MT Eastern Region HMP Kick-Off: Meeting Minutes

Date: 12-14-2022
10:00 – 12:00 PM

Meeting at: Click here to join the meeting
Meeting ID: 235 615 773 140
Passcode: jyZFBf
Call In: +1 406-318-5487,,791387199#
Phone Conference ID: 791 387 199#

Project: MT Eastern Region Hazard Mitigation Plan

Subject/Purpose: Risk Assessment Coordination Call

Attendees:
Cheryl Morrison (Prairie County)
Lindsey McNabb (Roosevelt County DES)
Dixie Pierson (Garfield County DES)
Dale Butori (Fallon County, City of Baker, Town of Plevna)
Mary Jo Gehnert (Dawson County)
Tiffani Jasper (Town of Culbertson)
Emily Geery (SWCA Environmental Consultants)
John Prisk (Prairie County DES)
Annemarie Overcast (Yellowstone County DES)
KC Williams (Yellowstone County DES)
Juliana Prosperi (Eastern MT Region Lead Planner, WSP)
Mary Nyhus (Daniels County)
Brian Mischel (Big Horn County Disaster and Emergency Services)
Katherine Ford and Mark Olson (Golden Valley County DES)
Gordon Oelkers (Roosevelt County Commissioner)
Amber Foechterle (Clerk/Treasurer, Town of Joliet)
Scott Caton, DPW (City of Columbus)
Christine Keltner (Prairie County Commissioner)
Robbie Savelkoul (District Administrator - Roosevelt County Conservation District)
Melissa Baum (Hazard Mitigation Planner, WSP)
Natalie Schoen (Hazard Mitigation Planner, WSP)
Shari Pool (Eastern MT Regional Plan Manager, MT DES)
Justin Russel (Musselshell DES Director)
Audrey Stromberg (Administrator, Roosevelt Medical Center)
Jamie George (Grants Manager, Crow Tribe)
Samantha Malenovsky (Floodplain Manager, City of Miles City)
Keifer Lewis – (Sheriff Prairie County)
Lynn Schilling (Clerk/Treasurer, Town of Terry)
Jason Strouf (Custer County Commissioner)

Burt Keltner (Prairie Community Hospital)
Christian Cullen (Risk Advisor, Crow Tribe)
Courtney Long (Planning Director, City of Red Lodge)
Debi Meling (Public Works Department, Billings)
Kevin Krausz (Custer County Commissioner)
Keith Holmlund (Custer County Commissioner)
Paul Skubinna (City of Glasgow)
Tim Clute (Staff Biologist/Fire Planner SWCA Environmental Consultants)
Darren Rook (Musselshell County DES)
Staci Ketchum (Custer County)
Cyrina Allen (Carbon County DES)
Rod Dees (City of Glasgow)
Jeff Gates (MT DES)
Anne Miller (MT DES)
David Stamey (Stillwater County)
Jen Staton (Regional Emergency Manager SCL Health)
Jennifer Robley (Town of Fort Peck)
Mack Chambers (GIS Analyst, WSP)
Georgia Bruski (Carter County)
Raymond Ragsdale (Powder River County Fire)
Adam Johnson (Powder River County EMS)
Rebecca McEuen (Powder River County DES)
Clint Pederson, (Powder River County)
Broadus Vet (Powder River County)
Kelly Keysor (Lower Yellowstone REC, Sidney MT)
Cory Cheguis (Custer County)
Robert Pancratz (Musselshell County Commissioner)
Director (City of Columbus)
Brandon Stevens (City of Miles City)
Cody Stuchlike (Powder River County Sheriff's Department)
Brandon Roth (Richland County)
Todd Devlin (Prairie County)

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1. **Introductions**
   - Wood and MT Department of Emergency Services (DES) introduced the project team and asked everyone participating in the meeting to use the Chat Box to enter their name, role, and agency or affiliation.
   - Approximately 52 jurisdiction and organization representatives, including counties, cities, and tribal nations participated during the meeting. Representatives present during the meeting are noted in the Attendee List above; several jurisdictions also participated by phone and MT DES clarified who called in by phone. The key discussion is summarized

below; additional details can be found in the meeting PowerPoint presentation. The meeting was also recorded.

2. **Review of the Hazard Mitigation Planning Process**
   - Ms. Prosperi briefly reviewed the steps of the hazard mitigation planning process and that the team was now preparing the risk assessment. She reminded the group that for the Regional Hazard Mitigation Plans; Montana was split into three regions. Of the regions, the Eastern region has the most subregions because it has the most counties. 26 county jurisdictions are participating in the plan, split into subgroups E1 through E-6.
     - Subregions E1-3 need a full county plan update.
     - Subregions E4-6 need a yearly update and will follow a streamlined process focused on mitigation action status and complying with the 2022 FEMA guidance since these jurisdictions recently updated their counties' HMPs.

3. **Highlights from the Returned Data Collection Guides**
   - Ms. Prosperi summarized the Data Collection Guides received from the counties and cities and re-capped key themes in the updates based on questions that reflect the 2022 FEMA Policy Guidance updates. These updates are related to increased stakeholder engagement, increased representation from socially vulnerable groups, building code compliance, and areas for enhancement based on capability gaps. She also summarized past and future development trends based on the responses. For instance, some counties noted growth in the floodplain, increased traffic on rural roads, and a high increase in housing demand. She emphasized that these Data Collection Guides are the tools her team and MT DES will rely on to better understand the most current on-the-ground hazard conditions.
   - KC Williams added that there were large crowd gatherings and increased safety and security during festivals, events, and elections in the past year.
   - Mr. Butori asked about the 2016 tornado and the disaster declaration number.
   - Mr. Stamey echoed KC's comments about additional preparation for civil unrest hazards and the need to add security for large gatherings and potential active shooters.
   - Roosevelt County noted that there were several train derailments in the last four years and whether the BNSF should be added as a stakeholder. These were not federally declared disasters, but they did involve fire, EMS, and law enforcement.
   - Other comments were made by KC Williams about the loss of critical infrastructure, such as water and wastewater services and the electrical grid vulnerability due to human and natural hazards. Mr. Devlin commented that revenue values vary from the market values.

4. **Highlights of Hazard Identification and Risk Assessment**
   - Ms. Prosperi discussed the two main components of the risk assessment: hazard identification (what can happen here) and the vulnerability assessment (what will be affected). She covered the aspects of natural hazards included in the assessment and how those hazards overlap with community assets.

- The group reviewed recent disaster declarations in eastern Montana; a participant asked about the hurricane event. Ms. Prosperi clarified this was related to the Hurricane Katrina event and the refugees that were supported and received aid in Montana during the evacuation.
- Ms. Prosperi explained that the vulnerability assessment looks at a range of assets in the Region: residential/commercial structures and critical facilities and infrastructure. Her team aligned these assets with the recent FEMA Community Lifeline framework.
- Ms. Prosperi also defined the spatial extent, severity and magnitude, frequency of occurrence, and significance hazard rankings.

Flood Hazards

- Flood hazards were covered first and the main flood hazard sources used in the risk assessment were explained. Ms. Prosperi noted the main tributaries in eastern Montana and 10 federally declared disasters in the eastern Region since 1975.
- Next, Ms. Prosperi reviewed flood risk for Billings and Miles City (as examples), and noted the number of parcels located within the 1% annual chance floodplain. Mr. Strouf from Custer County stated they are working with the USACE on a Flood Levee that is being reconstructed along the Tongue River and planning another along the Yellowstone River. He noted the flood analysis shown does not account for the flood prevention mechanisms in place in the City and overestimate the risk. Ms. Prosperi stated the analysis takes into account only accredited flood levees and controls. Mr. Chambers asked whether the City's flood levees were accredited; if they are not they were not accounted for in the analysis, but he can look into it and update the map and analysis, if necessary. Ms. Poole added the City and WSP staff could follow up with MT DES to discuss adding a narrative on this flood levee in the Eastern Region HMP and Annex. Ms. Prosperi added that every jurisdiction in eastern Montana participates in the National Flood Insurance Program. Miles City also requested to invite their City staff and Commissioners to a follow-up meeting.
- Mr. Butori asked why the flood insurance for Fallon was high; there is a 98-acre lake in the middle of town and most of the town is below an earthen dam. WSP staff will check the NFIP payment data.
- KC Williams recommended the team note the date the flood date represents. For example, state the flood data is accurate "as of" 2021, because it does not include the recent 2022 flooding.
- Ms. Keltner noted that flood hazards overall should be medium to low for Prairie County.
- Flood hazards should be high for Miles City.

Dam Incidents

- Ms. Prosperi defined dam failure as either a complete failure or an event of an unexpected release that causes rapid downstream flooding. She added that dams are classified as either high, significant or low hazard dams . High hazard dams are those that

will likely cause loss of life and result in property damages. Significant hazard dam - Loss of life is not likely but failure may cause economic loss, environmental damage, or disruption of lifeline facilities. Low hazard dams would likely only result in minimal property damage .

- Most jurisdictions ranked dam incidents a low hazard during the polling.

Wildfire

- Mr. Clute from SWCA presented the wildfire risk analysis.
- Custer County DES had a question on whether the analysis took into consideration fuels projects in the WUI. Mr. Clute added it did not.
- Mr. Russell asked when the DNRC analysis conducted to verify that the data was capturing the large increase we have seen over the past year of development in the WUI.
- Mr. Devlin asked whether there are federal properties for value property as part of the estimate. Mr. Chambers replied that we used data displayed on their site: https://mwra-mtdnrc.hub.arcgis.com/. Mr. Chambers added that sometimes Exempt or Federal Properties are not valued in the Assessor data so it would not have been covered if that's the case.
- Powder River County noted wildfire should be ranked high.
- KC Williams asked to include in the plan an indication of "when" the data used for any statistics. For all statistics, a qualifier that states "data collected as of" should be noted.
- Mr. Russell from Musselshell County stated he will get the updated information to the assessor, now that the assessor is back from medical leave. The graphic covered most of the area, but he added they had a new Amish development with 100 residents move into an area that wasn't highlighted.
- Mr. Clute added in the chat after his presentation that the WUI delineations were gathered from data the MT DNRC compiled and published in 2020. Most of the WUI delineations were conducted over a decade ago and were primarily based on previous CWPPs. So much of the WUI is likely out of date for counties that have experienced significant growth over the last decade. Unfortunately, the MT DNRC does not have more recent data. The exact method for how the WUIs were delineated likely changes from county to county (based on their Community Wildfire Protection Plans [CWPPs]). He added he is uncertain if/how fuel reductions were included. He also confirmed that the risk assessment also does not include fuel reduction projects in it calculations.

Drought

- Ms. Baum introduced drought hazards and defined drought as a hazard that can have cascading impacts or even increase the severity or probability of hazards such as wildfires or cause trees to die which could increase the chances of downed trees during a storm event.
- She noted that 2021 was a challenging drought year statewide and based on information shared in the Data Collection Guides. The 2022 drought appears to continue to impact

Eastern MT. She then reviewed graphics from the US Drought Monitor and FEMA's National Risk Index on the annualized frequency of drought in Montana.
- Prairie County ranked drought medium and Mr. Devlin ranked it high.

Severe Summer Weather
- Ms. Prosperi reviewed severe summer weather, which includes hail lightning, excessive heat, and heavy rain events. Most counties ranked severe summer weather as a medium hazard.

Wind and Tornadoes
- Ms. Prosperi noted that tornadoes and windstorms are being profiled and analyzed in one hazard section; NCEI data further breaks them down into High Wind, Strong Wind, Thunderstorm Wind and Tornado events. Both events can occur anywhere in the region, but Valley, Yellowstone, Roosevelt Counties had the most reported events.
- Most counties and cities ranked wind and tornado events high.

Severe Winter Weather
- Winter storms are highly likely to occur every year in the Eastern Region. Such events also have the potential to causes significant property losses as well as causalities.
- Most counties and cities ranked severe winter weather as a high hazard.

Landslide
- Ms. Prosperi stated that spring is typically when the Region experiences landslide and rock fall events and noted past events that led to disaster declarations in Daniels, Dawson, and Valley counties in 1986. She noted there are data limitations for landslide mapping and asked communities to note any event and where it occurred. Most counties and cities ranked landslide hazards low. KC Williams stated Yellowstone County should be occasional on the frequency of landslides but limited for the geographic location.

Earthquake
- Ms. Prosperi introduced earthquake hazards and showed a map displaying the latest probabilistic seismic hazards for the U.S. updated in 2018 by the USGS. According to the USGS Montana is one of the most seismically active states in the US given the Intermountain Seismic Belt that extends through western Montana. The largest known event in the State was a Magnitude 7.2 event in 1959.
- Most counties and cities ranked earthquake hazards low.

Volcanic Ash
- Ms. Prosperi covered volcanic ash and defined it as a major concern for Montana and especially the Eastern region with the most recent example being the 1980 Mt. St. Helens eruption. Ms. Prosperi distinguished volcanic Ash from ash from wildfires and emphasized

it is extremely abrasive and can cause major disruptions and damages to machinery and structures. It is also a major public health risk.
- Most counties and cities ranked volcanic ash a low hazard.

Communicable Disease

- Ms. Prosperi reviewed communicable diseases, which include preventable disease, influenza, food-borne disease, and disease transferred from animals. A participant asked if the COVID numbers for Eastern Montana have been artificially inflated because a lot of patients have been sent to the hospital in Billings, possibly resulting inaccurate numbers by County. KC Williams stated that the numbers provided by MT DPHHS are based on the counties where patients reside, not the hospital that they are treated at. As a follow-up, Prairie County asked if it was based on population. Ms. Prosperi added that COVID-19 was a leading cause of death among the State's Native American populations in 2020; these groups make up approximately 7% of the State's population but accounted for over 30% of the deaths and almost 20% of the cases in the State in 2020. Some counties, such as Big Horn County have low health insurance rates, and high COVID-19 rates.
- Most of the counties and cities ranked communicable disease medium.

Transportation Accidents

- Ms. Prosperi noted that transportation accident hazards take into account modes of transportation that directly threatens life, could lead to property damages, injuries or impact emergency services. This has the potential to occur throughout the Eastern region and most often along the major interstates in the region. On an average year there is 6,746 roadway crashes in the Eastern region.
- Mr. Butori noted the BNSF derailment in Yellowstone County and that the event involved 13 cars that contained denatured alcohol; this was near the cities of Plevna and Baker.
- The crashes in Prairie County were reduced since 2017. Counties and cities ranked transportation accidents form low to medium hazards.

Hazardous Material Incidents

- Ms. Prosperi noted the main sources of data for this hazard is through the National Response Center which tracks hazmat incidents back to 1991. Hazardous material incidents can occur at a fixed facility or during the transportation of materials. She added that in the Region the 2000s (2000-2009) generally saw a higher rate of incidents
- Most of the counties and cities ranked hazardous material incidents low. Yellowstone County looked at the potential areas where hazardous material facilities are high and trafficked and the risk associated with explosion and storage areas and determined that it should be a medium ranked hazard.

Cyber Attack

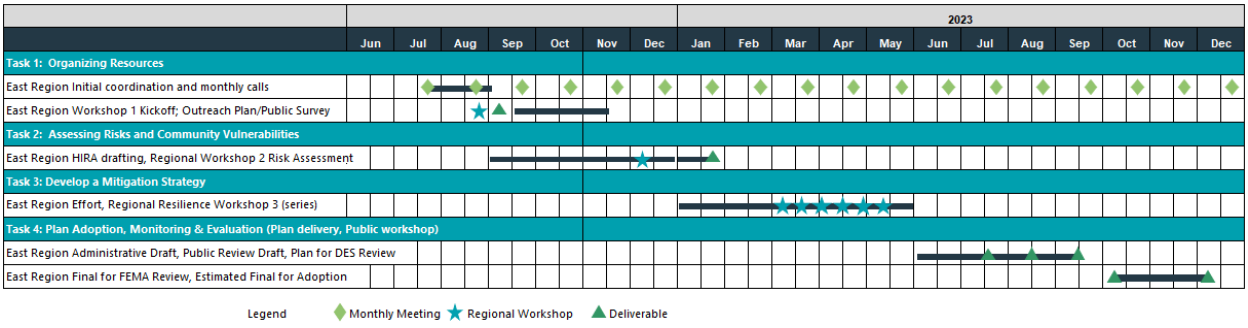
- Ms. Prosper reviewed the various types of cyber attacks being DDoS attacks, data breaches, malware, cyber espionage, cyber crimes and cyber terrorism or threats like that that occurred during the Olympics (Olympic Destroyer in 2018). Most of the counties and cities ranked cyber attacks as medium hazards. Yellowstone County had several attacks on hospitals including ransomware and information stealing.

Human Conflict

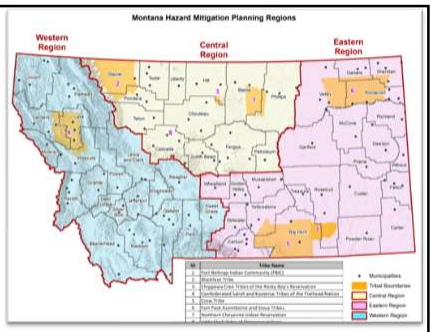
- Ms. Prosperi covered terrorism, active shooter incidents, and civil unrest events. This hazard can occur anywhere in the Region. There are several active groups in the State. This is a human-caused hazard that can lead to property damages, economic impacts, and possible injuries and fatalities. Most counties and cities human conflict as a low hazard.

5. Next Steps

- Ms. Prosperi stated that if any county or city has additional information they would like to add related to the Risk Assessment to please share it with Ms. Poole. She added this will be how the customize the plan for each jurisdiction.
- She summarized next steps and noted that her team will soon be sharing information on the mitigation action status forms via email, and with the risk assessment findings in mind to start thinking about new mitigation action ideas.
- The Risk Assessment is now under development and will be distributed to the CPTs/TPTs in early February.
- The next Monthly Meeting will be on January 4th from 11-12 PM. The schedule is also posted below.



- KC Williams wants plans on the DES MT website, Shari informed him that the link is there. She clarified it is on the main MT DES webpage, not the www.mitigationplanmt.com website.



State of Montana Eastern Region Hazard Mitigation Plan

Meeting 2 – Risk Assessment Update

December 14, 2022, 10 am – 12 pm MST

Please type your name, title, and affiliation in the chat box

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Agenda

1. Introductions
2. Review of the hazard mitigation planning process
3. Highlights from returned Data Collection Guides
4. Highlights of Hazard Identification and Risk Assessment (HIRA)
5. Next steps
6. Questions and answers

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Meeting Logistics

- Please mute your mic when not speaking.
- …but please feel free to unmute when you have something to say!
- You can also use the chat log to make comments, ask questions, or provide information.
- This meeting is being recorded.
- Slides, meeting summary, and recording will be made available.
- Meeting will use Slido polls to get feedback from participants.

