Floodplain Mapping Update : City of Three Forks

Floodplain Mapping Update:
City of Three Forks Mapping Project Update

November 10, 2020

Identifying Risk Through Mapping

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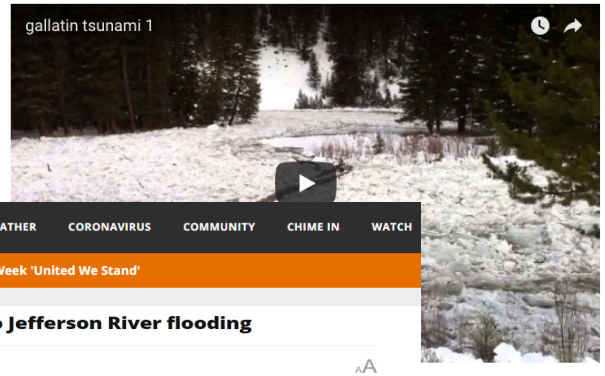
Gallatin River ice jam roars downstream

Jan 26, 2013 0



NBC MONTANA | NEWS | WEATHER | CORONAVIRUS | COMMUNITY | CHIME IN | WATCH

GENERAL ALERT America This Week 'United We Stand'

Road in Three Forks closed due to Jefferson River flooding

by NBC Montana Staff | Monday, May 28th 2018

Old Town Road near the Jefferson River in Three Forks is closed due to water over the road.

BOZEMAN, Mont. — The Gallatin County Sheriff's Office reports Old Town Road in Three Forks is closed due to water over the road.

Officials say flooding from the Jefferson River will likely force the road to be closed for days.

Drivers are urged to use alternate routes and reminded not to drive through water on

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TOP STORY

Jefferson River could reach major flood stage

Michael Wright Chronicle Staff Writer May 22, 2018

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- MSU film grad's 'The Story of Plastic' goes global on Earth Day — Posted: April 19, 2020
- Yellowstone settles arsenic lawsuit with Park County — Posted: April 3, 2020
- Judge keeps Hebgen timber project on hold — Posted: April 1, 2020
- Yellowstone slaughters wild bison to shrink park's herds — Posted: March 30, 2020
- FWP seeking information on bull elk poaching near Ennis; other cases still open — Posted: March 26, 2020

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With ice jams already forming, here's how to prepare for winter flood season

Rachel Louise Just Feb 11, 2019

1 of 2

Early stages of an ice jam on the Madison River near Three Forks. February 11, 2019.

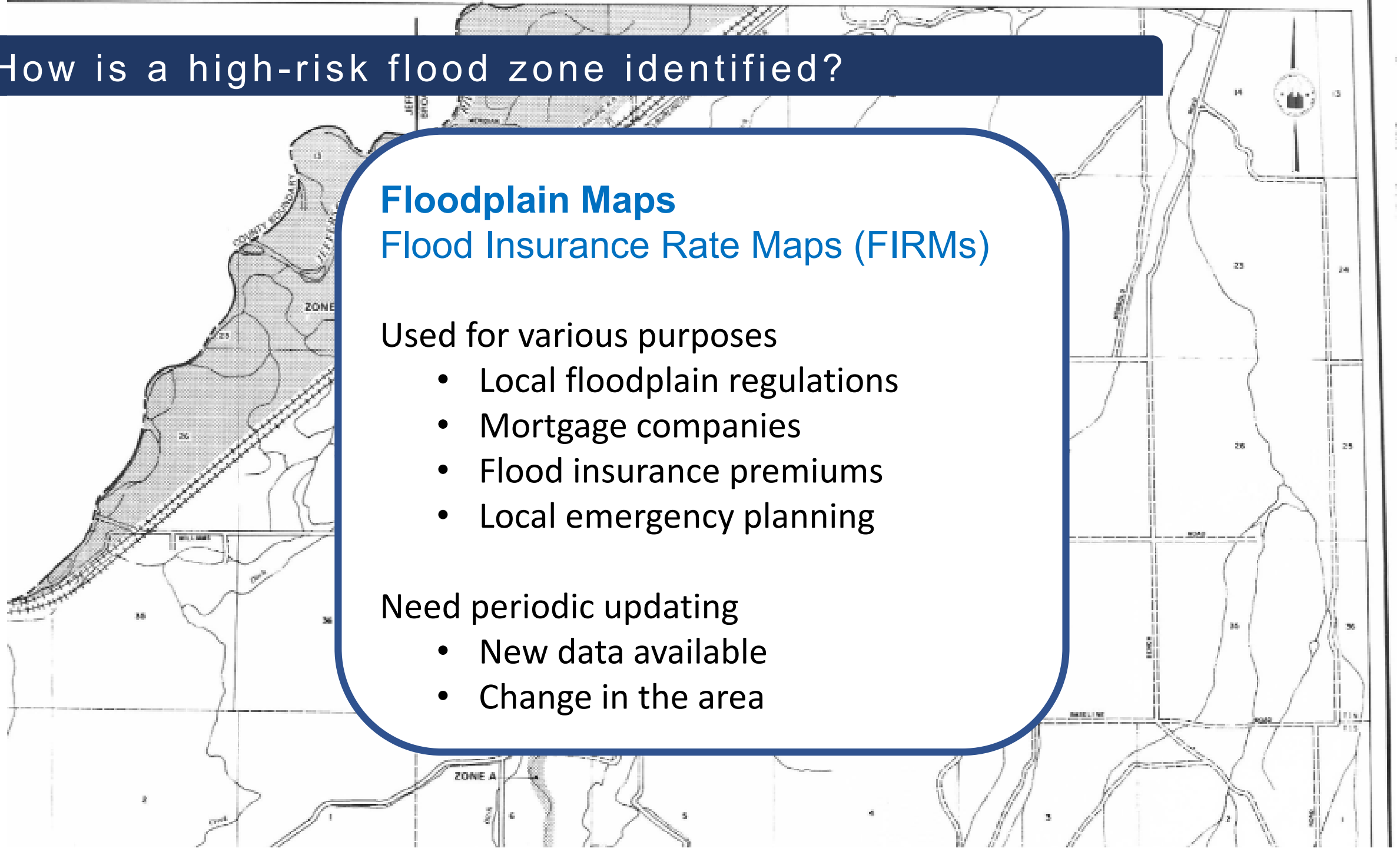
Editor

THREE FORKS - In southwest Montana, ice jams near the Madison and Jefferson Rivers are beginning to raise flood concerns.

