Illinois Interagency Levee Work Group  
Policy White Paper  

Reducing Flood Risk  
in Leveed Areas and Drainage Districts

Purpose
The primary purpose of this Policy White Paper is to inform the regional Interagency Levee Task Force (ILTF) about proposed modification to Federal and State agency policies and processes that would significantly improve our ability to reduce future flood risks to leveed areas and drainage districts.

Background
Multiple levee systems and districts throughout the Midwest experienced severe damages as a result of flooding that occurred in the Spring of 2008. The Illinois Interagency Levee Work Group (ILWG) was established in August 2008 with two primary objectives: (1) improve coordination of the current levee repair efforts and, (2) identify opportunities to reduce future flood risk. The ILWG, made up of Federal and State agencies, has succeeded in improving the coordination of current levee repair efforts from application through construction. The group has also reviewed Illinois levee repair projects underway by FEMA, USACE, and NRCS to identify opportunities for structural and non-structural alternatives (NSAs) that would reduce future flood risk. As a result of this review, three priority areas in Illinois were identified to have high potential for reducing future flood risks through application of NSAs. They included Henderson County, Vandalia, and Grand Tower Drainage & Levee Districts (D&LDs). While the sponsors from these three areas have selected to move forward with near-term structural repair of their levee systems under PL 84-99 authorization, they have also expressed interest in pursuing opportunities to reduce future flood risk through structural and non-structural alternatives. Before this effort to reduce future flood risk can proceed, modification of agency policy and processes must occur. ILWG recommendations for needed policy and process change are the focus of this White Paper.

The recommendations discussed in this document were developed by drawing on past efforts (such as the Upper Mississippi River Comprehensive Plan) and refined by the partner ILWG agencies with input from interested sponsors and stakeholders. The primary policy modification recommended in this document would allow USACE, partner agencies, sponsors and stakeholders to work together on one-year planning efforts to determine the best long-term solution to reduce flood risk in priority areas (initially Henderson County, Vandalia, and Grand Tower).

Flood Damages
The near-term repair estimates for damaged levee systems in the three priority D&LDs range from two to fifteen million dollars. Grand Tower also has an identified levee design deficiency that will require an additional sixty million dollars to correct. Significant financial losses also resulted from the flooding due to crop loss, structural damage to homes and businesses, infrastructure damages, and highway traffic detours. Henderson
County Drainage District alone experienced $9.5 million in damages to structures, eleven million dollars in crop losses, fifteen million dollars in damages to the levee system, sixty million dollars in damages to the BSNF railroad infrastructure, and the economic loss of $174,000 per day from the Highway 34 detour. The need to identify ways to reduce future flood damages is evident by the high cost of repair and the repetitive nature of these costs over time.

**Current Repair Efforts**
Repair efforts are currently underway or have been completed for damaged levee systems throughout the State of Illinois. Drainage districts and communities that participate in the USACE PL 84-99 Program are having levees and pump stations repaired by the Corps of Engineers. NRCS is repairing agricultural levees, removing debris and silt from drainageways, and stabilizing scour areas through their Emergency Watershed Protection Program. FEMA’s Public Assistance Program is working with drainage districts and communities to fund debris removal and other local government repair activities that assist the areas in a return to pre-flood condition. These agency programs are succeeding in quickly restoring the damaged levee systems back to pre-flood levels of protection, but identifying and incorporating ways to reduce future flood risk is not being seriously considered at this time.

**Shortfalls of Current Policies and Processes**
Current agency policies and processes focus on the near-term need of repairing levees back to pre-flood conditions to reduce risk to the populace, property, and resources before the next flood season. While it is very important that we maintain this near-term focus, it is just as important that a long-term focus is addressed to help reduce future flood risks. Major shortfalls of current agency policies and processes include:

- There is not a policy, process, or dedicated funding in place that allows agencies to quickly implement and perform a detailed assessment of an area (e.g., levee district) to develop the best solution to reduce future flood risks.
- Existing authorities that may allow the Corps to do a detailed flood risk assessment usually take at least two years before they are funded and work begins. Support for flood risk reduction projects often degrade significantly with time.
- The current levee repair process is heavily biased towards repetitive repair due to the choice for levee repair vs. non-structural alternative being an either/or question put to the levee districts. Under current Corps authority, non-structural alternatives to reduce flood risk will not be considered if the sponsor requests a levee repair.
- Programs that work on reducing future flood risk are poorly coordinated among agencies, sometimes contradictory, lack funding, and have low priority during the near-term flood recovery period.
- Agencies commonly examine only parts of the flood risk problem in an area, rather than examining the area as a system and developing solutions with a wider focus and multiple components.
- Current processes do not fully account for all costs and benefits associated with flood damage recovery efforts. Agencies may only focus on costs and benefits directly related...
to portions of the damaged area that their authorities cover. The full cost of long-term operation, maintenance, and rehab is also underestimated at times.

