

## Annex H Lewis and Clark County

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

This County Annex builds on previous versions of the Lewis and Clark County Hazard Mitigation Plan completed in 2017. 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 Helena
- City of East Helena

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.

### H.2 Community Profile

#### H.2.1 Geography and Climate

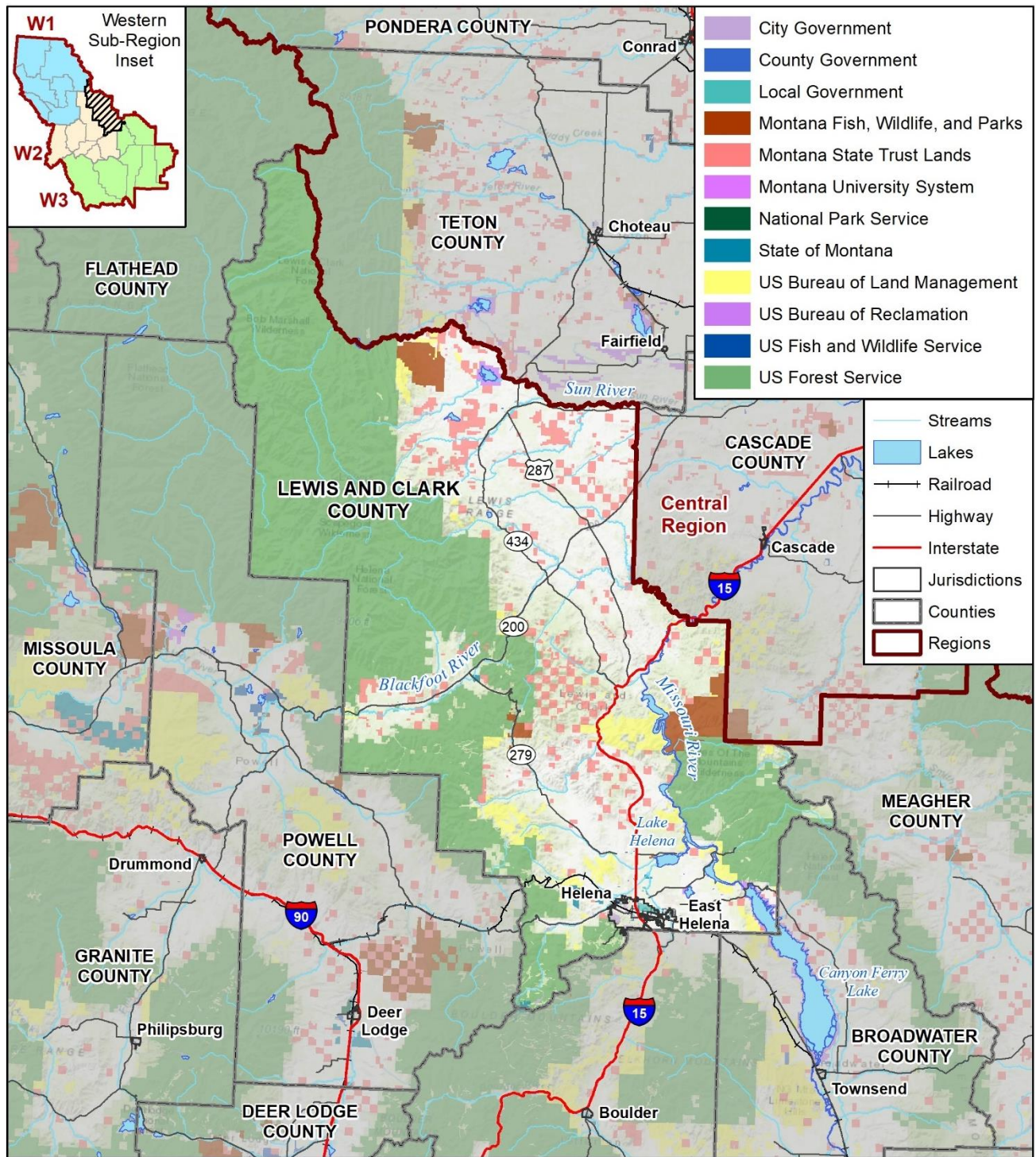
Lewis and Clark County is in west-central Montana and has an area of about 3,948 square miles. Figure H-1 displays a map of the County. About 70 percent of the County is mountainous and has several intermountain valleys between major mountain ranges. Elevation ranges from 3,400 feet on the Missouri River to peaks more than 8,000 feet along the Continental Divide. The northwestern portion of the County is very rocky and contains part of two wilderness areas with several streams' headwaters. This portion of the County is mostly uninhabited.

The City of Helena, located on the southern edge of Lewis and Clark County, is the County seat and the capital of the State of Montana. The City of Helena and the City of Eastern Helena sit in the southern portion of the Helena valley, which is a wide area west of the Missouri River. The Valley is bordered by the Elkhorn Mountains in the south and the Spokane Hills and Big Belt Mountains to the north and east. Tenmile Creek and Prickly Pear Creek cross the Helena valley and converge at Lake Helena. Ninety-five percent of the county population reside in either Helena, East Helena, or the Helena Valley. The unincorporated community of Lincoln is in west-central Lewis and Clark County along the Blackfoot River. Lincoln is the only sizable community west of the Continental Divide in the County.

Private land in Lewis and Clark County accounts for 43.5 percent of the total. The remaining land is managed by federal and state agencies. The federal government manages approximately 48 percent of the total land in the County including portions of the Helena and Lewis and Clark National Forest, BLM land, and other federal lands. The State of Montana manages 7.6 percent of the acreage within the County – mostly managed by the Montana DNRC Trust Lands Management Division and Montana Fish, Wildlife and Parks.

The climate across Lewis and Clark County varies with elevation and in the County's Growth Policy, climate across the County is broken down into six sub-areas. The mountains receive around 60 inches or more of rainfall annually, where the semi-arid southern portion of the County receives about 11 inches, and the Helena Valley experiences 20 to 30 inches annually. Peak river flows usually occur in late May or early June, as spring rains melt winter snowpacks. Winters in Lewis and Clark County are generally sunny, cold, and windy, with frequent storm fronts. Summers are warm with cool nights brought on by air drainage into valley bottoms. In the Helena Valley temperatures range from -35 ° degrees to 100° F with average monthly temperatures ranging from 18 ° F in January to 68 ° F in July.

Figure H-1 Lewis and Clark County Base Map and Land Stewardship



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

## H.2.2 Population Trends

According to the 2020 U.S. Census, Lewis and Clark County is the 6<sup>th</sup> most populous county in Montana with a total population of 70,973. The U.S. Census Bureau reported the County experienced a 11.95% increase in population since the 2010 census, with 47% of the population residing in the Cities of Helena and East Helena. Trends show that the City of Helena has seen consistent population growth since 1980. Specific demographic variables for the County are provided in Table H-1 below.

**Table H-1 Population Trends in Lewis and Clark County 1980-2020**

Incorporated Community	1980	1990	1980-1990 Change	2000	1990-2000 Change	2010	2000-2010 Change	2020	2010-2020 Change
City of Helena	23,938	24,569	2.6%	25,780	4.9%	28,190	9.3%	32,091	13.8%
City of East Helena	1,647	1,538	-6.6%	1,642	6.8%	1,984	20.8%	1,944	-2.0%
Lewis and Clark County	43,039	47,495	10.4%	55,716	17.3%	63,395	13.8%	70,973	11.9%

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

## H.2.3 Demographics

The 2016-2020 American Community Survey (ACS) reports demographic estimates for Lewis and Clark County, summarized in the table below Table H-2.

**Table H-2 Demographic Estimates for Lewis and Clark County (2016-2020 ACS)**

Characteristic	Lewis and Clark County	State of Montana
Percentage of persons below 150% poverty estimate	17.0%	24.1%
Unemployment Rate estimate	4.0%	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	25.0%	21.4%
Percentage of persons with no high school diploma (age 25+) estimate	4.0%	7.5%
Percentage uninsured in the total civilian noninstitutionalized population estimate	5.0%	9.6%
Percentage of persons aged 65 and older estimate	19.0%	22.1%
Percentage of persons aged 17 and younger estimate	22.0%	21.3%
Percentage of civilian noninstitutionalized population with a disability estimate	13.0%	15.6%
Percentage of single-parent households with children under 18 estimate	6.0%	3.9%
Percentage of persons (age 5+) who speak English "less than well" estimate	0.0%	0.3%

Characteristic	Lewis and Clark County	State of Montana
Minority (other than white non-Hispanic) estimate	9.0%	14.6%
Percentage of housing in structures with 10 or more units estimate	5.0%	3.3%
Percentage of mobile homes estimate	9.0%	13.1%
Percentage of occupied housing units with more people than rooms estimate	1.0%	2.1%
Percentage of households with no vehicle available estimate	5.0%	4.9%
Percentage of persons in group quarters estimate	3.0%	2.8%
Percentage Female estimate	50.5%	49.7%
Median Age estimate	41.3	40.1
Median Gross Rent estimate	\$863	\$836
Median House Value estimate	\$263,900	\$244,900
Percent Unoccupied Housing Units estimate	10.3%	15.3%

Source: ACS 2016-2020

## H.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 Lewis and Clark County as “Relatively Low”, with a score of 32.3. This is higher than 82.1% of counties within Montana. Refer to HIRA for more information on social vulnerability. Demographic factors that can influence the social vulnerability rating are displayed in Table 3. The ACS reports that just under 20% is below the 150% poverty level. Additionally, 25% of the population in Lewis and Clark County experiences the housing cost-burden, which is slightly higher than the State of Montana average. Over 20% of the population is aged 17 and younger, indicating that many individuals are still dependent on a caretaker, and 6% of families are single-parent households with children under 18, which is nearly 2% higher than the Montana average. Finally, 5% of houses are structures with 10 or more units, which is in line with the State of Montana average.

The CPT noted that Access and Functional Needs populations in the County are particularly vulnerable to many of hazards, particularly earthquake, flood, and wildfire. There are limited resources and local capability to provide shelter or long-term support to those with special needs. This is an ongoing challenge for local organizations that support these residents.

