



So, You Live Behind a Levee!

What you should know to protect your home and loved ones from floods.





What to Do During a Flood Watch or Flood Warning

- Listen to the radio, TV, or check the Internet to see whether a flood watch or flood warning for your area. A *flood watch* means that flooding is possible. A *flood warning* indicates that flooding is imminent or occurring.
- Check for instructions from your local emergency management agency or other local officials. Listen to the radio or television for information.
- Locate pre-assembled emergency kit and prepare other items to take with you in the event of an evacuation.
- Move valuable items from a basement. Personal items in a basement are not covered by flood insurance. However, furnaces, washers, dryers, and other items typically found in a basement are covered.
- Turn off electricity at your breaker or fuse box and close your main gas valve. For fuel oil or propane tanks, turn off the fuel valve at the tank. Bring outdoor possessions inside or secure them adequately.
- Place sandbags anywhere water may enter your home.
- Leave, avoiding locations with high water and downed power lines.
- If floodwaters enter your home or business before you can leave safely, move to the highest level, including the roof. It may take hours or even days before help can arrive.

For additional information about what to do during a flood, visit www.fema.gov/hazard/flood/fl_during.shtm.

Ask Yourself This:

are my Home and Loved Ones Safe from Floods?

Most people know that levees are structures built near rivers and sometimes lakes to protect certain areas from flooding. But what does it mean to live near a levee? What do you need to know to remain as safe as possible in the event of a flood?

Read on for answers to these and other related questions. This booklet was created to help you learn about levees, and their associated risk. Most importantly, it is intended to help you **act now** to better protect yourself against future flood threats.

This booklet has been prepared in cooperation with the following organizations:

- American Consulting Engineers Council
- American Society of Civil Engineers
- ASFE: The Best People on Earth
- Association of State Dam Safety Officials
- Association of State Floodplain Managers
- National Association of Flood and Stormwater Management Agencies
- United States Society on Dams
- U.S. Army Corps of Engineers
- U.S. Federal Emergency Management Agency

Above: Flooded farmland in the San Francisco Bay-Delta near Sacramento, California. California Department of Water Resources.

Opposite page: April 8, 1997 — Taking only what they can carry, residents begin evacuation of East Grand Forks, Minnesota. Dave Saville/FEMA News

Four Essential Levee Facts



Flooding *will* happen.

All rivers, streams, and lakes will flood eventually. This means that all levees will be called upon to combat floodwaters at some point. Are you ready?

Risks associated with flooding vary.

If you live behind a levee, you are responsible for knowing the threat you face from flooding. Don't assume that someone else is watching out for you.



No levee is flood proof.

Levees *reduce* the risk of flooding. But no levee system can *eliminate* all flood risk. A levee is generally designed to protect against floods up to a certain size. If a larger flood occurs, floodwaters will flow over the levee. Flooding also can damage levees, allowing floodwaters to flow through an opening, or breach. Don't think flooding can happen to you? Think again.

Actions now will save lives and property.

There are many steps you can take, from purchasing flood insurance, to developing an evacuation plan, to flood-proofing your home, to helping ensure that your levee is well maintained. The sooner you act, the better off you'll be when the next flood occurs.



Flooding *will* happen



March 28, 2009 — The River View neighborhood of Fargo, North Dakota experiences flooding from the Red River. Patsy Lynch/ FEMA News

All rivers, streams, and lakes flood eventually. There are no exceptions. It's a question of *when*, not *if*, flooding will occur along a particular waterway. Given enough time, any levee will eventually be overtopped or damaged by a flood that exceeds the levee's capacity.

How Flood Size is Defined

A common practice to describe the size of a flood is by the “percent chance” that a flood will occur in a given year. Experts estimate the percent chance based, in part, on past storm data. They do this by charting the size of all known floods at a location and recording how often floods of a particular size occur. Experts then estimate the probability (or “percent chance”) that the flood waters, will reach or exceed a certain level at that location.

Smaller floods occur more often than larger floods. Therefore, smaller floods have a higher percent chance of reaching or exceeding a particular flood water level in any given year. For example, a flood that has a 1-in-10 chance of occurring in a single year is also known as a 10%-annual-chance flood, or a 10-year flood. Engineers and flood managers consider a 10%-annual-chance flood to be a relatively small flood.

A 1%-annual-chance flood—sometimes referred to as a 100-year flood—is likely to happen less often. A 100%-annual-chance flood will have higher flood water level compared to a 10%-annual-chance flood.

A significantly larger flood that is expected to occur once every 500 years—commonly known as a 500-year flood—has only a 0.2% chance of occurring in a given year.

What does this have to do with levees? The level of protection offered by a levee is typically described in terms of the flood size, or flood water level, that the levee is capable of containing. For example, a levee designed to protect against a 1%-annual-chance flood is often referred to as a “100-year levee.”

Levees are designed to have a particular size and shape to enable them to withstand the corresponding flood water level. Do you know what size of flood your levee is designed to resist?

Levee Lingo

Flood warning – a term that means flooding is occurring or is imminent.

Flood watch – a term that means flooding may occur. If you are in a flood watch it is important to stay updated by weather services in case it is necessary to take action.

Floodplain - low lying areas where water naturally overflows, often found along rivers and lakes.

National Flood Insurance Program (NFIP) – a federally created program that offers flood insurance to property owners and renters in participating communities. These communities qualify by enforcing standards set by the government to protect against flooding.

