



US Army Corps of Engineers New Mexico Silver Jackets

Floodplains

Please add your name and email address to the chat to receive a CEC Certificate for this webinar.



USACE Silver Jackets

- USACE Silver Jackets is a component of the National Flood Risk Management Program (NFRMP)
- State (NMDHSEM) Led Teams with regular meetings
- Interagency Program to Reduce Flood Risk throughout New Mexico
- Interagency Projects
 - Competitive Project Proposals
 - 12 to 18-month Projects

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Planner

Silver Jackets Coordinator

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MID-REGION
Council of Governments



New Mexico Department of
Homeland Security and Emergency Management

New Mexico Post-Fire Flood Risk Education

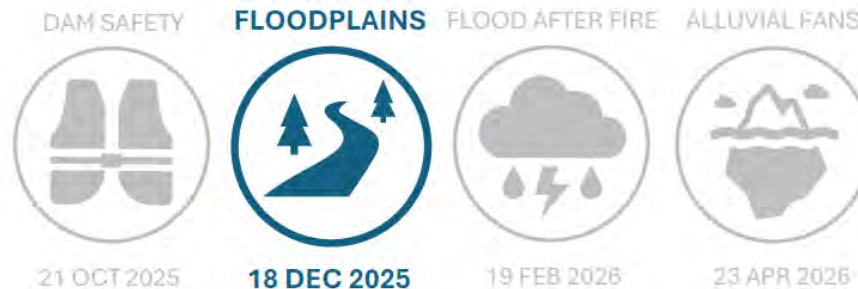
Fill gaps for post-fire technical support to understand flood risk post-fire, possible mitigation strategies, and resources and programs to provide long-term fire recovery support. Topics will inform and address risks associated with:

- **dam safety**
- **floodplains**
- **flood after fire**
- **alluvial fans**

The New Mexico Post-Fire Flood Risk Education project will empower communities in New Mexico to be better prepared for flood events after wildfire season.

New Mexico Flood Risk Webinar Series

Please join us for a webinar series about different types of **Flood Risks** across the State of New Mexico.



21 OCT 2025

18 DEC 2025

19 FEB 2026

23 APR 2026

9:00-10:00AM

Continuing Education Credits (CECs) will be offered through the US Army Corps of Engineers upon completion of individual sessions.

Sessions are **60** minutes, held virtually, with **30** minutes of recorded presentation and **30** minutes of question and discussion. Meeting instructions will be provided with individual series invites.

Interagency partners will present on **dam safety, floodplains, flood after fire, and alluvial fan risks.**

DECEMBER PRESENTER: SHAWN PENMAN
COOPERATING TECHNICAL PARTNER (CTP)
COORDINATOR
EARTH DATA ANALYSIS CENTER

NM EARTH DATA ANALYSIS CENTER



New Mexico Flood Risk Webinar Series

Floodplains

Shawn L. Penman, PHD, CFM, GISP



EARTH DATA
ANALYSIS CENTER



***DO YOU KNOW WHAT
A FLOODPLAIN IS?***

Flood Hazard Versus Flood Risk



Flood Hazard

- Refers to flood conditions (water depth, velocity, wind, etc.)
- With the potential to cause
 - Injuries and fatalities
 - Various types of damage
 - Physical
 - Economic



Flood Risk

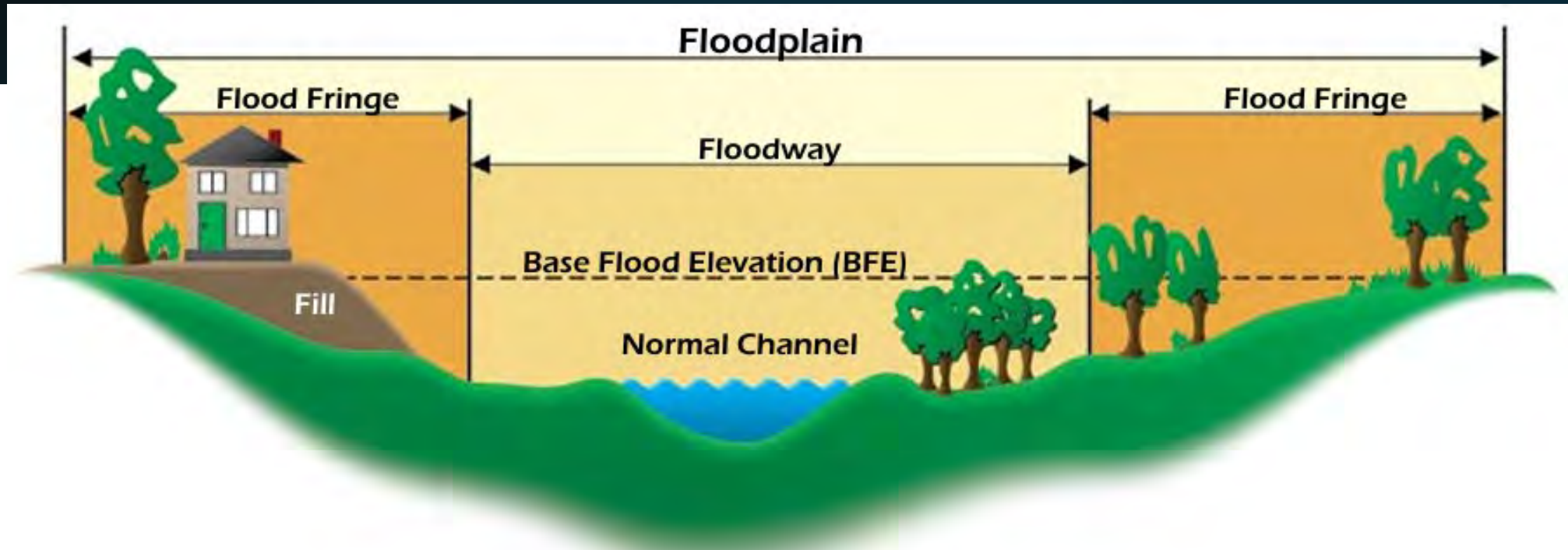
- Potential for flood damage due to flooding based on
 - Likelihood of flooding
 - Severity of flooding
 - Types of assets at risk

Floodplain



Floodplains are a **natural** part of the environment. The floodplain is the area of land along a waterway (stream, creek, river, etc.) that is susceptible to inundation by floodwaters. The floodplain plays an important role in conveying flood waters and also has an ecological role such as improving water quality and recharging groundwater, providing aquatic species and wildlife habitat, creating recreational areas, and producing cultural value.

