

## Annex G Glacier County

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### G.1 Mitigation Planning and County Planning Team

This County Annex builds on previous versions of the Glacier County Pre-Disaster Mitigation Plan completed in 2018. As part of the regional planning process, the County established a County Planning Team (CPT) to develop the mitigation plan and identify potential mitigation projects. The following incorporated communities participated in the DMA planning process with the County:

- City of Cut Bank

More details on the planning process followed and how the counties, municipalities and stakeholders participated can be referenced in Chapter 3 of the base plan. A full list of local government departments and stakeholders that participated can be found in Appendix A.

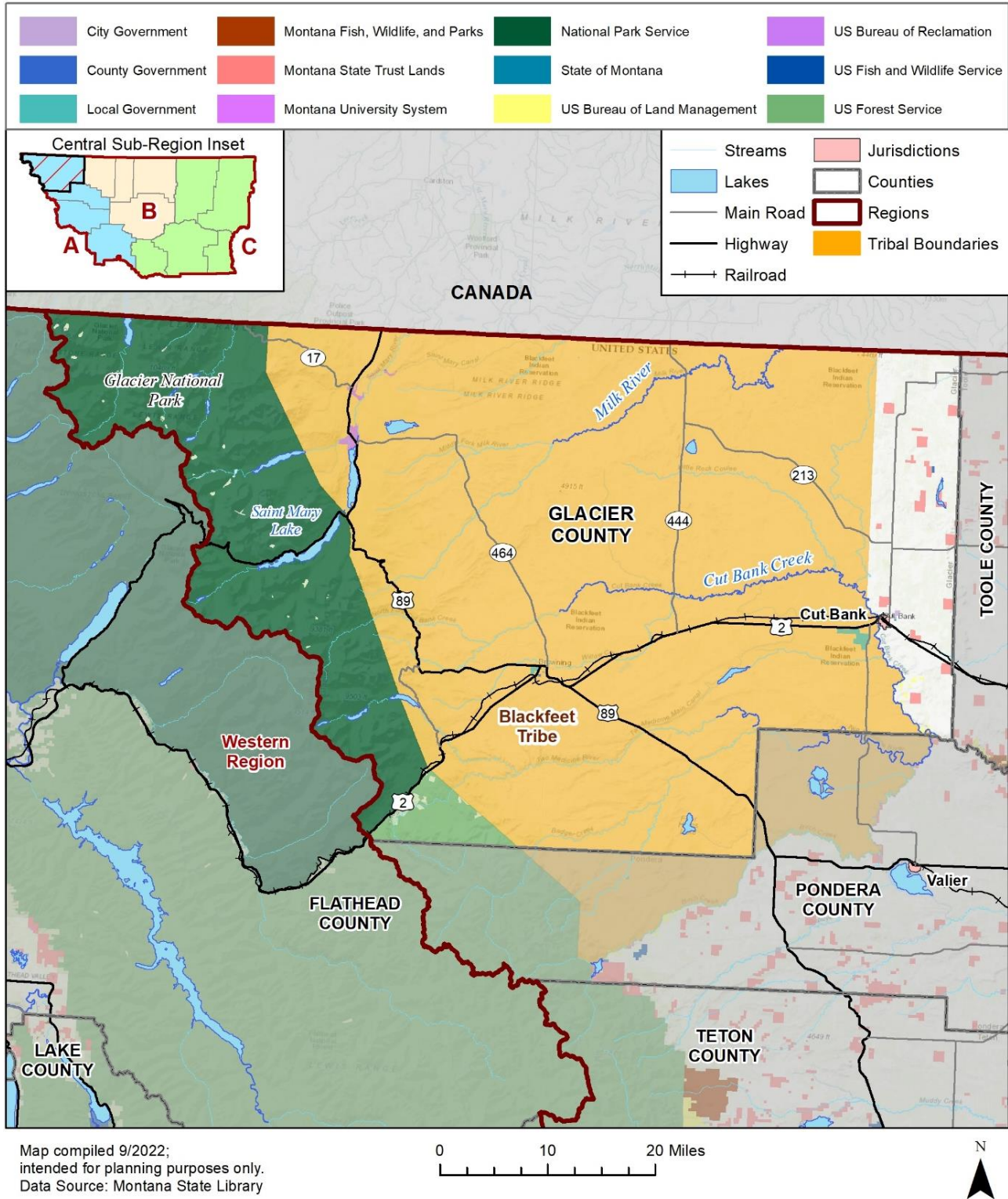
### G.2 Community Profile

#### G.2.1 Geography and Climate

Glacier county is located in northwestern Montana between the Great Plains and the Rocky Mountains, known to the Blackfeet as the "Backbone of the World". The county is geographically and culturally diverse and includes the Blackfeet Indian Reservation, Glacier National Park, and Lewis and Clark National Forest. The county is bordered by 75 miles of international boundary with two ports of entry. These are the Del Bonita and Piegan ports. They are open year-round and one seasonal (Chief Mountain) international border crossing into Alberta, Canada.

Glacier County is known for a moderate climate, with an average daily high of 76.6 degrees in July and low of 13.6 degrees in January. Glacier County averages 82 inches of snow and 21 inches of rain per year. On average there are 158 days of sun per year and Glacier County's highest elevation is 4,794 feet. The county has several water sources, including the Marias River and numerous creeks and reservoirs. Figure G-1 shows the base map and land stewardship in Glacier County.

**Figure G-1 Glacier County Base Map and Land Stewardship**



## G.2.2 Population Trends

The U.S. Census Bureau reported that Glacier County had an estimated population of 13,827 people in 2021 (2021: ACS 5-Year Estimates). Most of the county's population resides in the City of Cut Bank, which serves as the county seat. The county's population has remained relatively stable over the years, with small fluctuations due to migration and natural population changes. Specific demographic variables for the County are provided in the Social Vulnerability section in Table G-1.

**Table G-1 Population Trends in Glacier County 1980-2020**

| Incorporated Community | 1980   | 1990   | 1980-1990 Change | 2000   | 1990-2000 Change | 2010   | 2000-2010 Change | 2020   | 2010-2020 Change |
|------------------------|--------|--------|------------------|--------|------------------|--------|------------------|--------|------------------|
| Glacier County         | 10,628 | 12,121 | 14%              | 13,247 | 9.3%             | 13,251 | 0.03%            | 13,706 | 3.4%             |
| City of Cut Bank       | 3,688  | 4,223  | 14.5%            | 3,950  | -6.5%            | 2,884  | -27%             | 3,049  | 5.7%             |

Source: US Census 2010-2020, U.S. Decennial Census 1980-2000

## G.2.3 Demographics

The 2016-2020 American Community Survey (ACS) reports demographic estimates for Glacier County, summarized in Table G-2 below.

**Table G-2 Estimates for Glacier County (2016-2020 ACS)**

| Characteristic  | Glacier County | State of Montana |
|---|----------------|------------------|
| Percentage of persons below 150% poverty estimate   | 43.1%          | 24.1%            |
| Unemployment Rate estimate  | 6.3%           | 4.0%             |
| Percentage of housing cost-burdened occupied housing units with annual income less than \$75,000 (30%+ of income spent on housing costs) estimate | 20.3%          | 21.4%            |
| Percentage of persons with no high school diploma (age 25+) estimate  | 12.3%          | 7.5%             |
| Percentage uninsured in the total civilian noninstitutionalized population estimate   | 37.1%          | 9.6%             |
| Percentage of persons aged 65 and older estimate  | 11.9%          | 22.1%            |
| Percentage of persons aged 17 and younger estimate  | 31%            | 21.3%            |
| Percentage of civilian noninstitutionalized population with a disability estimate   | 10.2%          | 15.6%            |
| Percentage of single-parent households with children under 18 estimate  | 8.9%           | 3.9%             |
| Percentage of persons (age 5+) who speak English "less than well" estimate  | 1.4%           | 0.3%             |
| Minority (other than white non-Hispanic) estimate   | 70.2%          | 14.6%            |
| Percentage of housing in structures with 10 or more units estimate  | 4.2%           | 3.3%             |
| Percentage of mobile homes estimate   | 17.5%          | 13.1%            |
| Percentage of occupied housing units with more people than rooms estimate   | 5.6%           | 2.1%             |

| Characteristic  | Glacier County | State of Montana |
|---|----------------|------------------|
| Percentage of households with no vehicle available estimate | 4.4%           | 4.9%             |
| Percentage of persons in group quarters estimate            | 5.8%           | 2.8%             |
| Percentage Female estimate                                  | 50.2%          | 49.7%            |
| Median Age estimate   | 33.7           | 40.1             |
| Median Gross Rent estimate                                  | \$534          | \$836            |
| Median House Value estimate                                 | \$129,700      | \$244,900        |
| Percent Unoccupied Housing Units estimate                   | 25.2%          | 15.3%            |

Source: ACS 2016-2020

## G.2.4 Social Vulnerability

Social vulnerability is broadly defined as the susceptibility of social groups to the adverse impacts of natural hazards, including disproportionate death, injury, loss, or disruption of livelihood. Social vulnerability considers the social, economic, demographic, and housing characteristics of a community that influence its ability to prepare for, respond to, cope with, recover from, and adapt to environmental hazards. Additional details on social vulnerability and the NRI can be found in Section 4.1.1.5 of the Base Plan.

The NRI ranked the social vulnerability in Glacier County as “Very High”, with a score of 75.7. Only 1% of counties in Montana have a higher rating. Refer to HIRA for more information on social vulnerability. Demographic factors that can influence the social vulnerability rating are displayed in Table G-2. The ACS reports that a significant portion of the population in Glacier County (43.1%) is below the 150% poverty estimate, which is significantly higher than the Montana State average. Additionally, 70.2% of the population in Glacier County are minorities, which are correlated with social inequities and therefore greater vulnerability in disasters (Tierney, 2006). Nearly a third of the population is aged 17 and younger, indicating that many individuals are still dependent on a caretaker, and 8.9% of families are single-parent households with children under 18, which is more than double that of the Montana average. Finally, 4.2% of houses are structures with 10 or more units, which is 0.9% higher than the State of Montana average.

The CPT noted vulnerability concerns in jurisdictions across the County, including low-income rural residents who live in the floodplain, lack of childcare for those residents with children/dependents, and public notification systems that can reach all populations.

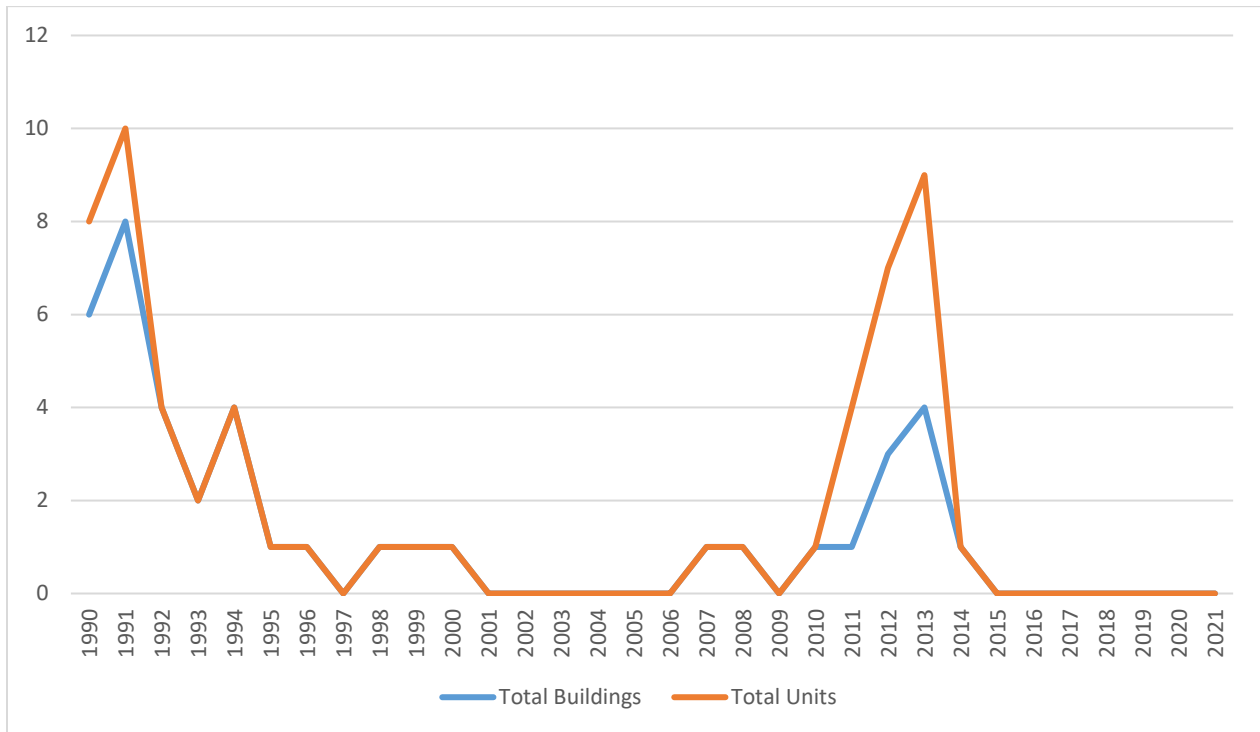
## G.2.5 Development Trends

In recent years, Glacier County has noted expansions in the oil and gas industry. Namely in relation to electricity and plugging. They also have expanded in the agriculture sector with grain elevator developments.

- **City of Cut Bank:** The City of Cut Bank hasn’t noted any new development policies, but the City is in the process of updating their growth policy that will include information on the community’s needs and future community development.

The U.S. Census Bureau Building Permit Survey provides information and local statistics on new privately-owned residential construction. Figure G-2 below displays the new privately owned housing unit authorizations by year in Glacier County. This data indicates that there was a housing developmental decline in 1991. Housing Unit authorizations rose in 2010 to 2014 and since that time has seen a steep and sustained drop. An increase in the number of housing unit authorizations in the county could indicate an increase in the total number of buildings exposed to hazard events. However, it is unknown how this development will impact vulnerability to specific hazards, such as wildfire and flooding.

**Figure G-2 New Privately Owned Housing Unit Authorizations**



Source: US Census Bureau, [https://www.census.gov/construction/bps/data\\_visualizations/index.html](https://www.census.gov/construction/bps/data_visualizations/index.html)

### G.2.6 Economy

Table G-3 below provides a brief overview of economic characters in Glacier County. The following information is provided by the U.S. Census Bureau American Community Survey (ACS) 5-year estimates from 2016-2020.

**Table G-3 Glacier County Economic Profile**

| Economic Characteristics                 | Glacier County |
|--|----------------|
| Families Below Poverty Level             | 20.4%          |
| Individuals Below Poverty Level          | 35.6%          |
| Median Home Value                        | \$184,400      |
| Median Household Income                  | \$129,700      |
| Per Capita Income                        | \$20,557       |
| Population > 16 Years Old in Labor Force | 56.6%          |
| Population Employed                      | 52.0%          |

Source: U.S. Census Bureau ACS 5-year estimates, 2016-2020

Table G-4 below shows the breakdown of employment in Glacier County by the industry sector. According to the ACS, the leading employment sectors in the County are "Educational services, and health care and social assistance", which composes nearly a third of the total employment in the County, followed by "Public Administration" and thirdly "Retail Trade". More than half of the total employed population in Glacier County work in one of these three industries.