Watershed – an area of land that is drained by a river or stream and its tributaries.

No levee is flood proof.



April 1, 1997 — Owners of this home in Moorhead, MN fought a valiant battle against the waters of the Red River. David Saville/FEMA News

Levees reduce the risk of flooding. But no levee system can eliminate all flood risk. There is always the chance that a flood will come along that exceeds the capacity of a levee, no matter how well it was built. Levees do not always perform as intended. In fact, levees sometimes fail even when a flood is small.

In a way, levees are like seat belts. Seat belts don't prevent car accidents, but they can reduce the risk associated with accidents. Levees don't prevent floods, but they can reduce the consequences of flooding within certain areas.

Where Levees are Located

No one knows exactly how many miles of levees there are in the United States. However, there may be as many as 100,000 miles of levees. More than 85% are thought to be locally owned and maintained, and the rest are overseen by the U.S. Army Corps of Engineers.

FEMA has estimated that levees are located in roughly 22% of the nation's 3,147 counties. Although no one knows precisely how many people currently rely on levees for flood protection, 43% of the U.S. population lives in counties with levees.

Levees are located across the nation, but certain states—Louisiana, Missouri, Mississippi, California, and Arkansas—rely more extensively on levees than others.

Large rivers tend to have many miles of levees. For example, levees line nearly the entire length of the lower Mississippi River, protecting major cities like St. Louis, Memphis, and New Orleans.

In California, the City of Sacramento relies heavily on levees to defend against flooding. A vast network of levees in the San Francisco Bay-Delta protects thousands of acres of farmland and much of state's drinking water supply.

Levees also are used to protect communities along inland lakes. In Florida, for example, many communities near Lake Okechobee benefit from the 143-mile-long Herbert Hoover Dike.

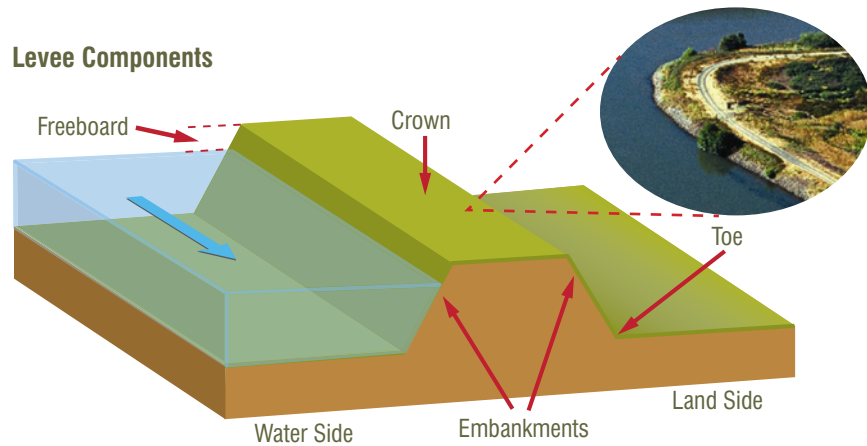
How to Tell Whether You Live Behind a Levee

- If you live near a major river or other body of water, there is a good chance that a levee may be nearby. Here are some ways you can check to see whether you live behind a levee:
- ☐ Check www.floodsmart.gov and take the "One Step Flood Risk Profile" quiz. In it, you enter your address to learn if you live in an area at risk of flooding. If so, nearby levees may appear on the Flood Insurance Rate Map created by the U.S. Federal Emergency Management Agency (FEMA) to show the flood risk in your area. Follow the links on the site to FEMA's Map Service Center to download the map for your area. But be aware that levees are not always depicted on flood maps.
 - ☐ Contact a local government agency, such as your public works department or flood control district, to find out about whether levees are nearby and if your home is dependent on them for reducing the risk of flooding.

What Is a Levee?

The U.S. Federal Emergency Management Agency (FEMA) defines a levee as 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.” Levees are sometimes referred to as dikes.

A floodwall is a vertical wall that is built to do the same thing as a levee. Typically made of concrete or steel, floodwalls often are erected in urban locations where there is not enough room for a levee. Floodwalls sometimes are constructed on a levee crown to increase the levee’s height.

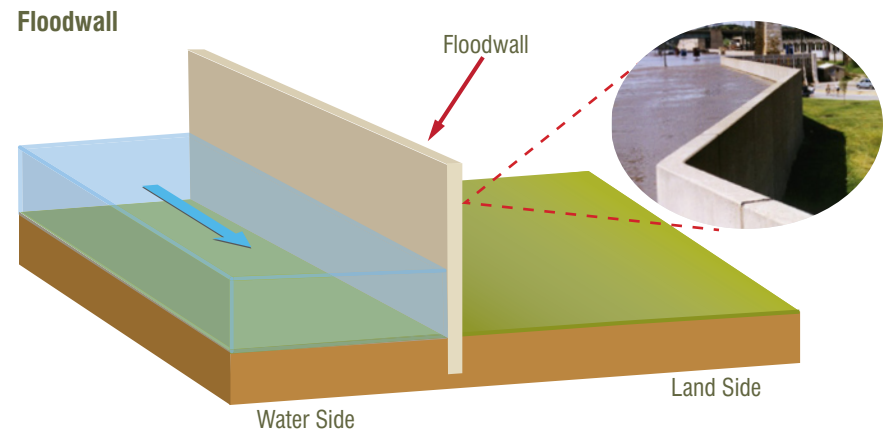


Natural Drainage

A levee is a barrier between floodwaters and the nearby town or other protected area. But what happens to the water in streams or channels that would normally drain from the land side to the river?

