

# Hazard Identification Exercise (Handout #1)

Gallatin County Hazard Mitigation Plan Update (2018)

## Identified Hazards in Gallatin County, Montana (as shown in 2012 Hazard Mitigation Plan)

Hazard	Jurisdiction	How Identified (2012)	Why Identified (2012)
<b>Avalanche and Landslide</b>	<ul style="list-style-type: none"> <li>Gallatin County</li> </ul>	<ul style="list-style-type: none"> <li>State DES Website</li> <li>Historical records from the Avalanche.org database</li> <li>Colorado Avalanche Information Center</li> <li>MT Hazard/Vulnerability Analysis, 1989</li> <li>USGS National Landslide Study</li> <li>Montana Department of Transportation District 2 Priorities</li> <li>Public meeting input</li> <li>2005 HAZUS Study</li> </ul>	<ul style="list-style-type: none"> <li>Mountainous terrain exists that may be prone to avalanches and landslides</li> <li>The county has frequent avalanches involving the population</li> <li>Priority landslide areas exist along roadways in the county</li> <li>The county has areas of landslide incidences and susceptibility based on a USGS study</li> <li>2005 HAZUS Study identified significant areas of landslide risk</li> </ul>
	<p><b>Jurisdiction Verification</b><sup>1</sup></p> <ul style="list-style-type: none"> <li></li> </ul>		
<b>Aviation Accident</b>	<ul style="list-style-type: none"> <li>Gallatin County</li> <li>All Incorporated Cities and Towns</li> </ul>	<ul style="list-style-type: none"> <li>Research of NTSB database</li> <li>Public meeting input</li> </ul>	<ul style="list-style-type: none"> <li>The county has three airports</li> <li>History of incidents, some with casualties</li> <li>Busiest airport in state located in Gallatin Co.</li> </ul>
	<p><b>Jurisdiction Verification</b><sup>1</sup></p> <ul style="list-style-type: none"> <li></li> </ul>		
<b>Civil Unrest and Violence</b>	<ul style="list-style-type: none"> <li>Gallatin County</li> <li>All Incorporated Cities and Towns</li> </ul>	<ul style="list-style-type: none"> <li>Centers for Disease Control website</li> <li>Southern Poverty Law Center website</li> <li>Anti-Defamation League website</li> </ul>	<ul style="list-style-type: none"> <li>Small scale incidents have occurred in Gallatin County</li> <li>Proximity to Yellowstone National Park and National Forest lands</li> </ul>
	<p><b>Jurisdiction Verification</b><sup>1</sup></p> <ul style="list-style-type: none"> <li></li> </ul>		
<b>Communicable Disease and Bioterrorism</b>	<ul style="list-style-type: none"> <li>Gallatin County</li> <li>All Incorporated Cities and Towns</li> </ul>	<ul style="list-style-type: none"> <li>Centers for Disease Control and Prevention website</li> <li>Public meeting input</li> <li>Local Health Department</li> </ul>	<ul style="list-style-type: none"> <li>Large number of livestock areas</li> <li>History of an influenza outbreak</li> <li>The area is highly traveled by tourists</li> <li>Rapid disease spread potential in urban areas</li> </ul>
	<p><b>Jurisdiction Verification</b><sup>1</sup></p> <ul style="list-style-type: none"> <li></li> </ul>		