Right now, the Jefferson River is in minor flood stages, with the Madison and Gallatin Rivers nearing flood levels, and local rivers seeing early signs of ice jams.

Local Weather

How is a high-risk flood zone identified?



Floodplain Maps

Flood Insurance Rate Maps (FIRMs)

Used for various purposes

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

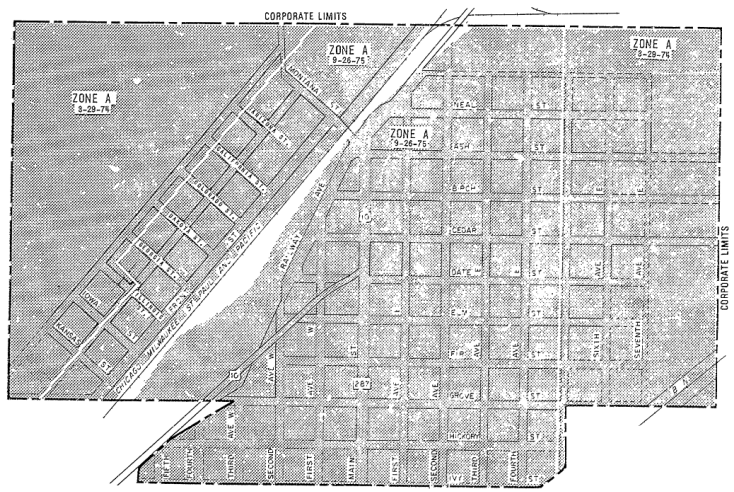
Need periodic updating

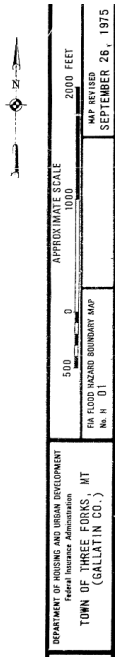
- New data available
- Change in the area

City of Three Forks Floodplain Maps

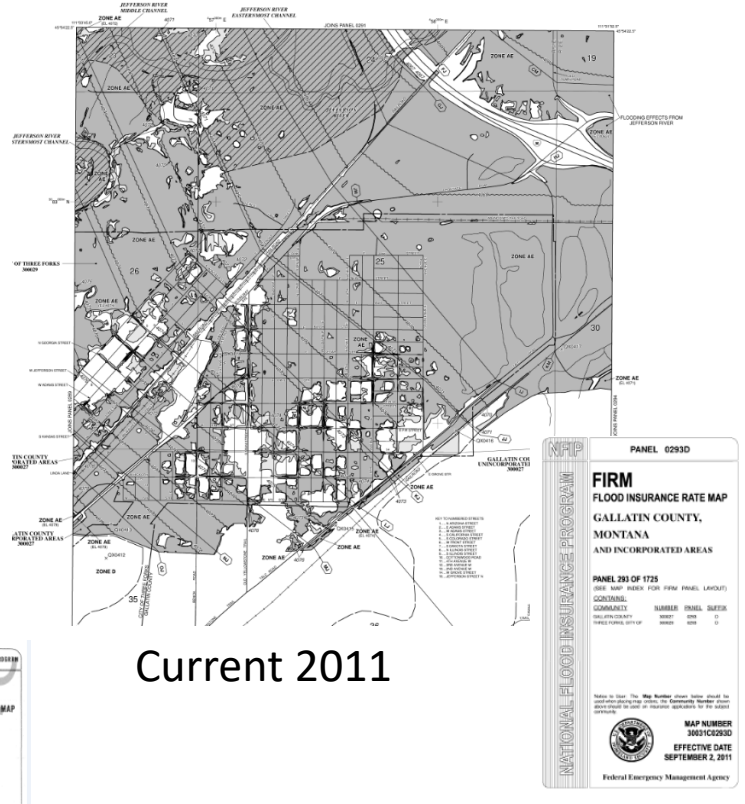
- 1975 Flood Hazard Boundary Maps (by HUD)
- 1980 – Initial study conducted FEMA FIRMs issued
- 2004- Small detailed study conducted
- 2011- Study from 2004 included in
  Gallatin County digitization

