

WHAT ELSE CAN BE DONE TO STOP FLOODING?

Possible Solutions to Flooding...

Many don't realize that the solutions to reducing flood risks vary between measures that deal either with the way a floodplain is managed to how floodwaters are managed. This is shown in the two boxes below. The flood risk is best addressed with more than one flood risk adaptive measure. Each one deserves a community-level evaluation, including reasons for and against the measure. Many of these items are activities, while some are features that can be built.

FLOOD RISK ADAPTIVE MEASURES FOR

FLOODPLAINS

Nonstructural measures

- Elevation
- Relocation
- Buyout / Acquisition
- Dry flood proofing
- Wet flood proofing

Nonphysical nonstructural measures

- Flood Warning Systems
- Flood Insurance
- Floodplain Mapping
- Flood Emergency Preparedness Plans
- Land Use Regulation
- Zoning
- Evacuation Plans
- Risk Communication

FLOOD RISK ADAPTIVE MEASURES FOR

FLOODWATERS

Physical or structural measures include constructible features such as

- Detention Basins
- Dams
- Floodwalls
- Levees and berms
- Channel
 - ◆ straightening
 - ◆ widening
 - ◆ deepening
 - ◆ diversions
- Bridge enlargements
- Conveyance modifications

And these activities

- Clearing and snagging debris
- Pumping
- Land treatment and infiltration

The Strategies and Tools

For many years, federal agencies have recommended combining these strategies and tools in different ways to address the specific needs of each community.

Modifying human susceptibility to flood hazards

- land use regulations
- public redevelopment policies
- flood warning systems
- flood proofing of structures in the floodplain
- process for relocation of structures

Modifying the impact of flooding

- information and education
- flood insurance
- tax adjustments
- emergency relief
- post-flood recovery processes

Preserving and restoring floodplains' environmental quality

- wetlands protection and restoration
- erosion and sediment control
- water quality enhancement
- enhancement of recreation and educational opportunities
- preservation of cultural resources

Modifying floodwaters

- stormwater detention basins
- levees, floodwalls, and landforms
- channel alterations, diversions, and bypasses
- pump stations

Nonstructural measures are permanent or contingent measures applied to a structure and/or its contents that prevent or provide resistance to damage from flooding. Nonstructural measures differ from structural measures in that they focus on reducing the consequences of floods in floodplains instead of focusing on reducing the chance of flooding (the effect on floodwaters).

Frequently Asked Questions

1) Can our community rely on a levee alone or are other measures needed?

The most resilient approach to flooding is to combine several measures with levees so property owners can drive down flood risks to a level acceptable. Additional measures include flood warning tools and evacuation routes.

2) Will we still have to pay flood insurance?

Paying is required for federally backed mortgages. Insurance is a good idea, because this transfers risk and makes communities more resilient to floods.

3) How will our community ever sort out and even fund the right options?

Develop a floodplain management plan with the community to evaluate measures and prioritize actions. Such a playbook helps elected officials justify funds. A floodplain management plan provides a story of the history that fully explains your community's flood risk management efforts.

The flood risk management professionals in your community, state, tribe, and at the Corps of Engineers have joined on state lead Silver Jackets teams that do flood hazard mitigation and will

- Help you understand your flood risk, including where flooding can happen, how often, and details about the danger
- Provide leadership in all aspects of floodplain management
- Look at combining measures that make sense in your community for your specific flood problem



US Army Corps of Engineers. Our risk professionals provide support in flood risk management through special technical services under the Flood Plain Management Services Program, the Planning Assistance to States Program, and pre-flood preparation activities through the Flood Control and Coastal Emergencies Program.

PLANNERS AND ENGINEERS CAN HELP

The planners and engineers at the Corps of Engineers, state, and other agencies have staff ready to answer your questions and help your community. We regularly provide workshops to communities and agencies across the nation. A variety of tools can also be leveraged including

- Building structure inventory
- Nonstructural assessments
- Cost estimating
- Flood warning systems
- Floodplain management planning
- Public involvement and outreach
- Inundation mapping

As risk management professionals, the floodplain leaders are skilled in looking at each community's unique needs and applying the right measure from the menu of measures. Professionals that can assist include certified floodplain managers, engineers, economists, and community planners.

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Website:

<http://silverjackets.nfrmp.us/State-Teams>

Contact Us:

PHOTOS ON THE COVER:

US Army Corps of Engineers

Top: Kansas, flood warning system with gage and forecast point; **Middle:** West Virginia, home elevation; **Bottom:** Certified flood barrier (*Aqua Fence*)



Possible Solutions To Flooding

