



FEMA

MITIGATION DIRECTORATE

Living Behind Levees

INFORMATION FOR PROPERTY OWNERS

LEVEES: PROTECTION WITH RISK

The United States has thousands of miles of levees - usually earthen embankments, 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. Many levees were first put in place by farmers to protect agricultural areas from frequent flooding. They date back as much as 150 years. Others have been designed to protect urban areas, and were typically built to higher standards used by the U.S. Army Corps of Engineers. However, no levee provides full protection from flooding.

All levees are designed to provide a *specific level of protection*, and can be overtopped in larger flood events. Levees require regular maintenance to retain their level of protection. The fact is, levees can and do decay over time, and maintenance can become a serious challenge. When levees do fail, or are overtopped, they fail catastrophically - the flood damage may be more significant than if the levee was not there. For these reasons, the millions of people affected by levees need to understand the flood risks they face and take steps to address them.

FEMA'S ROLE

The Federal Emergency Management Agency (FEMA) manages 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.

FEMA is updating the Nation's flood hazard data and maps through an effort called Flood Map Modernization. Accurately identifying the flood risk behind levees is an important element of Flood Map Modernization. Levees

are present in over one quarter of the counties being remapped.

FLOOD HAZARD MAPS IDENTIFY THE RISKS

Flood hazard maps (also known as Flood Insurance Rate Maps, or FIRMs) show the high-risk areas where there is a 1-percent chance of flooding in any given year. They also indicate the low-to-moderate risk areas with a less than 1-percent annual-chance of flooding.

Assessing flood risk for areas behind levees is complex. Among the many factors the assessment must take into account are the actual elevations that a 1-percent annual-chance flood will reach and the ability of the levee to contain such floodwaters. FEMA has criteria for recognizing levees as protecting against the 1-percent annual-chance

ACCREDITING A LEVEE DOES NOT GUARANTEE PROTECTION

When flood hazard maps identify the area behind a levee as being protected against the 1-percent-annual-chance flood, the levee is said to be accredited: it has met FEMA's accreditation criteria. However, an accredited levee does not guarantee protection.

FEMA flood maps identifying levees will carry a warning that overtopping or failure of the levee, dike, or other structure is possible, and that flood insurance and adherence to evacuation procedures are strongly recommended.



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flood. The levee owner is responsible for providing documentation to show that the levee meets these criteria. Note that FEMA does not examine structures or systems to determine how they will perform in a flood event.

If a levee meets FEMA criteria, the flood hazard map will show the area behind the levee as a moderate-risk zone. If it does not, the map will show the area as a high-risk area, or Special Flood Hazard Area (SFHA). The SFHA is the area subject to inundation by the 1-percent annual-chance flood. The chart below shows how FEMA depicts these designations on flood maps and the requirements and options for flood insurance behind levees.

FOR MORE INFORMATION

For more information about levees and flood risk zones, visit these documents and more at: http://www.fema.gov/plan/prevent/fhm/lv_intro.shtm.

IF THE LEVEE...	THE FEMA FLOOD MAP WILL SHOW THIS FLOOD RISK...	AND THESE FLOOD INSURANCE REQUIREMENTS AND OPTIONS WILL APPLY
Is not currently shown as providing protection from the 1-percent annual-chance flood. (Not Accredited)	High flood risk, with areas behind levees shown as being in a special Flood Hazard Area (shown as Zones A, AE, AH, AO).	Flood insurance is required in high-risk areas as a condition of any Federal financial assistance, including loans secured by buildings located in SFHAs from regulated or insured lending institutions. Your customers should be aware that insurance rates may rise to reflect higher flood risk in these areas.
Provides protection from the 1-percent annual-chance flood. (Accredited)	Moderate flood risk, but flooding is still possible (shown as Zones B, C, X, or X (shaded) on the map).	The mandatory flood insurance purchase requirements of the NFIP do not apply in Zones B, C, X, or X (shaded), but flood insurance is strongly recommended. Lower-cost Preferred Risk Policies (PRP) are available for most buildings in Zones B, C, X, or X (shaded).
No longer meets the minimum standards to be shown as providing protection from the 1-percent annual-chance flood. (De-Accredited)	High flood risk, with areas behind levees shown as being in a special Flood Hazard Area (shown as Zones A, AE, AH, AO).	Flood insurance is required in high-risk areas as a condition of any Federal financial assistance, including loans secured by buildings located in SFHAs from regulated or insured lending institutions. Grandfathering can save your customers money. Buildings covered by flood insurance before the effective date of new maps can be grandfathered in at the current flood zone designation, as long as there is no lapse in coverage. Note: this coverage can be transferred.
In temporarily shown as providing protection from the 1-percent annual-chance flood while additional documentation is being gathered. (Provisionally Accredited)	Moderate flood risk. Areas behind levees are shown as being behind a Provisionally Accredited Levee, or PAL (shown as a Zone X (shaded) on the map pending accreditation).	The mandatory flood insurance purchase requirements of the NFIP do not apply in Zones B, C, X, or X (shaded), but flood insurance is strongly recommended. Lower-cost Preferred Risk flood insurance is available for most buildings in Zones B, C, X, or X (shaded).