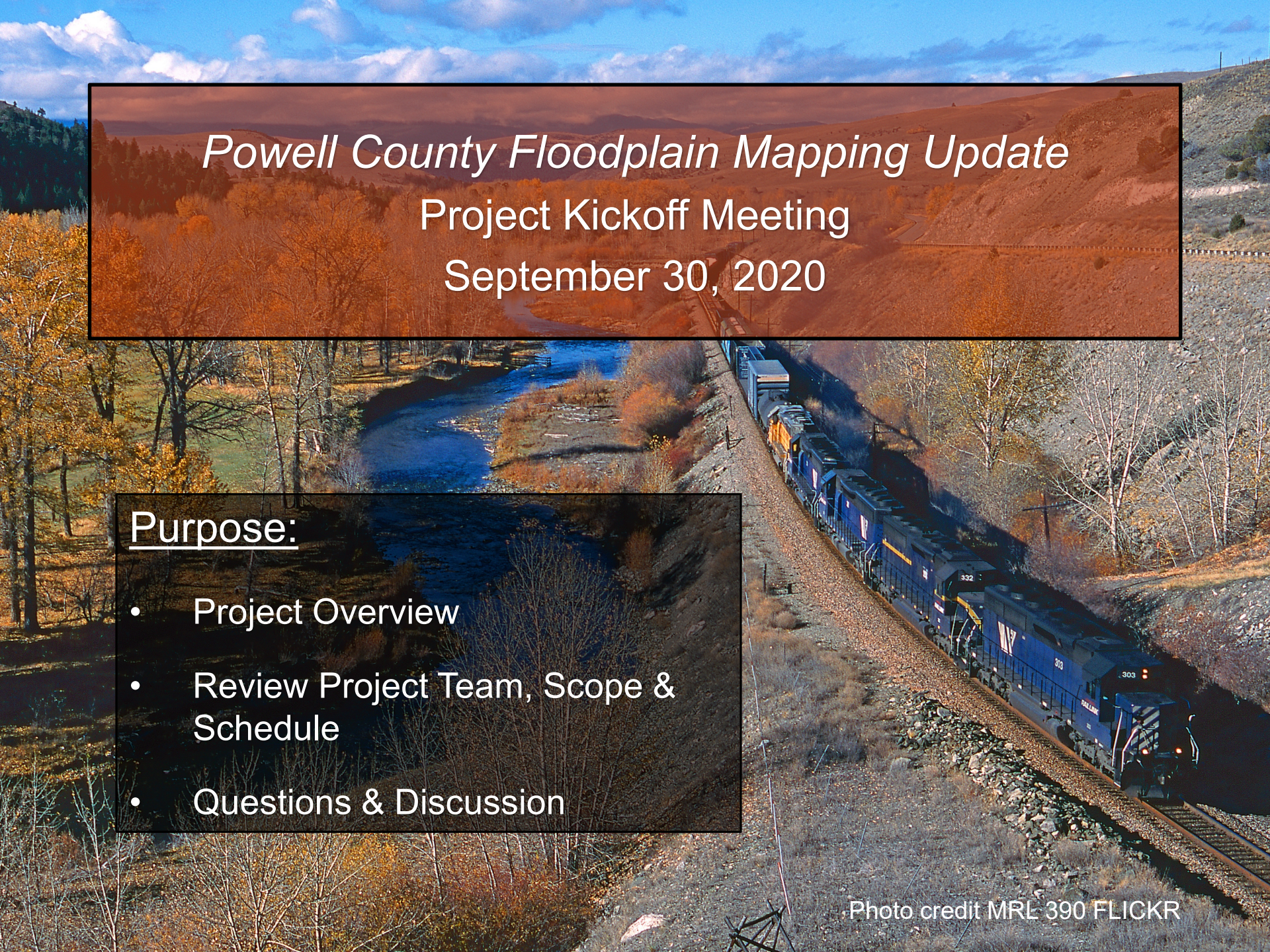


Powell County Floodplain Mapping Update

Project Kickoff Meeting

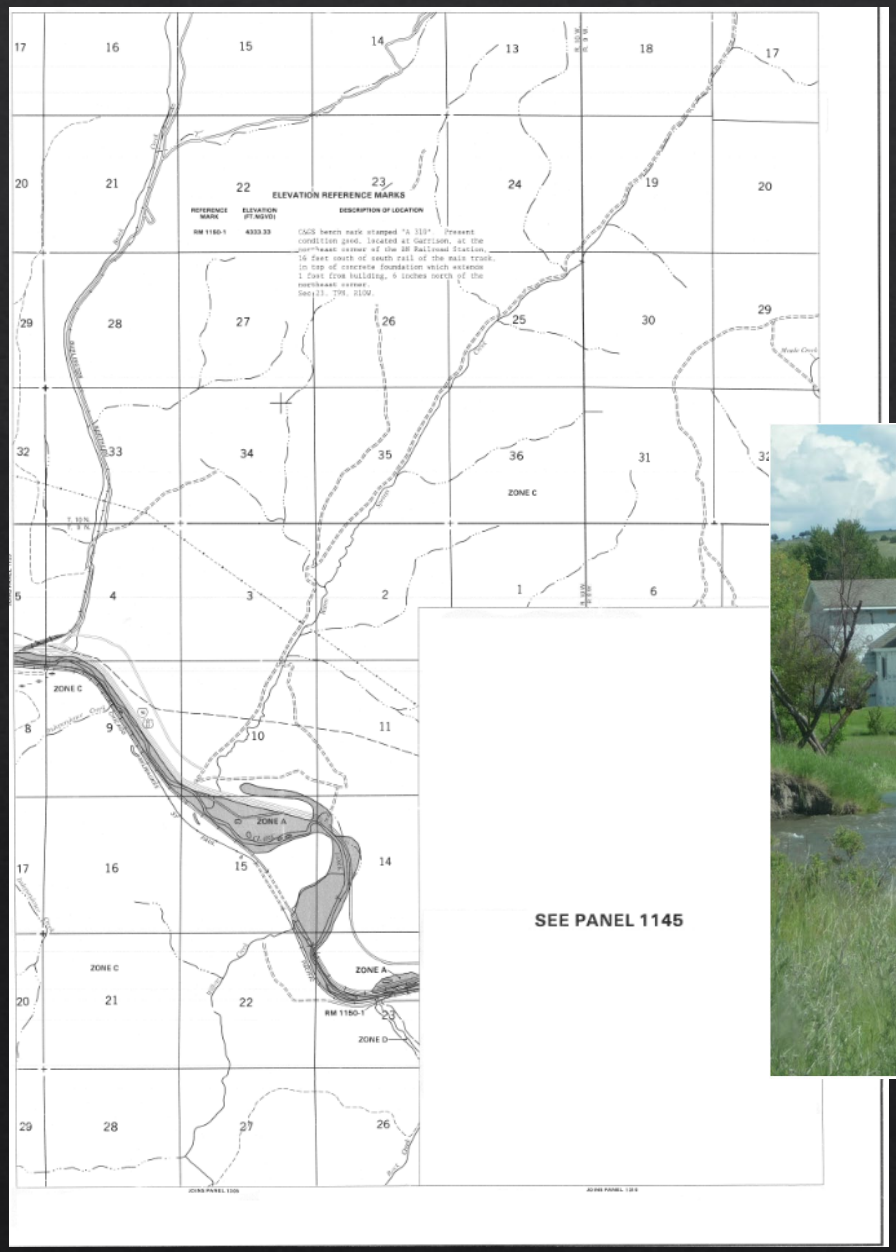
September 30, 2020

Purpose:

- Project Overview
- Review Project Team, Scope & Schedule
- Questions & Discussion

Photo credit MRL 390 FLICKR

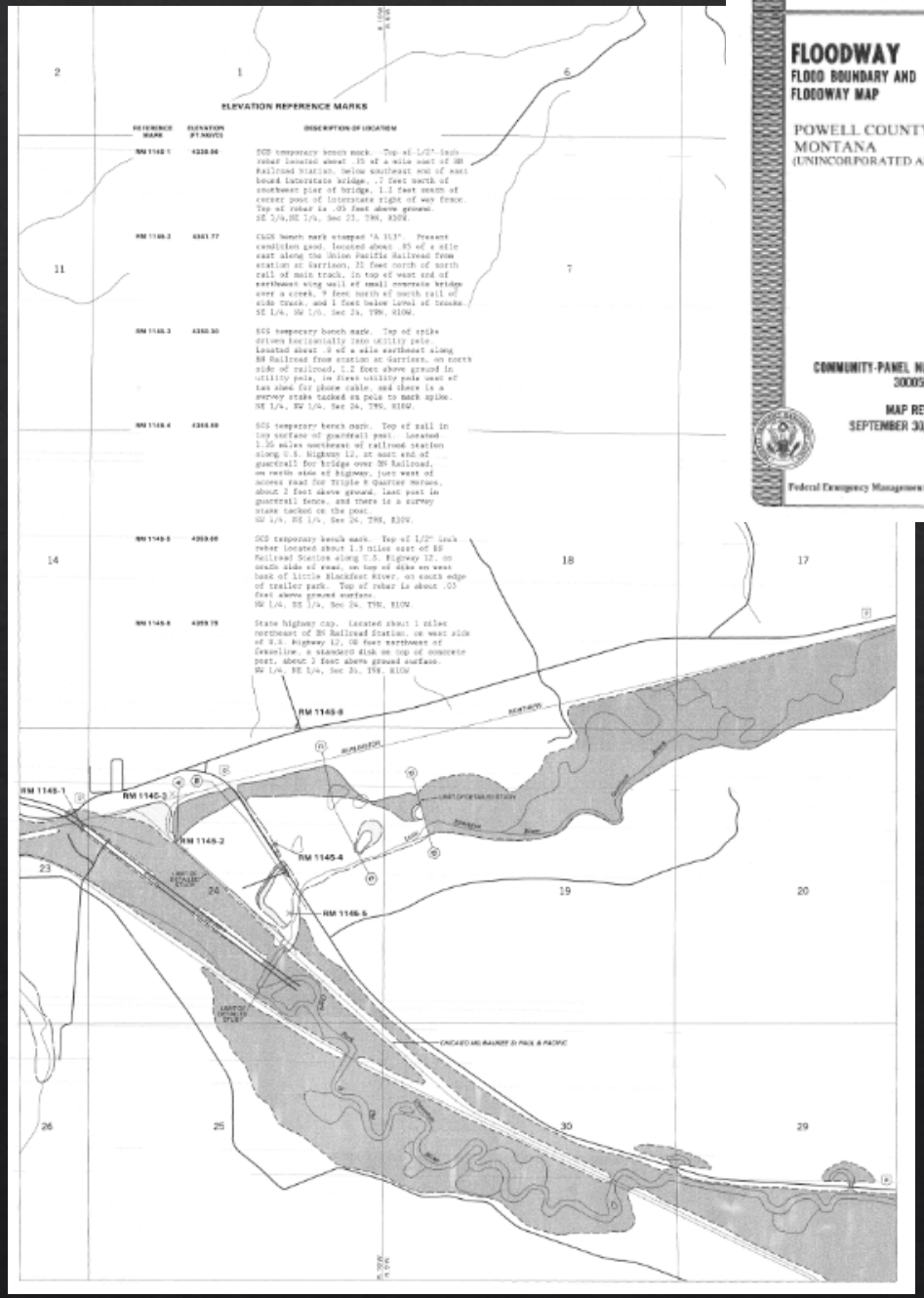
Identifying risk through mapping

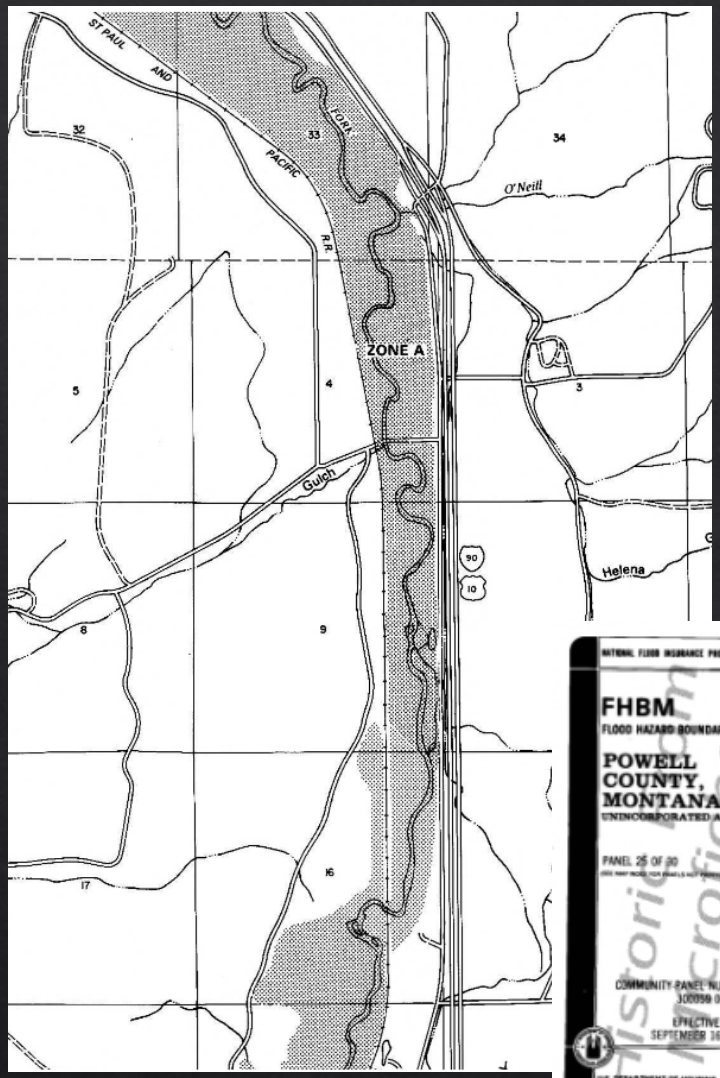


2010 highwater Clark Fork River

Flood Insurance Rate Maps

- Indicate areas of flood risk
- Used for various purposes
  - County floodplain regulations
  - Local emergency planning
- Need periodic updating