Floodplain Cont'd



The **regulatory** floodplain delineates the predicted flood height and inundation boundaries of a flood that has a 1% chance of occurring in any given year. The regulatory floodplain is what the Federal Emergency Management Agency (FEMA) and local authorities use to regulate public and private development and calculate flood insurance.

A floodplain, as defined by FEMA, is any land area susceptible to being inundated by floodwaters from any source, including coastal areas impacted by storm surge, land along a river or bayou that is flooded when that waterway rises out of its banks, or low-lying land that fills with water when it rains.

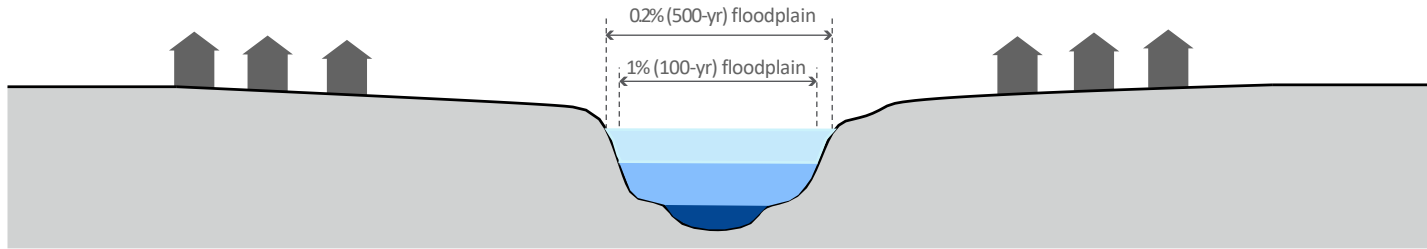
Terms to Know

- **Base Flood** - The flood having a one percent chance of being equaled or exceeded in any given year (often called the 100-year flood or one percent chance flood).
- **BE (Base Flood Elevation)** - The elevation of the crest of the base flood.
- **Floodplain Manager** - Individual who administers and enforces a community's floodplain ordinance. Depending on the local ordinance, this person could be a city engineer, building inspector, mayor, clerk, zoning administrator, or other official.
- **Flood Insurance Rate Map (FIRM)** - The map provided to communities in the regular phase of the NFIP. It delineates a Special Flood Hazard Area or floodplain in which regulations apply. FIRMs often include base flood elevations and floodways.

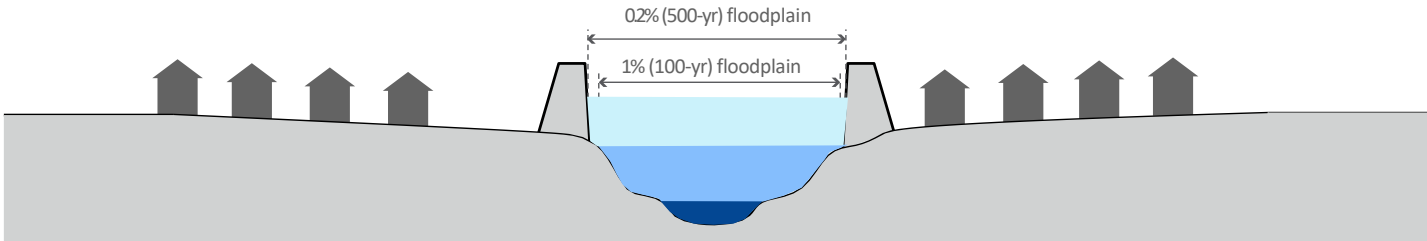
Terms to Know

- **Floodway** - The channel of a river and the portion of the floodplain that carries most of the floodwaters.
- **LOMA** - Letter of Map Amendment that FEMA issues for a structure or parcel of land that was inadvertently included in the floodplain, thereby waiving the Federal mandatory flood insurance purchase requirements.
- **LOMR** - Letter of Map Revision. FEMA issues a LOMR when changes to the effective floodplain map are made, such as floodway/floodplain boundaries, base flood elevations, or authorized fill.
- **NFIP** - National Flood Insurance Program
- **SFHA** - Special Flood Hazard Area. The term used by the National Flood Insurance Program for the floodplain identified on the flood insurance maps to represent the area that would be inundated by the Base Flood.

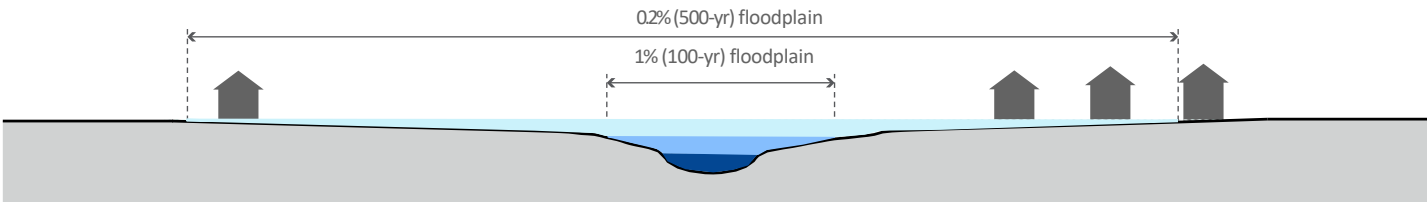
In some landscapes, floodplains are clearly defined by natural features. In a river valley, for example, there is often a flat area around a river that floods frequently, and land above steep banks on either side that the river never reaches. Here, the 100-year and 500-year floodplains are quite similar in their extent. Here, the designated floodplain is also a natural floodplain that is visible in the topography.



In some landscapes, floodplains are clearly defined by man-made infrastructure. Levees hold floodwaters back and create a clear boundary: land between the river and the levees is likely to flood, and land beyond the levees is not. Example - Albuquerque



In some places, floodplains are not clearly outlined by elevation differences. In a flat landscape, water spreads broadly once it rises out of the banks of the river. The FEMA modeled floodplains are more uncertain in this type of topography. A small rise in rainfall volume can lead to a large increase in the area flooded. There is no geographic feature that protects a house on the far side of the designated 100-year floodplain from flooding.