**Table G-4 Glacier County Occupation by Industry Profile**

| Industry   | Population Employed | Percent of Labor Force |
|--|---------------------|------------------------|
| Agriculture, forestry, fishing and hunting, and mining                                     | 215                 | 4.1%                   |
| Construction   | 314                 | 6.0%                   |
| Manufacturing  | 103                 | 2.0%                   |
| Wholesale trade  | 77                  | 1.5%                   |
| Retail trade   | 567                 | 10.9%                  |
| Transportation and warehousing, and utilities  | 105                 | 2.0%                   |
| Information  | 43                  | 0.8%                   |
| Finance and insurance, and real estate and rental and leasing                              | 211                 | 4.1%                   |
| Professional, scientific, and management, and administrative and waste management services | 91                  | 1.8%                   |
| Educational services, and health care and social assistance                                | 1,628               | 31.3%                  |
| Arts, entertainment, and recreation, and accommodation and food services                   | 1,012               | 19.5%                  |
| Other services, except public administration   | 113                 | 2.2%                   |
| Public Administration  | 720                 | 13.8%                  |

Source: U.S. Census Bureau ACS 5-year estimates, 2016-2020

## G.3 Hazard Identification and Risk Assessment

### G.3.1 Identified Hazards

The CPT reviewed significant hazards for inclusion in the hazard mitigation plan. Several changes were made from the 2018 Glacier County Hazard Mitigation Plan to be consistent with the 2023 Montana Central Region Hazard Mitigation Plan. In this plan update, railroad, aircraft, and highway incidents were combined to transportation incidents, which encompass all modes of transportation. Wildfire and structure fire were also combined into one wildfire hazard and the avalanche hazard was removed from the plan.

Glacier County's Overall Hazard Significance\* Summary Table provides a summary of the overall hazard significance for the hazards evaluated in this plan, showing variability by jurisdiction in Table G-5 below. More details on hazards can be found in Chapter 4 of the base plan.

**Table G-5 Glacier County Overall Hazard Significance by Hazard and Jurisdiction**

| Hazard                       | Glacier County | City of Cut Bank |
|------------------------------|----------------|------------------|
| Communicable Disease         | Medium         | Medium           |
| Cyber-Attack                 | Medium         | Medium           |
| Dam Failure                  | High           | High             |
| Drought                      | Medium         | Medium           |
| Earthquake                   | Medium         | Medium           |
| Flooding                     | Medium         | Medium           |
| Hazardous Materials Incident | Medium         | Medium           |
| Landslide                    | Medium         | Medium           |
| Severe Summer Weather        | Medium         | Medium           |
| Severe Winter Weather        | High           | High             |
| Human Conflict               | Low            | Low              |
| Tornadoes & Windstorms       | High           | High             |
| Transportation Accidents     | Medium         | Medium           |
| Volcanic Ash                 | Low            | Low              |
| Wildfire                     | Medium         | Medium           |

\*Significance based on a combination of Geographic Extent, Potential Magnitude/Severity and Probability as defined below.

|   |   |
|---|---|
| <p><b>Geographic Extent</b></p> <p><u>Negligible</u>: Less than 10 percent of planning area or isolated single-point occurrences</p> <p><u>Limited</u>: 10 to 25 percent of the planning area or limited single-point occurrences</p> <p><u>Significant</u>: 25 to 75 percent of planning area or frequent single-point occurrences</p> <p><u>Extensive</u>: 75 to 100 percent of planning area or consistent single-point occurrences</p> <p><b>Potential Magnitude/Severity</b></p> <p><u>Negligible</u>: Less than 10 percent of property is severely damaged, facilities and services are unavailable for less than 24 hours, injuries and illnesses are treatable with first aid or within the response capability of the jurisdiction.</p> <p><u>Limited</u>: 10 to 25 percent of property is severely damaged, facilities and services are unavailable between 1 and 7 days, injuries and illnesses require sophisticated medical support that does not strain the response capability of the jurisdiction, or results in very few permanent disabilities.</p> <p><u>Critical</u>: 25 to 50 percent of property is severely damaged, facilities and services are unavailable or severely hindered for 1 to 2 weeks, injuries and illnesses overwhelm medical support for a</p> | <p><b>Probability of Future Occurrences</b></p> <p><u>Unlikely</u>: Less than 1 percent probability of occurrence in the next year or has a recurrence interval of greater than every 100 years.</p> <p><u>Occasional</u>: Between a 1 and 10 percent probability of occurrence in the next year or has a recurrence interval of 11 to 100 years.</p> <p><u>Likely</u>: Between 10 and 90 percent probability of occurrence in the next year, or has a recurrence interval of 1 to 10 years</p> <p><u>Highly Likely</u>: Between 90 and 100 percent probability of occurrence in the next year or has a recurrence interval of less than 1 year.</p> <p><b>Overall Significance</b></p> <p><u>Low</u>: Two or more of the criteria fall in the lower classifications or the event has a minimal impact on the planning area. This rating is also sometimes used for hazards with a minimal or unknown record of occurrences/impacts or for hazards with minimal mitigation potential.</p> <p><u>Medium</u>: The criteria fall mostly in the middle ranges of classifications and the event’s impacts on the planning area are noticeable but not devastating. This rating is also sometimes</p> |
|---|---|

|  |   |
|--|---|
| brief period of time or result in many permanent disabilities and a few deaths. overwhelmed for an extended period of time or many deaths occur.<br><br><b>Catastrophic:</b> More than 50 percent of property is severely damaged, facilities and services are unavailable or hindered for more than 2 weeks, the medical response system is overwhelmed for an extended period of time, or many deaths occur. | utilized for hazards with a high impact rating but an extremely low occurrence rating.<br><br><b>High:</b> The criteria consistently fall along the high ranges of the classification and the event exerts significant and frequent impacts on the planning area. This rating is also sometimes utilized for hazards with a high psychological impact or for hazards that the jurisdiction identifies as particularly relevant. |
|--|---|

### G.3.2 Building Inventory and Assets

People, property, critical facilities/infrastructure, and other important assets in Glacier County are exposed to the hazards identified in this plan. Table G-6 summarizes the property inventory for the County and each participating jurisdiction, based on improvement value (i.e., structures) and includes the building count and value grouped by parcel type and jurisdiction. This is an assessment of the overall property exposed within the County and by jurisdiction.

Assets inventoried to determine vulnerability include people, structures, critical facilities, and natural, historic, or cultural resources. For the regional planning process, locally available GIS databases were utilized. Parcel and assessor data was obtained through Montana's MSDI Cadastral website. This Statewide database provided the basis for building exposure and property types. The focus of the analysis was on "improved" or developed parcels. These parcels were identified based on an improvement value greater than zero. Property Types were used to identify occupancy types as shown in the following table, which includes summations of total improved value for the various property types.

**Table G-6 Glacier County Building Inventory and Value by Jurisdiction**

| Jurisdiction    | Improved Parcels | Improved Value       | Content Value        | Total Value          |
|-----------------|------------------|----------------------|----------------------|----------------------|
| Blackfoot Tribe | 1,150            | \$153,855,129        | \$109,279,262        | \$263,134,391        |
| Cut Bank        | 1,398            | \$144,817,233        | \$81,511,733         | \$226,328,966        |
| Glacier County  | 425              | \$64,106,803         | \$49,152,288         | \$113,259,091        |
| <b>Total</b>    | <b>2,973</b>     | <b>\$362,779,165</b> | <b>\$239,943,283</b> | <b>\$602,722,448</b> |

Source: MSDI Cadastral database, <https://msl.mt.gov/geoinfo/msdi/cadastral/>

Total building exposure within Glacier County based on an analysis of improved parcels is over \$602 million, with over \$362 million in improved value properties and \$239 million of contents at-risk. Of the \$600 million of combined total building exposure in Glacier County, the City of Cut Bank accounts for \$226 million. Improved Residential properties represent the greatest portion of structures in the County, accounting for nearly \$255 million. This is shown in Table G-7 below.

**Table G-7 Glacier County Total Exposure by Jurisdiction and Property Type**

| Jurisdiction           | Property Type | Improved Parcels | Improved Value | Content Value | Total Value   |
|------------------------|---------------|------------------|----------------|---------------|---------------|
| <b>Blackfoot Tribe</b> | Agricultural  | 237              | \$23,050,240   | \$23,050,240  | \$46,100,480  |
|                        | Commercial    | 2                | \$772,460      | \$772,460     | \$1,544,920   |
|                        | Exempt        | 35               | \$28,169,965   | \$28,169,965  | \$56,339,930  |
|                        | Industrial    | 1                | \$4,834,450    | \$7,251,675   | \$12,086,125  |
|                        | Residential   | 812              | \$93,986,184   | \$46,993,092  | \$140,979,276 |
|                        | Tribal        | 53               | \$2,939,450    | \$2,939,450   | \$5,878,900   |
|                        | Vacant        | 10               | \$102,380      | \$102,380     | \$204,760     |

| Jurisdiction          | Property Type | Improved<br>Parcels | Improved Value       | Content Value        | Total Value          |
|-----------------------|---------------|---------------------|----------------------|----------------------|----------------------|
|                       | <b>Total</b>  | <b>1,150</b>        | <b>\$153,855,129</b> | <b>\$109,279,262</b> | <b>\$263,134,391</b> |
| <b>Cut Bank</b>       | Exempt        | 27                  | \$10,587,093         | \$10,587,093         | \$21,174,186         |
|                       | Industrial    | 3                   | \$3,774,050          | \$5,661,075          | \$9,435,125          |
|                       | Residential   | 1,366               | \$130,385,050        | \$65,192,525         | \$195,577,575        |
|                       | Vacant        | 2                   | \$71,040             | \$71,040             | \$142,080            |
|                       | <b>Total</b>  | <b>1,398</b>        | <b>\$144,817,233</b> | <b>\$81,511,733</b>  | <b>\$226,328,966</b> |
| <b>Glacier County</b> | Agricultural  | 118                 | \$13,652,533         | \$13,652,533         | \$27,305,066         |
|                       | Exempt        | 30                  | \$20,065,010         | \$20,065,010         | \$40,130,020         |
|                       | Industrial    | 3                   | \$205,280            | \$307,920            | \$513,200            |
|                       | Residential   | 267                 | \$30,114,310         | \$15,057,155         | \$45,171,465         |
|                       | Vacant        | 7                   | \$69,670             | \$69,670             | \$139,340            |
|                       | <b>Total</b>  | <b>425</b>          | <b>\$64,106,803</b>  | <b>\$49,152,288</b>  | <b>\$113,259,091</b> |
| <b>Grand Total</b>    |               | <b>2,973</b>        | <b>\$362,779,165</b> | <b>\$239,943,283</b> | <b>\$602,722,448</b> |

Source: MSDI Cadastral database, <https://msl.mt.gov/geoinfo/msdi/cadastral/>

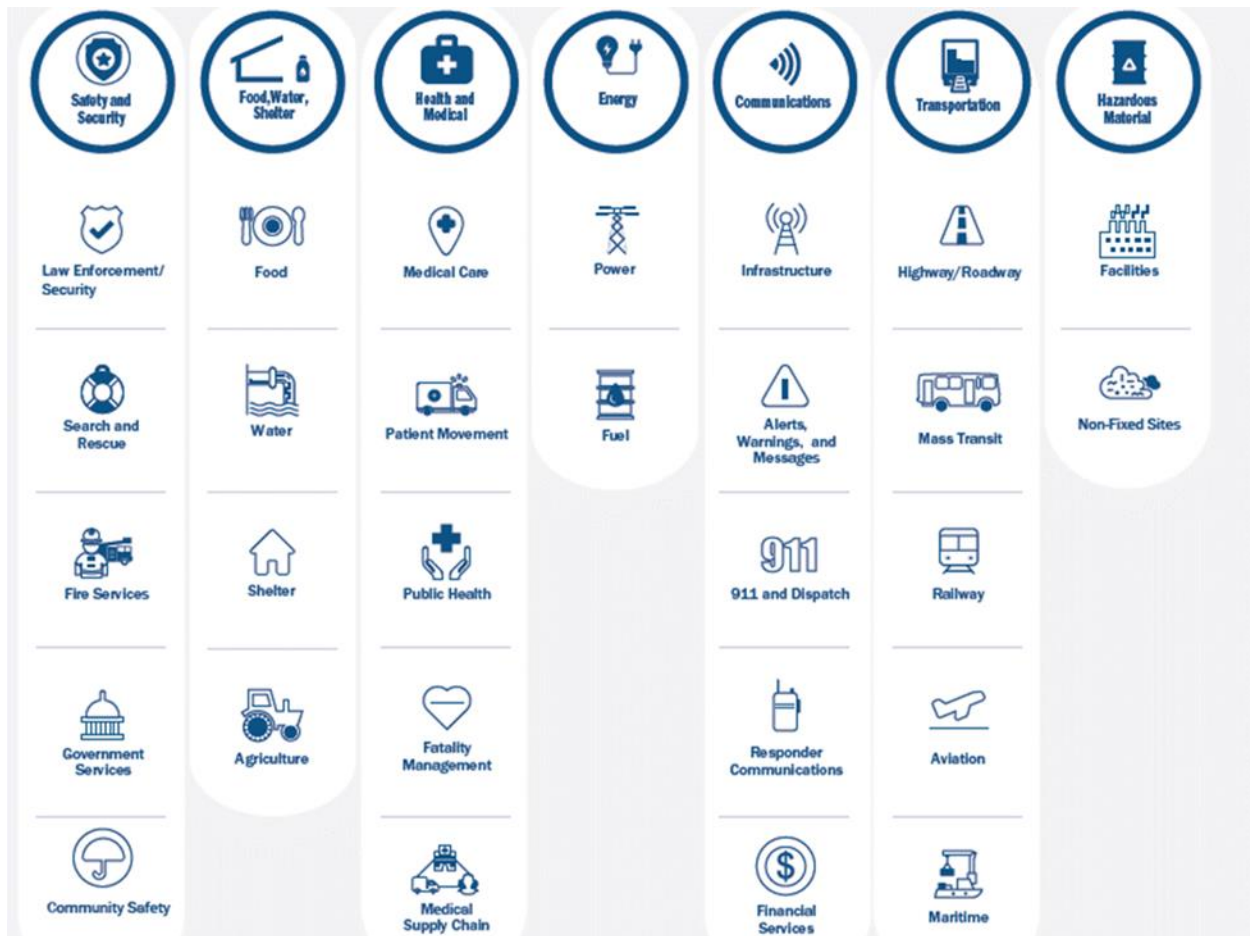
### Critical Facilities, Infrastructure, and Other Important Community Assets

A critical facility is defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. Much of this data is based on GIS databases associated with the 2022 Homeland Infrastructure Foundation-Level Data (HIFLD). Other critical facility databases were also used, such as the National Bridge Inventory (NBI), with supplementation from the HMPC. Where applicable, this information was used in an overlay analysis for hazards such as dam incidents, flood, and wildfire.

FEMA organizes critical facilities into seven lifeline categories as shown in Figure G-3 below. These lifeline categories standardize the classification of critical facilities and infrastructure that provide indispensable service, operation, or function to a community. A lifeline is defined as providing indispensable service that enables the continuous operation of critical business and government functions, and is critical to human health and safety, or economic security. These categorizations are particularly useful as they:

- Enable effort consolidations between government and other organizations (e.g., infrastructure owners and operators).
- Enable integration of preparedness efforts among plans; easier identification of unmet critical facility needs.
- Refine sources and products to enhance awareness, capability gaps, and progress towards stabilization.
- Enhance communication amongst critical entities, while enabling complex interdependencies between government assets.
- Highlight lifeline related priority areas regarding general operations as well as response efforts.