1975



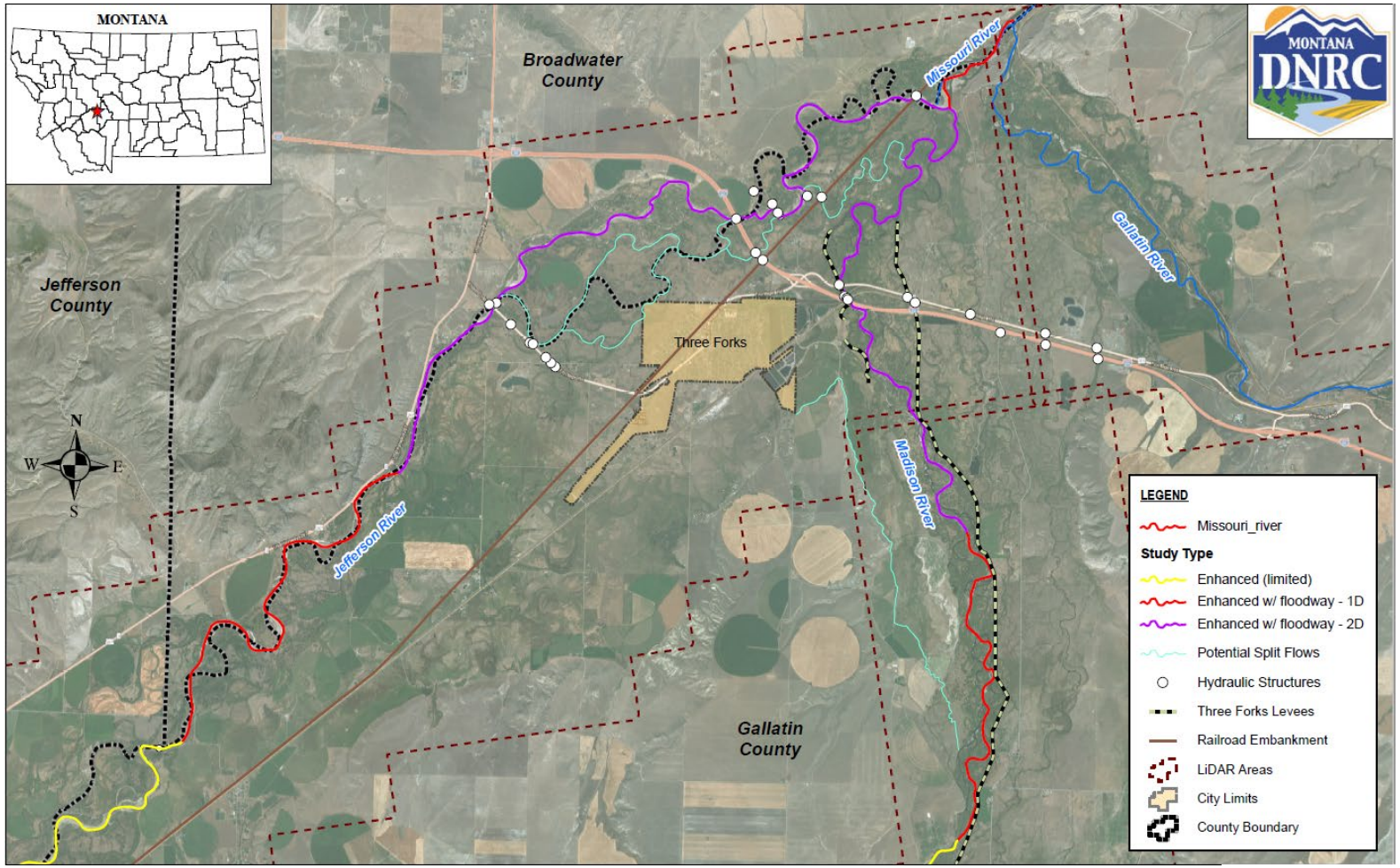


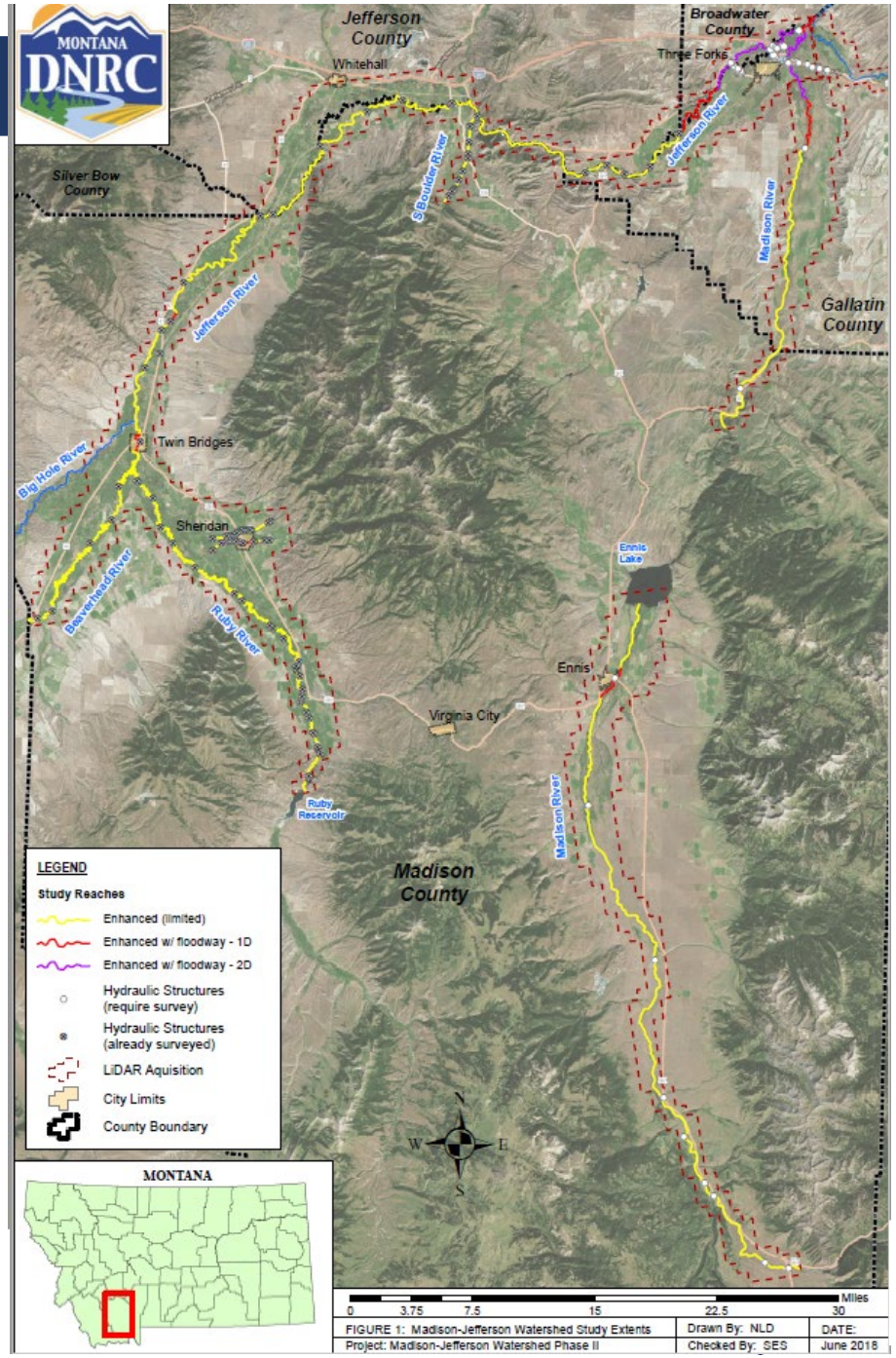
1980



Current 2011

Flood study


MONTANA
Broadwater County
Missouri River
Gallatin River
Jefferson County
Three Forks
N
W
E
S
Jefferson River
Madison River
Gallatin County
LEGEND
Missouri_river
Study Type
Enhanced (limited)
Enhanced w/ floodway - 1D
Enhanced w/ floodway - 2D
Potential Split Flows
Hydraulic Structures
Three Forks Levees
Railroad Embankment
LiDAR Areas
City Limits
County Boundary


