

Floodplain Mapping Update : City of Three Forks



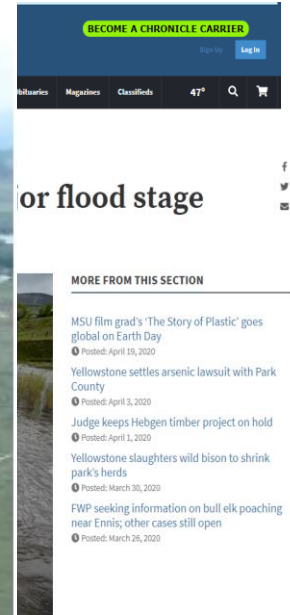
Floodplain Mapping Update:
City of Three Forks Open House

December 2, 2020



FEMA

Identifying Risk Through Mapping



Identifying Risk Through Mapping

Floodplain Maps Flood Insurance Rate Maps (FIRMs)

Used for various purposes

- Local floodplain regulations
- Mortgage companies
- Flood insurance premiums
- Local emergency planning

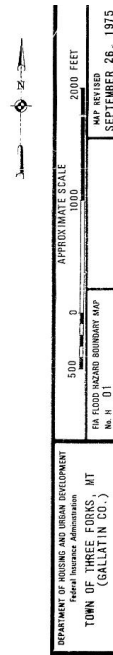
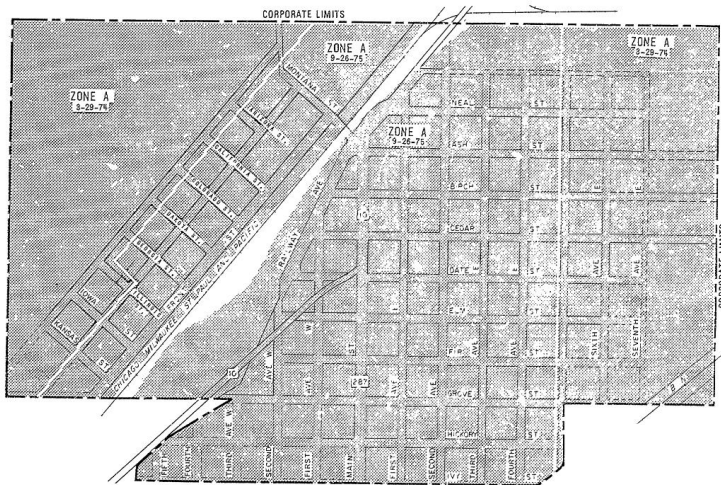
Need periodic updating

- New data available
- Change in the area

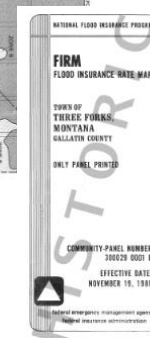
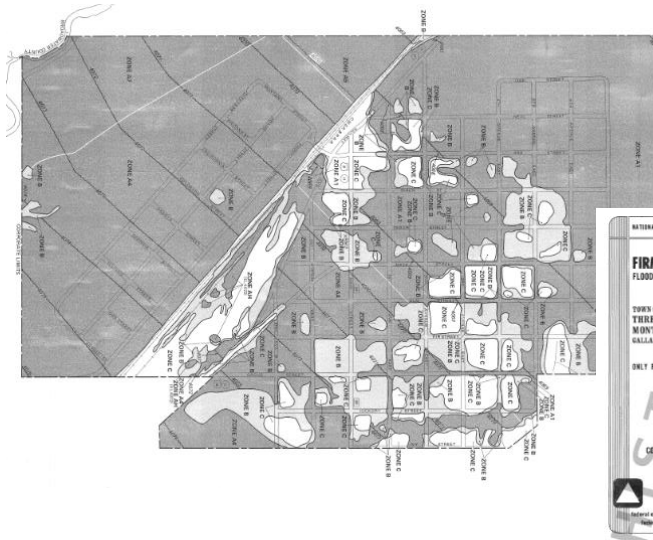
City of Three Forks Floodplain Maps

- 1975 Flood Hazard Boundary Maps (by HUD)
- 1980 – Initial study conducted FEMA FIRMs issued
- 2004- Small detailed study conducted
- 2011- Study from 2004 included in Gallatin County digitization