- The value of natural and beneficial functions of floodplains is often not seriously discussed or considered in evaluating solutions to reduce flood risk.
- There is poor two-way communication of flood risk and methods to reduce flood risk with sponsors and stakeholders.
- Many areas of the state have local groups successfully leading the development of flood risk reduction solutions, but some areas lack local personnel to organize an aggressive pursuit of solutions, including coordinating the resources necessary to develop comprehensive action plans within the affected municipalities. Reality is that the current forms of assistance still operate, to a certain extent, in a bottom up manner – local, state, Federal.
- There are no standard mechanisms in place to help fully fund a comprehensive flood risk reduction plan after it has been developed for an area.

Policy and Process Change Recommendations

The following recommendations were developed and refined by the partner ILWG agencies with input from interested sponsors and stakeholders. The recommendations include both policy and process changes needed to improve flood risk management and reduce future flood risk.

Policy Change and Resulting Benefits

**USACE PL 84-99 Program**

Modify USACE PL 84-99 authority or guidance to include the ability to better and more fully assess non-structural measures to reduce flood risk at the outset of a repair effort. This change would allow development of a more comprehensive flood risk reduction solution that goes beyond just focusing on benefits and costs directly related to levee system repair.

Modify PL 84-99 authority or guidance to include the ability to perform a one-year feasibility level planning effort to determine the best long-term solution to reduce flood risk in priority areas (e.g., initially in Henderson County, Vandalia, and Grand Tower D&LDs). This effort would include a detailed assessment of benefits and costs of alternatives with structural and non-structural measures that reduce flood risk. The projects would require sponsor support and involvement in order to be initiated and ultimately succeed. This effort should move forward (as supported by the Comprehensive Plan) for priority areas, even if the sponsor requests a near-term levee repair. The time to complete this process should be shortened if there is potential to eliminate the need for the current levee repair.

These PL 84-99 policy change recommendations would result in a better balance between addressing near-term flood risks and long-term flood risk reduction. It would allow us to develop improved solutions to reduce future flood risk, even if current levee repair efforts were underway. The policy changes would also greatly improve the ability of the program to address and enhance life safety issues by making more informed decisions about flood risk management. Flood damages and their associated costs are also reduced over time by
advancing this more balanced approach of the PL 84-99 program. This new authority could move forward with no cost share requirement (100% Federal) or a cost share (e.g., 80/20) based on the existing PL 84-99 agreement with the sponsor.

**FEMA Public Assistance 406 Program**
Proactively increase awareness and implementation of the FEMA Public Assistance (PA) Infrastructure Protection Mitigation Program (under Section 406 of the Stafford Act) which is currently available to fund projects that reduce future flood risk. The PA 406 authority is applicable to parts of local/state government-owned facilities damaged by a disaster and have planned mitigation measures that provide protection from subsequent events. This additional funding is available in conjunction with standard FEMA funding provided to repair disaster-damaged facilities. The FEMA PA 406 authority could help fund flood risk reduction solutions developed by the ILWG partner agencies through the PL 84-99 efforts described above.

**NRCS Wetland Reserve Program and Emergency Watershed Protection Program**
Additional coordination with NRCS and partner agencies should occur to further justify priority project areas for entry into the Wetland Reserve Program or an Emergency Watershed Protection Program Floodplain Easement if requested by an eligible sponsor on eligible land and if there is funding available through the programs. Multiple benefits would be realized through this effort including reducing flood damage risk to the area, helping offset the cost of land use change within the levee district, and restoring natural river and floodplain habitats.

**Process Change**
The policy change recommendations discussed above would allow the following process changes to occur that focus on reducing future flood risk.

Building on the successful ILWG partnership established to support the 2008 Midwest flood recovery, continue close coordination of State and Federal agencies in flood damage repair efforts. Further enhance this coordination in the future by having an ILWG/Silver Jacket presence on the ground at the start of a recovery effort following disaster incidents. ILWG/Silver Jacket representatives could then participate in initial site visits to discuss opportunities for long-term flood risk reduction. (Note: There is a “Silver Jacket” organization made up of partner State and Federal agencies being proposed to take over ILWG flood hazard reduction duties when this group stands down in July 2009.)