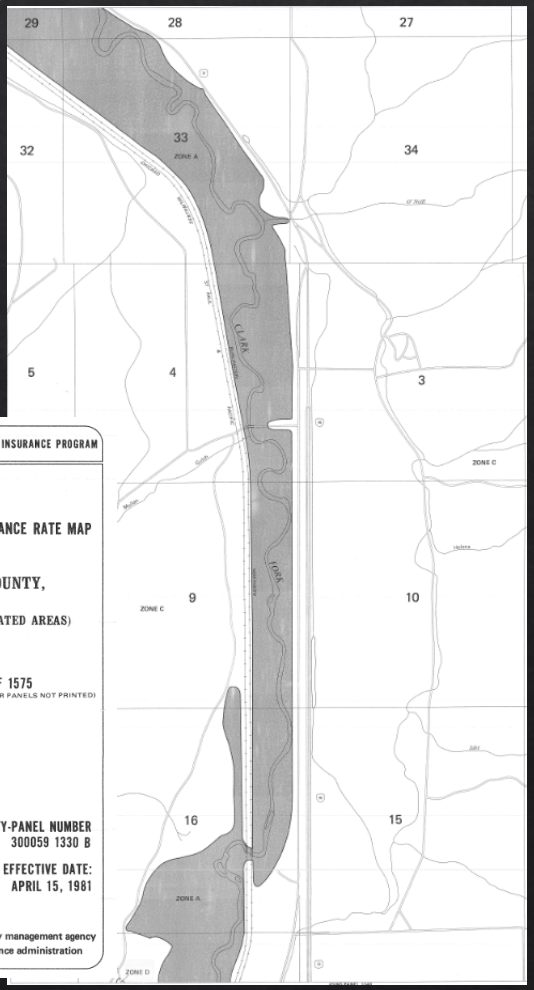


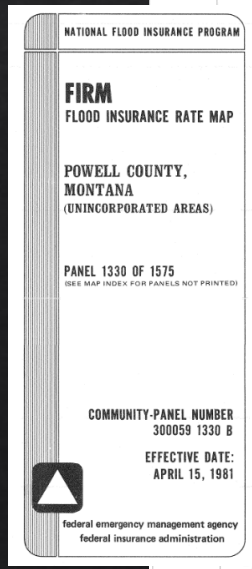
1974 Maps

- Flood hazard boundary map

1981 Maps

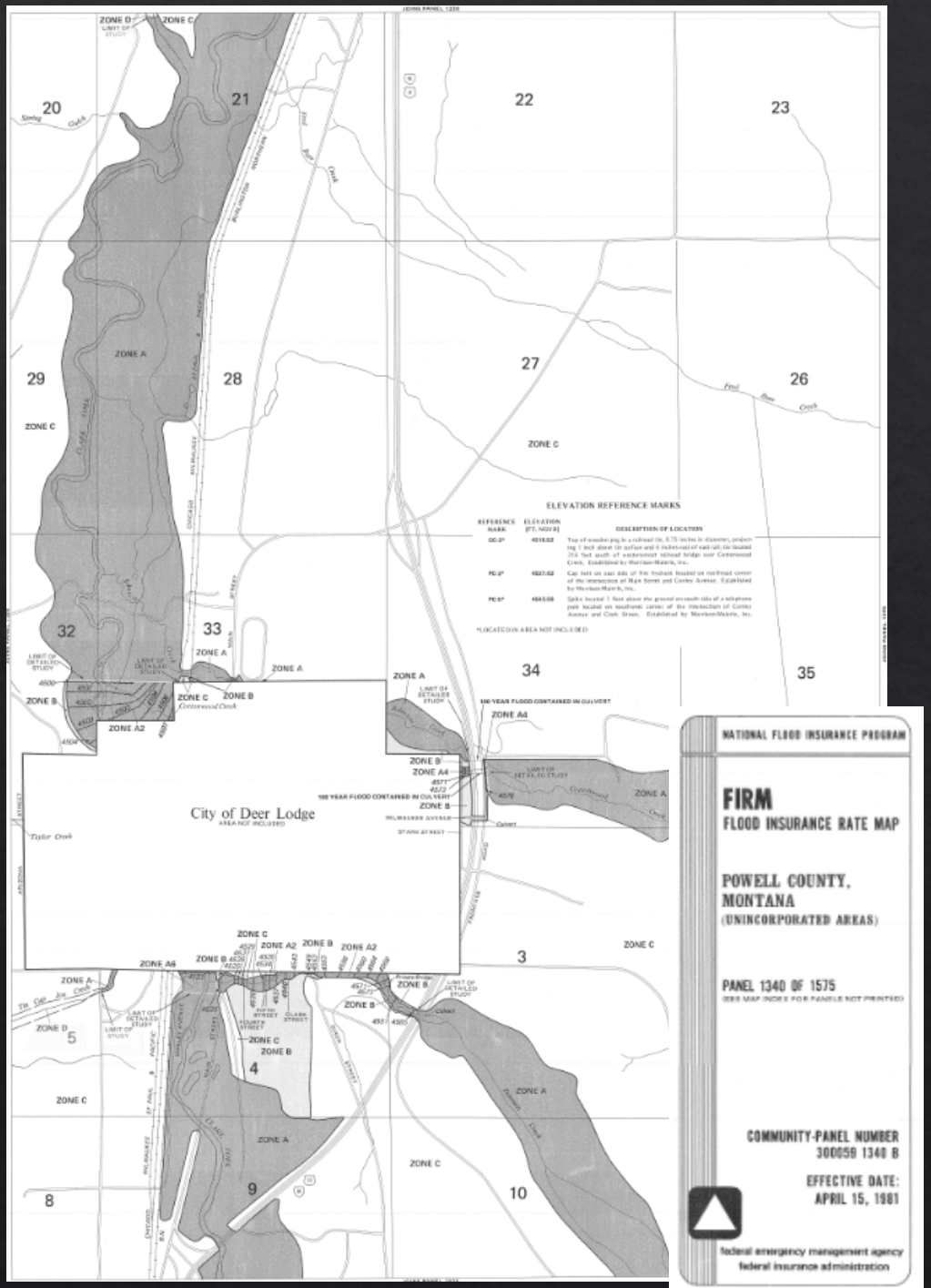
- Approximate /generalized mapping





Powell County Existing Floodplain Maps

- 1981

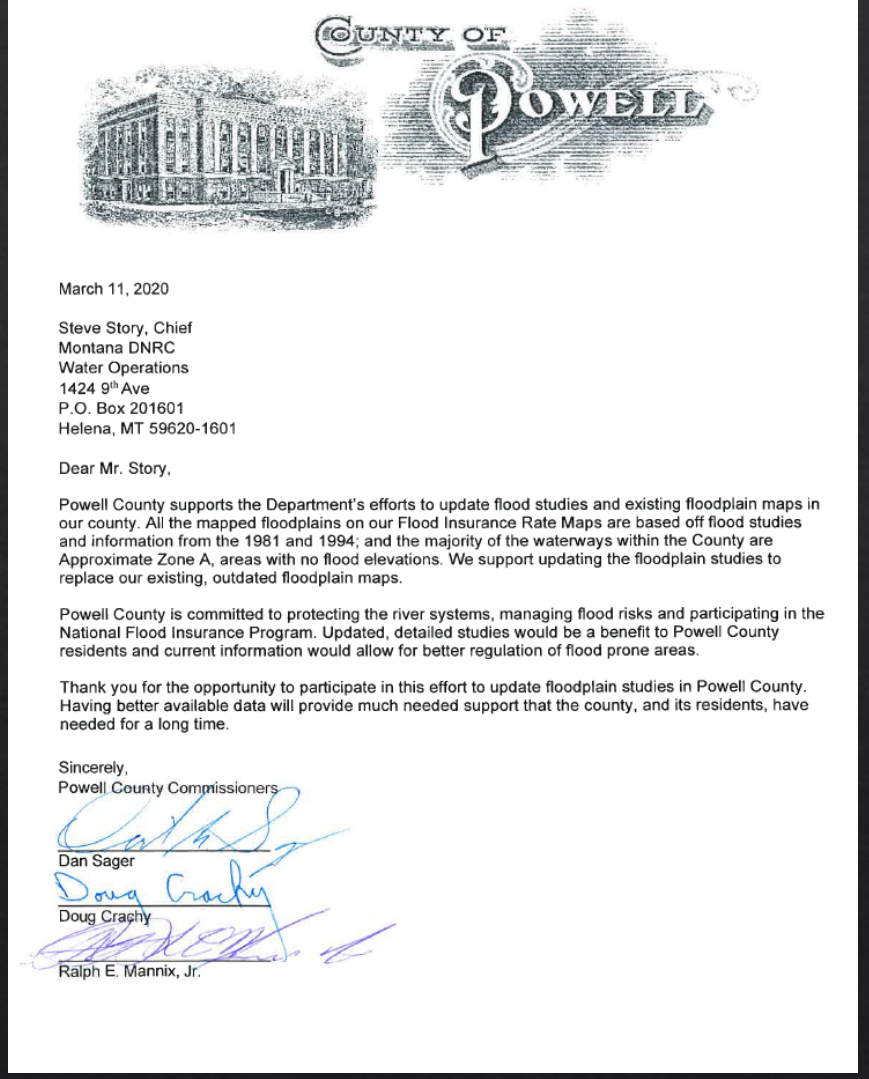


Project Background

- **Pre/early 2020 –** discussions
- **April 2020–** County support letter
- **May 2020 –** DNRC applied for FEMA grants (Teton & Powell)
  - Started ground topography collection (LiDAR)

August 2020 – FEMA grant awarded; contractor selection and contracts

Fall 2020 – Project underway



COUNTY OF POWELL

March 11, 2020

Steve Story, Chief
Montana DNRC
Water Operations
1424 9th Ave
P.O. Box 201601
Helena, MT 59620-1601

Dear Mr. Story,

Powell County supports the Department's efforts to update flood studies and existing floodplain maps in our county. All the mapped floodplains on our Flood Insurance Rate Maps are based off flood studies and information from the 1981 and 1994; and the majority of the waterways within the County are Approximate Zone A, areas with no flood elevations. We support updating the floodplain studies to replace our existing, outdated floodplain maps.

Powell County is committed to protecting the river systems, managing flood risks and participating in the National Flood Insurance Program. Updated, detailed studies would be a benefit to Powell County residents and current information would allow for better regulation of flood prone areas.

Thank you for the opportunity to participate in this effort to update floodplain studies in Powell County. Having better available data will provide much needed support that the county, and its residents, have needed for a long time.