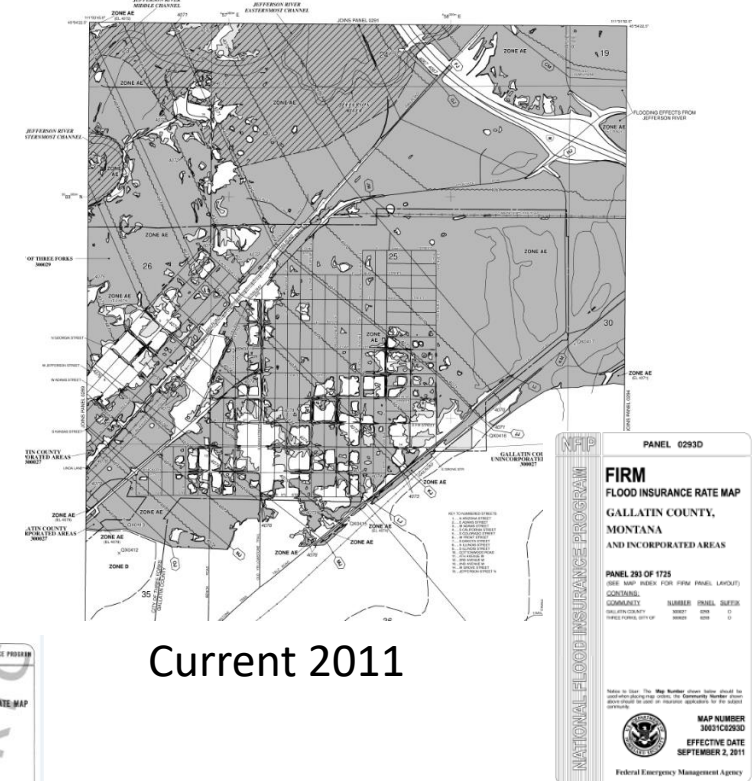
1975



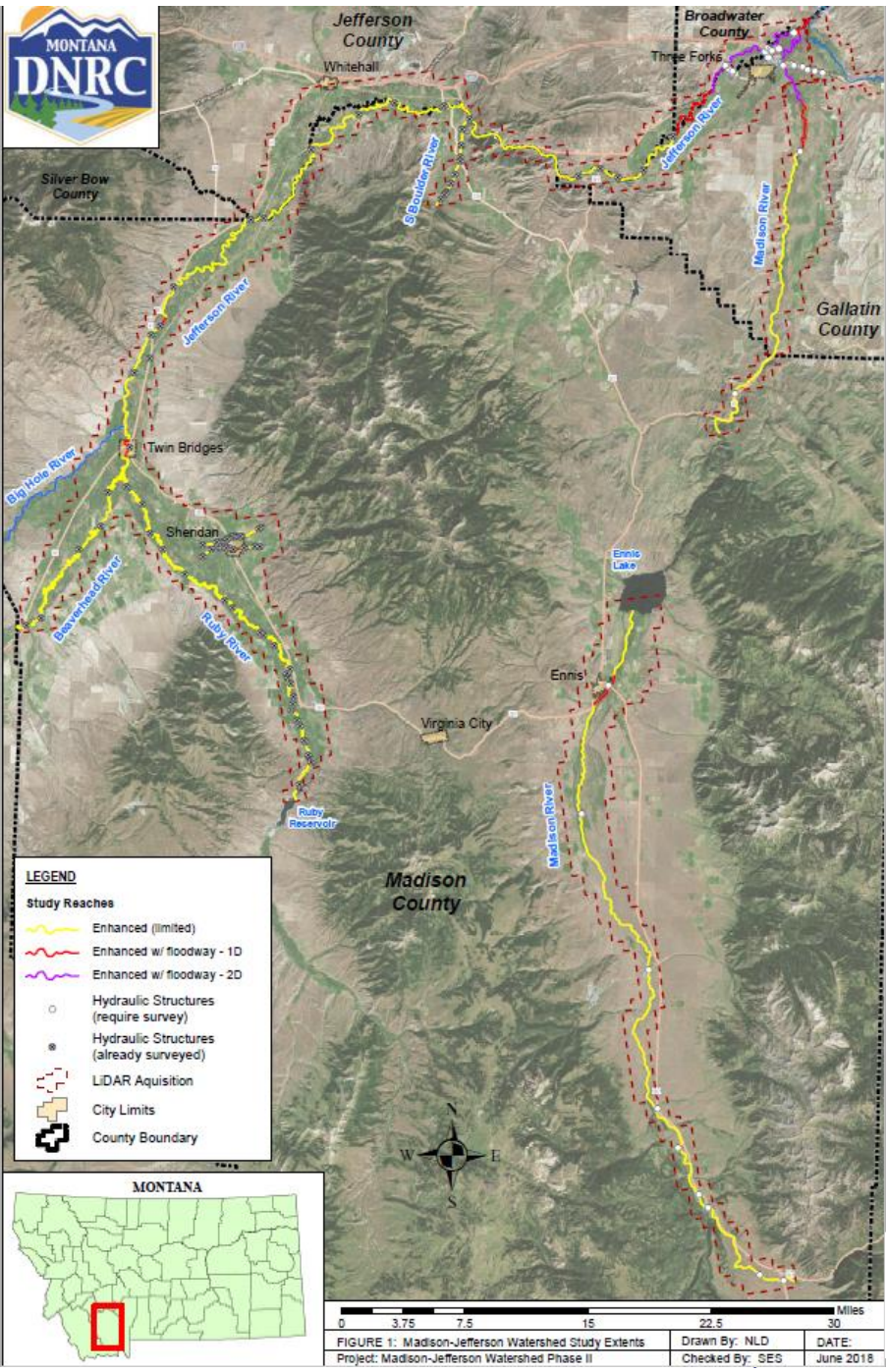
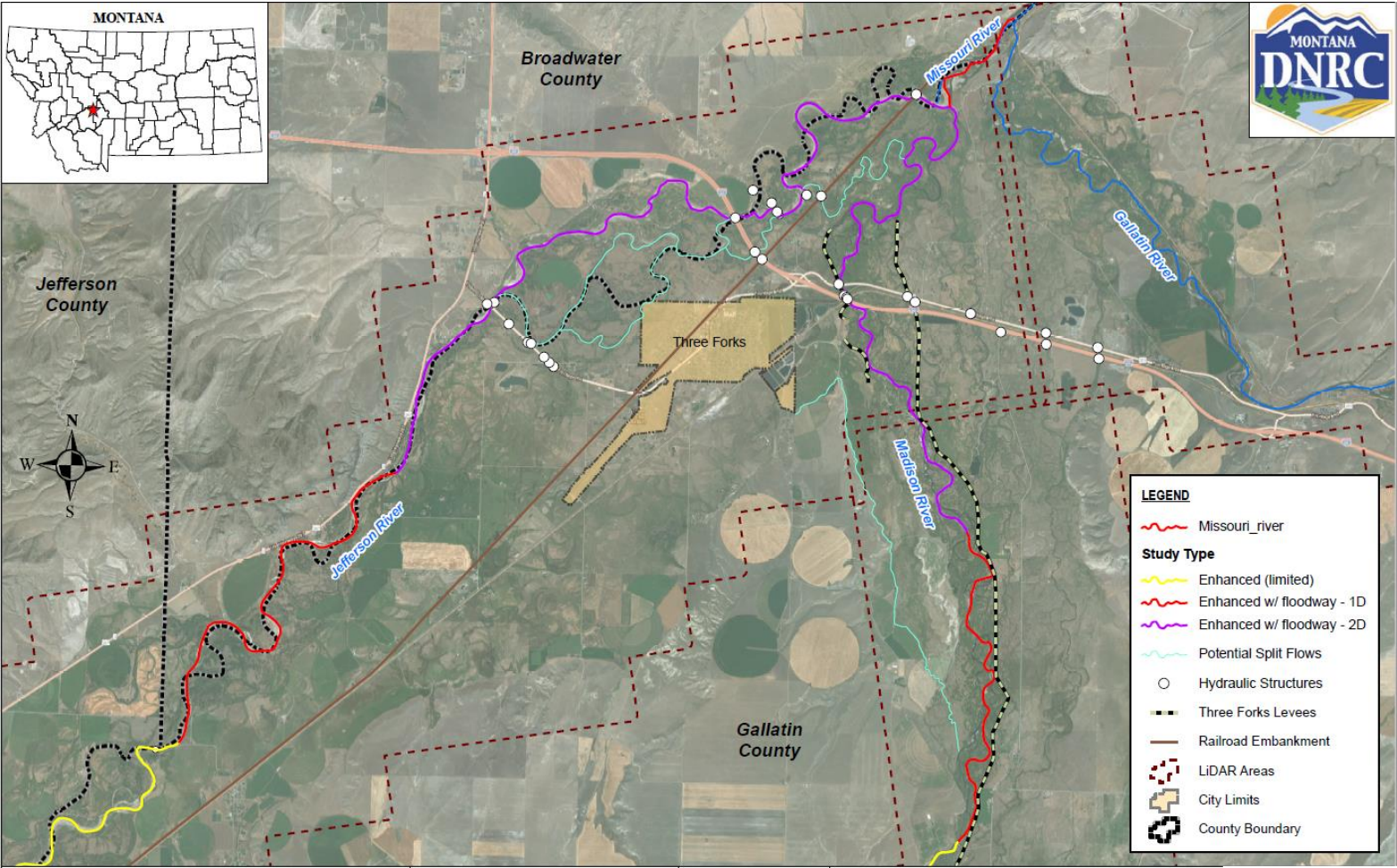
1980



