



The NFIP and Levees

Frequently Asked Questions

Q: What is a levee?

A: A levee is a man-made structure, usually an earthen embankment, 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.

Q: How are levees different from dams and other flood protection structures?

A: A levee is built parallel to a body of water (most often a river) in order to protect lives and properties behind it from some level of flooding. A dam built for flood protection is usually designed to lower the amount of water going downstream of the dam during a flood by containing excess water and releasing it slowly over time. Unlike levees, dams may serve purposes other than flood control, such as providing water for irrigation, community water supplies, recreation, and hydroelectric power.

Another flood protection structure is the floodwall, which FEMA considers and assesses the same as a levee for risk identification purposes. Floodwalls are similar to levees in that they are built parallel to a waterway in order to provide protection from flooding. They are usually found in more urban areas and are made of stone or concrete. Structures like floodwalls that are built in coastal areas and used to protect from tides and wave action are called sea walls.

Q: When were levees first constructed? Why have we become dependent on levees and levee systems?

A: Levees were first built in the United States more than 150 years ago. Farmers, traditionally drawn to the rich soils of floodplains, put many of the earliest levees in place to protect agricultural areas from frequent flooding. Since then, other levees have been built to protect urban areas. These structures were typically built to higher standards used by the U.S. Army Corps of Engineers (USACE). As rural areas of the country have undergone development and urbanization, businesses and homes have increasingly replaced farms, and now there are properties located behind levees that may not provide a sufficient level of protection. Both lives *and* properties behind many of the Nation's levees now depend on an adequate assessment of the current level of protection provided and related flood risks.

Q: Why is it important to understand the risks associated with levees?

A: There are currently thousands of miles of levees across the country affecting millions of people, so it is important for individuals to understand the risks associated with living behind levees and the steps they can take to address these risks. It is important to note that no levee provides full protection from flooding – even the best flood-control system or structure cannot completely eliminate the risk of flooding. Levees are designed to provide a *specific level of protection*, and larger flood events can cause them to be overtopped, or fail. Levees also decay and deteriorate over time. Regular maintenance and periodic upgrades are needed to ensure that they retain their level of protection and continue to perform to their design. Maintenance can become a serious challenge as a levee system gets older. When levees do fail, they fail catastrophically – the damage may be more significant than if the levee wasn't present.



Q: Who is responsible for building and maintaining levees?

A: There is no one entity that is solely responsible for levee construction and maintenance. Some levees were originally built by citizens to protect their properties from flooding. Others were subsequently built by various Federal, State, or local entities. The USACE has designed and constructed many of the Nation's levees, and is responsible for the maintenance of federally owned levees that are in the USACE system. Not all of the levees built by the USACE are federally owned, however. In most instances, levee ownership has been transferred to the State or to another local or regional authority, which then becomes responsible for documenting and maintaining the levee.

Q: Is the current interest in levee safety related to Hurricane Katrina?

A: The devastation caused by Hurricanes Katrina and Rita brought the issues of levee policy, flood hazard management, and flood insurance to the forefront of public debate and discussion. However, as administrator of the National Flood Insurance Program (NFIP), FEMA has long been active and concerned with the protection of life and property behind levee systems. Recognizing the importance of risk assessment behind the thousands of miles of levees across the country, FEMA established detailed requirements—in Title 44 of the Code of Federal Regulations Section 65.10—to guide the evaluation of levees and the mapping of levee-affected areas on flood hazard maps in 1986. To assure standard levee evaluation and mapping practices, FEMA issued guidance in the form of Appendix H to its comprehensive *Guidelines and Specifications for Flood Hazard Mapping Partners* dated April 2003. FEMA issued Procedure Memorandum 34 (PM 34)—*Interim Guidance for Studies Including Levees*—on August 22, 2005. PM 34 re-emphasized FEMA's 20-year old levee policy and regulations and provided additional guidance to help communities with levees meet Federal standards, before Hurricane Katrina hit the Gulf Coast.

Q: What is FEMA doing to address levee issues?

A: FEMA is responsible for identifying flood risks in areas behind levees through flood analysis and flood hazard mapping projects, including updating the Nation's flood hazard maps through an effort called Flood Map Modernization. In addition, FEMA has criteria for recognizing levees as providing protection against the 1-percent-annual-chance flood. However, FEMA does not actually *examine or analyze structures* to determine their performance in a given flood event. The levee owner must provide documentation to show that a levee meets current design, operations, and maintenance criteria. If the levee cannot be shown to meet FEMA criteria, the levee will not be mapped as providing adequate protection on the Flood Insurance Rate Map (FIRM) currently in effect. In addition to identifying risks behind levees, FEMA works in conjunction with its Federal, State, local, and professional/technical partners to bolster flood risk mitigation in communities across the country. Finally, because the risks associated with levees are real, FEMA strongly encourages flood insurance protection and adherence to evacuation procedures in *all* areas behind levees.

Q: What does it mean for a levee to be certified? How is levee accreditation different?

A: A levee is certified if evidence—typically a statement by a licensed professional engineer or Federal agency responsible for levee design—has been presented showing that the structure meets current design, construction, maintenance, and operation standards to provide protection from the one-percent-annual-chance flood. The levee owner is responsible for ensuring that the levee is being maintained and operated properly and for providing evidence of certification. If it can be shown that a levee provides the appropriate level of protection, then FEMA will “accredit,” or recognize, the levee as providing adequate protection on flood hazard maps and the area behind it will be shown as a moderate risk zone (shaded X zone on flood hazard maps). FEMA accredits levees that meet the criteria and maps areas behind them as having a certain risk level, but does not perform the actual certifications.



Q: What happens if a levee is decertified or cannot be certified and how does this impact FEMA’s accreditation process?