**Figure G-3 FEMA Lifeline Categories**



Source: FEMA

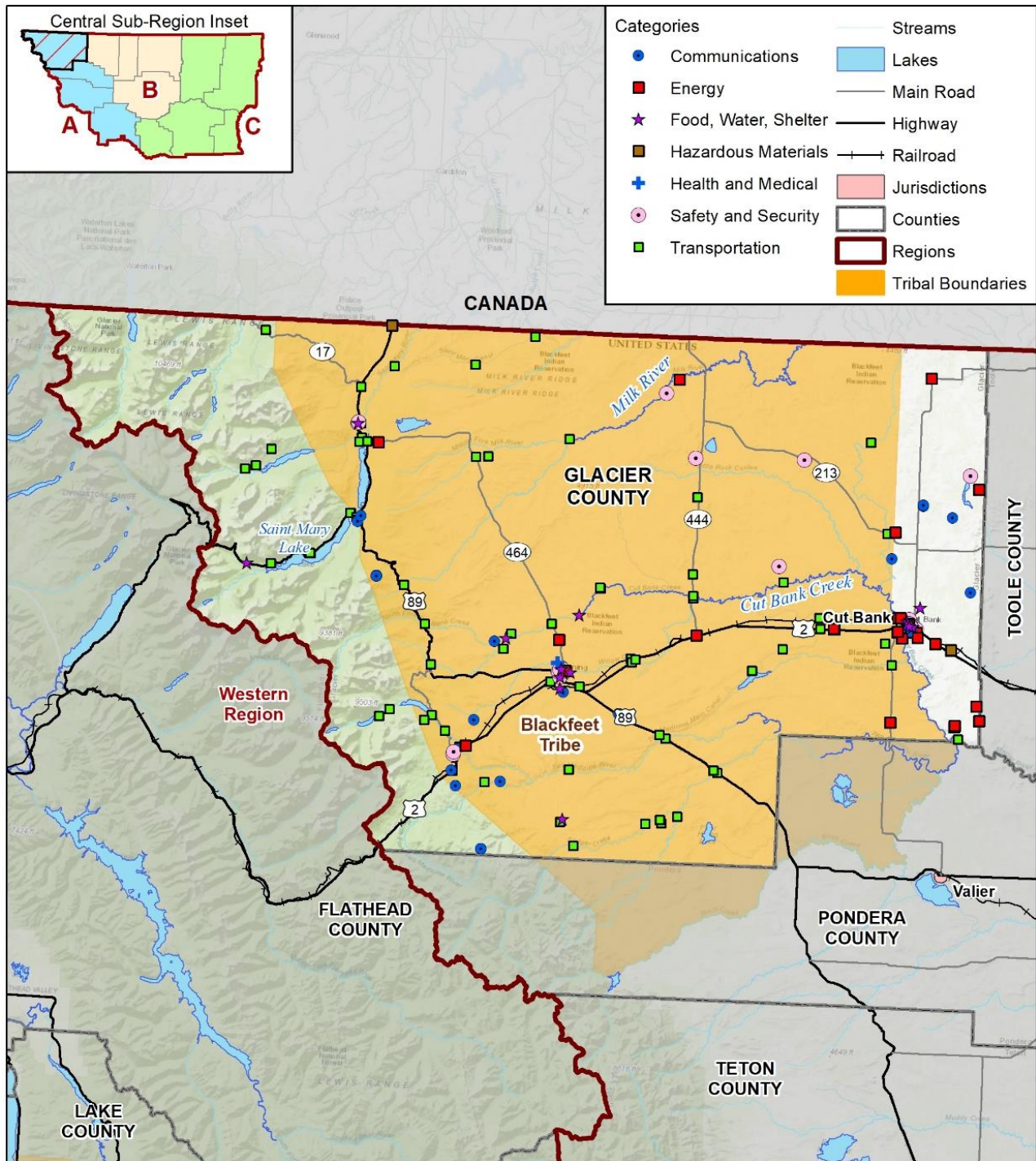
Table G-8 Glacier County Critical Facilities by Jurisdiction below summarizes the number of critical facilities by jurisdiction. Figure G-4 through Figure G-5 displays the location of critical facilities by FEMA Lifeline in Glacier County and Cut Bank.

**Table G-8 Glacier County Critical Facilities by Jurisdiction**

| Jurisdiction   | Communications | Energy    | Food, Water, Shelter | Hazardous Material | Health and Medical | Safety and Security | Transportation | Total      |
|----------------|----------------|-----------|----------------------|--------------------|--------------------|---------------------|----------------|------------|
| Cut Bank       | 2              | -         | 4                    | 1                  | 1                  | 14                  | -              | 22         |
| Glacier County | 35             | 28        | 10                   | 3                  | 1                  | 23                  | 75             | 175        |
| <b>Total</b>   | <b>37</b>      | <b>28</b> | <b>14</b>            | <b>4</b>           | <b>2</b>           | <b>37</b>           | <b>75</b>      | <b>197</b> |

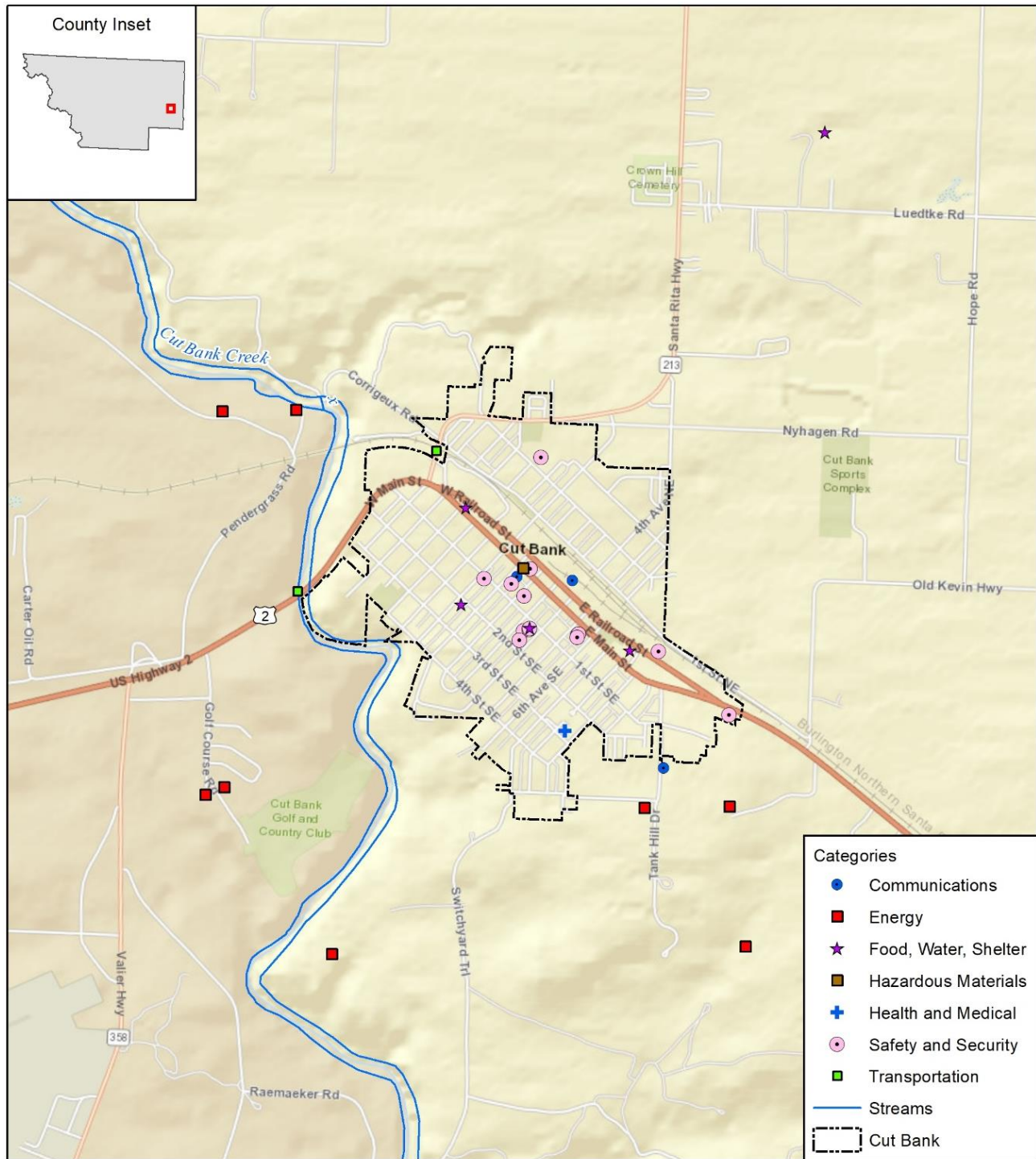
Source: HIFLD 2022, MT DES, National Bridge Inventory

**Figure G-4 Glacier County Critical Facilities**



Map compiled 9/2022;  
intended for planning purposes only.  
Data Source: Montana State Library,  
Montana DES, NIB, HIFLD

**Figure G-5 City of Bank Critical Facilities**



Map compiled 10/2022;  
intended for planning purposes only.  
Data Source: Montana State Library,  
Montana DES, NIB, HIFLD

0 0.5 1 Miles



### Natural, Historic, and Cultural Assets

Assessing the vulnerability of Glacier County to hazards also involves inventorying the natural, historical, and cultural assets of the area. This step is important for the following reasons:

- The community may decide that these types of resources warrant more protection due to their unique and irreplaceable nature and contribution to the overall economy.
- If these resources are impacted by a hazard, knowing so ahead of time allows for more prudent care in the immediate aftermath, when the potential for additional impacts are higher.
- The rules for reconstruction, restoration, rehabilitation, and/or replacement are often different for these types of designated resources.
- Natural resources can have beneficial functions that reduce the impacts of natural hazards, such as wetlands and riparian habitat, which help absorb and attenuate floodwaters.

### Historic and Cultural Assets

By definition, a historic property not only includes buildings or other types of structures, such as bridges and dams, roads, byways, historic landscapes, and many other features. The National Register of Historic Places, managed by the National Park Service and U.S. Department of Interior, is the nation's official list of cultural resources worthy of preservation. Table G-9 below lists the properties that are identified as having cultural and historic significance in Glacier County as recorded by the National Register of Historic Places.

**Table G-9 Historic Properties and Districts on National Registers**

| Property Name                                      | City/Town        | Location  | Date Listed |
|--|------------------|---|-------------|
| Babb--Piegan, Montana, Inspection Station          | Babb             | US 89 near United States and Canada Border  | 4/12/06     |
| Chief Mountain Border Station and Quarters         | Babb             | MT 17 at Canadian Border, Glacier National Park   | 5/20/08     |
| Intake Bridge                                      | Babb             | Abandoned bridge over St. Mary River at the diversion dam 1 mi. below St. Mary Lake, 1 mi. SE of Babb |             |
| Many Glacier Hotel Historic District               | Babb             | W of Babb   | 9/29/76     |
| MORNING EAGLE (carvel-planked wooden vessel)       | Babb             | Josephine L., Glacier NP  | 7/23/18     |
| St. Mary's River Bridge                            | Babb             | Local Rd. & irrigation pipes across the St. Mary River, 6 mi. NE of Babb                              |             |
| Camp Disappointment                                | Browning         | 12 mi. NE of Browning   | 10/15/66    |
| Holy Family Mission                                | Browning         | E of Browning   | 6/14/82     |
| Cut Bank Banger Station                            | City unavailable | Cut Bank Creek Rd.  |             |
| Cut Bank Municipal Airport and Army Air Force Base | Cut Bank         | Valier Hwy.   | 1/29/08     |
| Glacier County Courthouse                          | Cut Bank         | 512 E. Main St.   | 6/25/13     |
| Cut Bank Ranger Station Historic District          | East Glacier     | N side Cut Bank Creek, Glacier NP   | 1/19/96     |
| Swanson Boathouse                                  | East Glacier     | E shore of Two Medicine Lake, Glacier NP  | 1/19/96     |

| Property Name   | City/Town                | Location  | Date Listed |
|---|--------------------------|---|-------------|
| Two Medicine Campground<br>Camptender's Cabin   | East Glacier             | Two Medicine Lake, Glacier NP   | 1/19/96     |
| Glacier Park Women's Club   | East Glacier Park        | SE Corner of US Highway 2 and<br>Glacier Ave.                         | 6/13/19     |
| LITTLE CHIEF (boat)   | East Glacier Park        | Two Medicine L., Glacier NP   | 12/14/17    |
| Lee Creek Snowshoe Cabin  | Glacier National<br>Park | NE corner of Glacier National Park                                    | 3/2/01      |
| Swiftcurrent Auto Camp Historic<br>District   | Many Glacier             | W end of Glacier Rt. 3, Glacier NP                                    | 1/19/96     |
| Baring Creek Bridge   | Mary                     | Going to the Sun Hwy. over Baring<br>Creek about 10 mi. W of ST. Mary |             |
| Logan Pass Visitor Center   | Saint Mary               | Going-to-the-Sun Rd., 18 mi. W of US<br>89                            | 4/15/08     |
| Saint Mary Visitor Center, Entrance<br>Station and Checking Stations                  | Saint Mary               | Going-to-the-Sun Rd., 5 mi. of US 89                                  | 4/15/08     |
| Glacier National Park Tourist Trails--<br>Inside Trail, South Circle, North<br>Circle | St. Mary                 | Inside Trail, South Circle and North<br>Circle Trails                 | 1/19/96     |
| Goathaunt Bunkhouse   | St. Mary                 | S end of Waterton Lake, Glacier NP                                    | 1/19/96     |
| Kootenai Creek Snowshoe Cabin   | St. Mary                 | Flattop Mtn., along Kootenai Creek                                    | 7/1/99      |
| Many Glacier Barn and Bunkhouse   | St. Mary                 | Glacier Rt. 3 at Apikuni Flat, Glacier<br>NP                          | 1/19/96     |
| Many Glacier Campground<br>Camptender's Cabin   | St. Mary                 | Many Glacier, Glacier NP  | 1/19/96     |
| Rising Sun Auto Camp  | St. Mary                 | 500 ft. N of Going-to-the-Sun Rd. at<br>St. Mary Lake, Glacier NP     | 1/19/96     |
| Rising Wolf   | St. Mary                 | Saint Mary Lake, Glacier National Park                                | 11/14/16    |
| Roes Creek Campground<br>Camptender's Cabin   | St. Mary                 | N of Going-to-the-Sun Rd. at St. Mary<br>Lake, Glacier NP             | 4/4/96      |
| St. Mary Utility Area Historic District   | St. Mary                 | E of St. Mary at Divide Creek, Glacier<br>NP                          | 1/19/96     |
| Sun Camp Fireguard Cabin  | St. Mary                 | Going-to-the-Sun Rd.  | 7/1/99      |
| St. Mary's Ranger Station   | St. Mary's               |   |             |
| Going-to-the-Sun Road   | West Glacier             | Glacier Rt. 1   | 6/16/83     |
| Badger-Two Medicine Blackfoot<br>Traditional Cultural District                        |                          | Lewis and Clark National Forest                                       |             |

Source: National Register of Historic Places, <https://irma.nps.gov/DataStore/Reference/Profile/2210280>

### Natural Resources

Natural resources are important to include in benefit-cost analyses for future projects and may be used to leverage additional funding for projects that also contribute to community goals for protecting sensitive natural resources. Awareness of natural assets can lead to opportunities for meeting multiple objectives. For instance, protecting wetlands preserves sensitive habitats as well as attenuates and stores floodwaters.

Wetlands are a valuable natural resource for communities, due to their benefits to water quality, wildlife protection, recreation, and education, and play an important role in hazard mitigation. Glacier County encompasses five lakes (Benton Lake, Black Horse Lake, Cannon Lake, Horseshoe Lake, and Schrammeck Lake) in addition to 10 reservoirs. The Missouri River is the most significant river that runs through Glacier County, but smaller rivers and creeks including Belt Creek, Dearborn River, Roe River, Smith River, and Sun River, also run through the County.

