

03

Recommended Modifications to Existing Legislation, Regulation, Policy, and Practices

Large-Scale Levee Setback Playbook

In March 2019, abnormal weather patterns in Nebraska, Iowa, and South Dakota caused record-setting flooding along the Missouri River, resulting in widespread catastrophic damage throughout the river valley. The Large-Scale Levee Setback Playbook (Playbook) documents how, after this historic flood, a multi-agency team worked together to complete a highly complex \$100M levee setback after floodwaters destroyed most of the left bank of Missouri River Levee Unit 536 (L-536) in northwestern Missouri. The Playbook also serves as a guide for others pursuing similar nature-based solutions that enhance flood resilience. It is organized in four distinct but complementary sections.

SECTION 1: The Story

tells the story of the historic flooding in 2019 and provides an overview of the scope and benefits of the setback, the partners involved, and project milestones.

SECTION 2: The Challenges

dives deeper into the L-536 setback project, identifying the challenges—big and small—that project partners encountered and overcame through collaborative problem solving.

SECTION 3: The Recommendations

provides recommendations from the lessons learned during the L-536 setback regarding legislation, regulation, policies, and practices that can better support levee setback projects.

SECTION 4: The How-To Guide

illustrates a process for levee sponsors considering or pursuing a similar project, as well as identifying helpful pre-disaster planning efforts.

The development of the Playbook was supported by The Nature Conservancy with experience-based contributions from project partners involved in the L-536 setback project, a nature-based solution to reduce flood risk to the community by reconnecting more than 1000 acres to the riverward floodplain and restoring more than 400 acres of wetlands.

Key Takeaways of Section 3

- Recommend USACE clarify existing policy or seek new legislation to facilitate construction of levee setbacks, such as tracking repetitive loss data, allowing real estate acquisition for levee setbacks under PL 84-99, and emphasizing levee setbacks for flood risk management that create sustainable flood risk management projects in an era of changing climate and increasingly severe flooding.
- Recommend NRCS improve its ability to support levee setbacks through its Emergency Watershed Protection Program - Floodplain Easements and Wetland Reserve Easement programs by early collaboration with USACE to identify potential setback locations, rank and prioritize levee setbacks, as well as incorporate flexibility in easement administrative actions and easement approval processes.
- Recommend additional project efficiencies through inter-agency processes. These include establishing cooperative agreements between federal agencies, supporting levee sponsor real estate requirements, and developing and maintaining regional memorandums of understanding between USACE and NRCS to implement the emergency provision for joint interest in the same project location.
- Recommend incentives to increase and support participation in future setback projects including increased funding for federal and state participation in levee setback projects, as well as, crop insurance premium discounts and discounted lending rates for participating landowners.

U.S. Army Corps of Engineers (USACE)

Under Public Law 84-99 (PL 84-99), the US Army Corps of Engineers (USACE) offers a levee rehabilitation program that provides levee districts with technical and financial assistance after a flooding disaster. While PL 84-99 provides myriad benefits to levee districts and regions that qualify, areas of the program, from its corresponding legislation to on-the-ground policies, could be modified. The following recommendations pertain to USACE programs related to levees along the Missouri River and elsewhere.

1

Track and report repetitive loss data.

Currently, the PL 84-99 program does not report repetitive damages that occur to levee systems. Tracking repetitive damages and making the information publicly available through the National Levee Database (NLD) would identify levee systems that have incurred significant damages from prior flood events, a key metric for inclusion in local hazard mitigation planning, and help direct limited funding toward the most critical infrastructure needs.

- Make publicly available comprehensive historic damage data on levee segments, and give the data to levee sponsors, state emergency management, NRCS, and DNR agencies to strengthen local planning and increase awareness of where levee setbacks could be considered.

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USACE Support of Natural and Nature-Based Features

As documented in USACE authority (e.g., Section 1176 WIIN 2016, Section 1184 WRDA 2018) and regulations (e.g., EM 1110-2-1913), USACE will consider natural and nature-based features (NNBF) during project design, including during rehabilitation assistance. Finding opportunities to incorporate NNBFs can result in long-term flood risk management and flood resilience benefits to local communities. USACE reports, such as “Levee setbacks: An innovative, cost-effective, and sustainable solution for improved flood risk management,” showcase the engineering, economic, and ecological benefits of setbacks. Because of their successful implementation, USACE’s Engineering With Nature initiative supports levee setbacks as a viable alternative to in-line levee repairs following significant flood damage.

2

Allow real estate acquisition through the PL 84-99 program for levee setbacks.

