Yellowstone County
Floodplain Mapping Update

Project Kickoff Meeting

September 15, 2021

YELLOWSTONE COUNTY MONTANA

MONTANA DNRC

U.S. DEPARTMENT OF HOMELAND SECURITY

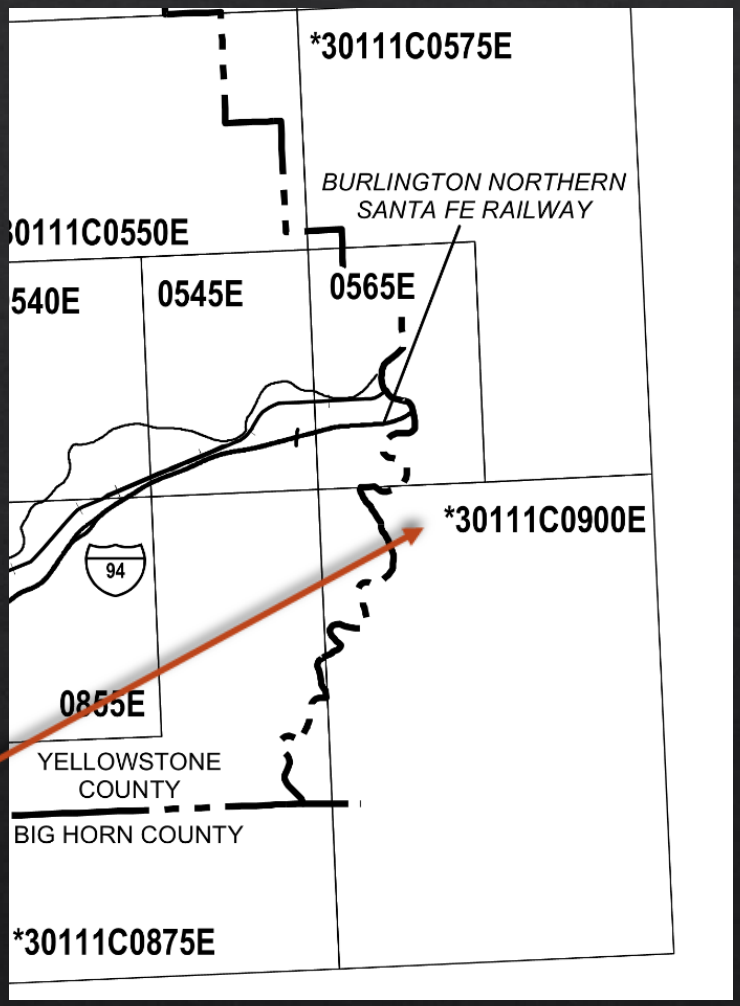
FEMA

Agenda

- Floodplain Maps review
- Flood Study Steps
- Project overview and project team
  - Community coordination
  - Community contribution
  - Estimated timeline
- Project website
- Mitigation planning
- Questions & Discussion

