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WELCOME!

Community Work Sessions – February 6 - 9, 2018
Hazard Identification, Analysis & Risk Assessment

*Please sign in for today's meeting
on the attendance roster*

Introductions

- Name
- Jurisdiction/Organization

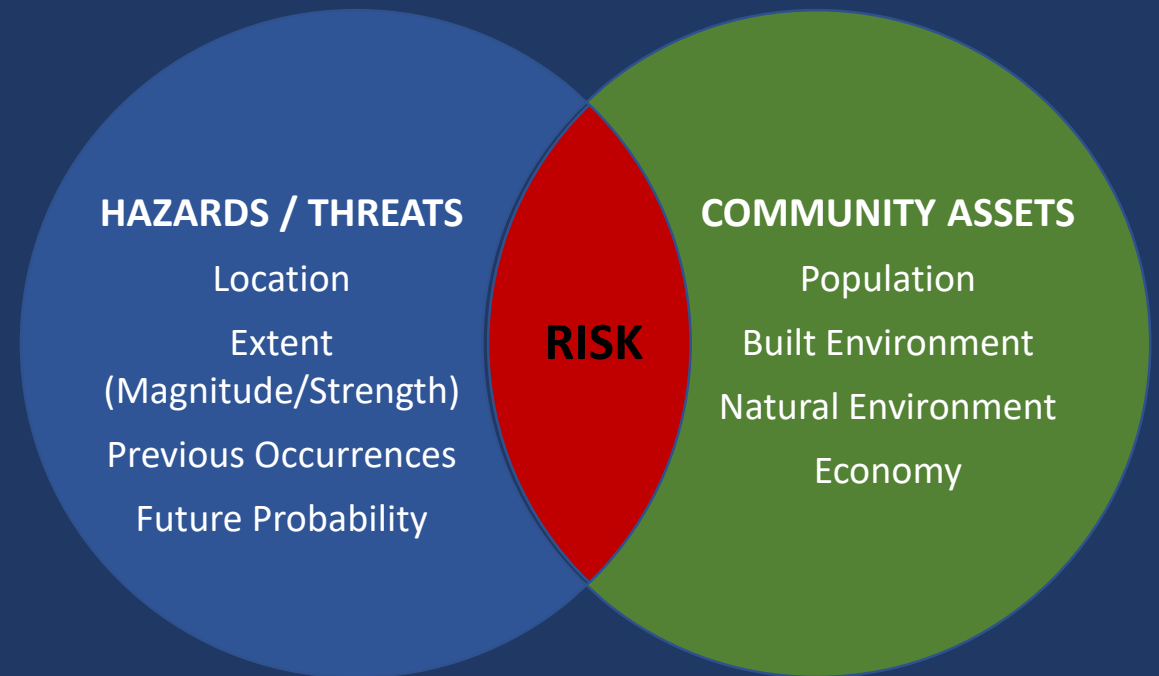
*Please sign in for today's meeting
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Defining Risk Assessment

Definition: *Risk, in the context of hazard mitigation planning, is the potential for damage, loss, or other impacts created by the interaction of hazards (or threats) with community assets.*

Impacts: *The consequences or effects of the hazard on the community and its assets.*

Vulnerabilities: *Characteristics of community assets that make them susceptible to damage from a given hazard or threat.*



Hazard Identification

44 CFR §201.6©(2)(i): *The risk assessment shall include a description of the type, location and extent of all natural hazards that can affect the jurisdiction.*

Evaluation of **Natural** hazards is required in Federal mitigation planning. **Technological Hazards** and **Human-caused Threats** may be included in the HMP.

Table 2: Example Threats and Hazards

Natural	Technological	Human-caused
<ul style="list-style-type: none">▪ Avalanche▪ Animal disease outbreak▪ Drought▪ Earthquake▪ Epidemic▪ Flood▪ Hurricane▪ Landslide▪ Pandemic▪ Tornado▪ Tsunami▪ Volcanic eruption▪ Wildfire▪ Winter storm	<ul style="list-style-type: none">▪ Airplane crash▪ Dam failure▪ Levee failure▪ Mine accident▪ Hazardous materials release▪ Power failure▪ Radiological release▪ Train derailment▪ Urban conflagration	<ul style="list-style-type: none">▪ Biological attack▪ Chemical attack▪ Cyber incident▪ Explosives attack▪ Radiological attack▪ Sabotage▪ School and workplace violence (Active Shooter)

Hazard Identification

Sources of Hazard Data and Information:

1) State of Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment (2013 update).

By rank

- 1 - Wildland and Rangeland Fire
- 2 – Flooding
- 3 – Earthquakes
- 4 – Severe Summer Weather
- 5 – Severe Winter Weather
- 6 – Communicable Disease
- 7 – Hazardous Material Incidents
- 8 – Drought
- 9 – Dam Failure
- 10 – Landslides
- 11 – Terrorism
- 12 – Volcanic Eruptions

Hazard Identification

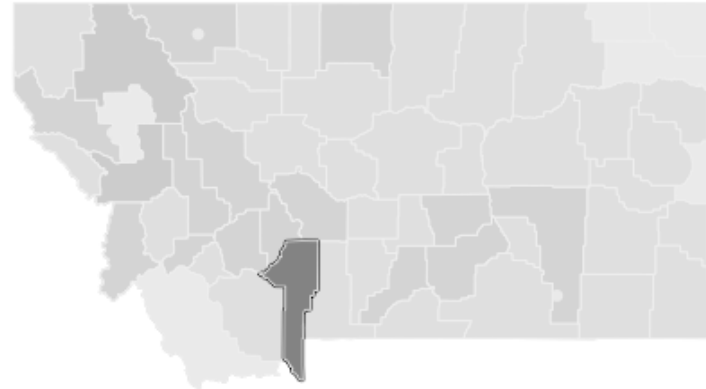
2) Historical Disaster Declarations (Federal, 1952 - 2018).

