DEPARTMENT OF THE ARMY

COMPLETE STATEMENT

OF

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BEFORE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

ON

The Midwest Floods: What Happened and What Might Be Improved for Managing Risk and Responses in the Future

JULY 23, 2008

Madam Chair and distinguished members of the Committee, thank you for the opportunity to testify before the Committee and to report to you on the June 2008 Midwest floods.

Background

Since the Flood Control Act of 1936 established a federal role in flood management, the Corps has completed approximately 400 major lake and reservoir projects, constructed over 8,500 miles of levees and dikes, implemented hundreds of smaller local flood management projects, and offered assistance to hundreds of local communities to construct their own flood damage reduction systems.

The Corps has also changed its paradigm since 1936. The Corps has transitioned from "controlling floods" to "reducing flood damages" by primarily building projects to manage the flood waters based on the economic value of the property that is at risk. Today Federal, State, and local agencies tend to jointly address the broader concept of "flood risk." Current national policy seeks not only to reduce the probability of flood damage through construction or reconstruction of flood water management facilities such as levees, but also seeks to reduce the consequences of flooding through the use of other tools to manage the floodplains, such as land zoning regulations or response and contingency planning. Flood risk is a rough measure of the probability of flooding and the consequences of flooding.

Responsibility for flood risk management in the United States is shared among multiple Federal, State, and local government agencies with a complex set of programs and authorities. Both the U.S. Army Corps of Engineers and the Federal Emergency Management Agency (FEMA) have programs to assist states and communities in reducing flood damages and promoting sound flood risk management. The authority to determine how land is used in floodplains and to enforce flood-wise requirements, however, is entirely the responsibility of state and local governments. Floodplain management choices made by state and local officials, in turn, impact the effectiveness of federal programs to mitigate flood risk and the performance of federal flood damage reduction infrastructure.

Responsibility for the Nation's levees is likewise shared. Over the years the Corps has built hundreds of miles of levees, typically turning them over to State or local authorities for operation, maintenance, repair, rehabilitation, and replacement once they are complete. The responsibilities of local levee partners also include levee safety, land use planning and development, building codes. Levee certification for FEMA's National Flood Insurance Program is the responsibility of the local levee owner or sponsor. No single agency is responsible for levee oversight nationwide. The Corps has specific and limited responsibilities for approximately 2,000 levees, but this is a small percentage of the nationwide total. The Corps is by no means the only builder of levees – localities, cooperatives, and individual landowners have built the vast majority of levees currently in existence throughout the United States. Many of the Nation's levees were first put in place by farmers to protect agricultural areas from frequent flooding. They date back as

much as 150 years, but in that time, land use has changed and development has taken place where farms were once located. These levees may appear to protect land behind them, but they often provide very limited protection from flooding.

While levees reduce the chance of flooding from certain events, the Corps is redoubling its efforts to make clear to the public that no levee completely eliminates the risks associated with flooding. Levees are designed to provide a specific level of protection and can be overtopped during flood events that exceed the design storm. Levees also decay over time; they require regular and proper maintenance and periodically must be upgraded to retain their level of protection. When levees overtop or fail, the results of the flooding can be catastrophic, and the damage may be more significant than if the levee did not exist. The vulnerability and the hazards for levee overtopping or failure need to be properly communicated.

Response to Midwest Floods

In June 2008, record-breaking storms and flooding occurred across six states. This flood event set new record high water stages at numerous gage stations within the region's tributaries in the Upper and Middle Mississippi River Basin. The majority of property damage occurred along Upper Mississippi tributaries. Records show that 41 levees were overtopped (6 federally authorized (locally maintained and operated), 31 non-federal and 4 private) in Iowa, Indiana, Illinois, and Missouri.

Through the emergency authority of Public Law 84-99, the Corps worked closely with state and local emergency managers to inspect, advise, and assist communities with professional engineering expertise and materiel during flood fights. The levees, although some overtopped, worked as intended to buy critical time for local emergency management officials to safely evacuate residents. In some cases, levee performance and the actions of determined communities provided the additional time needed to reinforce and improve levees and to protect lives and property behind them.

The Corps assisted FEMA with various mission support activities including debris removal; water; commodities; temporary housing; and emergency power teams. The Corps deployed civilian experts from its offices throughout the three major inland river systems, the Mississippi, Missouri and Ohio, to monitor and assess the stability of the Mississippi River levees against forecasted river levels. The Corps worked side-by-side with local residents and municipal, State and Federal officials, including volunteers, who used 13 million Corps-provided sand bags to raise and reinforce many levees.