Identifying Risk Through Mapping

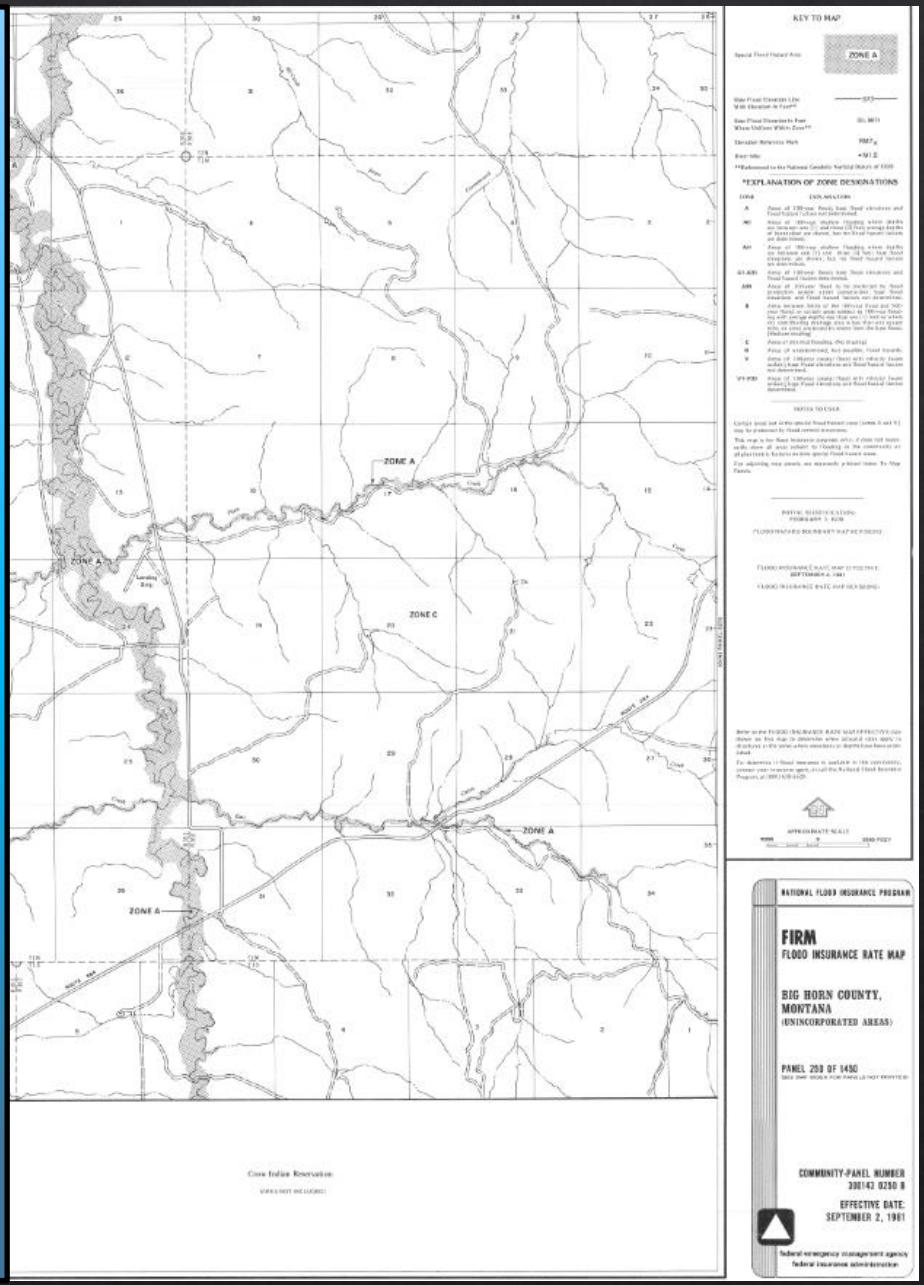
Floodplain Mapping: Identifies flood risk and in turn helps keep people and property out of harm's way.