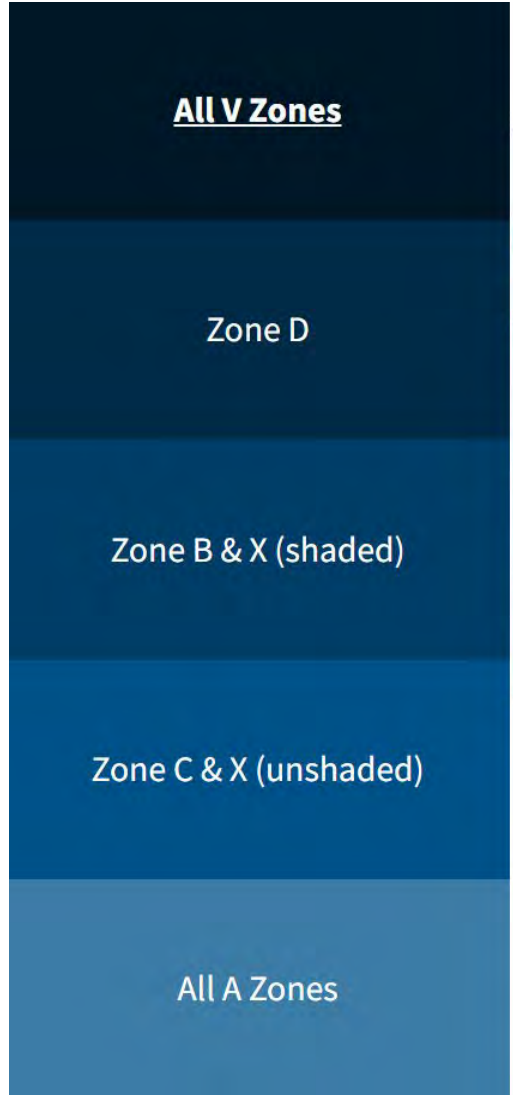


In some areas, undersized stormwater systems contribute to localized flooding in areas that are not near a river or arroyo. In these areas, flooding can occur no matter how low or how high the water may be in the nearest waterway. Since these areas are not near a waterway, they may not be included in FEMA floodplain mapping.

Flood Frequency

Flood frequency (years)	Chance of flooding in any given year	Percent chance of flooding during 30-year mortgage
10	10 out of 100 (10%)	96%
50	2 out of 100 (2%)	46%
100	1 out of 100 (1%)	26%
500	0.2 out of 100 (0.2%)	6%

What are Flood Zones?



High Risk Coastal

Zones V and VE are high-risk coastal areas with an additional hazard from storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. In communities that participate in the NFIP, flood insurance is mandatory for government-backed mortgages.

[Learn more about Zone V](#)

What are Flood Zones?



Undetermined Risk

Zone D includes areas with possible flood hazards, but because no flood hazard analysis has been conducted to determine probability, the flood risk in these areas is undetermined. Insurance rates are based on the uncertainty of the flood risk. Flood insurance is recommended.

[Learn more about Zone D](#)

What are Flood Zones?

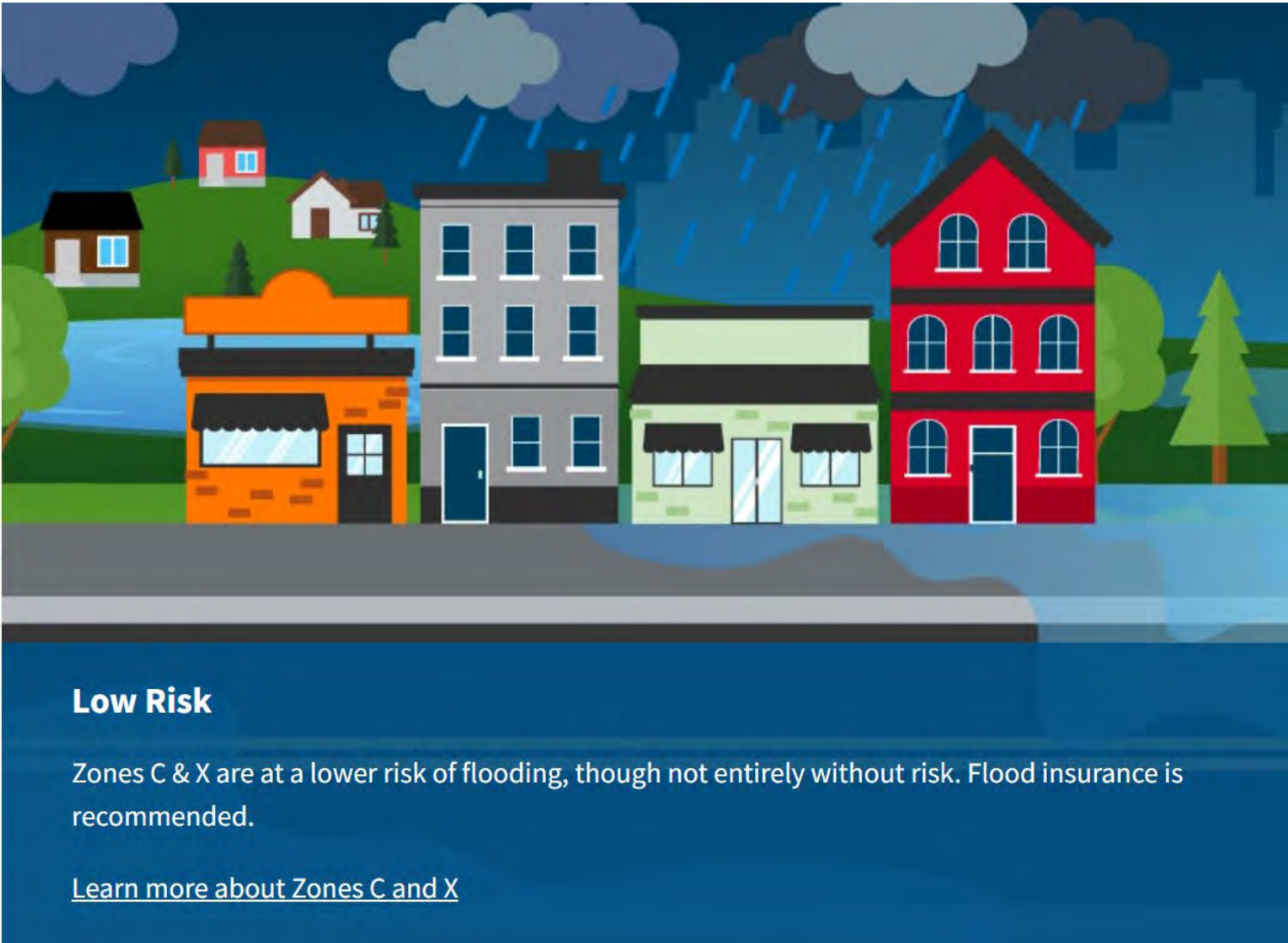
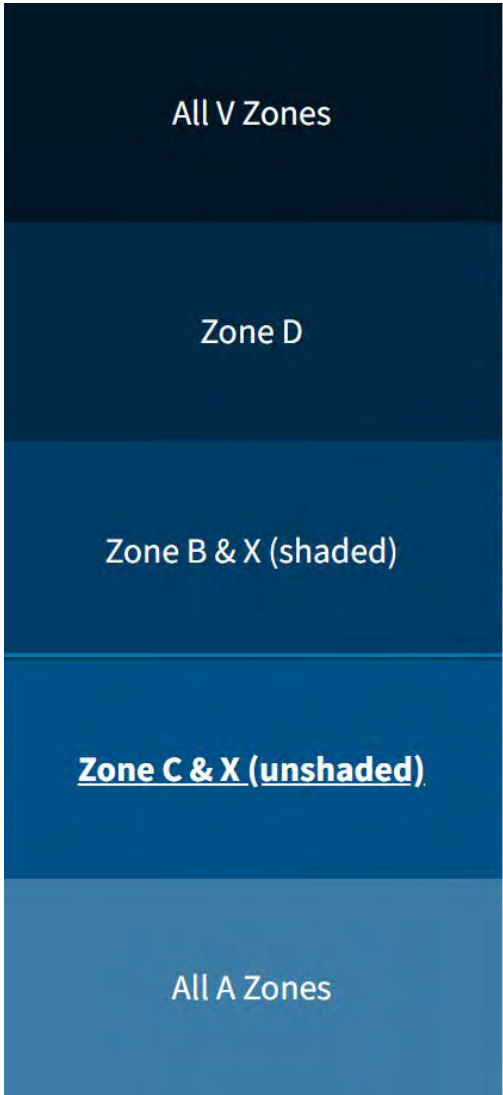