A: FEMA has a responsibility to the public to identify the risks associated with levees that have not been certified, or that can no longer be certified. If a levee cannot be certified as providing protection from the 1-percent-annual-chance flood, the levee will not be accredited by FEMA. De-certified or uncertified levees will not be depicted on flood maps as providing the required level of protection. The areas behind these levees will be mapped as high-risk areas and flood insurance will be required for buildings behind the levee with a federally backed mortgage.

It is important to note that neither certification nor accreditation guarantees protection. All flood hazard maps showing levees will carry a warning that overtopping or failure is possible, and that flood insurance and adherence to evacuation procedures are strongly recommended.

Q: What is a Provisionally Accredited Levee (PAL)?

A: The inability to provide full and prompt documentation of a levee’s status does not necessarily mean that the levee no longer provides the level of protection for which it was designed. It also does not mean that the flood hazard map should show the levee as providing protection against the 1-percent-annual-chance flood. FEMA has created the Provisionally Accredited Levee (PAL) designation to facilitate the certification process for communities whose levees are *reasonably expected to continue to provide* protection from the 1-percent-annual-chance flood.

The clarified procedures for Provisionally Accredited Levees (PALs) are documented in FEMA’s Procedure Memorandum No. 43 (PM 43)—*Guidelines for Identifying Provisionally Accredited Levees*—dated March 16, 2007. A PAL is a designation for a levee that FEMA has previously accredited with providing 1-percent-annual-chance flood protection on an effective FIRM, and for which FEMA is awaiting data and/or documentation that will show the levee’s compliance with NFIP regulations. Before FEMA will designate a levee as a PAL, the community or levee owner will need to sign and return an agreement that indicates that documentation required for compliance with Title 44, Chapter 1, Section 65.10 of the Code of Federal Regulations will be provided within a specified timeframe, depending upon the levee’s status. A PAL is shown on a FIRM as providing 1-percent-annual-chance flood protection, and the area landward of the levee is shown as a Zone X (shaded) except for areas subject to residual flooding, such as ponding areas, which will be shown as a high-risk area (called a Special Flood Hazard Area). A note clarifying the provisional nature of the Zone X designation will also be provided on the FIRM. Under the clarified procedures provided in PM 43, levee owners will have up to 24 months to obtain and submit necessary data and documentation.

Q: How do Provisionally Accredited Levees (PALs) affect the communities in which they are identified?

A: Providing communities with current flood risk information is one of the primary goals of Flood Map Modernization. In meeting this goal, the issue of whether levees provide adequate protection needs to be taken into account. However, gathering full documentation regarding a levee’s condition can sometimes take months. If the issuance of flood hazard maps were delayed until levee data was collected, existing flood maps would remain in effect, and more up-to-date flood risk information would not be available for other parts of the community. As such, many citizens would not have the most reliable information on which to base decisions regarding their flood risk, like the purchase of flood insurance.

The PAL designation allows map release to go forward while documentation is being gathered. A note on the FIRM alerts communities and the public to the levee’s provisional status and associated risks—including the risks that the levee may fail or be overtopped.



Q: What if the levee has maintenance deficiencies?

A: For levees in the USACE Federal System, the USACE has initiated a national levee inventory and assessment program to identify the condition, location, level of protection, and maintenance activities. This inventory will assist in the assessment of the risk to public safety associated with levees and levee systems across the Nation. The USACE and FEMA are working together throughout the inventory and assessment phase to coordinate this effort with Flood Map Modernization activities.

For levees within its program, the USACE determines which levees will be offered a one-time-only “maintenance deficiency correction period.” This period was established to allow public sponsors/levee owners to correct levee maintenance deficiencies before the levee is placed in an inactive status in the USACE Rehabilitation & Inspection Program and becomes ineligible for Public Law 84-99 rehabilitation assistance.

For maintenance-deficient levees *not* in the USACE Federal System, PM 43 allows for a one-time-only 1-year maintenance deficiency correction period. This 1-year period provides the levee owner and/or community with the time necessary to correct the maintenance deficiencies and provide the data demonstrating that these deficiencies have been corrected. If the documentation demonstrating that the maintenance deficiencies have been corrected is submitted within the 1-year timeframe, the levee could be eligible for the provisionally accredited levee designation. However, if this documentation is not submitted within the 1-year timeframe, then the area will be mapped as high risk and flood insurance will be required for buildings behind the levee with a federally backed mortgage. The maintenance deficiency correction period outlined in PM 43 is designed to afford non-USACE levees the same correction period as USACE levees.

Q: Where can I go for more information about a levee in my area?

A: There are several locations where you may be able to find information about a levee in your community:

- **Check your current FIRM** to see if your levee or other flood control structure is already shown on the map as providing protection against the 1-percent-annual-chance flood. Community officials will have copies of the local FIRM on file or you can order your own copy from the FEMA Map Service Center at 1-800-358-9616.
- **Call your local officials to request information about levees in your area.** Because most levee ownership and maintenance responsibilities have been turned over to communities, local agencies should have information about the levee and its operations and maintenance schedule.
- **Check with your USACE office.** To find contact information for your local district visit www.usace.army.mil/howdoi/where.html. The USACE will have information about any federally owned levees in your area, and may have additional information about other levees as well.

Q: Where can I go for more general information on levees?

A: Check FEMA’s Web site at www.fema.gov/plan/prevent/fhm/lv_intro.shtm to review the following:

- 44 CFR Section 65.10 of the NFIP regulations;
- Procedure Memorandum No. 34, *Interim Guidance for Studies Including Levees*;
- Revised Procedure Memorandum No. 43, *Guidelines for Identifying Provisionally Accredited Levees Guidelines and Specifications for Flood Hazard Mapping Partners*; and
- Levee-related fact sheets and brochures.