## H.2.5 Development Trends

Lewis and Clark County has seen steady growth in the Helena valley. The Helena valley has seen a high rate of development in the north valley, which includes areas of development in the North Hills which is an area that is susceptible to wildfire. There has been an increased interest in development of the downtown Lincoln area to increase tourism. This is also an area that is susceptible to wildfire and flooding. There has been an increase in commercial investment in the Wolf Creek/Craig area to attract tourism specific to fishing.

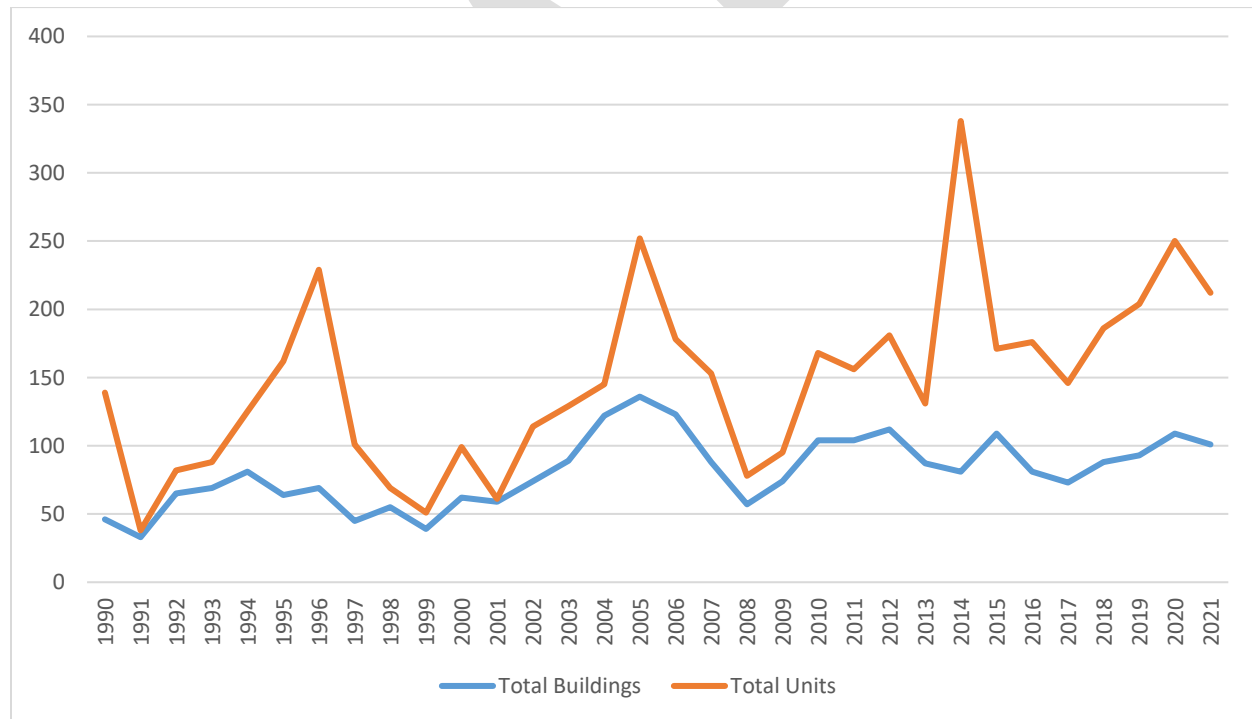
Augusta has not seen the level of growth the other areas of Lewis and Clark County has experienced, however, a renewed interest in the commercial possibility has been explored.

The County created a Growth Policy in 2015, to address growth in the Helena Valley which accounts for 95% of the County's population, but less than 10% of the County's land area. Several issues prompted the growth policy including water availability, wastewater management, roads, fire protection, and flooding.

Development in the Special Flood Hazard Area (SFHA) has been relatively low with minimal new structures proposed for development in the 100-yr floodplain, however, existing residential structures in the SFHA remains high. There has been an increase in commercial structures in the 100-yr floodplain. The County anticipates an increase in development in the 500-yr floodplain. Additionally, the County expects there will be an increase in proposed development in the wildland urban interface.

The U.S. Census Bureau Building Permit Survey provides information and local statistics on new privately-owned residential construction. Figure H-2 below displays the new privately owned housing unit authorizations by year in Lewis and Clark County. This data indicates that there was a significant increase in unit authorizations in 2014 followed by a decline in the 2015 and gradual trend of increasing authorizations since 2017. 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 H-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)

## H.2.6 Economy

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

**Table H-3 Lewis and Clark County Economic Profile**

Economic Characteristics	Lewis and Clark County
Families Below Poverty Level	6.5%
Individuals Below Poverty Level	9.5%
Median Home Value	\$263,900
Median Household Income	\$66,062
Per Capita Income	\$36,485
Population > 16 Years Old in Labor Force	66.8%
Population Employed	64.0%

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

Table H-4 below shows the breakdown of employment in Lewis and Clark 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 quarter of the total employment in the County with 8,264 people. This is followed by “Public administration” with 6,017 people. A close third is the “Retail Trade” Industry with 3,835 of the population in Lewis and Clark County employed.

**Table H-4 Lewis and Clark County Occupation by Industry Profile**

Industry	Population Employed	Percent of Labor Force
Agriculture, forestry, fishing and hunting, and mining	1,054	3.0%
Construction	2,212	6.2%
Manufacturing	1,225	3.5%
Wholesale trade	278	0.8%
Retail trade	3,835	10.8%
Transportation and warehousing, and utilities	894	2.5%
Information	589	1.7%
Finance and insurance, and real estate and rental and leasing	2,736	7.7%
Professional, scientific, and management, and administrative and waste management services	3,140	8.8%
Educational services, and health care and social assistance	8,264	23.3%
Arts, entertainment, and recreation, and accommodation and food services	3,472	9.8%
Other services, except public administration	1,784	5.0%
Public administration	6,017	16.9%

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

## H.3 Hazard Identification and Risk Assessment

### H.3.1 Identified Hazards

The CPT reviewed significant hazards for inclusion in the hazard mitigation plan. Several changes were made from the 2017 Lewis and Clark County Hazard Mitigation Plan to be consistent with the 2023 Montana Western Region Hazard Mitigation Plan. The 2017 Lewis and Clark County Hazard Mitigation Plan profiled the following hazards:

- Wildfire
- Flooding
- Earthquake
- Severe Weather and Drought
- Hazardous Materials Incidents
- Communicable Disease
- Dam Failure
- Terrorism, Violence, Civil Unrest

Each of these hazards is still profiled, however some changes in the naming and organization of them have been done. Severe Weather is now profiled as Severe Summer Weather and Severe Winter Weather, with Drought receiving a separate stand-alone profile. Terrorism, Violence, Civil Unrest is now referred to as Human Conflict. Additionally in this plan update, Avalanche, Cyber-Attack, Landslide, Tornadoes & Windstorms, Transportation Accidents, and Volcanic Ash were all added.

Table H-5 provides a summary of the overall hazard significance for the hazards evaluated in this plan, showing variability by jurisdiction. More details on hazards can be found in Chapter 4 of the base plan.

**Table H-5 Lewis and Clark County Overall Hazard Significance by Hazard and Jurisdiction\***

Hazard	Lewis and Clark County	City of Helena	City of East Helena
Avalanche	Low	Low	Low
Communicable Disease	Medium	Medium	Medium
Cyber-Attack	Medium	Medium	Medium
Dam Failure	High	High	High
Drought	High	High	High
Earthquake	Medium	High	Medium
Flooding	High	High	High
Hazardous Materials Incident	Medium	Medium	Medium
Landslide	Medium	Medium	Medium
Severe Summer Weather	High	High	High
Severe Winter Weather	Low	Low	Low
Human Conflict	Medium	High	Medium
Tornadoes & Windstorms	Medium	Medium	Medium
Transportation Accidents	Medium	High	Medium
Volcanic Ash	Low	Low	Low

Hazard	Lewis and Clark County	City of Helena	City of East Helena
Wildfire	High	High	High

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

Geographic Extent	Probability of Future Occurrences
<p><b>Negligible:</b> Less than 10 percent of planning area or isolated single-point occurrences</p> <p><b>Limited:</b> 10 to 25 percent of the planning area or limited single-point occurrences</p> <p><b>Significant:</b> 25 to 75 percent of planning area or frequent single-point occurrences</p> <p><b>Extensive:</b> 75 to 100 percent of planning area or consistent single-point occurrences</p> <p><b>Potential Magnitude/Severity</b></p> <p><b>Negligible:</b> 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><b>Limited:</b> 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><b>Critical:</b> 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 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.</p> <p><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.</p>	<p><b>Unlikely:</b> Less than 1 percent probability of occurrence in the next year or has a recurrence interval of greater than every 100 years.</p> <p><b>Occasional:</b> 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><b>Likely:</b> Between 10 and 90 percent probability of occurrence in the next year, or has a recurrence interval of 1 to 10 years</p> <p><b>Highly Likely:</b> 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><b>Low:</b> 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><b>Medium:</b> 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 utilized for hazards with a high impact rating but an extremely low occurrence rating.</p> <p><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.</p>

### H.3.2 Building Inventory and Assets

People, property, critical facilities/infrastructure, and other important assets in Lewis and Clark County are exposed to the hazards identified in this plan. Table H-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 H-6 Lewis and Clark County Building Inventory and Value by Jurisdiction**

Jurisdiction	Improved Parcels	Improved Value	Content Value	Total Value
Helena	10,211	\$3,132,354,389	\$1,831,579,331	\$4,963,933,720
East Helena	794	\$114,710,925	\$65,889,741	\$180,600,666
Lewis and Clark County	15,453	\$3,063,639,524	\$1,650,082,414	\$4,713,721,938
<b>Total</b>	<b>26,458</b>	<b>\$6,310,704,838</b>	<b>\$3,547,551,486</b>	<b>\$9,858,256,324</b>

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

Total building exposure with contents within Lewis and Clark County based on an analysis of improved parcels is nearly \$9.8 billion, with over \$6.3 billion in improved value properties and \$3.5 billion of contents. Of the nearly \$9.8 billion of total building exposure in Lewis and Clark County, the City of Helena accounts for \$3.1 billion in improved values of this total number. Residential properties represent the greatest portion of structures in the County, accounting for over \$5.5 billion of the nearly \$6.3 billion improved property value. This is shown in Table H-7 below.