Moderate Risk

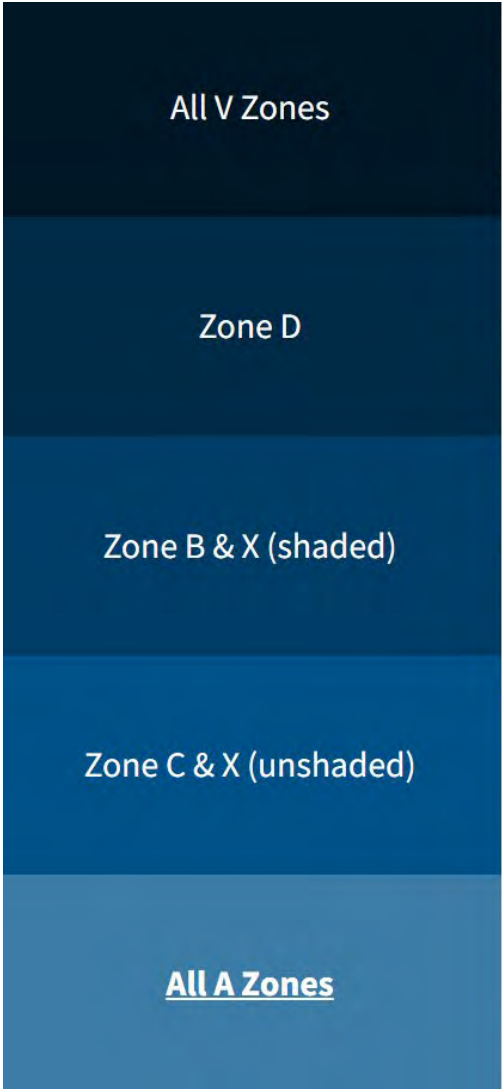
B & X Zones represent areas with a moderate risk of flooding. These areas may have reduced their risk with mitigation efforts such as levees, or experience shallow flooding, with water usually less than 1 foot deep or covering less than 1 square mile. Flood insurance is recommended.

[Learn more about Zones B and X](#)

What are Flood Zones?



What are Flood Zones?



High Risk

Zones A, AE, AH, AO, AR and A99 are high-risk flood areas, due to proximity to a pond, stream, river or protective barrier under construction. In communities that participate in the NFIP, flood insurance is mandatory if mortgages are government-backed.

[Learn more about all A Zones](#)



Regulation

Who Regulates Floodplains?

Flood in Gallup, N.M. July 29, 1910. Simeon Schwemberger Photograph Albums Collection; Center for Southwest Research, University Libraries, University of New Mexico. ZIM CSWR Pict Colls PICT 2016-003.

Regulation

- National Flood Insurance Program (NFIP) administered by FEMA
- Chapter 44 of the Code of Federal Regulations (44 CFR)
 - Parts 59 & 60

Part 59 — General Provisions

Subpart A — General

- 59.1 Definitions
- 59.2 Description of program
- 59.3 Emergency program
- 59.4 References

Subpart B — Eligibility Requirements

- 59.21 Purpose of subpart
- 59.22 Prerequisites for the sale of flood insurance
- 59.23 Priorities for the sale of flood insurance under the regular program
- 59.24 Suspension of community eligibility

Part 60 — Criteria for Land Management and Use

Subpart A — Requirements for Flood Plain Management Regulations

- 60.1 Purpose of subpart
- 60.2 Minimum compliance with flood plain management criteria
- 60.3 Flood plain management criteria for floodprone areas
 - (a) When there is no floodplain map
 - (b) When there is a map, but not flood elevations
 - (c) When there are flood elevations
 - (d) When there are final BFE's/ floodway mapped
 - (e) When there are final BFE's/ map with coastal high hazard areas
 - (f) When there are final BFE's/identified flood protection restoration areas
- 60.4 Flood plain management criteria for mudslide-prone areas
- 60.5 Flood plain management criteria for erosion-prone areas
- 60.6 Variances and exceptions
- 60.7 Revisions of criteria for flood plain management regulations
- 60.8 Definitions

Subpart B — Requirements for State Flood Plain Management Regulations

Subpart C — Additional Considerations in Managing Flood-Prone, Mudslide (i.e., Mudflow)-Prone, and Flood-Related Erosion-Prone Areas

New Mexico Statutes Relating to Floodplains

NM Stat § 3-18-7 (2024) Flood & Mudslide Section

Local Certified Floodplain Manager

- Section C. A county or municipality that enacts a flood plain ordinance shall designate a person, certified pursuant to the state-certified flood plain manager program, as the flood plain manager to administer the flood plain ordinance.