Think about it. Without an outlet to the river, rainfall and snowmelt would back up behind the land side of a levee, possibly flooding the very town that the levee is supposed to protect!

For this reason, levees often include a series of culverts, canals, ditches, storm sewers, and pump stations, called “interior drainage” systems. These systems take water from the land side of a levee over to the water side.



Levee Lingo

Dam – an engineered structure across a river system that often stores water year round.

Dike – an earthen structure used to retain or divert waters from a tidal storm. “Dike” is used interchangeably with levee.

Embankment – a mound of earth raised to retain or divert water.

Floodwall – a wall, typically made of concrete or steel, that may be constructed on a levee crown to increase the levee’s height.

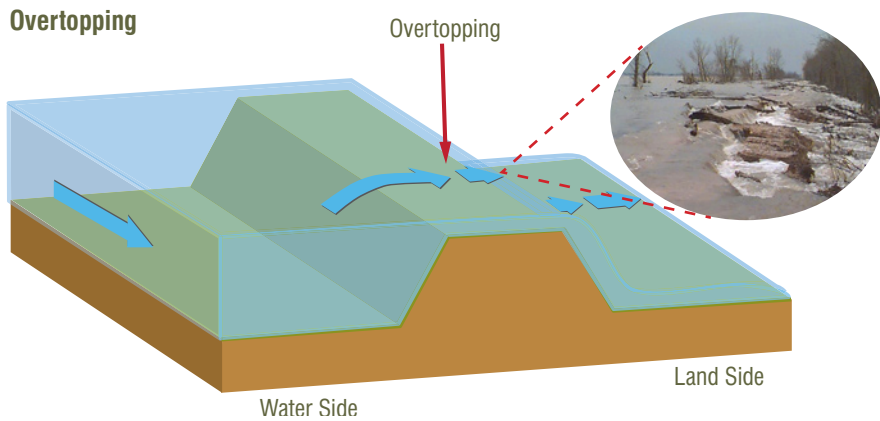
Freeboard - additional height of a levee above that which is necessary to protect against a particular level of flooding. Typically, freeboard is about two to three feet.

Levee – a man-made structure designed and constructed to control the flow of water.

Levee crown – the flat surface at the top of a levee that is much narrower than the base.

Levee toe – the edge of the levee where the base meets the natural ground.

Riprap – any form of large rock that is spread along levee embankments to provide additional slope stability and erosion control.



Overtopping: When a Flood Is Too Big

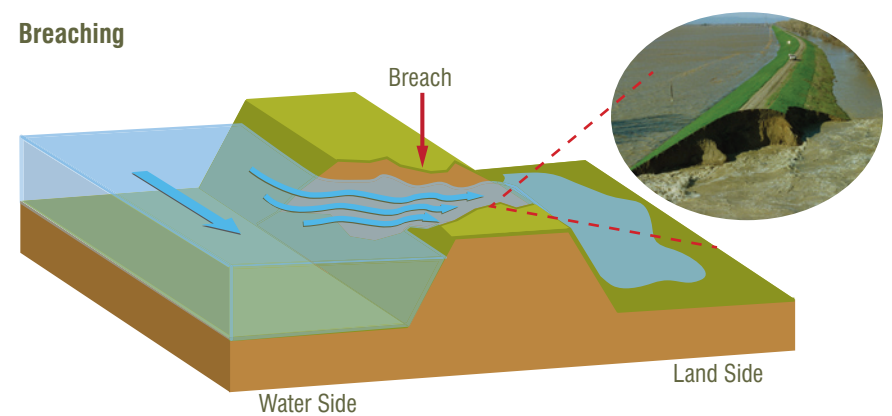
Overtopping occurs when floodwaters exceed the height of a levee and flow over its crown. As the water passes over the top, it may erode the levee, worsening the flooding and potentially causing an opening, or breach, in the levee.

To prevent overtopping, communities sometimes place sandbags on top of levees to increase their height. These and other “flood-fighting” efforts can help prevent a disaster. However, they do not always succeed. Therefore, they should be viewed as last-ditch steps rather than a first line of defense.

Breaching: When a Levee Gives Way

As the name implies, earthen levees are made from earth, or soil. The soil used to construct a levee is compacted to make the levee as strong and stable as possible. To protect against erosion and scouring, levees can be outfitted with everything from grass cover and gravel to harder surfaces like stone (riprap), asphalt, or concrete.

A levee breach occurs when part of a levee gives way, creating an opening through which floodwaters may pass. A breach may occur suddenly or gradually. The most dangerous breaches happen quickly during periods of high water. The resulting torrent can quickly swamp a large area behind the failed levee with little or no warning.



Earthen levees can be damaged in several ways. For instance, strong river currents and waves can erode the surface. Debris and ice carried by floodwaters—and even large objects such as boats or barges—can collide with and gouge the levee. Trees growing on a levee can blow over, leaving a hole where the root wad and soil used to be. Burrowing animals can create holes that enable water to pass through a levee. If severe enough, erosion can lead to a zone of weakness that could cause a levee breach.