Jefferson County
Broadwater County
Whitehall
Three Forks
Silver Bow County
S Boulder River
Jefferson River
Madison River
Gallatin County
Twin Bridges
Big Hole River
Sheridan
Beaverhead River
Ruby River
Ennis Lake
Ennis
Virginia City
Ruby Reservoir
Madison County
LEGEND
Study Reaches
Enhanced (limited)
Enhanced w/ floodway - 1D
Enhanced w/ floodway - 2D
Hydraulic Structures (require survey)
Hydraulic Structures (already surveyed)
LiDAR Aquisition
City Limits
County Boundary
MONTANA
Miles
0 3.75 7.5 15 22.5 30
FIGURE 1: Madison-Jefferson Watershed Study Extents
Drawn By: NLD
DATE:
Project: Madison-Jefferson Watershed Phase II
Checked By: SES
June 2018

Project Partners

Gallatin County

Three Forks

Madison County

Ennis

Sheridan

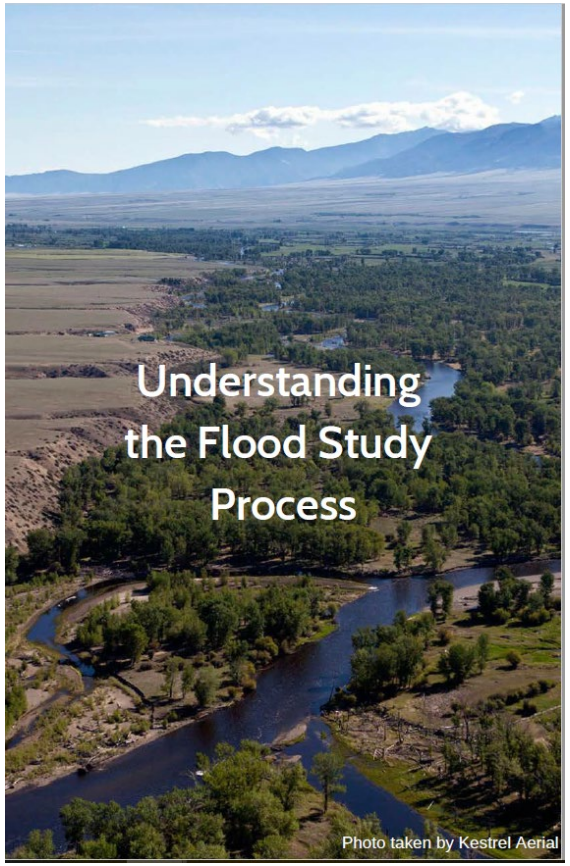
Twin Bridges

Jefferson County

Broadwater County

Federal Emergency Management Agency

Montana Department of Natural Resources and Conservation



Flood Study Steps

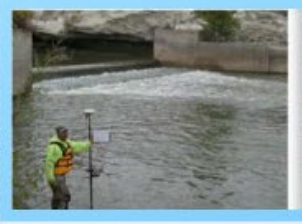
Step 1 - Survey: measurements are made of the topography around the river, along with any culverts, bridges, and road crossings. LiDAR uses an airplane to collect ground elevation over a large area, and ground survey supplements the airborne data.

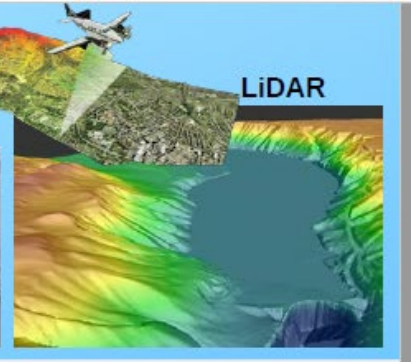
Step 2 - Hydrology: determines how much water there will be in the river during a flood event. Data from stream gages will tell how many cubic feet of water per second the river will carry during the flood.

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.

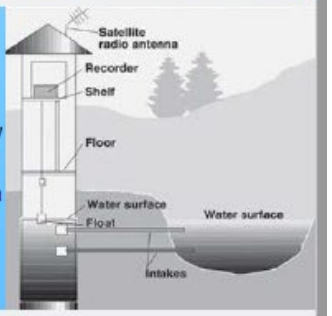
Step 4 - Mapping (delineation): the results from step 3 are combined with the elevation data and official maps to see how far the water will spread out. The area shown to be underwater during the flood is the regulatory floodplain.

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

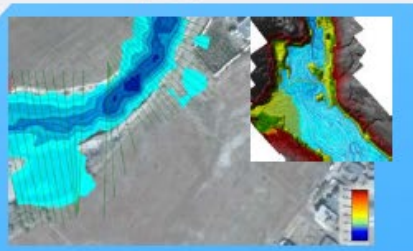


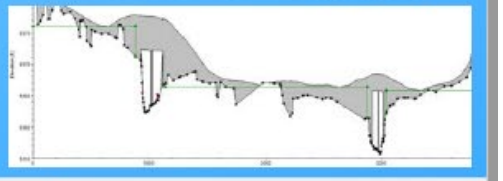


Step 2 - Hydrology:
Stream gage stations are an important tool to determine flow rates. If nearby stream gages aren't available, gage data from a similar location is used to determine the flow rate.



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

Completed in 2019	Summer 2020	Fall 2020 (est.)	2021 (est.)	2022 (est.)
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. Flood flow data determines how much water there will be in a river during a flood event.	The elevation and survey data are combined with the flood flow data to determine where the water will go when it overflows the channel and how far it will spread out. The area shown to be underwater and at high risk is mapped as the regulatory floodplain.	Draft data is delivered to the communities. Public open houses will be conducted for landowners to review the information.	FEMA Preliminary Maps are produced and ready for public review and comment period. A second public open house is usually conducted to review the information. 90-day official comment & appeal period held.	FEMA Flood Insurance Rate Maps finalized.
Data gathering	**Engineering and floodplain modeling**	**Draft Data available public review**	**Preliminary Data public comment and appeal period**	**Flood Insurance Rate Maps become effective**

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 10, 2020 02:29 PM — 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.

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:

- Gallatin County and the City of Three Forks [Show/Hide]
- Madison County and the Towns of Ennis, Twin Bridges, and Sheridan [Show/Hide]
- Jefferson County [Show/Hide]
- Broadwater County [Show/Hide]

Newly Mapped into a 100-Year Floodplain? See Low Cost Insurance Options

Big Hole River Floodplain Maps

A flood study and floodplain maps for the Big Hole River were produced in 2015. The Big Hole River floodplain maps and study information will eventually be incorporated into preliminary FEMA floodplain maps at the same time as the rest of Madison County's draft floodplain maps. Preliminary FEMA floodplain maps will go through a public review process before they are finalized.