Sincerely,
Powell County Commissioners

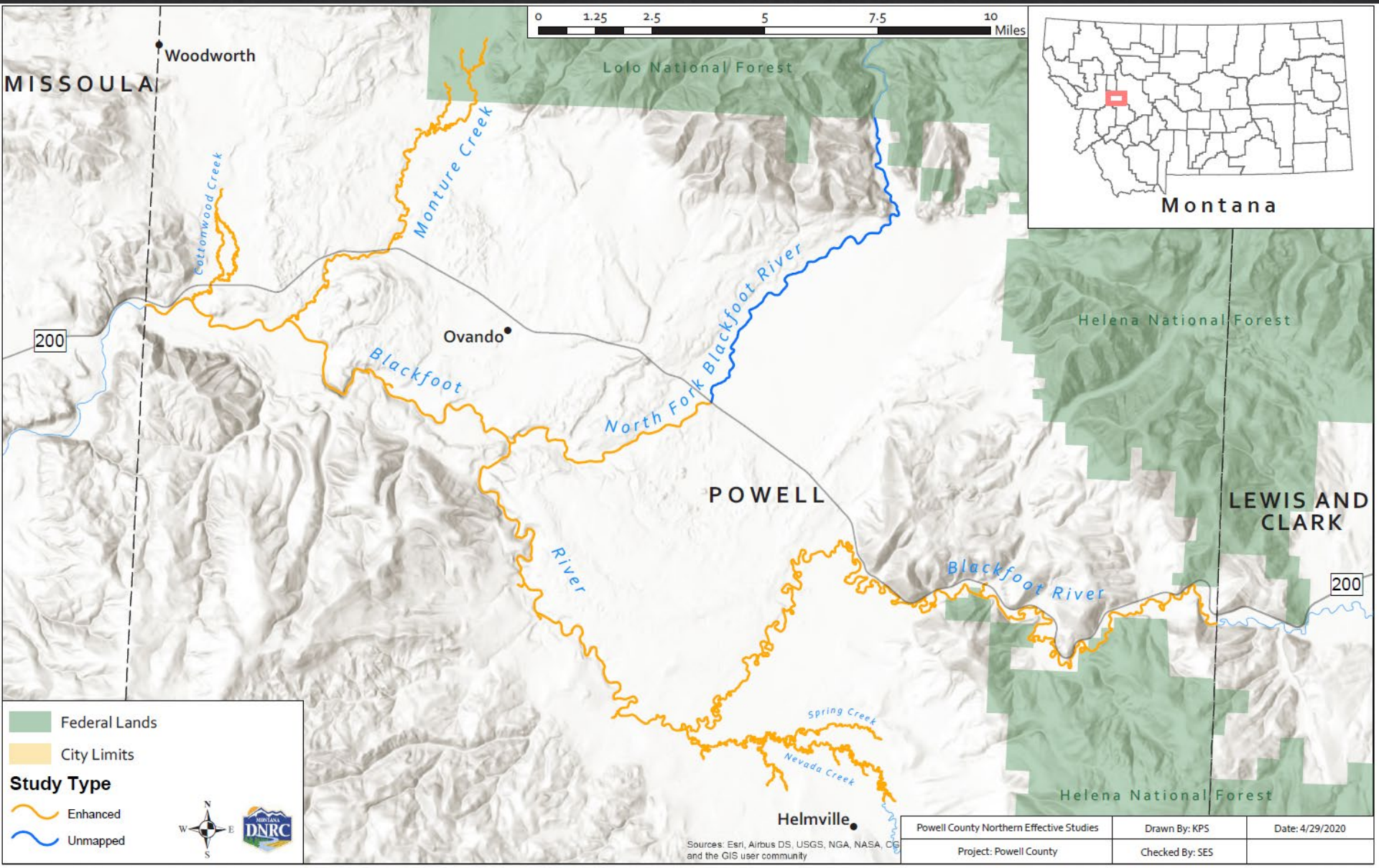
Dan Sager

Doug Crachy

Ralph E. Mannix, Jr.

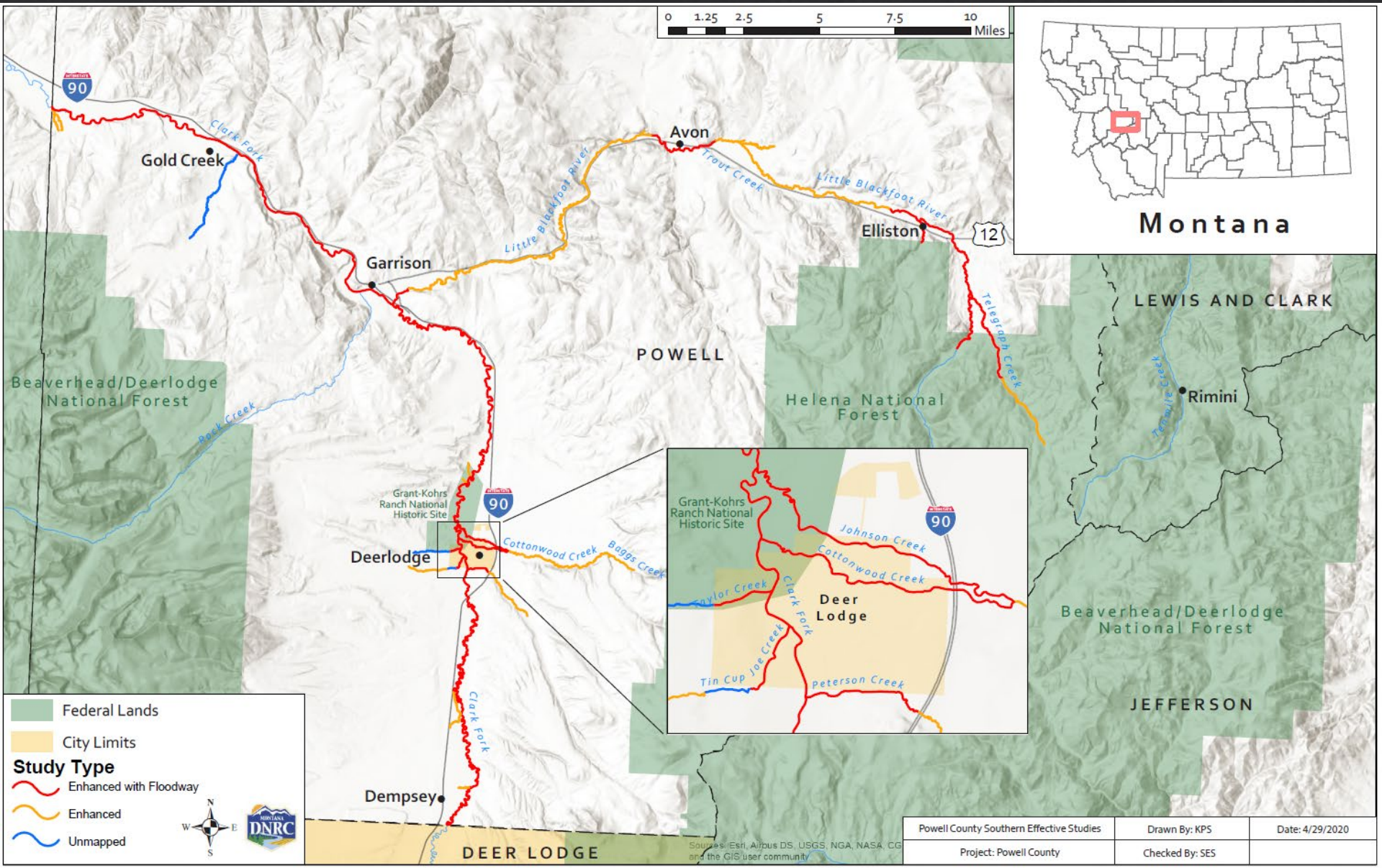
Powell County Floodplain Mapping Project

Update Existing Mapped Floodplains – approx. 242 stream miles



Powell County Floodplain Mapping Project

Update Existing Mapped Floodplains – approx. 242 stream miles



Project Team – Teton County project

- DNRC Floodplain Staff – Tiffany Lyden, Nadene Wadsworth, Steve Story, Katie Shank, Doug Brugger, Traci Sears, Shaye Bodine
- Teton County
- FEMA Region VIII
- DNRC Contractors:
  - Topography/LiDAR –
  - Survey Work–
  - Hydrology- and TBD
  - Hydraulic Analysis and Floodplain Mapping - TBD

Flood Study Steps

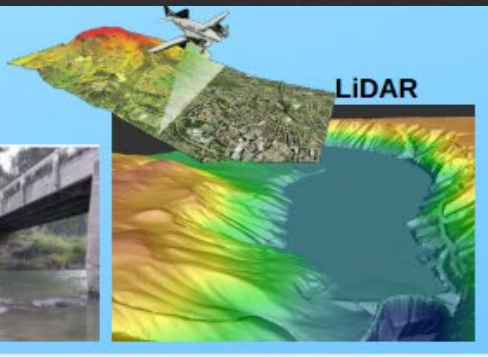
Step 1 - Survey: measurements are made of the topography around the river, along with any culverts, bridges, and road crossings. LiDAR uses an airplane to collect ground elevation over a large area, and ground survey supplements the airborne data.

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.

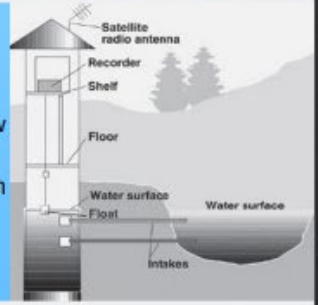
Step 3 - Hydraulics: once the first two steps are complete, calculations can show where the water will go during the flood. The elevation data is combined with the flood flow data to determine where the water will go when it overflows the channel.