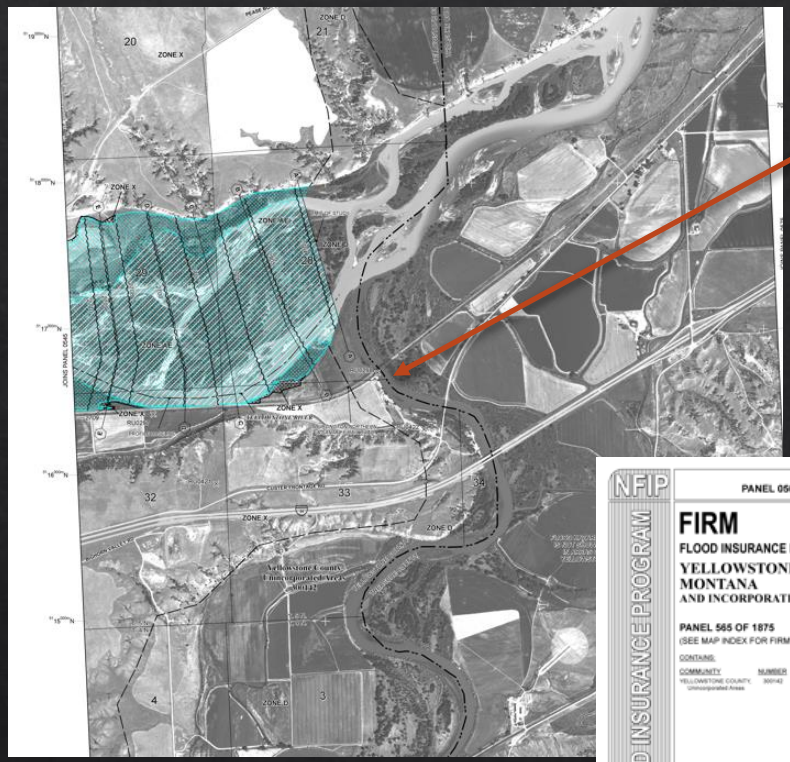
* PANEL NOT PRINTED - AREA IN ZONE D

Floodplain Maps

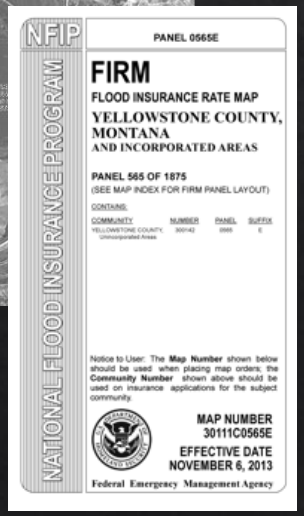
- Indicate areas of flood risk
- Used for
  - Floodplain regulations
  - Planning/Environmental Health
  - Emergency planning
- Coarse, general mapping
  - challenge for county/landowners
- Opportunity to upgrade/replace



Yellowstone County Floodplain Maps (Big Horn River)



Big Horn River No effective mapping on Yellowstone County side


NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0565E

FIRM

FLOOD INSURANCE RATE MAP

YELLOWSTONE COUNTY, MONTANA AND INCORPORATED AREAS

PANEL 565 OF 1875

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

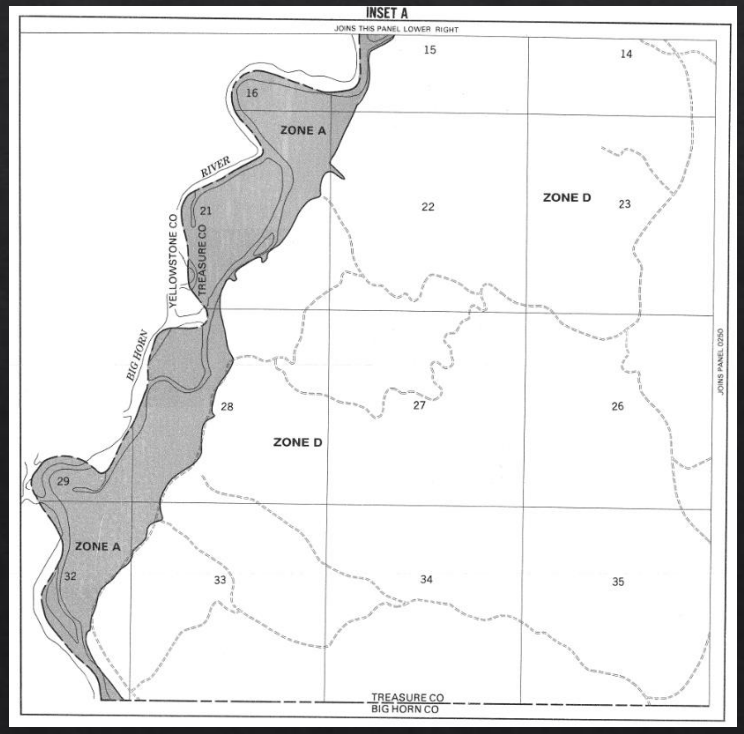
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
YELLOWSTONE COUNTY, Unincorporated Areas	300142	0565	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
30111C0565E
EFFECTIVE DATE
NOVEMBER 6, 2013

Federal Emergency Management Agency



Flood Study Steps

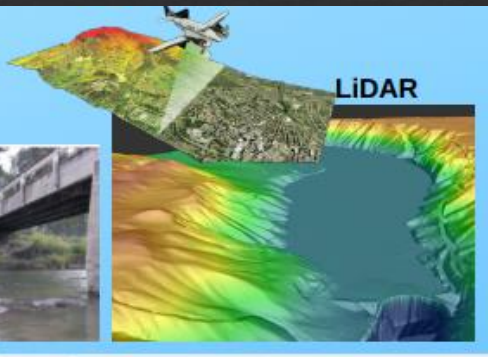
Step 1 - Survey: measurements are made of the topography around the river, along with any culverts, bridges, and road crossings. LiDAR uses an airplane to collect ground elevation over a large area, and ground survey supplements the airborne data.

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.

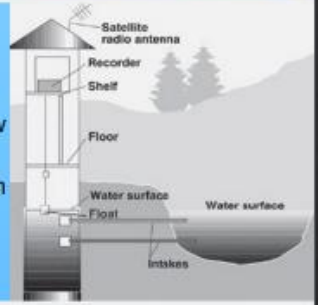
Step 3 - Hydraulics: once the first two steps are complete, calculations can show where the water will go during the flood. The elevation data is combined with the flood flow data to determine where the water will go when it overflows the channel.

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.