### Endangered Species

A table of endangered and threatened species in the State of Montana, as identified by the U.S. Fish and Wildlife Service, Montana Ecological Services Field Office, can be found in the Assets Summary Section in Chapter 4 of the base plan.

## G.4 Vulnerability to Specific Hazards

This section details vulnerability to specific hazards, where quantifiable, only where it differs from that of the Region as a whole. The results of detailed GIS analyses used to estimate potential for future losses are presented here, in addition to maps of hazard areas and details by jurisdiction and building type. For a discussion of the methodology used to develop the loss estimates, refer to Chapter 4 of the base plan. In many cases Chapter 4 contains information that differentiates the risk by county thus the information is not duplicated here. For most of the weather-related hazards the risk does not vary significantly enough from the rest of the Region and thus the reader should refer to Chapter 4. Only unique issues or vulnerabilities are discussed, where applicable.

- Communicable Disease
- Cyber-Attack
- Dam Failure
- Drought
- Earthquake
- Flooding
- Hazardous Materials Incident
- Landslide
- Severe Summer Weather
- Severe Winter Weather
- Human Conflict
- Tornadoes & Windstorms
- Transportation Accidents
- Volcanic Ash
- Wildfire

### G.4.1 Communicable Disease

All populations are vulnerable to communicable disease. Elder populations, young children, and individuals with pre-existing medical conditions are more likely to face long lasting impacts from communicable disease. While areas of high population density, such as the City of Great Falls, are likely to experience a greater number of cases due to a larger population, these larger cities also have greater access to medical resources. Communicable disease is ranked as medium for all counties in the Central Region and there were no noted differences in ranking of communicable disease by jurisdiction in Glacier County.

Refer to Chapter 4 for a discussion of the communicable disease risk relative to Glacier County and the Central Region.

### G.4.2 Cyber-Attack

All servers, networks, and users are vulnerable to cyber-attacks in Central Montana. Glacier County is ranked as medium, along with most other counties in the Region. There have been no recorded cyber-attack events in the county or the City of Cut Bank, but all servers and networks are vulnerable to future events. The elderly population in the U.S. has been disproportionately impacted by losses from cyber-attack events. The population of residents aged 65 and older in Glacier County is 11.95% of the total population.

Refer to Chapter 4 for a discussion of the cyber-attack risk relative to Glacier County and the Central Region.

### G.4.3 Dam Failure

Dam failure in Glacier County is ranked as high overall significance. There are three Federally owned high hazard dams located in Glacier County. Table G-10 below identifies the dams and the affected communities (participating in this plan). Refer to Chapter 4 for a discussion of the dam failure risk relative to Glacier County and the Central Region.

**Table G-10 Dams in Glacier County**

| Hazard Class | Dam Name           | Owner                    | River               | Nearest Downstream City | Distance to Nearest Downstream City (Miles) | Emergency Action Plans (EAP) |
|--------------|--------------------|--------------------------|---------------------|-------------------------|---|------------------------------|
| High         | Lower Two Medicine | Bureau of Indian Affairs | Two Medicine River  | East Glacier Park       | 5   | Yes                          |
| High         | Lake Sherburne     | Bureau of Reclamation    | Swift current Creek | Babb                    | 6   | Yes                          |
| High         | Four Horns         | Bureau of Indian Affairs | Blacktail Creek -Tr | None                    | 0   | Yes                          |

Source: National Inventory of Dams (NID)

In order to evaluate vulnerability, an analysis was conducted similar to the vulnerability analysis done for flooding. Inundation data is only available for high hazard dams which are not federally owned; therefore, no inundation data is available for analysis for the three dams in Glacier County. Table G-11 summarizes the estimated number of improved parcels and building values within inundation zones in Glacier County by property type. Figure G-6 displays the location of dams in Glacier County, which also includes some mapped inundation from dams in Pondera County which could impact the county seen in Table G-11. Table G-12 summarizes the critical facilities located in Glacier County which are at risk to dam inundation. The Transportation Lifeline has the greatest number of exposed facilities, the majority of which are likely bridges. While the analysis shows limited vulnerability in Glacier County, that does not mean there is no risk. With three federally owned high hazard dams in the planning area, dam failure flooding could result in significant property losses and loss to human life both in Glacier County and communities downstream of the county.

Additionally, Glacier County has a history of dam incidents leading to damage and loss of life, as detailed in the regional risk assessment. According to the Association of State Dam Safety Officials, Dam Incident Database, there have been two instances of dam failure flooding in the Central Region, both triggered during the same flood event in June of 1964. During a severe flood event, with an estimated 5,000 to 10,000 year or more period of return, both the Swift Reservoir Dam and the Two Medicine Dam failed and contributed to massive downstream flooding. The Swift Dam was located in Pondera County and the Two Medicine Dam in Glacier County, and both dams were located on the Blackfeet Indian Reservation. The resultant flooding combined with an initial lack of warning when the Swift Dam failed led to 30 deaths on the Reservation, the loss of 265 homes and 20,000 acres of hay land, and an estimated \$626 million dollars (in 2022 dollars) in property damage.

**Table G-11 Glacier County Parcels at Risk to Overall Dam Inundation by Property Type**

| Jurisdiction   | Property Type | Improved Parcels | Improved Value   | Content Value    | Total Value      |
|----------------|---------------|------------------|------------------|------------------|------------------|
| Glacier County | Agricultural  | 3                | \$312,030        | \$312,030        | \$624,060        |
|                | <b>Total</b>  | <b>3</b>         | <b>\$312,030</b> | <b>\$312,030</b> | <b>\$624,060</b> |

Source: County Assessor data, NID, MT DNRC, WSP GIS Analysis

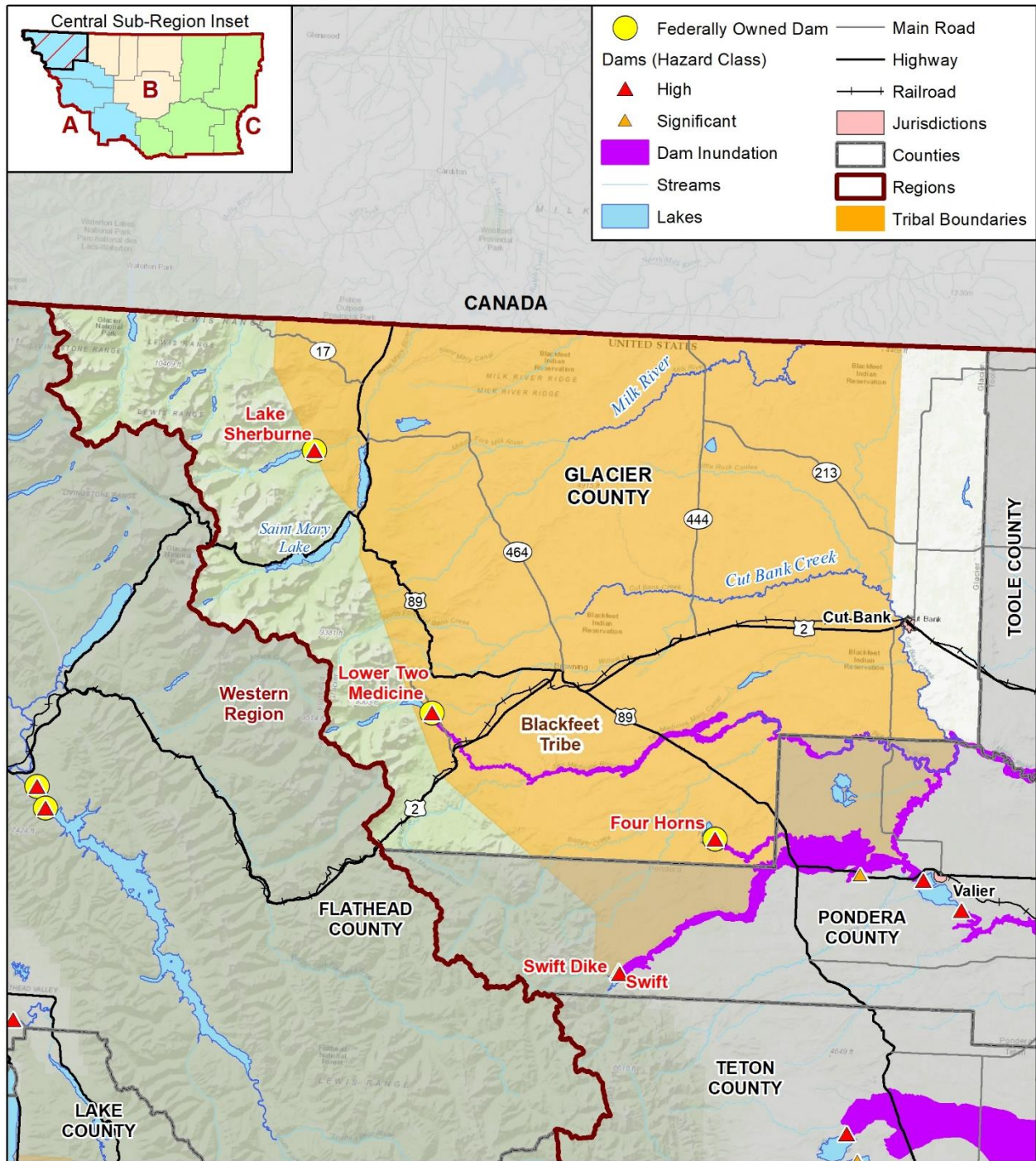
**Table G-12 Glacier County Critical Facilities at Risk to Dam Inundation by FEMA Lifeline**

| Jurisdiction   | Communications | Energy   | Food, Water, Shelter | Hazardous Materials | Health and Medical | Safety and Security | Transportation | Total    |
|----------------|----------------|----------|----------------------|---------------------|--------------------|---------------------|----------------|----------|
| Glacier County | -              | -        | -                    | -                   | -                  | -                   | 6              | 6        |
| <b>Total</b>   | <b>0</b>       | <b>0</b> | <b>0</b>             | <b>0</b>            | <b>0</b>           | <b>0</b>            | <b>6</b>       | <b>6</b> |

Source: Montana DNRC Dam Safety Program, Montana State Library, NID, HIFLD 2022, Montana DES, NBI

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**Figure G-6 Glacier County Dam Inundation**



Map compiled 5/2023;  
intended for planning purposes only.  
Data Source: Montana State Library,  
NID, MT DNRC Dam Safety Program

0 10 20 Miles



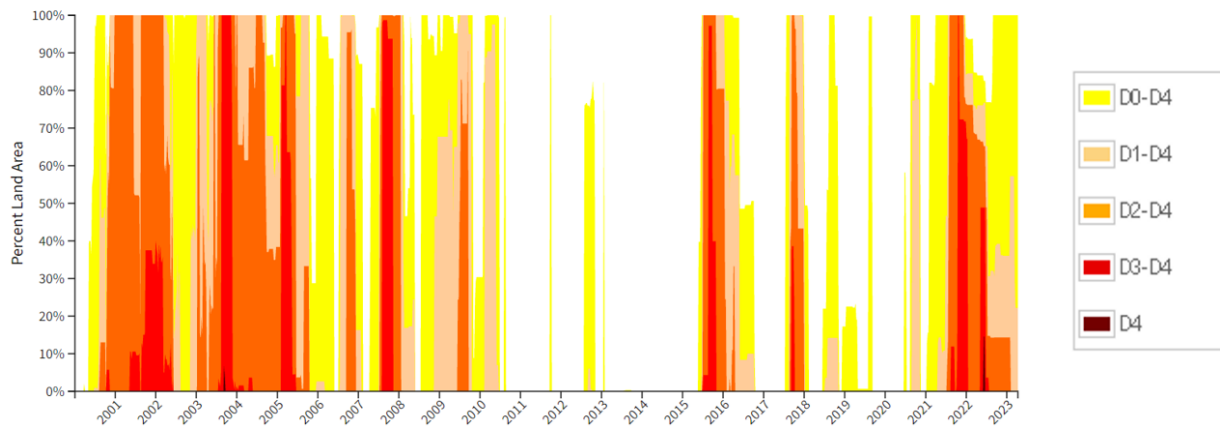
### G.4.4 Drought

Drought was rated as a hazard of medium concern in Glacier County. Between 2012 and 2021, Glacier County experienced 10 USDA emergency drought declarations, which is average for the Central Region. The Drought Impact Reporter (2000-2021) reported that Glacier County experienced 50 impacts from drought from 2000-2021 and the Risk Management Agency reported that drought resulted in nearly \$20 million in losses to agricultural commodities from 2007-2021.

The U.S. Drought Monitor (USDM) is a national data set released weekly, showing the severity of drought in locations across the nation. A time series showing the severity of drought in Glacier County between 2000 and 2023 (since the USDM came into being) is shown below. There were only a few periods of time in which the county experienced significant (D4) drought. These periods occurred in the years 2003 and 2022.

Refer to Chapter 4 for a discussion of the drought risk relative to Glacier County and the Central Region.

**Figure G-7 USDM Drought Timeseries for Glacier County**



Source: USDM; [www.drought.gov](http://www.drought.gov)

### G.4.5 Earthquake

There are several known fault systems throughout the State of Montana, mostly concentrated in the Western Region. However, large magnitude earthquakes that occur in the Western Region are likely to have impacts on counties in the Central Region. The potential severity of shaking and impacts to casualties and damage is not uniform across the Central Region and is likely to impact counties along the Western portion of the Region, including Glacier County. Earthquake hazards in Glacier County are therefore ranked as medium overall significance.

According to a Hazus probabilistic loss analysis conducted for a scenario with 2% in 50 years recurrence, Glacier County has the second greatest direct economic losses in the Central Region, with an estimated \$73 million in total direct losses. Older and historic buildings will be more vulnerable to earthquake shaking.

Refer to Chapter 4 for a discussion of the earthquake risk relative to Glacier County and the Central Region.

### G.4.6 Flooding

Glacier County is one of the four Counties/Tribes in the Central Region that rated flood as a high significance hazard. The CPT noted specific vulnerabilities in Glacier County: farmers and others living in unincorporated communities along the Sun River tend to be lower-income individuals. The same trends exist in the Gibson Flats area. These are areas of the County that are within the Special Flood Hazard Area (SFHA). A large portion of the Sun River is approximate Zone A for flood insurance purposes. The Floodplain Regulations

require detailed encroachment analysis in these areas for work in the SFHA that is usually cost prohibitive to local property owners. This results in property that is not maintained to withstand or reduce flood risks all together, e.g., limited bank stabilization projects. The County also has at least one assisted living facility in the SFHA of the Missouri River. Woodland Estates Subdivisions were approved prior to FEMA minimum requirements, and, in a flood emergency, this area will be cut off from emergency services unless accessed by boat. The CPT also noted the Missouri and Sun Rivers are likely to flood every spring depending on mountain snowpack melting and rain. Glacier County currently has no listed repetitive loss structures.

Table G-13 below summarizes the counts and improved value of parcels in the county, broken out by jurisdiction and property type, that fall within the 1% chance floodplains. Additionally, the table also summarizes loss estimate values, which are calculated based upon the improved value and estimated contents value and assumes a two-foot deep flood which usually results in 25% of the total value, based on FEMA depth-damage curves. For Glacier County DNRC provided digitized effective FIRM maps due to them not being converted to DFIRM or NFHL by FEMA. The Blackfeet Tribal area was not mapped by FEMA so Hazus was used as a flood supplement for analysis.