Current 2011



Flood study



Project Partners

Gallatin County



Federal Emergency
Management Agency



FEMA

Three Forks



Montana Department of Natural
Resources and Conservation



Madison County



Ennis



Sheridan



Twin Bridges

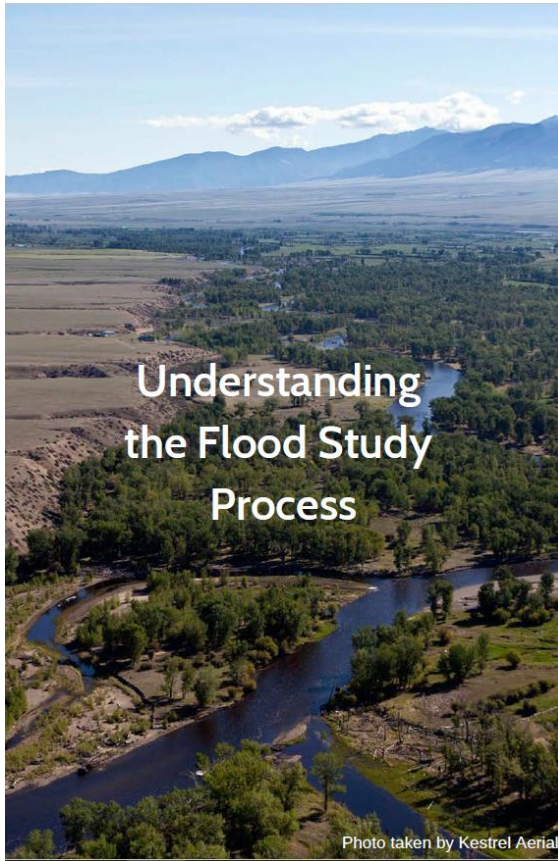


Jefferson County



Broadwater County





Flood Study Steps

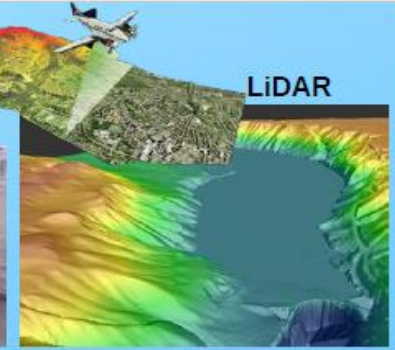
Step 1 - Survey: measurements are made of the topography around the river, along with any culverts, bridges, and road crossings. LiDAR uses an airplane to collect ground elevation over a large area, and ground survey supplements the airborne data.

Step 2 - Hydrology: determines how much water there will be in the river during a flood event. Data from stream gages will tell how many cubic feet of water per second the river will carry during the flood.

Step 3 - Hydraulics: once the first two steps are complete, calculations can show where the water will go during the flood. The elevation data is combined with the flood flow data to determine where the water will go when it overflows the channel.

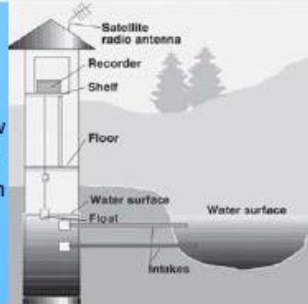
Step 4 - Mapping (delineation): the results from step 3 are combined with the elevation data and official maps to see how far the water will spread out. The area shown to be underwater during the flood is the regulatory floodplain.

Step 1 - Survey: The type of the survey depends on the size of the study area and type of study.



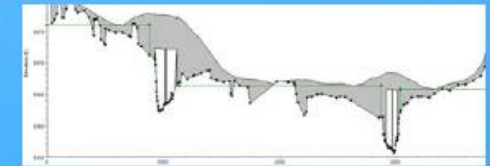
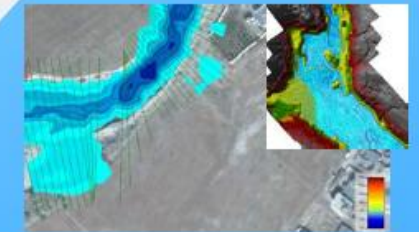
Step 2 - Hydrology:

Stream gage stations are an important tool to determine flow rates. If nearby stream gages aren't available, gage data from a similar location is used to determine the flow rate.



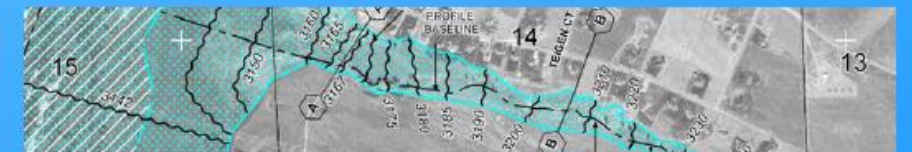
Step 3 - Hydraulics:

- 5 main components to the model
- 1) Hydrology (stream flow data)
 - 2) Cross Sections (measurements of the river bottom at key locations)
 - 3) Roughness (thickness of vegetation, land cover, etc determined by surveyors)
 - 4) Structures (road crossings, culverts, bridges, etc.)
 - 5) Downstream conditions



Step 4 - Mapping (delineation):

The result will be the floodplain boundary and a depth grid identifying the shallower and deeper areas of flooding.

