

and address the risk to your community?

If you know your community is located in an area protected by a levee system or adjacent to a river with a levee system:

1. Identify the sponsor.
2. Attend a sponsor meeting or make an appointment to ask the sponsor about:
  - The areas protected and the level of flooding the levee system is designed to control.
  - Historical flood events.
  - The overall maintenance status of the levee system.
  - The sponsor's readiness for a “flood fight.”
  - The likely impact of the sponsor's “flood fight” plans on the community.
  - The areas most likely to flood if the flood event exceeds the levee design and how much warning the sponsor could provide.
  - Whether maintenance funds are adequate, and if not, what steps are taken to ensure continued high-caliber maintenance.
3. Consider collaborating with them by supporting their management or providing resources to supplement their maintenance or flood fight plans. There may be an opportunity to include local industry in providing needed resources.
4. Consider the likely impact of the sponsor's flood flight procedures on the local government's resources, and address these effects in the local government's internal contingency planning and its planning to continue serving the needs of the community in a crisis.
5. Consider the likely impact on the local government's resources if the levee is

overtopped or fails and address these effects in the local government's internal contingency planning and its planning to continue serving the needs of the community in a crisis.

Community Outreach: What Your Citizens and Business Owners Need to Know About Your Community's Levee System

It is important that the local community is aware of the areas protected by levee systems and be able to provide confidence in their ability to protect these areas from flooding. Key topics include;

- Historical flooding in the community and how it relates to the flood level against which the levee is designed to protect.
- The location of the system: Where the levee is in relation to homes and businesses.
- The effect that a "flood fight" will have on the community's transportation and utility services.
- The sponsor's readiness for a “flood fight" if one becomes necessary.

Staffing

Training

Resources
- How the community and its citizens can help the sponsor by supporting the sponsor's management or providing resources to supplement the maintenance or flood fight plans.
- The locations most likely to flood in the event of failure or overtopping.
- The local government's plans for evacuating vulnerable areas in an

emergency and how it will give notice to affected citizens.

It may also be appropriate to provide the following information;

- Who the sponsor is and where it gets its financial support.
- To whom the sponsor is accountable.
- The levee’s state of maintenance, whether maintenance funds are adequate, and if not, what steps are taken to ensure continued high-caliber maintenance.

Support and information is available at the Flood Risk Education Alliance (FREA) web site, which is accessible through [www.ibhs.org](http://www.ibhs.org). The FREA web site provides links to other fine sources of information. In any case, help your citizens and business owners develop a heightened awareness of the residual risk in being behind a levee. Candor and close working relationships with others in your community will assist the Levee Sponsor and other government officials in keeping homes and businesses well protected.

www.ibhs.org

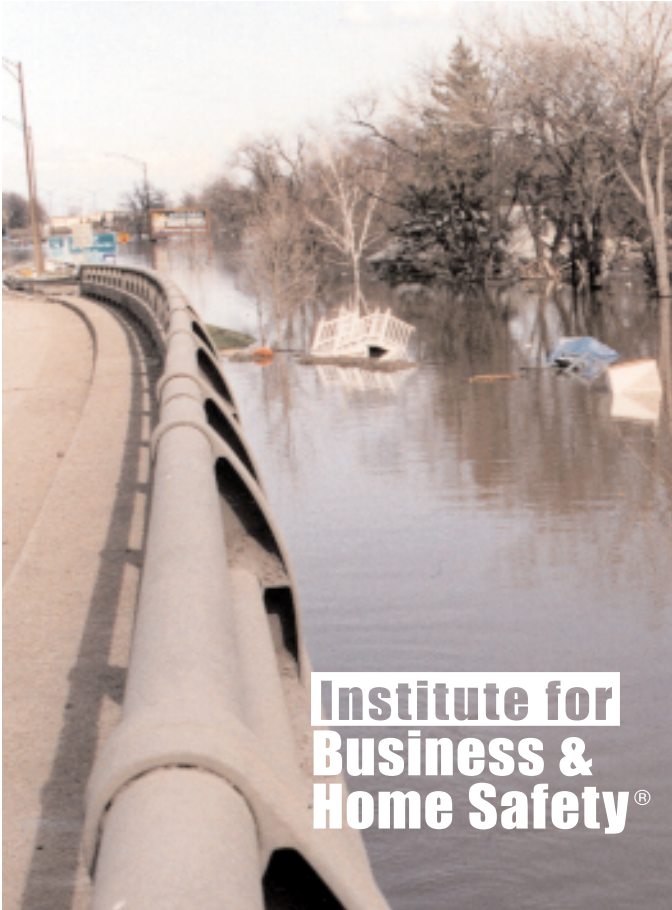
The Institute for Business & Home Safety, a national organization supported by insurance and reinsurance member companies, works to reduce social and economic losses caused by natural disasters.