Maps and Technical Reports

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Town of Twin Bridges
Jonathan Weaver
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email

Town of Sheridan
Bob Stump
Mayor/Floodplain Administrator
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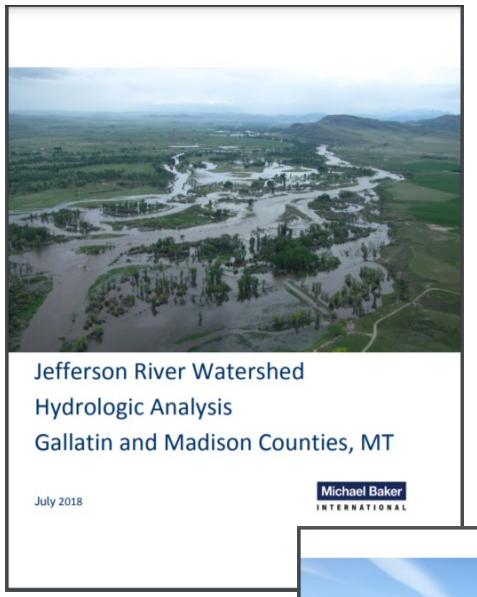
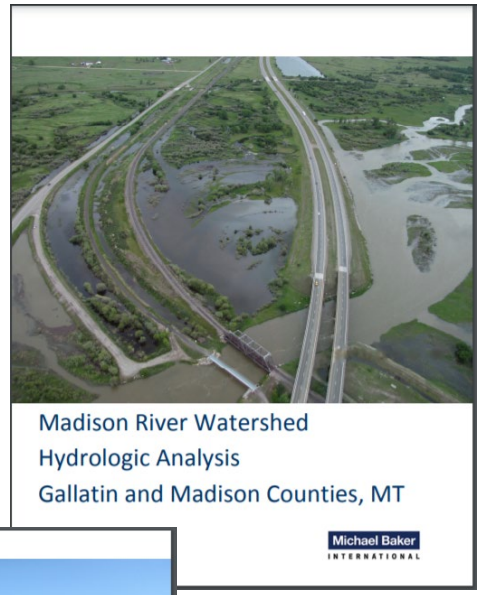
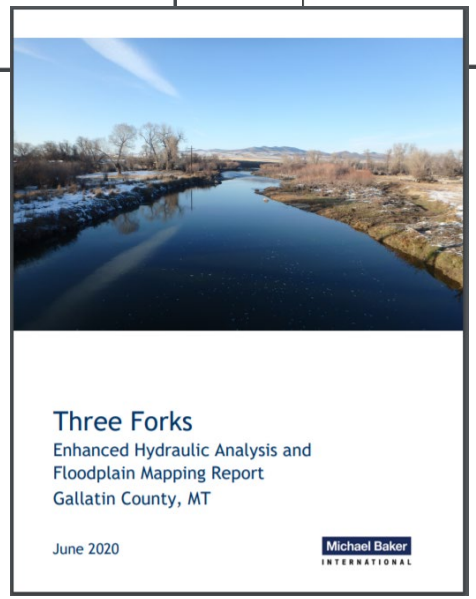
DNRC Contacts
Nadene Wadsworth