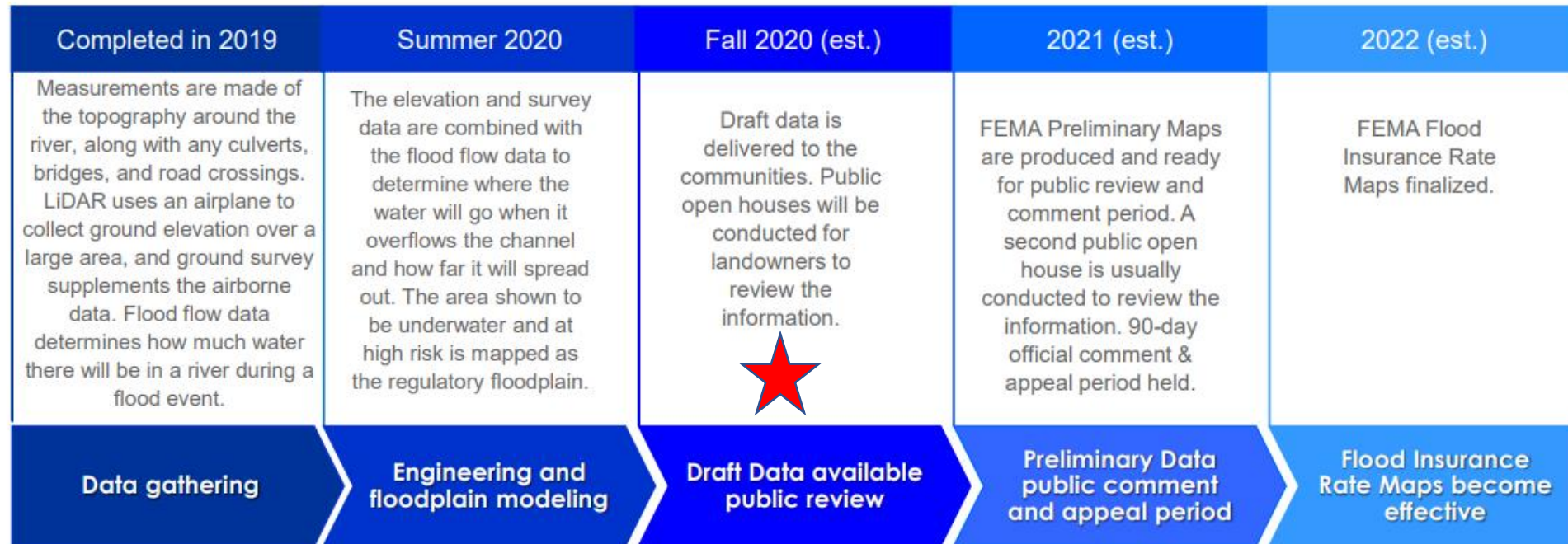


Tentative Project Schedule



Project Timeline

Madison, Ruby, & Jefferson Watershed Floodplain Maps Update



Flood Study Conducted

4 steps of a flood study.

- 1) Survey & LiDAR
- 2) Hydrology (flood flow)
- 3) Hydraulics (engineering)
- 4) Mapping (delineation)

Public Review

2 public open houses are usually held during this time. Once at draft map stage and again at preliminary map stage.

During this time public comments are encouraged. There will be an official 90-day appeal period after the maps become preliminary.

Resiliency and Mitigation efforts

Once new maps become effective the community can determine what mitigation efforts it would like to pursue to reduce flood risks.

Project webpage

Madison-Ruby-Jefferson River Watersheds Flood Maps Update

by [Nadene Wadsworth](#) — last modified Nov 30, 2020 10:02 AM — [History](#)



Madison, Ruby, & Jefferson Watershed Floodplain Maps Update

Madison, Jefferson, Gallatin, and Broadwater Counties have been working with the Federal Emergency Management Agency (FEMA) and Montana Department of Natural Resources and Conservation (DNRC) to produce new floodplain maps for portions of the Madison, Ruby, Jefferson, Beaverhead and South Boulder Rivers, and Mill and Indian Creeks.

See project extents [here](#).

Updated floodplain maps will depict the latest, most accurate flood risk data, and will eventually result in updated FEMA floodplain maps. Most of the existing FEMA floodplain maps and Madison County flood prone maps are based on data from the 1980s and 1990s.

To understand what goes into a new floodplain study [click here](#).

View Draft Data

New floodplain maps from this project are not expected to be finalized for a while – draft maps will be available to start reviewing in late 2020, but the study and maps will need to go through a lengthy technical and public review process before they can be finalized. When finalized, new maps could have effects on some property owners in the mapped 100-year floodplains.

New floodplain studies involve collecting and analyzing data, including: topography, hydrology analyses and hydraulic analyses.

Draft Map Viewer
[click here](#)

You can also view individual draft maps here:

[View draft floodplain maps](#)

Get more information on floodplain designations referenced on the maps, community meetings, and important information:

▼ **Gallatin County and the City of Three Forks (Updated Meeting information as of 11/16/2020)** [\[Show/Hide\]](#)

- [100-Year Floodplain \(1% Annual Chance Flood\)](#)
- [Floodway Area \(within a 100-Year Floodplain\)](#)
- [500 Year Floodplain](#)

Meeting information:

- **December 2, 2020 at 6pm - Public open house meeting. To register for the virtual meeting please [click here](#).**
- **January 6, 2021 - Three Forks draft floodplain map public open house event.** Please check back for more information on how to register for this event.
- **City of Three Forks elected officials meeting held November 10, 2020.** To view the slides presented [click here](#).