As the flood waters recede throughout the region, the Corps is transitioning from flood fight operations to recovery and levee repairs. In addition to providing authority to assist State and local entities during flooding, Public Law 84-99 also provides authority for the Corps to repair levees that have met minimum criteria and have been accepted into the P.L 84-99 program Within its Rehabilitation and Inspection Program, the Corps works with State and local partners to inspect and assess the maintenance and condition of levees that are active in the program and to repair damaged projects to pre-storm

condition and level of protection. In coordination with State and local agencies, the Corps has begun to assess the damages to the levees throughout the region. Initial damage assessments include approximately 115 projects throughout the region that have been damaged. Brigadier General Michael Walsh, Mississippi Valley Division Commander will provide more detail on the Corps response activities from the perspective of its field operating offices.

Now is the Time for Change

The Administration included funds in its FY 2009 budget to begin a study as outlined in Section 2032 of WRDA 2007 that would assess the vulnerability of the United States to flooding. The study t will assess the extent to which existing programs operate (individually and together) to address flood risk reduction priorities; develop recommendations for improving the effectiveness, efficiency, and accountability of these programs; and propose a strategy to implement those recommendations. The report will look at not only programs of the Corps of Engineers, but at a broad array of Federal, state, and local programs, including flood insurance, local land use planning, emergency response and recovery, disaster assistance, and economic development programs. This important effort needs congressional support in order to continue.

As the Corps considers the aftermath of the Midwest Floods of 2008, it is clear that greater awareness is needed by the residents and business in flood plains about the risks associated with living and working behind levees. Local jurisdictions will need to make decisions about flood risk reduction, land use, and development in flood plains. Residents living in flood plains tend to forget about their risk of flooding since catastrophic floods happen so infrequently. It is prudent to remind the public that the National Flood Insurance Program administered by FEMA and even a 100-year flood levee system does not provide an elimination of risk. Frequently, the public believes a 100-year flood occurs once per 100 years, as opposed to understanding that this is only a probability of 1% occurrence in any given year. The risks need to be properly mapped and conveyed so that the public understands the risks to its community.

Learning from the past

Many reports have offered lessons learned from past flooding disasters and recommend policy reforms intended to reduce the nation's flood risks (see attached bibliography).

Common themes have included a call for improved interagency coordination, an emphasis on public safety and the need for improved flood risk communication. Many reports have also called for greater use of floodplain management measures by local and state government to mitigate flood risks, including wise land use planning, enforcing flood-proofing building code requirements, acquiring easements and relocating flood prone structures, in conjunction with traditional engineered floodwater management structures. Many reports also have called for a lifecycle approach to managing flood risk that integrates post-flood recovery efforts with long term flood risk mitigation planning.

The Corps has adopted some of these practices and is conducting its own internal evaluations to continue to improve the Corps' flood damage reduction program. After the 2005 hurricane season, the Chief of Engineers developed and the Corps is beginning implement Actions For Change, designed to improve the Corps flood program after integrating the lessons learned from the 2005 hurricane season. This important activity requires support to continue to move forward.

Reducing flood risk is a shared responsibility

A common misperception persists that the Federal government is responsible for providing fail-safe protection from flooding. This overlooks the central role played by non-Federal levels of government and private citizens in mitigating flood risk through floodplain management. In part, this misperception is perpetuated by the traditional Corps focus on the construction of visible infrastructure to reduce flood damages by decreasing the probability of flooding. In this traditional role, the Corps' decisions have been driven by reducing the economic impact of flood damages on the national economy. There are other entities that can better assess and address localized risks and consequences.

Federal programs and policies to address the nation's flood risks depend heavily upon complementary, flood-wise practices to mitigate flood risks at the state and local level of government, as well as by private citizens. This means that successful management of the Nation's flood risks requires careful and continuous coordination between the Federal and non-Federal levels of government as well as ongoing engagement with the private sector and the public. A key challenge is ensuring that as the public and government leaders make flood risk management decisions, they integrate environmental, social, and economic factors and consider all available tools to improve public safety.

This period of post-flood recovery in the Midwest is an opportunity for the Corps to work in coordination with its Federal and non-Federal partners to improve short term emergency response and post-flood recovery efforts while considering long range flood risk management planning.

Path Forward

Now is the time to make changes for better management of flood risk that will come with the next Midwest flood. Following are ongoing or proposed actions for reducing flood damages or managing flood risks in the Midwest and nationally.