**Table H-7 Lewis and Clark County Total Exposure by Jurisdiction and Property Type**

Jurisdiction	Property Type	Improved Parcels	Improved Value	Content Value	Total Value
<b>Helena</b>	Commercial	77	\$38,888,821	\$38,888,821	\$77,777,642
	Exempt	263	\$486,228,025	\$486,228,025	\$972,456,050
	Industrial	1	\$2,547,700	\$3,821,550	\$6,369,250
	Residential	9,860	\$2,604,097,816	\$1,302,048,908	\$3,906,146,724
	Vacant	10	\$592,027	\$592,027	\$1,184,054
	<b>Total</b>	<b>10,211</b>	<b>\$3,132,354,389</b>	<b>\$1,831,579,331</b>	<b>\$4,963,933,720</b>
<b>East Helena</b>	Commercial	4	\$85,820	\$85,820	\$171,640
	Exempt	18	\$4,920,076	\$4,920,076	\$9,840,152
	Industrial	3	\$5,998,950	\$8,998,425	\$14,997,375
	Residential	768	\$103,641,318	\$51,820,659	\$155,461,977
	Vacant	1	\$64,761	\$64,761	\$129,522
	<b>Total</b>	<b>794</b>	<b>\$114,710,925</b>	<b>\$65,889,741</b>	<b>\$180,600,666</b>
<b>Lewis and Clark County</b>	Agriculture	672	\$150,169,318	\$150,169,318	\$300,338,636
	Commercial	18	\$13,137,250	\$13,137,250	\$26,274,500
	Exempt	127	\$49,812,975	\$49,812,975	\$99,625,950
	Industrial	9	\$10,576,720	\$15,865,080	\$26,441,800
	Mining	2	\$185,420	\$185,420	\$370,840
	Residential	14,562	\$2,837,690,941	\$1,418,845,471	\$4,256,536,412
	Vacant	63	\$2,066,900	\$2,066,900	\$4,133,800
	<b>Total</b>	<b>15,453</b>	<b>\$3,063,639,524</b>	<b>\$1,650,082,414</b>	<b>\$4,713,721,938</b>
	<b>Grand Total</b>	<b>26,458</b>	<b>\$6,310,704,838</b>	<b>\$3,547,551,486</b>	<b>\$9,858,256,324</b>

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

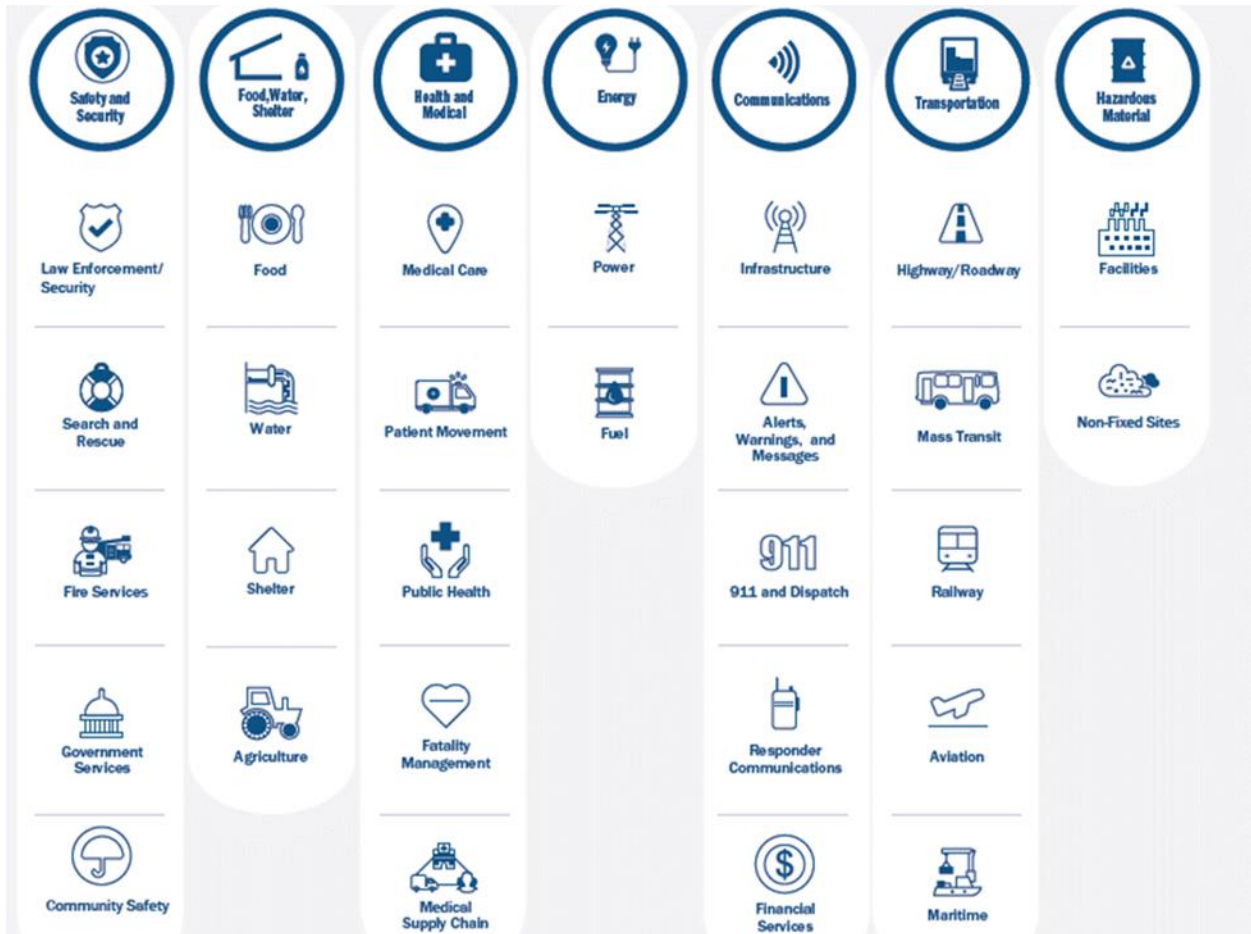
### **Critical Facilities, Infrastructure, and Other Important Community Assets**

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 failure, flood, and wildfire.

FEMA organizes critical facilities into seven lifeline categories as shown in Figure H-3. 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 H-3 FEMA Lifeline Categories**



Source: FEMA

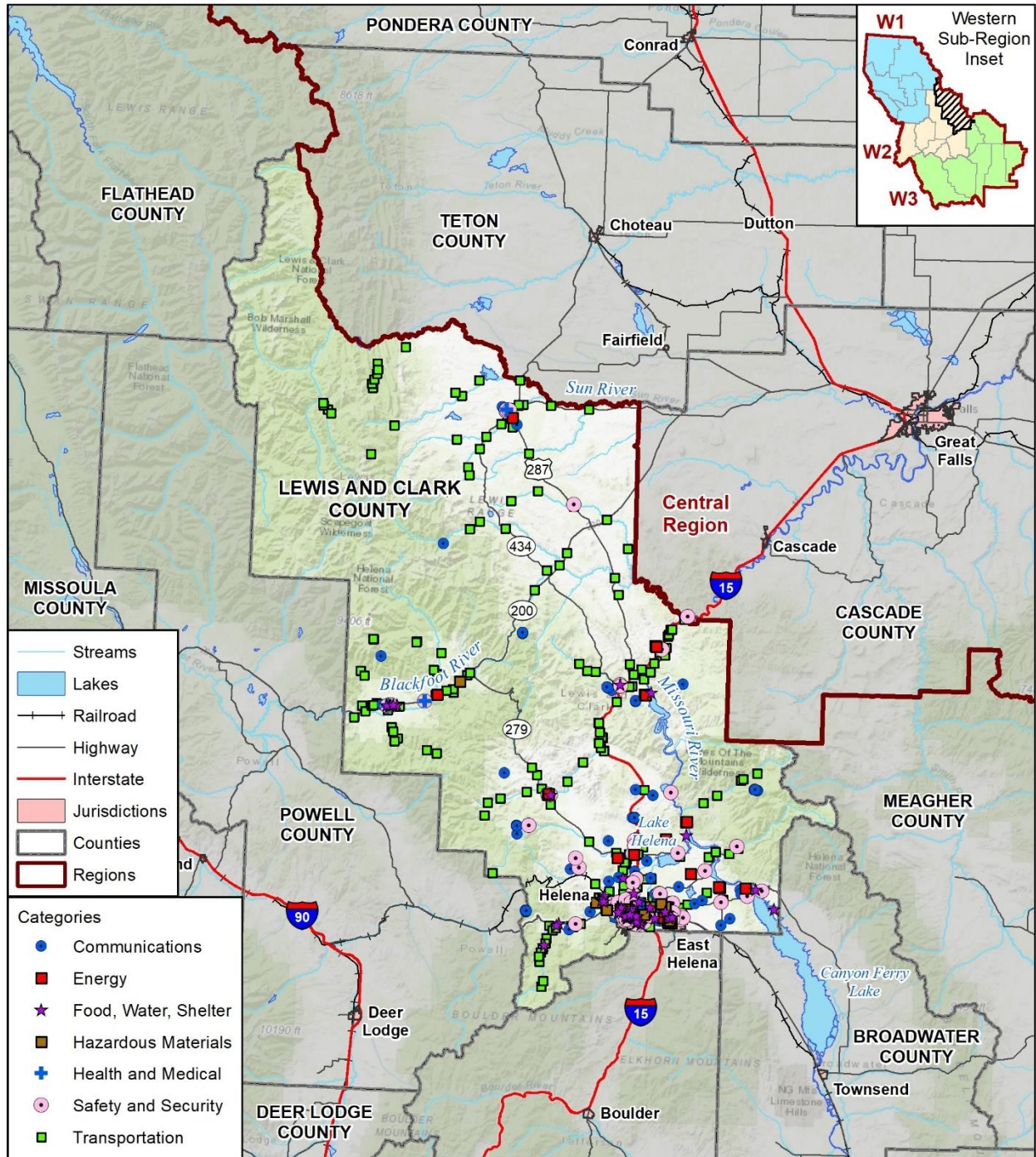
Table H-8 below summarizes the number of critical facilities by jurisdiction. Figure H-4 through Figure H-6 display the location of critical facilities by FEMA Lifeline in Lewis and Clark County, the City of Helena, and the City of East Helena.