More Info

Maps and Technical Reports

Madison County

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Town of Ennis Town of Twin Bridges

Jonathan Weaver
Floodplain Administrator
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Town of Sheridan

Bob Stump
Mayor/Floodplain Administrator
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Gallatin County

Sean O'Callaghan
Floodplain Administrator
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City of Three Forks

Kelly Smith
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Jefferson County

Megan Bullock
Floodplain Administrator
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Broadwater County

Shawn Higley
Floodplain Administrator
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[email](#)

DNRC Contacts

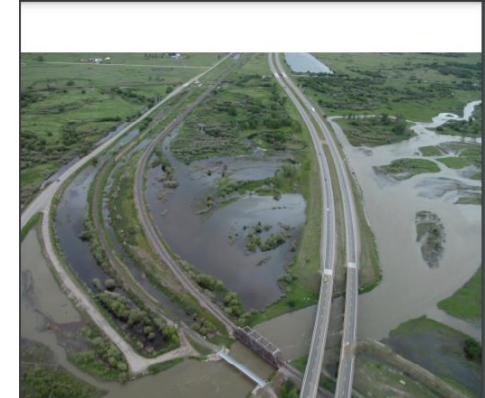
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DNRC Outreach Specialist
(406) 444-6732



Jefferson River Watershed Hydrologic Analysis Gallatin and Madison Counties, MT

July 2018

Michael Baker
INTERNATIONAL



Madison River Watershed Hydrologic Analysis Gallatin and Madison Counties, MT

Michael Baker
INTERNATIONAL



Three Forks Enhanced Hydraulic Analysis and Floodplain Mapping Report Gallatin County, MT

June 2020

Michael Baker
INTERNATIONAL

www.floodplain.mt.gov/madison



High-risk area

(1%-Chance Floodplain, 100-Year Floodplain)

- Floodway
- Flood Fringe

Flood fringe

Flood way

Flood fringe

FLOODWAY Zone AE

0.2 PCT ANNUAL CHANCE FLOOD HAZARD Zone X

Moderate-risk area

0.2%-Chance Floodplain,
500-Year Floodplain

AREA OF MINIMAL FLOOD HAZARD Zone X

300 600ft

Map Viewer-Draft Floodplain

Madison-Ruby-Jefferson Watersheds Floodplain Mapping Update

A Story Map    

1 Draft Floodplain Mapping

To search by address, click the magnifying glass to the right. To navigate, use a mouse or the (+) and (-) signs.

The flood hazard information in this section is currently a **draft** product. The draft floodplain designations are undergoing public review and are based on updated flood study information.

To see the current FEMA mapping, go to section 2.

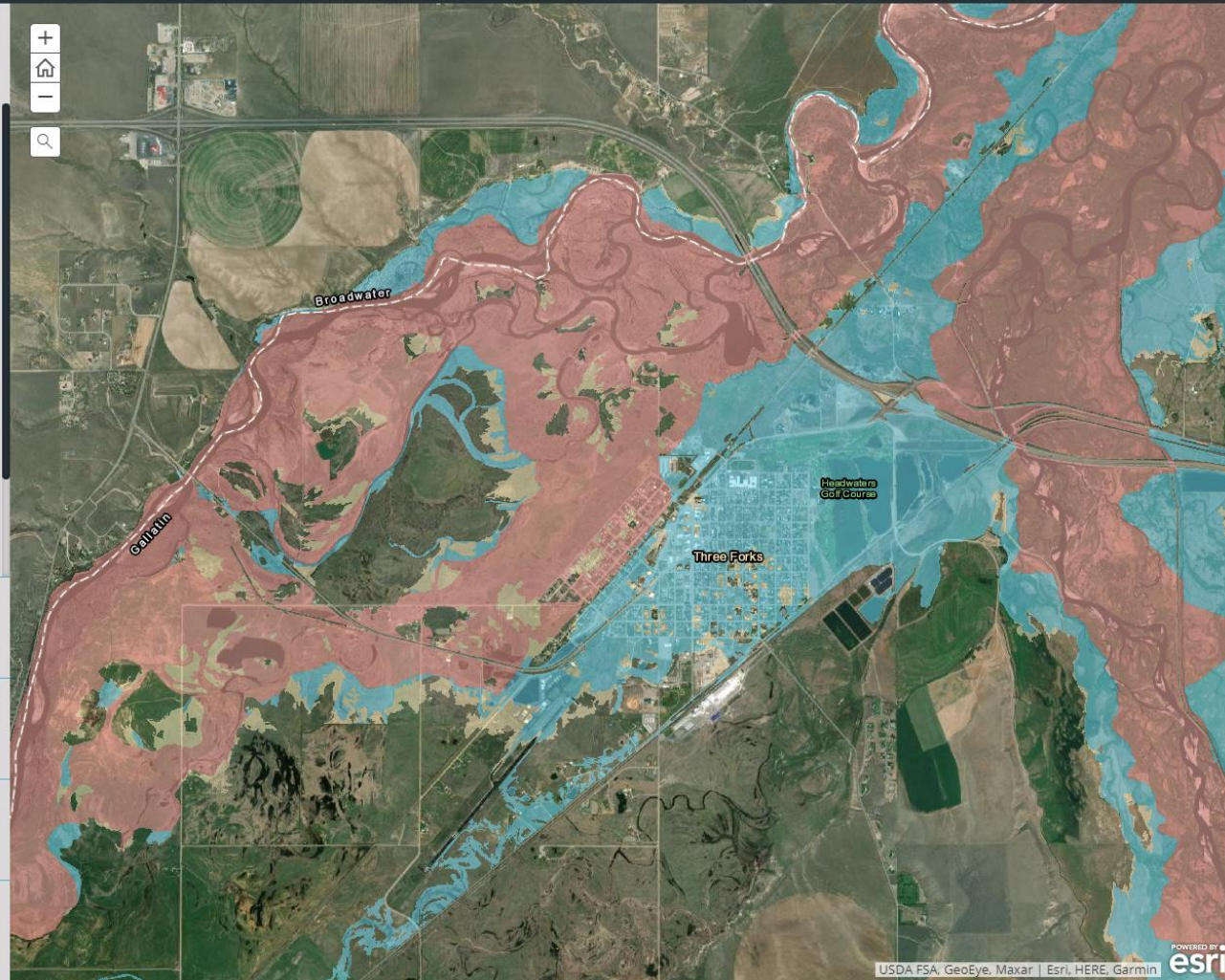
-  100-year Floodplain (1% Annual Chance)
-  Floodway
-  500-year Floodplain (0.2% Annual Chance)
-  Current Effective FEMA Mapping Not Included in Mapping Update