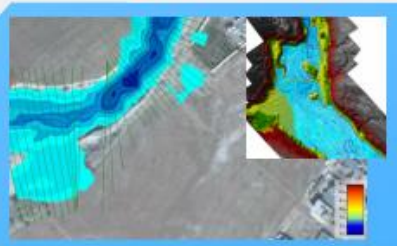
Step 1 - Survey: The type of the survey depends on the size of the study area and type of study.

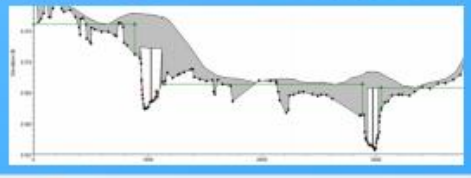


Step 2 - Hydrology: Stream gage stations are an important tool to determine flow rates. If nearby stream gages aren't available, gage data from a similar location is used to determine the flow rate.

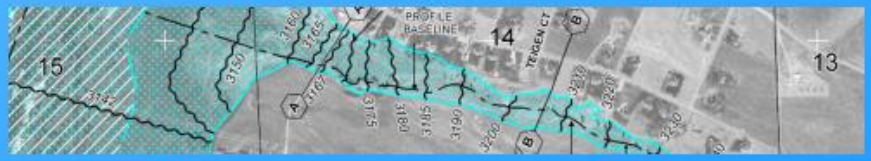


Step 3 - Hydraulics:
5 main components to the model
1) Hydrology (stream flow data)
2) Cross Sections (measurements of the river bottom at key locations)
3) Roughness (thickness of vegetation, land cover, etc determined by surveyors)
4) Structures (road crossings, culverts, bridges, etc.)
5) Downstream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