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.

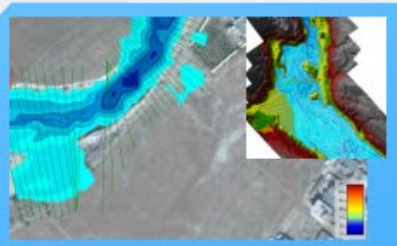
Step 1 - Survey: The type of the survey depends on the size of the study area and type of study.

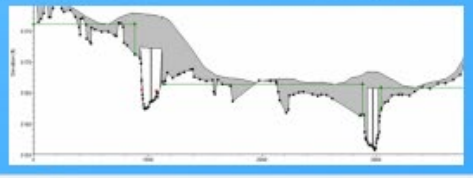


Step 2 - Hydrology: Stream gage stations are an important tool to determine flow rates. If nearby stream gages aren't available, gage data from a similar location is used to determine the flow rate.

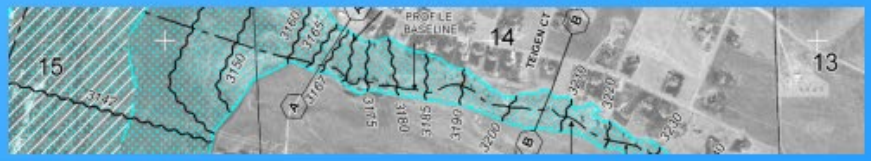


Step 3 - Hydraulics:
5 main components to the model
1) Hydrology (stream flow data)
2) Cross Sections (measurements of the river bottom at key locations)
3) Roughness (thickness of vegetation, land cover, etc determined by surveyors)
4) Structures (road crossings, culverts, bridges, etc.)
5) Downstream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



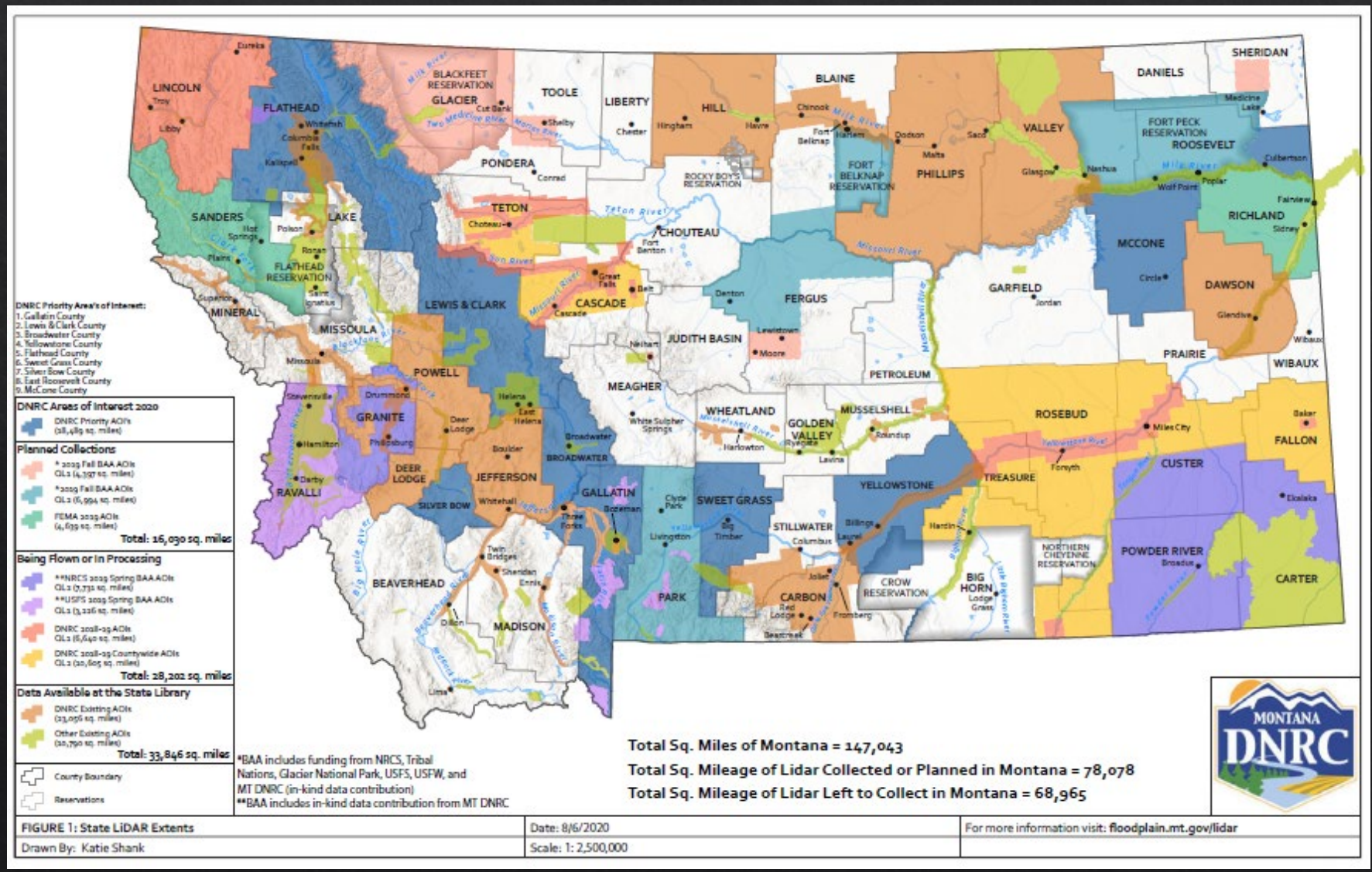


Step 4 - Mapping (delineation):
The result will be the floodplain boundary and a depth grid identifying the shallower and deeper areas of flooding.



Project Scope - Topographic Data Collection

- Lidar Data Acquisition:
  - LiDAR uses an airplane to collect ground elevation over a large area, and Ground Survey supplements the airborne data.



Project Scope

Survey Work

Provides in-stream and bridge/crossing data needed for hydraulic modeling and floodplain mapping.

PIONEER TECHNICAL SERVICES, INC.

Engineering and Environmental Services

August,14 2020.

«AddressBlock»

Dear Landowner,

The Montana Department of Natural Resources and Conservation (DNRC) has hired our firm to conduct survey work in Powell County. The work includes surveying stream channels, bridges and diversion structures or performing a bridge and diversion structure inventory along the Clark Fork River and select tributaries, the Little Blackfoot River and select tributaries, and the Blackfoot River and select tributaries. The work will be used to increase the accuracy of the floodplain mapping in these areas. You can find more information about this on DNRC's website: www.floodplain.mt.gov/floodstudy.

We are sending you this courtesy notice because you have been identified as a landowner in the study area where field work may be performed. Survey crews plan to start in late August and continue through the fall. The work should be completed by the end of November 2020.