Under the PL 84-99 program, real estate for levee repairs or setbacks is the responsibility of the levee sponsor. For large-scale levee setbacks, the amount of real estate required for a new levee footprint and riverward lands is typically beyond the financial capacity of a small rural community or levee sponsor. Real estate for the levee footprint and riverward lands are critical acquisitions that provide flood resilience and reduce repetitive loss, ultimately saving government funds.

- Under the PL 84-99 program, allow USACE to acquire **riverward land** for levee setback projects or to reimburse land acquisition by another entity associated with a setback project.
- Under the PL 84-99 program, allow USACE to acquire **levee footprint** for levee setback projects or to reimburse land acquisition by another entity associated with a setback project.

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3

Develop implementation guidance for nature-based and nonstructural alternatives under PL 84-99.

Develop and publish implementation guidance in conjunction with two related pieces of legislation: 2014 Water Resources Reform and Development Act (Section 3029) and the 2016 Water Infrastructure Improvements for the Nation Act (WIIN) (Section 1176). This guidance should consider levee setbacks, similar to Missouri River L-536, which increase the size of the reconnected floodplain, as a nonstructural alternative.

- Currently, USACE considers the complete removal of levees to be a nonstructural alternative through the PL84-99 program. The evacuation of the natural floodplain, or increase in the size of the reconnected floodplain through a levee setback project, should be considered as a nonstructural alternative.
- The restoration of the natural floodplain is significant in the conveyance of flood water. For levee systems which have known pinch points, a levee setback should be considered as a nonstructural alternative for its benefits in reducing flood risk.

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4

Provide 100 percent federal funding for non-federal levee setback implementation.

When a non-federal levee system is identified through a flood assessment as a preferred location for a levee setback, waive the non-federal cost-share for everything except the new levee footprint LERRDs, to incentivize levee setbacks as a flood risk reduction strategy. The non-federal levee must be in good standing within the PL 84-99 program at the time of the levee setback.

- Make non-federal levee setback projects eligible for 100 percent federal funding rather than the existing 80 percent federal and 20 percent non-federal cost share.
- Incorporate all current USACE levee design and construction standards into the non-federal levee setback.
- The new levee footprint LERRDs for the non-federal levee setback should continue to be a non-federal responsibility.
- Cost share all post-setback rehabilitation assistance to the non-federal levee system, containing a levee setback, to 80 percent federal and 20 percent non-federal.

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5

Provide funding through the Missouri River Recovery Program (MRRP) for real estate acquisitions for levee setbacks.

The MRRP has existing authority to purchase lands that conserve and develop habitat along the Missouri River. Levee setbacks expand the amount of riverward floodplain habitat and create significant ecological benefits.

- Provide the MRRP with \$4 million in annual funding to support land acquisition, including purchasing land that could facilitate a levee setback when it would also benefit the MRRP mission. Update annual funding based on future pre-disaster levee setback assessments.
- MRRP, in collaboration with levee districts and project partners, should conduct outreach when funding has been secured for real estate acquisition to build trust, share information with the public about federal agencies' ability to purchase lands when willing sellers are present, and demonstrate how MRRP can contribute to improved preparedness for recovery and preparation for future floods.

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6

Extend limits of land surveying efforts.

Currently USACE completes topographic and metes and bounds surveys for the new levee footprint and constructed levee. This surveying effort should be coordinated with project partners and the limits of metes and bounds survey extended to include the full legal description of the parcels impacted by the levee setback, both riverward and landward. Extending the survey limits and sharing survey results will maximize efficient use of resources as well as decrease overall project timing.

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7

Conduct flood risk management studies emphasizing levee setbacks.

The Lower Missouri River Flood Risk and Resiliency General Investigation (LoMoR GI) Study (Sioux City, IA to St. Louis, MO) should assess potential levee setback projects. A comprehensive, multi-levee district approach to ongoing or future USACE GI studies could identify levee systems vulnerable to severe damage and failure.

- Track when levee setbacks have been evaluated and formally document the hydraulic and environmental benefits of reducing stages, as well as improving conveyance. Create a publicly accessible database and repository of the information and findings.
- Work with federal and state agencies, as well as levee districts and local governments, to identify repetitively damaged infrastructure (vehicle, rail) located within the 500-year floodplain that would benefit from potential levee setback projects.

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8

Include repetitive losses and potential economic benefits in PL 84-99 rehabilitation alternatives analysis.

In accordance with ER 500-1-1; Civil Emergency Management Program, Chapter 5-2 (h) Alternative Plans, any alternative plan which is an increased cost over the least expensive to the federal government will be borne by the sponsor. Typically, PL 84-99 only includes construction costs for levee repair in today's dollars and looks to select the least cost, technically feasible, alternative project based upon damages from a single flood event. Repetitive loss and future flood damages are generally not considered during the economic evaluation.