In seismically active areas, earthquakes and ground shaking can cause a loss of soil strength, weakening a levee and possibly resulting in failure. Seismic activity can also cause levees to slide or slump, both of which can lead to failure.

Levee Lingo

Breaching - an opening through which floodwaters may pass after part of a levee has given way. A breach may occur suddenly or gradually.

Overtopping - the flow of water over a levee or dam low lying areas where water

naturally collects, often found off the coast, near rivers, and lakes.

Runoff - rain water that cannot be absorbed into the ground because of already saturated soil conditions, steep grades, or impervious

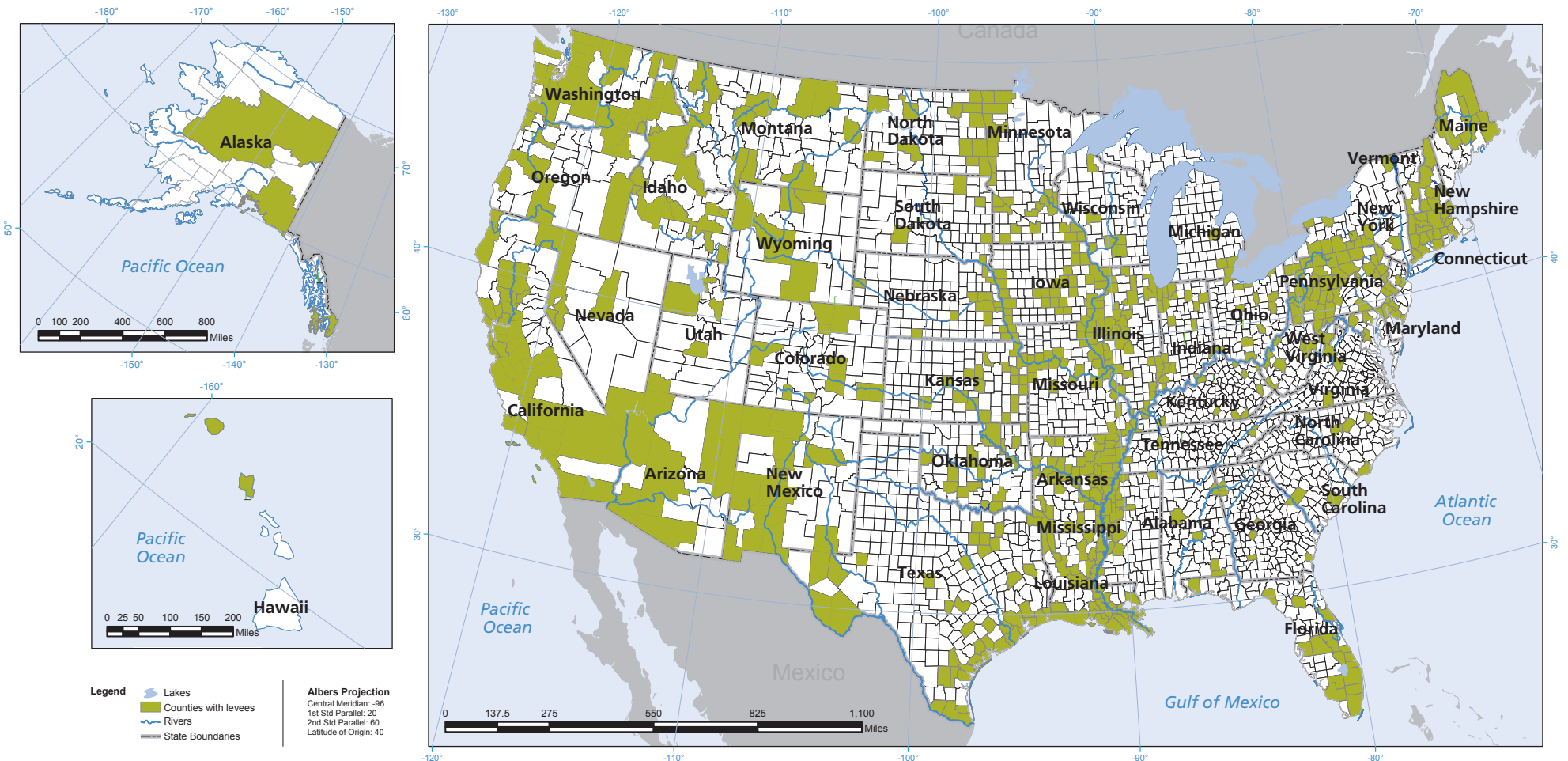
surfaces such as asphalt roads and concrete parking lots.

Storm surge - a build up of water creating a wave much above the normal sea level caused by high winds associated with hurricanes.

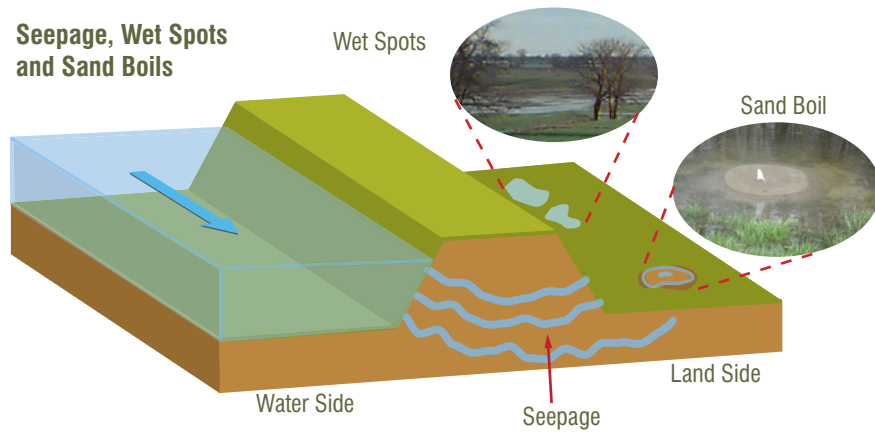
United States Counties where levees are found.