2 Current FEMA Floodplain Mapping

3 Compare Draft 100-year Floodplain Map to Current FEMA Floodplain Map

4 Compare Draft Floodway Map to Current FEMA Floodway Map

5 Estimated Building Information (Lowest Adjacent Grade (LAG))



www.floodplain.mt.gov/madison



Map Viewer-Draft Floodplain

Madison-Ruby-Jefferson Watersheds Floodplain Mapping Update

A Story Map    

1 Draft Floodplain Mapping

2 Current FEMA Floodplain Mapping

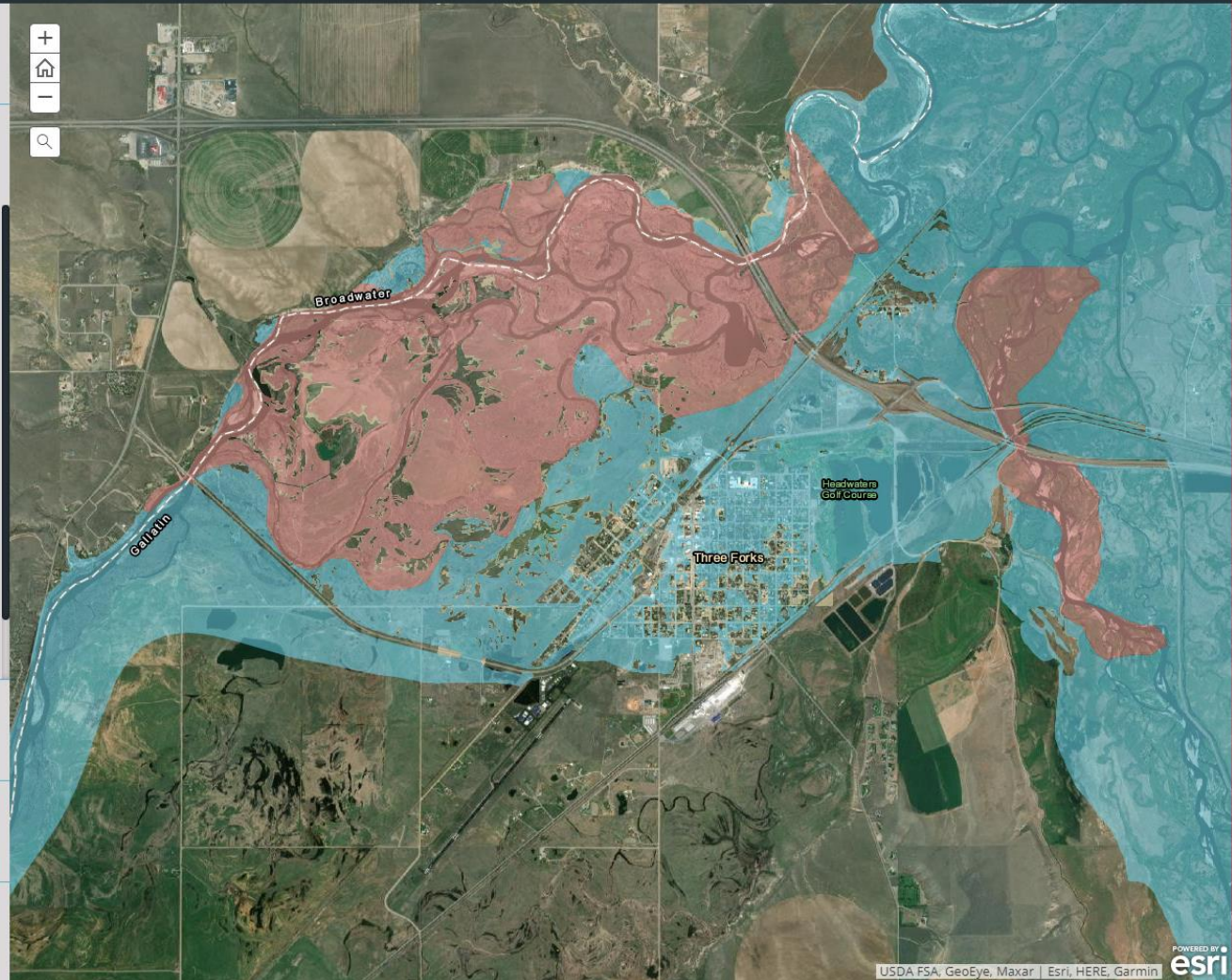
This section ONLY reflects the current FEMA floodplain mapping from the official FEMA Flood Insurance Rate Maps. It does NOT reflect Madison County's Floodprone Maps or any other local maps used for local floodplain regulation or planning. The FEMA floodplain boundaries and information were digitized from current FEMA maps. This viewer is not intended to be used for regulatory purposes and should only be used as a visualization tool. The official FEMA maps and other flood hazard products are available from the FEMA Map Service Center online at: <http://www.msc.fema.gov>

-  100-year Floodplain (1% Annual Chance)
-  Floodway
-  500-year Floodplain (0.2% Annual Chance)
-  Cross Sections - Flood Elevations (in Feet)