**Table H-8 Lewis and Clark County Critical Facilities by Jurisdiction**

Jurisdiction	Communications	Energy	Food, Water, Shelter	Hazardous Materials	Health and Medical	Safety and Security	Transportation	Total
City of Helena	78	6	21	3	1	60	16	<b>185</b>
East Helena	2	2	2	3	-	5	3	<b>17</b>
Lewis and Clark County	104	24	25	6	4	48	206	<b>417</b>
<b>Total</b>	<b>184</b>	<b>32</b>	<b>48</b>	<b>12</b>	<b>5</b>	<b>113</b>	<b>225</b>	<b>619</b>

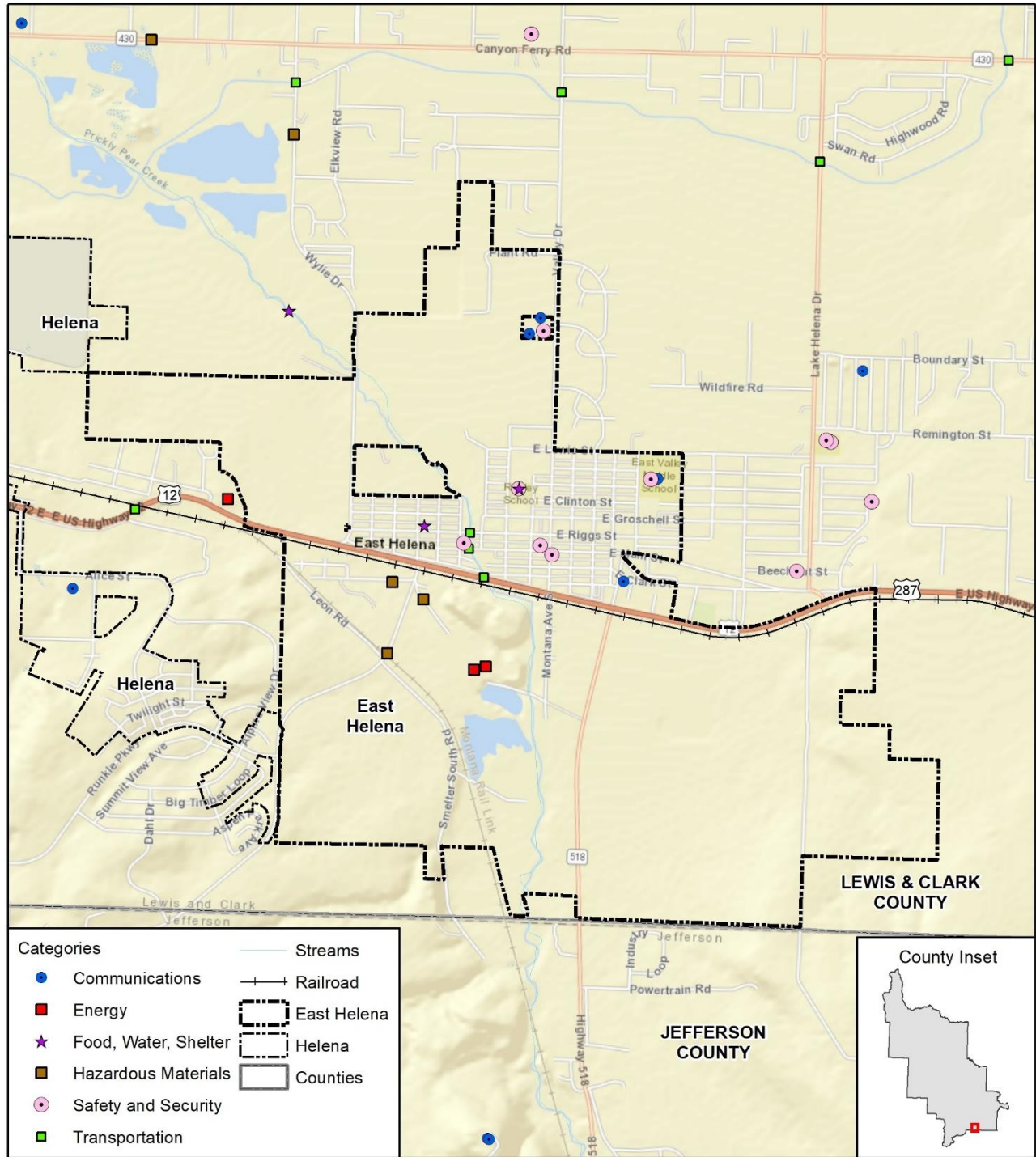
Source: HIFLD 2022, Montana DES, National Bridge Inventory

Figure H-4 Lewis and Clark County Critical Facilities



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

**Figure H-5 City of East Helena Critical Facilities**

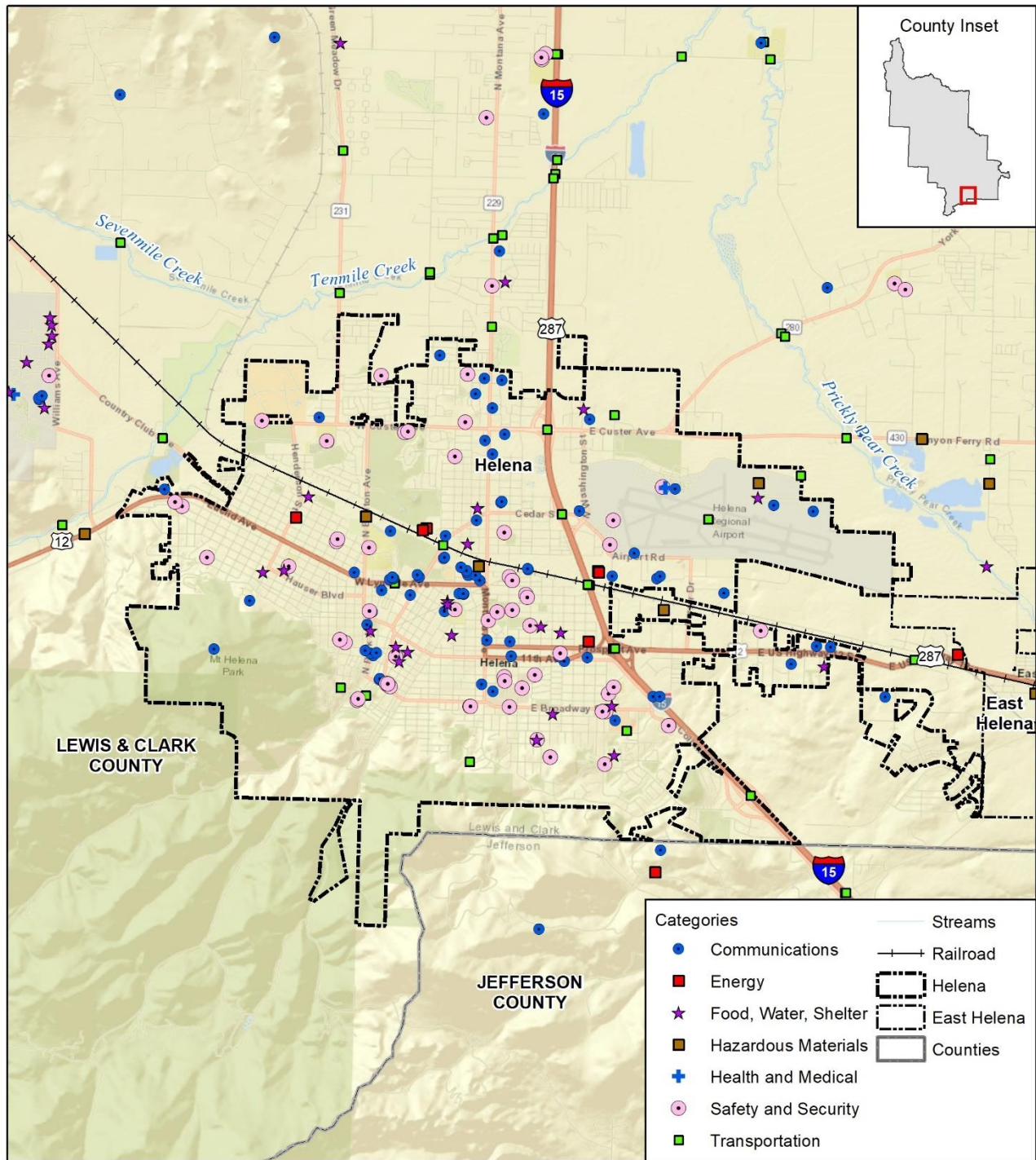


Map compiled 10/2022;  
intended for planning purposes only.  
Data Source: Montana State Library,  
Montana DES, NIB, HIFLD

0 1 2 Miles



Figure H-6 City of Helena Critical Facilities



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

0 1 2 Miles



### Natural, Historic, and Cultural Assets

Assessing the vulnerability of Lewis and Clark 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 H-9 below lists the properties that are identified as having cultural and historic significance in Lewis and Clark County as recorded by the National Register of Historic Places.

