should formalize environmental considerations in multi-agency disaster recovery, land restoration activity through a coordinated Memorandum of Agreement.</p> <p><i>“The Administration should direct the DOI to use the Louisa No. 8 project as an example to develop a MOA between agencies for post-disaster recovery. Formalization of working relationships would expedite recovery efforts by providing coordination points and a central clearinghouse for information on buyout options, sources of funds, and a list of potential cooperators.”</i></p> <p>Based on the successful model of cooperation between government and non-government agencies used to acquire property from distressed landowners along the Iowa River in 1993 and 1994, the IFMRC suggested formalizing the relationships among agencies and providing a clearinghouse for information on buyout options, funding sources, and potential cooperators during future disaster recovery periods. FWS is unaware of any initiative by DOI to execute this action. (FWS, Feb 09)</p>

Responsible Agency (Parenthesis indicates implied responsibility)	ACTIONS PROPOSED BY REPORT (Italicized entries indicate explanatory text from Sharing the Challenge Report)
7.4 Congress	<p>Seek legislative authority for flexibility in use of programmed funds in emergencies.</p> <p><i>“The Congress should provide legislative authority and flexibility, similar to that provided the USACE by PL 84-99, to other agencies and programs. Such flexibility would expedite landowner relief and enhance the federal ability to capitalize on environmental enhancement opportunities. Funds used could be reimbursed, if necessary, from supplemental appropriations, when they became available and, as appropriate, by reprogramming funds from other sources within agency. As an example, following the 1993 flood, the FWS was unable to access several million dollars of appropriated Land & Water Conservation (LAWCON) funds. If the FWS had been able to access those funds, which were earmarked for other uses, the agency could have offered landowners an immediate alternative to realigning and repairing levees. The opportunity to restore wildlife habitats was missed.”</i></p> <p>Legislative authority and flexibility under prescribed emergency situations is needed for federal agencies to respond adequately to flooding disasters. A provision similar to that provided the USACE by PL 84-99 would greatly assist other federal agencies in this task. (USACE, Jan 09)</p>
7.5 DOI	<p>The DOI should focus land acquisition efforts on river reaches and areas with significant habitat values or resource impacts.</p> <p><i>“Ecosystem management is in its infancy, and federal agencies have just begun ecosystem planning and related programs. Explicit funding for ecosystem management remains minimal and plan development incomplete. In the absence of plans and funding, the DOI, as the recommended lead agency for environmental land acquisitions and easements, should focus federal acquisitions and easements on problem river reaches with known habitat values and threatened and endangered species.”</i></p> <p>The National Performance Review report on the DOI suggested that “the Secretaries of Interior and Agriculture and the Director of OMB should modify the process for determining land acquisition priorities and modify current procedures.” The IFMRC endorsed this action, but we are unaware of any intent to develop spatial data in collaboration with other federal agencies that specifically identifies critical habitats, significantly impacted ecosystems, and opportunities for ecosystem management. Developing such spatial data and assembling maps based on such information was perceived to result in real estate market distortion as well as public backlash against a government “land grab”, consequently no action was taken. (FWS, Feb 09)</p>

Responsible Agency (Parenthesis indicates implied responsibility)	ACTIONS PROPOSED BY REPORT (Italicized entries indicate explanatory text from Sharing the Challenge Report)
7.6 Executive Branch	<p>Require agencies to co-fund ecosystem management using Operation and Maintenance funds.</p> <p><i>“Ecosystem management planning would document natural resource needs and identify actions that federal agencies can take to offset development impacts and enhance ecosystem sustainability. Funding for development and implementation of ecosystem management plans should be a standard component of each federal agency’s operation/maintenance/construction budgets along with annual funding for development projects, which often impact ecosystems. Funds should provide for participation by outside agencies and states. Once costs of minimizing environmental impacts become a standard part of project costs, they can be reflected more closely in federal benefit-cost ratios.”</i></p> <p>Each agency provides O&M support to ecosystem management based on their agency’s priorities for maintenance activities. With the costs of routine and deferred facility and project maintenance increasing, the resulting priority for ecosystem management often decreases. Even during periods of O&M shortfalls, ecosystem management should sustain a consistent priority for the allocation of O&M funding. The allocation of O&M funds is determined by individual Federal agencies during the process of balancing competing requirements. (USACE, Jan 09)</p>
7.7 Congress	<p>Enact legislation allowing cost-share participation and eligibility requirements under Section 906 and 1135 of the 1986 WRDA to include federal, state, and non-governmental contributions as well as work in-kind.</p> <p><i>“By expanding the array of possible cost-share sponsors and providing for cost-sharing consistency in Section 906, more enhancement opportunities can be leveraged by cooperating federal, state, and non-governmental organizations. Permitting work in-kind to qualify as local sponsor cost-share contributions would expand the availability of Section 1135 for environmental restoration activities.”</i></p> <p>Several WRDAs since 1986 have expanded the opportunities for non-governmental and state cost sharing participation in environmental restoration and allowance for “work in kind” contributions.</p> <p>As examples, WRDA 2000, Section 210 allows non-profits to cost share on environmental improvement projects and environmental dredging, and WRDA 1999, Section 210 allows non-profits to cost share on aquatic ecosystem projects. (USACE, Jan 09)</p>

Responsible Agency (Parenthesis indicates implied responsibility)	ACTIONS PROPOSED BY REPORT (Italicized entries indicate explanatory text from Sharing the Challenge Report)
7.8 Executive Branch	<p>Allocate funds for mitigation lands in concert with and at the same pace as project construction.</p> <p><i>“Development projects often require agreement to purchase mitigation lands before project construction plans receive approval. Although authority exists for mitigation measures and acquisition of mitigation lands and although agency policy encourages concurrent mitigation, funding of mitigation land acquisition has not proceeded on the same schedule as construction funding. In some cases this lack of funding has led to unmet mitigation over periods of year.”</i></p> <p>Requirements for purchase of mitigation lands should be identified at the time of project or program authorization and funds for purchase included in the initial project appropriation. The Administration is attempting to align mitigation funding with construction funding, however because of a significant backlog in mitigation projects, it may be several years before the steady state can be achieved. (USACE, Jan 09)</p>
8.1 Executive Branch	<p>Establish the USACE as the principal federal levee construction agency.</p> <p><i>“To coordinate their different responsibilities and engineering and evaluation guidelines, the USACE and the SCS should review and modify, as appropriate, the existing 1986 Memorandum of Agreement (MOA). When complete this MOA should be provided to all states and appropriate levee districts. Other government agencies wishing to pursue levee construction must arrange planning, design, and construction through the USACE which will follow the revised P&G procedures. For small agricultural projects, the USACE would coordinate the action with the SCS.”</i></p> <p>The 1986 MoA was discussed during a meeting of the NRCS/USACE Partnership Meeting held on 25 Sep 08. The existing MOA establishes consistent 80/20 cost sharing for all levee construction and maintenance and separates responsibility for levee projects. The NRCS EWP program applies in smaller watersheds (less than 400 square miles) and is aimed more at erosion control. The Corps PL94-99 program applies to larger (greater than 400 square miles) watersheds and urban areas and focuses on flood protection. During this meeting, the representatives agreed the MoA should be reviewed, but recognized the issues are now multilateral, involving other agencies (i.e., EPA, FEMA, and USFWS) in addition to NRCS and the USACE. Consequently, the MOA is being referred to the Interagency Levee Task Force (ILTF) for revision. (USACE, Jan 09)</p>

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8.2 Executive Branch	<p>The Administration should reaffirm its support for the USACE criteria under the PL 84-99 levee repair program and send a clear message that future exceptions will not be made.</p> <p><i>“It must be clear that the federal government will provide repair assistance in the future only to levees enrolled in the program and that the risks associated with non-participation are simply too great to take. “</i></p> <p><i>“In addition to the specific requirements of the USACE program, the USACE should ensure that levees are properly located and aligned to reduce the probability of repetitive losses and do not adversely impact river hydraulics and other properties. Benefit-cost analyses should be expanded to include consideration of environmental and social benefits and costs, in addition to the traditionally quantifiable benefits and costs. Where levees have a history of failures and realignment is not feasible, the benefit-cost analysis should consider the greater risk of failure, adjusting operation and maintenance cost estimates appropriately. Where the site is unsuitable, no federal support should be provided.”</i></p> <p>Based on lessons learned from the 1993 Flood, policy guidance under PL 84-99 was revised. New policy has very clear guidance minimum criteria for eligibility for repairs under authority of PL 84-99. (USACE, Dec 08)</p>

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8.3 (Executive Branch, USACE)	<p>Federal and state officials should restrict support of flood fighting to those levees that have been approved for flood fighting by the USACE</p> <p><i>“Threatened communities and owners of agricultural levees conducted heroic levee floodfighting during the Flood of 1993. They took action, however, without knowledge or consideration of the effects that keeping the water off their portion of the floodplain would have on the river level in proximity to that location. The act of raising a levee during rising flood conditions has the effect of increasing the river level in the immediate area and possibly upstream and downstream as well. The magnitude of the increase could be minor or significant, depending on hydraulic factors pertinent to the affected levee and river reach. If the water level rise is significant, it could cause greater damage than otherwise would have occurred to nearby lands, especially if levee raising results in the failure of a neighboring levee.”</i></p> <p>Advanced planning, with the benefit of river hydraulic modeling analysis, is needed to determine those levees that can and those that cannot be floodfought without significant adverse impacts on other properties in the floodplain. This action would not prevent floodfights that are consistent with state and local floodplain management regulations under the National Flood Insurance Program. (USACE, Jan 09)</p> <p>For emergency work, flood control works that are participating in the USACE Rehabilitation and Inspection Program; those that are eligible to join the USACE program but are not an active participant; or those that may be eligible for assistance under the NRCS EWP program may be eligible for flood fighting activities (e.g. sand-bagging, buttressing, adding freeboard, etc.), debris removal and emergency repairs (e.g. placing fill material in breached or significantly deteriorated, weakened areas of the flood control work). For the last, however, emergency repairs to flood control works that are participating in the USACE Rehabilitation and Inspection Program are ineligible. As a condition of receiving disaster assistance for emergency repairs, the applicant must agree to join the USACE program or abide by engineering and inspection requirements of the NRCS.</p> <p>FEMA shall limit disaster assistance for emergency repairs to flood control works on a one-time only basis. Therefore, subsequent emergency repairs to previously damaged flood control works (which include the entire levee system) would not be eligible for disaster assistance. When emergency repairs are authorized, they are limited to restoring the original elevation of the flood control work or to an elevation designed to protect against the five-year flood event, whichever is lesser. However, FEMA may provide disaster assistance for flood fighting activities and debris removal in subsequent disasters. FEMA is currently in the process of reviewing and revising the current policy 9524.3, <i>Policy for Rehabilitation Assistance for Levees and Other Flood Control Works</i> (FEMA, Jan 09)</p>

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8.4 (Executive Branch, USACE, FEMA)	<p>Establish a task force to develop common procedures for federal buyouts and mitigation programs.</p> <p><i>“Buyouts are the optimal solution for many neighborhoods impacted by the Midwest flood. Circumstances arise, however, where other mitigation techniques may be the most cost-effective method for reducing flood damages with the least impacts on the community and the environment.”</i></p> <p><i>“The task force should build on the Midwest flood experience to accomplish the following objectives:</i></p> <ul style="list-style-type: none"> • <i>Develop common policies and procedures among agencies for buyouts ...;</i> • <i>Address compliance with the NEPA, applicable executive orders, historic preservation requirements, and other federal mandates during multi-agency buyouts;</i> • <i>Design delivery systems to expedite buyout decisions to be responsive ...;</i> • <i>Identify statutory barriers to buyouts and other mitigation actions and propose changes where appropriate; and</i> • <i>Make recommendations on how supplemental appropriations would be channeled through a single program such as the FEMA Section 404 Hazard Mitigation Grant Program, rather than being provided through multiple agencies and programs.”</i> <p>While such an approach would facilitate more efficient and more effective buyouts, in the absence of a federal coordinating mechanism, no action has been taken to establish a national task force or other body to examine potential approaches. (USACE, Jan 09)</p> <p>Since 1993, no task force has been established specifically for this purpose. FEMA has common procedures for its mitigation programs to the degree it can, given statutory limitations. Presidential Task Forces have been established to coordinate the recovery to several floods in the late 1990’s, which included State and federal participants. These task forces evaluated the availability of funding for a variety of hazard mitigation activities as part of the recovery process.</p> <p>FEMA has successfully encouraged States to take a proactive, coordinated approach to identifying and implementing mitigation activities through task forces, planning committees or other inter-agency participation in the development of State Mitigation Plans.</p> <p>Furthermore, FEMA has codified acquisition and demolition requirements. In 2007, FEMA published Part 80 Property Acquisition and Relocation for Open Space regulations that provide one-set of regulations for acquisition projects. The regulations apply to all hazard mitigation grants. The FY 2009 guidance was updated and the regulations now apply to all pre and post-disaster programs. FEMA now has established policies and procedures to assist communities and states in implementing acquisition programs.</p> <p>Following Hurricanes Katrina and Rita, Congress provided supplemental</p>

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	funding to the impacted States through the Department of Housing and Urban Development, not through FEMA. Substantive federal interagency coordination has taken place to ensure that funds from agencies other than FEMA that were to be used alongside HMGP funds are consistent with HMGP and FEMA policies. (FEMA, Jan 09)
8.5 Congress (FEMA)	Provide states the option of receiving FEMA Section 404 Hazard Mitigation Grants as a block grant. <i>“A number of states have indicated an interest in coordinating buyouts and other mitigation actions after disasters. They feel that they could be more responsive to communities and could expedite decisions if they received FEMA Section 404 Hazard Mitigation Grants in the form of a block grant. Under the current program, states already are given considerable latitude in establishing priorities and allocating Section 404 Hazard Mitigation Grant Program monies. A block grant also may provide greater flexibility to use these funds in conjunction with other federal, state, and local funds.”</i> While amendments to the Robert T. Stafford Relief and Emergency Assistance Act were made, this proposal was not included in the amendments. FEMA has designed the Hazard Mitigation Grant Program (HMGP) program to provide as much flexibility to the States as permitted by the Stafford Act. The agency has taken several steps toward facilitating the delivery of HMGP assistance while affording the States considerable latitude. (FEMA, Jan 09)

