Understanding Flooding

When flooding occurs, one question is always in the forefront: why did it flood? Unfortunately, there is not one simple answer. Four different types of floodplains (valley, major river, shallow, coastal), each with its own characteristics, are illustrated in the first four diagrams below. The ponding diagram below shows the type of flooding caused by intense rainfall where no identifiable floodplain exists.

Some factors that aggravate flooding include:
- Changes to developed and undeveloped land
- Changes to rivers or streams
- Poor channel maintenance

Through wise floodplain management, communities can protect their citizens against much of the devastating financial loss and emotional toll caused by flood disasters. Residents and business owners are encouraged to purchase and maintain flood insurance policies and to consider flood-proofing or taking other protective measures to address flood risks to their own properties.

Types of Flooding

The ground in this type of area is more defined, with creek valleys. Flooding can be very deep and usually extends for a few days.

Vally

The floodplain along major rivers can be large, deep, and swift, and flooding conditions may last a week or more.

Major River

Shallow floodplains affect thousands of residences and businesses. When the channel capacity is exceeded, flooding begins. This flooding usually lasts hours, rather than days.

Shallow

Coastal flooding occurs when storm events coincide with tides, tsunamis, or a hurricane surge flood. High water levels are usually accompanied by waves capable of causing significant structural damage.

Coastal

This type of flooding is not restricted to any one area of the U.S. or to any one area of a community. It can occur almost ANYWHERE. When intense local rainfall exceeds storm sewer or roadside ditch capacity, the water can “pond” in the streets deep enough to flood residences that are not even near a creek or bayou. The water will seek a path to the channel by flowing overland (sheet flow).

Ponding

Levees are designed to protect against a certain level of flooding. However, levees can also be overtopped, or even fail during large floods. No levee can completely eliminate all flood hazards.

Levee

For More Information

- For more information on the NFIP, please read “Answers to Questions About the NFIP,” found on the FEMA website at www.fema.gov/media-library/assets/documents/27223c1d-1404 or may be ordered by calling 1-800-480-2520.
- For more information on flood insurance, including information on the Preferred Risk Policy, please visit www.floodsmart.gov or the “NFIP Publications” page at www.fema.gov/national-flood-insurance-program/national-flood-insurance-program-publications.
- For more information on flood hazard mapping products and processes, including tutorials on map change request procedures, please visit the “Flood Hazard Mapping” page at www.fema.gov/national-flood-insurance-program-flood-hazard-mapping.
- For more information on floodplain management, please visit the “Floodplain Management” page on the FEMA website at www.fema.gov/national-flood-insurance-program.
- There are many resources in the FEMA Resource & Document management system at www.fema.gov/resource-document-library.
- For more information on the Flood Insurance Rate Map for your community, please call the FMIX toll free, at 1-877-FEMA MAP (1-877-336-2627).

If you would like a FEMA Map Specialist to assist you with requesting a change to the Flood Insurance Rate Map for your community, please call the FMIX toll free, at 1-877-FEMA MAP (1-877-336-2627).
WHAT IS THE NATIONAL FLOOD INSURANCE PROGRAM?
Congress created the National Flood Insurance Program (NFIP) in 1968 as an alternative to taxpayer-funded disaster relief for flood survivors. The NFIP enables property owners and renters in participating communities to purchase flood insurance as a financial protection against flood losses. In exchange, States and communities adopt floodplain management regulations designed to reduce flood risks and future flood damage.

WHY MAP FLOODPLAINS?
Mapping floodplains is vital for implementing all floodplain management strategies. It creates broad-based awareness of flood risk; provides the data necessary for floodplain management and land-use regulations, hazard mitigation programs, and rating flood insurance for new construction on an actuarial basis; and supports the decision-making process with respect to the natural values of floodplains.

FREQUENTLY ASKED QUESTIONS
Who can purchase flood insurance?
NFIP flood insurance is available to homeowners, business owners, condominium owners and associations, as well as tenants of eligible buildings located in NFIP participating communities.

Where can I purchase flood insurance?
Any licensed casualty insurance agent in your State can sell you an NFIP policy. Call 1-888-225-5356 for more information.