This document is intended to serve only as a guide. The publisher disclaims all warranties and guarantees with respect to the information in the document and assumes no liability or responsibility with respect to the information.

© IBHS 2004

LEVEES ARE IN...  
The Flood Plain

For Local Government



Institute for  
Business &  
Home Safety®

## Levees are in the Flood Plain...

Most major levees protecting urban areas were built to US Army Corps of Engineers (USACE) standards. BUT... recent history and the reputation of USACE have lead to the common misconception that areas protected by levees are outside the floodplain – they are not; they are in (the floodplain)! It is important to understand the limitations of levee systems, as they all:

- Are designed to protect against a particular flood level and may be overtopped in more severe events.
- Require comprehensive maintenance programs, which become more of a challenge as the system gets older.
- Involve significant planning and resources to be made ready for flood events.
- May fail to live up to its design.

When a levee system fails or is overtopped, the results can be more damaging in the local area than if the levee were not there, due to increased elevation differences and water velocity. Unrealistic expectations of protection also may exist: no levee provides protection from events for which it was not designed, and proper operation and maintenance are necessary to reduce the probability of failure. The levee owner or management company, typically referred to as the “sponsor,” is the key to an effective maintenance program. Think of a levee system designed to USACE standards as equivalent to a commercial airliner. Ongoing maintenance and operation are essential, and as the system ages, the challenge increases.

## What is a Levee?

The term levee is defined as an embankment whose primary purpose is to furnish flood protection from seasonal high water and which is therefore subject to water loading for periods of only a few days or weeks a year.

### Are all Levees the Same?

Levee types are generally categorized by either location or use.

Levee types according to location. Levees are broadly classified according to the area they protect as either urban or agricultural levees because of different requirements for each.

1. Urban levees. Levees that reduce flooding in communities, providing protection for communities; industrial, commercial and residential facilities.
2. Agricultural levees. Levees that provide protection from flooding in lands used for agricultural purposes.

## Where are the Protected Areas?

Areas protected by levee systems are not always easily identified. Many levees across the country

- Were built decades ago and form a familiar part of the landscape. In areas without recent flooding, there may be limited knowledge of the system.
- May not be shown on FEMA Flood Insurance Rate Maps (FIRMs) as they are typically not considered to be in “Special Flood Hazard Areas” prone to regular flooding.

## If your community is protected by a levee, what is the concern?

Levee systems are designed protect against a specific flood level. The levee may not provide flood protection until certain actions are taken. There is a need for human intervention to make the system work and this often requires advance planning, significant resources, and specific, timely actions to make the levee system ready for a “flood fight”. For example, roads and railroads passing through the levee often need to be closed, and utilities may be affected. Disruption of transportation and utilities may force local businesses to close, and their owners may be angry.

Routine public education efforts directed at the affected homes and businesses will help citizens plan in advance to handle these contingencies.

If the flood level exceeds the level for which the levee was designed, it may fail or be overtopped. It is important for citizens to understand what may happen if the levee system fails or is overtopped. Citizens need to be aware of the possibility of flooding, which areas of the community may be flooded, how the public will receive notice of impending flooding, and how they should respond if, for any reason, the levee fails to protect them.

## What can you do to evaluate

Table 1: Levee types according to use. Some of the more common terms used for levees serving a specific purpose in connection with their overall purpose of flood protection are given in this table.

Type	Definition
Mainline and Tributary levees	Levees that lie along a mainstream and its tributaries, respectively .
Ring levees	Levees that completely encircle or “ring” an area subject to inundation from all directions.
Setback levees	Levees that are built landward of existing levees, usually because the existing levees have suffered distress or are in some way being endangered, as by river migration.
Sublevees	Levees built for the purpose of underseepage control. Sublevees encircle areas behind the mainlevee, which are subject, during high-water stages, to high uplift pressures and possibly the development of sand boils. They normally tie into the main levee, thus providing a basin that can be flooded during high-water stages, thereby counterbalancing excess head beneath the top stratum within the basin. Sublevees are rarely employed as the use of relief wells or seepage berms make them unnecessary except in emergencies.
Spur levees	Levees that project from the main levee and serve to protect the main levee from the erosive action of stream currents. (Spur levees are not true levees, but training dikes.)