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8.6 Congress (FEMA)	<p>Provide funds in major disasters where supplemental appropriations are made for buyouts and hazard mitigation, through FEMA’s Section 404 Hazard Mitigation Grant Program.</p> <p><i>“The federal government is providing funds for buyouts and other mitigation activities for the Midwest flood through several agencies and programs. For major disasters that require supplemental appropriations, a better approach would be to make supplemental appropriations to the Section 404 Hazard Mitigation Grant Program.”</i></p> <p>Congressional supplemental funding was not provided through the Hazard Mitigation Grant Program (HMGP) in 1993. However, later events demonstrated FEMA’s ability to effectively obtain and provide supplemental assistance. Specifically, in November of 1999 Congress appropriated approximately \$215,000,000 in supplemental funding for unmet mitigation needs arising from the effects of Hurricane Floyd. Again in July of 2000 Congress appropriated \$50,000,000 for unmet mitigation needs for all disasters declared in FY ‘99 and FY ‘00. To effectively manage the provision of this supplemental assistance, FEMA promulgated regulations at 44 C.F.R. Part 209, ensuring the administration of assistance in a manner consistent with HMGP criteria. The regulations stipulated that States determine priorities for funding in conformance with HMGP project identification and selection criteria (see 44 C.F.R. § 209.3 (b)). Following Hurricanes Katrina and Rita, Congress provided supplemental funding to the impacted States through the Department of Housing and Urban Development, not through FEMA. (FEMA, Jan 09)</p>
8.7 Congress (FEMA, HUD)	<p>Establish a programmatic buyout and hazard mitigation program with funding authorities independent of disaster declarations.</p> <p><i>“The current buyout program is funded primarily through supplemental appropriations made only after extraordinary floods and other disasters. Most flood events impact much smaller geographic areas and may or may not result in a Presidential disaster declaration. Programs need to be in place to accomplish buyouts and other appropriate mitigation for such floods on an on-going basis.”</i></p> <p>Since 1993, Congress has amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act and the National Flood Insurance Program to provide hazard mitigation assistance before a disaster occurred. Congress authorized the creation of additional mitigation assistance programs as part of the National Flood Insurance Reform Act (NFIRA) of 1994, the Disaster Mitigation Act of 2000; Bunning-Bereuter-Blumenauer Flood Insurance Reform Act in 2004. Four pre-disaster grant programs were created including Pre-Disaster Mitigation (PDM), FMA (Flood Mitigation Assistance Program), RFC (Repetitive Flood Claims), and SRL (Severe Repetitive Loss). These programs generally provide mitigation assistance through a combination of allocation-based and competitive-based processes.</p>

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	<p>Recognizing that acquisition and demolition projects are one of the most effective mitigation projects, FEMA has codified requirements for these projects. In 2007, FEMA published Part 80 Property Acquisition and Relocation for Open Space regulations that provide one-set of regulations for acquisition projects. The regulations apply to all hazard mitigation grants. The FY 2009 guidance was updated and the regulations now apply to all pre and post-disaster programs. FEMA now has established policies and procedures to assist communities and states in implementing acquisition programs. (FEMA, Jan 09)</p> <p>The current buyout program is funded primarily through supplemental appropriations made only after extraordinary floods and other disasters. Most flood events impact on much smaller geographic areas and may or may not result in a Presidential disaster declaration. Programs need to be in place to accomplish buyouts and other appropriate mitigation for such floods on an on-going basis.</p> <p>Money currently available for mitigation activities includes funds from existing programs -- such as the FEMA Section 404 Hazard Mitigation Grant Program, the NFIP Section 1362 program, SBA loans to individuals, and any monies remaining available from funds allocated to states and communities through CDBG (Community Development Block Grant) and EDA (Economic Development Administration). Recent changes to the Section 404 Hazard Mitigation Grant Program to increase available funding will help.</p> <p>Mitigation insurance coverage through the NFIP and cost shared mitigation grants for states and communities for ongoing hazard mitigation planning and actions also should be components of such a program. Such funding measures are included in pending legislation.</p> <p>In addition to this NFIP mitigation fund, the FEMA should have authority to allocate a percentage of its annual Disaster Assistance Fund appropriation to states for community hazard mitigation plans and action. (HUD, Jan 09)</p>

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8.8 FEMA	<p>The FEMA should continue to enforce substantial damage requirements, but decide on a definition of substantial damage and stick to that definition.</p> <p><i>“The NFIP substantial damage requirement is crucial to reducing flood damages to structures built prior to the adoption of floodplain management regulations in participating communities. The FEMA should decide on a definition of substantial damage/substantial improvement and consistently apply that definition in disaster and non-disaster situations. This will eliminate confusion and improve the overall level of compliance with NFIP regulations.”</i></p> <p>Under the National Flood Insurance Program regulations (44 CFR Part 60), buildings that are substantially damaged are required to meet the minimum requirements of the Program including elevation of the lowest floor to or above the Base Flood Elevation (elevation of the 100-year flood).</p> <p>Substantial damage is defined by regulation (44 CFR 59.1) as “damage of any origin sustained by a structure whereby the cost of restoring the structure to it’s before damaged conditions would equal or exceed 50 percent of the market value of the structure before the damage occurred.</p> <p>If a structure is substantially damaged and is not brought into compliance with community floodplain management regulations, it becomes a Post-FIRM building and is actuarially rated based on its risk of flooding. If the structure is rebuilt in violation of the community's floodplain management regulations and not elevated to or above the base flood elevation (or floodproofed if non-residential), the Post-FIRM rates and premiums will be significantly higher than Pre-FIRM rates and premiums. For substantially damaged structures, which have their lowest floors several feet or more below the base flood elevation, the annual premium could increase to thousands of dollars.</p> <p>FEMA has produced numerous publications and reference materials, as well as automated tools, to assist a community official in making an objective decision on determining substantial damage. These materials provide practical guidance on estimating both the cost of improvement and market value and in verifying that estimates submitted on permit applications are reasonably accurate. (FEMA, Jan 09)</p>

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8.9 Congress (FEMA)	<p>The Administration should support insurance coverage for mitigation actions necessary to comply with local floodplain management regulations.</p> <p><i>“Critical to continued enforcement of the substantial damage requirement is providing NFIP flood insurance coverage for the costs of elevating, floodproofing, or relocating substantially damaged buildings. Currently flood insurance pays only for the repair of physical damage to the building. Mitigation insurance would provide coverage that pays the costs of bringing insured buildings that are substantially damaged by floods into compliance with community floodplain management regulations either by elevating, floodproofing, demolishing, or relocating the building.”</i></p> <p>The National Flood Insurance Reform Act of 1994 establishes this coverage called Increased Cost of Compliance (ICC) coverage. The coverage is mandatory for all flood insurance policies issued or renewed after June 1, 1997. The coverage now provides up to \$30,000 to bring substantially damaged or repetitively damaged properties into compliance with community floodplain management regulations. (FEMA, Jan 09)</p>
8.10 FEMA	<p>Develop a program to reduce losses to repetitively damaged insured properties through insurance surcharges, increased deductibles, mitigation insurance, and/or mitigation actions</p> <p><i>“Repetitive loss buildings account for a disproportionate percentage of NFIP losses and represent a significant liability for the program. The FEMA should develop a comprehensive strategy to address these losses, including flood insurance premium surcharges and increased deductibles”.</i></p> <p>Four programs have been created to reduce losses to repetitively damaged properties through flood insurance program funding sources. The Repetitive Flood Claims (RFC) grant program and the Severe Repetitive Loss (SRL) grant program was authorized by the Bunning-Bereuter-Blumenauer Flood Insurance Reform Act of 2004 (P.L. 108–264), which amended the National Flood Insurance Act (NFIA) of 1968 (42 U.S.C. 4001, et al).</p> <p>The RFC program provides funding to reduce or eliminate the long-term risk of flood damage to structures insured under the NFIP that have had one or more claims for flood damages, and that can not meet the requirements of the FMA program for either cost share or capacity to manage the activities. Up to \$10 million has been available annually.</p> <p>The SRL program provides funding for residential properties that are covered under an NFIP flood insurance policy, and that has at least four NFIP claim payments (including building and contents) over \$5,000 each and the cumulative amount of such claims payments exceeds \$20,000, or for which at least two separate claims payments (building payments only) have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building. For FY 2009, Congress appropriated approximately \$80,000,000 for the program.</p>

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	<p>In addition, The Flood Mitigation Assistance Program (FMA) program provides funding to assist States and communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the NFIP. For FY 2009, Congress appropriated approximately \$35.7 million for the FMA program.</p> <p>Congress also authorized mitigation insurance through the National Flood Insurance Reform Act of 1994, called Increased Cost of Compliance (ICC) coverage. The coverage is mandatory for all flood insurance policies. The coverage now provides up to \$30,000 to bring substantially damaged or repetitively damaged properties into compliance with community floodplain management regulations. (FEMA, Jan 09)</p>
9.1 (Executive Branch, FEMA)	<p>Hold an interagency strategic planning meeting for those Presidentially declared disasters that require a multi-agency recovery effort.</p> <p><i>“Coincident with deliberations regarding each proposal for a Presidential disaster declaration, the FEMA should hold an interagency strategic planning meeting to review and determine the necessary or desired involvement of each agency. At such a meeting, the FEMA could brief each agency on the situation and figure out its involvement. More efficient interagency coordination, early enlistment of agencies, and clear direction regarding agency involvement should result.”</i></p> <p>Since 2005, Emergency Support Function #14 – Long-Term Community Recovery (ESF #14) provides a forum within the National Response Framework for coordinating Federal support to state, regional, local, and tribal governments, nongovernmental organizations (NGOs), and the private sector to enable community recovery from the long-term consequences of extraordinary disasters. ESF #14 LTCR accomplishes this by identifying and facilitating availability and use of sources of recovery funding and providing technical assistance such as impact analyses for community recovery and strategic recovery planning support. Seventeen Federal agencies and NGOs are signatory primary and support agencies for ESF #14, including the USACE.</p> <p>After the devastating floods of 2008, William Vogel, FEMA Federal Coordinating Officer (FCO) for Iowa, and Patrick Hall, State Coordinating Officer (SCO), convened the first Iowa ESF #14 Long-Term Community Recovery (LTCR) Inter-Agency Coordination Team (IACT) meeting in June 2008. The meeting set the stage for a collaborative, holistic approach to the long-term recovery of disaster stricken communities in Iowa. ESF#14 established the IACT consistent with its mission to coordinate federal and state agency recovery activities. Specifically the IACT was used to coordinate the multitude of buyout sources for both hazard mitigation, environmental, and other purposes. The large number of departments, agencies, and organizations providing resources to the State of Iowa provide an opportunity to leverage resources through coordination efforts. Planning and coordination support are supplemental to the local capacity and State resources. This was done in coordination with the Interagency Levee Task Force (ILTF). Further, in support of one of the IATC recommendations FEMA provided technical assistance in recovery planning and project development to</p>

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	<p>the more heavily impacted jurisdictions that faced difficult decisions, including choices between non-structural solutions, levees, and reconstruction priorities. This was also done in coordination with the ILTF. (FEMA, Jan 09)</p>
<p>9.2 Congress (FEMA)</p>	<p>Increase NFIP market penetration through improved lender compliance with the mandatory purchase requirement.</p> <p><i>“The Review Committee supports current attempts in pending legislation (S. 1405 and H.R. 3191, both entitled the National Flood Insurance Reform Act of 1994) to improve the level of lender compliance. This should include establishment of penalties for lenders who do not require the purchase or maintenance of flood insurance coverage.”</i></p> <p>The National Flood Insurance Reform Act of 1994 (NFIRA), largely in response to the 1993 floods, strengthened the NFIP mandatory purchase requirements, including increasing the penalties for non-compliance by lenders, and requiring the purchase of flood insurance if the risk of a property increases after the date of closing. FEMA works regularly with all Federal lending regulators to assist them in the enforcement of the mandatory purchase requirements. This includes providing them with useful data and producing educational materials for lenders, primarily the Mandatory Purchase of Flood Insurance Guidelines. (FEMA, Jan 08)</p>
<p>9.3 Congress (FEMA)</p>	<p>Provide for the escrow of flood insurance premiums or payment plans to help make flood insurance affordable.</p> <p><i>“The escrow of flood insurance premiums in those instances where the lender escrows property taxes and hazard insurance would ensure coverage is maintained over the life of a mortgage. Additionally, those who may not be able to afford a one-time annual payment of a flood insurance premium would be more likely to purchase and maintain flood insurance coverage, if it were possible to spread the cost of the premium through the escrow of flood insurance premiums.”</i></p> <p>NFIRA includes a provision that requires lenders that escrow homeowners’ premiums to also escrow flood insurance premiums and this is part of the review done by Federal regulators. Many WYO companies also offer payment plans to policyholders. (FEMA, Jan 09)</p>

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9.4 FEMA	<p>Develop improved marketing techniques for NFIP.</p> <p><i>“Although improved lender compliance is critical to achieving increased market penetration, it will not by itself drive insurance purchase to the levels necessary to achieve program objectives. The program requires additional measures to increase voluntary purchase of flood insurance by those property owners not subject to the mandatory purchase requirement.”</i></p> <p>The FloodSmart campaign that has been conducted over the past number of years has been extremely effective in developing promotional, educational, and motivational materials for all of the relevant NFIP audiences. The campaign has resulted in a significant growth in policies and awareness of the program. At the end of FY 1994, there were 2.8 million policies in force, while at the end of FY 2008; the number had doubled to 5.6 million. We are confident that FloodSmart will continue to identify strategies to continue program growth. (FEMA, Jan 09)</p>
9.5 Congress (FEMA)	<p>Reduce the amount of post-disaster support to those who could have bought flood insurance but did not, to that level needed to provide for immediate health, safety, welfare; provide a safety net for low-income victims.</p> <p><i>“A perception persists that disaster assistance compensates homeowners as fully as flood insurance coverage. This may or may not be true depending on the value of the property affected and the income of the owner. A particular concern expressed by communities and others after the Midwest flood is that disaster victims, particularly those with lower incomes, who obtain disaster assistance from the Individual and Family Grant Program, the Disaster Housing Program, the Red Cross, and other programs may end up as well off as those who purchase flood insurance and receive payment for claims.”</i></p> <p><i>“The FEMA should seek authority to limit the amount of disaster assistance to individuals in the 100-year floodplain who have not purchased flood insurance and investigate approaches that could be used to provide a safety net for those not able to afford flood insurance premiums.”</i></p> <p>FEMA’s authorities do not provide a capability to disqualify or reduce the amount of post-disaster support to those who could have bought flood insurance but did not. FEMA’s authority to disqualify post-disaster support to a household is limited to situations where the household has been previously provided disaster assistance for flood related losses, and as a condition for accepting that disaster assistance was required to purchase and maintain flood insurance, but they failed to do so. (FEMA, Jan 09)</p>

