



FEMA



# The NFIP and Levee Systems 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 risk reduction from temporary flooding.

## **Q: What is a levee system?**

**A:** A levee system is a flood risk reduction system that consists of a levee, or levees, and associated structures. These include closure and drainage devices, which are constructed and operated in accordance with sound engineering practices.

## **Q: How are levees different from dams and other flood risk reduction structures?**

**A:** A levee is built parallel to a waterway (most often a river) in order to protect lives and properties behind it from some level of flooding. A dam built for flood risk reduction 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 most levees, dams may serve purposes other than flood control, such as providing water for irrigation, community water supplies, recreation, and hydroelectric power.

A second type of flood risk reduction structure is the floodwall, which the Federal Emergency Management Agency (FEMA) considers and assesses the same as a levee for risk identification purposes. Floodwalls, similar to levees, are built parallel to a waterway in order to reduce risk from flooding. They are usually found in more urban areas and are made of stone or concrete.

## **Need more information on levee systems?**

Please visit the levee-dedicated pages on the FEMA Website at:

[www.fema.gov/plan/prevent/fhm/lv\\_intro.shtm](http://www.fema.gov/plan/prevent/fhm/lv_intro.shtm).

Here you will find an array of guidance and information resources to better answer any questions you might have on levee systems.



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**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 levees in place to protect agricultural areas from frequent flooding. Since then, other levee systems have been built to protect urban areas and these systems have typically been built to higher standards used by the U.S. Army Corps of Engineers (USACE). As rural areas of the United States have undergone development and urbanization, businesses and homes have increasingly replaced farms, and now there are properties located behind levee systems that may not provide a sufficient level of flood risk reduction. Both lives and properties landward of many of the Nation's levee systems—that is, in levee-impacted areas—now depend on an adequate assessment of the current level of risk reduction provided and the related flood risks.

**Q: Why is it important to understand the risks associated with levee systems?**

**A:** With thousands of miles of levee systems in the United States impacting millions of people, it is vital for individuals to understand the risks associated with living or working in levee-impacted areas and the steps they can take to mitigate these risks. Everyone should understand that no levee system provides full risk reduction from all flood events. Even the best flood risk reductions system cannot completely eliminate the risk of flooding. Levee systems are designed to provide a specific level of risk reduction and larger flood events can cause levees to be overtopped or fail. Levee systems also decay and deteriorate over time, so regular maintenance and periodic upgrades are needed to ensure a levee retains its level of risk reduction and continues to perform as designed. When levee systems do fail, they often fail catastrophically – the resulting damage, including loss of life, may be more significant than if the levee system had not even been built.

**Q: Who is responsible for building and maintaining the levee systems?**

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

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

**A:** The devastation caused by Hurricanes Katrina and Rita brought the issues of levee system 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 concerned with the reduction of the risk to life and property in levee-impacted areas. In recognition of the importance of accurate risk assessment for the areas impacted by the thousands of miles of levee systems across the United States, FEMA established detailed requirements, documented in the *Code of Federal Regulations* at Title 44, Chapter 1, Section 65.10, to guide the evaluation of levee systems and the mapping of levee-impacted areas on NFIP flood maps in 1986. To assure standard levee system evaluation and mapping practices, FEMA issued guidance to its contractors and mapping partners. This guidance can be found in Appendix H of the comprehensive *Guidelines and Specifications for Flood Hazard Mapping Partners*. FEMA issued Procedure Memorandum 34 (PM 34) — *Interim Guidance for Studies Including Levees*— on August 22, 2005, before Hurricane Katrina hit the Gulf Coast, which re-emphasized FEMA's 20-year old levee system evaluation and mapping policy and regulations and provided additional guidance to help communities and other levee owners meet NFIP standards.