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Introductions

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Introductions

- **Montana Disaster and Emergency Services**
  - Sara Hartley – State Hazard Mitigation Officer
  - Shari Pool– Mitigation Coordinator
  - Mike Radke– Eastern Region Supervisor
  - Jeff Gates – Eastern Region Field Officer
- County/Tribal Emergency Management Coordinators
- Federal & State Partners
- Other Stakeholders

WSP Project Team

- Jeff Brislawn – Project Manger
- Juliana Prosperi – Lead Planner, East Region
- Chris Johnson – Lead Planner, West Region
- Scott Field – Lead Planner, Central Region
- Bob Vince – Project Principal, Local Support
- Mack Chambers – Lead GIS Analyst
- Cameron Nelson – Hazard Mitigation Specialist
- Natalie Schoen – Hazard Mitigation Planner
- Adam Qian – Hazard Mitigation Planner
- Melissa Baum – Hazard Mitigation Planner
- Emily Geery – SWCA Wildfire Risk Assessment Support
- Tim Chute– SWCA Wildfire Planning Specialist

Jurisdictional representatives & stakeholders
Type your name, title, and affiliation in chat box

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Review of the Hazard Mitigation Planning Process

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Terminology

Hazard: Act or phenomenon with potential to do harm

Vulnerability: Susceptibility to harm, damage, loss

Exposure: People, property, systems or functions that could be lost to a hazard

Risk: Combines hazard, vulnerability, exposure and probability

Mitigation: Actions taken in advance of a hazard's impact that reduce its severity

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Disaster Mitigation Action of 2000

Federal Legislation

44 CFR 201.6

- Requires communities to update their hazard mitigation plans every 5 years to remain eligible for federal pre- and post-disaster funding for hazard mitigation grants from FEMA
- Plan ensures the counties and municipalities in the Region will remain eligible for mitigation projects when funding becomes available
- Tribal Mitigation Planning Guidance updated in 2017 and 2019

FEMA's Nine-Step Planning Process

- **Step 1 Determine the Planning Area and Resources**
- **Step 2 Build the Planning Team**
- **Step 3 Create an Outreach Strategy**
- **Step 4 Review Community Capabilities**
- **Step 5 Conduct a Risk Assessment**
- Step 6 Develop a Mitigation Strategy
- Step 7 Keep the Plan Current
- Step 8 Review and Adopt the Plan
- Step 9 Create a Safe and Resilient Community

Progress So Far

- Kickoff meeting August 4, 2022
- Risk and capability assessments in process of being drafted by WSP, based on research and CPTs/stakeholder input
- Data Collection Guides provided to participating jurisdictions
  - Full Data Collection Guides due by September 18th
  - Abbreviated Data Collection Guides due by November 18th
- Online public survey closed **December 5th**

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Highlights From Data Collection Guides

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Highlights From Data Collection Guides

Growth and Development Trends, Vulnerable Populations

Jurisdiction	Comments
Roosevelt County	• New development includes the Highway 2 reconstruction through town next summer; a portion of the **reconstruction is within the floodplain**. They are also designing a storm drainage system with the project
Sheridan County	• The **rural electric Co-ops have been improving their infrastructure** to provide more reliable service during severe weather events. • There is an on-going project to **improve rural roads** in the County. • Improvements have been made on the County Civic Center which is used for emergency shelter.
Custer County	• **Growth is trending on the outskirts** of the city and there is an **increase of semi-traffic** on roads
Carbon County	• Most likely there will be **residential growth in both the floodplain** and in the **wildland urban interface** due to the significant increase in development.
Yellowstone County	• Continuing to experience an **increased demand for housing**. Since the 2008 Recession, new construction build rates have remained low, creating a supply deficit of over 4,000 residential units resulting in a housing shortage for residents and new arrivals, further exacerbated by COVID-19 and the heavy shift of urban dwellers into smaller urban, more rural areas. This has also caused housing prices to rise by nearly 41%.

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Highlights From Streamlined Data Collection Guides

Growth and Development Trends, Vulnerable Populations

Jurisdiction	Comments
Golden Valley	• Currently planning **flood mitigation** and **evacuation routes**. • **Developing LEPC** and social media hazard mitigation team.
Rosebud County	• Continuously working with Army Corps for **levee repair and maintenance**.
Treasure County	• Unprecedented flooding caused **severe damage to roads** - emergency declared as repair was beyond financial capabilities of County.
Dawson County	• Glendive Mayor participated in information gathering event at local **mobile home** court. • The Town of Richey's population tends to skew to the **elderly**, so the greatest issue would likely be the relocation or evacuation of these residents in the event of an emergency.

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Review of Hazard Identification and Risk Assessment

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Conducting a Risk Assessment - Components

- Hazard Identification
  - What, where, how often, how bad
- Vulnerability Assessment
  - What will be affected?
  - Estimate losses by jurisdiction
  - Assess vulnerabilities of Critical Facilities, People, Economy, Natural and Built Environment

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Hazard Identification and Risk Assessment Includes

- Hazard description
- Past events
- Location (geographical area affected)
- Probability of future occurrences
- Impact severity & warning time
- Related hazards
- Climate change considerations
- Vulnerability assessment
  - Population
  - Property
  - Critical facilities and infrastructure
  - Economy
  - Environment and cultural resources
  - Development trends
- Risk summary and significance by jurisdiction

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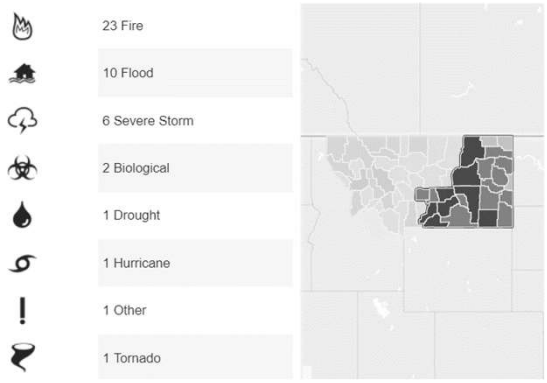
Recent Disasters in Eastern Montana

- 2022 – Severe Storm and Flooding (DR-4655-MT)
- 2021 – Richard Spring Fire (DR-4623-MT/FM-5406MT)
- 2021 – Straight-Line Winds (DR-4608-MT)
- 2020 – COVID-19 Pandemic (DR-4508-MT)
- 2020 – COVID-19 Pandemic (DR-4508-MT)
- 2020 – Bobcat Fire (FM-5344-MT)
- 2019 – Flooding (DR-4437-MT)
- 2018 – Flooding (DR-4488-MT)
- 2017 – Lodgepole Fire Complex (FM-5194-MT)
- 2016 – Tornado (DR-4275-MT)
- 2014 – Ice Jams and Flooding (DR-4172-MT)

45 Federally Declared Disasters in Region since 1953



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Asset Inventory Update

- Parcel level analysis
  - Assessors' data, parcel centroids
  - General property
  - Residential, commercial, etc.
- People
- Critical facilities and infrastructure
  - Grouped by FEMA Lifeline categories

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Hazard Rankings

Location/Spatial Extent

- Extensive: 50-100% of planning area
- Significant: 10-50% of planning area
- Limited: Less than 10% of planning area

Potential Severity

- Catastrophic: Multiple deaths, shutdown of facilities for 30 days or more, >50% of property is severely damaged
- Critical: Multiple severe injuries, shutdown of facilities for at least 2 weeks, >25% of property is severely damaged
- Moderate: Some injuries, shutdown of critical facilities for more than one week, >10% of property is severely damaged
- Negligible: Minor injuries, minimal quality-of-life impact, interruption of facilities and services for 24 hours or less, less than 10% of property is severely damaged.

Frequency of Occurrence

Highly Likely: Near 100% probability each year.

Likely: Between 10 and 100% probability per year or at least one chance in ten years.

Occasional: Between 1 and 10% probability per year or at least one chance in next 100 years.

Unlikely: Less than 1% probability in next 100 years.

Significance (combination of Location/Severity/Frequency)

High: widespread potential impact

Medium: moderate potential impact

Low: minimal potential impact

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What jurisdiction do you represent?

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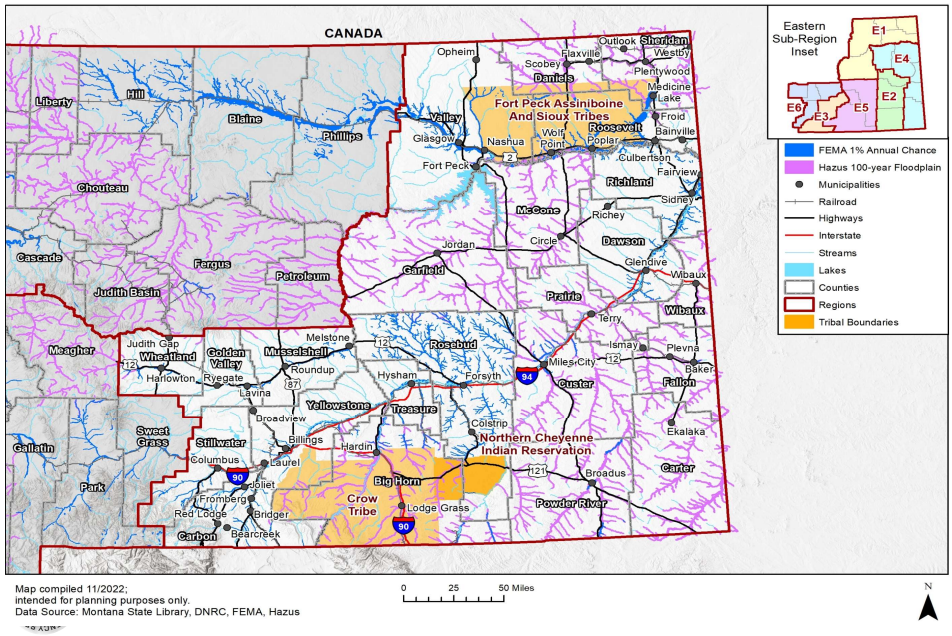
Flooding



Flood Hazard Sources

County	Flood Source
Big Horn	DNRC (partial), Hazus
Carbon	NFHL
Carter	Hazus
Custer	NFHL (partial), Hazus
Daniels	Hazus
Dawson	DNRC
Fallon	DNRC (partial), Hazus
Garfield	Hazus
Golden Valley	NFHL
McCone	Hazus
Musselshell	NFHL
Powder River	DNRC (partial), Hazus
Prairie	Hazus
Richland	NFHL
Roosevelt	NFHL
Rosebud	DNRC
Sheridan	Hazus
Stillwater	NFHL
Treasure	DNRC
Valley	DNRC (partial), NFHL (partial)
Wheatland	DNRC
Wibaux	Hazus
Yellowstone	NFHL

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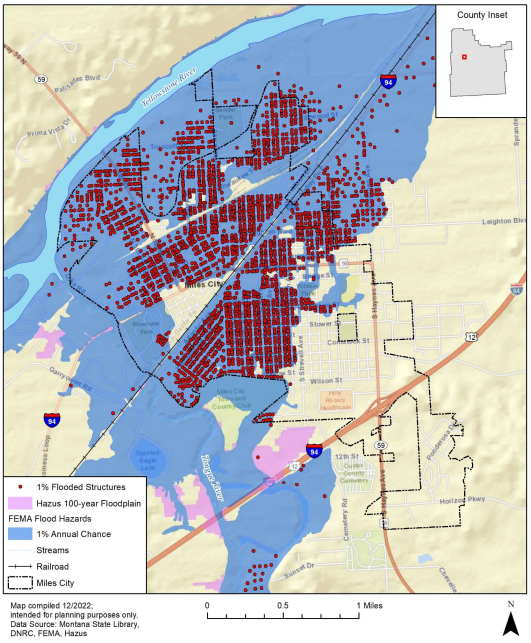
Flooding – Billings & Miles City Risk

An inundated WWTP located along the Yellowstone River as seen from the Four Dances viewpoint (June 2022)



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Flooding – Parcels at Risk to 1% Annual Flood Event

County	Improved Parcels	Improved Value	Content Value	Total Value	Estimated Loss	Population
Big Horn	320	$42,048,541	$28,419,080	$70,467,621	$17,616,905	856
Carbon	390	$94,893,650	$59,013,360	$153,907,010	$38,476,753	709
Carter	117	$9,409,733	$7,233,297	$16,643,030	$4,160,757	147
Custer	3,011	$339,329,544	$186,052,204	$525,381,748	$131,345,437	6,711
Daniels	19	$1,306,490	$1,274,230	$2,580,720	$645,180	2
Dawson	184	$23,263,219	$12,985,725	$36,248,944	$9,062,236	340
Fallon	60	$7,098,177	$4,648,789	$11,746,966	$2,936,741	84
Garfield	54	$3,949,454	$3,149,022	$7,098,476	$1,774,619	60
Golden Valley	26	$2,615,550	$2,147,890	$4,763,440	$1,190,860	32
McCone	73	$5,663,177	$4,813,339	$10,476,516	$2,619,129	46
Musselshell	221	$12,948,261	$8,252,576	$21,200,837	$5,300,209	393
Powder River	164	$11,476,921	$8,399,881	$19,876,802	$4,969,200	219
Prairie	12	$1,438,540	$1,351,150	$2,789,690	$697,423	5
Richland	156	$18,497,151	$13,398,821	$31,895,972	$7,973,993	218
Roosevelt	170	$42,111,267	$49,333,508	$91,444,775	$22,861,194	353
Rosebud	76	$9,189,124	$7,556,857	$16,745,981	$4,186,495	64
Sheridan	235	$23,978,537	$14,143,794	$38,122,331	$9,530,583	391
Stillwater	291	$55,596,478	$32,888,481	$88,484,959	$22,121,240	605
Treasure	44	$4,493,676	$4,232,678	$8,726,354	$2,181,589	15
Valley	361	$41,285,741	$28,490,501	$69,776,242	$17,444,060	418
Wheatland	113	$11,816,349	$10,001,820	$21,818,169	$5,454,542	204
Wibaux	38	$2,031,999	$1,344,740	$3,376,739	$844,185	64
Yellowstone	915	$168,328,469	$114,391,695	$282,720,164	$70,680,041	1,830
Total	**7,050**	**$932,770,048**	**$603,523,431**	**$1,536,293,479**	**$384,073,370**	**13,766**

- Custer County has the highest amount of Estimated Loss Value with **$131,345,437** total
- Yellowstone County has the 2nd highest amount of Estimated Loss Value with **$70,680,041**
- Overall, **$1,536,293,479** in total value exposed and a combined estimated loss of **$384,073,370** for 1% annual chance flooding.
- There are **7,050** parcels located in the floodplain and **13,766** people at risk to a 1% annual chance flood.

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Flooding – Eastern Region Parcels at Risk to 1% Annual Chance by Tribe

Tribal	Improved Parcels	Improved Value	Content Value	Total Value	Estimated Loss	Population
Crow Tribe	230	$28,443,085	$19,494,447	$47,937,532	$11,984,383	681
Fort Peck Assiniboine and Sioux Tribe	181	$21,611,356	$18,814,097	$40,425,453	$10,106,363	337
Northern Cheyenne Indian Reservation	1	$1,330	$665	$1,995	$499	5
Total	**412**	**$50,055,771**	**$38,309,209**	**$88,364,980**	**$22,091,245**	**1,023**

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Flooding – Parcels at Risk to 0.2% Annual Flood Event

County	Improved Parcels	Improved Value	Content Value	Total Value	Estimated Loss	Population
Big Horn	3	$129,490	$129,490	$258,980	$64,745	0
Carbon	103	$18,241,620	$9,788,475	$28,030,095	$7,007,524	225
Dawson	76	$8,190,582	$4,670,336	$12,860,918	$3,215,230	155
Fallon	22	$3,873,675	$2,850,223	$6,723,898	$1,680,974	41
Golden Valley	14	$907,333	$716,397	$1,623,730	$405,932	18
Musselshell	32	$1,934,689	$1,320,100	$3,254,789	$813,697	50
Richland	25	$4,373,014	$2,751,437	$7,124,451	$1,781,113	45
Rosebud	1	$220,840	$220,840	$441,680	$110,420	0
Stillwater	81	$17,796,252	$9,852,691	$27,648,943	$6,912,236	170
Wheatland	47	$2,769,818	$1,507,214	$4,277,032	$1,069,258	106
Yellowstone	538	$70,086,518	$39,697,532	$109,784,050	$27,446,012	1,183
Total	**942**	**$128,523,831**	**$3,504,733**	**$202,028,564**	**$50,507,141**	**1,992**

- Yellowstone County has the highest amount of Estimated Loss Value with $27,446,012 total
- Carbon County has the 2nd highest amount of Estimated Loss Value with $7,007,524
- $202,028,564 in total value and a combined estimated loss of $50,507,141 for 0.2% annual chance flooding.
- There are 942 parcels located in the floodplain and 1,992 people at risk to a 0.2% annual chance flood.