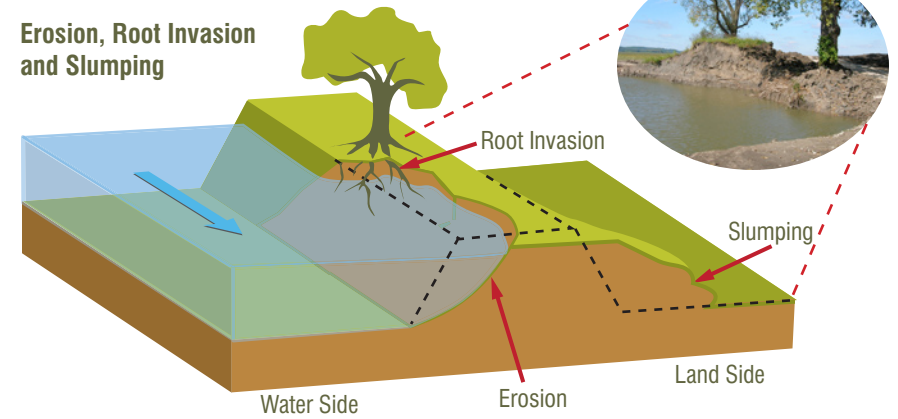
April 1, 1997 — The flag still flies over this flooded East Grand Forks, Minnesota neighborhood.
David Saville/FEMA News



Seepage, Wet Spots and Sand Boils



Erosion, Root Invasion and Slumping



Other Signs of Trouble

Levee inspectors are trained professionals who know what to look for when assessing the condition of a levee. But anyone living near a levee can watch for possible problems. You and your neighbors can play an important role in detecting levee problems and ensuring that they are addressed in a timely manner.

The following is a list of items that levee inspectors look for and why. If you see anything like this that you think needs to be addressed, don't hesitate to contact the levee owner or local government officials. If a levee failure has occurred or appears imminent, call 911 immediately.

- **Unwanted vegetation and debris.** Roots can allow seepage that weakens a levee. Vegetation and debris also makes it harder to spot and address problems.

- **Unauthorized encroachments.** Improper structures and excavations can weaken a levee.
- **Slope stability:** Slides, slumping, and cracks can indicate problems in need of attention.
- **Erosion.** Erosion is a sign of previous damage to a levee. If not addressed before the next flood, erosion can threaten levee stability.
- **Settlement.** Maintaining the design crest elevation is critical to providing the intended level of flood reduction.
- **Damaged Riprap.** Missing or damaged riprap could leave a levee vulnerable to the next flood.
- **Seepage.** The presence of seepage can be a sign of real trouble. The sooner addressed, the better!

Levee Lingo

Encroachment – a structure or object that is too close to another structure, often illegally.

Penetration – an object that has pierced or passed through the levee. This can be done by animals, roots, pipelines, etc.

Piping – a system of tunnels through which water can travel inside the levee. Piping can be created by animal burrows or the gradual flow of water eroding tunnels inside the levee.

Sand boil – occurs when water passing under a levee erupts through the ground surface on the landward side of a levee in the form of a bubbling spring.

Scour – the hole that is left when soil is washed away from the levee due to quick flowing water.

Seepage – the movement of water through or under a levee. When this happens, the soil within or beneath the levee may become unstable and could cause the levee to fail.

Subsidence – the gradual sinking of land. Subsidence often occurs over large areas.

Risks associated with flooding vary.



*April 4, 2006 — This 100% mitigated community in Empire, Louisiana received no damage from Hurricane Katrina because all homes are built above the flood plain.
Marvin Nauman/FEMA*

If you live behind a levee you are responsible for knowing the threat you face from flooding.

How do you assess your level of safety living behind a levee? Unfortunately, there's no simple answer. Many factors must be considered. However, better understanding your risk will give you a better idea of what steps to take to reduce your risk.

Questions to Ask About Your Local Levees

Become an informed citizen! Inquire about the following from the levee owner or local government officials:

- Where are nearby levees located?
- What areas in your community are served by levees?
- What size of flood are the levees designed to withstand?
- What areas are most likely to flood if a levee is overtopped or breached?
- What is the condition of the levees?
- How well have the levees performed during previous floods?
- What plans are in place to ensure that any levee operations proceed smoothly during a flood?
- What is the elevation of your home relative to the levee?
- How would your neighborhood and nearby areas likely be affected under different flood scenarios?
- How much time would you likely have to evacuate in the event of a disaster?

Assessing Your Level of Risk

The flood risk associated with a levee depends on three major components:

- (a) the hazard or probability of a particular size flood in a given location during a specific period of time (typically per year),
- (b) the potential loss of your property, the potential loss of your livelihood, or even the loss of your life or the lives of your loved ones as a result of flooding, and
- (c) your vulnerability to loss, meaning the probability that you will incur losses as a result of a flood of a certain intensity.