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9.6 FEMA	<p>Require actuarial-based flood insurance behind all levees that provide protection less than the standard protection.</p> <p><i>“The Review Committee is concerned that the minimum level of protection recognized by NFIP levee criteria and the level of protection that could result from current USACE procedures for selecting the design level for a federally constructed levee are not sufficient, given the residual risk to new and existing buildings behind levees. The residual risk to a building constructed behind a levee designed to provide protection from a 100-year flood is substantially greater than the risk to a building elevated to or above the 100-year flood elevation. This difference in residual risk, produced by the catastrophic damage that would occur if the levee is overtopped or fails, warrants a reevaluation of current federal policies toward levees and levee construction. Residual risk further warrants designating areas behind levees as flood hazard areas subject to the mandatory flood insurance purchase requirement.”</i></p> <p>Areas behind levees that do not provide protection against the 100-year flood are treated like all special flood hazard areas with respect to rates, i.e., those structures built before the date of the Flood Insurance Rate Map (FIRM) qualify by statute for subsidized rates, and those built after the FIRM date are rated actuarially. (FEMA, Jan 09)</p>
9.7 FEMA	<p>Increase the 5-day waiting period for flood insurance coverage to at least 15 days.</p> <p><i>“The 5-day waiting period for flood insurance coverage is too short for main stem riverine flooding and should be increased to at least 15 days. At the closing on the sale of a property, coverage should continue to become effective immediately. A 15-day waiting period would introduce sufficient uncertainty to ensure that property owners did not purchase flood insurance only when flooding was imminent. Data from the Midwest flood alone would warrant a 30-day waiting period. FEMA should balance the benefits of a 30-day waiting period against possible impacts on the marketing for flood insurance.”</i></p> <p>NFIRA increased the waiting period for new flood insurance policies to 30 days. (FEMA, Jan 09)</p>
9.8 Congress (USDA)	<p>The Administration should continue to support reform of Federal Crop Insurance that limits crop disaster assistance payments, increases participation, and makes the program more actuarially sound.</p> <p><i>“Data on participation in the current program by floodplain farmers are not available. Discussions with floodplain residents indicate that few farmers choose to participate in the crop insurance program because they consider the 75 percent maximum coverage too low, flooding is relatively rare, and disaster assistance is available that almost equals the insurance indemnity. Drought is the primary natural peril for which farmers make claims, and floodplain farmers are less at risk for the effects of drought than upland farmers. On average, floods represent only 2 percent of the FCIC insurance payments.”</i></p> <p>The Administration has supported significant changes and improvements in the</p>

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	<p>Federal crop insurance program since the 1993 floods. Beginning with the 1994 crop year, crop insurance policies for major field crops were revised to include automatic coverage for producers who were prevented from planting their crops. The initial changes for most crops provided prevented-planting coverage at 50 percent of the insurance guarantee for planted acreage. Now, prevented-planting coverage for most crops is provided at 60 percent of the production guarantee for planted acreage, and producers have the option to purchase additional coverage up to 65 or 70 percent.</p> <p>As a direct response to problems experienced by producers in 1993, Congress passed the Federal Crop Insurance Reform Act of 1994 (Reform Act). Changes mandated by the Reform Act helped increase participation in the crop insurance program by creating a catastrophic risk protection plan of insurance (CAT), which provides a low level of coverage for a small administrative fee of \$300.00, and by increasing premium subsidies for higher levels of coverage. Currently, premium subsidies for higher levels of coverage average nearly 60 percent. CAT provides less coverage (currently compensates producers for losses exceeding 50 percent of their average yield paid at 55 percent of the price established for the crop for that year) but the premium is fully subsidized. In addition to these changes, new insurance policies (Crop Revenue Coverage and Revenue Assurance) have been made available that provide protection against both loss of yield and change in crop prices. Over 50 percent of all acreage insured under the crop insurance program is now covered under these revenue policies. All of these changes have helped encourage more participation in the Federal crop insurance program.</p> <p>Participation in the crop insurance program increased significantly following the Reform Act. For example, in 1998, more than 180 million acres of farmland were insured under the program. This is more than twice the acreage insured in 1993. Continued support of the Federal crop insurance program has now resulted in insurance coverage for major crops reaching approximately 80 percent of U.S. farmland acreage. In 2008, coverage was available for over 125 crops with liability near \$90 billion, and there were more than 1.1 million crop policies in place providing insurance for over 272 million acres.</p> <p>Crop insurance program performance is closely monitored and premium rate adjustments are made on a frequent basis to assure actuarial soundness. In accordance with the Federal Crop Insurance Act, adequate premiums amounts will be determined that are necessary to achieve an overall projected loss ratio of not greater than 1.0. (USDA, Jan 09)</p>

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10.1 Congress	<p>Establish upper Mississippi and Missouri basin commissions with a charge to coordinate development and maintenance of comprehensive water resources management plans to include, among other purposes, ecosystem management, flood damage reduction, and navigation.</p> <p><i>“Reestablishment of the basin commissions will help decision makers reach fully coordinated floodplain management decisions within the larger context of basin-level water resources planning and goals. Through minimal staffing with qualified leadership, the basin commission format, authority, and funding mechanisms provided by PL 89-80 will stimulate non-federal attention to timely completion, update, and implementation of multiple use plans. The Review Committee considers basin commissions to be a necessary link between federal and state agencies and a coordination forum for implementing national policy.”</i></p> <p>At the strategic level, utilization of a regional institutional framework for comprehensive planning was exemplified by the Upper Mississippi River Basin Commission (UMRBC). The UMRBC prepared a Comprehensive Master Plan for Management of the upper Mississippi River system in response to Section 101 of the Inland Waterways Authorization Act of 1978 (PL 95-502). Termination of the UMRBC and five other basin commissions by EO 12319 in 1981 complicated implementation of the master plan, which represented a successfully integrated federal-state-local planning effort with substantial public input. No subsequent commissions have been established. (USACE, Jan 09)</p>
10.2 Executive Branch	<p>The Administration should expand the mission of the Mississippi River Commission to include the upper Mississippi and Missouri rivers. Further, to recognize ecosystem management as a co-equal federal interest with flood damage reduction and navigation, the Administration should request legislative change to expand commission membership to include the DOI.</p> <p><i>“At the operational level, an institutional framework is currently in place to effect operational modifications of flood damage reduction and navigation facilities throughout the basin. The foundation of this framework is the technical capability on water resources found within the USACE. Beyond this technical capability, Congress provided for detailed project planning and implementation oversight on the Mississippi River by establishing the Mississippi River Commission (MRC) in 1879. The MRC Act authorized the Commission to extend its activities “between the Head of Passes near its mouth to its (Mississippi River) headwaters.”</i></p> <p><i>“The expanded commission will provide for detailed planning and execution oversight of water resources development projects, and it will assure appropriate fiscal attention to programs necessary for achievement of national floodplain management goals.”</i></p> <p>While the utility of expanding the mission of the Mississippi River Commission continues to exist, the mission has not been expanded. (USACE, Jan 09)</p>

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10.3 Executive Branch	<p>Assign responsibility for development of an Upper Mississippi River and Tributaries (UMR&T) system plan and for a major maintenance and rehabilitation program for federally related levees to an expanded Mississippi River Commission, operating under the USACE</p> <p><i>“The objective of developing the UMR&T system plan is to determine how best to integrate existing facilities in the upper Mississippi River Basin into an efficiently functioning flood damage reduction system that is compatible with floodplain ecosystem function. A component of the plan would incorporate all eligible levees in the upper Mississippi River basin into a program to ensure their long-term functional integrity for flood damage reduction and to improve ecosystem function. The functional integrity objective would be accomplished through a federal-state-local cost-shared program of systematic major maintenance and major rehabilitation. Routine maintenance and repair would continue to be a state-local responsibility.”</i></p> <p>A system wide plan that incorporates a major maintenance and rehabilitation program for federally related levees has not been authorized.</p> <p>A plan submitted by the Mississippi River Commission to the ASA(CW) and HQUSACE on 14 August 2008 recommends a USACE Floodplain Management Assessment of the upper Mississippi River Basin and oversight of this assessment by the Mississippi River Commission. (USACE, Jan 09)</p>
10.4 Executive Branch	<p>Seek approval from the Congress to redirect the USACE Floodplain Management Assessment of the upper Mississippi River Basin to development of an UMR&T systems plan. Place this assessment under the Mississippi River Commission operating under USACE.</p> <p><i>“The refocused study would assess the condition of presently existing levees and would develop a general plan for basin flood damage reduction, including structural and nonstructural measures. Development of a flood damage reduction strategy should be collaborative and conducted using the revised P&G and the NEPA process to ensure full participation of affected and interested parties in floodplain management. The systemic approach will necessarily involve consideration of the upper Mississippi River Basin and the basin of its principal tributary, the Missouri River, as individual and aggregate watersheds with both unique and common human uses and ecosystem functions.”</i></p> <p>Same response as Action 10.3 (USACE, Jan 09)</p>

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10.5 Congress	<p>Following completion of the survey, seek authorization from the Congress to establish the UMR&T project.</p> <p><i>“Authorization of the UMR&T project is needed to assign responsibility to the USACE to develop and execute the federal program of major maintenance and major rehabilitation (MM&MR) of those levees found to be eligible for inclusion. The UMR&T project would be identified as a separate line item in the USACE budget and would be funded by annual appropriation. Under the MM&MR program, the USACE would be responsible for major maintenance and major rehabilitation of levees that are determined by the USACE to be eligible for the federal program. Major maintenance includes such activities as levee survey and setbacks; repair of levee slides, culverts and floodwalls; slope paving; and major erosion protection.”</i></p> <p>Same response as Action 10.3 (USACE, Jan 09)</p>
10.6 DOI	<p>DOI should complete an ecological needs investigation of the upper Mississippi River Basin and provide a report to the Administration within 30 months.</p> <p><i>“The ecological needs investigation would be collaborative between government agencies and private groups. It would incorporate information from the NBS, under the Long Term Resource Monitoring Program, the USACE, the USDA National Resource Inventory, and the Review Committee’s Scientific Assessment and Strategy Team.”</i></p> <p>In June 1994, the report, "Science for Floodplain Management into the 21st Century: A blueprint for change, Part V" was produced by an interdisciplinary Scientific Assessment and Strategy Team led by the DOI. That report was followed by a broader, management and policy-oriented report titled "Sharing the Challenge: Floodplain Management into the 21st Century". Both reports can be accessed from http://edc.usgs.gov/sast/. (DOI, Jan 09)</p> <p>The FWS representatives assigned to the IFMRC presented a proposal to execute 10.6 to the FWS’s Midwest Regional Office in 1994; however, no funding was available to pursue further. Under the authority of the 1999 Water Resources Development Act, partners engaged in the Upper Mississippi River System Environmental Management Program (EMP) completed a Habitat Needs Assessment (1-INA) for the Upper Mississippi River System, including the Illinois River. That effort was limited to the study area authorized for the EMP, not the entire basin as intended. The 1-INA was to be periodically redone, but Corps funding limitations have prevented further updates. (FWS, Feb 09)</p>

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10.7 USACE	<p>Provide an early report in the USACE Upper Mississippi River- Illinois Waterway Navigation Study of environmental enhancement opportunities in the upper Mississippi River.</p> <p><i>“Using information generated during the DOI ecological need investigation, the USACE should develop a report detailing the relationship of its ongoing operation and maintenance activities as well as those of new navigation construction alternatives to ecological needs identified by the DOI.”</i></p> <p>The UMR-IWW System Navigation Feasibility Study (Dec 2004) recommended a \$5.3 billion 50 year framework for ecosystem restoration on the Upper Mississippi River. The first increment of this plan (\$1.7 billion) was authorized in WRDA 2007.</p> <p>Construction funds have not yet been appropriated however; project development studies have been accomplished with prior year Investigation allocations. (USACE, Jan 09)</p>
10.8 USACE	<p>Provide a report on the ecological effects of relocating navigation pool control points under the USACE Navigation Study.</p> <p><i>“A potential opportunity to enhance upper Mississippi River resources exists through alteration of dam-regulation operations (at-dam vs. mid-pool hinge control points) on some headwater pools at the USACE navigation dams. With little or no impact to navigation, habitat benefits may be gained by alternately drying and inundating areas adjacent to the main channel between a navigation pool midpoint and the dam.”</i></p> <p><i>“A complete evaluation of navigation dam operations should be conducted under the ongoing USACE Navigation Study to determine if moving navigation pool control points from mid-pool to the dam is feasible and would produce significant benefits.”</i></p> <p>The UMR-IWW System Navigation Feasibility Study recommended changes to navigation control points for two pools and modification to water level management plans for 12 pools to better replicate a natural hydrograph while maintaining commercial navigation. These actions were authorized in WRDA 2007. Construction funds have not yet been appropriated, however, project development studies have been accomplished with prior year Investigation allocations. (USACE, Jan 09)</p>

