Floodplain Mapping Update:
Missoula County Clearwater River Mapping Project

Public Open House

The meeting will start at 6:00 pm
Project Partners

Missoula County
Todd Klietz
Floodplain Administrator
Jeanna Miller
Sanitarian

MONTANA DEPARTMENT OF NATURAL RESOURCES & CONSERVATION
Tiffany Lyden
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Traci Sears
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Larry Schock
DNRC Regional Engineer (Missoula Office)

FEMA
Mark English
Project Manager
Stephanie Dibetitto
Floodplain Management & Insurance
Meeting Overview

- Floodplain maps
  - What are they/how are they used
  - Existing maps – Clearwater River
- Mapping Update
- Draft Maps
- Next Steps
- Questions
- Optional - Opportunity to talk one-on-one for individual questions
How to Zoom Chat
Floodplain Maps: Identifying Risk Through Mapping
Clearwater River- Current Floodplain Maps

1983

1988

2015
Current Effective

Based off data gathered in 1977
Flood Insurance Rate Maps

- Indicate areas of flood risk
- Used for various purposes
  - Local floodplain regulations
  - Local planning/sanitation decisions
  - Local emergency planning
  - Mortgage lenders
  - Flood insurance premiums
- Need periodic updating
How is a Flood Study Done?

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.
Clearwater Study

2012- Topography (LiDAR) was collected

2017- Hydrology was completed

2018-2019 Hydraulics and Floodplain mapping completed
## Project Schedule

### Estimated Timeframes

<table>
<thead>
<tr>
<th>Completed</th>
<th>Completed</th>
<th>2020</th>
<th>2022 (estimated)</th>
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<tr>
<td>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 determine how much water there will be in a river during a flood event.</td>
<td>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.</td>
<td>Draft data is delivered to the communities. Public review of the draft data.</td>
<td>FEMA Flood Insurance Rate Maps are produced and ready for public review and comment period. A virtual public open house will be held on March 18, 2021. A 90-day official comment &amp; appeal period will be held in mid 2021.</td>
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### Project Timeline: Clearwater River Floodplain Maps Update

- **March 18, 2021**: Public Open Houses for preliminary maps
- **2012 - 2019**: Technical data collected and analyzed
- **2020**: Preliminary Flood Insurance Rate Maps produced – public meetings held
- **Mid-late 2021 (est.)**: FEMA Appeal and Comment Period
- **Early 2022**: Appeals and Comments resolved
- **Early 2023**: New Flood Insurance Rate Maps become effective
- **Mid 2022**: New Flood Insurance Rate Maps finalized
- **90 days**: Public Review
- **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.
Clearwater River Floodplain Study

Clearwater River Floodplain Maps Update

In Missoula County, floodplain maps were modernized through a Digited Flood Insurance Rate Map (DFIRM) project initiated in 2005 and completed in 2015. Included with the digital conversion effort was the Clearwater River Flood Insurance Rate Maps. Essentially, the paper maps were converted from paper to digital maps without a new flood study conducted. The maps that are in place for the Clearwater River are based on data that was collected back in the 1970s. Missoula County and the MT Department of Natural Resources and Conservation (DNRC) have partnered to update the study and eventually update the floodplain maps. The new maps are intended to provide reliable and more detailed information guiding future development in flood-prone areas.

In 2014 DNRC began working on updating the flood study for the Clearwater River.

Upcoming Public Meetings:


County Commissioner update meeting: March 1, 2021, 1:00 pm- 2:00 pm. To view the slides click here.

County Commissioner update meeting: October 27, 2020, 3:00 pm-4:00 pm. To view the slides click here.

View Preliminary Floodplain Maps

Click on the button below to see the proposed floodplain maps and how the proposed maps compare to the existing FEMA Flood Insurance Rate Maps on an interactive viewer:

[Preliminary Map Viewer](#)

You can also view the individual preliminary maps here:

<table>
<thead>
<tr>
<th>Index 1B</th>
<th>30063CB736F</th>
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<td>30063C10717F</td>
<td>30063CB739F</td>
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Preliminary Flood Insurance Study Reports
Map Viewer

Moderate-risk area
0.2%-Chance Floodplain, 500-Year Floodplain

High-risk area
(1%-Chance, 100-Year Floodplain)
  • Flood Fringe

High-risk area
(Area within the 1%-Chance, 100-year floodplain)
  • Floodway
Preliminary Floodplain Maps – Show Risk Areas

High-risk area
(1%-Chance Floodplain, 100-Year Floodplain)
- Floodway
- Flood Fringe

Moderate-risk area
0.2%-Chance Floodplain, 500-Year Floodplain

Low risk area
Preliminary Floodplain Maps & Study
Public Outreach Materials
www.floodplain.mt.gov/clearwater

CLEARWATER RIVER FLOOD MAP UPDATES
www.floodplain.mt.gov/clearwater

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
Missoula County requires Floodplain Development Permits for development in the 100-Year Floodplain (1% Annual Chance Floodplain) to protect human life and property.

- All building construction must be coordinated with the County Floodplain Administrator.
- 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 taxable 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 staff to understand the impacts of flood maps 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.

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 late 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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CLEARWATER RIVER FLOOD MAP UPDATES
www.floodplain.mt.gov/clearwater

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
Missoula County strictly regulates development in Floodways to protect human life and property by ensuring that there are no increases in flood elevations.

In accordance with The County Floodplain Regulations:
- New building construction is not permitted in the Floodway.
- Improvement to existing structures in a Floodway must be coordinated and approved by the Floodplain Administrator.