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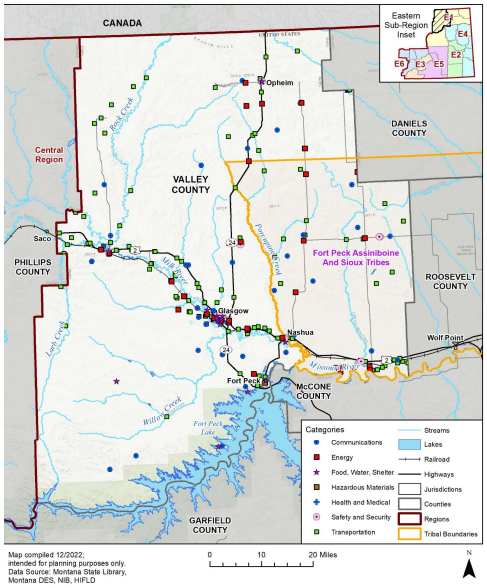
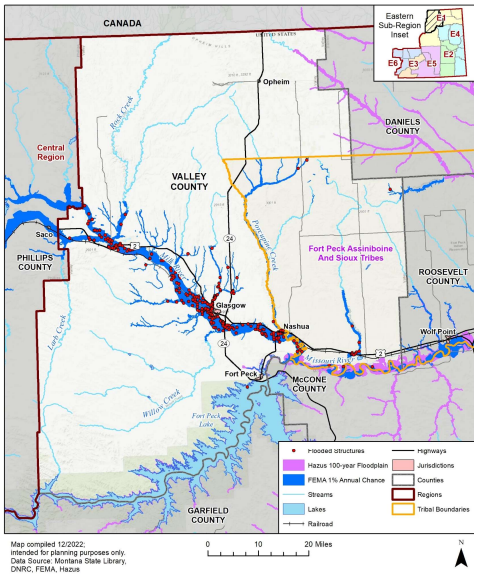
Critical Facilities 1% Flood Risk (Valley County)

East Valley Critical Facilities



East Valley Flood Structures



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Flooding – Eastern Region NFIP Data

County	Date Joined	Effective Firm Date	Dollars Paid (Historical)	Flood Claims	Current Policies	Coverage ($)
Big Horn	9/2/1981	9/2/1981	$245,116	16	8	$1,901,900
Carbon	11/4/1981	7/5/2017	$1,089,354	61	77	$20,190,100
Carter	-	-	$0	0	0	$0
Custer	9/1/1987	7/22/2010	$400,061	155	730	$119,513,500
Daniels	-	-	$0	0	0	$0
Dawson	5/1/1999	05/01/99(L)	$144,610	7	8	$2,465,500
Fallon	8/4/1988	8/4/1988	$0	1	2	$700,000,000
Garfield	3/20/1979	3/20/1979	$0	1	11	$562,600
Golden Valley	9/16/1981	11/5/2021	$0	0	1	$255,000
McCone	6/4/2007	6/4/2007	$0	0	0	$0
Musselshell	3/1/2001	11/15/2019	$1,201,833	60	18	$1,624,700
Petroleum	11/15/2019	11/15/2019	$0	0	0	$0
Phillips	5/19/1987	5/19/1987	$173,303	50	13	$1,182,900
Powder River	6/1/2010	06/01/10(L)	$25,382	7	4	$616,000
Prairie	5/8/1979	5/8/1979	$0	0	0	$0
Richland	12/4/1985	8/15/2019	$96,344	12	14	$3,589,400
Roosevelt	11/1/1996	11/01/96(L)	$59,144	8	5	$942,500
Rosebud	9/1/1997	11/15/2019	$15,452	12	5	$1,443,000
Sheridan	2/4/2019	6/4/2007	$72	1	0	$0
Stillwater	11/15/1985	10/16/2015	$915,175	56	64	$16,937,600
Treasure	12/18/1986	12/18/86(M)	$0	0	2	$47,000
Valley	1/1/1987	01/01/87(L)	$1,590,365	274	23	$3,043,600
Wheatland	9/16/1981	9/16/1981	$20,726	18	6	$439,000
Wibaux	3/4/1988	2/18/1998	$77,084	3	6	$430,300
Yellowstone	11/18/1981	11/6/2013	$1,814,878	263	275	$76,606,000
Total			**$ 7,868,905**	**1005**	**1272**	**$951,790,600**

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Flooding Risk Summary

- **Location:** Missouri River and its tributaries, Yellowstone, Musselshell, Big Muddy, Poplar, Rosebud, and Tongue Rivers
- **Extent**: Significant throughout the study area
- **Probability**: Likely with Richland, Roosevelt and Valley counties having the highest annualized frequencies
- **Impacts**: Medium level risk for most of the Eastern Region Counties. However, counties such as Big Horn, Custer, Roosevelt and Valley counties all have relatively moderate risk indexes due to the amount of people and property located within its jurisdictions
- **Climate Change:** Shifts in earlier snowmelt and spring runoff; warming will increase the amount of water and spring precipitation that falls as rain, which will accelerate snowmelt and increase flood risk.

Jurisdiction	Geographic Extent	Probability of Future Occurrence	Potential Magnitude/ Severity	Overall Significance
Eastern Region	**Significant**	**Likely**	**Critical**	**Medium**
Big Horn	Significant	Likely	Critical	Medium
Carbon	Significant	Likely	Catastrophic	High
Carter	Significant	Likely	Critical	Medium
Custer	Significant	Highly Likely	Catastrophic	High
Crow Tribe	Significant	Likely	Critical	Medium
Daniels	Significant	Likely	Critical	Medium
Dawson	Significant	Likely	Critical	Medium
Fallon	Significant	Likely	Critical	Medium
Fort Peck	Significant	Likely	Critical	Medium
Garfield	Significant	Likely	Critical	Medium
Golden Valley	Significant	Likely	Critical	Medium
McCone	Significant	Likely	Critical	Medium
Musselshell	Significant	Likely	Critical	Medium
Northern Cheyenne	Significant	Likely	Critical	Medium
Powder River	Significant	Likely	Critical	Medium
Prairie	Significant	Likely	Critical	Medium
Richland	Significant	Likely	Critical	Medium
Roosevelt	Significant	Likely	Catastrophic	High
Rosebud	Significant	Likely	Critical	Medium
Sheridan	Significant	Likely	Critical	Medium
Stillwater	Significant	Likely	Catastrophic	High
Treasure	Significant	Likely	Critical	Medium
Valley	Significant	Highly Likely	Catastrophic	High
Wheatland	Significant	Likely	Critical	Medium
Wibaux	Significant	Likely	Critical	Medium
Yellowstone	Significant	Highly Likely	Catastrophic	High

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What do you think the significance of flooding is for your jurisdiction?

ⓘ Start presenting to display the poll results on this slide.

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Dam Failure

- Can be a complete failure, or an unexpected release causing rapid downstream flooding
- Dams classified as:
  - **High Hazard** – failure would likely cause loss of life downstream
  - **Significant Hazard** – failure could result in significant property damage
  - **Low Hazard** – failure would result only in minimal property damage
- According to the National Inventory of Dams (NID), there are **1,647 total dams** in the region
  - 31 High Hazard (100% have approved EAP)
  - 73 Significant Hazard
  - 1,543 Low Hazard (Not shown in map)
- **1 past occurrence** in Region
  - Vaux Dams – 1951
- **1 past non-failure incident** in Region
  - Gartside Dam - 1995

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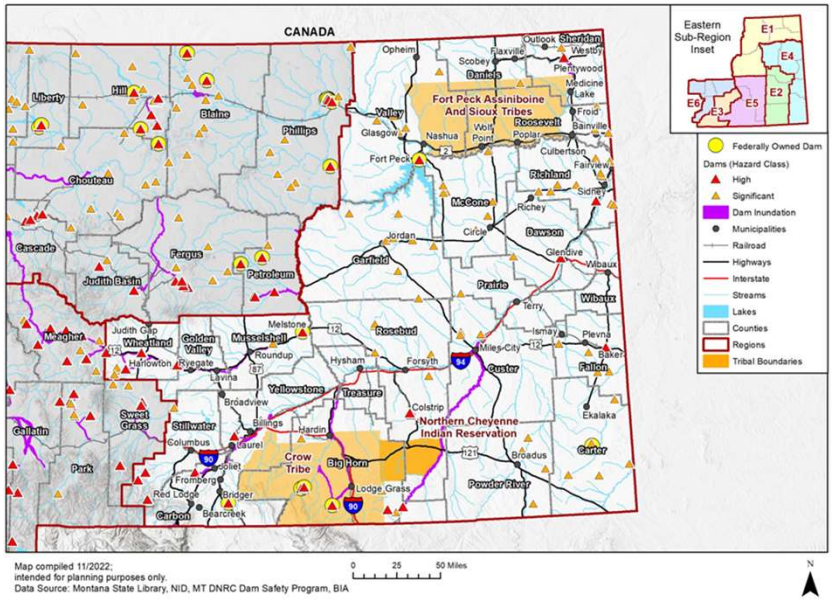
Dam Inundation



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Dam Failure - Parcels at Risk to Dam Inundation by County

County	Improved Parcels	Improved Value	Content Value	Total Value	Population
Big Horn	336	$29,559,470	$21,050,915	$50,610,385	1,036
Carbon	1,226	$255,778,914	$145,217,577	$400,996,491	2,560
Carter	$0	$0	$0	$0	$0
Custer	3,859	$531,993,624	$302,974,122	$834,967,746	8,586
Daniels	$0	$0	$0	$0	$0
Dawson	$0	$0	$0	$0	$0
Fallon	185	$23,170,848	$12,572,709	$35,743,557	384
Garfield	7	$279,990	$139,995	$419,985	17
Golden Valley	263	$21,983,922	$14,919,026	$36,902,948	486
McCone	$0	$0	$0	$0	$0
Musselshell	240	$13,848,735	$8,191,352	$22,040,087	458
Powder River	$0	$0	$0	$0	$0
Prairie	$0	$0	$0	$0	$0
Richland	5	$734,424	$509,317	$1,243,741	8
Roosevelt	$0	$0	$0	$0	$0
Rosebud	188	$13,809,659	$9,641,299	$23,450,958	464
Sheridan	978	$133,828,633	$88,114,776	$221,943,409	1,999
Stillwater	$0	$0	$0	$0	$0
Treasure	1	$366,520	$366,520	$733,040	$0
Valley	$0	$0	$0	$0	$0
Wheatland	384	$35,538,684	$26,560,646	$62,099,330	778
Wibaux	$0	$0	$0	$0	$0
Yellowstone	2,739	$746,790,386	$628,881,337	$1,375,671,723	5,971
Total	**10,411**	**$1,807,683,809**	**$1,259,139,589**	**$3,066,823,398**	**22,746**

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Dam Failure Risk Summary

- **Location**: Significant
- **Extent**: Unlikely
- **Probability**: Negligible to Moderate and Critical for some counties
- **Impacts**:
  - Impact may be underestimated due to limited data on BIA and privately owned dams
  - Yellowstone, Sheridan, and Carbon have significant exposed property values in excess of $100 million
  - Custer County has 2nd highest exposed property values and 72% of population potentially exposed to inundation

Jurisdiction	Geographic Extent	Probability of Future Occurrence	Potential Magnitude/ Severity	Overall Significance
Eastern Region	**Significant**	**Unlikely**	**Negligible**	**Low**
Big Horn	Significant	Unlikely	Negligible	**Low**
Carbon	Significant	Unlikely	Moderate	**Medium**
Carter	Significant	Unlikely	Negligible	**Low**
Custer	Significant	Unlikely	Critical	**Medium**
Crow Tribe	Significant	Unlikely	Negligible	**Low**
Daniels	Significant	Unlikely	Negligible	**Low**
Dawson	Significant	Unlikely	Negligible	**Low**
Fallon	Significant	Unlikely	Negligible	**Low**
Fort Peck	Significant	Unlikely	Negligible	**Low**
Garfield	Significant	Unlikely	Negligible	**Low**
Golden Valley	Significant	Unlikely	Negligible	**Low**
McCone	Significant	Unlikely	Negligible	**Medium**
Musselshell	Significant	Unlikely	Negligible	**Low**
Northern Cheyenne	Significant	Unlikely	Negligible	**Low**
Powder River	Significant	Unlikely	Negligible	**Low**
Prairie	Significant	Unlikely	Negligible	**Low**
Richland	Significant	Unlikely	Negligible	**Medium**
Roosevelt	Significant	Unlikely	Negligible	**Medium**
Rosebud	Significant	Unlikely	Negligible	**Low**
Sheridan	Significant	Unlikely	Moderate	**Medium**
Stillwater	Significant	Unlikely	Negligible	**Medium**
Treasure	Significant	Unlikely	Negligible	**Low**
Valley	Significant	Unlikely	Negligible	**Medium**
Wheatland	Significant	Unlikely	Negligible	**Low**
Wibaux	Significant	Unlikely	Negligible	**Low**
Yellowstone	Significant	Unlikely	Moderate	**Medium**

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What do you think the significance of dam failure is for your jurisdiction?

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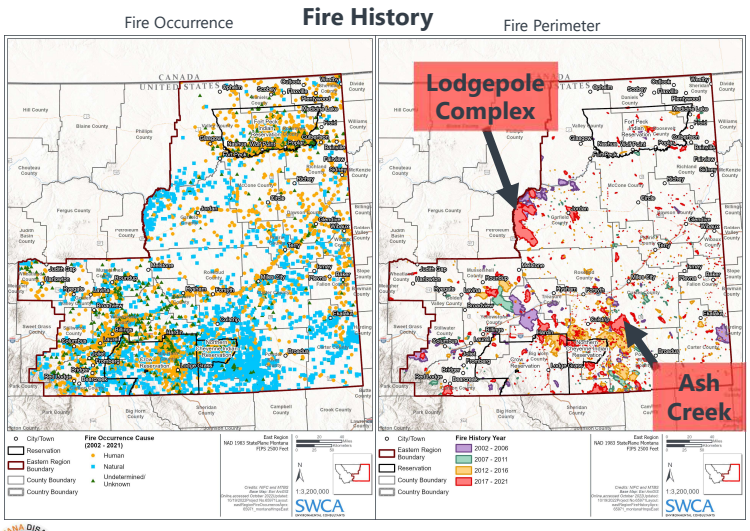
Wildland and Rangeland Fire



Location: Can occur anywhere in the Eastern Region, especially common in areas with an intermix of rangelands and forests.

Extent: Can be small (less than 10 acres) with minimal damage, or very large and destructive (Lodgepole Complex in 2017 burned 271,422 acres and Ash Creek fire in 2012 burned 249,714 acres). Hot and/or dry years are more likely to have larger wildfires.

Probability: Highly likely throughout the planning area, 10,345 fire ignitions and 216 notable wildfire incidents from 2002 - 2021 in the Eastern Region

Impacts:

- Health and safety of people
- Large scale structural damage
- Road closures
- Power and communication failure
- Damage to rivers and streams, reduced water quality from ash and debris
- Erosion that can lead to increased flooding
- Significant economic damages from repairs and business interruption
- Loss of biodiversity
- Loss of rangeland and forest resources

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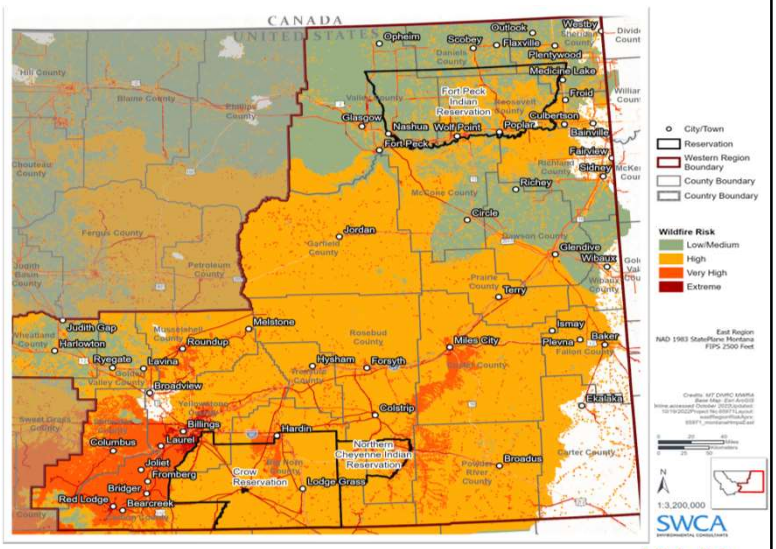
Wildland and Rangeland Fire Risk Assessment

- Maps with latest Montana Wildfire Risk Assessment (MWRA) Wildfire Risk (Hazard + Values)
- Utilizes
  - Likelihood of fire burning
  - Intensity of a potential fire
  - Exposure of assets and resources based on their location
  - Susceptibility of those assets and resources
- Updated with wildfire incidents
- Warmer temperatures, drier summers, and longer fire seasons are exacerbating the wildfire risk
- Invasive species, forest pathogens, tree mortality, and fire suppression have exacerbated hazardous fuel conditions in forests and rangelands



*Blank areas on map represent wildland forest and rangelands that have yet to have values mapped by the MT DNRC. Risk in these area likely follows similar trends seen elsewhere in the region.