**Table G-13 Glacier County Parcels at Risk to 1% Flood Hazard by Jurisdiction**

| Jurisdiction       | Property Type | Improved Parcels | Improved Value      | Content Value       | Total Value         | Estimated Loss      | Population |
|--------------------|---------------|------------------|---------------------|---------------------|---------------------|---------------------|------------|
| Blackfeet Tribe    | Agricultural  | 19               | \$3,623,400         | \$3,623,400         | \$7,246,800         | \$1,811,700         |            |
|                    | Exempt        | 15               | \$6,754,880         | \$6,754,880         | \$13,509,760        | \$3,377,440         |            |
|                    | Residential   | 181              | \$15,029,448        | \$15,029,448        | \$30,058,896        | \$7,514,724         | 563        |
|                    | Tribal        | 26               | \$1,265,310         | \$1,265,310         | \$2,530,620         | \$632,655           |            |
|                    | Vacant        | 2                | \$3,250             | \$3,250             | \$6,500             | \$1,625             |            |
|                    | <b>Total</b>  | <b>243</b>       | <b>\$26,676,288</b> | <b>\$26,676,288</b> | <b>\$53,352,576</b> | <b>\$13,338,144</b> | <b>563</b> |
| Glacier County     | Agricultural  | 8                | \$766,370           | \$766,370           | \$1,532,740         | \$383,185           |            |
|                    | Residential   | 5                | \$770,635           | \$385,318           | \$1,155,953         | \$288,988           | 16         |
|                    | <b>Total</b>  | <b>13</b>        | <b>\$1,537,005</b>  | <b>\$1,151,688</b>  | <b>\$2,688,693</b>  | <b>\$672,173</b>    | <b>16</b>  |
| <b>Grand Total</b> |               | <b>256</b>       | <b>\$28,213,293</b> | <b>\$27,827,976</b> | <b>\$56,041,269</b> | <b>\$14,010,317</b> | <b>578</b> |

Sources: DNRC, Hazus, FEMA NFHL

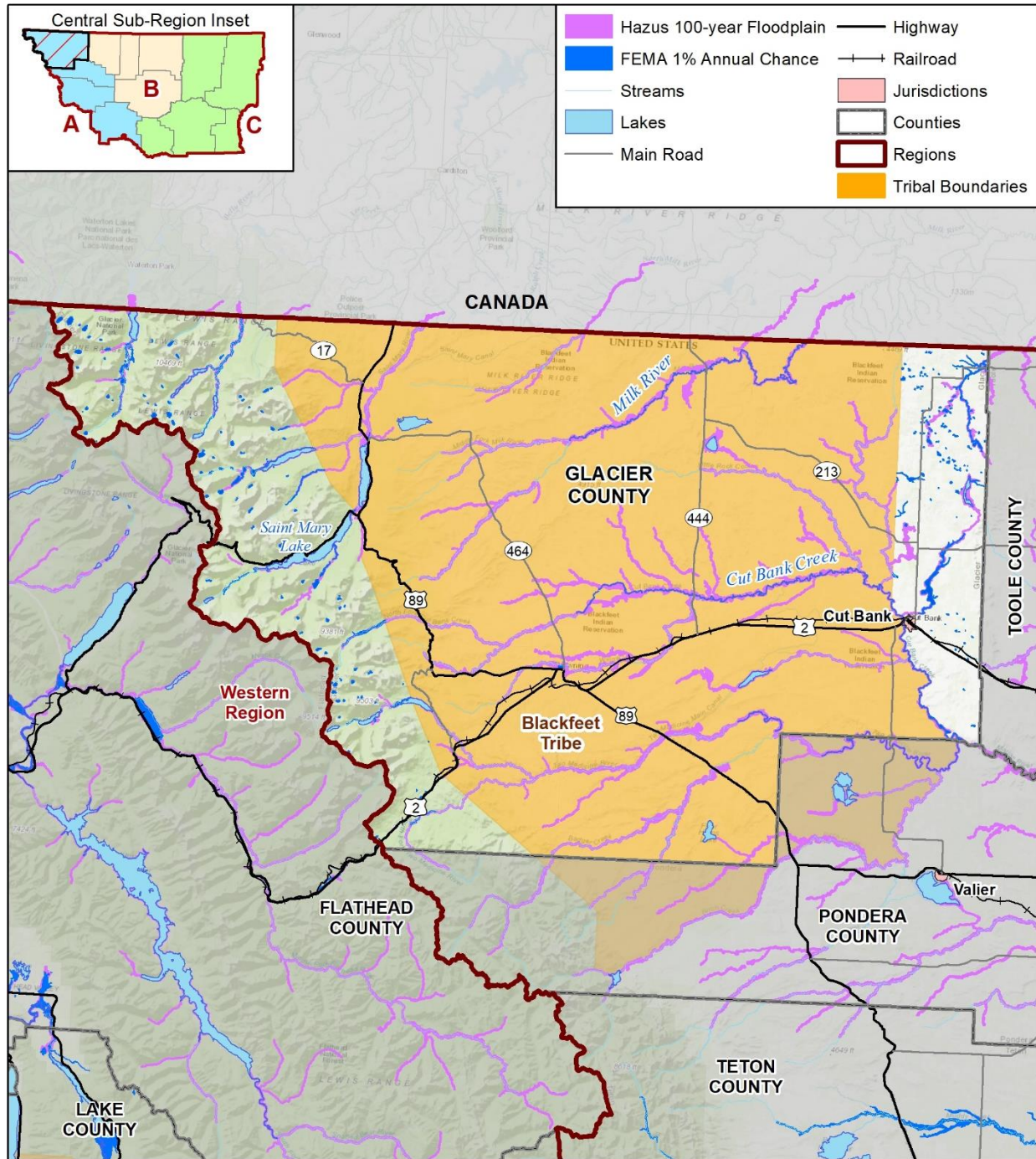
Glacier County has a total of 51 critical facilities located in the 1% annual chance floodplain. 41 are transportation lifelines, four are located in the communication sector, three are safety and security lifelines and two are food, water and shelter lifelines. This is shown in Table G-14 below.

**Table G-14 Glacier County Critical Facilities at Risk to 1% Annual Chance Flood Hazards by FEMA Lifeline**

| County  | Jurisdiction   | Communications | Energy   | Food, Water, Shelter | Hazardous Materials | Health and Medical | Safety and Security | Transportation | Total     |
|---------|----------------|----------------|----------|----------------------|---------------------|--------------------|---------------------|----------------|-----------|
| Glacier | Glacier County | 4              | 1        | 2                    | -                   | -                  | 3                   | 41             | 51        |
|         | <b>Total</b>   | <b>4</b>       | <b>1</b> | <b>2</b>             | <b>0</b>            | <b>0</b>           | <b>3</b>            | <b>41</b>      | <b>51</b> |

Source: Montana DNRC, FEMA, HAZUS, HIFLD 2022, MT DES, NBI

**Figure G-8 Glacier County Flood Hazard**



Map compiled 9/2022;  
intended for planning purposes only.  
Data Source: Montana State Library,  
DNRC, FEMA, Hazus

0 10 20 Miles



All participating jurisdictions in Glacier County contain structures located in the floodplain, as seen in Figure G-9 below.

**Figure G-9 Glacier County Flood Hazard and Structures**

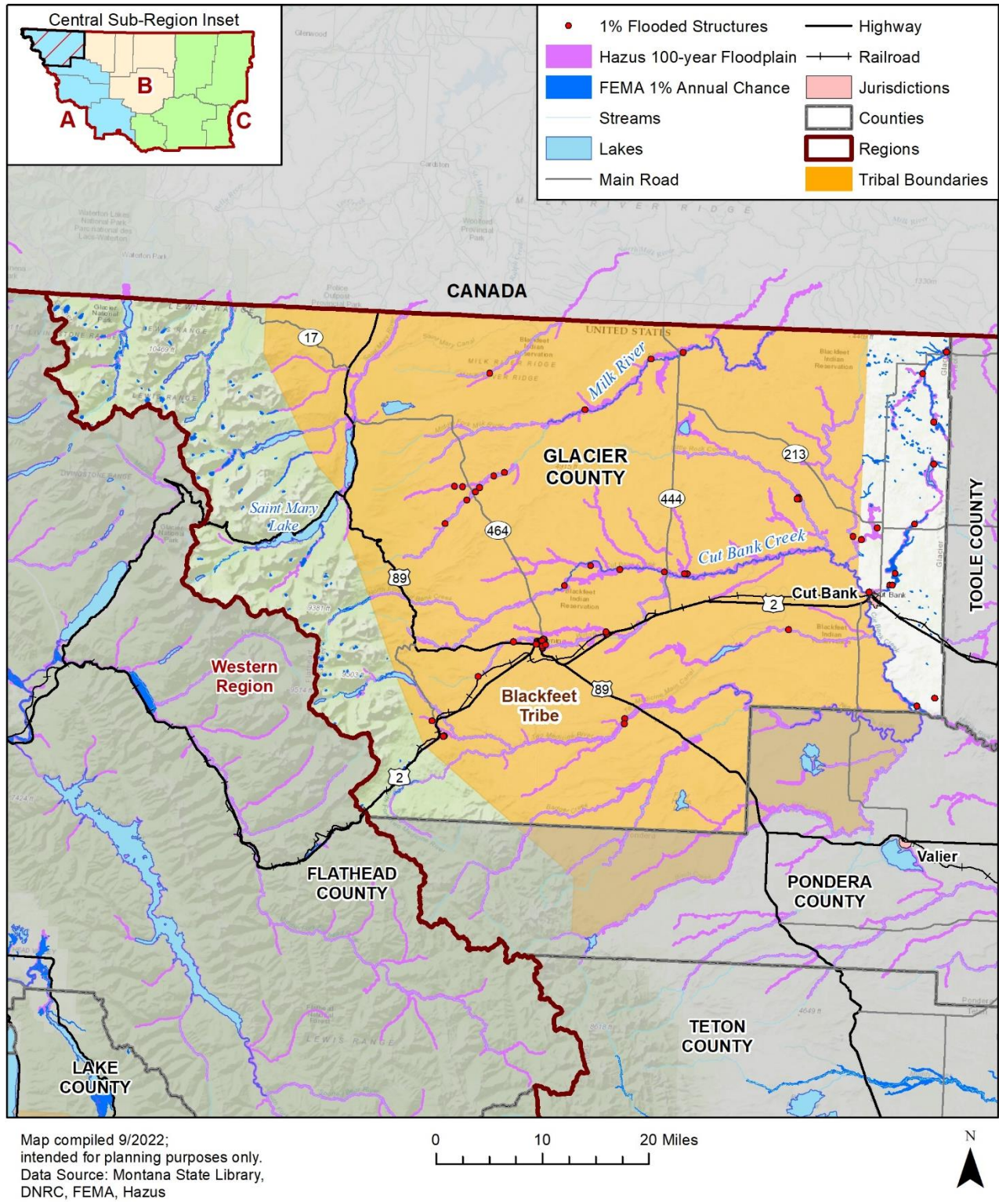
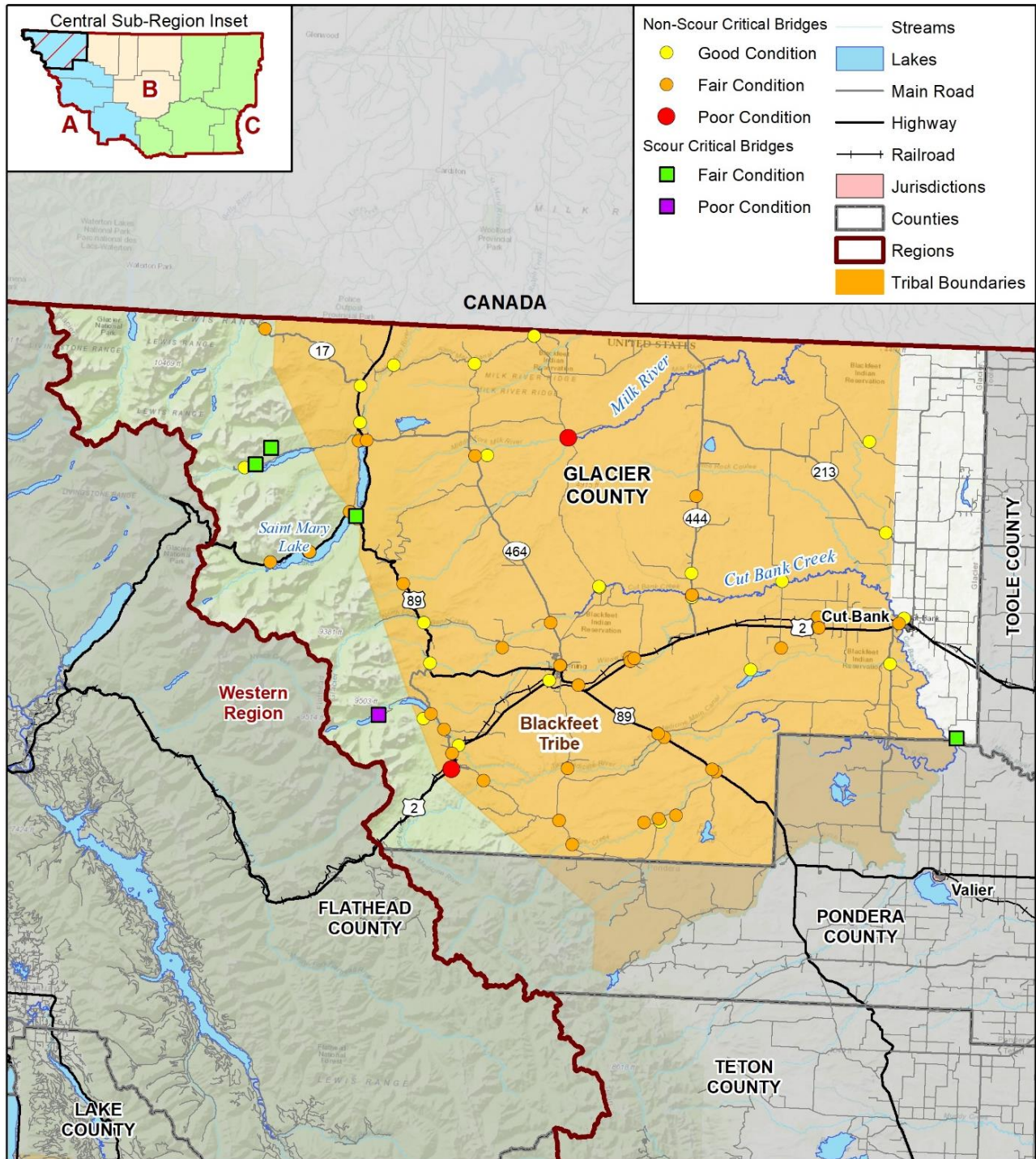


Figure G-10 below displays the location of bridges in Glacier County and their condition. Refer to Chapter 4 for a discussion of the flood risk relative to Glacier County and the Central Region.

**Figure G-10 Glacier County Bridges**



Map compiled 10/2022;  
intended for planning purposes only.  
Data Source: Montana State Library,  
National Bridge Inventory

#### **G.4.7 Hazardous Materials Incident**

Glacier County has the 2nd highest overall ranking for hazardous materials incidents in the Central Region with 73 total incidents. Glacier has the 2nd highest amount of Risk Management Program (RMP) facilities, with a total of two facilities. Additionally, nearly 20% of all hazardous material incidents that have occurred in the Central Region. Hazardous liquid pipelines also run near the Town of Belt and pose a threat to the populations living in the area.

Refer to Chapter 4 for a discussion of the hazardous materials incident risk relative to Glacier County and the Central Region.

#### **G.4.8 Landslide**

Landslides are ranked as a medium overall significance hazard in Glacier County. There have been two recorded instances of landslides in the County, in 1974 and 1986. Therefore, the risk index rating in Glacier County is relatively moderate. There were no documented differences in landslide vulnerability between jurisdictions in Glacier County. Refer to Chapter 4 for a discussion of the landslide risk relative to Glacier County and the Central Region.