Interagency Levee Task Force

Flood response, recovery and reducing flood risk are a shared responsibility. As part of the recovery process through the PL84-99 program, the Corps is developing a recovery strategy in coordination with Federal State and local partners to repair and restore the flood damage reduction systems. Addressing flood risk and flood damage reduction

prior to the next flood season is an important part of this strategy. Part of our recovery strategy will be the establishment of a regional Interagency Levee Task Force that will bring the appropriate Federal, State and local agencies together to provide a uniform approach across the impacted region ensuring that the restoration of these systems is consistent and equitable. The Interagency Levee Task Force will also provide opportunities to evaluate non-structural alternatives to reducing vulnerability to flood risks and explore other long-term mitigation initiatives and activities to improve floodplain management programs and policies. Federally authorized levees and some non-federal levees may be eligible for Corps rehabilitation assistance funding.

National Flood Risk Management Program

In May 2006, the Corps established the National Flood Risk Management Program (NFRMP) to take the first step of bringing together other federal agencies, state and local governments and agencies, and the private sector with stakes in flood risk management. The objective of the NFRMP is to develop and implement a unified national flood risk management strategy that eliminates conflicts between different flood risk management programs and takes advantage of all opportunities for collaboration.

Some of the specific goals of the program are:

- Providing current and accurate floodplain information to the public and decision makers;
- Identifying and assessing flood hazards posed by aging flood damage reduction infrastructure;
- Improving public awareness and comprehension of flood risk;
- Integrating flood damage and flood hazard reduction programs across local, state, and Federal agencies; and
- Improving capabilities to collaboratively deliver and sustain flood damage reduction and flood hazard mitigation services to the nation.

Levee Safety Program

The Midwest Floods of June 2008 have highlighted the importance of evaluating and communicating the risks to the public and decision makers associated with levee systems. There are many questions that need to be answered - How many miles of levees exist? What is the condition of these levees? Which entity is responsible for these levees? What areas are at the highest risks? How should Federal, State, and local resources be prioritized to reduce these risks? What can be done, together, in the interim to reduce these risks? In order to begin answering these questions, levees need to be identified and the risks associated with these levees assessed in a consistent manner across the nation.

In 2006, the Corps launched a major effort in answering these questions. Using $30 million in FY 2006 Supplemental appropriations provided by the Congress, the Corps created its Levee Safety Program with the mission to assess the integrity and viability of levees and recommend actions to assure that levee systems do not present

unacceptable risks to the public, property, and environment. In the last two years, the Corps has made great strides toward the creation of a National Levee Inventory for levees that are active in a Corps program; development of a methodology for performing technical risk assessments of existing levee infrastructure; and improvement of current related policies and procedures associated with levees.
Specific activities under the Levee Safety Program include,

1. Completion of a Geographic Information Systems (GIS)-based database model to serve as the National Levee Database (NLD).
2. Initiation of the Corps levee inventory.
3. Improvements in levee inspections to make them more rigorous, consistent, and comprehensive. These improvements will assist the Corps in being able to communicate to the local sponsors and the public on the overall condition and associated risks of levee systems.
4. Establishing national teams and partnerships to focus on developing new levee policies, procedures, and technical guidance. The Corps is also seeking international partnerships, such as the existing partnership with the Dutch, in order to leverage as much experience and expertise as possible.

The NLD, although still in its developmental stages, was used during the Midwest flood event to quickly compare the profile of federally constructed levees to predict water levels to determine if overtopping of levees systems were likely. The NLD will also have the capability to log all incidents such as sand boils, slides and other problem areas. This information will be critical in assessing flood fighting capabilities for future events or the need for immediate repairs, rehabilitation or mitigation.

Although great advances have been made in collecting and assessing information about levee systems, much remains to be done. Detailed information is needed about many federal levees, all private levees, and most non-Federal levees. Many of the levees that overtopped or breached during the Midwest Floods were non-Federal and therefore, the Corps did not have detailed information which could have been useful while responding to the event.

On November 8, 2007, the Water Resources Development Act (WRDA) of 2007 was enacted into law. Title IX of this WRDA, cited as the National Levee Safety Act of 2007 (the Act), involves development of recommendations for a national levee safety program in addition to the inventory and inspection of levees. The Act compliments many of the ongoing activities of the Corps' Levee Safety Program.