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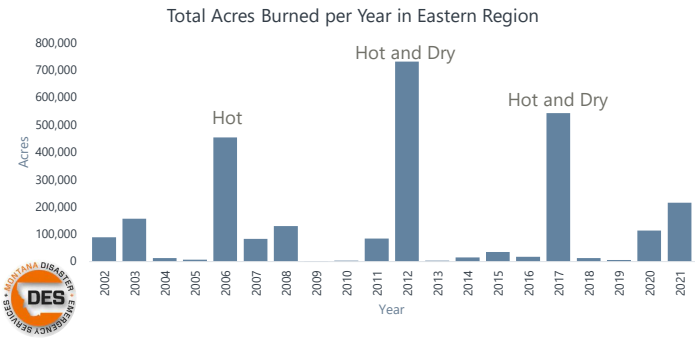
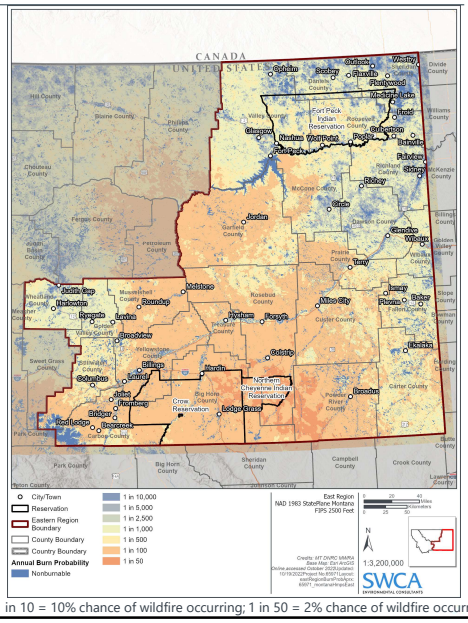
Wildland and Rangeland Burn Probability

- Burn probability is highest in the south-central portion of the region
- Rangelands display lower annual burn probability
- Wildfire is more likely to burn more acres during years of drought and/or warmer growing season temperatures
- Wildfires are predicted to be larger under a warmer climate





*1 in 10 = 10% chance of wildfire occurring; 1 in 50 = 2% chance of wildfire occurring

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Wildland and Rangeland Fire – County Parcel Analysis

Extreme risk to wildfire

County	Improved Parcels	Improved Value	Content Value	Total Value	Population
Big Horn	1,550	$202,949,949	$137,934,621	$340,884,570	5,390
Carbon	3,296	$693,167,480	$378,618,127	$1,071,785,607	7,397
Carter	152	$14,455,913	$11,113,807	$25,569,720	261
Custer	1,521	$217,038,271	$114,139,069	$331,177,340	3,399
Daniels	228	$24,807,057	$15,066,852	$39,873,909	437
Dawson	466	$54,701,745	$33,992,742	$88,694,487	970
Fallon	439	$54,146,980	$36,121,450	$90,268,430	913
Garfield	300	$23,256,363	$13,039,702	$36,296,065	689
Golden Valley	69	$4,487,390	$2,921,733	$7,409,123	131
McCone	266	$23,428,567	$13,039,210	$36,467,777	550
Musselshell	1,267	$116,264,790	$72,757,969	$189,022,759	2,509
Powder River	339	$26,943,938	$14,775,338	$41,719,276	682
Prairie	132	$9,161,738	$4,667,220	$13,828,958	292
Richland	65	$6,399,632	$3,980,141	$10,379,773	133
Roosevelt	1,233	$102,809,163	$59,724,939	$162,534,102	3,873
Rosebud	1,241	$135,645,674	$81,799,109	$217,444,783	3,280
Sheridan	752	$92,607,505	$57,328,988	$149,936,493	1,540
Stillwater	602	$101,028,261	$56,171,507	$157,199,768	1,415
Treasure	20	$793,239	$471,790	$1,265,029	33
Valley	1,596	$207,970,575	$114,419,411	$322,389,986	3,356
Wheatland	27	$2,881,529	$2,102,472	$4,984,001	59
Wibaux	10	$1,265,355	$875,373	$2,140,728	19
Yellowstone	24,107	$5,095,993,537	$2,674,222,521	$7,770,216,058	54,852
TOTAL	**39,678**	**$7,212,204,651**	**$3,899,284,086**	**$11,111,488,737**	**92,179**

Very high risk to wildfire

County	Improved Parcels	Improved Value	Content Value	Total Value	Population
Big Horn	**470**	**$84,697,265**	**$55,600,450**	**$140,297,715**	**1,380**
Carbon	**2,090**	**$547,758,151**	**$338,899,010**	**$886,657,161**	**3,810**
Carter	**194**	**$16,622,939**	**$11,777,870**	**$28,400,809**	**318**
Custer	**2,619**	**$355,987,960**	**$205,139,052**	**$561,127,012**	**5,766**
Daniels	**597**	**$49,379,383**	**$29,321,872**	**$78,701,255**	**1,098**
Dawson	**2,534**	**$298,389,201**	**$160,992,812**	**$459,382,013**	**5,242**
Fallon	**666**	**$82,437,643**	**$50,468,650**	**$132,906,293**	**1,417**
Garfield	**211**	**$20,592,843**	**$13,824,137**	**$34,416,980**	**357**
Golden Valley	**235**	**$27,723,611**	**$20,667,195**	**$48,390,806**	**457**
McCone	**279**	**$23,816,544**	**$16,536,307**	**$40,352,851**	**528**
Musselshell	**1,027**	**$104,380,896**	**$60,240,354**	**$164,621,250**	**1,890**
Powder River	**213**	**$31,077,010**	**$29,785,330**	**$60,862,340**	**236**
Prairie	**431**	**$23,090,380**	**$13,659,171**	**$36,749,551**	**888**
Richland	**1,620**	**$276,214,590**	**$150,699,173**	**$426,913,763**	**3,853**
Roosevelt	**881**	**$71,918,345**	**$43,188,463**	**$115,106,808**	**2,591**
Rosebud	**970**	**$105,865,876**	**$63,965,597**	**$169,831,473**	**2,303**
Sheridan	**758**	**$83,050,450**	**$64,111,850**	**$147,162,300**	**1,464**
Stillwater	**2,865**	**$567,115,185**	**$316,256,337**	**$883,371,522**	**6,458**
Treasure	**210**	**$16,963,574**	**$10,550,781**	**$27,514,355**	**315**
Valley	**1,161**	**$160,221,477**	**$90,507,557**	**$250,729,034**	**2,387**
Wheatland	**871**	**$67,516,048**	**$39,657,448**	**$107,173,496**	**1,927**
Wibaux	**293**	**$23,250,971**	**$14,174,318**	**$37,425,289**	**559**
Yellowstone	**24,939**	**$6,151,318,658**	**$3,597,410,593**	**$9,748,729,251**	**55,442**
TOTAL	**46,134**	**$9,189,389,000**	**$5,397,434,321**	**$14,586,823,321**	**100,683**

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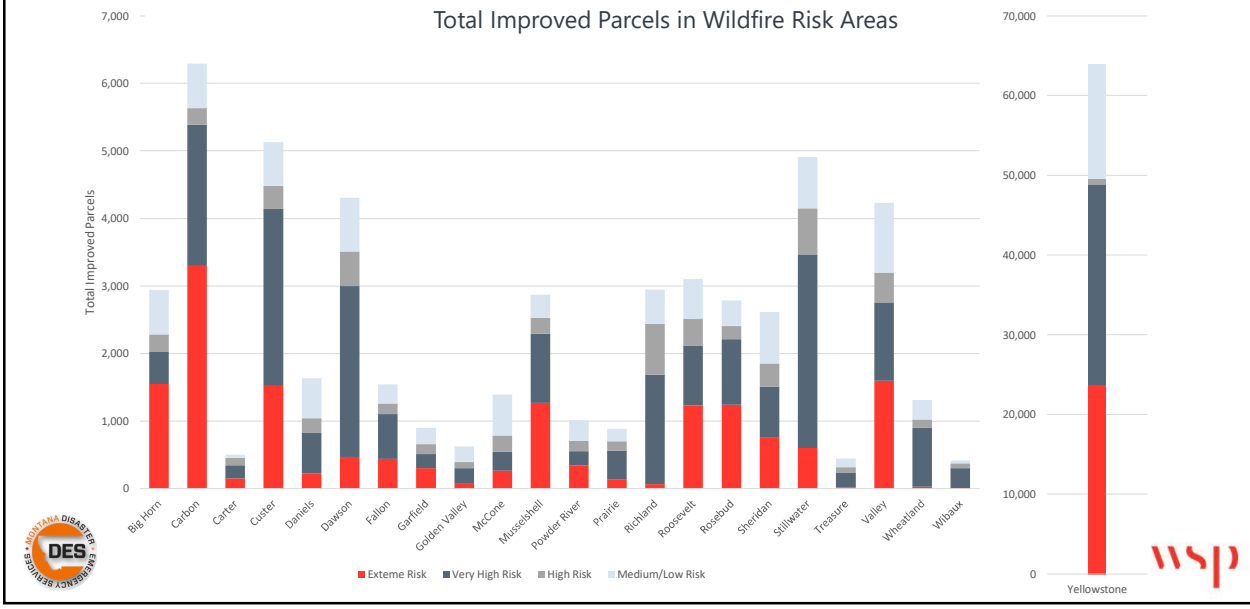
Eastern Region Parcels at Risk to Wildfire by County Summary

Jurisdiction	Parcel Count Extreme	Parcel Count Very High	Parcel Count High	Parcel Count Medium/Low	Total Parcel Count	Total Value	Population	Extreme to High Loss Ratio
Big Horn	1,550	470	261	658	**2,939**	**$830,688,737**	8,136	78%
Carbon	3,296	2,090	248	658	**6,292**	**$2,268,358,725**	12,107	90%
Carter	152	194	109	47	**502**	**$89,836,481**	633	52%
Custer	1,521	2,619	342	650	**5,132**	**$1,166,679,959**	10,566	87%
Daniels	228	597	217	593	**1,635**	**$233,154,973**	1,997	64%
Dawson	466	2,534	508	796	**4,304**	**$875,968,444**	7,420	82%
Fallon	439	666	155	285	**1,545**	**$334,700,946**	2,689	73%
Garfield	300	211	145	241	**897**	**$143,151,101**	1,113	73%
Golden Valley	69	235	89	233	**626**	**$117,796,754**	725	63%
McCone	266	279	238	611	**1,394**	**$199,807,702**	1,395	56%
Musselshell	1,267	1,027	236	338	**2,868**	**$522,839,746**	4,878	88%
Powder River	339	213	154	309	**1,015**	**$202,797,608**	1,080	69%
Prairie	132	431	137	183	**883**	**$103,986,104**	1,295	79%
Richland	65	1,620	752	507	**2,944**	**$836,859,342**	5,648	50%
Roosevelt	1,233	881	394	596	**3,104**	**$579,421,957**	7,411	78%
Rosebud	1,241	970	197	375	**2,783**	**$500,629,963**	5,921	87%
Sheridan	752	758	340	765	**2,615**	**$489,134,916**	3,617	67%
Stillwater	602	2,865	680	762	**4,909**	**$1,608,981,625**	9,985	84%
Treasure	20	210	86	126	**442**	**$83,182,931**	427	71%
Valley	1,596	1,161	438	1,036	**4,231**	**$936,602,413**	6,701	76%
Wheatland	27	871	126	287	**1,311**	**$251,733,105**	2,268	78%
Wibaux	10	293	71	42	**416**	**$69,285,377**	640	62%
Yellowstone	24,107	24,939	800	14,069	**63,915**	**$26,540,371,485**	141,715	78%
Crow Tribe	294	278	157	325	**1,054**	**$273,926,812**	2,381	69%
Fort Peck Assiniboine and Sioux Tribe	975	523	335	849	**2,682**	**$497,786,897**	5,211	68%
Northern Cheyenne Indian Reservation	112	7	2	9	**130**	**$14,923,837**	353	93%

40

Wildland and Rangeland Fire – County Parcel Analysis



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Wildland and Rangeland Fire – County Parcel Analysis

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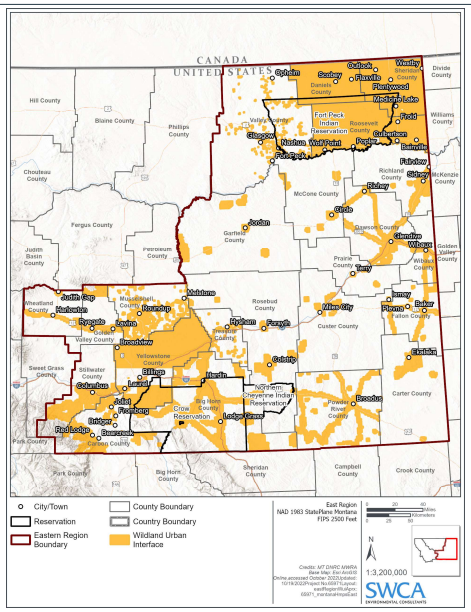
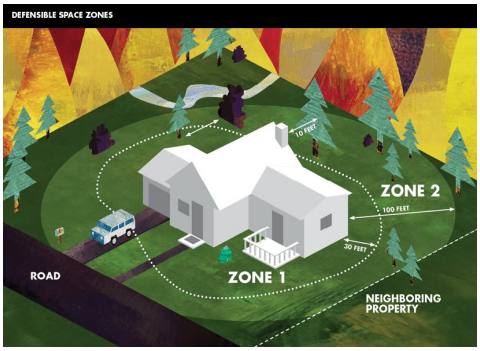
Wildland Fire – Wildland Urban Interface (WUI)



- Zone of transition between wildland and developed land
- The municipalities most notably at risk from wildfire include most of the Fort Peck Indian Reservation, and the Counties of Sheridan, Daniels, Roosevelt, Yellowstone, and Big Horn



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Wildland and Rangeland Fire Risk Summary

- **Location**: Effects of wildfire threaten all municipalities across the region
- **Extent**: Variable across the region - Undeveloped forests and rangelands are more prone to wildfire, agricultural/farming areas are less prone to wildfire
- **Probability**: Highly likely to occur during any given year
- **Impacts**: Vulnerable populations are most at risk from wildfire, Property, structures, and critical infrastructure are at moderate to extreme risk throughout the region
- **Climate Change:** Increased frequency and severity of wildfires

Jurisdiction	Geographic Extent	Probability of Future Occurrence	Potential Magnitude/ Severity	Overall Significance
Eastern Region	**Extensive**	**Highly Likely**	**Critical**	**High**
Big Horn	Extensive	Highly Likely	Critical	**High**
Carbon	Extensive	Highly Likely	Catastrophic	**High**
Carter	Extensive	Highly Likely	Critical	**Medium**
Custer	Extensive	Highly Likely	Critical	**High**
Crow Tribe	Extensive	Highly Likely	Catastrophic	**High**
Daniels	Limited	Occasional	Limited	**Low**
Dawson	Limited	Occasional	Limited	**Low**
Fallon	Significant	Likely	Limited	**Medium**
Fort Peck	Significant	Highly Likely	Critical	**Medium**
Garfield	Extensive	Highly Likely	Critical	**High**
Golden Valley	Significant	Occasional	Limited	**Low**
McCone	Significant	Occasional	Limited	**Low**
Musselshell	Extensive	Likely	Critical	**High**
Northern Cheyenne	Extensive	Highly Likely	Catastrophic	**High**
Powder River	Extensive	Highly Likely	Catastrophic	**High**
Prairie	Extensive	Likely	Limited	**Medium**
Richland	Significant	Occasional	Limited	**Medium**
Roosevelt	Significant	Highly Likely	Critical	**Medium**
Rosebud	Extensive	Highly Likely	Critical	**High**
Sheridan	Limited	Occasional	Limited	**Low**
Stillwater	Extensive	Likely	Critical	**Medium**
Treasure	Extensive	Occasional	Critical	**Medium**
Valley	Significant	Likely	Limited	**Medium**
Wheatland	Significant	Occasional	Limited	**Low**
Wibaux	Significant	Occasional	Limited	**Low**
Yellowstone	Extensive	Highly Likely	Catastrophic	**High**

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What do you think the significance of wildland and rangeland fire is for your jurisdiction?

ⓘ Start presenting to display the poll results on this slide.

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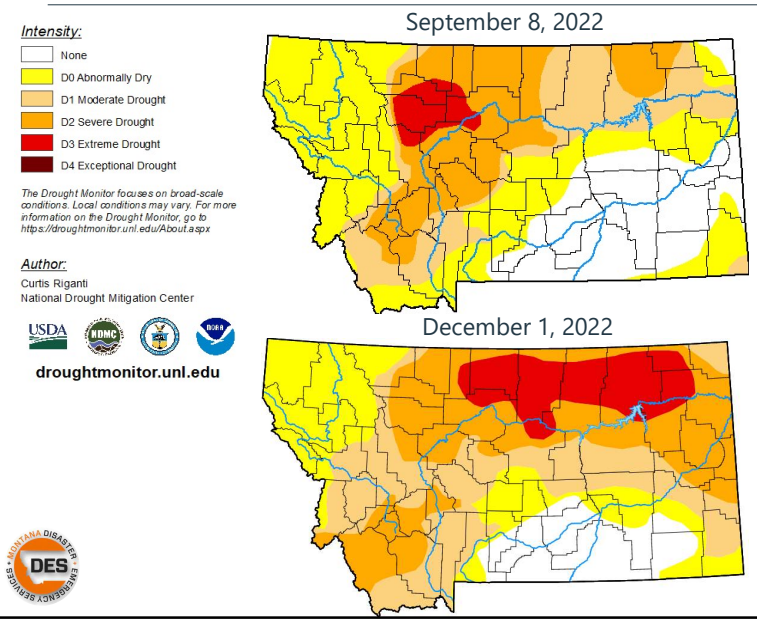
Drought



- 339 USDA Disaster Designations (2012-2021) regionwide from drought or combination of drought and other hazard
  - Greatest number of designations in 2017 (85) and 2021 (65)
- USDA RMA records 5,384,856 insured acres lost and $327,956,307 indemnity payments
  - 43.4% of acres lost recorded in 2017
  - 37% losses to corn
- Drought Impact Reporter notes most impacts since 2000:
  - Agriculture
  - Relief, Response & Restrictions
  - Water Supply & Quality
  - Society & Public Health
  - Plants & Wildlife
  - Fire

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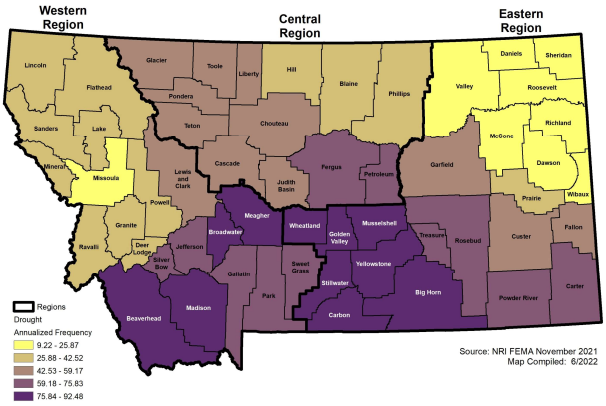
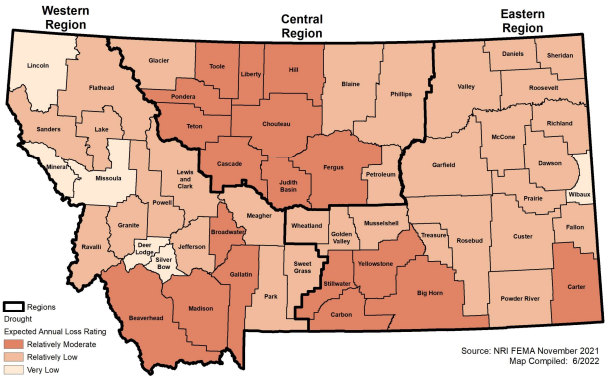
Drought

National Risk Index – Annualized Frequency



National Risk Index – Expected Annual Loss Rating



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Drought Risk Summary

- **Location**: Every county in the Eastern Region has experienced a USDA drought declaration.
- **Extent**: Will vary based on population size and existence of water intensive activities.
- **Probability**: The Eastern Region averages 8 drought declarations a year, making future declarations highly likely
- **Impacts**: Economic losses from crop damage, public health issues such as impaired drinking water quality, secondary impacts such as increased propensity toward wildfires and flood
- **Climate Change:** Temperatures are expected to increase 5.6 to 9.8°F by end of century depending on the emission scenario; precipitation is projected to increase in the winter, spring and fall, and decrease in the summer

Jurisdiction	Geographic Extent	Probability of Future Occurrence	Potential Magnitude/ Severity	Overall Significance
Eastern Region	Extensive	Highly Likely	Critical	High
Big Horn	Extensive	Highly Likely	Critical	High
Carbon	Extensive	Highly Likely	Limited	Medium
Carter	Extensive	Highly Likely	Critical	High
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Musselshell	Extensive	Highly Likely	Limited	Medium
Northern Cheyenne	Extensive	Highly Likely	Critical	High
Powder River	Extensive	Highly Likely	Critical	High
Prairie	Extensive	Highly Likely	Limited	Medium
Richland	Extensive	Highly Likely	Critical	High
Roosevelt	Extensive	Likely	Limited	Medium
Rosebud	Extensive	Highly Likely	Limited	Medium
Sheridan	Extensive	Highly Likely	Critical	High
Stillwater	Extensive	Highly Likely	Limited	Medium
Treasure	Extensive	Highly Likely	Limited	Medium
Valley	Extensive	Likely	Critical	Medium
Wheatland	Extensive	Highly Likely	Critical	High
Wibaux	Extensive	Highly Likely	Limited	Medium
Yellowstone	Extensive	Highly Likely	Critical	High

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What do you think the significance of drought is for your jurisdiction?