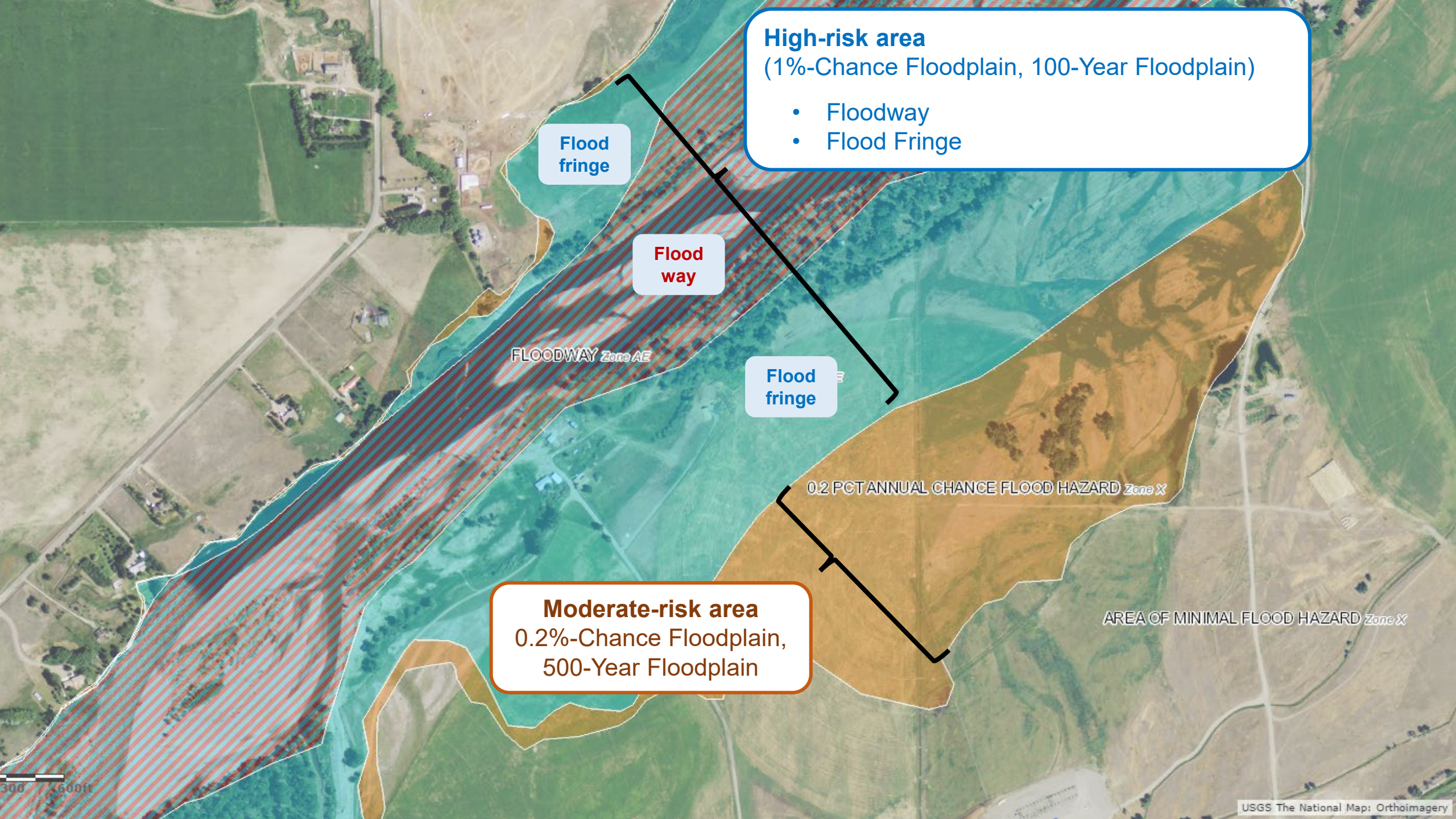




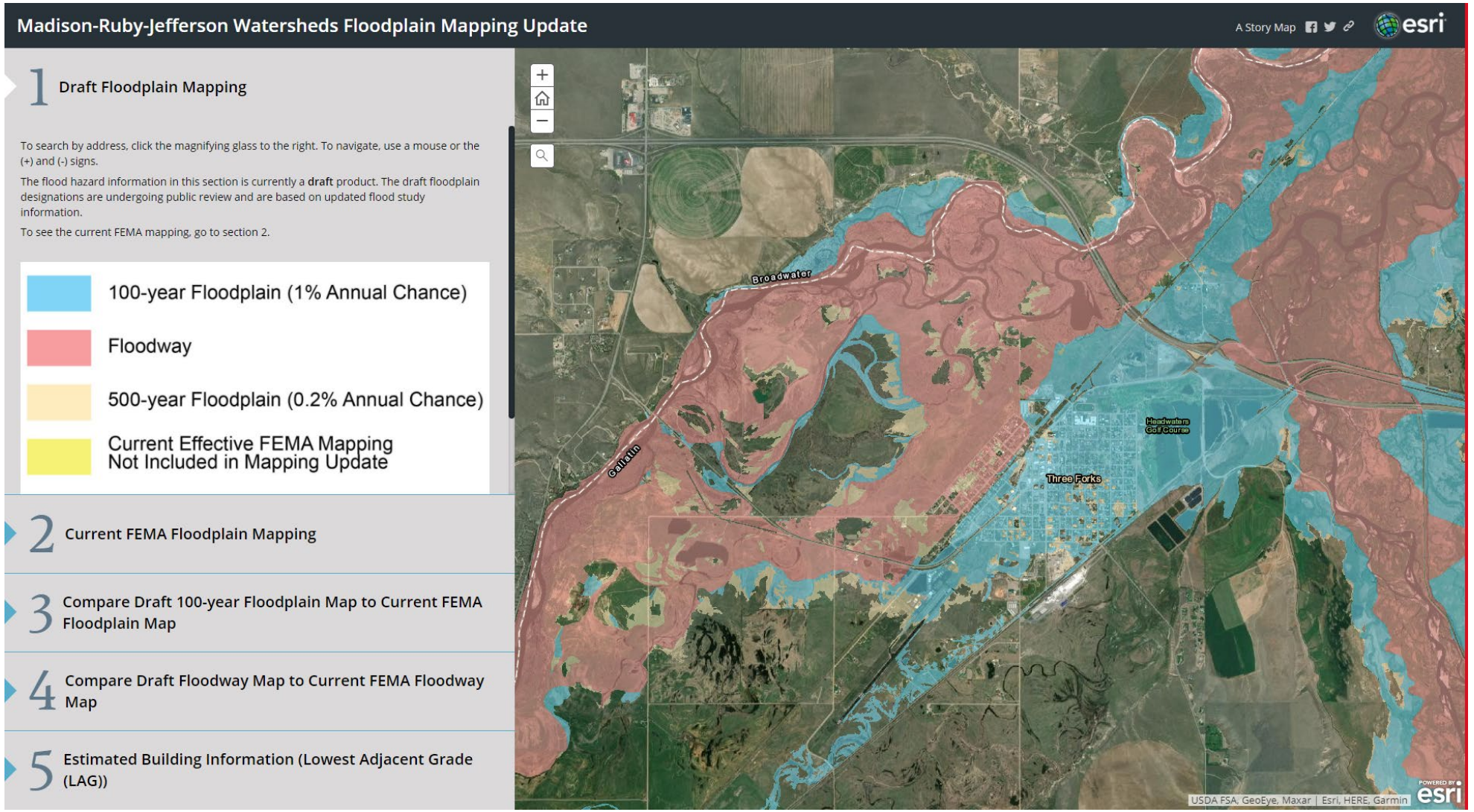


www.floodplain.mt.gov/madison

MONTANA DNRC


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
AREA OF MINIMAL FLOOD HAZARD Zone X
Moderate-risk area
0.2%-Chance Floodplain,
500-Year Floodplain
300
600ft
USGS The National Map: Orthoimagery