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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Counties and Towns have floodplain regulations that regulate development within the 100-year floodplain.

Floodplain permits are required for any manmade activities including 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.

No new structures and limited development is allowed in the Floodway.
Flood insurance is mandatory for buildings with a federally backed loan in a high-risk area.

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

Flood insurance is the best form of personal risk management and is an important form of economic protection against flooding.
Newly Mapped- Cost Saving Insurance Options

Purchasing Flood Insurance for Newly Mapped Buildings

During a Flood Insurance Rate Map update, draft floodplain maps may show that an area's risk of flooding will change. If draft floodplain maps show that a building is in an area being added to the existing 100-Year Floodplain (1% Annual Chance Floodplain), that building may be eligible for certain cost-saving insurance options when the new maps become effective due to the building's Newly Mapped status.

How Does the Newly Mapped Procedure Work?

In order to relieve some of the financial burden associated with new flood insurance premiums, the Federal Emergency Management Agency (FEMA) offers cost-saving options for buildings newly mapped into a 100-Year Floodplain during a Flood Insurance Rate Map update or revision.

One cost-saving option FEMA offers for new flood insurance policies is the Newly Mapped procedure. When a building's flood insurance policy is under the Newly Mapped procedure, the policy will receive a subsidized insurance rate for the first 12 months following the Flood Insurance Rate Map update or revision. After the introductory year, the rate will begin to transition to a full-risk rate with annual rate increases of no more than 18% per year.

A policy under the Newly Mapped procedure will stay with the building even if there is a change in building ownership, use, or occupancy as long as federal flood insurance coverage is continuous. A building that loses eligibility for the Newly Mapped procedure either due to a gap in coverage or due to losses (i.e., too many claims) will be rated at its full-risk rate and, in most cases, will require an Elevation Certificate to be rated.

My Building Will Be Newly Mapped into a 100-Year Floodplain. When Should I Purchase Flood Insurance?

Property owners who do not have flood insurance and find that their buildings are being newly mapped into a 100-Year Floodplain must purchase flood insurance within 11 months of the date that the new Flood Insurance Rate Maps become effective in order to be eligible for a policy under the Newly Mapped procedure.

Owners of newly mapped buildings are encouraged to purchase a flood insurance policy before the new Flood Insurance Rate Maps become effective. Not only is their risk higher than they thought (and potential flooding will not wait until the new maps become effective), but they also will be able to renew their policies at lower-cost rates during the first 12 months after the new maps become effective. In other words, they will gain almost an extra year at subsidized rates.

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

A lender must require flood insurance when a building carrying a federally backed loan is located in a mapped 100-Year Floodplain, unless it can be proven that the building is actually above the flood elevation or outside of the floodplain.

www.floodplain.mt.gov/clearwater

View Preliminary Floodplain Maps

Click on the button below to see the proposed floodplain maps and how the proposed maps compare to the existing FEMA Flood Insurance Rate Maps on an interactive viewer.

You can also view the individual preliminary maps here.

Index 1B 30063C0739F 30063C1027F
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30063C0717F 30063C0739F .

Preliminary Flood Insurance Study Reports

30063CV001C
30063CV002C
30063CV003C

Get more information on floodplain designations referenced on the maps:

- 100-Year Floodplain
- Floodway Area (within a 100-Year Floodplain)

Newly mapped into a 100-Year Floodplain? See Low Cost Insurance Options
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.
Next Steps:

- Review Preliminary maps and study information
- Prepare for the upcoming appeal period

Give Comments during the official Appeal and Comment Period
During this project you will have the opportunity to submit an official appeal or comment about the proposed floodplain changes to FEMA. Check back here to stay informed on the specific dates of the Appeal and Comment Period (estimated around Mid 2021). For more details see: Appeal Info

Panel numbers are found on the Preliminary Flood Insurance Rate Maps which can be viewed online at www.floodplain.mt.gov/clearwater

2) Identify the type of objection:
   ____ Appeal
   An Appeal is a technical issue such as an objection to a flood elevation or delineation of a floodplain boundary. To make an Appeal, check the box above indicating an Appeal and provide a detailed description of the issue below. You must also attach supporting documentation to this form, such as a topographic map, an engineering study, photographs, etc. More information about appeals can be found online at www.fema.gov, search for “Criteria for Appeals of Flood Insurance Rate Maps”.

   ____ Comment
   A Comment is a map error such as an objection to a street name, city limit boundary, etc. To make a Comment, check the box above indicating a Comment and provide a detailed description of the issue below. Supporting documentation is not required.

3) Provide a detailed description of the objection and attach supporting documentation (if needed):

(continue on reverse)

4) Mail completed forms to Todd Klietz:
   Missoula County Floodplain
   200 W Broadway
   Missoula, MT 59802

   Hand deliver completed forms to Todd Klietz:
   Missoula County Floodplain
   200 W Broadway
   Missoula, MT

Questions? Contact Todd Klietz at: klietz@missoulacounty.us
Project Partners

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Larry Schock
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Thank you for Participating

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Individual Questions: One-on-One (optional)

Instructions:
1. Stay on the line
2. Type in chat to discuss specific issue or question (i.e., insurance, need help viewing map, building requirements, etc.)
3. Wait for Host to connect you with a DNRC staff person
4. A box will pop up on screen, click ‘Join’ for separate Zoom session
5. Discuss your question with DNRC staff person
6. When done, press ‘Leave’
   and then ‘Leave Meeting’ or ‘Return to Meeting’
Thank You

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