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10.9 (Executive Branch, DOI)	<p>The Administration Interagency Ecosystem Management Task Force should select an Ecosystem Management Demonstration Project within the upper Mississippi River Basin, and establish a cross-agency ecosystem management team under DOI to develop plans and budgets for the project.</p> <p><i>“The upper Mississippi River Basin should be used as a demonstration ecosystem study area under the current National Performance Review’s (NPR) “Reinventing Environmental Management” action item (Env 02 Develop Cross-Agency Ecosystem Planning and Management)”. The study should be undertaken by the FWS to take advantage of other ongoing initiatives in the Missouri and Mississippi river basins, as well as the information obtained through Action 10.6.”</i></p> <p>At the time, the subject task force had established or was in the process of establishing a number of such demonstration projects around the nation. Initially they cataloged several hundred restoration projects of various scales that were in progress at that time. The “demonstration” projects were intended to be large collaborative multi-agency efforts in areas such as the Florida Everglades or Greater Yellowstone ecosystem. The IFMRC was not aware of the task force response to this recommendation, and it is assumed that there was no Administration interest in pursuing this further, given the Habitat Rehabilitation and Enhancement Projects underway in the 5 upper Mississippi River States within the existing Environmental Management Program. (FWS, Feb 09)</p>
11.1 (USGS)	<p>The USGS should establish a federal clearinghouse for data gathered during preparation of the Review Committee report.</p> <p><i>“To manage floodplains, mitigate flood damages, and respond to and recover from a disaster, analysts, and decision makers require easy access to basic data to audit disaster expenditures, identify loss concentrations, and formulate new preparedness and mitigation strategies. The USGS, in coordination with the Federal Geographic Data Committee, should take the lead in establishing a federal clearinghouse consistent with that outlined in the NPR for accessing and updating data acquired and developed for the flood-affected 9-state region in the Midwest.”</i></p> <p>A summary of data collection was completed by the Scientific Assessment and Strategy Team (SAST) through publication of “Science for Floodplain Management Into the 21st Century” published in 1994. (USACE, Jan 09)</p>

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11.2 FEMA	<p>FEMA should investigate the costs and feasibility of completing a national inventory of flood prone structures.</p> <p><i>“Nationwide, there is no authoritative estimate of the number of structures exposed to floods and other natural hazards. As a result, floodplain and emergency management decisions are often made based on inadequate information. This results in inappropriate allocation of resources.”</i></p> <p><i>“A national inventory of floodprone structures should be performed by FEMA through the states and tribes to determine the number, location, building type, and functional uses of structures in floodplains.”</i></p> <p>FEMA commissioned a study by Price Coopers Waterhouse in 1999 to do this. The report, A Study of the Economic Effects of Charging Actuarially Based Premium Rates for Pre-FIRM Structures was completed May 14, 1999. FEMA continues to use this study and extrapolates estimates of the numbers of flood prone structures by applying growth rates to the data in the study. (FEMA, Jan 09)</p>
11.3 (Executive Branch, USACE, NWS, USGS)	<p>The USACE, NWS, and USGS, with other collaborators, should continue development of basin-wide hydrologic, hydraulic, and hydrometeorologic models for the upper Mississippi River system.</p> <p><i>“Federal, state, tribal, and local agencies should develop coordinated estimates of floodflow frequency curves, flood elevation profiles, and floodplain maps. Overall improvement in the modeling of complex river systems will lead to advances in hydrologic prediction capabilities for both real-time forecasts of flood events and for water resources planning. Floodplain managers should consider one- and two-dimensional models for modeling complex areas.”</i></p> <p>These agencies have worked to enhance the end-to-end flood warning process, including: (1) observing, monitoring, detecting, forecasting, and producing flood warnings; (2) dissemination of the warnings to decision makers, emergency response personnel, first responders, and those affected by flooding; and (3) ensuring citizens understand warning information and respond in ways that saves lives and mitigate damages. The collaboration allows NWS to better fulfill its mandate to serve as the Federal agency responsible for providing the nation's flood (as well as weather) warnings. As a direct result of the 1993 Midwest flood, the NWS implemented the Advanced Hydrologic Prediction Service (ARPS), which provides a robust suite of water information, including flood warning services for decision support and response efforts of emergency managers. AHPS is widely used by the general public and the media. The USACE, NWS, and USGS are now working on an agreement to enhance their collaborations through a new focus on "Integrated Water Resources science and Services" (IWRSS). IWRSS will improve flood forecasting capability throughout the country, including the Mississippi River and its major tributaries. Major components of IWRSS include enhancing communication and engagement with stakeholders, improving system-level technical interoperability, data and information exchange, and enterprise geospatial information between the agencies to enable a</p>

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	<p>Common Operating Picture, and implementing new river models, data, systems, and water science to provide the seamless suite of consistent water resources information from summit to sea. (NWS, 5 Jan 09)</p> <p>A Rainfall-River forecast summit was held in St. Louis with USGS, NWS, and USACE to evaluate data collection and forecasting during the 2008 floods. The resulting Fusion Team, comprised of all three agencies, is developing methods of improving data collection and evaluation as well as flood forecasting, to include prioritization of gauge network improvements. The 1993 flood data is being incorporated into discharge-frequency analyses. (USACE, 16 Dec 09)</p> <p>The U.S. Geological Survey (USGS) Water Resources Discipline (WRD) provides reliable, impartial, timely information that is needed to understand the Nation’s water resources. The USGS promotes the use of this information in the Mississippi River basin by decision makers such as the USACE, NWS, Reclamation, EPA, and USDA to –</p> <ul style="list-style-type: none"> • Minimize the loss of life and property as a result of water-related natural hazards, such as floods, droughts, and land movement. • Effectively manage ground-water and surface-water resources for domestic, agricultural, commercial, industrial, recreational, and ecological uses. • Protect and enhance water resources for human health, aquatic health, and environmental quality. • Contribute to wise physical and economic development of the Nation’s resources for the benefit of present and future generations. <p>Like many federal agencies, the USGS has continuously faced funding shortages and in the unique case of the WRD, an alarming discontinuation of funding for long-term streamgages (streamgages with more than 30-years of continuous monitoring) over the past several decades. Given this lack of funding and declining funds for the upkeep and operation of a long-term Federal streamgaging network in the Upper Mississippi River Basin, in 2000, the USGS initiated the National Streamflow Information Program (NSIP) to provide a stable backbone network of streamgages that are critical to national streamflow information needs. A fully-funded NSIP would comprise a stable network of core streamgages from which streamflow information can be delivered in real time, uncompromised by fluctuating support by funding partners, which can lead to the loss of long-record streamgages. Long records of stream flow are vital for the characterization of regional hydrologic conditions (for such significant programs as water supply planning, flood hazard assessments and transportation infrastructure design) as well as for documenting and understanding changes that occur in streamflow owing to changes in land use, water use, ground-water development, and climate. Although NSIP has achieved less than 20 percent of full implementation, it serves as a major USGS thrust to stem the loss of gage funding and to build a National Federal Streamgaging Network that in the future could serve as a backbone for Federal interests in the Mississippi River and every major basin in the Nation. The NSIP has received and continues to receive a lot</p>

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	<p>of support in the last several years and is currently funded at about 17-19 percent of full implementation.</p> <p>One of the things the USGS tracks with great interest is the status of our "long-record" streamgages. These are defined as streamgages with 30 or more years of record. From Water Year 2004 to Water Year 2006, we had 197 long-record streamgages discontinued. The loss of 142 long-record streamgages in 2005 is about 3% of the total number of long-record streamgages where data were being collected in Water Year 2005. That total number of active long-record streamgages in 2005 was 4,365.</p> <p>The number of losses of long-record streamgages has risen steeply in the past few years. It hit a low of only 25 losses in Water Year 2001, the year in which Congress provided a large funding increase for the National Streamflow Information Program. The 1990's had some years with high losses of long-record streamgages similar to 2004-05: 1992 with net losses of 149 streamgages and 1995 with net losses of 153.</p> <p>Decisions to cease operations of streamgages are always undertaken with great care and in consultation with others. The factors that figure into the decision are the availability of funds from USGS appropriations and from the 800 Federal, State, and local partners who contribute to the network and our costs, which rise with mandated increases in Federal pay scales. Factors that enter into these decisions include importance of the streamgage to flood hazard mitigation, water resources operations, and long-term characterization of regional hydrologic systems.</p> <p>In summary what we are seeing in the past few years is a significant acceleration of the losses in the network similar to what we observed in the mid-1990's. The increased Federal funding of 2001 resulted in a brief turn-around but the losses are growing at the present time. The changes in the status of the network continue to be highly varied across the Nation. Some States, river basins or municipal areas are actually seeing growth in the network because of increased interests and funding from specific funding partners, while at the same time other States or river basins are experiencing rapid declines due to steep declines in the financial contributions of specific funding partners.</p> <p>Hydrologic and hydraulic model calibration is supported by a long-term network of stream flow information. The USGS has several hydrodynamic and hydrologic model development activities in the Mississippi River basin. The USGS now has the ability to collect detailed velocity and depth data with tools such as acoustic Doppler current profilers (ADCPs) and acoustic Doppler Velocimeters (ADV). ADCPs and ADVs have revolutionized the USGS' ability to collect discharge data in the Nation's rivers and streams and provide more accurate, more efficient, and safer methods for collecting streamflow during low-flow and flood events. Such technologies as those driven by laser, optics, acoustic and radar instrumentation are changing USGS techniques for the collection of continuous sediment data, river stage, flow velocity, and continue to develop rapidly in the field of ground and surface water quality assessment. In the near future, these new</p>

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	<p>instrumentation technologies will help the USGS to provide improved data that will be relevant to levee safety and will help the USACE and the DOI Bureau of Reclamation to improve routing of flood waters in the upper Mississippi River basin. These new technological instrumentation advances will also in the near future help to improve hydrodynamic model calibration throughout the Mississippi River and will serve not only Federal interests but also many State and local interests in the basin. (USGS, Jan 09)</p> <p>USACE and USGS continue to develop models to support these needs, but currently lack authorization and appropriation to develop and apply models basin-wide. Some basin-wide modeling effort was accomplished by USACE during the Upper Mississippi River System Flood Profile Update and new efforts due to post 2008 flood conditions are underway. A Rainfall-River forecast summit was held in St. Louis with USGS, NWS, and USACE to evaluate data collection and forecasting during the 2008 floods. The resulting Fusion Team is developing methods of enhancing future forecast accuracy and lead-time. (USACE, Jan 09)</p>
11.4 (Executive Branch)	<p>The Hydrology Subcommittee of the Federal Interagency Advisory Committee on Water Data should review the current standards for computing discharge-frequency relationships in light of observations from the 1993 flood and other recent large floods in the upper Mississippi River Basin.</p> <p><i>“Currently, the method of computing the relationship between annual flood peak discharge and frequency of occurrence is standardized among federal agencies. Though this method was reviewed less than ten years ago, the magnitude of the 1993 flood and its possible effects on discharge-frequency curves for stations in the upper Mississippi River Basin provide the opportunity to ascertain the adequacy of the recommended method to reflect the probability distribution of annual peak discharges.”</i></p> <p><i>“Frequency curves are generally developed using the current federal standard distribution function (log-Pearson Type III) for annual peak discharges. This methodology should be reviewed. The bases for concluding which method produces the most representative relationships should include, in addition to probability theory itself, the end uses of the curves such as selecting the heights of flood protection facilities, evaluating the degree of risk of a site or a structure, determining regulatory floodplain limits, and establishing flood insurance rates.”</i></p> <p>This project was funded and conducted by USACE with input from an interagency advisory team. Through the incorporation of additional data and knowledge gained from the 1993 flood this study was able to update and revise many of the discharge frequency curves within the Mississippi River Basin. The revised curves received extensive peer review and were communicated through multiple public forums. (USACE, Jan 09)</p>

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11.5 Executive Branch (USGS, USACE)	<p>The Administration should support the USGS in development and acquisition of detailed digital topographic data and other land characteristics for use in floodplain management and other resources management activities. Existing DOD technologies should be leveraged to assist in the acquisition of these data.</p> <p><i>“Critical to the development of any computer model used to estimate flood elevations is detailed topographic information. Engineers can use topographic information in a digital format more efficiently in computer models. Topographic information of the appropriate resolution or accuracy does not exist in a digital format for many locations in the flood-affected 9-state region of the Midwest, or in the nation, at a scale useful for floodplain management or for use in engineering models. Floodplain managers generally prefer contour intervals of two feet or less. Technologies are beginning to emerge that will produce accurate, high resolution digital elevation models at reasonable costs. Such models soon will be generally available.”</i></p> <p>The USGS is in full agreement with the request for administrative support of acquiring new digital topographic data and other land characteristics for use in floodplain management and other resources management activities, particularly the acquisition and processing of Light Detection and Ranging (LiDAR) data for the creation of high-resolution digital elevation models (DEMs). LiDAR data represents one of the most significant new mapping tools in geography today and for the foreseeable future. LiDAR DEMs have opened up significant opportunities for the hydrologic/geomorphic communities in multi-dimensional hydrologic and hydraulic modeling for the support of geomorphic studies, improvement of flood frequency analysis, and the enhancement of the National Elevation Dataset (NED) and the National Hydrologic Database (NHD). High resolution DEMs also support the enhanced improvement of flood/inundation mappings currently being implemented by the USGS, USACE, and National Weather Service in the Mississippi River basin.</p> <p>The USGS Earth Resources Observation Systems (EROS) Data Center (EDC) in Sioux Falls is a leading federal entity in the use of LiDAR data and is responsible for the creation of guidance for the creation of metadata for LiDAR systems and many other remote sensing systems. The EDC is using LiDAR data for the enhancement and improvement of the NED and NHD. (USGS, Jan 09)</p>

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11.6 Executive Branch	<p>The Administration should direct that scientific research be conducted to identify state-of-the-art techniques or applications for estimating and assessing environmental and social impacts.</p> <p><i>“Research should identify practical methods and improved techniques to allow greater consideration of impacts, both positive and negative, for which no market system exists. Such research would assist in evaluating the economic value of an environmental output or the willingness to pay to avoid an impact. Research is needed to improve techniques for measuring social or environmental outputs and for establishing criteria to assess the significance of such outputs from a regional and national perspective. Many federal agencies, universities, and private consulting firms are focusing on research in these areas. An organization such as the National Research Council of the National Science Foundation could foster this type of research, with federal oversight provided by the Office of Environmental Policy.”</i></p> <p>Federal agencies have continued to improve techniques and applications for estimating and assessing environmental and social impacts. These applications continue to evolve and be refined as the knowledge base expands and circumstances offer previously not considered situations. (USACE, Jan 09).</p>
11.7 (Executive Branch, USACE, USDA, DOI)	<p>The USACE and USDA, in collaboration with the DOI, should evaluate the effect of natural upland storage and floodplain storage in such areas as wetlands and forested wetlands on main stem flooding.</p> <p><i>“Floodplain and upland areas functioning as temporary storage areas can have impacts on flood peaks. The quantification of these impacts has not been well documented. Use of natural storage areas (wetlands) for temporary storage of floodwater to decrease downstream flood heights has not been utilized in modern flood control policy. The mathematical models exist to analyze these impacts, although additional field data may be necessary. The Administration should request completion of these investigations as soon as possible. The functions of wetlands and their drainage for agricultural purposes need better evaluation.”</i></p> <p>Natural and man made water storage capabilities are considered in every USACE project development, but accuracy in storage capacity calculations caused by uncertainty introduced in the analytical methods makes standardized planning and design challenging. USACE continues to develop methods and formulate USACE policy on how to consider wetland and forested area storage capacity. (USACE, Jan 09)</p> <p>Much has been accomplished through interagency efforts by using existing information and technology. NRCS has compiled and incorporated this information and technology into its engineering and technical directives currently used by field staff in carrying out the agency’s mission. Examples include National Engineering Handbook, Part 653, Stream Corridor Restoration (NEH 653), originally released in October 1998, and revised in August 2001; and National Engineering Handbook, Part 654, Stream Restoration Design (NEH 654), released in August 2007.</p>