🔥 2 Fire

☁️ 2 Severe Storm

🌊 1 Flood

🌀 1 Hurricane



Year of Date	Title	Disaster Number
1981	SEVERE STORMS & FLOODING	640
1996	SEVERE STORMS, FLOODING, AND ICE JAMS	1105
2000	MT - SOUTH CENTRAL ZONE 4 FIRE COMPLEX	2321
	WILDFIRES	1340
2001	SEVERE WINTER STORMS	1385
2005	HURRICANE KATRINA EVACUATION	3253

Hazard Identification... 3) Gallatin County Hazard Mitigation Plan (2012).

In alphabetical order

- **Avalanche and Landslide**
- **Aviation Accident**
- **Civil Unrest and Violence**
- **Communicable Disease and Bioterrorism**
- **Dam Failure**
- **Drought**
- **Earthquake**
- **Flooding**
- **Ground Transportation Accident**
- **Hazardous Materials Release**
- **Railroad Accident**
- **Severe Thunderstorms, Wind and Tornadoes**
- **Terrorism**
- **Urban Conflagration**
- **Utility Outage**
- **Volcano**
- **Wildfire**
- **Winter Storms and Extended Cold**

Hazard Identification...

4) Additional Hazards to be considered for Gallatin County?

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Hazard Identification Exercise (approx. 30 – 45 minutes)

Please refer to Handout #1 for Hazard Identification and Verification exercise

- 1) Group review/discussion of hazards included in 2012 Gallatin County Hazard Mitigation Plan.
- 2) Group discussion of any new hazards proposed for inclusion in 2018 HMP update.

Hazard Ranking

Ranking of hazards to describe their probability of occurrence and their impact on population, property (general building stock including critical facilities) and the overall economy.

Probability of Occurrence

Rating	Probability	Definition
0	None	Hazard event is not likely to occur
1	Rare	Hazard event is not likely to occur within 100 years
2	Occasional	Hazard event is likely to occur within 100 years
3	Frequent	Hazard event is likely to occur within 25 years

Hazard Ranking....

Impacts

- Population
- Property
- Economy

Category	Weighting Factor	Low Impact (1)	Medium Impact (2)	High Impact (3)
Population*	3	14% or less of your developed land area is exposed to a hazard due to its extent and location	15% to 29% of your developed land area is exposed to a hazard due to its extent and location	30% or more of your developed land area is exposed to a hazard due to its extent and location
Property*	2	Property exposure is 14% or less of the total replacement cost for your community	Property exposure is 15% to 29% of the total replacement cost for your community	Property exposure is 30% or more of the total replacement cost for your community
Economy	1	Loss estimate is 9% or less of the total replacement cost for your community	Loss estimate is 10% to 19% of the total replacement cost for your community	Loss estimate is 20% or more of the total replacement cost for your community

Note: A numerical value of zero is assigned if there is no impact.

Hazard Ranking....

Hazard Ranking/Risk Assessment Exercise (approx. 60 minutes)

Please refer to Handout #2 for Hazard Ranking/Risk Assessment exercise

- 1) Group review/discussion of hazards included in 2012 Gallatin County Hazard Mitigation Plan.
- 2) Group discussion of any new hazards proposed for inclusion in 2018 HMP update.

Hazard Ranking....

1) Comparison of Risk Category (low, moderate, high) between 2012 HMP and today's exercise.

2) Review/discussion of 2018 risk categories for each hazard – notes and adjustments, as needed.

Handout #3 includes full summary of 2012 HMP Hazard Ranking and Risk Designation

¹ Risk Categories:

Low: Total Score < 20

Moderate: Total Score of 20 – 39

High: Total Score ≥ 40

HAZARD	Relative Overall Risk (2012 HMP)	TOTAL RISK SCORE (2018)	RISK CATEGORY ¹ (Low, Mod., High) (2018)	Notes / Adjust
Wildfire	High			
Earthquake	High			
Hazardous Materials Release	High			
Flooding	Moderate			
Communicable Disease and Bioterrorism	Moderate			
Drought	Moderate			
Winter Storms and Extended Cold	Moderate			
Utility Outage	Moderate			
Severe Thunderstorms, Wind and Tornadoes	Moderate			
Ground Transportation Incident	Moderate			
Dam Failure	Moderate			
Terrorism	Moderate			
Railroad Accident	Moderate			
Volcano	Moderate			
Urban Conflagration	Moderate			
Avalanche and Landslide	Low			
Aviation Accident	Low			
Civil Unrest and Violence	Low			

Review of Implementation Plan in 2012 HMP

Review/Discussion of Action Implementation Plan (approx. 30 minutes)

Handout #3 (back side) includes Implementation Plan from 2012 HMP

- **What projects have been accomplished since the last plan?**

Other Topics

- **Status of Community Wildfire Protection Plan (CWPP) Update**
 - Preliminary criteria for delineating Wildland-Urban Interface (WUI).
 - Schedule for future work session/meeting.

- **What are the next steps to completing the Draft HMP?**
 - Schedule

Closing..... Questions ??

Contact Information

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