



Nonstructural Alternative Projects

Information Paper

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

Levee Repair Options

Recent and significant major flooding in the Missouri River Basin suggests consideration of Nonstructural Alternatives (NSA) for levee repair due to flooding.

These projects help restore the natural floodplain and reduce future flood damages that affect flood control works (FCW) operation and maintenance. Options include land acquisition, flowage easements, and levee removals or setbacks to reduce flood elevations and lower erosive velocities associated with the majority of damages caused by flooding.



Structural versus Nonstructural Measures

Structural measures, in general, are any fixed or permanent structure, such as levees, which reduces flooding risk from occurring within the natural floodplain. Nonstructural measures are those actions which support the interconnection of the natural floodplain, reducing flood risk and flood damages incurred within floodplains. When compared with structural measures, nonstructural measures are more sustainable over the long term, with minimal costs for operation, maintenance, repair, rehabilitation, and replacement. An example of a nonstructural measure that reduces risk related to levees would be the opening of the natural floodplain to reduce flood stages by setting back existing levees. Other possible measures might be home, business and utility relocation; land acquisition through easements and fee title, restoration of natural floodplain habitats, or the flood proofing of essential structures.

Eligibility and Allowable Costs

A NSA, in lieu of levee repair, is available only to non-Federal sponsors of FCW projects eligible for Rehabilitation Assistance. The U.S. Army Corps of Engineers (USACE) may bear up to 100 percent of the costs of the NSA project, limited to the lesser of (1) the Federal share of rehabilitation construction costs of the project were it to be structurally rehabilitated in accordance with PL 84-99, or (2) the Federal share of computed benefits which would be derived from structural rehabilitation. Examples of allowable costs include acquisition of land for the NSA project; removal of utility connections; removal, protection or relocation of highways roads and utilities; protection of essential structures and facilities; total or partial removal of levee reaches; construction of setback levees; and the restoration of natural habitats, including debris removal and enhancement of water flows into and out of the project area.

After consultation with USACE officials on the potential benefits of a nonstructural project, non-Federal sponsors must request implementation of such a project in writing within 30 days of notification of eligibility, but may request an extension of up to 60 days.

Other Potential Funding Sources

In order to implement the most feasible NSA project, USACE funding may be combined with the funding of other Federal agencies for acquisition of lands, interest in land, easements, and right-of-ways. Reimbursement may be made to the non-Federal sponsor for acquisition, easements and right-of-way.

Limitations

Under this authority, USACE can provide flood-related assistance on a case-by-case basis for certain FCW repairs or setback, as part of the NSA project.

U.S. ARMY CORPS OF ENGINEERS – KANSAS CITY DISTRICT

<http://www.nwk.usace.army.mil>

Readiness Office: 816-426-6320



Potential benefits of flood plain management using nonstructural alternatives

A. Reduced Flood Risk

- Reduced water surface elevations during flood event on levee segments and adjacent levee tie-offs
- Reduced velocity/erosion during flooding, leading to increased reliability and lower rehabilitation costs
- Reduced flood elevations at critical infrastructure locations
- More reliable levee segments (removal of historic problem areas) and lower overall flood risk
- Better access for monitoring and flood fighting purposes

B. Increased Environmental Benefits

- Improved fish access to the floodplain, benefiting spawning and survival of native fish species
- Increased potential for developed habitat connectivity and ecological productivity
- Increase in native riparian vegetation
- More opportunities for habitat restoration for endangered Pallid Sturgeon (chutes, backwaters, wetlands)
- Provides area for natural river processes to occur (erosion, deposition, shallow water coves, wetland formation, channel evolution)

C. Reduced Costs

- Potential savings in maintenance, repair, and rehabilitation costs through lower height levee segments and shorter levee systems overall
- Reductions in loading will lead to reduced flood fighting and rehabilitation costs for all levels of government
- Amortized long-term savings associated with life cycle costs of repeated levee repairs

D. Recreational Benefits

- Open up land for parks, hunting, hiking and biking trails, and other recreational opportunities

What if I'm interested in exploring nonstructural alternative projects?

- The principle purposes of a nonstructural alternative project (NSAP) are: the reduction of future flood damages; provision or restoration of floodways; and flood plain restoration.
- Under the authority of PL84-99, the Corps will identify and coordinate opportunities to provide non-structural alternatives to levee repairs following natural disaster events where flood control works are damaged. This is typically accomplished by working with interested Federal, state, and local agencies via an interagency levee workgroup or flood risk management team.
- All systems considered eligible for PL84-99 NSAP implementation must be "active" in the Rehabilitation and Inspection Program (RIP) prior to the flood event.
- Corps expenditures to implement a NSAP are limited to the lesser of either the Federal share of rehabilitation costs or Federal share of computed benefits which would be derived from structural rehabilitation. Exceptions to this cost cap policy may be requested from HQUSACE.
- A sponsor Cooperation Agreement or Memorandum of Agreement is required. Contact us for more information.

**NONSTRUCTURAL ALTERNATIVES TO
REHABILITATION OF FLOOD CONTROL WORKS**

Authority. Under Public Law 84-99, the Chief of Engineers is authorized, when requested by the non-Federal sponsor, to implement nonstructural alternatives (NSA's) to the rehabilitation, repair, or restoration of flood control works damaged by floods or coastal storms.

I, _____ (name), _____ (title)

representing the _____ (local sponsor) have been provided with information indicating that the option of pursuing a Non-Structural Alternative Project has been made available to the public entity that I represent.

The _____ (local sponsor) **does/does not** (circle one) wish to pursue the option of a Non-Structural Alternative Project.

Corps of Engineers Representative
Providing Information on NSA

Name of Local Sponsor

Date Information Provided

Signature

Name (Printed)

Title

Date