ⓘ Start presenting to display the poll results on this slide.

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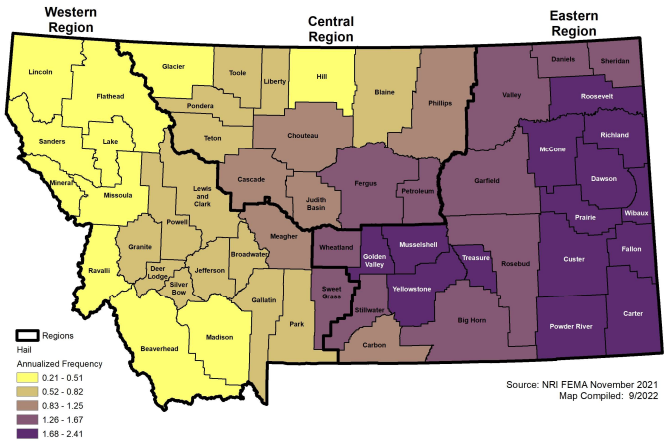
Severe Summer Weather



Source: FEMA NRI

	Deaths	Injuries	Property Loss	Crop Loss	Days with Events	Total Events
Excessive Heat	1	0	$0	$0	4	7
Hail	0	5	$31,580,100	$31,954,000	1,008	5,062
Heavy Rain	0	0	$2,000	$0	67	150
Lightning	5	12	$68,100	$0	21	21
Total	**6**	**17**	**$31,650,200**	**$31,954,000**	**1,100**	**5,240**

Source: NCEI

Impacts:

- Injury to people and fatalities
- Property damage (roofs, cars, and windows)
- Road closure and flash flooding due to hail accumulation and heavy rain
- Power and communication failure due to lightning
- Economic losses due to repairs - hail is the costliest insured hazard in MT
- Damaged crops, landscape, and other vegetation
- Structure fires and wildfires ignited by lightning

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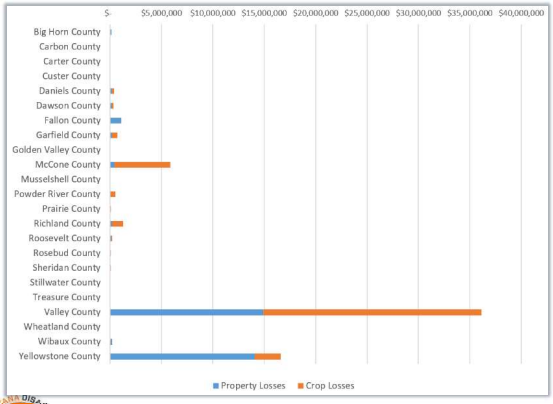
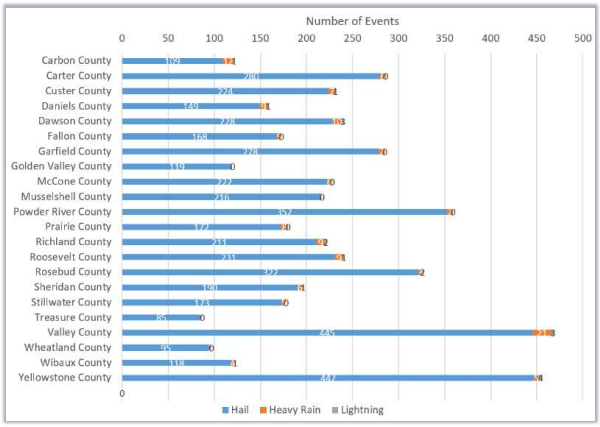
Severe Summer Weather

Valley and Yellowstone Counties experience the **highest frequency** of summer weather events





Valley and Yellowstone Counties have experienced the **most significant losses** from severe summer weather - hail hazard events to be more specific

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Severe Summer Weather Risk Summary

- **Geographic Extent:** Extensive; all counties
- **Extent**: Causes extensive damage to property and environment and threatens human life.
  - Hail is the most damaging summer event
- **Probability of Future Occurrence**: Highly likely that a severe summer weather event will occur annually
  - 5,240 reported events in 1,110 days in the over 67 years
  - Most reported events are hail events
- **Impacts:** Injury to people and fatalities, property damage, road closures, power and communication infrastructure failures, economic losses, and crop damage.
- **Climate Change:** Increases and decreases in temperature, shifts in precipitation, changing risk of certain types of severe weather

Jurisdiction	Geographic Extent	Probability of Future Occurrence	Potential Magnitude/ Severity	Overall Significance
Eastern Region	Extensive	Highly Likely	Catastrophic	High
Big Horn	Extensive	Highly Likely	Critical	Medium
Carbon	Extensive	Highly Likely	Critical	Medium
Carter	Extensive	Highly Likely	Critical	Medium
Crow Tribe	Extensive	Highly Likely	Critical	Medium
Custer	Extensive	Highly Likely	Critical	Medium
Daniels	Extensive	Highly Likely	Critical	Medium
Dawson	Extensive	Highly Likely	Critical	Medium
Fallon	Extensive	Highly Likely	Critical	Medium
Fort Peck	Extensive	Highly Likely	Critical	Medium
Garfield	Extensive	Highly Likely	Critical	Medium
Golden Valley	Extensive	Highly Likely	Critical	Medium
McCone	Extensive	Highly Likely	Critical	Medium
Musselshell	Extensive	Highly Likely	Critical	Medium
Northern Cheyenne	Extensive	Highly Likely	Critical	Medium
Powder River	Extensive	Highly Likely	Critical	Medium
Prairie	Extensive	Highly Likely	Critical	Medium
Richland	Extensive	Highly Likely	Critical	Medium
Roosevelt	Extensive	Highly Likely	Critical	Medium
Rosebud	Extensive	Highly Likely	Critical	Medium
Sheridan	Extensive	Highly Likely	Critical	Medium
Stillwater	Extensive	Highly Likely	Critical	Medium
Treasure	Extensive	Highly Likely	Critical	Medium
Valley	Extensive	Highly Likely	Catastrophic	High
Wheatland	Extensive	Highly Likely	Critical	Medium
Wibaux	Extensive	Highly Likely	Critical	Medium
Yellowstone	Extensive	Highly Likely	Catastrophic	High

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What do you think the significance of summer severe weather is for your jurisdiction?

ⓘ Start presenting to display the poll results on this slide.

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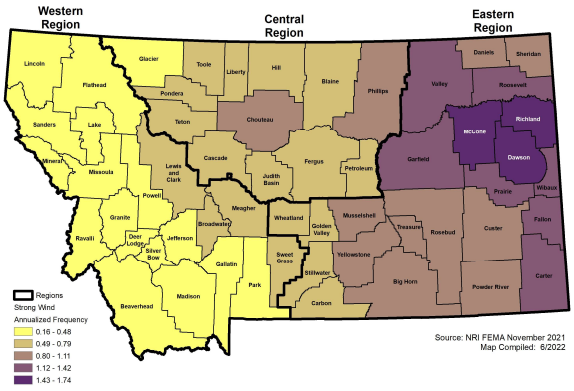
Tornadoes & Windstorms



Source: FEMA NRI

	Deaths	Injuries	Property Loss	Crop Loss	Days with Events	Total Events
High Wind	0	3	$930,000	$0	404	1,492
Strong Wind	0	0	$8,000	$0	4	5
Thunderstorm Wind	7	15	$25,199,200	$10,550,000	810	3,233
Tornadoes	4	17	$42,279,250	$80,000	172	252
Total	**11**	**35**	**$68,416,450**	**$10,630,000**	**1,390**	**4,982**

Source: NCEI

Photo courtesy of the Billings Gazette

Impacts

- Threatened life and safety of people
- Structural and property damage
- Road closures from debris
- Power and communication failure
- Damages to water treatment plants
- Economic losses from repair and business interruptions

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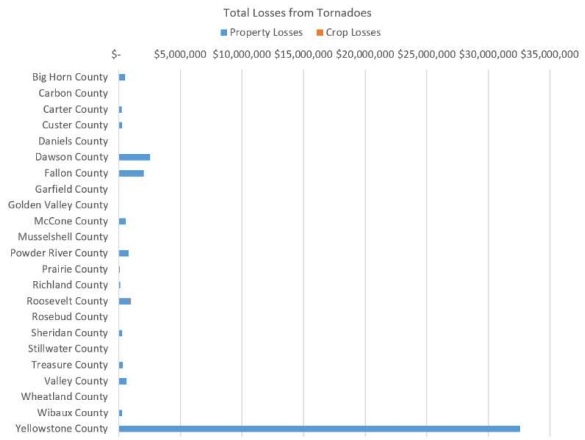
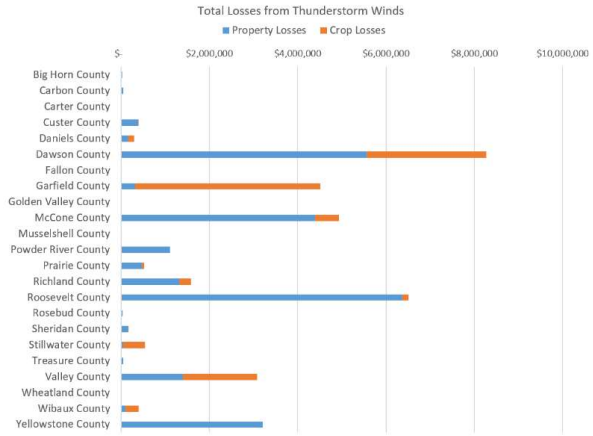
Tornadoes & Windstorms

Greatest losses from tornadoes in Yellowstone County



Greatest losses from thunderstorm wind in Dawson and Roosevelt Counties



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Tornado and Windstorm Risk Summary

- **Geographic Extent:** Extensive; all counties; wind/tornadoes can cause extensive damage to property, crops, and threaten human life
- **Probability**: Highly likely that a wind event or tornado event will occur annually
  - 4,982 reported events in 1,390 days in the past 72 years
  - Most reported events in Valley, Yellowstone, Roosevelt Counties
- **Impacts**: Threatened life and safety of people, structural and property damage, road closures from debris, power and communication failures, damage to WTPs, and economic losses.

Jurisdiction	Geographic Extent	Probability of Future Occurrence	Potential Magnitude/ Severity	Overall Significance
Eastern Region	**Extensive**	**Highly Likely**	**Critical**	**Medium**
Big Horn	Extensive	Highly Likely	Critical	Medium
Carbon	Extensive	Highly Likely	Critical	Medium
Carter	Extensive	Highly Likely	Critical	Medium
Crow Tribe	Extensive	Highly Likely	Critical	Medium
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Prairie	Extensive	Highly Likely	Critical	Medium
Richland	Extensive	Highly Likely	Critical	Medium
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Rosebud	Extensive	Highly Likely	Critical	Medium
Sheridan	Extensive	Highly Likely	Critical	Medium
Stillwater	Extensive	Highly Likely	Critical	Medium
Treasure	Extensive	Highly Likely	Critical	Medium
Valley	Extensive	Highly Likely	Catastrophic	High
Wheatland	Extensive	Highly Likely	Critical	Medium
Wibaux	Extensive	Highly Likely	Critical	Medium
Yellowstone	Extensive	Highly Likely	Catastrophic	High

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What do you think the significance of tornadoes and windstorms is for your jurisdiction?

ⓘ Start presenting to display the poll results on this slide.

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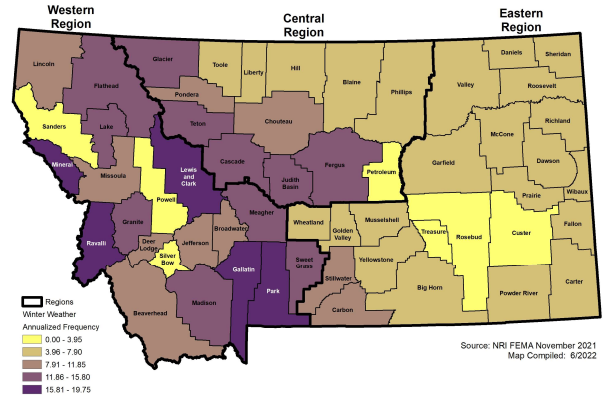
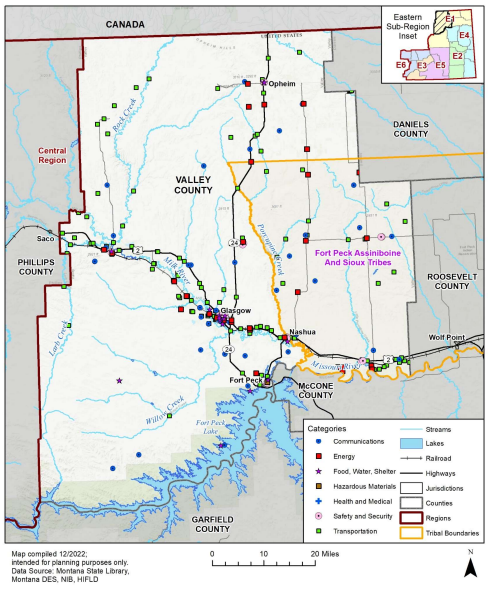
Severe Winter Weather



Source: FEMA NRI

	Deaths	Injuries	Property Loss	Days with Events	Total Events
Blizzard	1	5	$1,792,000	68	307
Cold/Wind Chill	4	0	$0	93	397
Heavy Snow	0	1	$1,236,000	210	701
Ice Storm	0	0	$0	11	56
Winter Storm	3	1	$6,331,700	285	1,138
Winter Weather	5	7	$0	71	209
Total	**13**	**14**	**$9,359,700**	**738**	**2,808**

Source: NCEI



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Severe Winter Weather

- Severe winter weather events can cause critical facilities to break down
- Accumulation of snow and ice on powerlines can cause damages that result in power loss.
- A power outage in the winter months is increasingly dangerous during periods of extremely cold temperatures and wind chill.

Photo courtesy of the Billings Gazette

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Severe Winter Weather Risk Summary

- **Geographic Extent:** Extensive; all counties experience severe winter storm events
- **Probability of Future Occurrence**: Highly likely to occur every year in the Eastern Region
  - 2,808 reported events in 738 days over 26 years
- **Impacts**: Structural damage from snow and ice accumulation, isolation due to road closures and increased car accidents/pileups, power and communication failure, threatens health and safety of humans, livestock, and animals caught outside, tree and vegetation damages
- **Climate Change:** Increases and decreases in temperature, shifts in precipitation, changing risk of certain types of severe weather

Jurisdiction	Geographic Extent	Probability of Future Occurrence	Potential Magnitude/ Severity	Overall Significance
Eastern Region	**Extensive**	**Highly Likely**	**Critical**	**Medium**
Big Horn	Extensive	Highly Likely	Critical	**Medium**
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Prairie	Extensive	Highly Likely	Critical	**Medium**
Richland	Extensive	Highly Likely	Critical	**Medium**
Roosevelt	Extensive	Highly Likely	Critical	**Medium**
Rosebud	Extensive	Highly Likely	Critical	**Medium**
Sheridan	Extensive	Highly Likely	Critical	**Medium**
Stillwater	Extensive	Highly Likely	Critical	**High**
Treasure	Extensive	Highly Likely	Critical	**Medium**
Valley	Extensive	Highly Likely	Critical	**Medium**
Wheatland	Extensive	Highly Likely	Critical	**Medium**
Wibaux	Extensive	Highly Likely	Critical	**Medium**
Yellowstone	Extensive	Highly Likely	Critical	**High**

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What do you think the significance of severe winter weather is for your jurisdiction?

ⓘ Start presenting to display the poll results on this slide.

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Landslide/Rockfall/Debris Flow

Yellowstone National Park Landslide/Flooding (June 2022)

- Spring is typically when landslide and rockfall events occur
- One past landslide event that led to disaster declarations for Daniels, Dawson and Valley counties in 1986 (DR-0761-MT).
- These types of events have the potential to cause property and facility damages, block roads as well as impact the natural environment
- We are lacking consistent data for the entire region for this hazard

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Landslide Risk Summary

- **Geographic Extent**: Limited; several likely and probable landslide locations throughout the Region where landslides can occur.
  - Can be massive or disturb only a few cubic feet
- **Probability of Future Occurrence**:
  - **Likely -** No counties identified
  - **Occasional –** Dawson, Daniels and Valley Counties can have intermittent risks due to landslides
  - Unlikely, but still possible, in other counties based on past events.
- **Impacts**:
  - Structural Damage
  - Road Closure
  - Power and Communication Failure
  - Damage to Rivers and Streams, reduced water quality
  - Erosion and Deposition
  - Flooding

Jurisdiction	Geographic Extent	Probability of Future Occurrence	Potential Magnitude/ Severity	Overall Significance
Eastern Region	**Limited**	**Unlikely**	**Negligible**	**Low**
Big Horn	Limited	Unlikely	Negligible	**Low**
Carbon	Limited	Unlikely	Negligible	**Medium**
Carter	Limited	Unlikely	Negligible	**Low**
Custer	Limited	Unlikely	Negligible	**Low**
Crow Tribe	Limited	Unlikely	Negligible	**Low**
Daniels	Limited	Occasional	Negligible	**Low**
Dawson	Limited	Occasional	Negligible	**Low**
Fallon	Limited	Unlikely	Negligible	**Low**
Fort Peck	Limited	Unlikely	Negligible	**Low**
Garfield	Limited	Unlikely	Negligible	**Low**
Golden Valley	Limited	Unlikely	Negligible	**Low**
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Roosevelt	Limited	Unlikely	Negligible	**Low**
Rosebud	Limited	Unlikely	Negligible	**Low**
Sheridan	Limited	Unlikely	Negligible	**Low**
Stillwater	Limited	Unlikely	Negligible	**Medium**
Treasure	Limited	Unlikely	Negligible	**Low**
Valley	Limited	Occassional	Negligible	**Low**
Wheatland	Limited	Unlikely	Negligible	**Low**
Wibaux	Limited	Unlikely	Negligible	**Low**
Yellowstone	Limited	Unlikely	Negligible	**Low**

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What do you think the significance of landslide is for your jurisdiction?