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	<p>The NEH 653 provides a broad overview of stream corridor restoration. It has been used in interagency training throughout the United States and other countries (Afghanistan and Nicaragua). NEH 653 came about as the result of 16 federal agencies' input and cooperation, and served as the basis for the development of the more applied NEH 654.</p> <p>The NEH 654 provides detailed design information in the arena of stream restoration designs. This was also an interagency effort, with the introduction to the handbook listing nine pages of contributing authors. This document provides the designer with information to address the immediate protection of life and property and also how to identify and incorporate environmental issues and long term sustainability into projects.</p> <p>Since release of NEH 654, NRCS has held workshops in 6 states on the engineering aspects of stream restoration design. Current efforts are focused on developing a new training course for planning stream restoration measures. In addition to stream restoration training tied to NEH 654, NRCS developed and held classes in geomorphology, stream bank soil bioengineering, and hydraulic modeling.</p> <p>A detailed synopsis of current NRCS products in Stream Corridor design can be found at http://www.ndcsmc.nrcs.usda.gov/technical/Stream/index.html.</p> <p>Great strides have been made in computer based modeling since 1992. Modelers now have the ability to model not only steady state flood flows, but also unsteady flows and sediment transport. Dam safety modeling efforts have also significantly improved. NRCS continues to work with USDA Agricultural Research Service (ARS) on research and development to incorporate dam overtopping into analyses tools. This work will also support other applications, such as levee overtopping.</p> <p>Further effort is needed in collaboration and coordination among agencies. NRCS participates in several interagency support efforts such as the Advisory Committee on Water Information's (ACWI) Sub-committee on Sedimentation and Sub-committee on Hydrology; the Interagency Committee on Dam Safety (ICODS); software support coordination for the US Army Corp of Engineers (USACE), Hydrologic Engineering Center (HEC) programs; and making co-presentations at meetings and workshops with United States Geological Survey (USGS), the Environmental Protection Agency (EPA), USACE, and the National Oceanic and Atmospheric Administration (NOAA). (USDA, Jan 09)</p> <p>The DOI in collaboration with the USACE and the USDA produced a report titled "Upper Mississippi River Comprehensive Plan" (2008) to address the evaluation of the effect of natural upland storage and floodplain storage in wetlands and forested wetlands on main stem flooding. The report is available from www2.mvr.usace.army.mil/umrcp/. (DOI, Jan 09)</p> <p>We are unaware of an organized effort specifically as described. Following the 1993 event, flood control interests in the basin successfully lobbied for legislation directing the Corps of Engineers to update flow frequency models using more</p>

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	<p>current data than that used to evaluate levee design and program eligibility criteria. Appendix G of that study was a collaboration between the Corps and USGS to investigate how land cover changes may affect the frequency and magnitudes of floods. This report may be accessed at http://www.mvr.usace.army.mil/pdw/pdf/FlowFrequency/flowfreq.htm. Action 11.7 was preceded by a reference to a study at Marshall, Minnesota. The Corps of Engineers Engineer Research and Development Center at Vicksburg, Mississippi, produced a document in 2002 reporting the results of simulation modeling on a small watershed near Marshall. This report may be downloaded from http://el.erdc.usace.army.mil/elpubs/pdf/wqtnam12.pdf. (FWS, Feb 09)</p>

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4.1 (USACE, FEMA)	<p>Reduce the vulnerability of population centers to damages from the standard project flood discharge.</p> <p><i>“Reducing the vulnerability of communities, where appropriate, to the discharge associated with standard project flood (SPF) provides a greater reduction in residual risk than is provided by using the 1 percent annual chance (100-year) flood discharge. The SPF serves as a practicable expression of the discharge to be considered in evaluating alternatives to reduce the vulnerability of activities associated with communities where large population and high-value property are involved. In most cases the SPF approximates the 0.2 percent chance (500- year) discharge</i></p> <p>The point of this recommendation seems to be primarily to construct and maintain levees and other flood protection systems to a 500 year / SPF level. This is an action for agencies that construct and maintain levees and other flood protection systems like the USACE. (FEMA, Jan 09)</p>
4.2 (FEMA)	<p>Reduce the vulnerability of critical infrastructure to damage from the standard project flood discharge.</p> <p><i>“The risk of imposing severe hardship on the public or endangering public health and safety arises when infrastructure critical to maintaining the wellbeing of a community, region or nation is damaged.”</i></p> <p><i>“Critical infrastructure could include, on a situation dependent basis, municipal drinking water facilities, stations, major highways bridges, major passenger and freight railroads, critical access roads running through or over floodplains, major airports, hospitals and related medical care facilities, electricity generating plants, and facilities that generate, store, or dispose of hazardous, toxic, or radioactive materials.”</i></p> <p><i>“Where feasible, critical infrastructure should be located outside the floodplain. Critical infrastructure, which must be situated in the floodplain, should be evaluated for protection against the SPF discharge. This issue is not new. Floodplain Management Guidelines for implementing</i></p> <p><i>Executive Order (EO) 11988, issued by the Water Resources Council in February 1978, require that critical high-risk activities be protected at a minimum against the 0.2 percent annual chance (500-year) flood.”</i></p> <p>FEMA has taken a number of actions related to this recommendation. These actions include;</p> <ul style="list-style-type: none"> • Implementation of Section 406 of the Stafford Act to fund mitigation for public facilities for which disaster assistance has been provided including critical infrastructure. • The Hazard Mitigation Grant Program (HMGP) and the Pre-Disaster Mitigation Program (PDM) provide funding sources to protect critical

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	<p>infrastructure from flooding.</p> <ul style="list-style-type: none"> • The NFIP minimum regulations require that all public utilities and facilities be located and constructed to minimize or eliminate flood damage. Communities and states are encouraged through outreach programs including through the Community Rating System, to adopt even more restrictive safeguards to protect critical infrastructure. • FEMA continues to works closely with the trade associations, model code groups and others to strengthen national building codes for flood-resistance of critical infrastructure. American Society of Civil Engineers ASCE 24 Flood Resistant Design and Construction Standard. ASCE 24 has been incorporated by reference into the International Building Code and the NFPA 5000 Building Code and it requires critical infrastructure to have between 1 and 3 feet of freeboard above the Base Flood Elevation depending on the location and use of the building. It specifies flood loads that have to be accounted for and performance expectations for foundations of buildings. It requires structures located in Coastal A Zone Hazard Areas to be designed with similar protection of those located in High Velocity Hazard V Zones. It also contains requirements for use of flood-resistant materials, protection for utility and service equipment and siting criteria. FEMA was instrumental in helping to develop ASCE 24 and for getting it incorporated into the nations building codes. • In addition, through the experience of responding to disasters and recognizing the needs of critical infrastructure owners, FEMA has developed a new publication in 2007 on Improving Critical Facility Safety from Flooding and High Winds. That publication, FEMA 543, is available in print and online in the FEMA library http://www.fema.gov/library/viewRecord.do?id=2441. <p>The “Guidelines for Implementing Executive Order 11988 – Floodplain Management” stipulates that “critical actions”, those actions for which even a slight chance of flooding would be too great, such as hospitals, hazardous wastes facilities, and critical records, should not be undertaken in any area subject to the 500-year flood. Many Federal agencies have adopted the 500-year standard for critical actions as part of their Executive Order 1988 implementing procedures. (FEMA, Jan 09)</p>

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5.1 Congress (EPA)	<p>Revise the RCRA locational standards and contingency planning regulations for consideration of flood hazards in areas impacted by the Standard Project Flood.</p> <p><i>“The EPA’s regulations for the Resource Conservation and Recovery Act (RCRA) on permitting hazardous materials treatment, storage, or disposal facilities have locational standards; but these standards appear inconsistent with the EO guidelines for critical actions. The EPA, in draft regulations (1978), proposed design standards for facilities located in the 500-year floodplain. Public comment on the draft reflected difficulties with identifying the 500-year floodplain and a concern that the EPA was holding these facilities to a higher standard than that required by EO 11988. The final regulations addressing flood design require that no wash out of hazardous materials occurs. Therefore they apply only to those facilities located in the areas with a 1 percent annual chance of flooding.”</i></p> <p><i>“Revision of the site regulations to recognize that releases of hazardous materials are critical actions for which “even a slight chance of flooding is too great” would provide a greater level of environmental protection and public health and safety and would be consistent with implementing guidelines for EO 11988.”</i></p> <p>EPA's regulations governing the location standards and contingency planning for consideration of flood hazards are found at 40 CFR Part 264.18. These regulations restrict the construction, operation, and maintenance of hazardous waste treatment, storage, and disposal facilities in the 100-year floodplain to prevent washout or any hazardous waste by a 100-year flood. The design condition for hazardous waste facilities under these regulations, therefore, remains the 100-year flood. The "standard project flood", the more severe design condition recommended in the 1994 report, is defined in the literature as the volume of streamflow expected to result from the most severe combination of meteorological and hydrologic conditions which are reasonably characteristic of the geographic region involved, excluding extremely rare combinations. (EPA, Jan 09)</p>
5.2 (FEMA)	<p>Increase the state role in all floodplain management activities including, but not limited to, flood fighting, recovery, hazard mitigation, buyout, floodplain regulation, levee permitting zoning, enforcement, and planning.</p> <p>Additionally. for all federally assisted or funded floodfight, repair and recovery, flood damage reduction, and other floodplain activities require;</p> <ul style="list-style-type: none"> - State sponsorship or co-sponsorship in conjunction with local sponsorship - Prior state approval <p><i>“The state should be the entity best able to coordinate the overall watershed and floodplain management activities occurring within its borders. Communities deal with local problems and solutions. Active involvement by the states is necessary to develop flood-reduction projects consistent with multiple floodplain and watershed management goals as well as other state natural resource and economic goals. States need to be more involved in setting floodplain management priorities, adjudicating intrastate issues regarding priorities and determining impacts of floodplain</i></p>

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	<p><i>management projects, and in brokering federal assistance.”</i></p> <p>FEMA has consistently encouraged a stronger state leadership role in managing their hazards including the adoption and enforcement of higher regulatory standards than the NFIP. FEMA initiatives undertaken since 1994 include;</p> <ul style="list-style-type: none"> • FEMA has made funding available to States for floodplain management under the Community Assistance Program-State Support Services Element (CAP-SSSE). This cooperative agreement relies on the partnership with state floodplain management programs to assist them in implementing a full program, including flood map adoption, regulatory enforcement, training & education. • The Community Rating System (CRS) was implemented in 1990 to recognize and encourage community floodplain management activities that exceed the minimum NFIP standards. The National Flood Insurance Reform Act of 1994 codified the Community Rating System in the NFIP. Under the CRS, flood insurance premium rates are adjusted to reflect the reduced flood risk resulting from community activities that meet the three goals of the CRS: (1) reduce flood losses; (2) facilitate accurate insurance rating; and (3) promote the awareness of flood insurance. From its first year of implementation in 1990 the CRS has grown to now include 1094 communities nationwide which represents 66% of the NFIP policy base. FEMA works closely with the States to promote the CRS and encourage communities to join the program. • The Disaster Mitigation Act of 2000 established a Pre-Disaster Mitigation Program (PDM) to fund mitigation planning and project grants. The Act also includes a State and local mitigation planning requirement as a condition of receiving certain grant funding. In 2003, FEMA published regulations at 44 CFR Part 201 that set forth the requirements for State, local, and Indian tribal mitigation plans. Both State and local or tribal plans must be approved by FEMA in order for a jurisdiction to be eligible to receive funding under mitigation grant programs. (FEMA, Jan 09)

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5.3 Congress (USACE, FEMA)	<p>Restructure and refine the scope of federal technical services programs and increase funding for the USACE in the areas of Floodplain Management Services and Planning Assistance to the States programs and increase funding for states through the FEMA Community Assistance Program.</p> <p><i>“By altering the focus of technical and planning assistance for floodplain management from individual and local assistance to state assistance for coordinated dispersal to local areas, federal programs can create an incentive for states to build these types of expertise. Federal information transfer and training for the states for subsequent transmittal to local governments are far more efficient uses of federal expertise and limited federal funds because the same information reaches more people and provides a public service.”</i></p> <p><i>“The federal government receives far more requests for assistance from local governments and individuals than can be accommodated given current funding constraints. The inability to provide assistance in some situations can lead to inappropriate floodplain development decisions and, therefore, increased long-term costs. Additional funding would allow federal agencies to provide and analyze pertinent data necessary for state and local governments to make sound floodplain management decisions.”</i></p> <p>The funding ceilings for FPMS and PAS have remained constant over time while the appropriations have increased slightly but remained below the ceilings. The funding ceilings for FY08 were \$8,856,000 and \$6,396,000, respectively, for FPMS and PAS. This funding level has therefore inhibited USACE ability to expand the program. (USACE, Jan 09)</p> <p>FEMA has significantly increased funding available to States for floodplain management under the Community Assistance Program-State Support Services Element (CAP-SSSE) since 1986. This cooperative agreement relies on the partnership with state floodplain management programs to assist them in implementing a full program, including flood map adoption, regulatory enforcement, training & education. FY 2009 funding for CAP-SSSE is \$8.6 million. (FEMA, Jan 09)</p>