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

Property Name	City/Town	Location	Date Listed
Algeria Shrine Temple	Helena	Neill and Park Aves.	4/14/88
Alice Creek Historic District	Lincoln	USDA Forest Service, Helena National Forest	6/6/07
Appleton House No. 13	Helena	2200 Cannon	10/25/82
Appleton House No. 9	Helena	1999 Euclid Ave.	11/7/95
Armitage, Joshua and Martha, House	Helena	1117 East Broadway	5/10/05
Benton Avenue Cemetery	Helena	1800 N. Benton Ave.	7/24/03
Broadwater, Charles A., House	Helena	1104 Williams St.	8/27/08
Cathedral of Saint Helena	Helena	530 N. Ewing St.	4/30/80
Childs Carriage House	Helena	318 E. Sixth Ave.	11/7/95
Crum, William C., House	Helena	535 5th Ave.	5/30/97
Crump-Howard House	Helena	1003 9th Ave.	4/24/17
Cuthbert, D. H., House	Helena	602 N. Ewing	5/4/95
Dearborn River High Bridge	Augusta	15 mi. SW of Augusta on Bean Lake Rd.	12/18/03
Donovan-Mayer House	Helena	46 S. Howie St.	12/28/05

Property Name	City/Town	Location	Date Listed
Dorsey Grocery and Residence	Helena	401 N. Hoback St.	4/24/17
Eagle's Site	Helena	Address Restricted	10/7/93
Evans, Christmas Gift, House	Helena	404 N. Benton Ave.	4/16/80
F.M. Mack General Store	Augusta	210 Main St.	4/12/21
Fisk, Robert and Elizabeth, House	Helena	319 N. Rodney St.	1/17/07
Forestvale Cemetery	Helena	490 Forestvale Rd.	2/21/90
Former Montana Executive Mansion	Helena	6th Ave. and Ewing St.	4/28/70
Fort Harrison Veterans' Hospital Historic District	Helena	2 mi. NW. of Helena	12/20/16
Gehring Ranch	Helena	5488 Lincoln Rd. W.	8/28/17
Gilman State Bank	Gilman	Main St.	12/1/83
Gilpatrick-Root House	Helena	604 Dearborn Ave.	8/10/05
Haight-Bridgwater House	Helena	502 Peosta	3/14/14
Hauser Mansion	Helena	720 Madison Ave.	2/12/79
Helena Historic District	Helena	Irregular pattern from Hauser Blvd. to Acropolis and between Garfield and Rodney Sts.	6/2/72
Helena Historic District (Boundary Increase II)	Helena	Bounded by E. Sixth, N. Davis, Broadway and N. Rodney Sts.	10/7/93
Helena Historic District (Boundary Increase)	Helena	Roughly bounded by Cruse, Neill and Park Aves. and Lawrence	6/14/90
Helena Railroad Depot Historic District	Helena	Roughly bounded by Railroad/Helena Aves., Gallatin St., N. Sanders St. and N. Harris St.	12/04
Helena South-Central Historic District	Helena	Roughly bounded by Broadway, S. Davis St., city limits, and S. Warren St.	7/28/86
Helena West Main Street Historic District	Helena	500--600 blocks of W. Main St.	2/22/96
Hilger, Joe and Carrie, Ranch	Helena	Sleeping Giant Ranch, 20 mi. N of Helena	8/31/01
Home of Peace	Helena	Alexander St. bet. Brady St. and Custer Ave.	5/24/06
House of the Good Shepherd Historic District	Helena	Area surrounding jct. of 9th Ave. and N. Hoback St.	12/23/93
Huseby, John H., House	Helena	511 E. 6th Ave.	12/26/12
Kemna, Herman, House	Helena	635 First St.	8/18/92



Property Name	City/Town	Location	Date Listed
Kleinschmidt, T. H., House	Helena	1823 Highland Ave.	8/6/80
Kluge House	Helena	540 W. Main St.	4/28/70
Lewis and Clark County Hospital Historic District	Helena	3404 Cooney Dr.	11/19/02
Lincoln Community Hall	Lincoln	MT 200	1/22/87
Lincoln Lodge	Lincoln	Stemple Pass Rd.	10/23/86
Lyman-Neel Residence	Helena	309 N. Rodney St.	3/29/19
Mann Gulch Wildfire Historic District	Helena	Mann Gulch, tributary of the Missouri River	5/19/99
Methodist-Episcopal Church of Marysville	Marysville	3rd St.	1/5/84
Missouri River Bridge	Wolf Creek	Milepost 11 on Old US 91	1/4/10
Montana Aeronautics Commission Operations Historic District	Helena	2630 Airport Rd.	7/31/17
Montana State Arsenal, Armory and Drill Hall	Helena	1100 North Main	2/14/02
Montana State Capitol Building	Helena	Central Ave. and Main St.	2/17/81
Montana State Capitol Campus Historic District	Helena	Bounded by E. Broadway & N. Carson Sts., E. 8th & N. Montana Aves.	2/23/16
Montana State Fairgrounds Racetrack	Helena	98 W. Custer Ave.	12/20/06
Montana Veterans and Pioneers Memorial Building	Helena	225 North Roberts	12/15/04
Morelli Bridge	Helena	Head of Reeder's Alley on Howie St.	12/8/22
Mount Helena Historic District	Helena	Promontory roughly bounded by LeGrande Canon Blvd., Last Chance and Grizzly Gulches, and Helena National Forest boundary	1/9/97
Murphy, John T., House	Helena	418 N. Benton Ave.	8/1/84
Olsen House	Helena	516 N. Park	3/22/91
Pope, Francis and Hannah, House	Helena	327 N. Rodney	6/27/07
Porter Flats Apartments	Helena	335 N. Ewing St.	1/14/93
Power, C. B., Bungalow	Wolf Creek	1.2 mi. N of I-15 and 1 mi. W of US 287	4/7/95

Property Name	City/Town	Location	Date Listed
Quinn's Garage	Augusta	206 Main St.	3/27/20
Regan, Thomas P., Cabin	Helena	McDonald Pass	1/8/03
Shaw's Best Factory	Helena	426 ½ Harrison Ave.	6/25/21
Sheep Creek Bridge	Wolf Creek	Milepost 5 on Recreation Rd.	4/28/11
Silver City Cemetery	Silver City	Approximately 12 miles north-northwest of Helena, MT	4/23/20
Silver Creek School	Helena	N of Helena on Sierra Rd.	8/11/80
Silver King Ranch	Lincoln	Roughly 15 mi. NE of Lincoln in Helena NF	3/10/92
Silverman, Morris, House	Helena	412 N. Rodney St.	6/14/82
Spalding-Gunn House	Helena	433 Clarke St.	12/27/06
Stearns Hall	Wolf Creek	2 mi. N of jct. of MT 200 and Hwy. 434	4/7/95
Stedman Foundry and Machine Company	Helena	2650 Euclid Ave.	4/4/96
Summit Lodge	Helena	30 mi. NW of Helena in Helena National Forest	5/17/90
Temple Emanu-El	Helena	515 N. Ewing St.	7/11/02
Unemployment Compensation Commission Building	Helena	1315 Lockey Ave.	5/18/12
Wassweiler Hotel and Bath Houses	Helena	W of Helena on U.S. 12	8/1/78
Western Clay Manufacturing Company	Helena	2915 Country Club Rd.	5/9/85
Western Life Insurance Company Helena Branch Office	Helena	600 N. Park Ave.	9/10/12
Wick-Seiler House	Helena	729 11th Ave.	8/2/00
Williams Street Bridge	Helena	Williams St. crossing Ten Mile Creek, N of jct. of Williams St. and Broadwater Ave.	11/29/06
Wolf Creek Hotel	Wolf Creek	Jct. of Main St. and Bissonmett St.	11/7/97
Young Women's Christian Association (Independent)	Helena	501 N. Park St.	12/27/84

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. Lewis and Clark County encompasses Tenmile Creek, Prickly Pear Creek, Lake Helena, Willow Creek Reservoir, the Missouri River, portions of Canyon Ferry Lake, and several other creeks and river.

### **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.

## **H.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.

- Avalanche
- 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

### **H.4.1 Avalanche**

Avalanche is a low significance hazard for Lewis and Clark County. To distinguish between counties where avalanches have not occurred and those that have no possibility of avalanche occurrence, FEMA created a control table overlaying avalanche forecast zones and counties which have experienced losses due to credible avalanche events. Based on this analysis, Lewis and Clark County was determined to be an area where avalanches have no possibility of occurrence.

Refer to Chapter 4 for a discussion of the avalanche risk relative to Broadwater County and the Western Region.

### **H.4.2 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 Helena, 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 Western Region.

Refer to Chapter 4 for a discussion of the communicable disease risk relative to Lewis and Clark County and the Western Region.

### H.4.3 Cyber-Attack

All servers, networks, and users are vulnerable to cyber-attacks in Western Montana. Lewis and Clark County is ranked as medium, along with most other counties in the Region. There have been no recorded cyber-attack events occurring in the county or its jurisdictions, however, minor cyber-attacks such as phishing emails often go unreported. While all networks and servers are equally vulnerable to cyber, the City of Helena has a greater population and therefore more people exposed to a cyber-attack event.

Refer to Chapter 4 for a discussion of the cyber-attack risk relative to Lewis and Clark County and the Western Region.

### H.4.4 Dam Failure

Dam failure in Lewis and Clark County is ranked as medium. There are 16 high hazard dams and two significant hazard dams located in Lewis and Clark County. Table H-10 below identifies the dams and the nearest downstream cities which could potentially be impacted in a dam failure or incident. Refer to Chapter 4 for a discussion of the dam failure risk relative to Lewis and Clark County and the Western Region.

