

The NFIP and Levee Systems

An Overview

There are thousands of miles of levee systems in the United States that affect millions of people. Levee systems are usually earthen embankments that are designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding. However, no levee system provides full protection.

The Department of Homeland Security, Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP), the cornerstone of the Nation's strategy for preparing communities for flood disasters.

The NFIP was created to reduce flood damages by identifying flood risks, encouraging sound community floodplain management practices, and providing flood insurance to lessen the financial impact of floods.

LEVEE SYSTEMS: PROTECTION WITH RISK

Levee systems are designed to provide a *specific level of protection*. They can be overtopped or they can fail during larger flood events. Levee systems also decay over time. They require regular maintenance and periodic upgrades to retain their level of protection. When levee systems do fail, they fail catastrophically. The damage may be more significant than if the levee system had not been built. For all these reasons, people who live and work in levee-impacted areas

should understand the risk they face and take steps to address that risk.

FLOOD MAPS IDENTIFY RISKS

FEMA is updating the NFIP flood maps with an effort called Flood Map Modernization, or Map Mod. These maps (also known as Digital Flood Insurance Rate Maps, or DFIRMs) indicate the high-risk areas (called Special Flood Hazard Areas, or SFHAs) with at least a 1-percent chance of flooding in a given year. They also show the low- and moderate-risk areas with a less than 1-percent-annual-chance of flooding.

Identifying the risks in levee-impacted areas is an important element of Map Mod. Levee systems have been identified in over one-fourth of the counties that will receive DFIRMs. The NFIP maps show some levee systems as providing 1-percent-annual-chance flood protection, showing the areas behind them as moderate-risk areas, labeled Zone X (shaded).

However, before a levee system can be shown as providing that level of protection, the levee owner must provide data and documentation to indicate that the levee system meets NFIP criteria. If it does, FEMA will revise the map to show the impacted area as Zone X (shaded). If it does not, FEMA will revise the map to show the impacted area as a high-risk SFHA, labeled Zone AE or A, depending on the type of study performed.

Because gathering the data and documentation can take time, FEMA

A COLLABORATIVE EFFORT

Ensuring the safety of life and property in areas behind levees is a collaborative effort.

FEMA establishes criteria for levee accreditation and identifies risk levels through flood analysis and mapping projects.

The U.S. Army Corps of Engineers (USACE) is responsible for building and maintaining USACE-owned levees and for inspecting those structures in the USACE programs to determine their level of maintenance.

States, communities, and private levee owners maintain and operate the levees they own according to their design criteria.



is allowing owners of certain eligible levee systems up to 24 months to provide the required data and documentation. During that time, FEMA will designate the levee system as a Provisionally Accredited Levee, or PAL, system on the DFIRM and will show the levee-impacted area as Zone X (shaded).

Maintenance-deficient levee systems may qualify for a one-time-only 1-year “maintenance deficiency correction period.” If the levee owner provides data to demonstrate that the deficiencies have been corrected within the 1-year period, the levee system also could be eligible for the PAL designation. More information on PAL requirements is provided in FEMA Procedure Memorandum No. 43, *Guidelines for Identifying Provisionally Accredited Levees (PAL)*, dated March 16, 2007.

REDUCING RISK

Communities that join the NFIP are required to adopt floodplain management ordinances to minimize damage to properties located in SFHAs. The NFIP requires all new or substantially improved buildings to be constructed at or above the elevation of the 1-percent-annual-chance flood. In areas behind levee systems that are mapped as low- or moderate-risk areas, appropriate precautions are encouraged.

A levee system being accredited does not guarantee protection. For all levee systems, the DFIRMs will carry notes informing officials and citizens that overtopping or failure is possible and that purchasing flood insurance protection, adhering to evacuation procedures, floodproofing, and other protective measures should be considered.

FLOOD INSURANCE

Flooding is the Nation’s number one natural disaster. Because homeowners insurance does not cover damage from floods, FEMA offers federally backed flood insurance through the NFIP. In many low-to-moderate risk areas, single-family homes and businesses are eligible for reduced-cost Preferred Risk Policies, or PRPs.

Insurable structures behind levee systems that are credited with providing 1-percent-annual-chance flood protection are mapped as moderate-risk areas and will likely not be *required* to have flood insurance.

However, FEMA recommends flood insurance for *all* insurable structures in levee-impacted areas.

FEMA RESPONSIBILITIES

FEMA *is* responsible for:

- Establishing appropriate flood insurance risk zone determinations and reflecting these determinations on flood maps; and
- Establishing mapping standards, including minimum design, operation, and maintenance criteria that must be met to have a levee system credited with providing 1-percent-annual-chance flood protection. FEMA will only recognize on the DFIRMs those levee systems that have met and continue to meet the minimum NFIP standards.

FEMA is *not* responsible for:

- Designing, constructing, operating, certifying, or maintaining levee systems;
- Examining levee systems; or
- Determining how levee systems will perform during a flood.

FOR MORE INFORMATION

NFIP requirements for “Mapping of Areas Protected by Levee Systems” are provided in Title 44 Chapter 1, Section 65.10 of the Code of Federal Regulations (44 CFR Section 65.10).

Procedures for levee accreditation can be found in:

Appendix H of FEMA’s *Guidelines and Specifications for Flood Hazard Mapping Partners*.

FEMA’s Procedure Memorandum No. 34, *Interim Guidance for Studies Including Levees*, dated August 22, 2005.

FEMA’s Revised Procedure Memorandum No. 43, *Guidelines for Identifying Provisionally Accredited Levees*, dated March 16, 2007.

FEMA Procedure Memorandum No. 45, *Revisions to Accredited Levee and Provisionally Accredited Levee Notation*, dated May 12, 2008.

Professional and technical associations, including floodplain and stormwater management groups, also are educating their members about flood risks and appropriate mitigation measures.

Find these documents and more at www.fema.gov/plan/prevent/fhm/lv_fpm.shtm.