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5.4 Congress (FEMA)	<p>Hold FEMA’s existing disaster assistance cost-sharing requirements to no more than 75/25; seek to make other agencies disaster programs’ cost-share requirements consistent at 75/25.</p> <p><i>“Ultimate responsibility for floodplain management rests with individuals and local government through local land use planning decisions. The federal government must ensure that it provides incentives for, and no disincentives to, community-based floodplain management. Cost sharing is essential to maintain the state and local stake in all floodplain management activities and should be retained.”</i></p> <p><i>“The federal-state cost-share originally 75/25 was adjusted for all three disasters to a 90/10 basis. These cost-share changes have two potentially significant consequences. First they set up an expectation of similar treatment in subsequent disasters and increase political pressure to provide a lower nonfederal share. This perpetuates the dominant federal role in recovery and increases federal costs. Second they may defeat the fundamental purpose behind cost sharing which is to increase the amount of local involvement, responsibility, and accountability. By lessening the non-federal investment, state and local governments have less at stake and, therefore, may have a lower incentive to develop and adopt sound floodplain management policies and practices.”</i></p> <p>FEMA typically provides funding under the Public Assistance Program on a cost shared basis of 75 percent Federal funding and 25 percent non-Federal. In certain circumstances, FEMA may recommend an increase to the Federal cost-share when the impact of an incident is so severe as to warrant additional Federal assistance. (FEMA, Jan 09)</p>
5.5 Executive Branch	<p>The Administration should seek increased funding for federal agencies to support collaborative planning participation with other federal agencies.</p> <p><i>“In keeping with the trend toward ecosystem-or watershed based planning federal agencies are expected to work as partners or to collaborate. Currently funding constraints limits the ability or most federal agencies to participate without reprogramming their funds. The USACE districts are particularly limited by the project-specific nature of their funding. Feasibility studies are cost-shared with the non-federal sponsor on a 50-50 basis, and partner interests are more likely to be limited to the study area than to the entire watershed. Additional funding is needed for all federal agencies for the purpose of collaborative planning. While it will cost more initially, collaborative planning is an investment in the future that will reduce future project specific planning expenditures.”</i></p> <p>There are several activities by federal agencies to collaborate in planning and projects. Examples include the Flood Risk Management Program; collaboration meetings between USACE and USGS, USACE and NRCS, USACE and Bureau of Reclamation; and WestFAST (Federal Agency Support Team).</p> <p>Continued work to improve and expand collaborative efforts is warranted, but additional funding is needed to enable additional collaborative efforts, (USACE, Jan 09)</p>

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5.6 Executive Branch	<p>Promote the use of programmatic NEPA documents in the planning process.</p> <p><i>“... requiring independent NEPA documents on similar but individual projects can be an inefficient and time-consuming approach to decision making. Efficiencies can be realized by analyzing all the anticipated actions as a group and applying NEPA on a programmatic basis before proceeding on individual projects requiring site-specific NEPA compliance. Application of multi-agency programmatic environmental impact analyses performed at the watershed scale allows agencies to focus on issues that are geographically related or have timing, impact, or other subject matter similarities. In addition the programmatic NEPA process provides a formal public involvement mechanism to address strategic decisions.”</i></p> <p>Programmatic NEPA documents are used by the Corps in specific circumstances, both in planning for Corps projects and within our Regulatory program, but could be more widely used in the future given our changing role. A report by the CEQ NEPA Task Force (2002) recommended increased use of programmatic documents, but recognized a significant lack of confidence exists between stakeholders and federal agencies concerning their use. Additionally, the NEPA Task Force report stated that the process for implementing programmatic analyses is not clearly established and there is much uncertainty in the applicability of the final decision document. The state of California is pursuing increased use of programmatic Environmental Assessments and Environmental Impact Statements for water resource projects. Similar initiatives have been done and others are underway through our Regulatory authority but none directly deal with issues in floodplain management. (USACE, Jan 09)</p>
5.7 (OMB)	<p>OMB should issue a directive that requires periodic reevaluation of federal water resources project to include potential operation and maintenance modifications.</p> <p><i>“Many of the nation’s water resources projects were constructed a number of years ago. The Review Committee heard concerns that: (1) these projects will eventually need major maintenance expenditures, (2) conditions have changed that make them less effective (such as headwater development that increases runoff and flood stages causing protection downstream to be lessened, and (3) consideration is not adequately given to changing societal goals with regard to potential modifications to the projects themselves or modifications in the operation of them.”</i></p> <p><i>“Projects for which construction was completed 40 or more years ago should be reevaluated to consider potential project modification and insure project integrity. Other projects less than 40 years old should be reevaluated when know major problems exist, where conditions have changed that impact the effectiveness of the project, or where changing societal goals demand that modification be considered. Specific procedures tied to the new P&G should be established and a directive issued by OMB.”</i></p> <p>No policy directive is in place that requires the periodic reevaluation of federal water resource projects. Select projects are reevaluated as compelling needs are identified. (USACE, Jan 09)</p>

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5.8 (OMB)	<p>OMB should use only the benefit-cost ratio for damage reductions to existing development in establishing Administration funding priorities unless a standard project flood level of protection is provided.</p> <p><i>“Some flood damage reduction projects, in their effort to reduce damages for existing floodplain structures, also provide protection for undeveloped land areas that have a high potential for future development. In these cases, future development savings resulting from the project are estimated and included in the benefit-cost ratio. A separate accounting of existing and future benefits is required by P&G to provide decisions makers with the information necessary to make informed decision. The total benefit-cost ratio, however, is reported in the feasibility report and usually used for budgetary considerations in establishing funding priorities.”</i></p> <p><i>“Future development benefits should not be used as the basis for increasing the funding priority of flood damage reduction projects unless a standard project flood level of protection is provided.”</i></p> <p>Through the late 1990’s and early 2000’s, the benefit-cost ratio was used as the dominant factor in determining funding priorities. However, starting with the 2007 budget an increasing use risk factors has been incorporated in each successive budget guidance document. (USACE, Jan 09)</p>
6.1 (FEMA)	<p>Enhance pre-disaster planning and training.</p> <p><i>“Pre-disaster planning needs to coordinate individual, business, community, state, tribal, and federal personnel and activities to minimize health and safety impacts and environmental risks.”</i></p> <p><i>“The FEMA, in coordination with the EPA, UACE, USDA, DOT, and other federal agencies involved with aspects of emergency response, should increase state, tribal, local, public, and corporate awareness of risk. Those involved should practice implementation of pre-disaster plans.”</i></p> <p>FEMA has made great strides in improving pre-disaster planning and training from both a Mitigation planning perspective as well as a National Preparedness perspective.</p> <p>With respect to Mitigation Planning, the Disaster Mitigation Act of 2000 ties Public Assistance and HMGP disaster assistance at the state level and HMGP assistance at the local level to a requirement for FEMA approved Mitigation plans which included community wide hazard identification and risk assessment along with prioritize mitigation initiatives that can be taken to reduce potential damages to these resources. From a National Preparedness perspective, DHS and FEMA have gone to great lengths to establish common nomenclatures, response systems, interoperable communications. (FEMA, Jan 09)</p>

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6.2 FEMA	<p>The FEMA should review its policy of issuing revisions to flood insurance maps, which remove property from the floodplain based on fill.</p> <p><i>“Under current NFIP policy, if floodplain areas are filled to above the 100-year flood elevation, the property be removed from the floodplain by revising the flood insurance map for the community. Within these areas, floodplain management measures and the mandatory flood insurance purchase requirement do not apply. This policy may encourage the filling of floodplains by developers to avoid community floodplain management requirements and to assist in marketing flood prone properties. It also may result in individuals making decisions to purchase a property without full knowledge of the residual risk of flooding, the advisability of obtaining flood insurance coverage, or access problems during floods.”</i></p> <p>FEMA reviewed and revised its policies regarding Letters of Map Revision (LOMRs) based on the placement of fill in the floodplain. The revised policy and technical guidance was issued in 2001 and places considerable responsibility on communities to certify the development is reasonably safe from flooding. FEMA policy does still permit LOMRs based on fill pursuant to the new policy. (FEMA, Jan 09)</p>
6.3 (FEMA, USACE)	<p>Federal agencies involved in floodplain management should include information regarding floodplain management and past and probable future flood heights and extents in their education and public affairs initiatives.</p> <p><i>“Floodplain information should be available to the general public in formats that the average person can understand and use. All agencies involved in floodplain management should continue efforts to inform and educate the public Floodplain information should be available to the general public in formats that the average person can understand and use. All agencies involved in floodplain management should continue efforts to inform and educate the public about the nature of flood hazards, the natural resources and functions of floodplains, and the various strategies and tools available for comprehensive floodplain management. Agencies should adhere to guidance given in EO11988 (or in a revised EO on floodplain management) regarding the conspicuous delineation of past and probable flood heights on property used by the general public.”</i></p> <p>The USACE Levee Inventory is providing accurate information on the elevation of flood protection provided by Federal Levees.</p> <p>The FEMA RiskMAP, a continuation of the FEMA flood risk map program, received \$200M to further this initiative in FY09.</p> <p>The IPET flood inundation mapping of New Orleans has provided both a flood map of the New Orleans area as well as new ways to conduct flood risk communication. (USACE, Jan 09)</p> <p>FEMA has fully supported and encouraged the dissemination of this critical information through states to communities and the general public. FEMA’s Community Assistance Program-State Support Services Element (CAP-SSSE) is a matching cooperative agreement with states that among many activities, provides</p>

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	<p>funding for state outreach projects to better inform the public of the flood hazard and mitigation actions they may take. In addition, public meetings are held in thousands of communities receiving new flood maps under FEMA’s Map Modernization program, providing valuable education opportunities to inform the public of their flood hazards and the various tools and strategies for comprehensive floodplain management. (FEMA, Jan 09)</p>
<p>6.4 (FEMA)</p>	<p>State floodplain management officials should encourage local school districts to include natural hazard education in their curricula.</p> <p><i>“Education regarding the existence of natural hazards, such as floods, should be introduced into the elementary and secondary education curricula to provide an early awareness and understanding of how and why floods occur. Information should include what to do in the event of a natural hazard emergency. If educated from an early age, adults will be better able to participate in pre-disaster, response, recovery, and mitigation efforts.”</i></p> <p>FEMA encourages states to embrace this and other leadership roles for incorporating making mitigation a key early education concept. Various early learning childhood materials have been produced to help accomplish this for multiple hazards with the latest information covered under “FEMA For Kids” on our website. The website also directs teachers to multiple week-long courses on teaching Hazard Mitigation, as well as on-line training, offered through FEMA’s Emergency Management Institute (EMI). (FEMA, Jan 09)</p>

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7.1 Executive Branch, (DOI)	<p>The Administration should support increased funding for the Refuge Revenue Sharing Act.</p> <p><i>“Increased funding of the RRSA, in conjunction with review and revision of implementing regulations, would assist in equitable distribution of funds among different regions of the country and would address of concerns of local governments regarding tax base impacts that negatively affect schools and infrastructure.”</i></p> <p>Available information suggests that the extent to which any Administration publicly supported enhancing RRS probably peaked with former Director Jamie Clark's 2000 testimony to the Senate regarding two CARA type bills before the Environment and Public Works Committee that specifically did not include funding for RRS enhancement. She urged RRS inclusion in one or both of those bills. There has been little interest by past Director or other recent Administration officials in RRSA for example HR 790 - The PILT and Refuge Revenue Sharing Permanent Funding Act, which was introduced in 2007 but not adopted. This continued the trend noted in Galloway Report background material, viz., "In nearly every recent session of Congress, new legislation or amendments to the existing [RRS] legislation have been proposed. To date, none of the proposals would provide for a more equitable distribution of funds without drastically increasing program costs". Recently stakeholders in two Midwest forums provided comments of concern regarding the local tax base impacts of expanding conservation lands through buyouts of flood-distressed properties. One of these forums was the Interagency Levee Task Group chaired by General Walsh of the Corps Mississippi Valley Division. This group consists of administrative level staff from State and federal agencies and has been coordinating agency response and recovery for the 2008 floods in the Midwest. The other forum was the Fish and Wildlife Interagency Committee, chaired by USFWS field staff This group was engaged with local floodplain landowners in establishing restoration objectives for the Upper Mississippi River System. It seems clear that the time is right for another look at the RRSA funding levels and implementation regulations. (FWS, Feb 09)</p>
8.1 (FEMA, USACE)	<p>Federal agencies should capitalize on opportunities, within existing authorities and resources, to enhance the environment when reviewing operations or undertaking repairs or improvements to existing flood damage reduction programs.</p> <p><i>“The next step in changing the historic approach to flood damage reduction is to equally consider structural and nonstructural approaches. Objective consideration of the various flood damage reduction options looks at their short and long-term engineering and their environmental, social, and economic feasibility. Such a consideration is vital to achieving a new pattern of flood vulnerability reduction. The revisions proposed by the Review Committee for the Principles and Guidelines would facilitate this type of consideration. If structural alternatives provide the only means to address a local flooding problem, they need to be considered within the context of the larger systems of the river and its watershed. The direct and incremental impact of each structure on river hydrology, hydraulics, and ecology needs evaluation and balancing. By understanding the system and designing and constructing in response</i></p>

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	<p><i>to that system, more efficient opportunities to reduce the vulnerability of flood impacts can be found.</i></p> <p><i>Existing and future damage reduction strategies must consider the impact on upland and riparian areas of the ecosystem. The design, operation, and repair of flood damage reduction systems can lessen these impacts and may, in some circumstances, enhance the environment. Chapter 7 focused on flood damage reduction measures that also protect and improve wildlife habitat.”</i></p> <p>The Interagency Levee Task Force was created to address non-structural alternatives to levee repairs</p> <p>USACE developed a set of Environmental Operating Principles to guide USACE planning and execution of all USACE projects</p> <p>USACE Engineer Circular 409 requires USACE to consider environmental quality at the same level of importance as national and regional economic development</p> <p>USACE and The Nature Conservancy have cooperated through the “Sustainable Rivers Initiative” to improve aquatic habitat through the management of reservoir operations. (USACE, Jan 09)</p> <p>FEMA’s Office of Environmental Planning and Historic Preservation (OEHP) is currently identifying existing challenges within the agency on the implementation of EO 11988 (Floodplain Management) considerations into disaster program processes, and evaluating the current implementation of 44 CFR Part 9 to determine if there are particular project categories that are a source of implementation inconsistencies. A methodology will be developed to prioritize and address the identified issues, as well as, identify existing resources, tools, and enhancement opportunities. In our efforts to address the inconsistencies, we will develop an EO 11988 Strategy that will target the Agency’s internal coordination and compliance efforts regarding the procedures codified in 44 CFR Part 9. The strategy will address the following areas: Roles and Responsibilities of the FEMA organizational element that would have the responsibility of coordinating with FEMA’s programs and organizational elements; Address the capabilities needed to ensure adequate review of the Agency’s actions under 44 CFR 9; Training and outreach for program staff and partners. Finally, develop policy or guidance on the use of Regional Protocol Agreements across programs for compliance with 44 CFR Part 9 and EO 11988 to ensure that proper documentation mechanisms are in place for a consistent message of the agency’s vision and goals.</p> <p>The expected outcome of developing this strategy will be to further the intent and spirit of EO 11988 by promoting opportunities to integrate EO 11988 compliance considerations into current agency initiatives, like State and Local Mitigation Plan requirements and project statements of work, in addition to incorporating natural and beneficial floodplain values into watershed planning opportunities following disasters that would direct communities and government activities within or near floodplains and coastal zones to undertake actions that will reduce the need for future flood control, and to promote living with the natural</p>