3 Compare Draft 100-year Floodplain Map to Current FEMA Floodplain Map

4 Compare Draft Floodway Map to Current FEMA Floodway Map

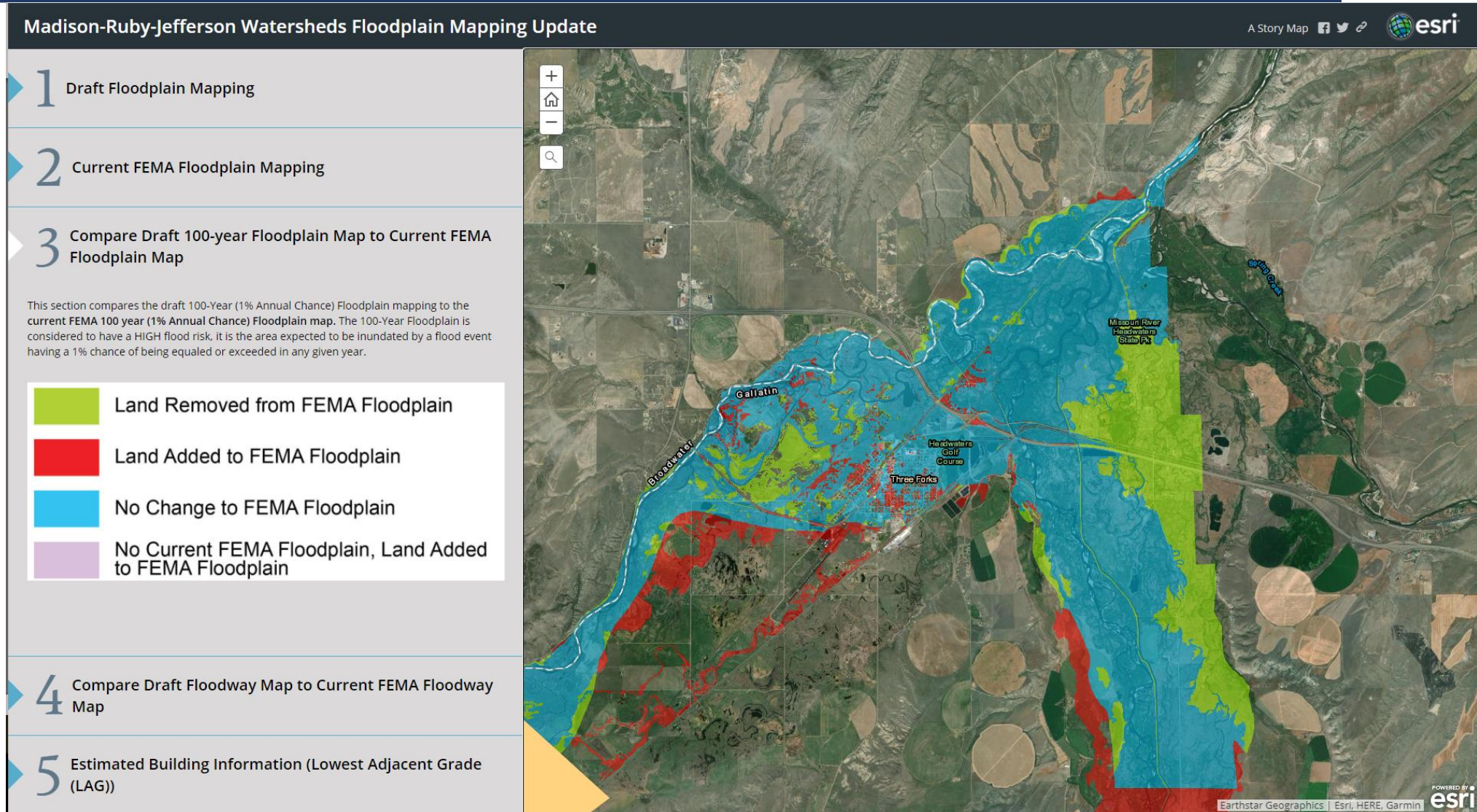
5 Estimated Building Information (Lowest Adjacent Grade (LAG))



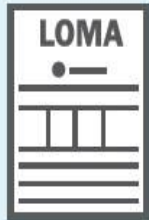
www.floodplain.mt.gov/madison



Map Viewer-Draft Floodplain



What about Elevation Certificates or Map Amendments?



Letter of Map Amendment (LOMA)

is for when a flood map shows a building in the floodplain but it is actually on natural ground above the base flood elevation.

Lowest Adjacent Grade (LAG) is the lowest point where the ground touches the building.

Base Flood Elevation (BFE) is how high the water is expected to rise during the 1-percent-annual-chance flood.

Page 1 of 5	Date: December 09, 2019	Case No.: 20-08-0101A	LOMA
 Federal Emergency Management Agency Washington, D.C. 20472			
LETTER OF MAP AMENDMENT DETERMINATION DOCUMENT (REMOVAL)			
COMMUNITY AND MAP PANEL INFORMATION		LEGAL PROPERTY DESCRIPTION	
COMMUNITY	CITY OF THREE FORKS, GALLATIN COUNTY, MONTANA	Lot 6, Block 29, Town of Three Forks, Section 25, as shown on the Plat recorded as Document No. 18 in Book D, in the Office of the Clerk and Recorder, Gallatin County, Montana	
	COMMUNITY NO: 300029		
AFFECTED MAP PANEL	NUMBER: 30031C0293D DATE: 9/2/2011		
FLOODING SOURCE: JEFFERSON RIVER		APPROXIMATE LATITUDE & LONGITUDE OF PROPERTY: 45.890191, -111.551351 SOURCE OF LAT & LONG: GPS DATUM: NAD 83	
DETERMINATION			
		1% ANNUAL	LOWEST

Existing Letter of Map Amendments:

- ✓ will be reviewed
- ✓ will be revalidated if building elevation is still above new proposed flood elevation

Public Outreach Materials

MADISON, RUBY, JEFFERSON RIVERS FLOOD MAP UPDATES

www.floodplain.mt.gov/madison

Owning property in a 100-YEAR FLOODPLAIN

A 100-YEAR FLOODPLAIN (1% Annual Chance Floodplain) is considered to have a HIGH flood risk. It is the area that is expected to be inundated by a 100-Year Flood, an event having a 1% chance of being equaled or exceeded in any given year. The 100-Year Flood is also referred to as a 1% Annual Chance Flood or a Base Flood.

DEVELOPMENT REGULATIONS

Gallatin County and the City of Three Forks require Floodplain Development Permits for development in the 100-Year Floodplain (1% Annual Chance Floodplain) to protect human life and property.

- New building construction must obtain a Floodplain Development Permit.
- New residential construction must be elevated 2 feet above the 100-Year Flood Elevation (Base Flood Elevation).
- Improvements to existing structures must obtain a Floodplain Development Permit. Improvements to an existing structure greater than 50% of a structure's market value (a Substantial Improvement) require the entire structure to be brought into compliance with floodplain regulations.
- Other federal, state, and local regulations may apply.

Floodplain Regulations require a floodplain permit for any man-made development in the 100-Year Floodplain.

Draft floodplain maps are going through review and are not yet effective. It is important to discuss your community's floodplain regulations with County, Town staff to understand the impacts of flood map updates on proposed construction projects in a mapped floodplain.

INSURANCE REQUIREMENT

If you own a building in an area that will be newly mapped into a 100-Year Floodplain, contact your insurance agent or lender as early as possible to start the discussion about flood insurance.

Your lender will require you to carry flood insurance if you have a federally backed loan and your building is located in a mapped 100-year Floodplain.

Lenders will typically reevaluate their loans to reassess flood risk when a new flood map or revision goes effective. When this happens, your lender will require you to carry flood insurance if you own a building that is located in a mapped 100-Year Floodplain, unless you can prove that the building is above the flood elevation or outside of the 100-Year Floodplain. Your lender may also require building elevation information (an Elevation Certificate) at this time.

There are many cost-saving options available to those who are being newly mapped into the 100-Year Floodplain. In order to secure the lowest premium, you should purchase flood insurance either before or within 11 months of a new flood map or revision going effective (expected 2022). Contact your insurance agent or lender as early as possible to find the best flood insurance option available to you—ask for a comparison of Newly Mapped rates, Grandfathered rates, etc.