#### **G.4.9 Severe Summer Weather**

Glacier County ranked severe summer weather as a medium overall significance hazard. Glacier County experienced 65 recorded hail events, 14 recorded heavy rain events, and 1 recorded lightning event from 1955-2022. Property losses from severe summer weather in Glacier County totaled to \$5,000, and \$50,000 was recorded in total losses from crop damages. Additionally, three of the seven total injuries in the Central Region occurred in Glacier County. These three events occurred in July of 2013 when lightning struck and injured three hikers. Glacier County is a popular location for outdoor enthusiasts, such as hikers and campers, who are exposed to severe summer weather events and vulnerable to injuries in the future.

Refer to Chapter 4 for a discussion of the severe summer weather risk relative to Glacier County and the Central Region.

#### **G.4.10 Severe Winter Weather**

Glacier County ranked severe winter weather as a high overall significance hazard. The Eastern Glacier Zone and Northern Rocky Front zone experienced 330 total severe winter weather events. Additionally, \$1.6 million was recorded in total property damages due to winter storm events in the county. The NRI rated Glacier County as "very high" risk for cold events and "relatively high" risk for winter weather events.

Refer to Chapter 4 for a discussion of the severe winter weather risk relative to Glacier County and the Central Region.

#### **G.4.11 Human Conflict**

Human conflict is ranked as an overall low significance for Glacier County, along with most other counties in the Central Region. None of the 23 documented events in the Central Region were recorded in Glacier County. While all cities and towns are vulnerable to human conflict events, human conflict events tend to occur in populated areas or at major events.

Refer to Chapter 4 for a discussion of the human conflict risk relative to Glacier County and the Central Region.

#### **G.4.12 Tornadoes & Windstorms**

Glacier County ranked tornadoes and windstorms as a high overall significance hazard. The Northern Rocky Mountain Front Zone, which encompasses Glacier County, experienced the greatest number of high wind/strong wind events in the Central Region, with 570 total events. However, Glacier County experienced

a relatively low number of thunderstorm wind events and tornadoes compared to the rest of the Central Region. Mobile homes are disproportionately likely to experience damages from tornado and windstorm events. In Glacier County, 17.5% of total housing is composed of mobile homes, which is greater than the Montana State average.

Refer to Chapter 4 for a discussion of the tornadoes and windstorms risk relative to Glacier County and the Central Region.

#### G.4.13 Transportation Accidents

Glacier County ranked transportation accidents as an overall medium significance. Glacier County experienced 670 recorded roadway crashes. Additionally, an aircraft crash was reported near the City of Cut Bank when a pilot flew too close to powerlines in 2018. While transportation accidents can occur along any type of transportation route in the county and region, accidents are more likely to occur in high traffic areas, such as along the BNSF Railway, the Cut Bank Internal Airport, and several significant highways including U.S. Route 89 and U.S. Highway 2.

Refer to Chapter 4 for a discussion of the transportation accident risk relative to Glacier County and the Central Region.

#### G.4.14 Volcanic Ash

All counties in the Central Region and all jurisdictions within Glacier County ranked volcanic ash as an overall low significance hazard. Vulnerability throughout the county is largely uniform and dependent on the scale of volcanic activity impacting the region. Refer to Chapter 4 for a discussion of the volcanic ash risk relative to Glacier County and the Central Region.

#### G.4.15 Wildfire

Glacier County, and the Central Region as a whole, ranked wildfire as a medium significance hazard. Glacier County has the fourth largest population of individuals residing in high wildfire risk or greater areas, with a total of 7,178 people exposed. Figure G-11 below displays the wildfire risk in Glacier County. As shown in this map, large portions of the County and the Blackfeet Reservation are rated high wildfire risk, and there are extensive pockets of very high and extreme wildfire risk located throughout heavily populated areas of the county, including Cut Bank and the unincorporated communities of Browning and East Glacier Park.

Table G-15 below summarizes the estimated exposed value of improvements in each wildfire risk category. Residential properties comprise approximately 89% of the total value at risk. Wildfires typically result in a total building loss, including contents. See Chapter 4 in the base plan for details on the methodology of this analysis.

**Table G-15 Glacier County Parcels at Risk to Wildfire by Jurisdiction and Risk Rating**

| At Risk Rating                      | Jurisdiction    | Improved Parcels | Improved Value       | Content Value       | Total Value          | Population   |
|-------------------------------------|-----------------|------------------|----------------------|---------------------|----------------------|--------------|
| At Risk to Extreme Wildfire Hazards | Blackfeet Tribe | 586              | \$57,874,270         | \$32,951,558        | \$90,825,828         | 1,574        |
|                                     | Cut Bank        | 662              | \$69,382,983         | \$35,719,587        | \$105,102,570        | 2,043        |
|                                     | Glacier County  | 6                | \$698,150            | \$357,125           | \$1,055,275          | 12           |
|                                     | <b>Total</b>    | <b>1,254</b>     | <b>\$127,955,403</b> | <b>\$69,028,269</b> | <b>\$196,983,672</b> | <b>3,629</b> |

| At Risk Rating                               | Jurisdiction    | Improved Parcels | Improved Value       | Content Value       | Total Value          | Population   |
|--|-----------------|------------------|----------------------|---------------------|----------------------|--------------|
| At Risk to <b>Very High</b> Wildfire Hazards | Blackfeet Tribe | 262              | \$41,872,155         | \$24,943,083        | \$66,815,238         | 678          |
|  | Cut Bank        | 699              | \$66,533,172         | \$39,731,333        | \$106,264,505        | 2,105        |
|  | Glacier County  | 138              | \$11,322,691         | \$6,138,836         | \$17,461,527         | 389          |
|  | <b>Total</b>    | <b>1,099</b>     | <b>\$119,728,018</b> | <b>\$70,813,251</b> | <b>\$190,541,269</b> | <b>3,172</b> |
| At Risk to <b>High</b> Wildfire Hazards      | Blackfeet Tribe | 106              | \$15,634,857         | \$15,661,979        | \$31,296,836         | 134          |
|  | Cut Bank        | 4                | \$216,789            | \$108,395           | \$325,184            | 9            |
|  | Glacier County  | 163              | \$28,799,990         | \$20,853,822        | \$49,653,812         | 234          |
|  | <b>Total</b>    | <b>273</b>       | <b>\$44,651,636</b>  | <b>\$36,624,195</b> | <b>\$81,275,831</b>  | <b>377</b>   |

Source: MSDI 2022, MWRA

Table G-16 summarizes the potential impact of wildfire on critical facilities and lifelines in Glacier County and its associated jurisdictions. The table highlights the type and number of facilities in each jurisdiction in the County that are in Low/Moderate, High, Very High, or Extreme Wildfire risk areas. See Chapter 4 for the methodology of the critical facilities at risk analysis.

**Table G-16 Glacier County Critical Facilities at Risk to Wildfire Hazards by Jurisdiction, Facility Type, and Risk Rating**

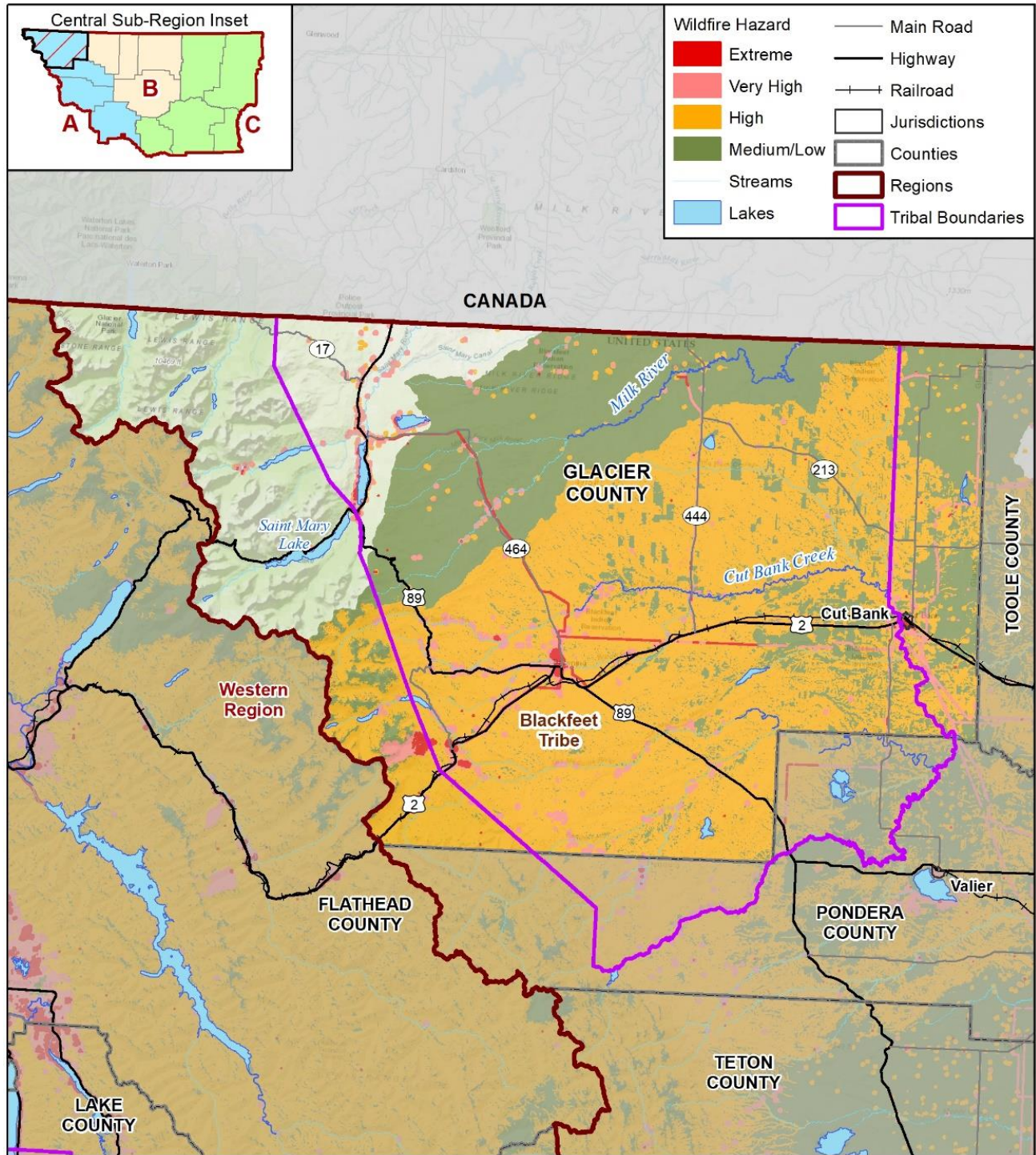
| At Risk Rating                               | Jurisdiction   | Communications | Energy    | Food, Water, Shelter | Hazardous Materials | Health & Medical | Safety & Security | Transportation | Total     |
|--|----------------|----------------|-----------|----------------------|---------------------|------------------|-------------------|----------------|-----------|
| At Risk to <b>Extreme</b> Wildfire Hazards   | Cut Bank       | -              | -         | 2                    | 1                   | 1                | 4                 | -              | <b>8</b>  |
|  | Glacier County | 23             | 8         | 2                    | -                   | 1                | 15                | 7              | <b>56</b> |
|  | <b>Total</b>   | <b>23</b>      | <b>8</b>  | <b>4</b>             | <b>1</b>            | <b>2</b>         | <b>19</b>         | <b>7</b>       | <b>64</b> |
| At Risk to <b>Very High</b> Wildfire Hazards | Cut Bank       | 2              | -         | 2                    | -                   | -                | 9                 | -              | <b>13</b> |
|  | Glacier County | 10             | 17        | 5                    | -                   | -                | 3                 | 28             | <b>63</b> |
|  | <b>Total</b>   | <b>12</b>      | <b>17</b> | <b>7</b>             | <b>0</b>            | <b>0</b>         | <b>12</b>         | <b>28</b>      | <b>76</b> |
| At Risk to <b>High</b> Wildfire Hazards      | Glacier County | 1              | -         | -                    | 2                   | -                | 1                 | 16             | <b>20</b> |
|  | <b>Total</b>   | <b>1</b>       | <b>0</b>  | <b>0</b>             | <b>2</b>            | <b>0</b>         | <b>1</b>          | <b>16</b>      | <b>20</b> |
| At Risk to <b>Medium/Low</b>                 | Cut Bank       | -              | -         | -                    | -                   | -                | 1                 | 1              | <b>2</b>  |
|  | Glacier County | -              | 3         | 2                    | -                   | -                | 4                 | 15             | <b>24</b> |

| At Risk Rating   | Jurisdiction | Communications | Energy   | Food, Water, Shelter | Hazardous Materials | Health & Medical | Safety & Security | Transportation | Total     |
|------------------|--------------|----------------|----------|----------------------|---------------------|------------------|-------------------|----------------|-----------|
| Wildfire Hazards | <b>Total</b> | <b>0</b>       | <b>3</b> | <b>2</b>             | <b>0</b>            | <b>0</b>         | <b>5</b>          | <b>16</b>      | <b>26</b> |

Source: HIFLD 2022, MT DES, NBI, MWRA

DRAFT

**Figure G-11 Glacier County Wildfire Hazard**



Map compiled 10/2022;  
intended for planning purposes only.  
Data Source: Montana State Library, MWRA

0 10 20 Miles



## G.5 Mitigation Capabilities Assessment

As part of the regional plan development, the Region and participating jurisdictions developed a mitigation capability assessment. Capabilities are those plans, policies and procedures that are currently in place that contribute to reducing hazard losses. Combining the risk assessment with the mitigation capability assessment results in “net vulnerability” to disasters and more accurately focuses the goals, objectives, and proposed actions of this plan. The CPT used a two-step approach to conduct this assessment. First, an inventory of common mitigation activities was made using a matrix. The purpose of this effort was to identify policies and programs that were either in place or could be undertaken, if appropriate. Second, the CPT conducted an inventory and review of existing policies, regulations, plans, projects, and programs to determine if they contribute to reducing hazard related losses.

### G.5.1 Regulatory Mitigation Capabilities

Table G-17 lists planning and land management tools typically used by local jurisdictions to implement hazard mitigation activities and indicates those that are in place in the Central Region and each participating jurisdiction.

**Table G-17 Glacier County and Jurisdictions Regulatory Mitigation Capabilities**

| Plans and Regulations   | Glacier County | City of Cut Bank |
|---|----------------|------------------|
| Building Codes  | No             | Yes              |
| Building Codes Year   | N/A            | N/A              |
| BCEGS Rating  | N/A            | N/A              |
| Capital Improvements Program (CIP) or Plan                      | No             | Yes              |
| Community Rating System (CRS)                                   | No             | No               |
| Community Wildfire Protection Plan (CWPP)                       | No             | No               |
| Comprehensive, Master, or General Plan                          | No             | No               |
| Economic Development Plan                                       | No             | No               |
| Elevation Certificates  | No             | No               |
| Emergency Operations Plan (EOP)                                 | Yes            | Yes              |
| Erosion/<br>Sediment Control Program                            | No             | No               |
| Floodplain Management Plan                                      | No             | Yes              |
| Flood Insurance Study   | No             | No               |
| Floodplain Management Ordinance                                 | No             | No               |
| National Flood Insurance Program (NFIP) Participant             | Yes – 01/01/90 | Yes – 02/08/17   |
| Growth Management Ordinance or Policy                           | No             | No               |
| Other Hazard-Specific Ordinance or Plan (Steep Slope, Wildfire) | No             | Yes - Floodplain |
| Site Plan Review Requirements                                   | No             | No               |
| Stormwater Program, Plan, or Ordinance                          | No             | No               |
| Zoning Code or Ordinance  | Yes            | Yes              |
| Other?  | No             | No               |

### Discussion on Existing Regulatory Mitigation Capabilities

The CPT noted that the City of Cut Bank has a building inspector and city supervisor on the floodplain board that presides over existing land uses and development ordinances. Glacier County does not have a floodplain administrator, but the City of Cut Bank does for its jurisdiction.