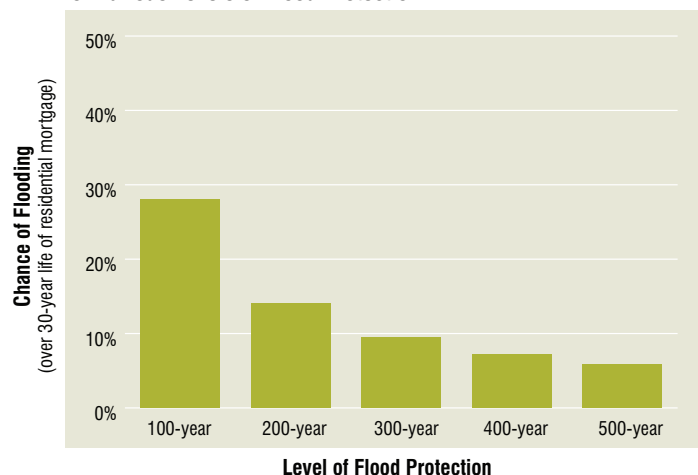
This may seem complicated but it's really common sense. People with the highest risk: (a) live in flood-prone areas, (b) have property that, if flooded, would be expensive or impossible to replace, and (c) don't have adequate warning systems, evacuation plans, or flood insurance. Note that your risk may change over time if these factors change.

Levees and the Probability of Flooding

Overtopping (as defined on page 12) is one of the most common ways that flooding occurs behind a levee. Levees designed for larger floods are less likely to be overtopped than levees designed to protect against smaller floods. A levee designed to resist a 1%-annual-chance (100-year) flood is more likely to be overtopped than one designed to protect against a 0.2%-annual-chance (500-year) flood.

To help put this in perspective, imagine two homeowners living near different levees for 30 years, the span of a typical home mortgage. The first homeowner lives near a levee that is designed to withstand a 1%-annual-chance flood (100-year), while the second lives near a levee that is designed to withstand a 0.5%-annual-chance (200-year) flood.

Flood Exposure Behind Levees for Various Levels of Flood Protection



Based on "Draft Recommendations for a National Levee Safety Program" as prepared by the National Committee on Levee Safety.

Probability modeling reveals that the levee serving the first homeowner has a 26% chance—or roughly a one-in-four likelihood—of being overtopped by a

flood during a 30-year period. Meanwhile, the levee near the second homeowner has a 14% chance of being overtopped in 30 years (see diagram, above).

Breaching (as defined on page 12) is the other most common way that flooding occurs behind a levee. Determining whether a levee might breach is no simple task. The advanced age of many levees across the country casts some doubt on their ability to perform optimally. Other factors that come into play include how well a levee has been maintained over its lifetime and the ability of the levee owner to perform any necessary operations to the levee in the event of flooding.

The potential loss caused by a flood may vary tremendously depending on the size of the flood, levee performance, and a home's location and elevation relative to the levee. Just because water overtops a levee — or just because a levee breaches — does not necessarily mean that damaging flooding will occur. An overtopped or breached levee could allow an inch of water on a nearby street, or it could result in houses under water.



Flooded homes and farmland at Sutter Buttes, California. California Department of Water

Flood Risk Will Change Over Time

Complicating matters, the hazards associated with flooding will change over time. Certain flooding threats are expected to grow in the future. Climate change is expected to increase the intensity of storm events. Larger storms could increase the risk of flooding along waterways. Climate change also could cause sea levels to rise, posing a greater flood risk for coastal areas.

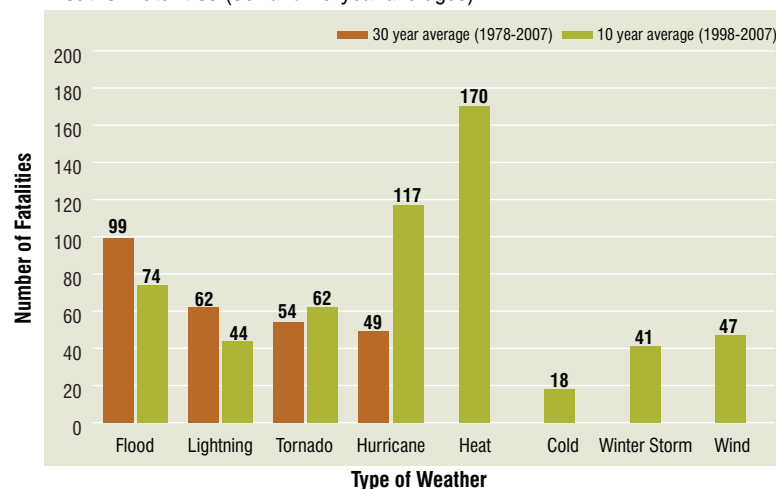
Conditions within a watershed can also change. For example, population may increase, adding to the number of people vulnerable to flooding. As areas become more developed with houses, roads, and parking lots, water runs off the land more quickly rather than being absorbed into the ground. As more runoff enters streams and rivers more quickly, the waterways become more flood-prone.

So how safe are you, really?

The simple answer is no one knows for sure. Risk has not been calculated in most areas. It's important to put the dangers of flooding into perspective. Between 1978 and 2007, flooding has resulted in more fatalities in the United States than any other weather-related cause, save heat (see diagram, below).