**Table H-10 Dams in Lewis and Clark County**

Hazard Class	Dam Name	Owner	River	Nearest Downstream City	Distance to Nearest Downstream City (Miles)	Emergency Action Plans (EAP)
High	Willow Creek Bor Mt - Dike 4	Reclamation	Willow Creek	Willow Creek	60	Yes
High	Willow Creek Bor Mt - Dike 2	Reclamation	Willow Creek	Willow Creek	60	Yes
High	Willow Creek Bor Mt - Dike 3	Reclamation	Willow Creek	Willow Creek	0	Yes
High	Willow Creek Bor Mt - Dike 5	Reclamation	Sun River-Tr	Sun River-Tr	60	Yes
High	Willow Creek Bor Mt	Reclamation	Willow Creek	Willow Creek	60	Yes
High	Holter Dam	NorthWestern Energy	Missouri River	Missouri River	8	Yes
High	Hauser Dam	NorthWestern Energy	Missouri River	Missouri River	32	Yes
High	Scott Reservoir	City Of Helena	Ruby Creek	Ruby Creek	4	Yes
High	Nilan East Dam	State Water Projects	Tr-Elk Creek	Tr-Elk Creek	7	Yes
High	Nilan North Dam	State Water Projects	Tr-Willow Creek	Tr-Willow Creek	50	Yes
High	Hinman Dam	Roger Hinman	Beartooth Creek	Beartooth Creek	0	Not Required
High	Three Mile Reservoir (L.&C.)	Debbie Wright	Three Mile Creek	Three Mile Creek	7	Yes

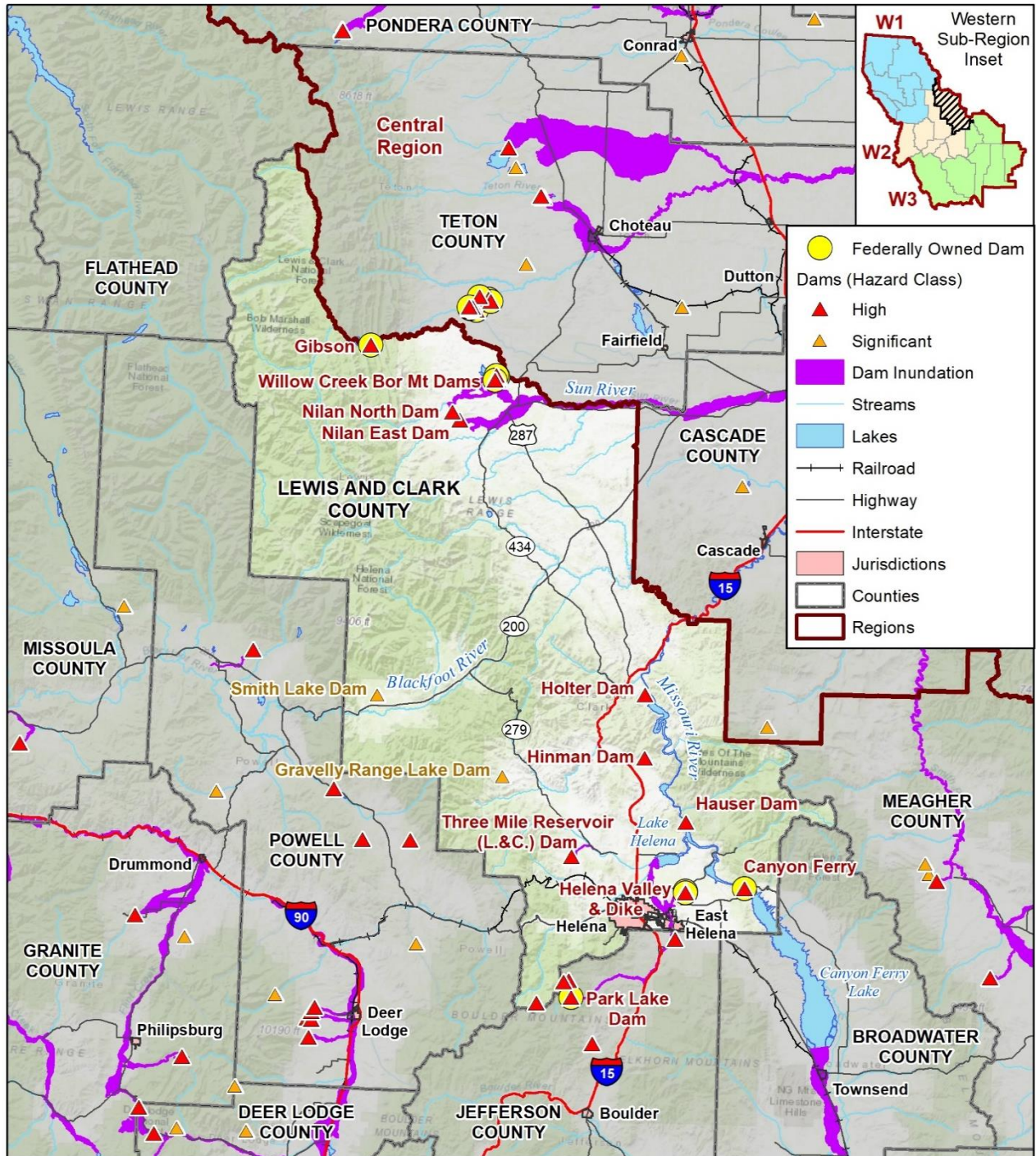
Hazard Class	Dam Name	Owner	River	Nearest Downstream City	Distance to Nearest Downstream City (Miles)	Emergency Action Plans (EAP)
High	Chessman Main Dam	City Of Helena	Beaver Creek	Beaver Creek	3	Yes
High	Helena Valley	Reclamation	Tenmile Creek Tr	Tenmile Creek Tr	6	Yes
High	Helena Valley Dike	Reclamation			8	Yes
High	Canyon Ferry	Reclamation	Missouri River	Missouri River	1	Yes
Significant	Gravelly Range Lake	Ed Grady	Tr-Cottonwood Creek	Tr-Cottonwood Creek	8	Not Required
Significant	Smith Lake	James R Hess	Tr-Keep Cool Creek	Tr-Keep Cool Creek	30	Not Required

Source: National Inventory of Dams (NID)

With 16 high and two significant hazard dams in the planning area, dam failure flooding could result in significant property losses and loss to human life. Figure H-7 displays the location of dams in Lewis and Clark County. Table H-11 summarizes the estimated number of improved parcels, building values, and people within inundation zones in Lewis and Clark County by property type. Residential property types represent the greatest total number of improved parcels and most property value, with approximately \$125.6 million in total property value at risk.

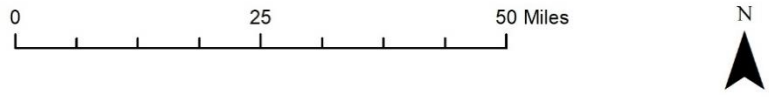
Additionally, the Park Lake High Hazard dam in Jefferson County poses a threat to Lewis and Clark County from Inundation. Also, Canyon Ferry, Helena Valley, and Helena Valley Dike dams within Lewis and Clark County are Federally owned and inundation was not provided for these dams which could have a large impact along the Missouri River downstream from them.

Figure H-7 Lewis and Clark County Dam Inundation



- Federally Owned Dam
- Dams (Hazard Class)**
- ▲ High
- ▲ Significant
- Dam Inundation
- Streams
- Lakes
- +— Railroad
- Highway
- Interstate
- Jurisdictions
- Counties
- Regions

Map compiled 10/2022;  
intended for planning purposes only.  
Data Source: Montana State Library,  
NID, MT DNRC Dam Safety Program



**Table H-11 Lewis and Clark County Parcels at Risk to Dam Inundation by Property Type**

Jurisdiction	Property Type	Improved Parcels	Improved Value	Content Value	Total Value	Population
East Helena	Commercial	3	\$61,590	\$61,590	\$123,180	
	Exempt	6	\$967,804	\$967,804	\$1,935,608	
	Residential	174	\$20,371,569	\$10,185,785	\$30,557,354	409
	Vacant	1	\$64,761	\$64,761	\$129,522	
Lewis and Clark County	Agricultural	31	\$7,072,570	\$7,072,570	\$14,145,140	
	Commercial	2	\$1,141,350	\$1,141,350	\$2,282,700	
	Exempt	17	\$4,440,987	\$4,440,987	\$8,881,974	
	Residential	495	\$63,423,773	\$31,711,887	\$95,135,660	1,163
	Vacant	1	\$3,630	\$3,630	\$7,260	
	<b>Total</b>	<b>730</b>	<b>\$97,548,034</b>	<b>\$55,650,363</b>	<b>\$153,198,397</b>	<b>1,572</b>

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

Table H-12 below summarized the critical facilities at risk to dam inundation in the County of Lewis and Clark as well as its jurisdictions by facility type. There was no recorded critical facility infrastructure at risk to dam inundation in the City of Helena.

**Table H-12 Lewis and Clark 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
East Helena	-	-	1	-	-	2	3	6
Lewis and Clark County	3	1	1	2	1	7	15	30
<b>Total</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>9</b>	<b>18</b>	<b>36</b>

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

#### H.4.5 Drought

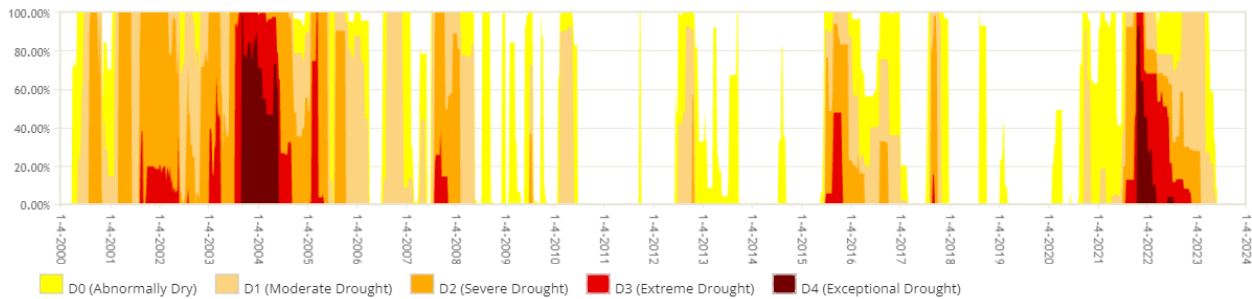
Drought was rated as a hazard of high concern in Lewis and Clark County. Lewis and Clark County has experienced 16 USDA drought declarations from 2012-2021, which is slightly more than the average county in the Western Region. These drought declarations occurred in 2015, 2016, 2017, 2018 and 2021.

The Drought Impact Reporter recorded 19 drought impact reports in Lewis and Clark County between 2000-2023. The HMPC noted that drought conditions can be felt throughout the County. Impacts to the County include seasonal water restrictions and the County have continued to look for direct and indirect funding sources.

The U.S. Drought Monitor (USDM) is a national data set released weekly, showing the severity of drought in locations across the nation. Figure H-8 displays a time series showing the severity of drought in Lewis and Clark County between 2000 and 2023. The figure indicates that the county experienced significant drought (D4) in the years 2002-2005, 2007, 2015, and 2021-2022.

Refer to Chapter 4 for a discussion of the drought risk relative to Lewis and Clark County and the Western Region.