NM Stat § 13-5-3.1 Public Buildings Section

Building in floodplain with State Funding/Ownership

- Section C. Development that is owned or funded, in whole or in part, by the state shall obtain:
 - (1) floodplain review by a certified floodplain management professional prior to the start of development;



Silver City, Flooding Downtown, Image #148, Silver City Museum, 1915.

New Mexico Statutes Relating to Floodplains

Local Floodplain Administrator

- Enforces Ordinances
- Other Regulatory Standards

RESOLUTION R-04-XXX

AGREEMENT TO ENFORCE A FLOODPLAIN ORDINANCE

WHEREAS, certain areas of _____ (City or County) _____, are subject to periodic flooding, causing serious damages to properties within these areas; and

WHEREAS, it is the intent of this (Commission/Council) to require the recognition and evaluation of flood hazards in all official actions relating to land use in areas having these hazards; and

WHEREAS, this (Commission/Council) has the legal authority to adopt land use and control measures to reduce future flood losses pursuant to Section 3-18-7 NMSA, 1978.

NOW, THEREFORE, BE IT RESOLVED, that the (County Commissioners or City Council) hereby:

1. Assures the Federal Emergency Management Agency (FEMA) that it will enact as necessary, and maintain in force, in those areas having flood hazards, adequate land use and control measures with effective enforcement provisions consistent with the criteria set forth in Section 60 of the National Flood Insurance Program (NFIP) Regulations; and

2. Vests _____ (department) _____ with the responsibility, authority and means to:

(a) Assist the (NFIP) Administrator, at his/her request, in the delineation of the limits of the area having special flood hazards.

(b) Provide such information concerning present uses and occupancy of the floodplain, mudslide (i.e., mudflow) or flood-related erosion areas as the Administrator may request.

Flood Damage



Flooding after heavy rains, Clovis, New Mexico, New Mexico Palace of the Governors Photo Archives, New Mexico History Museum, Santa Fe, New Mexico, **Negative Number** HP.2010.40.10, 1908.

FEMA estimates that just a single inch of floodwater in a home causes \$25,000 in damages.

Insurance


An official website of the United States government [Here's how you know](#)

FEMA NATIONAL FLOOD INSURANCE PROGRAM®

National Flood Insurance Program (NFIP)

Before You Start

Since 1996, 99% of counties in the U.S. have been affected by flooding, and most homeowners' policies do not protect against flooding. Flood insurance protects the home and life you've built.



Who should complete this?

- Homeowners.
- Renters.

[Learn more about eligible buildings](#)

10 minutes or less to get a quote

- Most people complete the quote process in 10 minutes or less.
- The process must be completed in a single session.
- After completing the quote, get connected with an agency to purchase.

You'll need ...

- The address of the property you want to quote.
- Basic information about your home.

I agree and consent to the [Terms, Conditions, and Disclaimers](#) for use of the NFIP Quoting Tool.

[Exit](#) [Start](#)

Frequently Asked Questions

An official website of the United States government [Here's how you know](#)

FEMA NATIONAL FLOOD INSURANCE PROGRAM®

Property Building Coverage **Deductible** Quote Details

We've generated a few pricing options based on the coverage amounts you selected:

\$250,000 Building Coverage

\$100,000 Contents Coverage

[View Coverage Details](#)

Choose Deductible

Select your annual amount and deductible

All annual amount and deductible combinations have the same National Flood Insurance Program (NFIP) coverage.

Total Annual Amount	Total Annual Amount	Total Annual Amount	Total Annual Amount
\$464	\$463	\$452	\$441
Deductible	Deductible	Deductible	Deductible
Building \$1,250 Contents \$1,000	Building \$2,000 Contents \$2,000	Building \$5,000 Contents \$5,000	Building \$10,000 Contents \$10,000
Get Quote Details	Get Quote Details	Get Quote Details	Get Quote Details

[View Additional Options](#)

<https://www.floodsmart.gov/policy-quote/>

NFIP Flood Insurance

Understanding Mudflow and the NFIP

The National Flood Insurance Program (NFIP) aims to educate the public about mudflow, including what it is, when it can occur and whether it's covered by a flood insurance policy.

Defining Mudflow

Mudflow falls under the definition of a flood in the NFIP's Standard Flood Insurance Policy (SFIP). The SFIP defines a flood as:

1. "A general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties (one of which is your property) from:
 - a. Overflow of inland or tidal waters;
 - b. Unusual and rapid accumulation or runoff of surface waters from any source;
 - c. Mudflow.*
2. Collapse or subsidence of land along the shore of a lake or similar body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels that result in a flood as defined above."

*Mudflow is defined as, "A river of liquid and flowing mud on the surface of normally dry land areas, as when earth is carried by a current of water. Other earth movements, such as landslide, slope failure, or a saturated soil mass moving by liquidity down a slope, are not mudflows."

Mudflow Conditions

Mudflows can develop in areas where upland or upstream environment features exist and water containing mud can flow down slopes and through channels. They are likely in the wake of wildfires that destroy the vegetation needed to support and strengthen hillsides or, more often, after periods of prolonged drought.

In both instances, the soil is loose and unable to absorb water. Heavy precipitation (such as rainfall or snowmelt) that might not be a problem under normal conditions can trigger fast-moving water that picks up earth, rock and other debris. These mudflows often happen with little-to-no warning and can travel several miles from their source, leaving nearby communities and rural homesteads vulnerable to devastation.

Are Mudflows Covered by NFIP Policies?

Yes, the NFIP can protect policyholders from the financial hardships mudflows can bring. As mudflow is a type of flood event the SFIP insures against, policyholders can start a claim to repair or replace covered property damaged by mudflow.

Floodplain Data

- Map Service Center
- NFHL
- BLE Viewer



S.G. Hanna store and Post Office after flood, San Marcial, New Mexico, New Mexico Palace of the Governors Photo Archives, New Mexico History Museum, Santa Fe, New Mexico, **Negative Number** 201318, 1929.



Navigation

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- Contact MSC Help

FEMA Flood Map Service Center: Welcome!

Looking for a Flood Map?

Enter an address, a place, or longitude/latitude coordinates:

Looking for more than just a current flood map?

Visit [Search All Products](#) to access the full range of flood risk products for your community.

About Flood Map Service Center

The FEMA Flood Map Service Center (MSC) is the official public source for flood hazard information produced in support of the National Flood Insurance Program (NFIP). Use the MSC to find your official flood map, access a range of other flood hazard products, and take advantage of tools for better understanding flood risk.