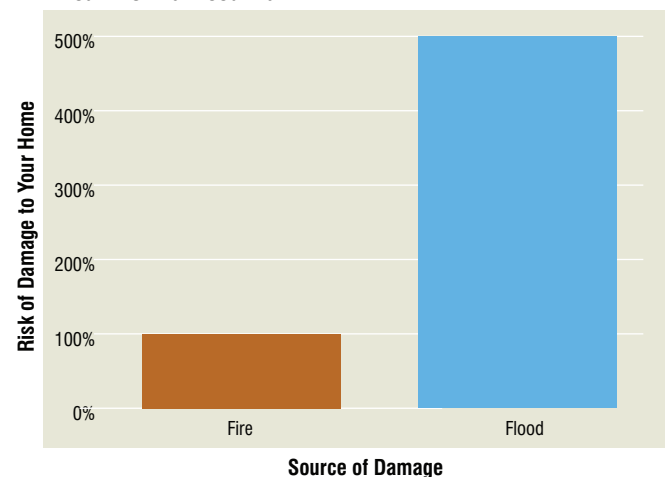
How does the risk of flooding compare to the risk of fire? A home located in a floodplain is five times more likely to suffer damage from flooding than fire over the course of 30 years. Certainly, fire poses a genuine threat. Yet many homeowners do not insure themselves against flood damage unless they are required to do so.

Weather Fatalities (30- and 10-year averages)



Statistics compiled by the Office of Services and the National Climatic Data Center from information contained in "Storm Data," a report comprising data from NWS forecast offices in the 50 states, Puerto Rico, Guam and the Virgin Islands. NOAA

If You Live in a Flood Plain:



Actions now will save lives and property.



Recreational area along the Red River in Grand Forks, North Dakota. See story below.

There are many actions you can take ahead of time. Everyone can help promote levee and flood safety.

How Communities Can Reduce Flood Risk

Flood risk can never be eliminated entirely. But just as you can take steps to reduce the risk of flooding to your home, your community can take actions to reduce its risk, too. In fact, communities should view levees as one part of a comprehensive approach to reducing flood risk, rather than the only line of defense.

Here are some steps communities can take to reduce their flood risk:

- buy properties in flood-prone areas, removing existing structures, and converting the areas into parks or greenways that can accommodate flooding;
- remodel or outfit buildings or raise them on stilts above floodwater levels;
- urge homeowners to purchase flood insurance
- avoid building structures, planting trees, or leaving debris on a levee;
- change zoning ordinances or building codes to limit development in floodplains;
- develop or refine flood warning systems, flood preparedness, and emergency evacuation plans; and
- provide technical and/or financial assistance to property owners to protect against flooding.

Levee Improvement Success Story

In 1997, the Red River experienced massive flooding, overtopping levees and causing more than \$1-billion worth of damage to the cities of Grand Forks, North Dakota, and East Grand Forks, Minnesota. Following the devastation, the two cities partnered with the U.S. Army Corps of Engineers to develop a comprehensive flood protection system that included new, more robust levees and floodwalls.



The \$409-million project also involved constructing pump stations to remove water from behind the levees, installing closures at various points to seal off roadways and other locations during high water, relocating residents and removing structures from the most flood-prone areas, and adding trails and other recreational features.

Even before its completion in 2007, the project succeeded in preventing flood damages in Grand Forks and East Grand Forks despite flooding on

the Red River. However, the system faced its toughest test to date when the Red River flooded severely in spring 2009.

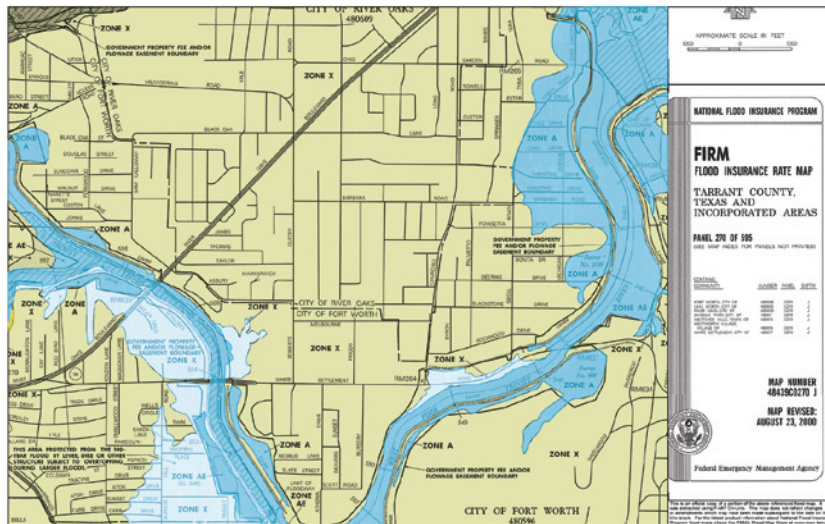
While other cities along the Red River were frantically trying to stave off floodwaters, Grand Forks and East Grand Forks remained calm, as their new levees, floodwalls, and other components of their flood protection system ably performed the task for which they were constructed.

What About Flood Insurance?

Purchasing flood insurance is a key step in preparing for the worst. Flood damage typically is not covered by a homeowner's insurance policy. Federal disaster assistance—when available—usually comes in the form of a loan that must be paid back.