- Requirement 1 of the Act is to form a "Committee on Levee Safety," to develop recommendations for a national levee safety program, including a strategic implementation plan. Technical corrections to this Act were signed into law July 15, 2008 that gives the Army the authority to fund the committee with existing funds.
- Requirement 2 of the Act is to inventory and inspect levees. The Act requires that the Secretary establish and maintain a database with an inventory of all of the

Coordinating Flood Risk Management at the National and Local Level

The Corps has worked with FEMA and representatives of non-Federal levels of government to improve coordination through two channels, the Intergovernmental Flood Risk Management Committee and the Silver Jackets Program.

The Intergovernmental Flood Risk Management Committee (IFRMC) provides a venue for FEMA and Corps leadership to coordinate programs and policies, and thus improve program implementation for the flood risk management community. Additionally, quarterly meetings have provided an opportunity for key stakeholder groups representing the non-Federal perspective, the Association of State Floodplain Managers (ASFPM) and the National Association of Storm and Floodwater Management Agencies (NAFSMA), to provide both agencies direct feedback on specific policy and implementation issues faced at the State and local level.

Establishing the IFRMC as a forum for coordination at the senior leadership level has helped address coordination challenges by:

1. Providing a forum for the exchange of information and experiences relating to flood risk management among the senior level staff and leaders of member organizations;
2. Creating an opportunity for each member organization to identify and discuss policy and implementation issues they have encountered as barriers to effective flood risk management;
3. Creating an opportunity for Federal agencies to receive feedback from non-Federal member organizations on Federal programs and initiatives to improve flood risk management;
4. Discussing among senior leaders of member organizations flood risk management priorities; and
5. Obtaining senior leader feedback on ideas and initiatives developed by the staff of member organizations.

A key accomplishment to date of the IFRMC has been providing Corps and FEMA leadership information about the challenges in producing accurate, updated FIRMS under FEMA's MapMod program, due to aging and poorly maintained levees. This awareness provided FEMA and Corps leadership the foundation for coordinating directly to revise and improve both agencies' policies outlining the procedures for performing certification of levee systems for purposes of developing FIRMS, as well as establishing and enforcing requirements for addressing levee deficiencies in a timely manner and providing adequate operation and maintenance.

The Corps has also launched the Silver Jackets Program, to provide an avenue for interagency and intergovernmental collaboration at the State level. Through the Silver Jackets program, the Corps collaborates with FEMA and other Federal agencies to create interagency teams at the State level to develop and implement solutions to state natural hazard priorities. The Silver Jackets Program's primary goals are to integrate information and resources, improve public risk communication through a united effort, and create a mechanism to collaboratively solve issues and implement initiatives.

To date, the Silver Jackets Program has initiated pilot programs in Ohio, Indiana and California. These teams have succeeded not only in improving communication, but also in leveraging resources and programs between Federal agencies. For example, coordination through the Ohio team has enabled the small community of Marietta Ohio to acquire detailed mapping of its community by tapping into an ongoing, regional watershed study, at nominal costs. Through the same Silver Jackets team, an opportunity was discovered to integrate two different programs by utilizing the Corps Planning Assistance to States Program to provide resources and FEMA's Flood Mitigation Assistance (FMA) Program to outline the requirements - resulting in the town gaining eligibility for FEMA flood mitigation funds.

The Corps is also working to collaborate with other Federal agencies that have a role in flood risk communication. In June 2008, the Corps and FEMA hosted a meeting of senior staff from Federal agencies involved in flood risk management. The objective of the meeting was to seek opportunities for improved efficiencies and greater coordination across agencies. There was wide participation, including the Department of Interior, (U.S. Geological Survey, U.S. Fish and Wildlife Services, and the U.S. Bureau of Reclamation), National Oceanic and Atmospheric Administration (National Weather Service, National Ocean Service, and National Marine Fisheries Service), U.S. Environmental Protection Agency, U.S. Department of Agriculture (Natural Resources Conservation Service and Forest Service), Department of Transportation (Federal Highway Administration and Federal Aviation Administration), Department of Housing and Urban Development, Small Business Administration, Federal Energy Regulatory Commission and the International Boundary and Water Commission.

The Corps provided meeting participants background on the coordination successes FEMA and the Corps have achieved over the past three years under the National Flood Risk Management Program, including 1) coordination between agency leadership through quarterly meetings of the Intergovernmental Flood Risk Management Committee and 2) field level coordination through the Silver Jackets program.

The remainder of the meeting was used for facilitated discussions involving all participants to share their thoughts on areas of potential coordination across Federal agencies.

Participants all agreed to continue staff-level coordination meetings to focus in on high priority coordination issues.