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	fluctuations of the river or coastline. (FEMA, Jan 09)
8.2 Executive Branch	<p>The Administration should propose legislation that establishes consistent cost-sharing across agencies for non-federal participation in like activities.</p> <p><i>“The SCS Emergency Watershed Protection Program requires a non-federal cost-share of 25 percent of the cost of the project which excludes inspections and design. Under the USACE PL 84-99 program, there is no cost-sharing for federally built levees. However, the nonfederal cost-share for qualified non-federally constructed levees is 20 percent of the cost of the project to include inspections and design. The FEMA and the EDA also are players in levee repair with non-federal shares of 25 percent for the FEMA repairs (although this was modified to 10 percent for the 1993 flood) and 20 to 25 percent for the EDA repairs.”</i></p> <p><i>“Affected federal agencies should coordinate with each other to identify all differences in cost-sharing and in-kind services and provide documentation of inconsistencies to the Administration. For those flood damage reduction activities where multiple federal agencies will still be participating, consistent cost-sharing is recommended.”</i></p> <p>No legislative proposal establishing consistent cost-sharing across agencies has been developed. (USACE, Jan 09)</p>
8.3 USACE	<p>The USACE should investigate procedures to minimize impacts associated with levee overtoppings.</p> <p><i>“Differing methods to lessen levee overtopping impacts should be investigated. A report should be prepared by USACE that details preferred engineering techniques to improve current levee structures, where appropriate.”</i></p> <p>The need for design procedures dealing with the possibility of levee overtopping was reinforced through lessons learned during Hurricane Katrina. USACE has since developed specific design guidance for calculating overtopping flows and protection from such flows and is in the process of translating these calculations into national guidance. (USACE, Jan 09)</p>

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8.4 USACE	<p>The USACE should coordinate with the SCS to decide on appropriate criteria for evaluating the economics of levee repairs.</p> <p><i>“Past differences in the evaluations by the two agencies suggest that coordination of methods could lead to an improved procedure.”</i></p> <p>The Corps and NRCS signed a partnership agreement in 2005, pledging to work together in three areas: watershed planning; natural disaster recovery; and ecosystem restoration. Subsequently, coordination has occurred between USACE and NRCS following the spring 2008 floods in the Upper Mississippi area and associated levee damage repair. NRCS and USACE are also both involved with the Interagency Levee Task Force.</p> <p>An existing NRCS/USACE MOA establishes consistent 80/20 cost sharing for all levee construction and maintenance and separates responsibility for levee projects. During a meeting of the NRCS/USACE Partnership held on 25 Sep 08, it was recognized that this agreement should be reviewed and possibly revised. The meeting representatives recognized the issues are now multilateral, involving other agencies (i.e., EPA, FEMA, and USFWS) in addition to NRCS and the USACE. Consequently, the MOA was referred to the Interagency Levee Task Force (ILTF) for revision. (USACE, Jan 09)</p>
8.5 (FEMA, USACE)	<p>Maintain flexibility in hazard mitigation programs to promote cost-effective and appropriate mitigation techniques.</p> <p><i>“Buyouts are the optimal solution for many neighborhoods impacted by the Midwest flood. Circumstances arise, however, where other mitigation techniques may be the most cost-effective method for reducing flood damages with the least impacts on the community and the environment. In areas of shallow, short-duration flooding, elevation of structures on site may be the preferred alternative. Where high groundwater or sewer backups flood basements in or out of identified flood hazard areas, the optimal mitigation action could be making drainage improvements, upgrading sewer systems, or installing backwater valves. Future mitigation initiatives must be flexible enough to respond appropriately to these differences.”</i></p> <p>An Interagency Levee Task Force was created under the direction of OMB/CEQ in 1997 and then reconstituted as a joint effort by USACE and FEMA in 2008 in accordance with ER 500-1-1. Part of the Task Force mission is identify and promote the use of non-structural repair alternatives at damaged projects and facilitate coordinate interagency flood mitigation opportunities and techniques. (USACE, Jan 09)</p> <p>During the Midwest floods, the first priority for many States and local communities was acquisition and demolition projects. However, there are a variety of mitigation methods that may be funded through FEMA’s various mitigation programs including the elevation of flood prone structures, structure and infrastructure retrofits, and minor localized flood control projects. The prioritization of projects and project types is a State responsibility.</p> <p>The Stafford Act was amended to require mitigation planning prior to receiving</p>

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	<p>hazard mitigation assistance, and in 2003, FEMA published regulations at 44 CFR Part 201 that set forth the requirements for State, local, and Indian tribal mitigation plans. Part of the planning process requires the jurisdiction to identify a range of potential mitigation actions and evaluate them against cost benefit criteria. (FEMA, Jan 09)</p>
<p>8.6 (FEMA)</p>	<p>Encourage establishment of state-chaired forces to coordinate buyout and implementation of other hazard mitigation activities.</p> <p><i>“One of the success stories of the Midwest flood is the creation and operation of state task forces to coordinate buyouts and other mitigation actions. These task forces include participation by representatives of state agencies and of field offices of various federal agencies. In some cases communities have had to make only one application to the task force, which then determined the funding sources and amounts available to the community. These task force have proved to be important forums for resolving differences between agencies and for coordinating buyout programs.”</i></p> <p>FEMA has successfully encouraged States to take a proactive, coordinated approach to identifying and implementing mitigation activities through task forces, planning committees, or other inter-agency participation in the development of State Mitigation Plans. The process of developing the State hazard mitigation plans creates incentives for increased coordination and integration of mitigation activities at the State level, requires coordination with Tribal and local jurisdictions, and requires States to describe how they will provide mitigation funds and technical assistance to communities. Further, States are required to update their Mitigation Plan every three years to reflect changes in development, progress in statewide mitigation efforts and changes in priorities. Local and Indian tribal governments are required to update their mitigation plans every five years to continue eligibility for FEMA assistance. Since 2000, all 50 States, the District of Columbia, eight Territories, 99 Tribes, and 17,769 local jurisdictions have developed mitigation plans, covering approximately 75 of the nation’s population. (FEMA, Jan 09)</p>

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8.7 Congress (HUD)	<p>Encourage use of CDBG (Community Development Block Grant), EDA (Economic Development Administration), and other funding to acquire and relocate or take other mitigation actions where consistent with program objectives.</p> <p><i>“The Midwest Flood of 1993 demonstrates a commonality of objectives between mitigation actions to protect neighborhoods and businesses from flooding and the missions of federal housing and development programs intended to provide safe and sanitary affordable housing and to create and preserve jobs. For example, many of the neighborhoods most severely impacted by the Midwest flood are low-income neighborhoods with substandard housing. Often these neighborhoods further deteriorate as a result of floods or the threat of floods. Similarly, efforts to create or preserve jobs are made more difficult in communities where business expansion is prevented or results in the relocation of these businesses to other communities or regions. Agencies administering these programs should continue to be active participants in floodplain management and to seek out opportunities for reducing flood losses.”</i></p> <p>HUD recognizes the importance of flood plain management. As noted in the discussion of Action 8.7, Community Development Block Grant (CDBG) Disaster Recovery Assistance funds were used after the 1993 Midwest floods to acquire property and relocate residents out of flood hazard areas. Similar use of such supplemental appropriations has occurred many times since then. Consistent with Recommendation 8.7, CDBG Disaster Recovery Assistance requirements are designed to encourage responsible flood plain management, and HUD waives requirements when necessary to permit such uses. In the regular CDBG program, grantees must comply with Executive Order 11988 and other flood plain management requirements. (HUD, Jan 09)</p>
9.1 Executive Branch	<p>Integrate federal flood response and recovery under the FEMA.</p> <p><i>“The Review Committee suggests that the FEMA be the federal agency coordinating response and recovery to help achieve floodplain management goals. Development of a federal response and recovery plan would incorporate national floodplain management goals and reflect state floodplain management responsibilities by identifying federal and state agency roles and responsibilities and establishing consistent rules and priorities, thus streamlining both response and recovery by the federal government.”</i></p> <p>Through the National Response Framework, cooperation and coordination by local and federal agencies continues to improve. (USACE, Jan 09)</p>

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9.2 (FEMA)	<p>Enhance the linkage among response, recovery, and floodplain management.</p> <p><i>“Coordinating the Interagency Hazard Mitigation Task Force, the Interagency Floodplain Management Task Force, and other groups involved with emergency response will help link disaster response into a seamless set of functions.”</i></p> <p>FEMA has enhanced the linkage between response, recovery, and floodplain management in several ways. FEMA has made a concerted educate disaster response and recovery staff in the requirements of EO 11988 with respect to placing manufactured housing and travel trailers in the V and A zone areas. More significantly, FEMA has issued guidance on applying the executive order in recovery operations for the Public Assistance and Hazard Mitigation Grant programs. This has resulted in federally funded reconstruction and hazard mitigation efforts taking into account potential impacts to floodplains and finding ways to avoid or mitigate them. (FEMA, Jan 09)</p>
9.3 (FEMA)	<p>Continue to seek federal-state co-leadership of an interagency hazard mitigation team.</p> <p><i>“State co-leadership of hazard mitigation teams formed in response to a Presidentially declared disaster recognizes the responsibility of the states for floodplain management. In addition the experience gained by state participants increases opportunities for hazard mitigation in state or locally declared disasters and should decrease federal expenditures for hazard mitigation in the future.”</i></p> <p>FEMA accomplishes many goals as a result interagency coordination and through a comprehensive planning network. In conjunction with its many private and public partners, FEMA educates communities about the risks they face and provides the tools they need to make sound planning, land-use, and building decisions to make our communities less vulnerable. FEMA continually seeks to leverage partners through incentives to meet these objectives.</p> <p>Hazard mitigation planning is the process State, local, and tribal governments use to identify risks and vulnerabilities associated with natural disasters, and to develop long-term strategies for protecting people and property in future hazard events. FEMA works to provide incentives to reward those States, localities, and individuals who are taking initiative to break the cycle of development, damage, and redevelopment at federal expense and instead build their own capability to manage hazards and resources in a sustainable manner. FEMA’s role has generally been not that of “doing” the planning and implementation of projects, but of fostering the development of State and local capability and programs to reduce risk and costs through incentives.</p> <p>The planning process results in a well-coordinated mitigation plan that offers a strategy for breaking the cycle of disaster damage, reconstruction, and repeated damage, and a framework for developing feasible and cost-effective mitigation projects.</p> <p>In 2003, FEMA published regulations at 44 CFR Part 201 that set forth the requirements for State, local, and Indian tribal mitigation plans. Both State and local or tribal plans must be approved by FEMA in order for a jurisdiction to be</p>

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	eligible to receive funding under any of the five hazard mitigation grant programs. (FEMA, Jan 09)
9.4 (FEMA)	<p>States should actively encourage flood insurance purchase by their citizens.</p> <p><i>“States must play an active role in improving market penetration for flood insurance by working with communities and lenders and by assisting in education efforts. Fiscal assistance to states for floodplain management under a Floodplain Management Act should take into account a state’s willingness to undertake this effort.”</i></p> <p>FEMA works regularly with ASFPM, the National Conference of Insurance Legislators, and the National Association of Insurance Commissioners to try to employ the leverage of State government to highlight the importance of flood insurance. (FEMA, Jan 09)</p>
10.1 Congress	<p>Where they do not already do so, states should assume responsibility for regulating levee-related activities such as levee location, alignment, design, construction, upgrade, maintenance, repair, and floodlighting.</p> <p><i>“This is not a call for levee construction but for state oversight of levees to assure their structural integrity and that actions in one location along the river do not create adverse impacts elsewhere.</i></p> <p><i>Using current technology, the states have the capability to assure that existing levees are properly located and aligned to avoid or minimize hydraulic impacts and to avoid high energy, damage-prone locations on rivers. Using a levee permit program, states could also assure that the embankment and foundation conditions meet engineering and environmental standards, that the level of protection afforded is commensurate with land use, that maintenance and repair are performed to assure structural integrity, and that floodfighting is limited to areas deemed critical by the state”</i></p> <p>Consistent guidance does not exist concerning the responsibilities by states for regulating levee-related activities.</p> <p>The National Levee Safety Program as authorized by WRDA 2007 directed the establishment of a National Levee Safety Committee to make recommendations to Congress regarding implementation of a National Levee Safety Program. One recommendation area being addressed by the committee is the establishment of incentives that would establish state responsibilities for regulating levee-related activities. (USACE, Jan 09)</p>