The National Flood Insurance Program (NFIP) offers flood insurance, regardless of flood risk. Anyone living behind a levee should seriously consider purchasing a flood insurance policy. Don't wait until it's too late!

Under federal law, lenders must require borrowers whose property is located within designated high-risk flood areas to obtain flood insurance as a condition of receiving a mortgage that is federally backed, regulated, or insured. To assist lenders and borrowers, FEMA creates Flood Insurance Rate Maps (*see example map, below*) depicting the risk of flood hazards for individual communities.



For more detailed information about the NFIP, see www.floodsmart.gov. For a list of communities participating in the NFIP, see www.fema.gov/fema/csb.shtm.

Although flood insurance is mandatory only in high-risk areas, FEMA strongly recommends flood insurance for properties in areas designated as moderate or low risk as well. This is because flooding can and does occur outside of high-risk areas. In fact, approximately 25% of flood claims come from areas found to be at low or moderate risk of flooding.



September 15, 2007
— A FEMA Mitigation representative (L) gives flood repair and prevention information to a shopper at the Lowes Home Building store in Findlay, Ohio.
John Ficara/FEMA

What You Can do In Advance

If you live in a flood-prone area, or behind a levee, don't delay. Take these steps today:

Prepare for a Flood

- Purchase flood insurance from the National Flood Insurance Program. For more information, see the “What About Insurance?” section, below.
- Store insurance papers, deeds, and other important records in a safe-deposit box or other secure location.

- ❑ Learn which local agency is responsible for notifying residents of flooding, so you'll know where to turn for relevant information in an emergency.
- ❑ Determine whether local agencies have a flood-warning system and an emergency response plan in place. Learn how this information will be broadcast (radio, television, Internet, etc.), so you'll know how to access it.
- ❑ Prepare an emergency kit that includes at least one large flashlight, a battery-powered radio, spare batteries, candles, waterproof matches, and other items you'll likely need in the event of a power outage.
- ❑ Find out where you can get sandbags.

Prepare for an Evacuation

For additional information about what to do during a flood, visit www.fema.gov/hazard/flood/fl_during.shtm.

- ❑ Make a list of other items to take with you in case of an evacuation (for example, clothing, cash and credit cards, prescription medications, eye glasses, mobile phone, etc.). Keep this list in a handy location.
- ❑ Learn where official shelters are located and plan your route to the nearest shelter or other safe area. Consider whether any locations along your planned route might flood. Also consider what to do with pets, as shelters typically do not allow animals.
- ❑ Learn if your area has a predetermined evacuation route that should be used in the event of an emergency.



Prepare Your Home

- ❑ Elevate the furnace, water heater, and electric panel if they are susceptible to flooding.
- ❑ Install "check valves" in sewer traps to prevent floodwater from backing up into drains.
- ❑ Seal basement walls with waterproofing compounds to avoid seepage.
- ❑ Keep family heirlooms and other priceless possessions on an upper level, if possible, or in locations within your home that are least likely to flood.

April 1, 1997 -- Animal rescue teams removed pets left behind during the evacuation of East Grand Forks, Minnesota. David Saville/FEMA



The Truth About Levees



April 10, 2009 — A resident of Valley City, North Dakota moves some of her possessions into a tractor trailer in preparation for possible flooding on the Sheyenne River. Patsy Lynch/FEMA

All rivers, streams, and lakes will eventually flood. The levees built to protect people from flooding are by no means fail-proof. Some levees are in good shape but many are not. People who live behind levees are vulnerable to flooding.

Can the problem be solved? Addressing the problems of outdated levees will not be easy or inexpensive. Systematically upgrading levees will require considerable time, energy, and resources—and sustained leadership to see it through. Rough estimates indicate that repairing and rehabilitating the nation’s levees will likely cost more than \$100 billion.

However, doing nothing ultimately will cost far more than it will cost to fix the problems. Consider that an additional \$2 billion investment in the levees surrounding New Orleans could have reduced the \$200 billion-worth of property damage—not to mention the tragic and undue loss of life—caused by Hurricane Katrina.

As daunting as these figures sound, it’s in society’s best interest to begin making these repairs sooner rather later. Such efforts will save lives and reduce flood damages. The cost to repair levees will only increase over time. Acting now will cost less than acting later.

What to do if you live in a flood prone area.

- Read this booklet, “So, You Live Behind a Levee!” (available at www._____)
- Determine if you live behind a levee, and find out who owns the levee near you, and do your part to promote levee safety.
- Visualize the impact if your levee is overtopped or breached and your neighborhood is flooded.
- Develop an emergency action plan to follow in case of flooding.
- Consider buying flood insurance.
- Take advance precautions to reduce potential flood damage.
- Do your part to promote levee safety.

URGENT! What To Do if Water Is Rising Quickly Behind a Levee?

Stay safe! If flooding appears imminent, evacuate!

This is especially true if a levee looks like it might be overtopped or breached. Surging floodwaters can cause sudden, catastrophic damage with little or no warning.

When in doubt, evacuate!

DO YOU KNOW ...

- what a levee failure would mean for you and your loved ones?
- what to do if flooding occurs?
- what you can do today to reduce your flood risk?



You Could Be at Risk of Flooding

A levee is a man-made structure designed and constructed to control the flow of water. The problem is that no levee can guarantee protection from flooding. There is always the chance that a levee will fail.