ⓘ Start presenting to display the poll results on this slide.

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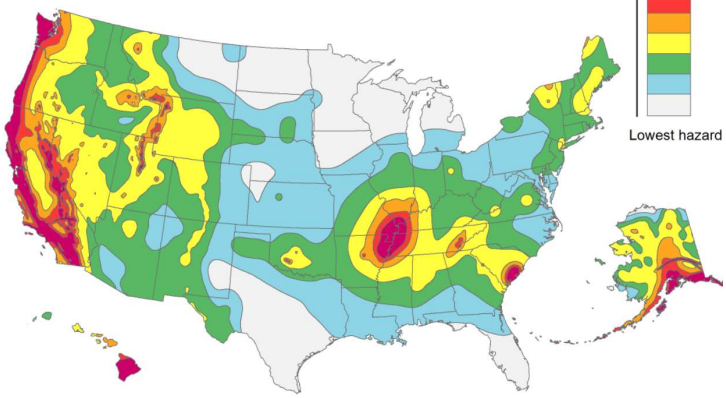
Earthquake

Long Term Probabilistic Seismic Hazard Map 2018



- Montana is one of the most seismically active states in the U.S according to USGS
- Much of this activity has been concentrated in the Intermountain Seismic Belt, which extends through western Montana
- Largest known event in the state was the M7.2 Hebgen Lake event in 1959; the event happened in southwestern Montana
- Likelihood of occurrence is occasional (between 1% and 10% probability each year) but impacts could be significant

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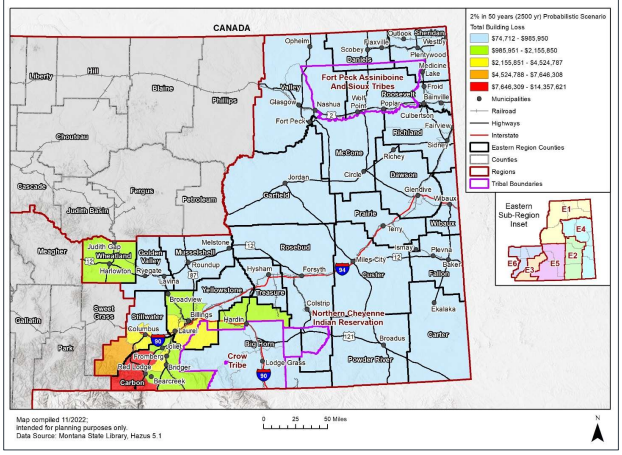
Earthquake

- Hazus 2,500-year M5.0 Probabilistic Scenario conducted
- Model uses USGS probabilistic seismic hazard maps to model ground shaking with a 2 percent probability of being exceeded in 50 years
- Eastern Region Totals:
  - 37 injuries, no fatality
  - $28.68 million in total economic losses
  - 1,652 buildings with some damage, 128 buildings with extensive damage and 3 completely destroyed
  - 27 displaced households
  - 29,000 tons of debris generated
- Several related/cascading hazards: Landslide, Rockfall, Liquefaction, Fire

Eastern Region Hazus 2% in 50 years (2500 yr) as the Probabilistic Scenario Direct Economic Loss



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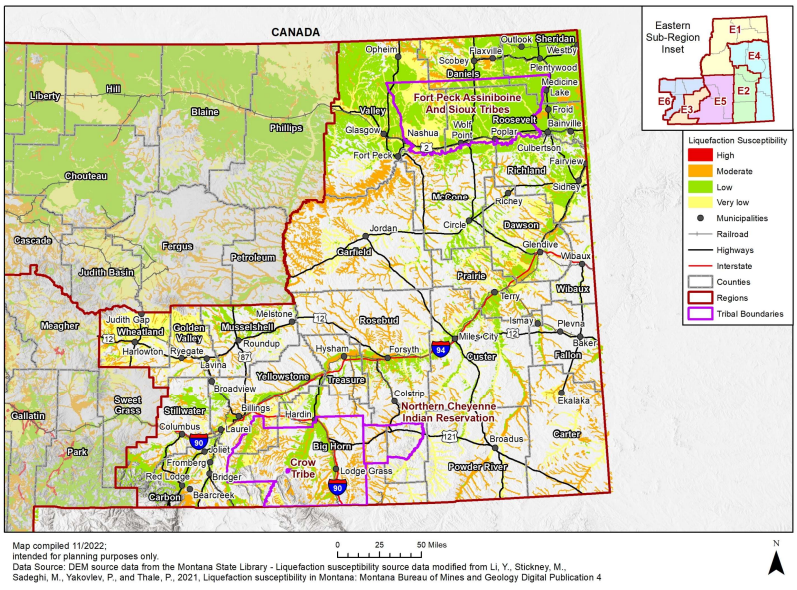
Earthquake - Liquefaction

- Liquefaction can occur during an earthquake when vibrations cause soil particles to lose contact with one another and act as a liquid (*geology.com*)
- Liquefaction can cause property damage, harm to human life, fracturing, and sliding of the ground surface
- Moderate/low liquefaction susceptibility in general – no area with high susceptibility



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Earthquake Risk Summary

- **Location**: Montana is one of the most seismically active states in the US according to the USGS, however, the Eastern Region is not particularly in the State's hazard-prone region, which is the western part of the State
- **Extent**: Earthquake events can cause severe damage to properties and critical facilities, meanwhile result in casualties
- **Probability**: Occasional (1 – 10% chance of occurrence in a given year)
- **Impacts**:
- Building, property & critical facilities damage; loss of water, electricity and natural gas supply
- Economic loss and business interruption;
- Casualties and injuries; displaced households

Jurisdiction	Geographic Extent	Probability of Future Occurrence	Potential Magnitude/ Severity	Overall Significance
Eastern Region	**Extensive**	**Likely**	**Limited**	**Low**
Big Horn	Extensive	Occasional	Critical	**Medium**
Carbon	Extensive	Occasional	Critical	**Medium**
Carter	Extensive	Occasional	Limited	**Low**
Crow Tribe	Extensive	Occasional	Limited	**Low**
Custer	Extensive	Occasional	Limited	**Low**
Daniels	Extensive	Occasional	Limited	**Low**
Dawson	Extensive	Occasional	Limited	**Low**
Fallon	Extensive	Occasional	Limited	**Low**
Fort Peck	Extensive	Occasional	Limited	**Low**
Garfield	Extensive	Occasional	Limited	**Low**
Golden Valley	Extensive	Occasional	Limited	**Low**
McCone	Extensive	Occasional	Limited	**Low**
Musselshell	Extensive	Occasional	Limited	**Low**
Northern Cheyenne	Extensive	Occasional	Limited	**Low**
Powder River	Extensive	Occasional	Limited	**Low**
Prairie	Extensive	Occasional	Limited	**Low**
Richland	Extensive	Occasional	Limited	**Low**
Roosevelt	Extensive	Occasional	Limited	**Low**
Rosebud	Extensive	Occasional	Limited	**Low**
Sheridan	Extensive	Occasional	Limited	**Low**
Stillwater	Extensive	Occasional	Critical	**Medium**
Treasure	Extensive	Occasional	Limited	**Low**
Valley	Extensive	Occasional	Limited	**Low**
Wheatland	Extensive	Occasional	Critical	**Medium**
Wibaux	Extensive	Occasional	Limited	**Low**
Yellowstone	Extensive	Occasional	Critical	**Medium**

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What do you think the significance of earthquake is for your jurisdiction?

ⓘ Start presenting to display the poll results on this slide.

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Volcanic Ash

Major concern for Montana -ashfall after an eruption, most likely from the Cascades in WA, OR, and CA

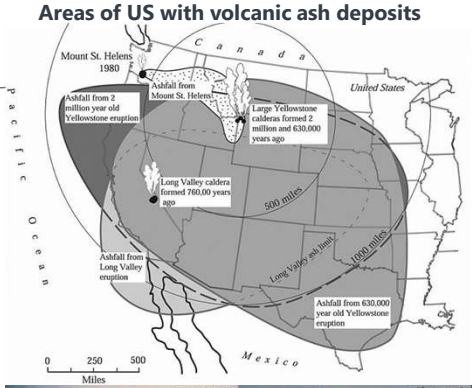
- Yellowstone Caldera in WY and ID presents some risk, although unlikely based on the geologic record

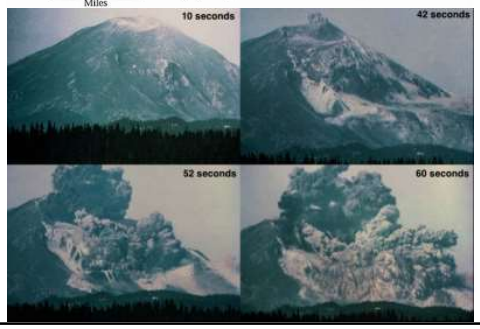
1980 Mt. St Helens eruption is best recent example

Unlike ash from fires, volcanic ash is hard, does not dissolve in water, is extremely abrasive, and can conduct electricity when wet

- Can scratch skin and eyes
- Create a cement-like mixture in the lungs if inhaled
- Leads to massive damage to machinery
- Massive cleanup costs, as ash must be collected and trucked away
- Can collapse roofs under weight if too much accumulates
- Large scale ejections of ash can even alter the global climate

Areas of US with volcanic ash deposits





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Volcanic Ash Risk Summary

- **Location**: Extensive, historically a greater threat to southern region of state , but ash events are extremely widespread
- **Extent**: Depending on size of eruption, volcanic ash can be a localized or global event
- **Probability**: Very unlikely to occur in any given year
- **Impacts**: Economic, infrastructure, public health

Jurisdiction	Geographic Extent	Probability of Future Occurrence	Potential Magnitude/ Severity	Overall Significance
Eastern Region	**Extensive**	**Unlikely**	**Critical**	**Low**
Big Horn	Extensive	Unlikely	Critical	**Low**
Carbon	Extensive	Unlikely	Critical	**Low**
Carter	Extensive	Unlikely	Critical	**Low**
Crow Tribe	Extensive	Unlikely	Critical	**Low**
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McCone	Extensive	Unlikely	Critical	**Low**
Musselshell	Extensive	Unlikely	Critical	**Low**
Northern Cheyenne	Extensive	Unlikely	Critical	**Low**
Powder River	Extensive	Unlikely	Critical	**Low**
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Richland	Extensive	Unlikely	Critical	**Low**
Roosevelt	Extensive	Unlikely	Critical	**Low**
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Sheridan	Extensive	Unlikely	Critical	**Low**
Stillwater	Extensive	Unlikely	Critical	**Low**
Treasure	Extensive	Unlikely	Critical	**Low**
Valley	Extensive	Unlikely	Critical	**Low**
Wheatland	Extensive	Unlikely	Critical	**Low**
Wibaux	Extensive	Unlikely	Critical	**Low**
Yellowstone	Extensive	Unlikely	Critical	**Low**

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What do you think the significance of volcanic ash is for your jurisdiction?

ⓘ Start presenting to display the poll results on this slide.

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Communicable Disease

Five pandemics in the last 100 years

1918 - 1919	Spanish Flu, H1N1	17 to 100 million deaths
1957 -1958	Asian Flu, H2N2	1 to 4 million deaths
1968 - 1969	Hong Kong Flu, H3N2	1 to 4 million deaths
2009	H1N1 Flu	18,000 deaths
2020 – ongoing	COVID-19	6.63 million deaths

Local COVID-19 Statistics, as of December 6, 2022

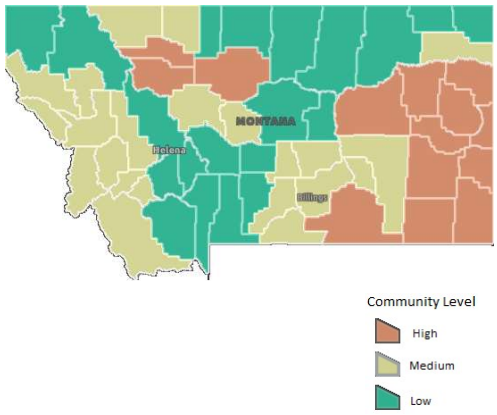
United States	98.5 million cases	1.09 million deaths
State of Montana	318,360 cases	3,614 deaths
Eastern Region	79,577 cases	1,198 deaths

Other prevalent communicable diseases in the State of Montana

Hantavirus Pulmonary Syndrome, STDs, Hepatitis, Food & Water borne Diseases

Montana Coronavirus Community Levels by County

As of 12/09/22 from MT DPHHS



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Communicable Disease Risk Summary

- **Location**: Population dense areas; areas where people live, work, and socialize in close quarters
- **Extent**: Depends on virulence and transmissibility
- **Probability**: About 5% annual probability of pandemic
- **Impacts**: Strain on health care system, potential economic impacts from absenteeism, and health and mortality impacts for those affected

Jurisdiction	Geographic Extent	Probability of Future Occurrence	Potential Magnitude/ Severity	Overall Significance
Eastern Region	**Significant**	**Occasional**	**Critical**	**Medium**
Big Horn	Significant	Occasional	Critical	High
Carbon	Significant	Occasional	Critical	Medium
Carter	Limited	Occasional	Critical	Medium
Custer	Limited	Occasional	Critical	Medium
Crow Tribe	Extensive	Occasional	Critical	Medium
Daniels	Daniels	Occasional	Critical	Medium
Dawson	Limited	Occasional	Critical	Low
Fallon	Significant	Occasional	Critical	Medium
Fort Peck	Significant	Occasional	Critical	High
Garfield	Limited	Occasional	Critical	Medium
Golden Valley	Limited	Occasional	Critical	Medium
McCone	Limited	Occasional	Critical	Low
Musselshell	Significant	Occasional	Critical	Medium
Northern Cheyenne	Significant	Occasional	Critical	High
Powder River	Limited	Occasional	Critical	Medium
Prairie	Limited	Occasional	Critical	Medium
Richland	Significant	Occasional	Critical	Medium
Roosevelt	Significant	Occasional	Critical	High
Rosebud	Limited	Occasional	Critical	Medium
Sheridan	Significant	Occasional	Critical	Medium
Stillwater	Significant	Occasional	Critical	Medium
Treasure	Limited	Occasional	Critical	Medium
Valley	Limited	Occasional	Critical	Medium
Wheatland	Significant	Occasional	Critical	Medium
Wibaux	Significant	Occasional	Critical	Medium
Yellowstone	Extensive	Occasional	Critical	High

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What do you think the significance of communicable disease is for your jurisdiction?

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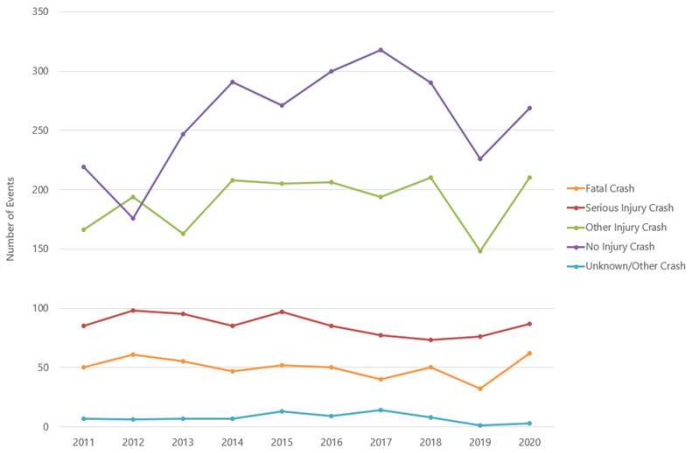
Transportation Accidents

Crash Severity in Montana 2011-2020



Source: MT DOT

- **Location**: All counties can experience transportation accidents, often along **Interstates 90 and 94, US 12, US 212, US 2, Other major transportation routes**
- **Extent**: Can cause significant property losses, injuries, and fatalities to those involved in the accident.
- **Probability**: Highly likely
  - 9 aircraft accidents per year in the state
  - **6,746 annual average roadway crashes** from 2016-2020 in the **Eastern Region** (Includes all counties)
  - **7,163 annual average roadway crashes due to wildlife** in the **state** (most often caused by white-tailed deer in the month of Nov.)
  - 82 boating accidents from 2017-2021 in the state
  - **48 reported train accidents** in the **Eastern Region** from 2017-2021
- **Impacts**:
  - Isolation/delayed emergency response due to road closure
  - Property damage
  - Threaten to life and safety

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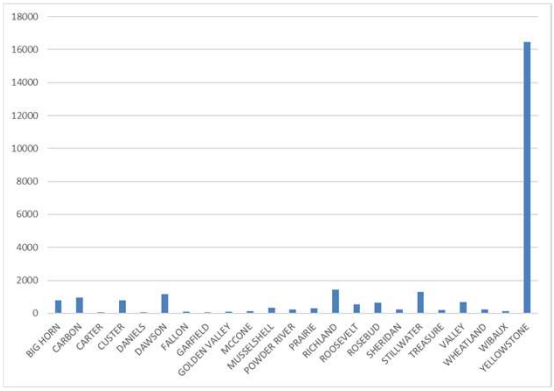
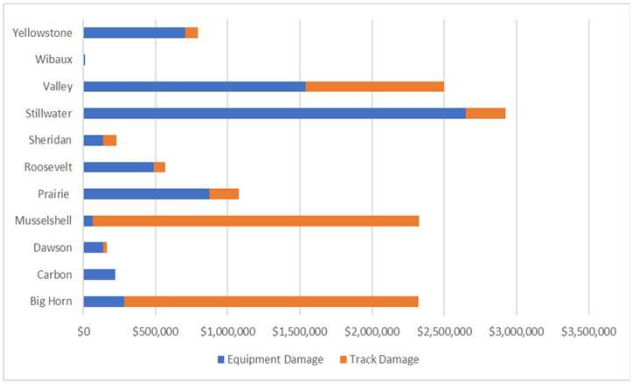
Transportation Accidents

Eastern Region Roadway Crashes 2016-2020



Source: MT DOT

Eastern Region Railway Accidents 2017-2021



Source: Federal Railway Administration

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Transportation Accidents Risk Summary

- **Location**: Along major transportation routes and railroads
- **Extent**: Significant distribution of locations where this hazard can occur, but most occurrences only impact a very small area (i.e., individual car crashes)
- **Probability**: Highly Likely – can be expected to occur multiple times annually in each county.
- **Impacts**: Negligible – most resulting damages are limited to individual private property, covered by insurance. However, some counties have seen significant losses from rail incidents recorded in the millions of $$

Jurisdiction	Geographic Extent	Probability of Future Occurrence	Potential Magnitude/ Severity	Overall Significance
Eastern Region	**Significant**	**Highly Likely**	**Negligible**	**Low**
Big Horn	Significant	Highly Likely	Negligible	Low
Carbon	Significant	Highly Likely	Negligible	Low
Carter	Significant	Highly Likely	Negligible	Low
Custer	Significant	Highly Likely	Negligible	Low
Crow Tribe	Significant	Highly Likely	Negligible	Low
Daniels	Significant	Highly Likely	Negligible	Low
Dawson	Significant	Highly Likely	Negligible	Low
Fallon	Significant	Highly Likely	Negligible	Low
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Garfield	Significant	Highly Likely	Negligible	Low
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McCone	Significant	Highly Likely	Negligible	Low
Musselshell	Significant	Highly Likely	Negligible	Low
Northern Cheyenne	Significant	Highly Likely	Negligible	Low
Powder River	Significant	Highly Likely	Negligible	Low
Prairie	Significant	Highly Likely	Negligible	Low
Richland	Significant	Highly Likely	Negligible	Low
Roosevelt	Significant	Highly Likely	Negligible	Low
Rosebud	Significant	Highly Likely	Negligible	Low
Sheridan	Significant	Highly Likely	Negligible	Low
Stillwater	Significant	Highly Likely	Negligible	Medium
Treasure	Significant	Highly Likely	Negligible	Low
Valley	Significant	Highly Likely	Negligible	Medium
Wheatland	Significant	Highly Likely	Negligible	Low
Wibaux	Significant	Highly Likely	Negligible	Low
Yellowstone	Significant	Highly Likely	Moderate	Medium

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What do you think the significance of transportation accidents is for your jurisdiction?