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10.2 USACE	<p>The USACE should consider land acquisition as an alternative during planning and design of habitat rehabilitation and enhancement projects under the Upper Mississippi River Environmental Management Program.</p> <p><i>“This change would improve the effectiveness of the program, and could help to meet both environmental and flood flow attenuation needs. The Review Committee supports the efforts of state and federal EMP partner agencies in their pursuit of additional appropriations to support EMP land acquisition.</i></p> <p><i>The upper Mississippi River Basin should be used as a demonstration ecosystem study area under the current National Performance Review’s (NPR) “Reinventing Environmental Management” action item (Env 02 Develop Cross-Agency Ecosystem Planning and Management). The study should be undertaken by the FWS to take advantage of other ongoing initiatives in the Missouri and Mississippi river basins, as well as the information obtained through Action 10.6.”</i></p> <p>USACE is taking land acquisition into consideration. As an example, 35,000 acres of floodplain restoration, including land acquisition, was authorized by WRDA 2007 under the UMR-IWW Navigation Feasibility.</p> <p>However, authority must be obtained for land acquisition under the Environmental Management program as a provision of LERRD (Lands, Easements, Rights-Of-Way, Relocations and Disposal areas). (USACE, Jan 09)</p>
11.1 (FEMA, USGS, USACE)	<p>Federal water agencies, in collaboration with state, tribal, and local entities, should review and update, as necessary, discharge-frequency relationships for streamflow gages in the upper Mississippi River Basin to reflect the 1993 flood data. The adequacy of the existing stream gauging network should also be reviewed.</p> <p><i>“In 1979 the USACE estimated flood discharges for the upper Mississippi River corresponding to the 5-, 10-, 50-, 100-, and 500-year frequency floods. Water surface profiles for the Mississippi River developed from these discharge frequency curves form the basis for FEMA’s flood insurance rate maps for the areas along the Mississippi River. This is an example of the use of discharge-frequency curves and indicates the importance of keeping them representative of present conditions.”</i></p> <p>A Rainfall-River Forecast Summit hosted by MVD was held in St. Louis, MO, with USGS, NWS, and USACE to evaluate data collection and forecasting during the 2008 floods. The resulting Fusion Team, comprised of all three agencies, is developing methods of improving data collection and evaluation as well as flood forecasting, to include prioritization of gauge network improvements. The 1993 flood data is being incorporated into discharge-frequency analyses. (USACE, Jan 09)</p> <p>The USGS revised all stage-discharge and flood frequency relationships on all active USGS gages in the Mississippi River Basin during or after the 1993 flood that indicated a change in these relationships. The USGS continues the operation and maintenance of many main stem Mississippi River and tributary gages in the Basin in cooperation with the USACE, the NOAA National Weather Service and many State and local agencies. This includes measuring flooding and low-flow</p>

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	<p>events to ensure the validity of computed stream flow in the Basin. (USGS, Jan 09)</p> <p>The USACE has produced an updated discharge-frequency analysis for the upper Mississippi River Basin that includes data from the 1993 flood. FEMA is working to incorporate these updated analyses into the flood hazard maps. (FEMA, Jan 09)</p>
11.2 (NWS, USGS)	<p>Federal agencies, coordinated by NWS and USGS, should collaborate on an assessment of the effectiveness of the stream gauging network and flood forecasting during the 1993 Midwest flood.</p> <p><i>“This assessment should include an evaluation of the ability of the present streamgaging network to monitor the Mississippi River system and provide the public with timely and reliable flood warnings. The assessment should identify gaps, inconsistencies and areas of duplication in the present system and make recommendations on improvements. NOAA’s Natural Disaster Survey Report identifies the need for improvements to real-time hydrologic forecasting and provides 106 findings and recommendations resulting from an interagency evaluation of the 1993 Midwest flood.”</i></p> <p>The USGS continues to work with USACE, USDA, and many others in the evaluation of upland and floodplain storage not only to document the effects of flooding in wetlands and forested areas affected by main stem flooding, but also to understand how flood storage affects sedimentation in restoration.</p> <p>The National Hydrologic Warning Council (NHWC) recently published two reports that assess and document the effectiveness of the USGS streamgaging network. The names of the two reports are as follows. The reports can be downloaded free of charge from the URLs listed below:</p> <ol style="list-style-type: none"> 1. Benefits of USGS Streamgaging Program: Users and uses of USGS streamflow data (http://water.usgs.gov/osw/pubs/nhwc_report.pdf) 2. Flood management benefits of USGS streamgaging program (http://water.usgs.gov/osw/pubs/Flood_Management_benefits_complete.pdf) <p>(USGS, Jan 09)</p> <p>An assessment was conducted and published by the U.S. Department of Commerce, National Oceanic, and Atmospheric Administration, "Natural Disaster Survey Report: The Great Flood of 1993" (Washington, DC: U.S. Department of Commerce, NOAA, 1994). The report summarizes 106 findings and recommendations to improve the NWS hydrologic forecast services for the Nation. Finding 4.7 addresses the "complex hydrologic and hydraulic elements that require application of advanced modeling approaches to handle such effects as backwater at river junctures, overbank flows, levee failures, and changing [stage-discharge] ratings." As a direct result of the 1993 Midwest flood, the NWS implemented the Advanced Hydrologic Prediction Service (ARPS), which provides a robust suite of water information using advanced river modeling approaches with links to the USGS National Streamflow Information Program</p>

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	<p>(NSIP) stream gauging network. Finding 5.1 provides specific reference to the critical importance of stream gauges to flood forecasting. The finding states, "Most NWS offices indicated that a shortage of stream and precipitation gauges hindered their ability to produce accurate and timely forecasts. The Des Moines case study in Chapter 6 dramatically illustrates the major impact that the loss of just one stream gauge can have on hydrologic forecast procedures." The NSIP is a multipurpose national network, operated by the USGS on behalf of all users. The Federal funds needed to operate the network are appropriated directly to the USGS rather than being placed within the budgets of other agencies with responsibility for hazards, resource management, or environmental protection. The USGS has designed and augmented the NSIP to be highly responsive to NWS data requirements. The NWS has taken many opportunities to highlight the importance of stream gauges at major public meetings and conferences. For example, at a 2006 Capitol Hill briefing on the role of USGS in flood hazards, a NWS River Forecast Center director delivered a highly effective message about the importance of USGS gages to NWS forecasts. (NWS, Jan 09)</p>
11.3 Executive Branch (USACE, USGS)	<p>The USACE and USGS should investigate and better define relationships between high-energy erosion zones, other zones in flood prone areas, and levee failure.</p> <p><i>“Evidence indicates that levees that were largely responsible for raising flood water to levels that generated the high energies necessary to overpower and blow the levees, creating the scour holes and generating the sands that damaged the very farmlands the levees were designed to protect. In many areas, riparian forests had minimal flood erosion or deposition damage. These areas commonly coincided with levees that did not fail, indicating some protection was given to levees by riverward forested areas. Evidence also indicated that levees placed in high energy zones would not hold, even if it were possible to excavate all the sand from the old channel and place the levees on a clay core. This suggests that levees should not be reconstructed in such high energy erosion zones, but should be set back to allow high energy zones to remain within a designated, functioning floodway. A mix of compatible land uses, such as dry-year farming, open space, recreation, fish and wildlife habitat, could occur within high energy floodways. Any such use, however, should not be eligible for future emergency federal disaster assistance. A study is needed immediately to better define, document, and map such high energy zones, at least along the Missouri River.”</i></p> <p>No study to define and document high-energy zones along the Missouri River has been authorized.</p> <p>A multi-agency (USGS, NWS, USACE) Rainfall-River Forecast Summit was held in October in St Louis to evaluate forecasting during the 2008 floods. A Fusion Team comprised of members of all three agencies is developing methods of improving data collection and evaluation as well as flood forecasting, to include prioritization of gauge network improvements. The 1993 flood data is being incorporated into discharge-frequency analyses. (USACE, Jan 09)</p> <p>The USGS continues to support and define stage-discharge relationships in high-energy erosion zones, other zones in flood prone areas, and levee failure. In recent</p>

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	<p>years, partner funding for the operation and maintenance of USGS streamgages has declined significantly in some areas of the upper Mississippi River Basin and in other regions. This can have a significant impact on USGS’ ability to monitor, process, publish, and further investigate hydraulic and geomorphic issues in the Basin. (USGS, Jan 09)</p>
<p>11.4 (USACE, USDA)</p>	<p>Federal agencies should conduct research on biotechnical engineering techniques and incorporate them into design manuals.</p> <p><i>“State, local, and private engineers and planners rely heavily on federal design manuals. Currently these manuals do not address biotechnical engineering -- channel or bank modification techniques that use vegetation in innovative ways in contrast to traditional bank sloping and riprap protection. Traditional approaches typically focus on maximizing flood conveyance only. Biotechnical engineering techniques can be employed in engineering designs and contribute to the natural functions of floodplains. These practices have not been incorporated into federal government standards. Federal agencies responsible for establishing guidelines should test and incorporate these methods into their design manuals.”</i></p> <p>The USACE Engineer Research and Development Center has developed a proposal to study the impacts of vegetation on functioning flood damage redacting projects. This proposal is not funded.</p> <p>USACE initiated research in FY 08 to improve its landscaping guidance for civil works projects with a special emphasis for dams and levee systems. The outcome of this research is to provide a minimum safety consideration for the impacts of vegetation on the function of the engineered structures. (USACE, Jan 09)</p> <p>See also USDA comment for Action 11.7</p>

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11.5 OMB	<p>OMB should review the current system of funding disaster relief; consideration should be given to encouraging the National Science Foundation to support a review.</p> <p><i>“Natural disasters in the United States are costly events in terms of both human lives lost and property damaged. Since FY 1989, over \$27.6 billion has been spent on federal disaster assistance programs. The Review Committee heard concerns expressed about the current system of funding disaster relief through emergency supplemental appropriations and the subsequent effects on the federal deficit.”</i></p> <p>OMB evaluates the appropriate level of funding to request for the Disaster Relief Fund (DRF) each year. The Administration recognizes the challenges of budgeting for disasters. FEMA uses the DRF to provide immediate on-the-scene assistance to disasters, cover on-going recovery from previous disasters, support readiness and response capacities, and prepare for notice events, such as pre-deployment of response assets for hurricanes. The annual budget request for the DRF has been generally based on a five-year average of historical spending for small- and medium-scale disasters, leaving large-scale disasters (defined as events with obligations of at least \$500M) to be funded through supplemental spending bills. Reliance on supplemental spending bills results in emergency funding designations, which the DRF was established to minimize, and reduces efforts to improve the management of program funds. (USACE, Jan 09)</p>
11.6 USDA	<p>USDA should evaluate the impact of federal farm programs on agricultural land use decisions in and out of the floodplain.</p> <p><i>“The role of the federal farm programs in influencing sound floodplain management continues to receive great attention. Other federal policies, however, also affect land use decisions. Data currently exist to support research on the effects of federal incentives and disincentives on agricultural production in the floodplain.”</i></p> <p>USDA’s Economic Research Service released a report in August, 2006 that examines land-use conversion between 1982 and 1997 resulting from two agricultural programs that others have identified as potentially having important influences on land use and environmental quality: Federal crop insurance subsidies and the Conservation Reserve Program (CRP), the Nation’s largest cropland retirement program. The report, <i>Environmental Effects of Agricultural Land-Use Change: The Role of Economics and Policy</i> http://www.ers.usda.gov/Publications/ERR25/ examines evidence on the relationship between agricultural land-use changes, soil productivity, and indicators of environmental sensitivity. While the study does not focus on land use decisions in the floodplain per se, it does consider implications of crop insurance in keeping flood-prone land in crop production. According to the study, cropland cultivated in 1997 due to a 1995 increase in crop insurance subsidies is slightly more prone to flooding than all cropland cultivated in 1997. (USDA, Jan 09)</p>

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11.7 FEMA	<p>FEMA should conduct research on the issue of NFIP market penetration to determine who buys flood insurance and who does not and why.</p> <p><i>“The Review Committee was not able to obtain definitive information on NFIP market penetration or on who buys flood insurance and who does not and why. Much of the information that is currently available is based on inadequate information, personal observation, or speculation. This knowledge is critical to developing strategies to increase compliance with the mandatory purchase requirements and to increase voluntary purchase of flood insurance.”</i></p> <p>FEMA has done a number of analyses of why people are resistant to the purchase of flood insurance, including the NFIP Evaluation completed last year. The reasons for people not purchasing flood insurance have been apparent for some time and the challenge for the NFIP marketing effort has been focused on and guided by these reasons. (FEMA, Jan 09)</p>
11.8 NSF	<p>The National Science Foundation should consider funding [basic] research on the following subjects: are all accounting of all public private benefits and costs of floodplain occupancy and associated floodplain management measures, including both monetary and non-monetary methods of accounting,</p> <ul style="list-style-type: none"> • Mapping and regulating areas with movable stream channels and storm drainage overflow and backup, • Special impacts of floods, including epidemiological and mental health factors, and • The feasibility and effectiveness of the use of meteorologic data and geomorphic and botanical evidence in conjunction with hydrologic and hydraulic models to estimate flood frequency. Will <p>The NSF supports basic research in the sciences and in engineering, including modeling of the Earth’s water systems. For example, the NSF-supported National Center for Earth-Surface Dynamics focuses on the physical, chemical, and biological processes of landscape evolution in watersheds to predict ecosystem response and guide management decisions. Similarly, the NSF-funded National Center for Atmospheric Research has developed forecasting systems for people who live in flood-vulnerable areas.</p> <p>NSF has a rapid response grants mechanism by which qualified researchers can receive on-the-spot support to study the processes and effects of floods and other disasters. Such support has led to greater understanding of the causes of flooding and contributes to an ability to forecast future floods. Immediately after the recent Midwest flooding, NSF funded rapid-response projects in the social and behavioral sciences, hydrological sciences, biological sciences, and environmental engineering. Such a response was also organized for the Gulf hurricanes and associated flooding.</p> <p>The FY 2009 NSF budget request includes a new focus on interdisciplinary research to increase our fundamental understanding of the Earth’s freshwater</p>

Responsible Agency (Parenthesis indicates implied responsibility)	REPORT RECOMMENDATIONS (Italicized entries indicate explanatory text from Sharing the Challenge Report)
	<p>systems and provide the scientific basis for decision-making about water resources. This is an indication of the urgency with which the research community has approached the questions of drought, flooding, and sustainability.</p> <p>A few examples of related NSF research:</p> <ol style="list-style-type: none"> 1. NSF-supported projects have examined how individuals formulate and make decisions about insurance as a form of financial protection against low probability but high consequence events. 2. On June 17, 2008, NSF supported the National Center for Airborne Laser Mapping to deploy its airborne laser swath mapping unit to map areas in Iowa hit by a 500-year flood. The mapping operations were completed in three days and supplied vital information to emergency efforts. 3. NSF-funded projects are assessing the longitudinal effects of floods and hurricanes on the educational performance of youth. Enhanced understanding of community and individual responses to disasters like the Cedar Rapids flood will be increasingly valuable for policy makers, planners, and other community leaders as they try to prepare for major catastrophes. 4. NSF-supported researchers identified and dated flood layers and from them reconstructed flood history from the lower Mississippi Valley. A better understanding of long term flood dynamics may be useful in improving urban planning and reducing flood damage in the future. (NSF, Jan 09)