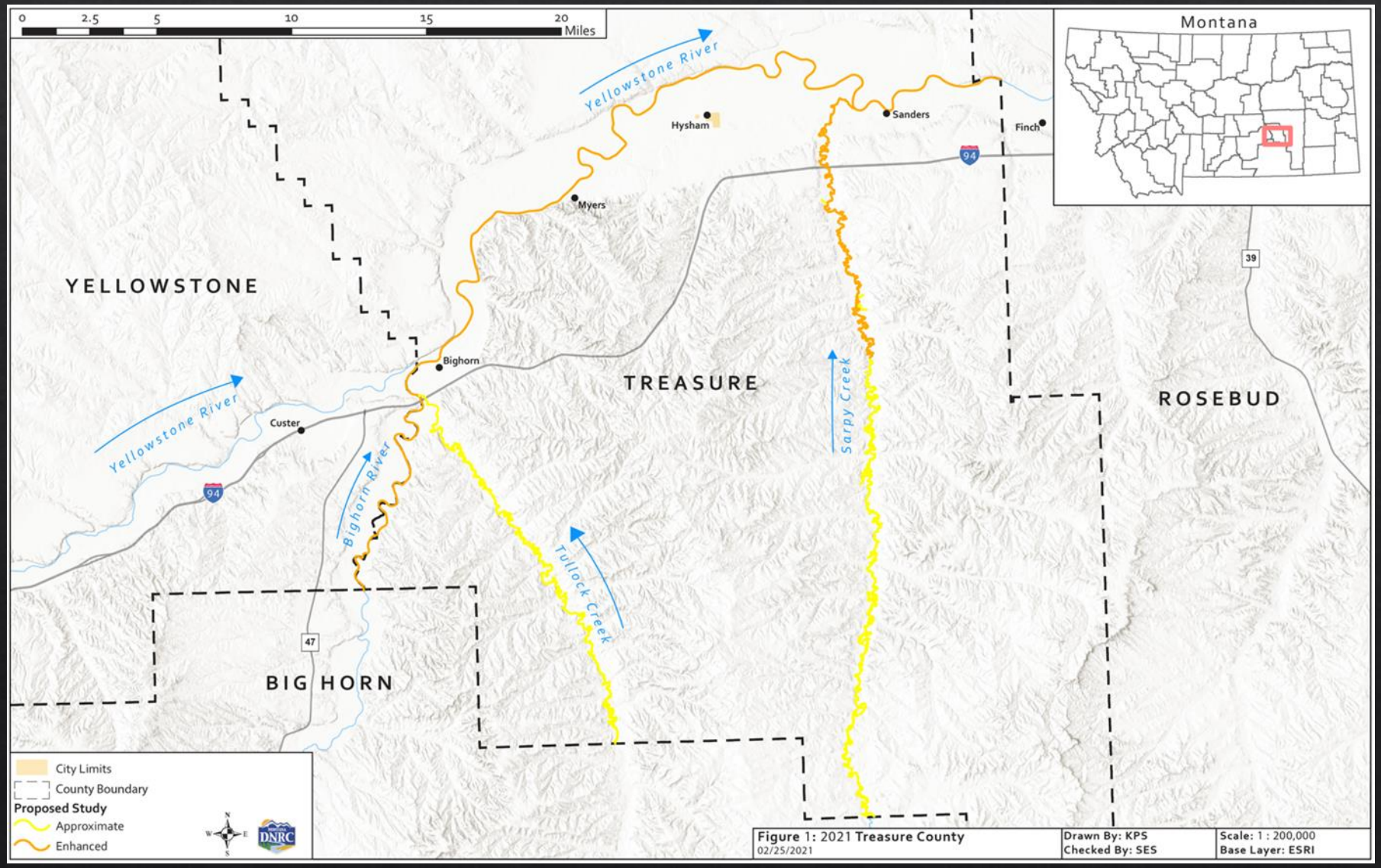




Step 4 - Mapping (delineation):
The result will be the floodplain boundary and a depth grid identifying the shallower and deeper areas of flooding.



Proposed study



Project Team

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

engineers • surveyors • planners • scientists

Community Coordination

- Landowner notifications survey work
  - DNRC contractors will send letters

- Work in floodplain during new study
  - Work with DNRC to update contractors

- Historic flood information sharing
  - Photos, data collected

DOWL

July 24, 2019

Landowner Name
Street Address
City, ST, Zip

Dear Landowner,

The Montana Department of Natural Resources and Conservation (DNRC) has hired our firm to conduct survey work in Carbon, Stillwater, and Yellowstone Counties. The work includes surveying cross sections across the Clarks Fork of the Yellowstone River, Rock Creek, Red Lodge Creek, Rosebud Creek, and the Stillwater River. 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.

You are receiving this letter because our survey personnel have identified your property as a location that would be helpful to use for accessing the areas where the survey work is to be performed. Prior to initiating work, DOWL would like to speak with you further to discuss the possibility of accessing the stream through your property. Please contact Greg Gabel with DOWL using the contact information below. If you reach his voicemail, please leave your contact information and our team will reach out to you as soon as possible.

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,

DOWL

DOWL
Greg Gabel, P.E., CFM
Project Manager
222 N 32nd Street Suite 700
Billings, MT 59101
ggabel@dowl.com
406-656-6399

The Montana Department of Natural Resources & Conservation

Dept. of Natural Resources and Conservation (DNRC)
Nadene Wadsworth, Outreach Specialist
DNRC Floodplain Management Program
1424 9th Ave.
Helena, MT 59601
Nadene.Wadsworth@mt.gov
(406) 444-5918

Estimated Project Schedule

Topographic (LiDAR) Done can be accessed from state library

Survey Work- Fall 2021

Hydrology- Fall 2021

Hydraulics – mid- late 2022

Draft Maps – late 2022 to early 2023

Public review of draft maps – early 2023

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

Project website

MONTANA.GOV
OFFICIAL STATE WEBSITE

SERVICES AGENCIES LOGIN SEARCH MONTANA.GOV

- Water Adjudication
- Water Management
- Water Operations
  - Board of Water Well Contractors
  - Dam Safety
  - Floodplain Management
    - Training
    - Silver Jackets
    - Permitting and Regulations
    - Outreach
    - News
    - Mapping and Technical Resources
    - Disaster and Recovery
    - Community Rating System
    - Big Hole Floodplain Study Products
    - Flood Insurance
    - Property Owner Resources
    - Cool Tools
    - Contacts
    - Gallatin Mapping Updates
    - Grants
    - Musselshell River Flood Maps Update

Carbon County Floodplain Maps Update

Carbon County Floodplain Maps Update

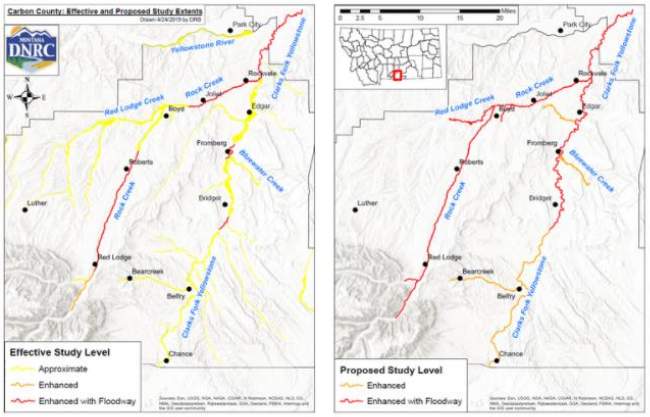
Carbon County is working with MT DNRC and FEMA to update flood studies and floodplain maps for the Clarks Fork of the Yellowstone, Rock Creek, and tributaries. Updated floodplain maps will depict the latest, most accurate flood risk data, and will be used to eventually replace some of the existing FEMA floodplain maps in Carbon County.