FEMA flood maps are continually updated through a variety of processes. Effective information that you download or print from this site may change or become superseded by new maps over time. For additional information, please see the [Flood Hazard Mapping Updates Overview Fact Sheet](#)

Announcements

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 Official website of the Department of Homeland Security

FEMA Flood Map Service Center (MSC)

[HTTPS://MSC.FEMA.GOV/PORTAL/HOME](https://MSC.FEMA.GOV/PORTAL/HOME)

Navigation

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Enter an address, place, or coordinates: ?

hobb, nm

Search



Whether you are in a high risk zone or not, you may need [flood insurance](#) because most homeowners insurance doesn't cover flood damage. If you live in an area with low or moderate flood risk, you are 5 times more likely to experience flood than a fire in your home over the next 30 years. For many, a National Flood Insurance Program's flood insurance policy could cost less than \$400 per year. Call your insurance agent today and protect what you've built.

Learn more about [steps you can take](#) to reduce flood risk damage.

Search Results—Products for LEA COUNTY

Show ALL Products »

The flood map for the selected area is number **35025C1335D**, effective on **12/16/2008**

DYNAMIC MAP



MAP IMAGE



Changes to this FIRM ?

- Revisions (1)
- Amendments (12)
- Revalidations (1)

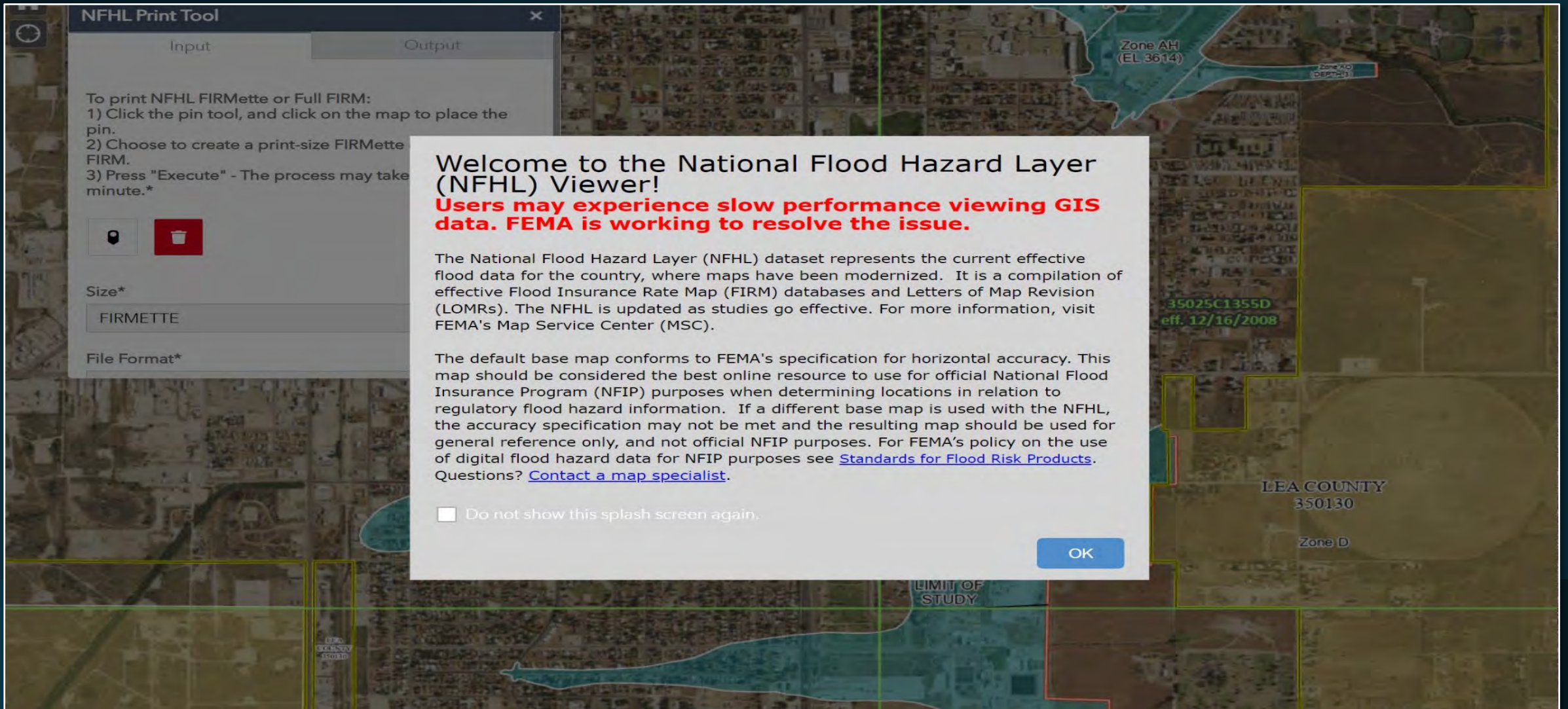
You can choose a new flood map or move the location pin by selecting a different location on the locator map below or by entering a new location in the search field above. It may take a minute or more during peak hours to generate a dynamic FIRMette.

Go To NFHL Viewer »