ⓘ Start presenting to display the poll results on this slide.

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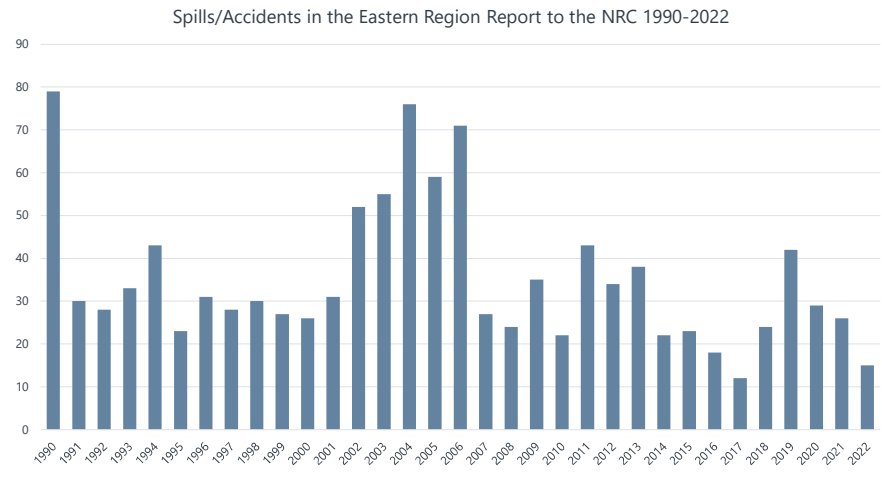
Hazardous Materials Incidents



Location: Hazmat incidents can occur at a **fixed facility** or during **transportation**.

Hazardous materials facilities are identified and mapped by the counties they reside in, along with the types of materials stored there; facilities generally reside in and around communities.

Probability: Likely throughout the planning area

- Montana's Eastern Region has had **1,156 Hazmat Spill incidents in 32 years**.
- The 2000s generally saw consistently higher rates of incidents in this timeframe.

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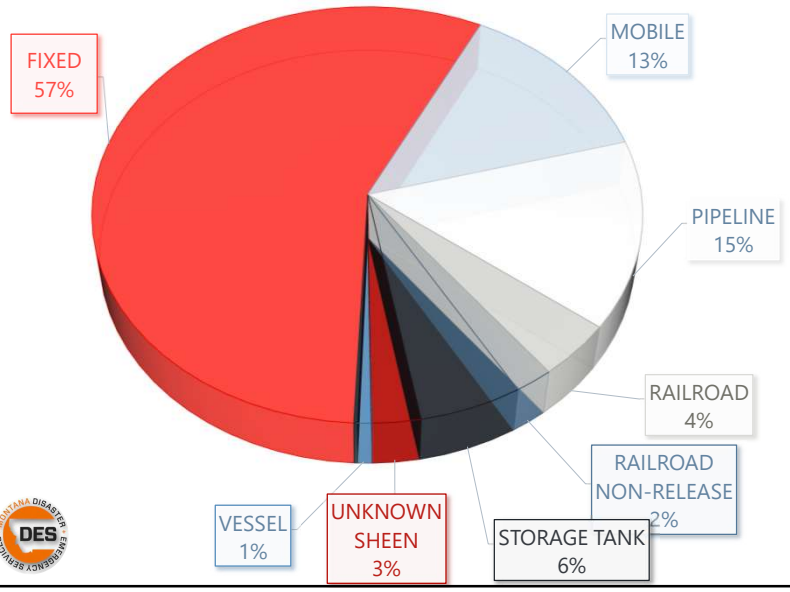
Hazardous Materials Incidents

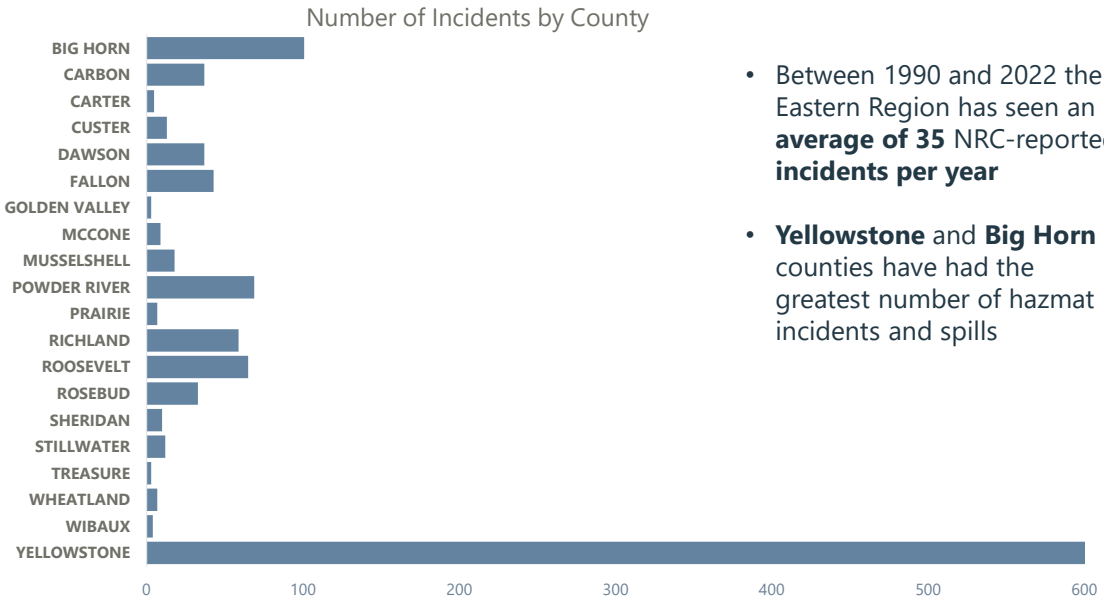


- The **greatest number of incidents** reported to the NRC by type are **fixed** with 57% of the 1,156 events reported.
  - Fixed Facilities such as Tier II and RMP facilities are common places where hazardous material incidents occur.
- Second are **pipeline incidents** with 15%.

  An event that involves a release of gas from a pipeline, gas from an underground natural gas storage facility (UNGSF), liquefied natural gas, liquefied petroleum gas, refrigerant gas, or gas from an LNG facility
- Third largest amount is **mobile incidents** with 13%
  - When Hazardous Materials are being transported and accidents occur.

81

Hazardous Materials Incidents



- Between 1990 and 2022 the Eastern Region has seen an **average of 35** NRC-reported **incidents per year**
- **Yellowstone** and **Big Horn** counties have had the greatest number of hazmat incidents and spills

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Hazardous Materials Incidents Risk Summary

- **Location**: Incidents can occur anywhere that hazardous materials are stored or transported
- **Extent**: Localized to area around facility or transportation route
- **Probability**: Dependent upon presence of hazardous materials facilities or transportation routes
- **Impacts**: Minimal remediation to serious environmental damage or human health hazards depending on nature of material released

Jurisdiction	Geographic Extent	Probability of Future Occurrence	Potential Magnitude/ Severity	Overall Significance
Eastern Region	**Limited**	**Highly Likely**	**Negligible**	**Low**
Big Horn	Limited	Highly Likely	Negligible	**Medium**
Carbon	Limited	Likely	Negligible	**Low**
Carter	Limited	Occasional	Negligible	**Low**
Custer	Limited	Likely	Negligible	**Low**
Crow Tribe	Limited	Likely	Negligible	**Low**
Daniels	Limited	Unlikely	Negligible	**Low**
Dawson	Limited	Likely	Negligible	**Low**
Fallon	Limited	Likely	Negligible	**Low**
Fort Peck	Limited	Likely	Negligible	**Low**
Garfield	Limited	Unlikely	Negligible	**Low**
Golden Valley	Limited	Occasional	Negligible	**Low**
McCone	Limited	Likely	Negligible	**Low**
Musselshell	Limited	Likely	Negligible	**Low**
Northern Cheyenne	Limited	Likely	Negligible	**Low**
Powder River	Limited	Highly Likely	Negligible	**Medium**
Prairie	Limited	Likely	Negligible	**Low**
Richland	Limited	Likely	Negligible	**Low**
Roosevelt	Limited	Highly Likely	Negligible	**Medium**
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Sheridan	Limited	Likely	Negligible	**Low**
Stillwater	Limited	Likely	Negligible	**Low**
Treasure	Limited	Occasional	Negligible	**Low**
Valley	Limited	Unlikely	Negligible	**Low**
Wheatland	Limited	Likely	Negligible	**Low**
Wibaux	Limited	Occasional	Negligible	**Low**
Yellowstone	Limited	Highly Likely	Negligible	**High**

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What do you think the significance of hazardous material incidents is for your jurisdiction?

ⓘ Start presenting to display the poll results on this slide.

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Cyber Attack

- **DDoS attacks**: frequent, minimal impacts
- **Data breaches:** 9,741 in U.S. 2005-2019
  - 35 in Montana
- **Malware:** 1 in 131 emails contains malware
  - **Supply Chain Attack**: SolarWinds
- **Cyber espionage:** primarily by foreign governments
- **Cyber crime:** motivated by financial gain
- **Cyber terrorism:** developing threat – Olympic Destroyer 2018

Ransomware attacks on government servers are increasing:

2021	Montana Department of Agriculture USAHERDS software attacked
2021	JBS
2021	Colonial Pipeline
2019	Baltimore
2019	Orange County NC
2018	Atlanta

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Cyber Attack

Source: The FBI Internet Crime Report 2021

- As shown in the map on the left, the total complaints and losses on cyber attacks have been increasing in the last five years in the US
- In 2021, Montana ranked as the 49th state in victim losses – $10,107,283 in losses; the 48th state in the number of victims per state – 1,188 victims.

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Cyber Attack Risk Summary

- **Location**: Can occur anywhere. Both to private and government servers
- **Extent**: Can range from personal email scams to large scale theft of confidential information, or interruption of critical services with a required ransom.
- **Probability**: Growing rapidly in frequency every year, but difficult to predict due to high variability
- **Impacts**:
  - Power failure and blackouts
  - Communication/emergency response failure (9-1-1 attacks)
  - Personal monetary losses; Populations 60+ experience the greatest losses from cyber-attacks
  - Leaked confidential information from government servers

Jurisdiction	Geographic Extent	Probability of Future Occurrence	Potential Magnitude/ Severity	Overall Significance
Eastern Region	**Significant**	**Occasional**	**Critical**	**Medium**
Big Horn	Significant	Occasional	Critical	**Medium**
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Stillwater	Significant	Occasional	Critical	**Medium**
Treasure	Significant	Occasional	Critical	**Medium**
Valley	Significant	Occasional	Critical	**Medium**
Wheatland	Significant	Occasional	Critical	**Medium**
Wibaux	Significant	Occasional	Critical	**Medium**
Yellowstone	Significant	Occasional	Critical	**Medium**

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What do you think the significance of cyber-attack is for your jurisdiction?

ⓘ Start presenting to display the poll results on this slide.

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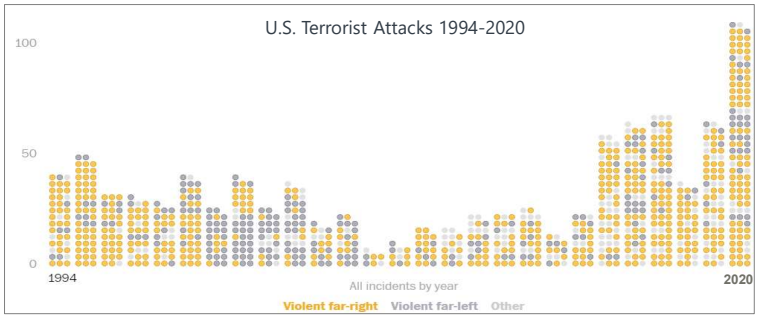
Human Conflict (Terrorism)

- Terrorism: "**the unlawful use of force or violence against persons or property** to intimidate or coerce a government or civilian population in furtherance of political or social objectives"
- The Center for Strategic & International Studies records 980 domestic terrorist attacks in the US since 1994, with sharp growth over the last 10-15 years.
- One terrorist event that targeted the police recorded in Billings on March 15, 1970

Most common targets
Businesses: 27%
Government: 17%
Private Citizens & Property: 13%
Abortion-related: 9%
Military: 6%
Police: 6%
Religious: 5%

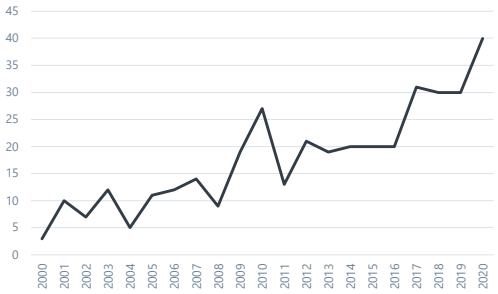


89

Human Conflict (Active Shooter Incidents)

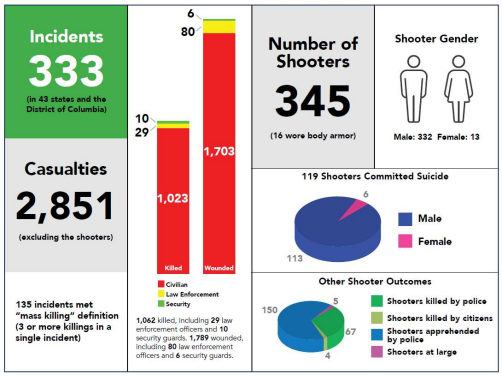
- Active Shooter: "one or more individuals **actively engaged in killing or attempting to kill people in a populated area** using one or more firearms"
- FBI reported 434 active shooter events from 2000-2021 in the United States, none of which occurred in the MT Eastern Region

Active Shooter Incidents in the U.S. 2000-2020



Sources: FBI Active Shooter Incidents, 20-Year Review 2000-2019, FBI Active Shooter Incidents in the United States 2020

20-Year Active Shooter Summary in the U.S.

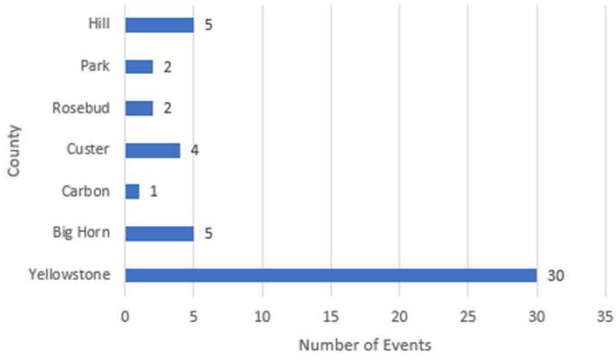


90

Human Conflict (Civil Unrest)

- Civil Unrest: "**any public disturbance involving acts of violence by assemblages of three or more persons, which causes an immediate danger** of **or results in damage or injury** to the property or person of any other individual."
- Can include riots, demonstrations, threatening individuals, or assemblies that have become disruptive and may cause harm to others.
- 49 documented protests in the Region, 29 of which occurred in Billings, MT (1/2017-1/2021). Not all documented protests were violent in nature.

Protest Incidents in the Eastern Region 1/2017-1/2021



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Human Conflict
(Terrorism, Active Shooter, Civil Unrest)

- **Location**: Anywhere in the Eastern Region. More likely to occur in densely population areas and in capital cities.
- **Extent**: Can result in significant damage to property and infrastructure, and injuries and fatalities at local scale or across the entire planning area.
- **Probability**: Occasional, **4 active hate groups reported in Montana in 2021** by the Southern Poverty Law Center, in addition to growing numbers of protests across the world in recent years.
- **Impacts**:
  - Property damage and personal injuries possible
  - Continuity of operations may be impacted
  - Economic disruptions
  - Public confidence in government can be affected

Jurisdiction	Geographic Extent	Probability of Future Occurrence	Potential Magnitude/ Severity	Overall Significance
Eastern Region	**Significant**	**Occasional**	**Critical**	**Medium**
Big Horn	Significant	Occasional	Critical	**Medium**
Carbon	Significant	Occasional	Critical	**Medium**
Carter	Significant	Occasional	Critical	**Medium**
Custer	Significant	Occasional	Critical	**Medium**
Crow Tribe	Significant	Occasional	Critical	**Medium**
Daniels	Significant	Occasional	Critical	**Medium**
Dawson	Significant	Occasional	Critical	**Medium**
Fallon	Significant	Occasional	Critical	**Medium**
Fort Peck	Significant	Occasional	Critical	**Medium**
Garfield	Significant	Occasional	Critical	**Medium**
Golden Valley	Significant	Occasional	Critical	**Medium**
McCone	Significant	Occasional	Critical	**Medium**
Musselshell	Significant	Occasional	Critical	**Medium**
Northern Cheyenne	Significant	Occasional	Critical	**Medium**
Powder River	Significant	Occasional	Critical	**Medium**
Prairie	Significant	Occasional	Critical	**Medium**
Richland	Significant	Occasional	Critical	**Medium**
Roosevelt	Significant	Occasional	Critical	**Medium**
Rosebud	Significant	Occasional	Critical	**Medium**
Sheridan	Significant	Occasional	Critical	**Medium**
Stillwater	Significant	Occasional	Critical	**Medium**
Treasure	Significant	Occasional	Critical	**Medium**
Valley	Significant	Occasional	Critical	**Medium**
Wheatland	Significant	Occasional	Critical	**Medium**
Wibaux	Significant	Occasional	Critical	**Medium**
Yellowstone	Significant	Likely	Critical	**High**

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slido

What do you think the significance of human conflict is for your jurisdiction?