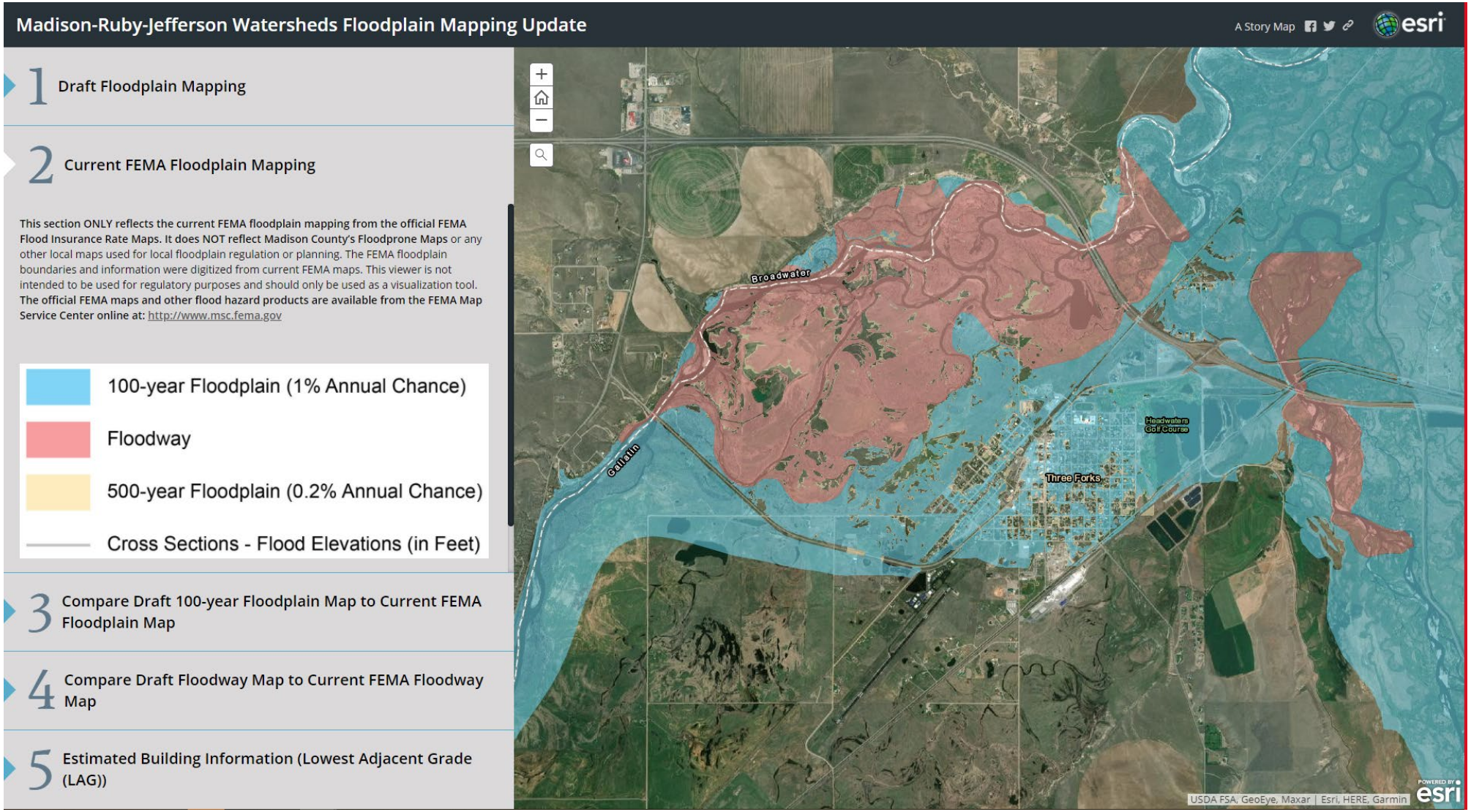
Map Viewer-Draft Floodplain



www.floodplain.mt.gov/madison

MONTANA DNRC

Map Viewer-Draft Floodplain



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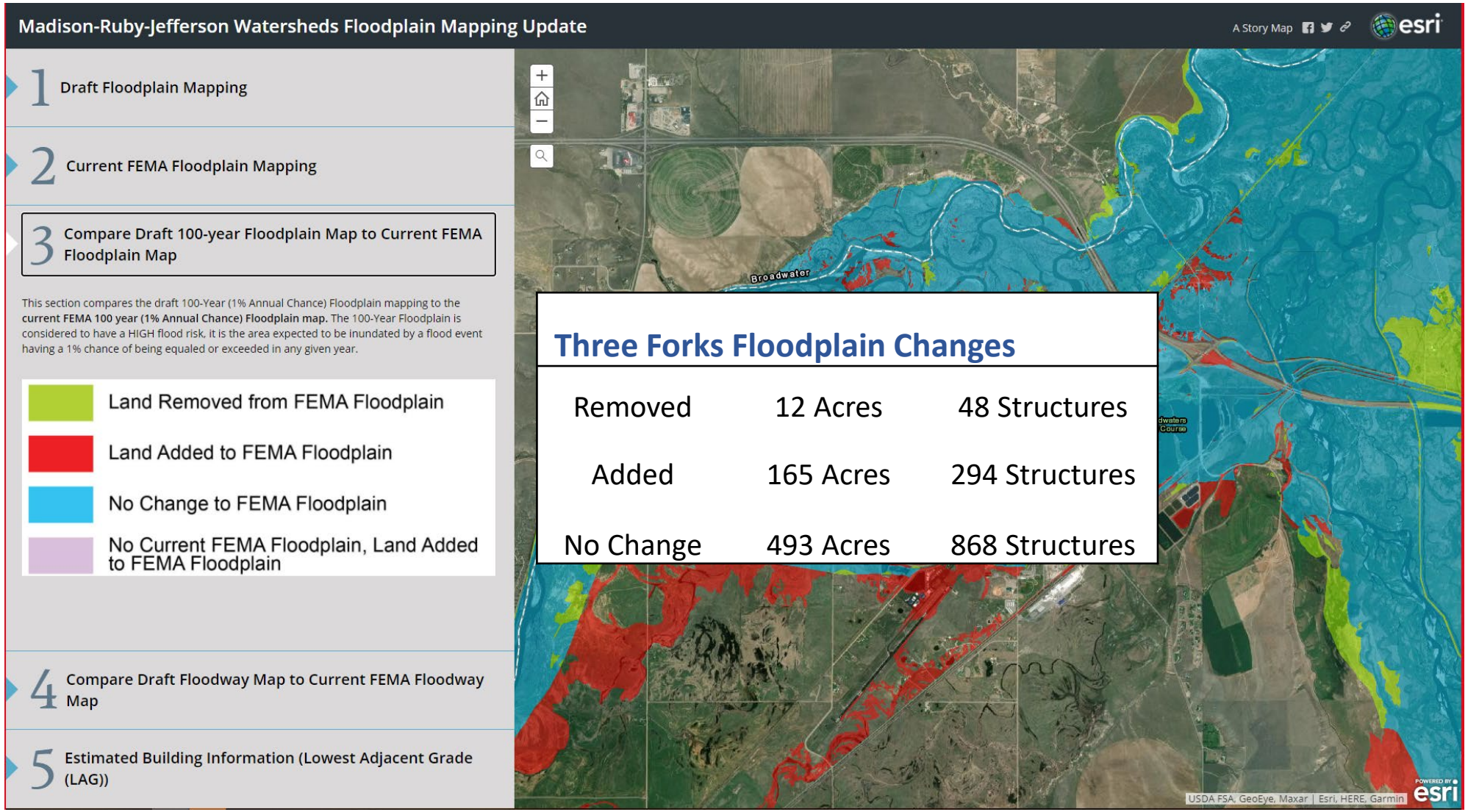
MONTANA DNRC