In addition to levee system repair, the ILWG/Silver Jackets group would provide detailed information to sponsors and stakeholders about the benefits and costs of other measures that could reduce present and future flood risk. This would allow the sponsor to make a more informed decision on how to proceed. If a sponsor is initially interested in pursuing measures other than levee repair to reduce flood risk, proceed with fully developing and assessing those measures with input from the ILWG, sponsors, and stakeholders. If a sponsor chooses to proceed with structural levee repairs because of the current flood risk, then proceed with those repairs under the existing authorities.
After initiating near-term levee repair efforts there should still be an opportunity to implement other measures to reduce future flood risk in an area. If the ILWG/Silver Jackets group determines there is high potential for these measures to succeed in an area (such as with the Henderson County, Vandalia, and Grand Tower D&LD priority areas), the group should then meet and discuss these measures with the sponsor to determine their interest. If a sponsor is interested, the recommended policy changes would allow the Corps to proceed with a one-year planning effort, closely coordinated with the ILWG/Silver Jackets team, sponsor, and stakeholders, to develop the best long-term solution to reduce flood risk in that area. There would be a full assessment of the benefits and costs of various measures and alternatives through this process. The recommended plan resulting from this effort would also include identification of potential funding mechanisms (e.g., PL 84-99, PA 406, Emergency Watershed Protection Program, Wetland Reserve Program, Community Development Block Grants, the National Flood Insurance Program, etc.) to help fund the costs of the solution.

Support of the Upper Mississippi River Comprehensive Plan - Reconstruction Recommendation

The recommendations above are consistent with, and build on, the Reconstruction recommendation of the USACE Comprehensive Plan that states, “It is recommended that a study authorization be established to address reconstruction needs for the Upper Mississippi and Illinois Rivers drainage and levee districts.” The Comprehensive Plan recommendation goes on to say that, “The cost shared feasibility phase reconstruction analysis would then be accomplished on individual flood risk management reduction systems to evaluate whether rehabilitation on the aging infrastructure is needed and justified to assure that the systems provide their intended benefits into the future.” Identifying priority drainage and levee districts and moving forward with one-year planning efforts to reduce flood risk fully supports and implements the Comprehensive Plan’s Reconstruction recommendation.

Measures to Reduce Flood Risk

In addition to standard levee system repair, multiple structural and non-structural measures have been successfully implemented to reduce flood risk. The following measures should be assessed as part of the policy/process changes recommended in this document.

- Levee Setback
- Levee, Floodwall, and Berm Augmentation
- Raising Pump Stations
- Temporary Flood Inundation and Storage Areas
- Floodways
- Relocating/Elevating Structures
- Wetland Reserve Program
- Emergency Watershed Protection Program Floodplain Easements
- Land use Modification
- Environmental Restoration
- Hazard Mitigation Assistance Grants
- Crop Insurance Program
• National Flood Insurance Program (land use regulations, building codes/standards, insurance policies, increased cost of compliance benefits, flood hazard mapping)
• Flood Warning/Preparedness
• Dry and Wet Flood Proofing
• Buyout/Acquisition

Evaluation of these measures would determine the best and most economical means to reduce flood risks in identified areas. Progress already made in evaluating these measures (through the Upper Mississippi River Comprehensive Plan, Galloway Report, Flow Frequency Study, etc.) would also be used in this effort. The measures evaluated through this process would go beyond those listed above as other means of flood risk reduction may exist.

Outreach and Communication
There must be enhanced outreach and communication with residents, landowners, and stakeholders at the outset of a disaster. All ILWG/Silver Jacket partners must work together to do a better and more consistent job of informing and educating residents and local officials about the current flood risk and how it can be reduced in the future through non-structural and structural measures. Easy to understand information about ILWG partner programs and the way they can help before, during, and after recovery will be part of this message. Enhanced communication will be achieved through a public web site, newsletters, news releases, brochures, public meetings, media opportunities (newspaper, radio, TV), and meeting directly with sponsors and stakeholders. For example, workshops could take place within 30 days of a flood event that involve experts meeting with affected individuals to explain flood risk and multiple ways to reduce impacts. It is important to remember that the need for enhanced outreach and communication does not fall on the shoulders of just one entity within the ILWG, but is a shared responsibility that will require the participation of all ILWG member organizations. The ILTF has developed a Communication Strategy Plan (available via the ILTF website) that lays out a process to help address many of the outreach goals above.

With support from the ILWG, there will also be locally-led long-term planning efforts in areas that could benefit from flood risk reduction. Having good communication and working relationships with these grassroots efforts will result in better flood risk reduction solutions and greater support for their implementation.

Recovery Complexities
This and other efforts to reduce flood risk will continue to be a complex undertaking. Obtaining support from sponsors to proceed with measures that reduce future flood risk will be difficult due to conflicting priorities (e.g., economic vs. reduced flood risk vs. environmental restoration). Balancing the near-term need to provide protection with the long-term desire to reduce future flood risks is also complicated because of varying stakeholder opinions and the inability of our agency authorities to address both of these goals equally. Assessing needs and priorities to reduce flood risk at a regional scale will also be difficult and require continued coordination and commitment by the ILWG partner agencies, stakeholders, and sponsors.