Sean O'Callaghan
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406.582.3130



Kelly Smith
City of Three Forks Floodplain Administrator
ksmith@threeforksmontana.us
406.285.3431



MADISON, RUBY, JEFFERSON RIVERS FLOOD MAP UPDATES

www.floodplain.mt.gov/madison

Owning property in a FLOODWAY

A FLOODWAY is the area within a 100-Year Floodplain that must be kept free from new development so that the 100-Year Flood (1% Annual Chance Flood, Base Flood) can be carried without substantial increases in flood heights. The Floodway will usually see the highest water velocities and deepest inundation during a 100-Year Flood event.

DEVELOPMENT REGULATIONS

Gallatin County and the City of Three Forks strictly regulate development in Floodways to protect human life and property by ensuring that there are no increases in flood elevations.

In accordance with each community's Floodplain Regulations:

- New building construction is not permitted in the Floodway.
- Improvement to existing structures in a Floodway must obtain a Floodplain Development Permit.

Floodplain Regulations require a floodplain permit for any man-made development in the 100-Year Floodplain (including Floodway).

Your lender will require you to carry flood insurance if you have a federally backed loan and your building is located in a mapped 100-Year Floodplain (including Floodway).

INSURANCE REQUIREMENT

If you own a building in an area that will be newly mapped into a 100-Year Floodplain (including Floodway), contact your insurance agent or lender as early as possible to start the discussion about flood insurance.

Lenders will typically reevaluate their loans to reassess flood risk when a new flood map or revision goes effective. When this happens, your lender will require you to carry flood insurance if you own a building that is located in a mapped 100-Year Floodplain, unless you can prove that the building is above the flood elevation or outside of the 100-Year Floodplain. Your lender may also require building elevation information (an Elevation Certificate) at this time.

There are many cost-saving options available to those who are being newly mapped into the 100-Year Floodplain (including Floodway). In order to secure the lowest premium, you should purchase flood insurance either before or within 11 months of a new flood map or revision going effective (estimated 2022). Contact your insurance agent or lender as soon as possible to find the best flood insurance option available to you—ask for a comparison of Newly Mapped rates, Grandfathered rates, etc.

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MADISON, RUBY, JEFFERSON RIVERS FLOOD MAP UPDATES

www.floodplain.mt.gov/madison

Owning property in a 500-YEAR FLOODPLAIN

A 500-YEAR FLOODPLAIN (0.2% Annual Chance Floodplain) is considered to have a MODERATE flood risk. It is an area that is expected to be inundated by a 500-Year Flood, a flood event having a 0.2% chance of being equaled or exceeded in any given year. The 500-Year Flood is also referred to as a 0.2% Annual Chance Flood.

DEVELOPMENT REGULATIONS

Gallatin County, and the City of Three Forks do not regulate development in the 500-Year Floodplain (0.2% Annual Chance Floodplain) although flooding is still possible in this area.

New construction and building improvements may occur in the 500-Year Floodplain without a Floodplain Development Permit. Other federal, state, and local regulations may apply.

Unlike in a 100-Year Floodplain, a Floodplain Development Permit is not required for development in a 500-Year Floodplain.

If your property has areas of both 100-Year and 500-Year Floodplain, proposed projects may require a Floodplain Development Permit depending on exactly where the development will occur. It is important to discuss the location of any development with County, City or Town staff to understand the impacts of the community's floodplain regulations and flood map updates on proposed projects in or near a mapped

INSURANCE REQUIREMENT

If you own a building in a 500-Year Floodplain (0.2% Annual Chance Floodplain), you are considered to be at a moderate risk of flooding. It is therefore recommended that you purchase flood insurance even if your lender does not require you to do so in order to protect your investment.

Your lender can require flood insurance for a building they are financing regardless of where the building is located.

Lenders will typically review their loans to reassess flood risk when a new flood map or revision goes effective. When this happens, if your building is located in a 500-Year Floodplain, your lender might choose to require you to carry flood insurance and/or provide building elevation documentation (an Elevation Certificate) to prove your building is above the flood elevation.

Some property owners may not see any insurance changes with this mapping update. Talk to your lender or insurance agent early if you are considering purchasing flood insurance in order to find the best option for you.

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FLOODPLAIN REGULATIONS

City of Three Forks has floodplain regulations that regulate development within the 100-year floodplain.

Floodplain permits are required for new construction and modifications to existing structures.

New construction and additions- elevated 2' **Improvements** and additions to existing structures $\leq 50\%$ of building's value, will require the entire structure to be brought into compliance.



FLOOD INSURANCE

Flood insurance is mandatory for buildings with a federally backed loan in a high-risk flood zone.

Flood insurance is not mandatory in a lower risk zone but is highly recommended. Lenders can always require insurance in any zone.

Flood insurance is an important form of economic protection against flooding.



Next Steps

- Review draft maps and study information
- Attend open house meeting
 - January 6, 2021 at 6pm
 - City will mail notices to landowner
- Provide feedback and other technical information

www.floodplain.mt.gov/madison

The screenshot shows the Montana Department of Natural Resources & Conservation (DNRC) website. The header includes the DNRC logo and contact information. The navigation menu lists various divisions and services. The main content area is titled "Madison-Ruby-Jefferson River Watersheds Flood Maps Update" and provides information about the project, including a draft map viewer and contact information for local officials.

ATTENTION
THREE FORKS PROPERTY OWNERS
in or near a FLOODPLAIN

FLOOD INSURANCE RATE MAP UPDATES
The City of Three Forks is currently working with FEMA and Montana DNRC to update Flood Insurance Rate Maps for the Jefferson and Madison Rivers. You are receiving this postcard because proposed floodplain changes could affect your property.

www.floodplain.mt.gov/madison

Visit the project website above to view maps showing proposed floodplain changes and to get more information about this project.

PUBLIC OPEN HOUSE
Date Time Location
This open house is intended for property owners located within the city of Three Forks. Please come to learn about floodplain mapping and the proposed mitigation actions the City is working on:

- Speak with City or DNRC Staff one-on-one about how Flood Insurance Rate Map changes could affect your property.
- Hear a short, informational presentation about the overall Floodplain Mapping Project and proposed mitigation actions.

We look forward to seeing you there!

Please contact us directly for more information.

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Madison-Ruby-Jefferson River Watersheds Flood Maps Update

Madison, Ruby, & Jefferson Watershed Floodplain Maps Update

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You can also view individual draft maps here:
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More Info
[Maps and Technical Reports](#)

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City of Three Forks
Kelly Smith
Floodplain Administrator





Questions?
Thank *you*

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