ⓘ Start presenting to display the poll results on this slide.

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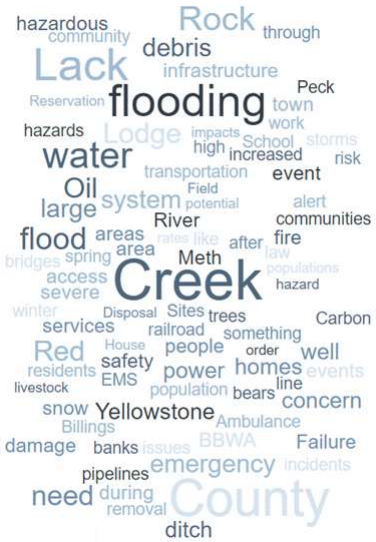
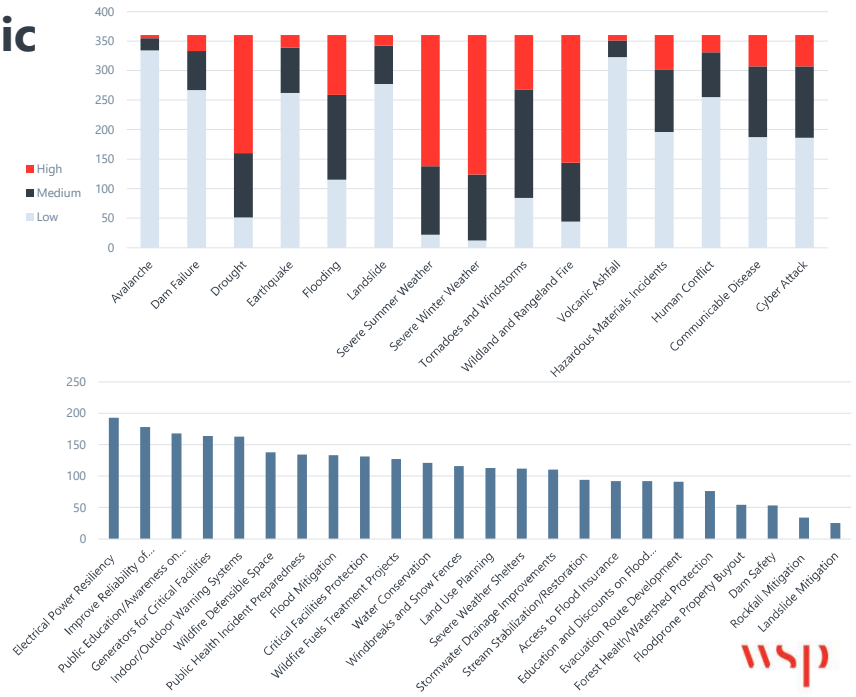
Preliminary Public Survey Results





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MT Eastern Region Hazard Significance Summary Table : E1

Hazard	Roosevelt	Valley	Daniels	Sheridan	Garfield	Fort Peck
Avalanche	Low	Low	Low	Low	Low	Low
Communicable Disease	Medium	Medium	Medium	Medium	Medium	High
Cyber-Attack	Medium	Medium	Medium	Medium	Medium	Medium
Dam Failure	Low	Low	Low	Low	Low	Low
Drought	Medium	Medium	Medium	High	Medium	High
Earthquake	Low	Low	Low	Low	Low	Low
Flooding	Medium	High	Medium	Medium	Medium	Medium
Hazardous Material Incidents	Medium	Low	Low	Low	Low	Low
Human Conflict	Medium	Medium	Medium	Medium	Medium	Medium
Landslide	Low	Low	Low	Low	Low	
Severe Summer Weather	Medium	High	Medium	Medium	Medium	Medium
Severe Winter Weather	Medium	Medium	Medium	Medium	Medium	Medium
Tornadoes & Windstorms	High	High	Medium	Medium	Medium	Medium
Transportation Accidents	Low	Medium	Low	Low	Low	Low
Volcanic Ash	Low	Low	Low	Low	Low	Low
Wildland and Rangeland Fire	Medium	Medium	Low	Low	High	Medium

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MT Eastern Region Hazard Significance Summary Table : E2-E3

Hazard	Prairie	Custer	Powder River	Yellowstone	Carbon	Crow Tribe
Avalanche	Low	Low	Low	Low	Medium	Low
Communicable Disease	Medium	Medium	Medium	High	Medium	Medium
Cyber-Attack	Medium	Medium	Medium	Medium	Medium	Medium
Dam Failure	Low	Medium	Low	Low	Low	Low
Drought	Medium	Medium	High	High	Medium	High
Earthquake	Low	Low	Low	Medium	Medium	Low
Flooding	Medium	High	Medium	High	Medium	Medium
Hazardous Material Incidents	Low	Low	Medium	High	Low	Low
Human Conflict	Medium	Medium	Medium	High	Medium	Medium
Landslide	Low	Low	Low	Low	Low	Low
Severe Summer Weather	Medium	Medium	Medium	Medium	Medium	Medium
Severe Winter Weather	Medium	Medium	Medium	Medium	Medium	Medium
Tornadoes & Windstorms	Medium	Medium	Medium	High	Medium	Medium
Transportation Accidents	Low	Low	Low	Medium	Low	Low
Volcanic Ash	Low	Low	Low	Low	Low	Low
Wildland and Rangeland Fire	Medium	High	High	High	High	High

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MT Eastern Region Hazard Significance Summary Table : E4

Hazard	McCone	Richland	Dawson	Wibaux	Fallon	Carter
Avalanche	Low	Low	Low	Low	Low	Low
Communicable Disease	Low	Medium	Low	Medium	Medium	Medium
Cyber-Attack	Medium	Medium	Medium	Medium	Medium	Medium
Dam Failure	Low	Low	Low	Low	Low	Low
Drought	High	High	Medium	Medium	High	High
Earthquake	Low	Low	Low	Low	Low	Low
Flooding	Medium	Medium	Medium	Medium	Medium	Medium
Hazardous Material Incidents	Low	Low	Low	Low	Low	Low
Human Conflict	Medium	Medium	Medium	Medium	Medium	Medium
Landslide	Low	Low	Low	Low	Low	Low
Severe Summer Weather	Medium	Medium	Medium	Medium	Medium	Medium
Severe Winter Weather	Medium	Medium	Medium	Medium	Medium	Medium
Tornadoes & Windstorms	Medium	Medium	High	Medium	Medium	Medium
Transportation Accidents	Low	Low	Low	Low	Low	Low
Volcanic Ash	Low	Low	Low	Low	Low	Low
Wildland and Rangeland Fire	Low	Medium	Low	Low	Medium	Medium

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MT Eastern Region Hazard Significance Summary Table : E5

Hazard	Treasure	Rosebud	Northern Cheyenne Tribe	Big Horn
Avalanche	Low	Low	Low	Low
Communicable Disease	Medium	Medium	High	High
Cyber-Attack	Medium	Medium	Medium	Medium
Dam Failure	Low	Low	Low	Low
Drought	Medium	Medium	High	High
Earthquake	Low	Low	Low	Medium
Flooding	Medium	Medium	Medium	Medium
Hazardous Material Incidents	Low	Low	Low	Medium
Human Conflict	Medium	Medium	Medium	Medium
Landslide	Low	Low	Low	Low
Severe Summer Weather	High	Medium	Medium	Medium
Severe Winter Weather	Medium	Medium	Medium	Medium
Tornadoes & Windstorms	Medium	Medium	Medium	Medium
Transportation Accidents	Low	Low	Low	Low
Volcanic Ash	Low	Low	Low	Low
Wildland and Rangeland Fire	Medium	High	High	High

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MT Eastern Region Hazard Significance Summary Table : E6

Hazard	Wheatland	Golden Valley	Musselshell	Stillwater
Avalanche	Low	Low	Low	Medium
Communicable Disease	Medium	Medium	Medium	Medium
Cyber-Attack	Medium	Medium	Medium	Medium
Dam Failure	Low	Low	Low	Low
Drought	High	Medium	Medium	Medium
Earthquake	Medium	Low	Low	Medium
Flooding	Medium	Medium	Medium	Medium
Hazardous Material Incidents	Low	Low	Low	Low
Human Conflict	Medium	Medium	Medium	Medium
Landslide	Low	Low	Low	Low
Severe Summer Weather	Medium	Medium	Medium	Medium
Severe Winter Weather	Medium	Medium	Medium	Medium
Tornadoes & Windstorms	Medium	Medium	Medium	Medium
Transportation Accidents	Low	Low	Low	Medium
Volcanic Ash	Low	Low	Low	Low
Wildland and Rangeland Fire	Low	Low	High	Medium

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Next Steps

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Next Steps

- Please return data collection guide input where outstanding
- Provide input on mitigation action status on form – when available
- Start thinking of ideas for new mitigation actions
- Stay informed by email of upcoming meetings (TBD)
- Review results public survey results
- Review draft HIRA section of plan when available
  - For yellow highlighted gaps where applicable
  - Review for jurisdiction specifics, mitigation ideas

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Project Tasks and Schedule

Project Milestones	Anticipated Timeline
Meeting #2 Risk Assessment	December 2022
HIRA Draft for MT DES review	January/February 2023
Meeting #3 Mitigation Strategy	April-May 2023/TBD
MT DES and LPT/TPT Review Draft Plan	July 2023
Public Review Draft Plan	August 2023
MT DES Review Final Plan	September 2023
Final Plan for FEMA Review (estimated)	October 2023
Final Approved Regional HMP for local adoption	November 2023

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Questions?

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Chat Log

[9:13 AM] rebecca McEuen (Guest)
Clint Pederson, Broadus Vet, Powder River County

[9:15 AM] Kelly Keysor
Kelly Keysor
Lower Yellowston REC
Sidney MT

[9:16 AM] custer county DES (Guest)
Cory Cheguis Custer County

[9:18 AM] Jason Strouf (Guest)
City of Miles City is working with the USACE for Flood Levee reconstruction along the Tongue River and planning along the Yellowstone River. An internal drainage project is under way.

[9:18 AM] KC Williams
Large Crowd Gatherings safety and security for festivals , elections, concerts, sporting events entertainment events, etc.

[9:20 AM] David Stamey
Echo YC comments - prep for civil unrest - security for gatherings and active shooter or MCI

[9:21 AM] Audrey (Guest)
3 or 4 train derailments in Roosevelt county in last 4 years. Maybe BNSF should be brought into the group?

[9:22 AM] Audrey (Guest)
These weren't federally declared disasters but did involve fire, EMS, law enforcement response.

[9:22 AM] KC Williams
Loss of critical infrastructure such as water, waste water services and now electrical grid due to human or natural issues.

[9:23 AM] Dale Butori
Our number was 4275. You had the right one. Sorry for my confusion.

[9:24 AM] Todd Devlin, Prairie Co
DOR values dramatically different than market

[9:24 AM] Schoen, Natalie
Dale Butori Perfectly fine, thanks for double checking our work! 🙄

[9:27 AM] Baum, Melissa
https://app.sli.do/event/qSKhY8zh1Feg7TySFbggNv
Join Slido: Enter #code to vote and ask questions
Participate in a live poll, quiz or Q&A. No login required.

[9:28 AM] Justin Russell
Robert Pancratz, Musselshell County Commissioner just joined

[9:29 AM] Director
City of Columbus

[9:29 AM] B. Stevens (Guest)
City of Miles City

[9:34 AM] rebecca McEuen (Guest)
Cody Stuchlike, Powder River County Sheriff's Department

[9:37 AM] Sami M
Please contact Miles City on that meeting. As the City should know what is going on with our City not just the commissioners. Thank you

[9:39 AM] Pool, Shari
will do Sami, thanks

[9:48 AM] Justin Russell
Yes

[9:49 AM] Christine Keltner (Guest)
med to low

[9:49 AM] Sami M
I agree with your analys, flooding would be high in Milrs City.

[9:53 AM] Christine Keltner (Guest)
low

[9:53 AM] Sami M
Low

[9:54 AM] rebecca McEuen (Guest)
low

[9:54 AM] B. Stevens (Guest)

low

[10:01 AM] custer county DES (Guest)
have you taken into consideration fuels projects in the WUI?

[10:03 AM] Justin Russell (External)
When was the DNRC analysis conducted?

[10:05 AM] Chambers, Mack
we used data displayed on their site here:
https://mwra-mtdnrc.hub.arcgis.com/

[10:05 AM] Todd Devlin
Are federal properties for value property part of your estimate??

[10:06 AM] Justin Russell
Thanks Mack

[10:06 AM] Chambers, Mack
Yes if it was valued within the Parcel/Assessor data that was provided.

[10:08 AM] Justin Russell
I just wanted to verify that the data was capturing the large increase we have seen over the past year of development in the WUI.

[10:08 AM] rebecca McEuen (Guest)
powder river – high (FIRE)

[10:09 AM] KC Williams
Please include in the plan an indication of "when" the data used for any statistics. For all statistics, a qualifier that states "data collected as of"

[10:12 AM] Chambers, Mack
Justin Russell Sometimes Exempt or Federal Properties are not valued in the Assessor data so it would not have been covered if that's the case.

[10:13 AM] Christine Keltner (Guest)
Med (DROUGHT)

[10:14 AM] Todd Devlin
High. (DROUGHT)

[10:14 AM] Justin Russell
Perfect. We will make sure to get the updated information to the assessor, now that she is back from medical leave. The graphic covered most of the area, but we had a new Amish development with 100 residents move into an area that wasn't highlighted.

[10:20 AM] Todd Devlin
Medium (SUMMER WEATHER)
[10:21 AM] Christine Keltner (Guest)
med(SUMMER WEATHER)
[10:21 AM] Todd Devlin
Wind-high
[10:22 AM] Christine Keltner (Guest)
wind---high prop dmge
[10:28 AM] Tim Clute
RE:custer county DES (Guest)
have you taken into consideration fuels projects in the WUI?
Hey, the WUI delineations were gathered from data the MT DNRC compiled and published in 2020. Most of the WUI delineations were conducted over a decade ago and were primarily based on previous CWPPs. So much of the WUI is likely out of date for counties that have experienced significant growth over the last decade. Unfortunately, the MT DNRC does not have more recent data. How the exact method for how the WUIs were delineated likely changes from county county (based on their CWPPs); so I'm uncertain if/how fuel reductions were included. The MT risk assessment also does not include fuel reduction projects in it calculations.

[10:29 AM] Todd Devlin
Winter weather-high

[10:31 AM] Christine Keltner (Guest)
high WINTER WEATHER

[10:31 AM] rod dees (Guest)
High WINTER WEATHER

[10:32 AM] Todd Devlin
Landslide- low

[10:33 AM] Christine Keltner (Guest)
Low LANDSLIDE

[10:34 AM] rod dees (Guest)
Low LANDSLIDE

[10:34 AM] B. Stevens (Guest)
Low LANDSLIDE

[10:34 AM] KC Williams
Yellowstone County should be occasional on the frequency of landslides please. Very limited area.

[10:37 AM] Todd Devlin
Earthquake low

[10:38 AM] Christine Keltner (Guest)
Low EARTHQUAKE

[10:38 AM] rod dees (Guest)

Low EARTHQUAKE
[10:39 AM] B. Stevens (Guest)
Low EARTHQUAKE

[10:41 AM] Christine Keltner (Guest)
light ash, SE Pr Co

[10:41 AM] Todd Devlin
Volcanic medium

[10:41 AM] B. Stevens (Guest)
Low VOLCANIC

[10:41 AM] rod dees (Guest)
Low VOLCANIC

[10:41 AM] Christine Keltner (Guest)
Med VOLCANIC

[10:44 AM] Prairie County (Guest)
Is this based upon population?

[10:46 AM] Prairie County (Guest)
OK thank you

[10:48 AM] Todd Devlin
Covid etc- medium

[10:48 AM] Christine Keltner (Guest)

cvd--med

[10:51 AM] Prairie County (Guest)
Crashes have been reduced since 2016

[10:51 AM] Todd Devlin
Traffic ac- low

[10:51 AM] rod dees (Guest)
medium

[10:51 AM] Christine Keltner (Guest)
hiwy acc----low

[10:55 AM] Todd Devlin
Hazard- low

[10:55 AM] Christine Keltner (Guest)
hz mat----low

[10:56 AM] Dale Butori
Need to step out. Thank you.

[10:59 AM] Todd Devlin
Cyber medium

[11:00 AM] Christine Keltner (Guest)
cybr------med

[11:01 AM] KC Williams
we have had several attacks on our hospitals including ransomware and information stealing.

[11:03 AM] Todd Devlin
Terror low

[11:04 AM] Christine Keltner (Guest)
cnft----low

[11:04 AM] rod dees (Guest)
Low CONFLICT

[11:09 AM] Prairie County (Guest)
Prairie County would request pdf please

[11:11 AM] Pool, Shari
In person meeting will be in April

Justin Russell (External)11:12 AM
Thank you.

custer county DES (Guest)11:12 AM
Thank You! Shari ill be reaching out to you !

Christine Keltner (Guest)11:12 AM
t u

rod dees (Guest)11:12 AM
thank you

[11:12 AM] Amber Foechterle - Town of Joliet (Guest)
Thank you

[11:12 AM] Todd Devlin
Thanks

[11:12 AM] Director
Thanks again

[11:12 AM] B. Stevens (Guest)
Thanks

[11:12 AM] Disaster Emergency Services
Thanks

[11:12 AM] Emily Geery
Thank you!