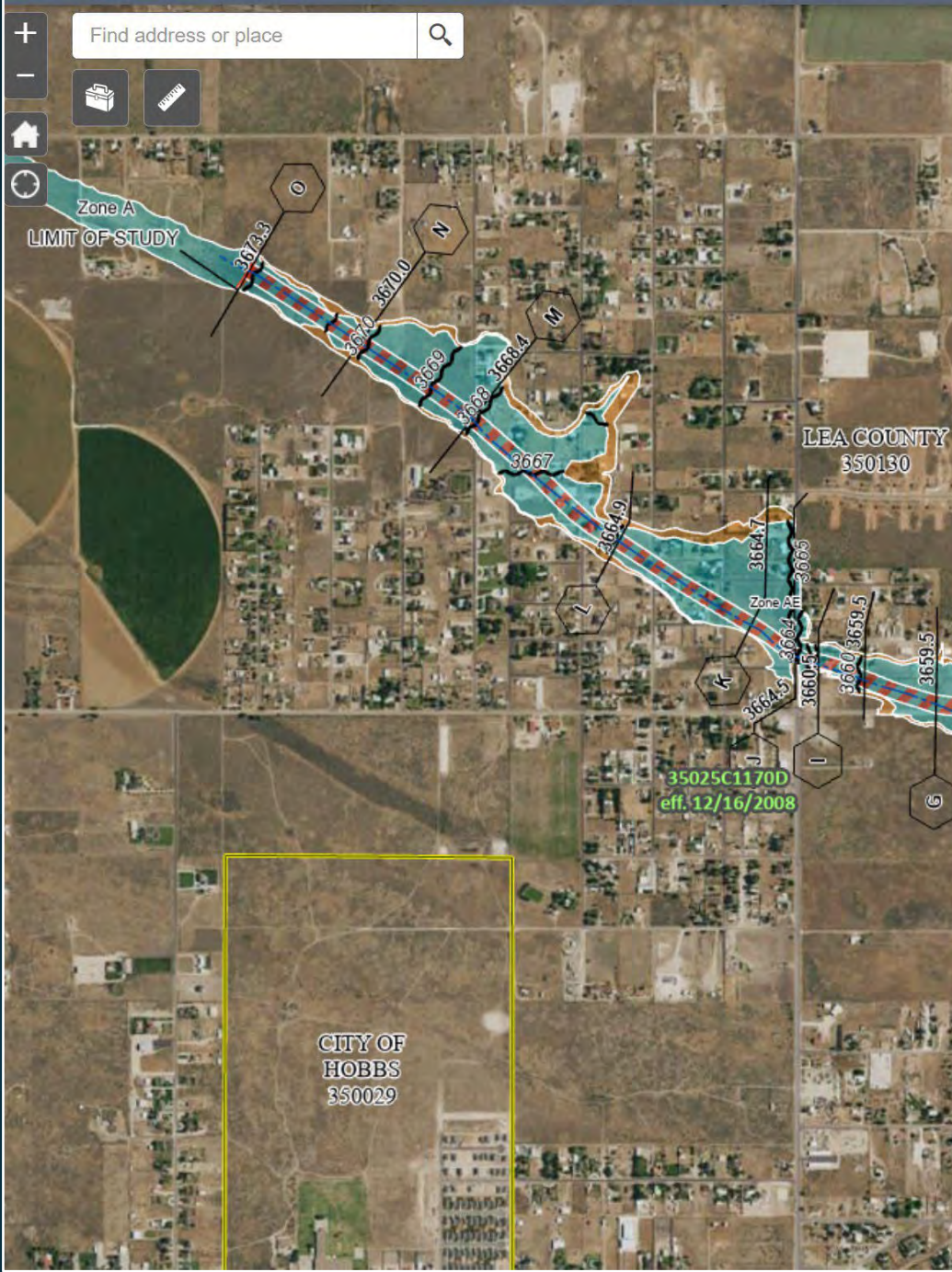
<p>PIN</p> <ul style="list-style-type: none"> Approximate location based on user input and does not represent an authoritative property location <p>MAP PANELS</p> <ul style="list-style-type: none"> Selected Floodmap Boundary Digital Data Available No Digital Data Available Unmapped <p>OTHER AREAS</p> <ul style="list-style-type: none"> Area of Minimal Flood Hazard Zone X Effective LOMRs Area of Undetermined Flood Hazard Zone D Otherwise Protected Area Coastal Barrier Resource System Area 	<p>SPECIAL FLOOD HAZARD AREAS</p> <ul style="list-style-type: none"> Without Base Flood Elevation (BFE) Zone A, B, X, V, VE With BFE or Depth Regulatory Floodway Zone AE, AO, AH, VE, VE1 <p>OTHER AREAS OF FLOOD HAZARD</p> <ul style="list-style-type: none"> 0.2% Annual Chance Flood Hazard, Areas of 1% Annual Chance Flood with average depth less than one foot or with drainage areas of less than one square mile Zone X Future Conditions 1% Annual Chance Flood Hazard Zone X Area with Reduced Flood Risk due to Levee. See Notes. Zone D Area with Flood Risk due to Levee Zone D 	<p>OTHER FEATURES</p> <ul style="list-style-type: none"> Cross Sections with 1% Annual Chance Water Surface Elevation Coastal Transect Base Flood Elevation Line (BFE) Limit of Study Jurisdiction Boundary Coastal Transect Base-line Profile Baseline Hydrographic Feature <p>GENERAL STRUCTURES</p> <ul style="list-style-type: none"> Channel, Culvert, or Storm Sewer Levee, Dike, or Floodwall
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Share This Page.



NFHL Viewer

National Flood Hazard Layer Online



Legend

- Effective FIRM Panels**
 - GeolIndex
 - No Digital Data Available
 - Digital Data Available
 - Unmapped
- NFHL**
 - LOMRs
 - Effective
 - Political Jurisdictions
 -
 - Profile Baselines
 -
 - Levees
 -
 - Coastal Transects
 -
 - Transect Baselines
 -
 - Limit of Moderate Wave Action
 -
 - Flood Hazard Boundaries
 - Limit Lines
 - SFHA / Flood Zone Boundary
 - Flowage Easement Boundary
 - Flood Hazard Zones
 - 1% Annual Chance Flood Hazard
 - Regulatory Floodway
 - Special Floodway
 - Area of Undetermined Flood Hazard
 - 0.2% Annual Chance Flood Hazard
 - Future Conditions 1% Annual Chance Flood Hazard
 - Area with Reduced Risk Due to Levee
 - Area with Risk Due to Levee
 - Primary Frontal Dunes
 -

NFHL Viewer

Welcome to the

Estimated Base Flood Elevation Viewer

Base Level Engineering assessments are produced using high resolution ground data to create technically credible flood hazard information that may be used to expand and modernize FEMA's current flood hazard inventory.



High Flood Risk

 This location is in a 1% (100 year) flood zone.

[View Report](#)

[Zoom](#) [Close](#)

Property Look Up

Where data are available, produce a property-specific report with estimated base flood information.



What's My Flood Risk?



View Base Level Engineering Data

Access all available Base Level Engineering data without GIS software.



I Want to Explore

File Name	Size	
12030106_Models.zip	383.9 MB	Download
12030106_Depth01.zip	82.8 MB	Download
12030106_Depth002.zip	91.3 MB	Download
12030106_Elev01.zip	19.5 MB	Download
12030106_Elev002.zip	20.1 MB	Download
12030106_VectorData.zip	263.7 MB	Download

Download Datasets & Models

Download the Base Level Engineering data presented in the viewer.