Why should I purchase flood insurance?
Homeowners or rental insurance does not cover flood damages and floods may occur even in areas designated as moderate or minimal risk. Approximately 25 percent of all flood insurance claims occur in these areas. The Federal Emergency Management Agency (FEMA) encourages you to maintain flood insurance coverage, even if you are not required to do so by the lender. You may be eligible to pay much less for flood insurance coverage if the property is located in an area designated as moderate or minimal risk. For more information, including pricing options, contact your insurance agent.

FLOOD RISK MANAGEMENT
Managing flood risk means understanding the risks and taking steps to reduce those risks. The Federal Emergency Management Agency provides tools, resources, and guidance to help communities manage flood risk.

WHAT ROLE DOES THE FLOOD INSURANCE RATE MAP PLAY IN THE FLOOD INSURANCE PROGRAM?
As the Federal agency responsible for administering the NFIP, FEMA identifies flood hazards, assesses flood risks, and provides appropriate flood hazard and risk information to communities nationwide. This information is provided to communities in the form of maps, known as Flood Insurance Rate Maps (FIRMs).

FIRMs are used estimated 30 million times annually for:
- Enforcing State and community floodplain management regulations.
- Calculating flood insurance premiums.
- Determining whether property owners are required by law to obtain flood insurance as a condition of obtaining loans from federally-backed lending institutions or other federally-based financial assistance.
- They are also used by States and communities for emergency management, land-use and water resource planning, and by Federal agencies implementing Executive Order 12988 for Floodplain Management.

Most importantly, FIRMs are used for determining where flood insurance must be purchased and how much that insurance will cost based on the flood risk. Federally regulated or insured lenders are obligated to require flood insurance to secure loans for all structures located in high-risk areas, as shown on the FIRM.

Through the NFIP, property owners and renters in participating communities are able to insure themselves against flood losses. The NFIP is a public safety program implemented at the local level. A FIRM can help property owners determine how high to elevate the home in order to be protected from the next flood event. FIRMs reflect the results of engineering studies, known as Flood Insurance Studies (FIS), which include examinations of historical flood records, topographic surveys, and other data. In many cases the FIS will establish base flood elevations. The base flood is the flood that has a 1 percent chance of occurrence in any given year. Along rivers, streams, and lakes, these elevations indicate the level at which flooding is expected to occur during the 1 percent-annual-chance flood event. Along the coast, these elevations are the result of the analysis of storm surge, wind direction and speed, wave height, and other factors. FEMA is updating and modernizing existing FIRMs for most of the United States. The components of these modernized maps are shown below.

By employing wise floodplain management, NFIP communities can help protect citizens from future flood disasters. Managing development in floodplains results in construction practices that can reduce future flood losses and high costs associated with flood disasters thereby easing the emotional toll experienced by citizens when their personal property is damaged by flood waters.

WHY DO I CHANGE THE FLOOD MAP?
If the documentation supports a map amendment, FEMA will issue a formal decision in the form of a Letter of Map Amendment (LOMA), removing the SFHA designation from the property. The LOMA can be used to work with a lender to remove the Federal mandatory flood insurance purchase requirement and to work with the flood insurance agent to bring down the premium cost. Lenders, however, may still opt to require flood insurance as a condition of mortgage. Even if the SFHA designation has been removed from a property, flooding can still occur, so maintaining flood insurance is highly recommended. As a result of a LOMA, the property owner may be eligible for a lower-cost policy, referred to as a Preferred Risk Policy (PRP).

FEMA has a similar process for properties that have been elevated by the placement of earthen fill. The document issued by FEMA for these cases is called a Letter of Map Revision based on Fill (LOMFR).

In making amendments and revisions, FEMA adheres to the same engineering standards applied in the preparation of the effective FIRMs and related products.

HOW DO I OBTAIN A FLOOD MAP?
FEMA exercises great care to ensure that the analytical methods used for its engineering studies are scientifically and technically correct. FEMA also uses the best available technologies to ensure that the maps depict accurate flood risks.

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Sample of Digital Flood Hazard Data

Property owners interested in having FEMA examine the SFHA designation for their property can submit technical data and supporting documentation to FEMA in support of a map change, also known as a map amendment.

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