**Q: What is FEMA doing to address levee system issues?**

**A:** FEMA does not build, maintain, or certify levee systems. FEMA is responsible for identifying flood hazards and assessing flood risks in levee-impacted areas through engineering studies and mapping projects, including updating the existing NFIP flood maps. In addition, FEMA has established criteria for recognizing levee systems as providing a 1-percent-annual-chance or greater level of flood risk reduction. However, FEMA does not actually *examine or analyze* structures to determine their condition or how they will perform during a given flood event. FEMA relies on communities and other levee owners to provide data and documentation showing that a levee system meets NFIP design, operations, and maintenance criteria. If the levee system does not meet these regulatory criteria, FEMA will show the levee system not providing 1-percent-annual-chance flood risk reduction on the FIRM. In addition to identifying risks in levee-impacted areas, FEMA works in conjunction with its Federal, State, local, and professional/technical partners to bolster flood risk mitigation in communities nationwide. Finally, because the risks associated with levee systems are real FEMA strongly encourages flood insurance, risk reduction, adherence to evacuation procedures, floodproofing, and other protective measures in all levee-impacted areas, even for those that are accredited. FEMA emphasizes the need for property owners to consider such measures through notes on affected FIRM panels.

**Q: What does it mean for a levee system to be certified?**

**How is accreditation different?**

**A:** A levee system is certified if evidence, typically a statement by a licensed professional engineer or Federal agency responsible for levee system design, has been presented showing that the system meets current design, construction, maintenance, and operation standards to provide risk reduction from the 1-percent-annual-chance flood. The levee owner is responsible for ensuring that the levee system is being maintained and operated properly and for providing evidence of certification. If the levee satisfies the regulatory design, maintenance, and operation criteria FEMA will “accredit” the levee system as providing adequate risk reduction on the FIRM and the levee-impacted area will be shown as a moderate-risk area, labeled Zone X (shaded). FEMA will only accredit a levee system that meets NFIP criteria, which can be found by visiting <http://www.fema.gov/library/viewRecord.do?id=2741>.

**Q: What happens if a levee system cannot be certified?**

**How does this impact the FEMA accreditation and mapping process?**

**A:** FEMA has a responsibility to the public to identify the risks associated with levee systems that have not been certified or that have lost certification. If a levee system cannot be certified as providing risk reduction from the 1-percent-annual-chance flood FEMA will not accredit the levee system or will de-accredit a levee system that had previously been shown as providing a 1-percent-annual-chance level of flood risk reduction on an NFIP map. Because FEMA will not accredit uncertified levee systems these systems will not be depicted on FIRMs as providing a 1-percent-annual-chance level of risk reduction. FEMA will remap the levee-impacted areas landward of these levee systems as high-risk areas, called Special Flood Hazard Areas (SFHAs). Flood insurance is required in SFHAs for any mortgage that is federally backed, regulated, or insured. It is important to note that neither certification nor accreditation guarantees protection from a given flood event. All FIRM panels showing accredited and provisionally accredited levee systems will carry notes indicating that overtopping or failure of any levee system is possible. FIRM panels will also note that flood insurance, risk reduction, floodproofing, and other protective measures in all levee-impacted areas should be considered.

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

**A:** A levee owner’s failure to provide full documentation of a levee system’s status does not mean that the levee system does not provide the designed level of risk reduction. It also does not mean that the FIRM should show the levee system as providing 1-percent-annual-chance flood risk reduction. FEMA created the PAL designation to facilitate the certification and accreditation process for communities with levee systems that are *reasonably expected to continue to provide* 1-percent-annual-chance flood risk reduction.

The clarified procedures for PALs are documented in FEMA Procedure Memorandum No. 43 (PM 43)—*Guidelines for Identifying Provisionally Accredited Levees*—dated March 16, 2007.



A PAL is a designation for a levee system that FEMA has previously accredited with providing 1-percent-annual-chance flood risk reduction on an effective FIRM and for which FEMA is awaiting certified data and/or documentation that will show that the levee system is in compliance with NFIP regulations. Before FEMA will apply the PAL designation to a levee system, the community or levee owner will need to sign and return an agreement that indicates that the data and documentation required for compliance with the NFIP regulations will be provided within a specified timeframe, which depends on the levee system's status, but will be no longer than 24 months. On a FIRM, a PAL is shown as providing 1-percent-annual-chance flood risk reduction and the impacted area landward of the PAL is shown as a medium-risk area, labeled Zone X (shaded), except for areas subject to residual flooding, such as ponding areas, which will be shown as high-risk areas (i.e., SFHAs). A note clarifying the provisional nature of the PAL designation and the Zone X (shaded) area will also be provided on the FIRM.