I Want to Download

Estimated Base Flood Elevation Viewer

Base Level Engineering Data Viewing and Download

BLE Datasets



Floodplains

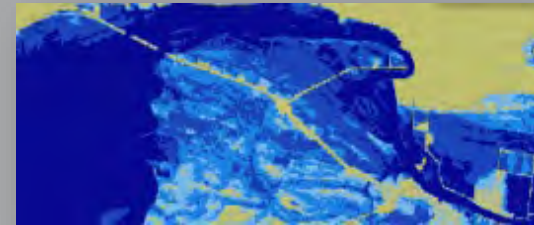
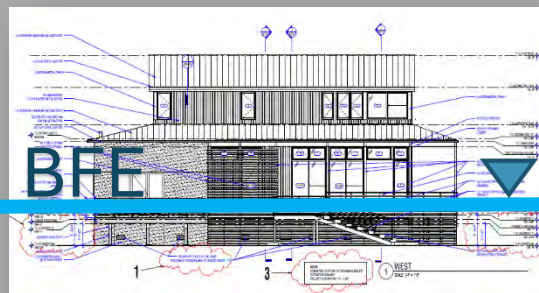
1-Dimensional
Elevations provided at XS

Good for:
In/out determinations
Zoning updates
Neighborhood/facilities
planning



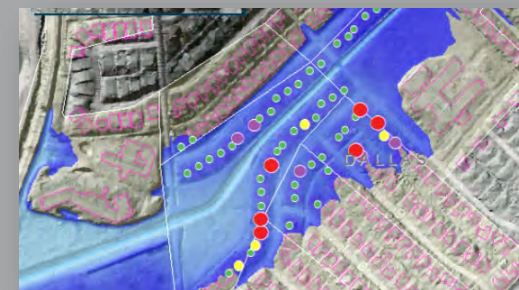
Water Surface Grids

- 1-Dimensional
- Elevations provided for each grid cell
- Good for:
 - BFE Determinations



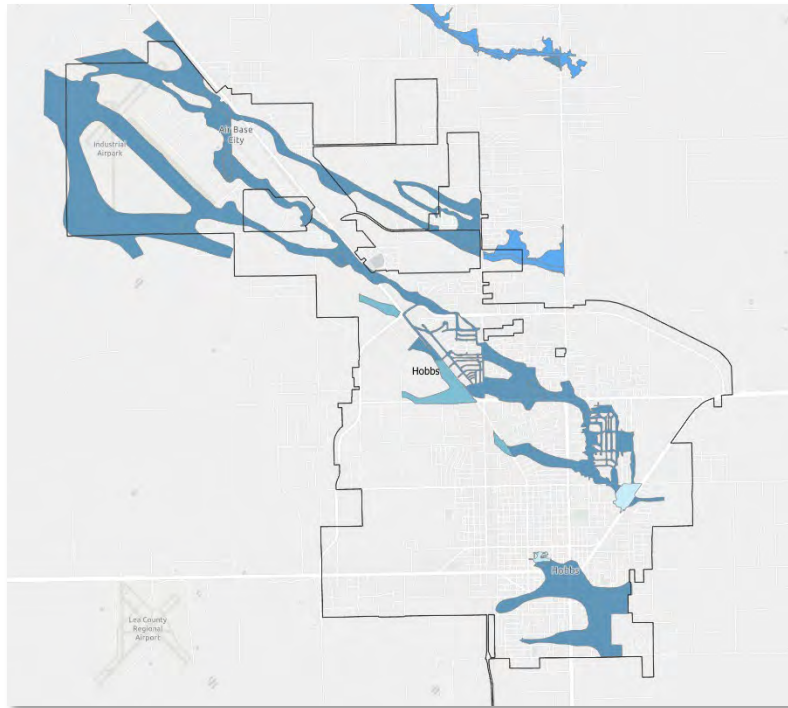
Flood Depth Grids

- ▶ 2-Dimensional
- ▶ Depths provided for each grid cell
- ▶ Good for:
 - Review of Development Proposals
 - Risk Assessments

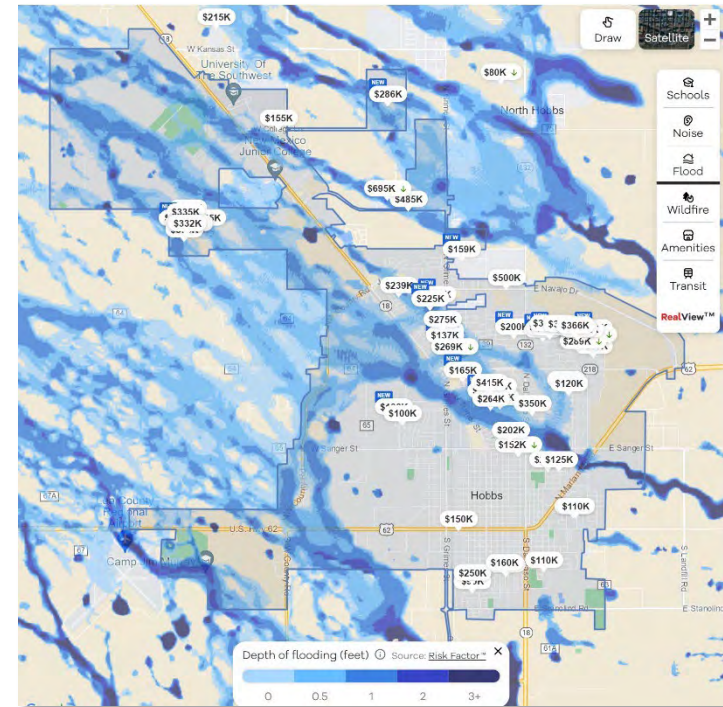


Other Flood Information

FEMA NFHL



Realtor.com (Risk Factor)



Realtor.com has non-regulatory hazard information including flood, wildfire, heat and wind.

Resources



New Mexico Centennial Project. August 13 flooding in front of Oxford Hall, Cimarron, New Mexico, 1909. Courtesy of the Palace of the Governors Photo Archives (NMHM/DCA, Negative No. 146899.

- Heath Dobrovolny, State Hazard Mitigation Officer and State Floodplain Coordinator, heath.dobrovolny@dhsem.nm.gov, 505-919-8955
- Local Floodplain Administrator for your County or Municipality
- New Mexico Floodplain Managers Association – NMFMA.org
- FEMA.gov

Questions

Shawn L. Penman, PhD, CFM, GISP
Cooperating Technical Partner Coordinator
spenman@edac.unm.edu

In August 1935, floodwaters up to 4 feet deep rushed through Las Cruces. An area north of Picacho Avenue suffered some of the worst damage. New Mexico State University Library Archives.



New Mexico Flood Risk Webinar Series

Floodplains



EARTH DATA
ANALYSIS CENTER

Please add your name and email address to the chat to receive a CEC Certificate for this webinar.