- USACE should consider repetitive losses and potential economic benefits (i.e., reduced future repair and O&M) of levee setbacks in detail during economic evaluation and select a project alternative based on a consideration of potential benefits in addition to construction costs.

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Natural Resources Conservation Service (NRCS)

For the L-536 levee setback, NRCS utilized the Emergency Watershed Protection Program – Floodplain Easements (EWPP-FPE) for land on the newly riverward side of the levee setback. This voluntary easement program was fundamental in compensating landowners whose land became unprotected after construction. The following recommendations would improve the NRCS’s ability to support levee setbacks.

1

Develop flood resilience ranking criteria for EWPP-FPE applications.

Encourage NRCS state offices to develop EWPP-FPE application-ranking criteria that consider applications contributing to improved flood risk management through actions like levee setbacks.

- Collaborate with USACE on the identification of potential levee setback locations based upon repetitive levee damages and river conveyance improvements.
- Prioritize easement selection, focal areas, and funding where levee setbacks are occurring.
- NRCS HQ ensure state EWPP-FPE funding is available for the full amount of applications contributing to levee setbacks to be selected.

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2

Modify NRCS easement administrative actions for levee setbacks.

Levee setback projects create significant ecological benefits, but may result in relatively minor impacts to existing easement land created under prior NRCS easement programs. The requirement to compensate NRCS for minor easement impacts can create an expensive real estate acquisition burden on the levee sponsor. For nature-based solutions such as levee setbacks, create mitigation flexibility through NRCS easement administrative actions regarding impacts to existing conservation easements for mutually beneficial outcomes.

- Allow for an amount of conservation easement impact during a levee setback that will not require mitigation when associated with significant conservation land gains and ecological benefits. For example, waive mitigation requirements if the impacted area is less than a certain percent (to be determined by NRCS) of the total easement parcel(s) acreage associated with the setback project.

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3

Expedite easement approval processes in post-disaster recovery efforts.

NRCS easements are an important financial resource to compensate landowners whose lands were significantly damaged by floods and are willing to participate in a levee setback. However, the time frame from disaster to landowner enrollment and compensation is significant and can be a deterrent for landowner participation.

- Shorten easement enrollment process from typical two-year time frame to less than 12 months in post-disaster recovery efforts. Delegate some NRCS decision making from HQ to state offices to expedite approval process in disaster-recovery efforts.
- Using a process like the Federal Emergency Management Agency's National Incident Management System (NIMS), create additional staffing capacity during disaster recovery to assist state staff in expediting response, program establishment, and conservation easement enrollment.
- The EWPP-FPE program requires landowners to contact NRCS, as the levee sponsor cannot do this for them. Add flexibility to allow landowners to collaborate with levee sponsors and project partners through establishment of a signed third party agreement, allowing levee sponsors or other project partners to drive NRCS coordination through the enrollment process.
- Save landowner time and federal funds by sharing key due diligence items (such as title searches, surveys, legal descriptions, etc.) amongst partners.

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Inter-Agency

The key to large-scale levee setbacks is inter-agency collaboration. No one group can manage it on their own—this type of project requires the dedicated efforts of many groups working in tandem. The following recommendations focus on bolstering inter-agency efforts before and during the levee setback process.

1

Create a federal agency cooperative agreement and action plan specific to levee setbacks.

- Develop, document, and share agency-specific processes, roles, and responsibilities specific to levee setbacks. On a state-by-state basis, extend this federal cooperative agreement to include appropriate state agencies prior to flood events.
- When a disaster occurs and a levee setback is determined as the best option, the inter-agency work group acts as a rapid response team, in full collaboration with each other and state and local partners.

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2

Support levee sponsors in real estate requirements.

- Develop a joint NRCS-USACE fact sheet for state natural resources agencies, illustrating the full measure of real estate requirements for implementing a levee setback project.
 - USACE should identify and define PL 84-99 real estate requirements for potential levee setback projects (lands, easements, right-of-ways, relocations, and disposal, or LERRDs).
 - NRCS should create landowner resources describing process and compensation for enrolling in conservation easement programs that may be used for levee setback.
- States should provide disaster recovery funding resources that can be multi-allocated and provide matching funds which are often required by other funding sources. Missouri's Governor and Legislature realized the need for and value in having flexible state funding available during the 2019 flood recovery. The funding proved critical during this project to ensure progress did not slow or stop.

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3

Update and maintain regional MOU between USACE and NRCS.