**Q: How do the PAL designations for levee systems affect the communities in which they are provided?**

**A:** Providing communities with current flood risk information is one of the primary goals of the NFIP and the Risk MAP effort. In order to meet this goal, the status of levee systems providing 1-percent-annual-chance flood risk reduction needs to be taken into account. However, gathering all data and documentation for a levee system can sometimes take months, which could delay the issuance of FIRMs and provide citizens with out of date information on which to base decisions to reduce their flood risk, including the purchase of flood insurance. The PAL designation allows the map release and review process to proceed while data and documentation are being gathered. The previously cited note on the FIRM alerts community officials and the public to the levee system's provisional status and associated risks—including the potential risk of overtopping. FEMA updated the levee notes that will appear on the FIRMs by issuing Procedure Memorandum No. 45—*Revisions to Accredited Levee and Provisionally Accredited Levee Notations* on May 12, 2008.

**Q: What if the levee system has maintenance deficiencies?**

**A:** For levee systems in the USACE Program, the USACE has initiated a national levee inventory and assessment program to identify the condition, location, level of risk reduction, and maintenance activities of all USACE levees. This inventory assists in the assessment of the risk to public safety associated with levee systems nationwide and FEMA is working with the USACE throughout the inventory and assessment phase and coordinating this effort with FEMA's mapping activities.

For levee systems within its program, the USACE determines which levee systems will be offered a one-time-only 1-year "maintenance deficiency correction period." This period was established to allow public sponsors/levee owners to correct levee system maintenance deficiencies before the levee system is placed in an inactive status in the USACE Rehabilitation and Inspection Program and becomes ineligible for Public Law 84-99 rehabilitation assistance.

For maintenance-deficient levees not in the USACE program, 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 data and documentation demonstrating that these deficiencies have been corrected. If that information is submitted within the 1-year timeframe the levee system could be eligible for the PAL designation.

However, if the 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 regulated loan.

**Q: What qualified as a USACE Program Levee System?**

- A:** Levee systems within the USACE Program included (and continue to include) the following:
- Levee systems built by the USACE that were authorized for construction by the U.S. Congress or by USACE continuing authorities (e.g., Section 205);
  - Levee system projects constructed by non-Federal interests or other (non-USACE) Federal agencies and incorporated into the USACE Federal system by specific congressional action; and
  - Federal projects that are either operated and maintained by the USACE or turned over to a local sponsor for operation and maintenance; and Non-Federal projects within the Rehabilitation and Inspection Program (Public Law 84-99).

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

- A:** You can find additional information about a levee system in your community from several locations:
- **Check the current FIRM for your community to see if a levee system or other flood risk reduction system is already shown as providing 1-percent-annual-chance flood risk reduction.** Community officials will have copies of the FIRM on file in the Community Map Repository. To learn the location of the Community Map Repository in your community, please call the FEMA Map Assistance Center, toll free, at 1-877-FEMA MAP (1-887-336-2627). You can also view the effective FIRM for your community on the FEMA Map Service Center Website, located at <http://msc.fema.gov>, or you may order your own copy by calling the FEMA Map Information eXchange, toll free, at 1-877-336-2627.
  - **Call your local officials to request information about levee systems in your area.** Because most levee ownership and maintenance responsibilities have been turned over to communities, local agencies should have information about the levee system, including its operations and maintenance schedule.
  - **Check with your local USACE district office.** To find your local USACE district office, please visit <http://www.nfrmp.us/guidance.cfm>. The USACE will have information about any federally owned levee systems in your area and possibly additional information about other levee systems.