If you do not wish our survey personnel to be on your property, or if you would like to be contacted by phone or email prior to survey personnel being on your property, please notify us by contacting George Austiguy with Pioneer using the contact information below.

If you have any other questions or would like more information regarding this project, please contact Nadene Wadsworth with the DNRC using the contact information below.

Thank you

PIONEER TECHNICAL SERVICES, INC.

Pioneer Technical Services, Inc.
George Austiguy P.E.
Project Manager
106 Pronghorn Trail
Bozeman, MT 59718
gaustiguy@pioneer-technical.com
406 723-1981

The Montana Department of Natural Resources & Conservation

Dept. of Natural Resources and Conservation
Nadene Wadsworth, Outreach Specialist
DNRC Floodplain Management Program
1424 9th Ave.
Helena, MT 59601
Nadene.Wadsworth@mt.gov
(406) 444-6732

HEADQUARTERS: 1101 S. MONTANA ST. • BUTTE, MT 59701 | PH: 406.782.5177 • FX: 406.782.5866 | WWW.PIONEER-TECHNICAL.COM

Project Scope

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 per second the river will carry.

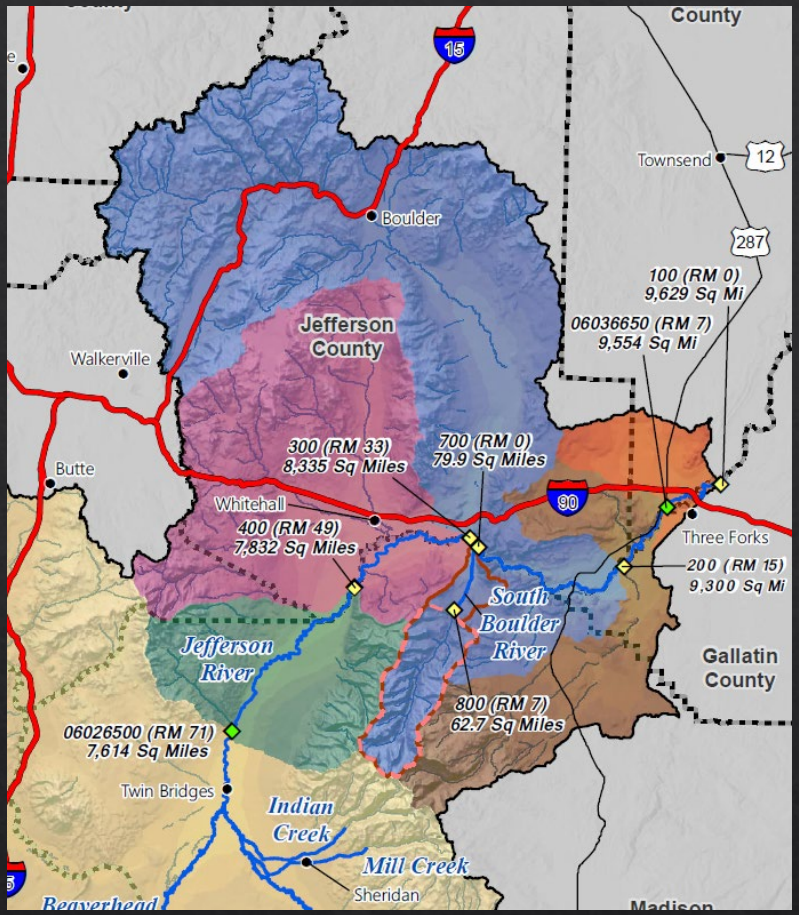
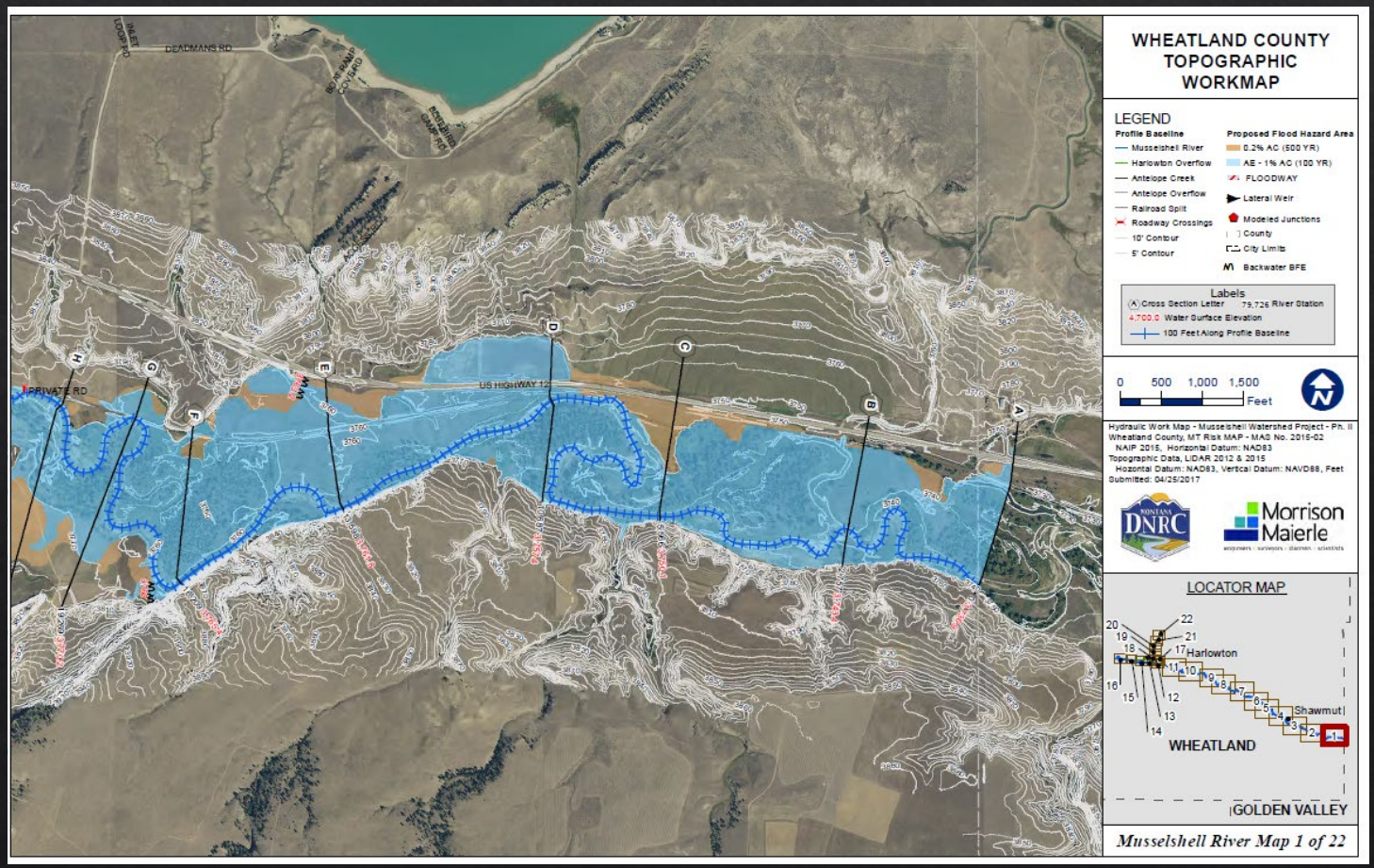