**Figure H-8 USDM Drought Timeseries for Lewis and Clark County**



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

#### H.4.6 Earthquake

There are several known fault systems throughout the State of Montana, mostly concentrated in the Western Region. The potential severity of shaking and impacts to casualties and damage is not uniform across the Western Region and is likely to have a greater impact on counties in the northern portion of the region. While most of Lewis and Clark County is likely to experience low to moderate losses from an earthquake event, significant losses are likely near the City of Helena and City of East Helena. The earthquake hazard in Lewis and Clark County is therefore ranked as medium overall significance.

According to a Hazus probabilistic loss analysis conducted for a scenario with 2% in 50 years recurrence, Lewis and Clark County has low to moderate economic losses when compared to the rest of the counties in the Western Region, with moderate losses predicted to occur in the City of East Helena and high losses in the City of Helena. The probabilistic scenario estimated \$524,558,000 in total economic losses (11.6% of total losses in the region). While both jurisdictions in the County have adopted building codes, the City of Helena has a high-risk rating due to the concentration of people and infrastructure relative to the rest of the County. Older and historic buildings will be more vulnerable to earthquake shaking.

Refer to Chapter 4 for a discussion of the earthquake risk relative to Lewis and Clark County and the Western Region.

#### H.4.7 Flooding

Table H-13 below summarizes the building counts and improved value of parcels in the County, broken out by jurisdiction, 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. Lewis and Clark has partial NFHL data that was used and for the portions without NFHL data Hazus was used as the data source.

Table H-13 also indicates the estimated flood losses in each applicable jurisdiction in Lewis and Clark County, Lewistown and the unincorporated areas having the greatest numbers of properties at risk and highest estimated losses. The majority of the properties are residential. There is a total value of \$329 million in improved values and \$123 million in estimated losses to residential properties. This is the largest amount of all property types.



**Table H-13 Lewis and Clark County Parcels at Risk to 1% Flood Hazard by Jurisdiction**

Jurisdiction	Property Type	Improved Parcels	Improved Value	Content Value	Total Value	Estimated Loss	Population
East Helena	Exempt	2	\$271,374	\$271,374	\$542,748	\$135,687	
	Residential	71	\$7,032,764	\$3,516,382	\$10,549,146	\$2,637,287	167
	Vacant	1	\$64,761	\$64,761	\$129,522	\$32,381	
Helena	Commercial	5	\$9,340,871	\$9,340,871	\$18,681,742	\$4,670,436	
	Exempt	4	\$3,150,336	\$3,150,336	\$6,300,672	\$1,575,168	
	Residential	103	\$117,642,131	\$58,821,066	\$176,463,197	\$44,115,799	242
Lewis and Clark County	Agricultural	66	\$18,294,090	\$18,294,090	\$36,588,180	\$9,147,045	
	Commercial	1	\$577,020	\$577,020	\$1,154,040	\$288,510	
	Exempt	20	\$7,839,122	\$7,839,122	\$15,678,244	\$3,919,561	
	Industrial	1	\$680,280	\$1,020,420	\$1,700,700	\$425,175	
	Residential	1,358	\$204,562,192	\$102,281,096	\$306,843,288	\$76,710,822	3,191
	Vacant	4	\$124,560	\$124,560	\$249,120	\$62,280	
	<b>Total</b>	<b>1,636</b>	<b>\$369,579,501</b>	<b>\$205,301,098</b>	<b>\$574,880,599</b>	<b>\$143,720,150</b>	<b>3,600</b>

Sources: DNRC, Hazus, FEMA NFHL

Lewis and Clark County has a total of 118 critical facilities located in the 1% annual chance floodplain. 92 are transportation lifelines, ten are communication facilities, seven are energy facilities, seven are safety and security lifelines and two are food, water and shelter facilities. Lewis and Clark County has the 2nd highest amount of critical facilities located in the SFHA in the Western Region. This is shown in Table H-14 below.

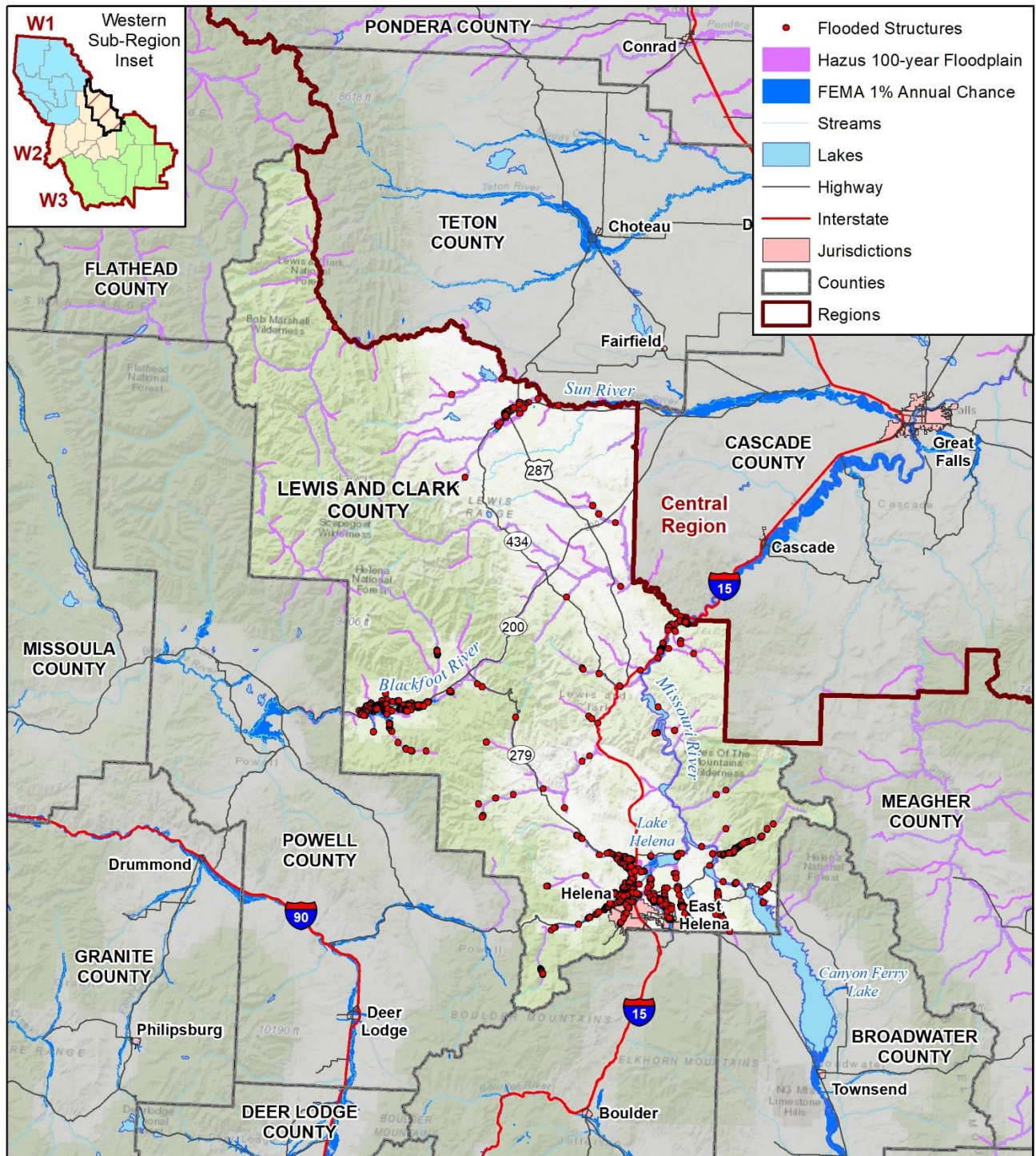
**Table H-14 Lewis and Clark County Critical Facilities at Risk to 1% Annual Chance Flood Hazards by FEMA Lifeline**

Jurisdiction	Communications	Energy	Food, Water, Shelter	Hazardous Materials	Health and Medical	Safety and Security	Transportation	Total
East Helena	-	-	-	-	-	1	3	<b>4</b>
Helena	6	-	-	-	-	-	1	<b>7</b>
Lewis and Clark County	4	7	2	-	-	6	88	<b>107</b>
<b>Total</b>	<b>10</b>	<b>7</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>92</b>	<b>118</b>

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

All participating jurisdictions in Lewis and Clark County contain structures located in the floodplain, as seen in Figure H-9 through Figure H-11 below.