### Discussion on NFIP Participation and Compliance

Glacier County participates in the National Flood Insurance Program, with a regulatory date of 01/01/90. The City of Cut Bank also participates and joined on 02/08/17, although there are no mapped flood zones.

## G.5.2 Administrative and Technical Mitigation Capabilities

Table G-18 identifies the County and participating jurisdictions personnel responsible for activities related to mitigation and loss prevention in Glacier County.

**Table G-18 Glacier County Jurisdictions Administrative/Technical Mitigation Capabilities**

| Administrative and Technical                                | Glacier County | City of Cut Bank |
|---|----------------|------------------|
| Emergency Manager   | Yes            | Yes              |
| Floodplain Administrator/Position/ Department               | No             | Yes              |
| Community Planning:   | Yes            | No               |
| - Planner/Engineer (Land Development)                       | No             | Yes              |
| - Planner/Engineer/Scientist (Natural Hazards)              | No             | No               |
| - Engineer/Professional (Construction)                      | No             | Yes              |
| - Resiliency Planner  | No             | No               |
| - Transportation Planner                                    | No             | No               |
| Full-Time Building Official                                 | No             | No               |
| GIS Specialist and Capability                               | No             | No               |
| Grant Manager, Writer, or Specialist                        | No             | Yes - Engineers  |
| Housing Authority   | Yes            | No               |
| Warning Systems: (list the hazards each system is used for) | Yes            | No               |
| - Sirens  | Yes            | No               |
| - Reverse 911   | No             | No               |
| - IPAWS/Wireless Emergency Alerts (WEA)                     | No             | No               |
| - Opt-In Notifications (CodeRed, Everbridge, etc.)          | No             | No               |
| - Other system  | No             | No               |

## G.5.3 Financial Capabilities

Table G-19 identifies the County and participating jurisdictions financial tools or resources that the jurisdictions have access or are eligible to use and could potentially be used to help fund mitigation activities.

**Table G-19 Glacier County Jurisdictions Financial Capabilities**

| Financial Capabilities  | Glacier County | City of Cut Bank |
|---|----------------|------------------|
| Ability to fund projects through Capital Improvements funding | No             | Yes              |

| Financial Capabilities   | Glacier County | City of Cut Bank |
|--|----------------|------------------|
| Ability to incur debt through general obligation bonds             | No             | Yes              |
| Ability to incur debt through private activities                   | Yes            | No               |
| Ability to incur debt through special tax bonds                    | Yes            | No               |
| Authority to levy taxes for a specific purpose with voter approval | Yes            | Yes              |
| Authority to withhold spending in hazard prone areas               | No             | No               |
| Community Development Block Grants                                 | Yes            | Yes              |
| FEMA Hazard Mitigation Assistance grants                           | Yes            | No               |
| FEMA Public Assistance funds                                       | Yes            | No               |
| Stormwater Service Fees  | No             | No               |
| System Development Fee   | No             | No               |
| Utility fees (water, sewer, gas, electric, etc.)                   | No             | Yes              |
| Gas Tax/BaRSAA (Roads and Streets)                                 | No             | No               |
| Montana Coal Endowment Program (MCEP)                              | No             | No               |
| State Revolving Fund   | No             | No               |
| Department of Natural Resources & Conservation                     | No             | No               |

### FEMA and Other Grant Funding Leveraged for Hazard Mitigation

Funding for the proposed mitigation projects may come from a variety of sources. Below is a list of funding possibilities. This list is not tied directly to each proposed project; however, these programs could work for specific projects or multiple projects.

- FEMA Hazard Mitigation Assistance Grants including:
  - Building Resilient Infrastructure and Communities (BRIC)
  - Flood Mitigation Assistance Program (FMA).
  - Hazard Mitigation Grant Program (HMGP).
- US Army Corp of Engineers funding
- USDA Environmental Quality Incentive Program.
- USDA Conservation Reserve and Conservation Reserve Enhancement Program.
- USDA Small Watersheds (NRCS).

There are many more potential funding opportunities available to the municipalities and county. Funding research will be done during the scoping process for each project. New funding mechanisms may be present that were not before. Glacier County and its jurisdictions have participated in several of these hazard mitigation assistance projects, summarized in Table G-20 below.

**Table G-20 Glacier County Hazard Mitigation Assistance Projects**

| Program | Date Approved | Project Type                             | Status | Location |
|---------|---------------|--|--------|----------|
| HMGP    | 2017-06-13    | 601.1: Generators                        | Closed | Glacier  |
| PDM     | 2021-01-05    | 94.1: Tribal Multihazard Mitigation Plan | Closed | Glacier  |

Source: FEMA OpenData

### G.5.4 Education and Outreach Capabilities

Table G-21 below summarizes the existing education and outreach capabilities available to Glacier County and its jurisdictions.

**Table G-21 Glacier County Education and Outreach Capabilities**

| Education & Outreach Programs  | Glacier County | City of Cut Bank |
|--|----------------|------------------|
| Ongoing public education programs (fire safety, responsible water use, household preparedness, etc.) | Yes            | Yes              |
| Local citizen groups that communicate hazard risks   | No             | No               |
| Firewise or other fire mitigation program  | Yes            | Yes              |
| National Weather Service StormReady  | No             | No               |
| Other?   |                |                  |

### G.5.5 Non-Governmental Organizations (NGOs) and Mitigation Partnerships

Table G-22 shows the local chapters partnered with the County and participating jurisdictions.

**Table G-22 Glacier County Non-Governmental Organizations (NGOs)**

| Non-Governmental Organizations (NGOs)          | Glacier County                      | City of Cut Bank |
|--|-------------------------------------|------------------|
| American Red Cross                             | No                                  | No               |
| Chamber of Commerce                            | Yes                                 | Yes              |
| Community Organizations (Lions, Kiwanis, etc.) | Yes- Elks, Moose, Masons, Blackfeet | Yes              |
| Environmental Groups                           | Yes                                 | No               |
| Homeowner Associations                         | No                                  | No               |
| Neighborhood Associations                      | No                                  | No               |
| Salvation Army                                 | No                                  | No               |
| Veterans Groups                                | No                                  | Yes              |
| Other?   | No                                  | No               |

### G.5.6 Opportunities for Enhancement

Based on the capabilities assessment, Glacier County has several existing mechanisms in place that already help to mitigate hazards. There are also opportunities for the County to expand or improve on their policies, programs and fiscal capabilities and further protect the community. Future improvements may include providing training for staff members related to hazards or hazard mitigation grant funding in partnership with the County and DHSEM. Additional training opportunities will help to inform County and local government staff members on how best to integrate hazard information and mitigation projects into their departments. Continuing to train staff on mitigation and the hazards that pose a risk to Glacier County will lead to more informed staff members who can better communicate this information to the public.

Another opportunity for enhancement is to increase public education and outreach on hazards. Creating ongoing public education programs or becoming StormReady communities can increase the community's preparedness for hazard events. Improved cross-jurisdictional communication on evacuation and awareness to mitigate life safety impacts during dam incidents, floods, or wildfires including the development of

brochures and using existing communication capabilities through social media or other media. Other specific opportunities for improvement include:

- Glacier County:
  - Consider joining the NFIP
  - Consider adopting building codes to improve structure resilience to hazards
  - Additional partnerships with area agencies to further develop hazard mitigation programs.
- City of Cut Bank:
  - Consider joining the NFIP
  - Consider a stormwater management plan

## G.6 Mitigation Strategy

This section describes the mitigation strategy and mitigation action plan for Glacier County. See Chapter 5 of the base plan for more details on the process used to develop the mitigation strategy.

### G.6.1 Goals

During the creation of the 2023 Regional Plan, the counties in the Montana Central Region decided to collaborate and develop a set of new, uniform goals, which were adopted by all counties in the Region and move away from hazard-specific goals. The adopted goals are as follows:

- Goal 1: Reduce impacts to people, property, the environment, and the economy from hazards.
- Goal 2: Protect community lifelines and critical infrastructure to ensure the continuity of essential services.
- Goal 3: Increase public awareness and participation in hazard mitigation.
- Goal 4: Sustain and enhance jurisdictional capabilities to enact mitigation activities.
- Goal 5: Integrate hazard mitigation into other plans, processes, and regulations.
- Goal 6: Promote regional cooperation and leverage partnerships in mitigation solutions where possible.

### G.6.2 Progress on Previous Actions

During the 2023 planning process, the Glacier County Planning Team reviewed all the mitigation actions from the 2018 plan. As shown in Table G-23, of their 20 mitigation actions from 2018, one has been completed and five were deleted as being no longer feasible.

**Table G-23 Completed and Deleted Actions**

| ID | Action Name & Description   | Hazard(s) Mitigated | Jurisdiction             | Notes    |
|----|---|---------------------|--------------------------|----------|
| 18 | Insulating a facility's water pipes helps prevent them from freezing and bursting due to sudden and prolonged low temperatures during winter storms. The planning areas should implement this project in conjunction with their school districts and critical facilities standard maintenance cycles. | Severe Weather      | Glacier County, Cut Bank | Complete |
| 10 | Linear power grids have single points of failure that are vulnerable to a number of hazards. Looped power grids operate in parallel and are thus significantly more resistant to damage allowing the utilities to maintain power after an event.  | Multi Hazard        | Glacier County, Cut Bank | Deleted  |
| 14 | Some structures may be able to be relocated from identified floodplains or dam inundation zones. Removing them from identified hazard areas will eliminate their risk.  | Dam Failure         | Glacier County, Cut Bank | Deleted  |

| ID | Action Name & Description  | Hazard(s) Mitigated   | Jurisdiction             | Notes    |
|----|--|---|--------------------------|----------|
| 16 | Significant food damage in developed communities can be prevented by upgrading their storm water drainage system. This mitigation measure will allow flood waters to drain quicker and prevent excess accumulation. This project should be implemented in older drainage systems and any expanding areas throughout the planning area. | Flooding  | Glacier County, Cut Bank | Deleted  |
| 17 | Securing trees with wire harness will prevent wind related events from blowing them over and potentially onto the jurisdictions' facilities and infrastructure   | Severe Weather, Tornadoes   | Glacier County, Cut Bank | Deleted  |
| 20 | Xeriscaping is a specific method of landscaping and gardening designed to reduce and eliminate the need for supplemental water. By practicing xeriscaping on jurisdiction-owned properties the net system wide water necessary for a community to maintain itself is substantially reduced.  | Drought   | Glacier County, Cut Bank | Deleted  |
| 5  | Back Up generators provide critical facilities with electricity in the event a community's electrical transmission grid is either damaged by earthquakes, severe thunderstorms, tornadoes, or winter storms, or overload by excessive use during an extreme heat or a winter storm.  | Multi: Cyber-Attack, Dam Failure, Earthquake, Flooding, Summer Weather, Winter Weather, Human | Glacier County           | Complete |

### G.6.3 NFIP Continued Compliance

Also important to reducing losses to future development is continued compliance with the NFIP. All the jurisdictions will continue to make every effort to remain in good standing with the program. This includes continuing to comply with the NFIP regarding adopting floodplain maps and implementing, maintaining, and updating floodplain ordinances. See Section 5.4.2 in the base plan for more discussion on NFIP compliance.

### G.6.4 Mitigation Action Plan

As a part of the 2023 regional planning process, the CPT developed an updated list of hazard mitigation actions or projects specific to Glacier County and its jurisdictions. The process used to identify, develop, and prioritize these actions is described in Chapter 5 of the base plan. **A total of nine new mitigation** actions were added to the 31 actions carried over from the 2018 HMP.

Table G-24 represents Glacier County's Mitigation Action and Plan. The CPT identified and prioritized the following mitigation actions based on the risk assessment and goals, and objectives. It is grouped by hazard(s) mitigated). Background information as well as information on how the action will be implemented and administered, such as ideas for implementation, responsible office, partners, potential funding, estimated cost, and timeline also are described. Per the DMA requirement, actions have been identified that address reducing losses to existing development as well as future development.

The Cost Estimate column describes the estimated project costs using the following categories:

- Little to no cost
- Low: Less than \$10,000
- Moderate: \$10,000-\$100,000
- High: \$100,000-\$1,000,000

- Very High: More than \$1,000,000

The Timeline column describes the estimated time of completion for each project using the following categories:

- Short Term: 1-2 years
- Medium Term: 3-5 years
- Long Term: 5+ years
- Ongoing: action is implemented every year

The Status/Implementation Notes column describes the progress made on the actions so far using the following categories:

- Not Started: project is carried over from the 2018 Plan; little to no work has been completed.
- In Progress: project is carried over from the 2018 Plan; work has begun on the project and is proceeding.
- Annual: project is carried over from the 2018 Plan and is implemented every year on an ongoing basis.
- New in 2023: The action is new to this plan update; little to no work has been completed.

Table G-24 below lists the mitigation actions for each participating jurisdiction in Glacier County. All jurisdictions have developed mitigation actions for each applicable hazard in the HMP.