Additionally, the Corps is seeking partnerships with those in the private sector that best understand risk, such as banking and insurance industries to share data and risk model development. An opportunity exists for the Federal Government and insurance industry to leverage mutual efforts, such as in the areas of research and development, implementation of assessment tools, and increase of public and policy-maker awareness. We wish to collaborate more closely with business councils and developers so they understand local flood risks, and can assist us in public education campaigns.

Midwest Actions

Over the past three years, through the IFRMC, the Silver Jackets Program, and periodic regional coordination meetings, the Corps and FEMA have succeeded in building strong, working relationships between our agencies, both at the top levels in Washington as well as in the field at FEMA regions and Corps districts. The Corps and FEMA are now also working to establish the same type of working relationships with other Federal partners, such as the National Oceanic and Atmospheric Administration and the United States Geological Survey.

Now is the time to make use of these relationships to be sure that a unified response is provided to the Midwest flooding that not only meets the immediate emergency response needs, but also lays the ground work for long term recovery efforts that result in an informed approach to future flood risk management for the region.

Some initiatives include:

- Establishing an Interagency Levee Task Force for the 2008 Midwest Floods in accordance with a February 18, 1997 directive from the Office of Management and Budget to ensure that agencies fully consider relevant options, including non-structural alternatives, during evaluation and review of levee repair and reconstruction projects. In that regard, the Midwest Floods of June 2008 present another opportunity for the impacted Federal, State and local governments to address a rapid and effective response to damaged flood and floodplain management systems that will minimize future risk to life and property, while ensuring an effective interagency approach to flood damage mitigation and floodplain management, including opportunities for non-structural alternatives, in a collaborative manner.

- Coordinate post-flood assessment efforts among FEMA, Corps, the National Weather Service (NWS) and U.S. Geological Survey (USGS) to avoid unnecessary duplication of effort and to ensure that data quality standards are met in the collection process.

- Where warranted, consider both floodwater management and floodplain management options beyond the limited levee rehabilitations authorized under PL 84-99, to address flood risk reduction needs.

- Present a common federal voice in conveying flood risk information and to send a clear message to the American public about the realities of residual risk and the responsibility they hold to make wise decisions in floodplains during their long term recovery efforts.

In summary, responsibility for flood risk management in the United States is shared between multiple Federal, State, and local government agencies who must all work together to effectively address these complex issues. Madam Chair, this concludes my testimony. I would be happy to answer any questions you or other members of the Committee may have.

Bibliography

Association of State Flood Plain Managers, *Reducing Flood Losses: Is the 1% Chance (100-year) Flood Standard Sufficient?; 2004.*

Association of State Floodplain Managers and National Association of Flood and Stormwater Management Agencies*; Joint Recommendations on Levee Policy by the Association of State Floodplain Managers and the National Association of Flood and Stormwater Management Agencies from discussions at the Flood Risk Policy Summit of December 2006*; 2007.

Interagency Performance Evaluation Task Force (IPET)*; Performance Evaluation of the New Orleans and Southeast Louisiana Hurricane Protection System Final Report of the Interagency Performance Evaluation Task Force*; 2008.

National Wildlife Federation; *Higher Ground: A Report on Voluntary Property Buyouts in the Nation's Floodplains A Common Ground Solution Serving People at Risk, Taxpayers and the Environment*; 1998.

Panel on Adaptive Management for Resource Stewardship, Committee to Assess the U.S. Army Corps of Engineers Methods of Analysis and Peer Review for Water Resources Project Planning, National Research Council of the National Academies; *Adaptive Management for Water Resources Project Planning*; 2004.

Panel on Methods and Techniques of Project Analysis, Committee to Assess the U.S. Army Corps of Engineers Methods of Analysis and Peer Review for Water Resources Project Planning, National Research Council; *Analytical Methods and Approaches for Water Resources Project Planning*; 2004.

Panel on River Basin and Coastal Systems Planning, U.S. Army Corps of Engineers Methods of Analysis and Peer Review for Water Resources Project Planning, National Research Council; River Basins and Coastal Systems Planning Within the U.S. Army Corps of Engineers; 2004.

Report of the Interagency Floodplain Management Review Committee to the Administration Floodplain Management Task Force; *Sharing the Challenge: Floodplain Management Into the 21st Century* ("the Galloway Report"); 1994.

Wooley, Douglas and Shabman, Leonard; Decision-Making Chronology for the Lake Pontchartrain & Vicinity Hurricane Protection Project Final Report for the Headquarters, U. S. Army Corps of Engineers. Submitted to the Institute for Water Resources of the U.S. Army Corps of Engineers; 2008.