For more information, see: Background on existing floodplain maps and Flood Study Process.

2020 Hydrologic Analysis Report: Pioneer-Technical Services

DNRC held project kick-off meetings on October 3rd & 4th, 2019 with Carbon County, Joliet, Red Lodge, Bear Creek, and Fromberg. To view the slides that were presented: click here.

Below are the study extents for the project. To view a larger image click here.



Below is a tentative project timeline. Click here to view the project timeline.

Project Timeline Carbon County Floodplain Maps Update

More Info

Background on existing floodplain maps
Flood Study Process
Hydrologic Analysis Report - 2020

Contact Carbon County

Page Dringman
Carbon County Floodplain Administrator
(406) 932-5470
email

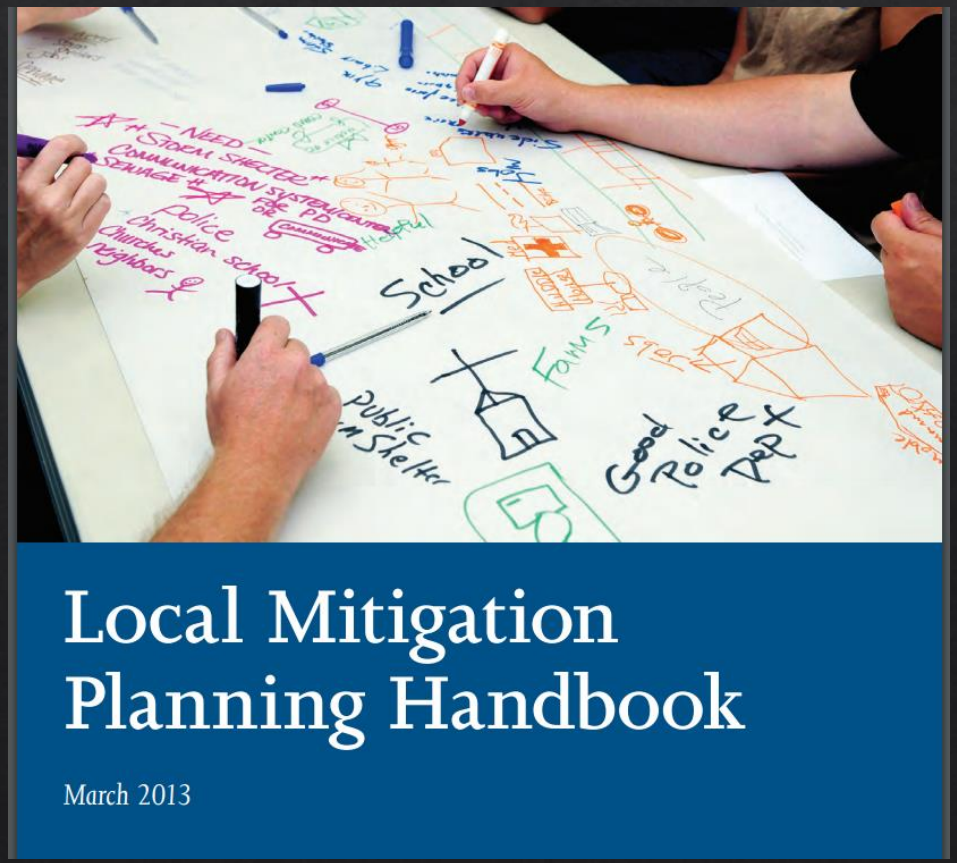
Contact DNRC

Tiffany Lyden
MT DNRC Outreach Specialist
(406)444-0599
email

Nadene Wadsworth
MT DNRC Outreach Specialist
(406)444-6732
email

Mitigation Planning

- Status of plan?
  - Include floodplain mapping project in plan



Mitigation Technical Assistance

In process of developing

May be able to provide engineered mitigation actions as a result of updated flood risk

Discussion

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

Tiffany Lyden
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