**Table G-24 Glacier County Mitigation Action Plan**

| ID | Action Name & Description  | Hazard(s) Mitigated  | Jurisdiction   | Lead Agency and Partners                | Cost Estimate     | Potential Funding        | Timeline    | Priority | Status/ Implementation Notes |
|----|--|--|----------------|---|-------------------|--------------------------|-------------|----------|------------------------------|
| 1  | The County will continue to improve its alert, broadcast, and warning systems to give information and instructions in the face of an impending hazard impact to prevent injury and property damage. These systems will allow citizens to better protect themselves in the event of an impending or potentially impending hazard. Additionally hazard or weather specific information can be delivered to assist in achieving the previously stated goal. | Multi: Dam Failure, Earthquake, Flooding, Hazmat, Landslide, Summer Weather, Winter Weather, Human Conflict, Tornado/Wind, Transportation Accident, Volcanic Ash, Wildfire | Glacier County | Glacier County, OEM/DES, Municipal Gov. | Moderate          | HMGP, PDM, Local Budgets | Ongoing     | High     | In Process                   |
| 2  | The Town will continue to improve its alert, broadcast, and warning systems to give information and instructions in the face of an impending hazard impact to prevent injury and property damage. These systems will allow citizens to better protect themselves in the event of an impending or potentially impending hazard. Additionally hazard or weather specific information can be delivered to assist in achieving the previously stated goal.   | Multi: Dam Failure, Earthquake, Flooding, Hazmat, Landslide, Summer Weather, Winter Weather, Human Conflict, Tornado/Wind, Transportation Accident, Volcanic Ash, Wildfire | Cut Bank       | Glacier County, OEM/DES, Municipal Gov. | Moderate          | HMGP, PDM, Local Budgets | In Progress | Medium   | Began process with NWS.      |
| 3  | The NWS Storm Ready Community Program helps arm Americas Communities with communication and safety skills needed to save lives and property before and during an event. Storm Ready helps community planning, education, and awareness.  | Multi: Dam Failure, Drought, Flooding, Summer Weather, Winter Weather, Tornado/Wind, Volcanic Ash, Wildfire  | Glacier County | Glacier County, OEM/DES                 | Little to no cost | Local Budget             | Proposed    | Medium   | In Process                   |

| ID | Action Name & Description   | Hazard(s) Mitigated  | Jurisdiction   | Lead Agency and Partners                                 | Cost Estimate     | Potential Funding              | Timeline | Priority | Status/ Implementation Notes |
|----|---|--|----------------|--|-------------------|--------------------------------|----------|----------|------------------------------|
| 4  | The NWS Storm Ready Community Program helps arm Americas Communities with communication and safety skills needed to save lives and property before and during an event. Storm Ready helps community planning, education, and awareness.   | Multi: Dam Failure, Drought, Flooding, Summer Weather, Winter Weather, Tornado/Wind, Volcanic Ash, Wildfire                                  | Cut Bank       | Glacier County, OEM/DES                                  | Little to no cost | Local Budget                   | Proposed | Medium   | In Process                   |
| 6  | Back Up generators provide critical facilities with electricity in the event a community's electrical transmission grid is either damaged by earthquakes, severe thunderstorms, tornadoes, or winter storms ,or overload by excessive use during an extreme heat or a winter storm.   | Multi: Cyber-Attack, Dam Failure, Earthquake, Flooding, Summer Weather, Winter Weather, Human Conflict, Tornado/Wind, Volcanic Ash, Wildfire | Cut Bank       | Glacier County, OEM/DES, Municipal Gov.                  | Moderate          | HMGP, PDM, Local Budgets       | Ongoing  | Medium   | In Process                   |
| 7  | Transferring existing utility lines, pipes, and chemical storage tanks from above ground to below ground will significantly reduce the amount of property damage incurred from wind ice and snow related events.  | Severe Weather, TORNADOS   | Glacier County | Glacier County, OEM/DES, Municipal Gov.                  | Moderate          | HMGP, PDM, Local Budgets       | Ongoing  | Medium   | In Process                   |
| 8  | Transferring existing utility lines, pipes, and chemical storage tanks from above ground to below ground will significantly reduce the amount of property damage incurred from wind ice and snow related events.  | Severe Weather, TORNADOS   | Cut Bank       | Glacier County, OEM/DES, Municipal Gov.                  | Moderate          | HMGP, PDM, Local Budgets       | Ongoing  | Medium   | In Process                   |
| 9  | This project includes the physical removal of debris and clearing quick-to-burn vegetation. Reducing the amount of debris and natural fuels in a community will deprive wildfires of the material it requires to spread and prevent high winds from launching dead deadly and damaging debris around during a severe storm or | Severe Weather, Wildfires, TORNADOS  | Glacier County | Glacier County Fire, Glacier Co. Maintenance Dept, GCOEM | Moderate          | FP&S, HMGP, PDM, Local Budgets | Ongoing  | N/A      | In Process                   |

| ID | Action Name & Description  | Hazard(s) Mitigated                  | Jurisdiction   | Lead Agency and Partners                | Cost Estimate | Potential Funding              | Timeline | Priority | Status/ Implementation Notes |
|----|--|--------------------------------------|----------------|---|---------------|--------------------------------|----------|----------|------------------------------|
|    | tornado. This project will be implemented in high risk areas as identified in this plan's WUI maps and well-known to burn areas as determined by the participating jurisdictions and appropriate local agencies.   |                                      |                |   |               |                                |          |          |                              |
| 10 | This project includes the physical removal of debris and clearing quick-to-burn vegetation. Reducing the amount of debris and natural fuels in a community will deprive wildfires of the material they require to spread and prevent high winds from launching dead and damaging debris around during a severe storm or tornado. This project will be implemented in high risk areas as identified in this plan's WUI maps and well-known to burn areas as determined by the participating jurisdictions and appropriate local agencies.   | Severe Weather, Wildfires, Tornadoes | Cut Bank       | Glacier County, OEM/DES, Municipal Gov. | Moderate      | FP&S, HMGP, PDM, Local Budgets | Ongoing  | Low      | In Process                   |
| 11 | Creating defensible spaces and buffer zones void of vegetative fuel and covered with gravel or rock helps prevent the spread of wildfires as well as creating an area in which local emergency response services can safely operate. This two-pronged approach directly mitigates damage to property and protects lives, but also indirectly mitigates the threat to life and property in the area at large. This project will be implemented in high risk areas as identified in this plan's WUI maps and well known areas as determined by the participating jurisdictions and appropriate local agencies. | Wildfires                            | Glacier County | Glacier County, OEM/DES, Municipal Gov. | Moderate      | FP&S, HMGP, PDM, Local Budgets | Ongoing  | Medium   | In Process                   |
| 12 | Creating defensible spaces and buffer zones void of vegetative fuel and covered with gravel or rock helps  | Wildfires                            | Cut Bank       | Glacier County,                         | Moderate      | FP&S, HMGP,                    | Ongoing  | Medium   | In Process                   |

| ID | Action Name & Description  | Hazard(s) Mitigated    | Jurisdiction   | Lead Agency and Partners                | Cost Estimate | Potential Funding             | Timeline | Priority | Status/ Implementation Notes |
|----|--|------------------------|----------------|---|---------------|-------------------------------|----------|----------|------------------------------|
|    | prevent the spread of wildfires as well as creating an area in which local emergency response services can safely operate. This two-pronged approach directly mitigates damage to property and protects lives, but also indirectly mitigates the threat to life and property in the area at large. This project will be implemented in high risk areas as identified in this plan's WUI maps and well known areas as determined by the participating jurisdictions and appropriate local agencies. |                        |                | OEM/DES, Municipal Gov.                 |               | PDM, Local Budgets            |          |          |                              |
| 13 | Structures located within identified flood zones can be elevated above flood elevation or other predicted flood inundation levels.   | Flooding               | Glacier County | Glacier County, OEM/DES, Municipal Gov. | High          | HMGP, PDM, Local Budgets, FMA | Proposed | High     | Not Begun                    |
| 14 | Structures located within identified flood zones can be elevated above flood elevation or other predicted flood inundation levels.   | Flooding               | Cut Bank       | Glacier County, OEM/DES, Municipal Gov. | High          | HMGP, PDM, Local Budgets, FMA | Proposed | High     | Not Begun                    |
| 15 | FEMA code 361 regulations ensure a structure is capable of withstanding wind speeds greater than 200 miles per hour. Additionally, these anti-tornado regulations also ensure the structure is protected against hail, lightning, high facility. Any critical facility is a potential target for this, but realistically locations will be determined by which participating jurisdictions have the want and resources to accomplish this project.   | Severe Weather, Tornos | Glacier County | Glacier County, OEM/DES, Municipal Gov. | Low           | HMGP, PDM, Local Budgets      | Proposed | High     | Not Begun                    |

| ID | Action Name & Description  | Hazard(s) Mitigated      | Jurisdiction   | Lead Agency and Partners                | Cost Estimate | Potential Funding        | Timeline | Priority | Status/ Implementation Notes          |
|----|--|--------------------------|----------------|---|---------------|--------------------------|----------|----------|---------------------------------------|
| 16 | FEMA code 361 regulations ensure a structure is capable of withstanding wind speeds greater than 200 miles per hour. Additionally, these anti-tornado regulations also ensure the structure is protected against hail, lightning, high facility. Any critical facility is a potential target for this, but realistically locations will be determined by which participating jurisdictions have the want and resources to accomplish this project. | Severe Weather, TORNADOS | Cut Bank       | Glacier County, OEM/DES, Municipal Gov. | Low           | HMGP, PDM, Local Budgets | Proposed | High     | Not Begun                             |
| 17 | Upgrading a facilities' windows, window frames, roofing and insulation will allow it to better maintain a desired warm or cool temperature during prolonged extreme heat or winter storms. Additionally, it decreases the energy load necessary to do so, decreasing the burden on the local energy grid.  | Severe weather           | Glacier County | Glacier County, OEM/DES, Municipal Gov. | Moderate      | HMGP, PDM, Local Budgets | On Going | Low      | In Process                            |
| 18 | Upgrading a facilities' windows, window frames, roofing and insulation will allow it to better maintain a desired warm or cool temperature during prolonged extreme heat or winter storms. Additionally, it decreases the energy load necessary to do so, decreasing the burden on the local energy grid.  | Severe weather           | Cut Bank       | Glacier County, OEM/DES, Municipal Gov. | Moderate      | HMGP, PDM, Local Budgets | Proposed | Low      | Not Begun                             |
| 19 | To decrease water usage before, during, and after a drought, communities can still install low water flow utilities throughout its critical facilities and infrastructure. This will not only decrease water usage but will also decrease water demands. The planning area should implement the project in conjunction with their school districts and critical facilities standard maintenance cycles.  | Drought                  | Glacier County | Glacier County, OEM/DES, Municipal Gov. | Moderate      | HMGP, PDM, Local Budgets | Proposed | Low      | In Progress, still in planning phase. |

| ID | Action Name & Description   | Hazard(s) Mitigated  | Jurisdiction   | Lead Agency and Partners                | Cost Estimate | Potential Funding        | Timeline | Priority | Status/ Implementation Notes                          |
|----|---|--|----------------|---|---------------|--------------------------|----------|----------|---|
| 20 | To decrease water usage before, during, and after a drought, communities can still install low water flow utilities throughout its critical facilities and infrastructure. This will not only decrease water usage but will also decrease water demands. The planning area should implement the project in conjunction with their school districts and critical facilities standard maintenance cycles. | Drought  | Cut Bank       | Glacier County, OEM/DES, Municipal Gov. | Moderate      | HMGP, PDM, Local Budgets | Proposed | Low      | In Progress, still in planning phase.                 |
| 21 | While there are currently no repetitive loss properties in Glacier County, it is important to consider the need for property buyout should it become necessary over time.   | Flooding   | Glacier County | Glacier County, OEM/DES, Municipal Gov. | N/A           | HMGP, PDM, Local Budgets | Proposed | Low      | In Progress. Working to identify suitable properties. |
| 22 | While there are currently no repetitive loss properties in Glacier County, it is important to consider the need for property buyout should it become necessary over time.   | Flooding   | Cut Bank       | Glacier County, OEM/DES, Municipal Gov. | N/A           | HMGP, PDM, Local Budgets | Proposed | Low      | In Progress. Working to identify suitable properties. |
| 23 | A campaign will inform and educate the public on Hazard Risks, allowing them to better protect their property through preparations and their lives through appropriate evacuation and survival procedures.  | Multi: Communicable Disease, Cyber-Attack, Dam Failure, Drought, Earthquake, Flooding, Hazmat, Landslide, Summer Weather, Winter Weather, Human Conflict, Tornado/Wind, Transportation Accidents, Volcanic Ash, Wildfire | Glacier County | Glacier County, OEM/DES, Municipal Gov. | Moderate      | HMGP, PDM, Local Budgets | Ongoing  | High     | In Progress. Using social media and public meetings.  |

| ID | Action Name & Description   | Hazard(s) Mitigated  | Jurisdiction   | Lead Agency and Partners                | Cost Estimate | Potential Funding              | Timeline | Priority | Status/ Implementation Notes   |
|----|---|--|----------------|---|---------------|--------------------------------|----------|----------|--|
| 24 | A campaign will inform and educate the public on Hazard Risks, allowing them to better protect their property through preparations and their lives through appropriate evacuation and survival procedures.  | Multi: Communicable Disease, Cyber-Attack, Dam Failure, Drought, Earthquake, Flooding, Hazmat, Landslide, Summer Weather, Winter Weather, Human Conflict, Tornado/Wind, Transportation Accidents, Volcanic Ash, Wildfire | Cut Bank       | Glacier County, OEM/DES, Municipal Gov. | Moderate      | HMGP, PDM, Local Budgets       | Proposed | Medium   | In Progress. Using social media and public meetings.                   |
| 25 | Snow fences force drifting snow to accumulate in a desired place minimizing the amount of snowdrift on roads and railways. Controlling snow accumulation decreases the danger to a jurisdictions' citizen traveling during and after a winter storm. This project should be implemented along major transportation routes throughout the planning | Severe Weather   | Glacier County | Glacier County, OEM/DES                 | Moderate      | HMGP, PDM, Local Budgets       | Proposed | Low      | In Progress. Meeting with BNSF and other partners.                     |
| 26 | Snow fences force drifting snow to accumulate in a desired place minimizing the amount of snowdrift on roads and railways. Controlling snow accumulation decreases the danger to a jurisdictions' citizen traveling during and after a winter storm. This project should be implemented along major transportation routes throughout the planning | Severe Weather   | Cut Bank       | Glacier County, OEM/DES                 | Moderate      | HMGP, PDM, Local Budgets       | Proposed | Low      | In Progress. Meeting with BNSF and other partners.                     |
| 27 | Retrofitting structures with screened vent enclosures, double paned glass and spark arrestors will reduce the chances of a structure igniting from a wildfire as well as wildfires chance of spreading.   | Wildfires  | Glacier County | Glacier County, OEM/DES,                | Moderate      | FP&S, HMGP, PDM, Local Budgets | Proposed | Low      | In Progress. Meeting with stakeholders to build power base and buy in. |

| ID | Action Name & Description   | Hazard(s) Mitigated | Jurisdiction  | Lead Agency and Partners                | Cost Estimate | Potential Funding              | Timeline   | Priority | Status/ Implementation Notes   |
|----|---|---------------------|---|---|---------------|--------------------------------|------------|----------|--|
|    |   |                     |   | Municipal Gov.                          |               |                                |            |          |  |
| 28 | Retrofitting structures with screened vent enclosures, double paned glass and spark arrestors will reduce the chances of a structure igniting from a wildfire as well as wildfires chance of spreading. | Wildfires           | Cut Bank  | Glacier County, OEM/DES, Municipal Gov. | Moderate      | FP&S, HMGP, PDM, Local Budgets | Proposed   | N/A      | In Progress. Meeting with stakeholders to build power base and buy in. |
| 29 | Clearing and reduction of fuels at or in vicinity critical infrastructures housing comms for safety and security. (repeater sites).   | Wildfires           | Glacier County, Glacier Co. Maintenance Dept, GCOEM | OEM/Fire                                | \$75,000      | OEM/Fire                       | Short-Term | High     | New in 2023  |

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## **G.7 Plan Implementation and Maintenance**

Moving forward the Glacier County CPT will use the mitigation action table in the previous section to track progress on implementation of each project. Implementation of the plan overall is discussed in Chapter 6 of the base plan. County Emergency Management will take the lead on implementation and maintenance in coordination with MT DES.

### **G.7.1 Incorporation into Existing Planning Mechanisms**

As described in the capability assessment, the County already implements policies and programs to reduce losses to life and property from hazards. This plan builds upon the momentum developed through previous and related planning efforts and mitigation programs and recommends implementing actions, where possible, through these other program mechanisms. Where applicable, these existing mechanisms could include:

Glacier County:

- Glacier County Emergency Operations Plan, 2018
- Glacier County LEPC
- Glacier County OEM/DES

City of Cut Bank:

- City of Cut Bank Capital Improvements Program Plan
- City of Cut Bank Emergency Operations Plan (EOP)

The process for incorporation of the Regional Hazard Mitigation Plan into other planning mechanisms can be as simple as cross-referencing the Hazard Mitigation Plan where applicable. Integrated planning is a key to building community resiliency.

### **G.7.2 Monitoring, Evaluation and Updating the Plan**

Glacier County will follow the procedures to review and update this plan in accordance with Montana Central Region as outlined in Chapter 6 of the Regional Plan. The County and municipalities realize that it is important to review and update this plan regularly and update it on a five-year cycle. The Glacier County Annex to the Montana Central Region Plan will be evaluated on a regular basis to determine the effectiveness of programs, and to reflect changes in land development or programs that may affect mitigation priorities.

Continued public involvement will be followed as outlined in Chapter 6 of the base plan, with an emphasis on vulnerable populations or groups that could have been missed during the 2023 process.