Map Viewer-Draft Floodplain



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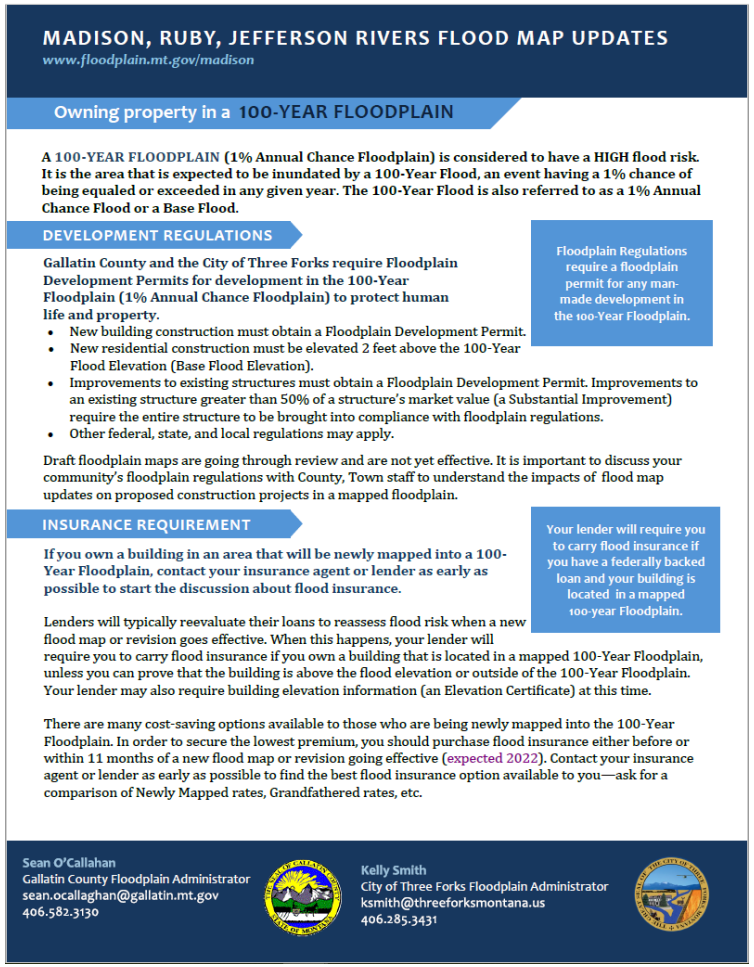
Public Outreach Materials



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

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

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.

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

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.

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.

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.

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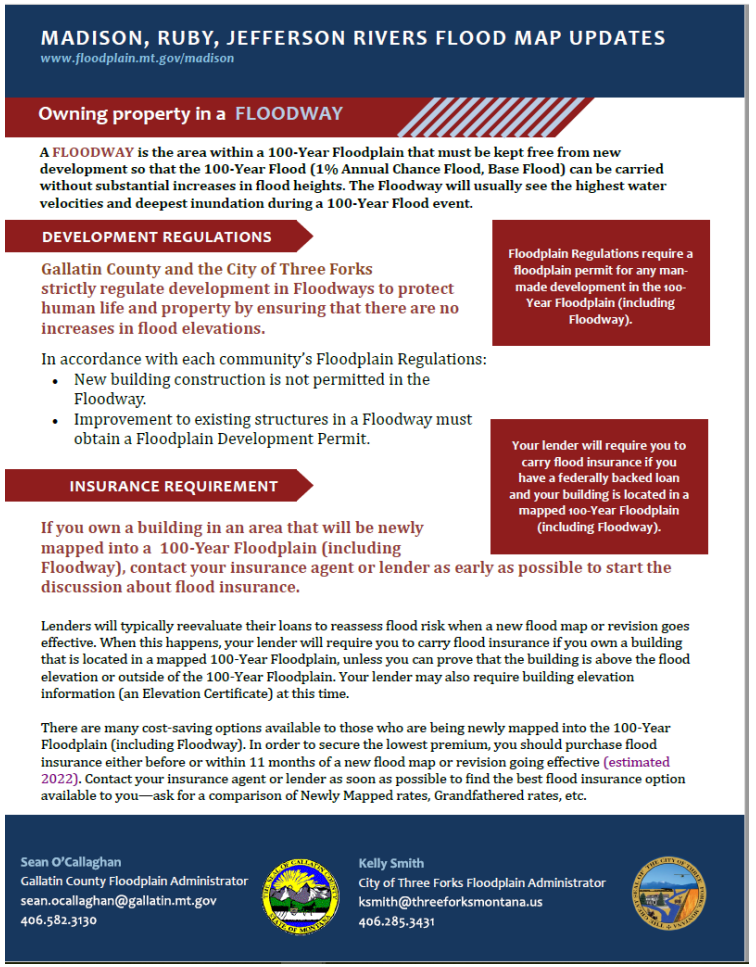

MADISON, RUBY, JEFFERSON RIVERS FLOOD MAP UPDATES
www.floodplain.mt.gov/madison

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

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

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.

INSURANCE REQUIREMENT

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).

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

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

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.

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

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

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.

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 ≤ 50% of building’s value, will require the entire structure to be brought into compliance.

FLOOD INSURANCE

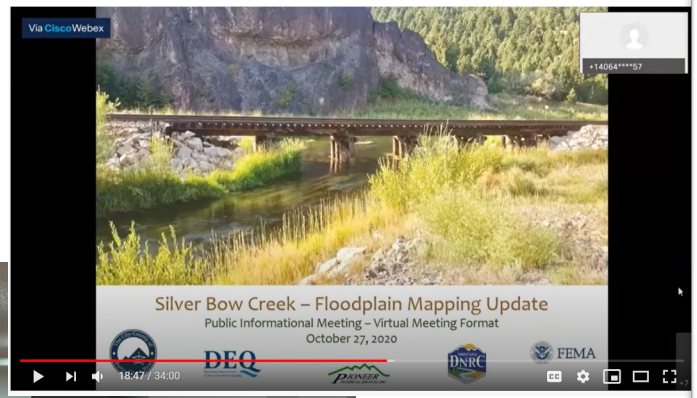
Flood insurance is mandatory for buildings with a federally backed loan in a high-risk flood zone.

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.

City Next Steps

- Review draft maps and study information
- Open house meetings
  - December 2, 2020 (mapping and mitigation project)
    January 6, 2021 (mapping only)
  - Landowner notifications



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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Questions?
Thank you

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