The Regional NRCS-USACE MOU provided multiple opportunities to implement the emergency provision for joint interests in the same project vicinity. This was extremely useful in addressing damaged levees and rehabilitation alternatives. Close coordination between USACE and NRCS was facilitated by the actions established in the Regional MOU. As the 2019 flood repairs wrapped, USACE and NRCS compiled a list of useful updates. The Regional MOU should be renegotiated and updated by USACE and NRCS.

- Establish permitting and environmental law compliance lead when an agency invokes the emergency clause of an Regional MOU.
- Standardize use of a 3rd party EWPP-FPE policy waiver between NRCS, USACE, and landowners for borrow material, like the novel waiver utilized on L-536 for similar, future construction efforts.
- Help ensure early and often coordination between all involved parties when an Easement Administrative Action is triggered, especially during use of the Regional MOU emergency provision. Establish clear expectations, roles and responsibilities, and mutually agreed upon timelines (if possible).
- Refine Regional MOU with lessons learned from the L-536 project to serve as a model for other NRCS states/USACE Districts to follow where real estate interests overlap.

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4

Increase funding for levee setbacks.

The funding needs of a large-scale levee setback far exceed the capacity of a typical rural levee sponsor, necessitating a multi-prong funding approach. Request additional federal and state funding to support large-scale levee setback projects.

- Review US Department of Commerce Economic Development Administration programs and make recommendations for supporting levee setback projects.
- Review the US Department of Housing and Urban Development Community Block Development Grant (CDBG) program and state-level prioritization process.
 - Revise evaluation criteria for potential projects under the National Objective 3.4: Urgent Need, eliminating the single-funding source criteria or revising to accommodate large-scale levee setbacks.
 - Create flexibility in state-level prioritizations to support large-scale disaster recovery efforts.
- Explore use of FEMA mitigation funding (Building Resilient Infrastructure for Communities) or post-disaster Public Assistance or Hazard Mitigation Grant program funding for assessment (hydrologic study to model and measure flood risk of levee setback) and potential construction of levee setbacks in the vicinity of vulnerable communities to reduce flood risk.
- The Federal Highways Administration (FHWA) directs funding to states for construction, maintenance, and repair of interstates and highways across the country. Many transportation corridors are at risk of significant flooding and damage due to their proximity to vulnerable levee systems. Recommend FHWA, through the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, provide funding to state Department of Transportation agencies for fair market appraisal and land acquisition in support of levee setback projects which will result in more resilient transportation corridors.
 - Support provisions in the 2021 pending Federal Highway reauthorization bills that would enable funding for levee setback work. The provisions call out the need to plan for and enhance the resilience of transportation infrastructure and provide new funding and grants directed at resilient infrastructure work.

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5

Increase incentives for participation in levee setbacks.

Create a crop insurance levee setback incentive program for landowners.

- The USDA Risk Management Agency (RMA) administers the U.S. crop insurance program. Flooding of cropland is a potential risk associated with farming which landowners are insured against. If the risk of flooding is high, for example in the vicinity of repetitively damaged levees, then the associated crop insurance premiums paid by farmers will also be high. If the flood risk is low, or nonexistent, then the insurance premium will also be lower.
 - Engage in multi-agency discussion to determine if resilience provided by a levee setback equates to crop insurance financial benefits for landowners.
 - For those landowners who elect to participate in a levee setback, provide a one-or-two year extension to the five-year crop insurance benefits rule for any other farmland they own.

Create discounted lending rate for landowners participating in levee setbacks.

- The USDA Farm Services Agency (FSA) makes loans to support farm operations. Because the levee setback can protect farmlands behind the new levee, increasing the value of landward farms, collateral for the FSA improves. In addition, loan loss rates on lands from repetitive losses can be decreased with levee setbacks by removing those high impact lands out of production. Creating non-purchase price related incentives for farmers to participate in levee setbacks will improve FSA's serviceability and financial condition of any levee setback participants who continue to farm other lands.
 - Engage the USDA's Farm Services Agency to create incentives for levee setback participants for other farmlands they own, for example, reducing lending rates by 25 basis points.

Create levee setback program with Internal Revenue Service.

- The Internal Revenue Service (IRS) provides due diligence service to the NRCS by reviewing and approving applicants' Adjusted Gross Income requirements. Because levee setbacks can reduce the amount of repetitive losses, they provide a better investment for taxpayers and the federal government.
 - Encourage Internal Revenue Service to expedite NRCS Adjusted Gross Income analysis in the case of levee setbacks.
 - Engage the Internal Revenue Service to give levee setback participating landowners a tax credit, refund, or favorable basis to decrease capital gains taxes when they sell their interests or to extend the amount of time they need for a 1031-exchange.

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