



FROM THE DIRECTOR'S DESK

Nonstructural Flood Mitigation: A Legacy Worth Strengthening at USACE

By **Chad Berginnis, CFM** October 15, 2025

At a congressional hearing last month, the new Assistant Secretary for the United States Army Corps of Engineers (USACE), Adam Telle, was being questioned by Senator Whitehouse about non-structural flood solutions. In his response, Mr. Telle offered a surprising perspective on the Corps' recent decision to "pause" new non-structural projects saying, "The question is whether the USACE is the appropriate entity to implement them."

Despite all of the turmoil happening at FEMA right now, and the agency's near complete stoppage of its hazard mitigation function, it is important to understand that flood hazard mitigation has never been FEMA's responsibility alone.

Historically, these efforts have been carried out by a number of federal agencies, including the USACE, the Department of Housing and Urban Development (HUD), and the Natural Resources Conservation Service (NRCS), an agency within the Department of Agriculture.

In this month's column, I'd like to take a look back at the important history of the USACE's nonstructural flood mitigation authorities, review its current status, and argue why nonstructural solutions should be a significant element of USACE activities going forward.

A Brief History of the Corps' Nonstructural Authorities

The USACE got its first authority to evaluate and consider nonstructural options in 1974 through Section 73 of the Water Resources Development Act (WRDA), which requires consideration of nonstructural alternatives in flood damage reduction studies. The nonstructural options can be considered independently or in combination with structural measures.

OK, let's pause for a quick explanation. Nonstructural measures reduce flood damage without significantly altering the nature or extent of flooding. This is accomplished by changing the use made of the floodplains, or by accommodating existing uses to the flood hazard. Examples are flood proofing, relocation of structures, structure elevation, buyouts, flood warning and preparedness systems (including associated emergency measures), and regulation of floodplain uses. By contrast, structural measures are those that change and/or control the flood water flow to reduce the probability of flooding (dams, levees/flood walls, channels modification, etc.).

In 1981, Section 202 of the Water Resources Development Act gave USACE a unique and flexible authority to implement whatever measures were deemed by the Chief of Engineers to be necessary to reduce flood damages in the areas affected by the 1977 flood in the Tug and Levisa Forks and Upper Cumberland River Basins of West Virginia, Kentucky and Virginia. The result? A groundbreaking flood damage reduction plan that used both structural and nonstructural measures to achieve a cost-effective and socially acceptable solution to the flooding problems. A good read on the Tug Fork project can be accessed via a **downloadable PDF** from the ASFPM library. This project and the resulting experience, ongoing research by USACE on floodproofing options, and the 1985 creation of the USACE's National Nonstructural / Flood Proofing Committee (NFPC now called the National Nonstructural Committee or NNC), resulted in USACE having the majority of the nation's expertise in the application of nonstructural flood solutions by the end of the 1980s. Remember, FEMA didn't even have authority to do hazard mitigation projects until the Stafford Act passed in 1988, and the agency really didn't implement much mitigation until after the 1993 Mississippi River flood!

By the early 1990s, when I started my career in floodplain management, nearly every authoritative standard, manual, or other publication on nonstructural approaches or floodproofing solutions came from the Corps. Through the 1990s and 2000s, the NFPC worked within USACE and with project planners to promote nonstructural solutions and awareness of USACE's authority and responsibility to evaluate nonstructural solutions. Outside organizations, including ASFPM, sought and often were successful in changing the law to ensure that nonstructural solutions were on "equal footing" with structural solutions as they were evaluated and implemented through changes in subsequent WRDAs.

The 2000s also saw the launch of the Silver Jackets program, which helped strengthen ties with states and often focused on a number of nonstructural approaches. In the 2010s, USACE partnered with ASFPM and FM Approvals to create the **Flood Mitigation Certification Program** where the water testing lab U.S. Army Engineer Research and Development Center (ERDC) is used to test floodproofing technologies.

Progress, Setbacks, and the Path Ahead

Unfortunately, for much of this time since 1974, nonstructural solutions have been slow to fully take root within USACE. A **2009 USACE newsletter** explained the problem:

Nonstructural measures...have not yet been fully integrated into the culture of Corps planning. Although they can perform cost effectively for risk reduction, nonstructural measures have nontraditional implementation requirements and specific policy guidance which detract from their consideration by some Corps planners.

So, while USACE's nonstructural authorities have been around for more than 50 years, culturally within USACE they had not been broadly embraced or accepted. We've seen over the years where leadership would sometimes embrace nonstructural solutions and at other times were hostile to them.


However, that has changed significantly in the last 5 to 10 years. Today, sources tell me that there are over **88,000 individual structures** identified to be mitigated with nonstructural solutions either within approved projects or in projects being developed across the country. The grassroots demand for nonstructural solutions is coming from communities who are local project sponsors and want resilience without the expensive long-term operations and maintenance costs for upkeep of levees and floodwalls. Illustrating this shift, today, the USACE is implementing two massive projects with a substantial nonstructural component:

- The **Southwest Louisiana Storm Risk Management and Ecosystem Restoration Project** looks to elevate over 1,000 homes in the 25-year floodplain in an area spanning over 4,700 square miles.
- **The Fire Island to Montauk Point project (FIMP)** looks to elevate and floodproof over 4,000 structures in the 10-year floodplain along 83 miles of shoreline in New York.

When considering USACE's project development process, nonstructural solutions can almost always be complementary to structural solutions in many projects. In other areas, especially in small rural communities or in geographies spanning a large area, nonstructural solutions are far more cost effective than a structural solution. And while USACE is working out its own processes for implementing nonstructural solutions effectively, it nonetheless has the expertise as the nation's leading water resources agency to do nonstructural solutions on a much larger scale than other agencies.

So, to end where I began, if I could advise Mr. Telle, I would say this: For over 50 years, USACE has the authority, expertise, and responsibility to consider and implement nonstructural solutions. While there will be growing pains and necessary adjustments to USACE policies to efficiently implement nonstructural solutions more broadly throughout the agency, project plans from the district level are revealing what we already know — communities want more than just levees and floodwalls. USACE is one of the few agencies with the capability to do these projects at scale, and nonstructural solutions will typically be much more viable than structural solutions in the rural communities that are of particular importance to you.

Your partner in loss reduction,

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