Photo Credit: Billings Gazette

Project Scope

Hydraulic Analysis and Floodplain Mapping

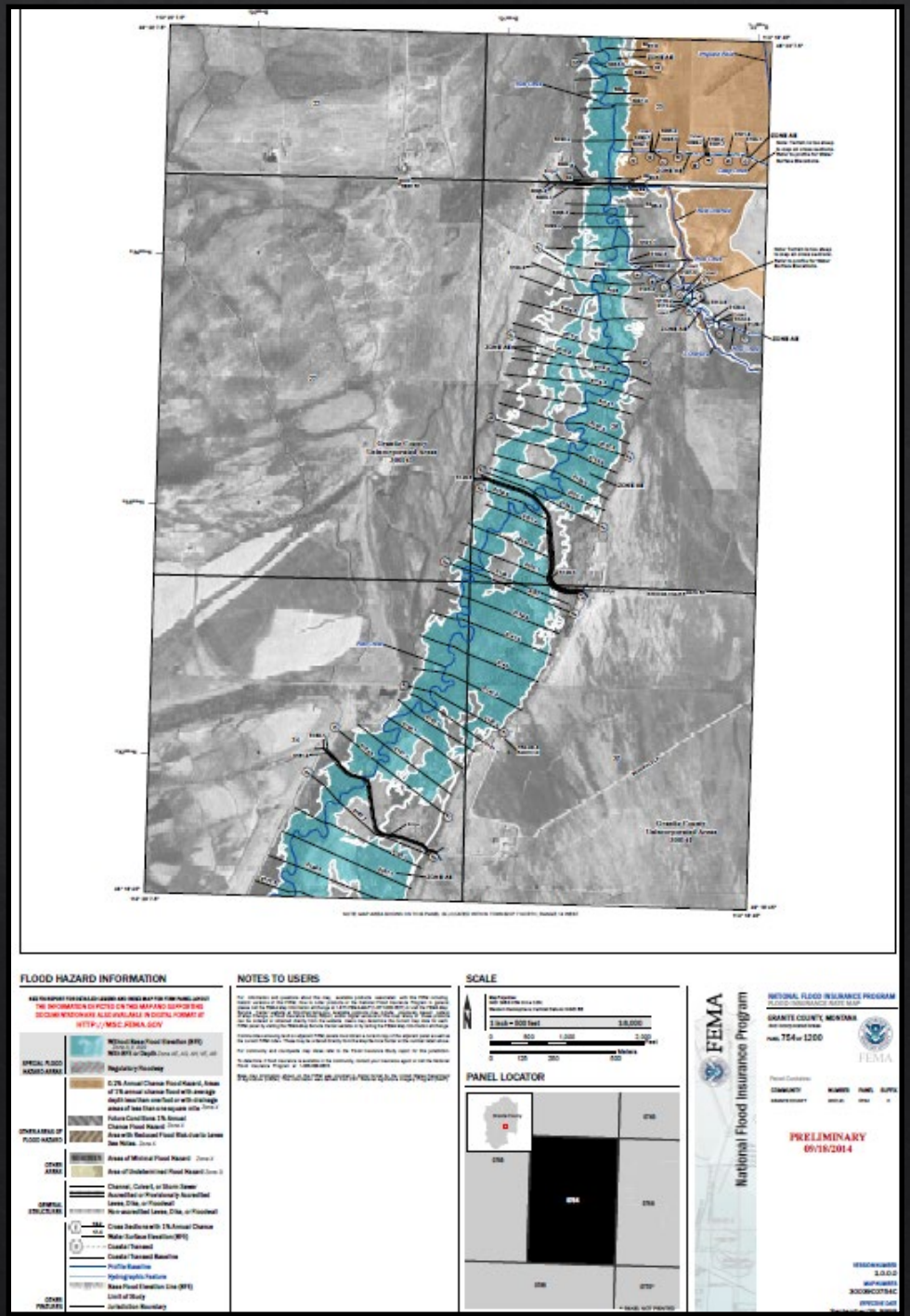
Hydraulic modeling (where the water will go when it overflows the channel) and engineering to produce draft maps.



Project Scope

FEMA Map Production

- Preliminary Maps
- Public Review
- Maps Finalized



Estimated Project Schedule

Topographic (LiDAR) Data – Collected in 2019

Survey Work- Fall 2020

Hydrology- Mid-late 2021

Hydraulics – mid to late 2022

Draft Maps – mid 2023 (est.)

Public review of draft maps – early 2023 (est.)

FEMA Map Production/
Preliminary Maps - late 2023 (est.)

Public review of preliminary maps – 2024 (est.)

FEMA maps finalized – 2025 (est.)

Community Contribution

Community Contribution

CITY OF DILLON, MONTANA

125 N. IDAHO
DILLON, MT 59725

TODD HAZELBAKER
DIRECTOR OF OPERATIONS

NEAL STRAUS
TREASURER

406-683-4245
FAX 406-683-6361

JANI OLSEN
CLERK

JAMES P. DOLAN
CITY ATTORNEY
406-988-0067

MICHAEL KLAKKEN
MAYOR

Dear Landowner,

The City of Dillon has been working with FEMA and the Montana Department of Natural Resources & Conservation (DNRC) to conduct new flood studies and update floodplain maps for Blacktail Deer Creek and the Beaverhead River. The new maps are intended to provide more reliable and detailed information about flood-prone areas along these waterways.

You are receiving this notification because proposed floodplain mapping changes could affect your property.

Visit this website www.floodplain.mt.gov/beaverhead to view the draft floodplain maps.

Attend one of our public open houses to get more information about this project and learn how it may affect your property:

Thursday, May 9th 5:00 – 7:00pm	**Monday, May 13th 5:00 – 7:00pm**
Department of Natural Resources	**Lima Town Hall**
840 N. Montana St	**5 W Section Corner**
Dillon, MT	**Lima, MT**

Staff from the DNRC Floodplain Program and the City will be on hand during the open houses to answer questions and provide an overview of the project. We look forward to seeing you there!

For more information about the overall project, or the draft maps, feel free to contact us directly:

Todd Hazelbaker
Dillon Floodplain Administrator
operations@dillonmt.org
406.683.4245

Tiffany Lyden
MT Dept of Natural Resources and Conservation
tlyden@mt.gov
406.444.0599

Discussion

Tiffany Lyden
MT DNRC
Tlyden@mt.gov
(406) 444-0599

Nadene Wadsworth
MT DNRC
Nadene.Wadsworth@mt.gov
(406) 444-6732

Thank You