<b>Dam Failure</b>	<ul style="list-style-type: none"> <li>Gallatin County</li> <li>All Incorporated Cities and Towns</li> </ul>	<ul style="list-style-type: none"> <li>National Inventory of Dams website</li> <li>Dam Emergency Action Plans</li> </ul>	<ul style="list-style-type: none"> <li>Several high hazard dams and several significant hazard dams exist in the county</li> </ul>
	<p><b>Jurisdiction Verification</b><sup>1</sup></p> <ul style="list-style-type: none"> <li></li> </ul>		
<b>Drought</b>	<ul style="list-style-type: none"> <li>Gallatin County</li> <li>All Incorporated Cities and Towns</li> </ul>	<ul style="list-style-type: none"> <li>MT Drought Advisory Committee website</li> <li>National Drought Mitigation Center website</li> <li>Data from Western Regional Climate Center</li> <li>State DES website</li> <li>NOAA Paleoclimatology Program website</li> <li>Public meeting input</li> </ul>	<ul style="list-style-type: none"> <li>Frequent historical drought events</li> <li>USDA Disaster Declarations</li> <li>Relationship to wildfire danger</li> <li>Impact to agricultural community</li> <li>Impact on natural resources and tourism</li> </ul>
	<p><b>Jurisdiction Verification</b><sup>1</sup></p> <ul style="list-style-type: none"> <li></li> </ul>		
<b>Earthquake</b>	<ul style="list-style-type: none"> <li>Gallatin County</li> <li>All Incorporated Cities and Towns</li> </ul>	<ul style="list-style-type: none"> <li>Montana Bureau of Mines and Geology publication and website</li> <li>USGS National Seismic Hazard Mapping Project website</li> <li>University of Utah Seismograph Stations website</li> <li>USGS National Earthquake Information Center website</li> <li>2005 HAZUS Study</li> </ul>	<ul style="list-style-type: none"> <li>History of nearby earthquakes greater than 6.0 magnitude</li> <li>Proximity to the active geological region of Yellowstone National Park</li> <li>2005 HAZUS scenarios defined a significant hazard</li> </ul>
	<p><b>Jurisdiction Verification</b><sup>1</sup></p> <ul style="list-style-type: none"> <li></li> </ul>		
<b>Flooding</b>	<ul style="list-style-type: none"> <li>Gallatin County</li> <li>All Incorporated Cities and Towns</li> </ul>	<ul style="list-style-type: none"> <li>FEMA Flood Insurance Study and Rate Maps</li> <li>Gallatin County DES documents</li> </ul>	<ul style="list-style-type: none"> <li>History of flooding</li> <li>Large areas of identified floodplain in developed areas</li> </ul>
	<p><b>Jurisdiction Verification</b><sup>1</sup></p> <ul style="list-style-type: none"> <li></li> </ul>		
<b>Ground Transportation Accident</b>	<ul style="list-style-type: none"> <li>Gallatin County</li> <li>All Incorporated Cities and Towns</li> </ul>	<ul style="list-style-type: none"> <li>Public meeting input</li> <li>Subject matter expert input</li> <li>Fire department records</li> </ul>	<ul style="list-style-type: none"> <li>Heavily-traveled Interstate 90 and Highway 191 traverse the county</li> </ul>
	<p><b>Jurisdiction Verification</b><sup>1</sup></p> <ul style="list-style-type: none"> <li></li> </ul>		

<b>Hazardous Materials Release</b>	<ul style="list-style-type: none"> <li>Gallatin County</li> <li>All Incorporated Cities and Towns</li> </ul>	<ul style="list-style-type: none"> <li>Gallatin County Hazardous Material Plan</li> <li>State of MT Hazardous Materials Plan</li> <li>Public meeting input</li> <li>Fire department records</li> </ul>	<ul style="list-style-type: none"> <li>Fixed facilities exist in the county that house hazardous materials</li> <li>Regular interstate, highway, and railroad traffic transport hazardous materials</li> <li>History of hazardous material releases</li> </ul>
	<b>Jurisdiction Verification</b> <sup>1</sup> <ul style="list-style-type: none"> <li></li> </ul>		
<b>Railroad Accident</b>	<ul style="list-style-type: none"> <li>Gallatin County</li> <li>All Incorporated Cities and Towns</li> </ul>	<ul style="list-style-type: none"> <li>Federal Railroad Administration database</li> <li>Public meeting input</li> </ul>	<ul style="list-style-type: none"> <li>Active railroad exists in the county and passes through Bozeman, Belgrade, Manhattan and Three Forks</li> <li>Several accidents have occurred in past</li> <li>Potential exists for a large hazardous materials release from a railroad accident</li> </ul>
	<b>Jurisdiction Verification</b> <sup>1</sup> <ul style="list-style-type: none"> <li></li> </ul>		
<b>Severe Thunderstorms, Wind and Tornadoes</b>	<ul style="list-style-type: none"> <li>Gallatin County</li> <li>All Incorporated Cities and Towns</li> </ul>	<ul style="list-style-type: none"> <li>National Climatic Data Center database</li> <li>National Weather Service website</li> <li>Subject matter experts</li> </ul>	<ul style="list-style-type: none"> <li>Severe thunderstorms, some causing damage, have occurred in recent history</li> </ul>
	<b>Jurisdiction Verification</b> <sup>1</sup> <ul style="list-style-type: none"> <li></li> </ul>		
<b>Terrorism</b>	<ul style="list-style-type: none"> <li>Gallatin County</li> <li>All Incorporated Cities and Towns</li> </ul>	<ul style="list-style-type: none"> <li>Gallatin County Emergency Operations Plan</li> </ul>	<ul style="list-style-type: none"> <li>Heightened alert since September 11, 2001</li> <li>Proximity to Yellowstone National Park and National Forest lands</li> </ul>
	<b>Jurisdiction Verification</b> <sup>1</sup> <ul style="list-style-type: none"> <li></li> </ul>		
<b>Urban Conflagration</b>	<ul style="list-style-type: none"> <li>Gallatin County</li> <li>All Incorporated Cities and Towns</li> </ul>	<ul style="list-style-type: none"> <li>Public meeting input</li> </ul>	<ul style="list-style-type: none"> <li>History of significant wildfires, both forest and grass fires</li> <li>Growth in the wildland/urban interface</li> </ul>
	<b>Jurisdiction Verification</b> <sup>1</sup> <ul style="list-style-type: none"> <li></li> </ul>		
<b>Utility Outage</b>	<ul style="list-style-type: none"> <li>Gallatin County</li> <li>All Incorporated Cities and Towns</li> </ul>	<ul style="list-style-type: none"> <li>Public meeting input</li> <li>Subject matter experts</li> </ul>	<ul style="list-style-type: none"> <li>Dependence of population on utility services</li> </ul>
	<b>Jurisdiction Verification</b> <sup>1</sup> <ul style="list-style-type: none"> <li></li> </ul>		
<b>Volcano</b>	<ul style="list-style-type: none"> <li>Gallatin County</li> <li>All Incorporated Cities and Towns</li> </ul>	<ul style="list-style-type: none"> <li>Yellowstone Volcano Observatory</li> <li>Montana Disaster and Emergency Services</li> </ul>	<ul style="list-style-type: none"> <li>Proximity to active volcanic caldera</li> <li>History of ash fall over the county</li> </ul>
	<b>Jurisdiction Verification</b> <sup>1</sup> <ul style="list-style-type: none"> <li></li> </ul>		
<b>Wildfire</b>	<ul style="list-style-type: none"> <li>Gallatin County</li> <li>All Incorporated Cities and Towns</li> </ul>	<ul style="list-style-type: none"> <li>Gallatin County records</li> <li>DNRC records</li> <li>USFS records</li> </ul>	<ul style="list-style-type: none"> <li>Mountainous, forested, and flammable terrain exists throughout the county</li> <li>History of significant wildfires, both forest and grass fires</li> <li>Growth in the wildland/urban interface</li> </ul>
	<b>Jurisdiction Verification</b> <sup>1</sup> <ul style="list-style-type: none"> <li></li> </ul>		
<b>Winter Storms and Extended Cold</b>	<ul style="list-style-type: none"> <li>Gallatin County</li> <li>All Incorporated Cities and Towns</li> </ul>	<ul style="list-style-type: none"> <li>Western Regional Climate Center database</li> <li>Public meeting input</li> </ul>	<ul style="list-style-type: none"> <li>History of road closures due to winter conditions</li> <li>Potential for power outages during a cold spell</li> </ul>
	<b>Jurisdiction Verification</b> <sup>1</sup> <ul style="list-style-type: none"> <li></li> </ul>		

**Additional Hazards (proposed for inclusion in 2018 Hazard Mitigation Plan, if any)**

Hazard	Jurisdiction <sup>1</sup>	How Identified	Why Identified
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	•	•	•

<sup>1</sup> **Jurisdictions:** 1) Hebgen Basin – West Yellowstone – Yellowstone National Park

2) Big Sky – Taylor Fork

3) Bozeman – Four Corners (SE) – Gallatin Gateway – Hyalite – Bear Canyon – Bozeman Pass – Bridger Canyon – Sedan

4) Belgrade – Four Corners (NW) – Dry Creek – Springhill – Menard - Maudlow – North Bridgers

5) Cherry Creek – Amsterdam/Churchill – Manhattan – Three Forks – Willow Creek – Madison River – Trident/Clarkston