Figure H-9 Lewis and Clark County Flood Hazard and Structures

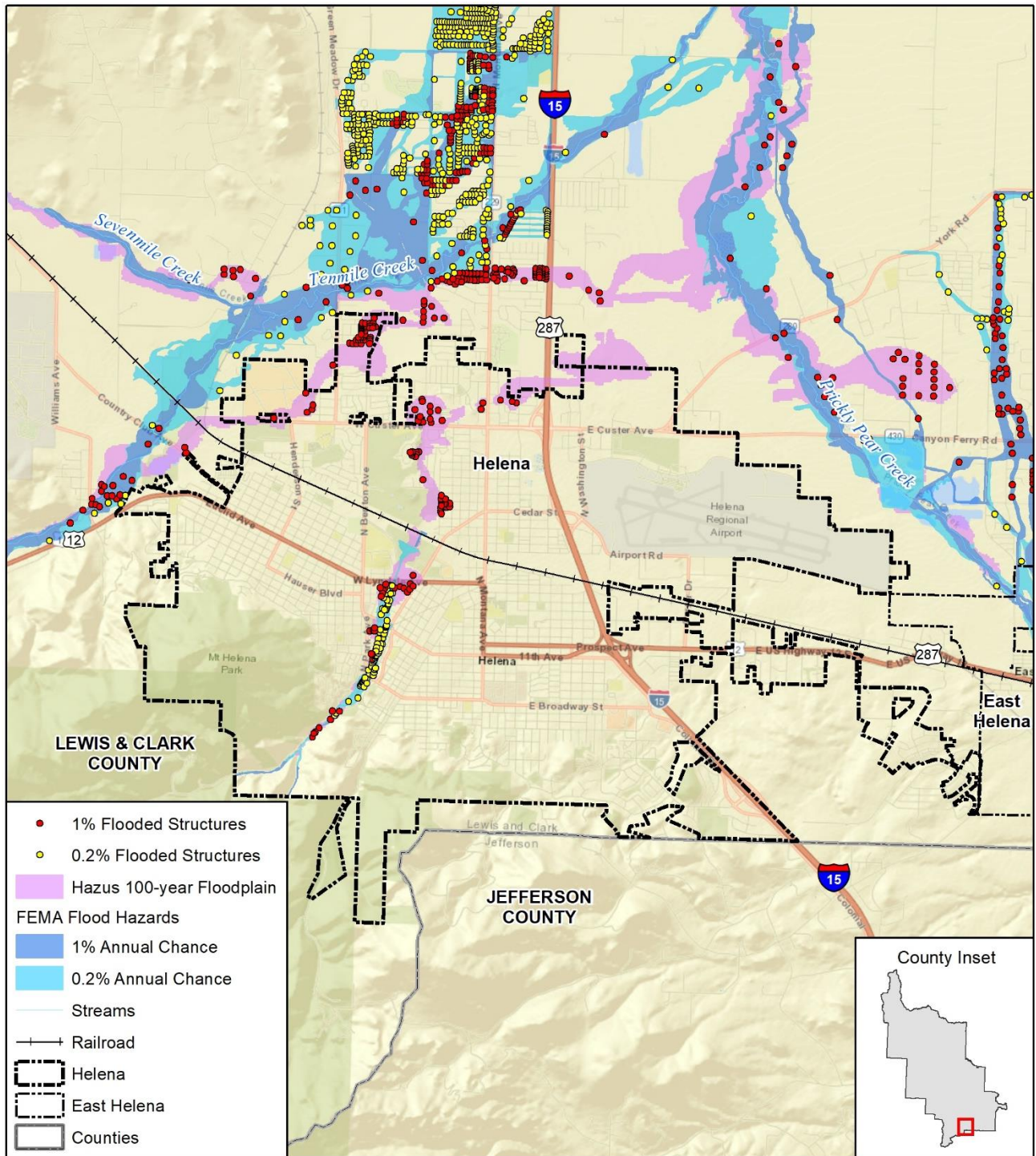


Map compiled 9/2022;  
intended for planning purposes only.  
Data Source: Montana State Library,  
DNRC, FEMA, Hazus

0 25 50 Miles



Figure H-10 City of Helena Flood Hazard and Structures

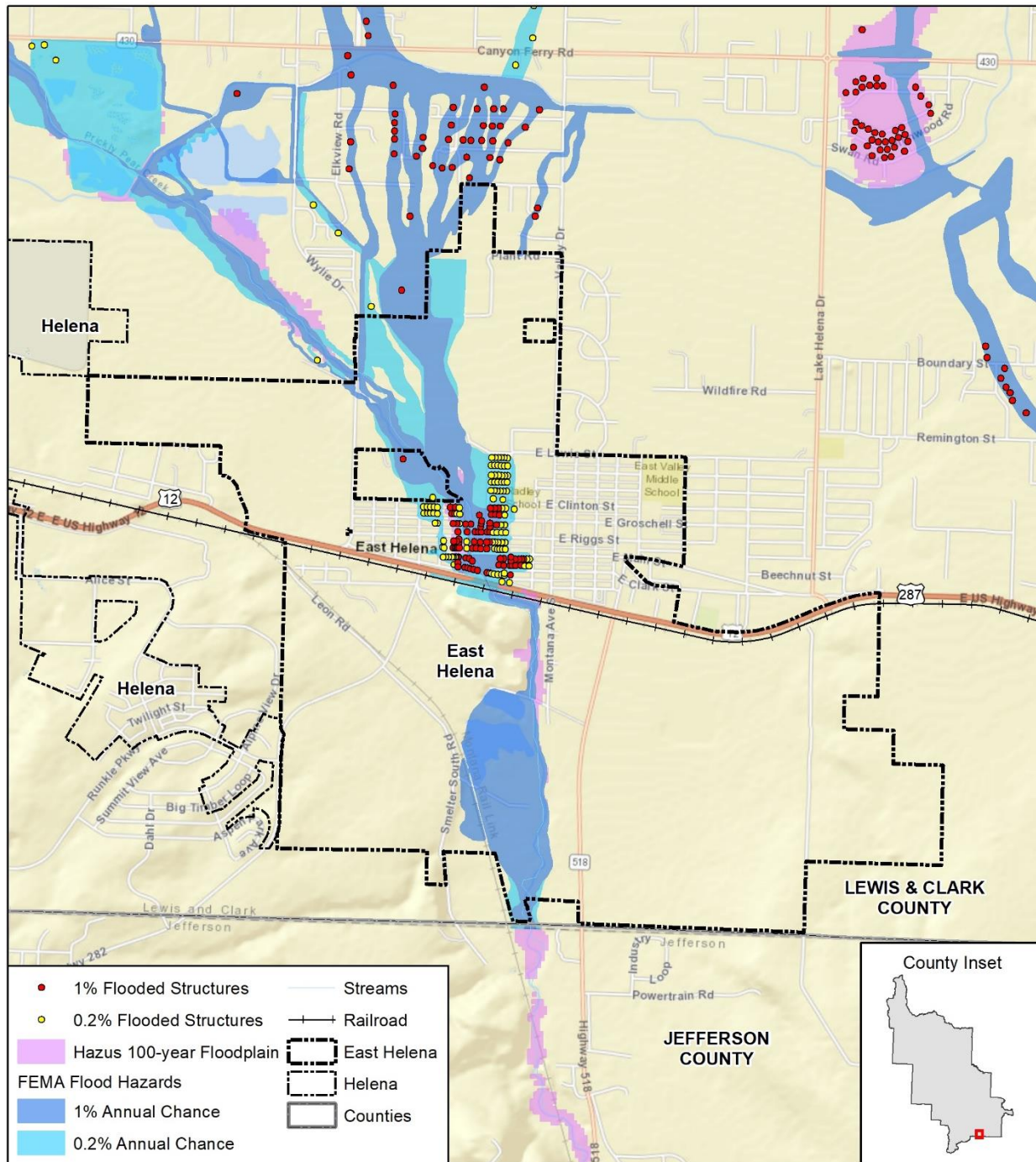


Map compiled 10/2022;  
intended for planning purposes only.  
Data Source: Montana State Library,  
DNRC, FEMA, Hazus

0 1 2 Miles



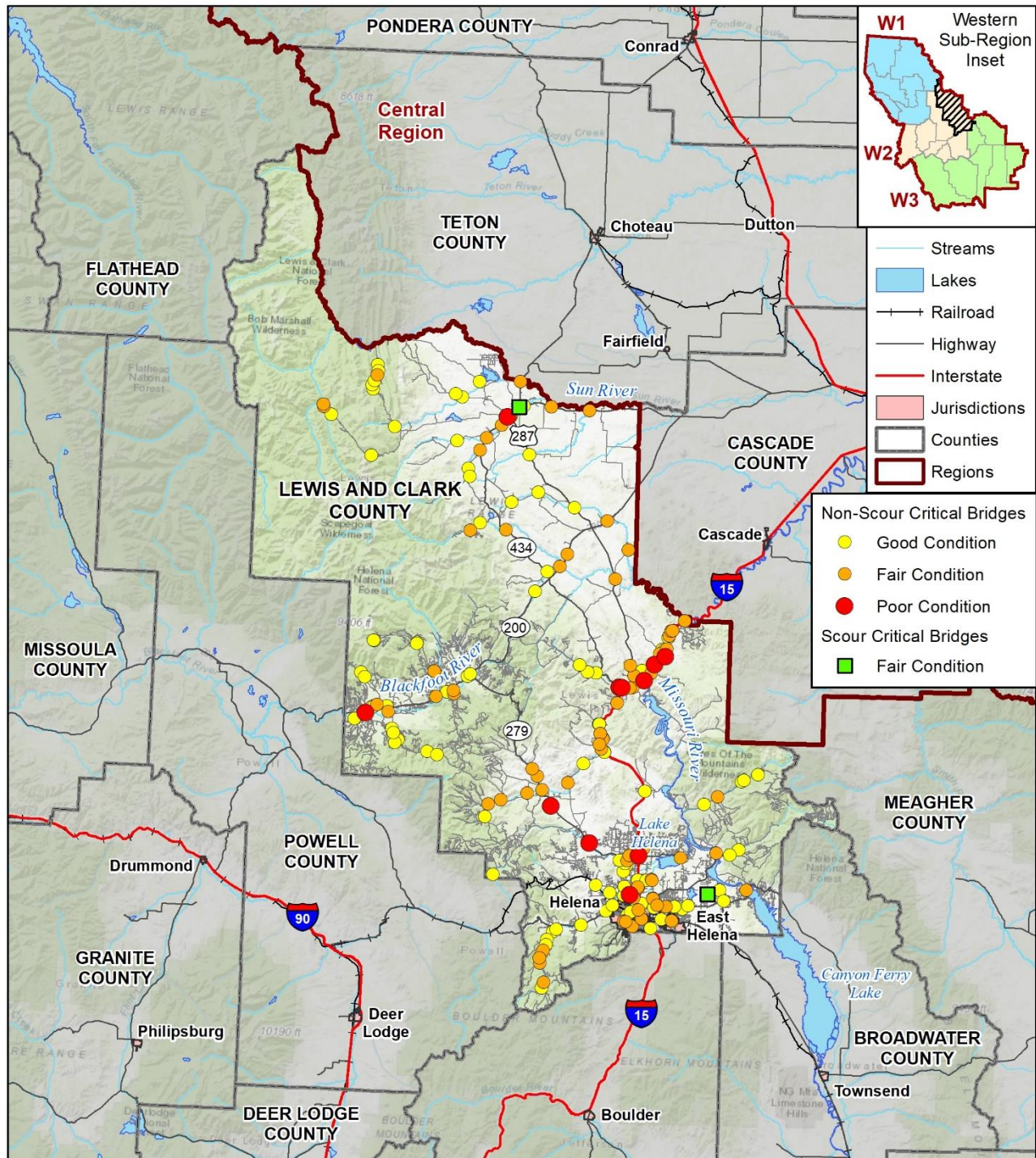
**Figure H-11 Town of East Helena Flood Hazard and Structures**



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

Figure H-12 below displays the location of bridges in Lewis and Clark County and their condition. Refer to Chapter 4 for a discussion of the flood risk relative to Lewis and Clark County and the Western Region.

**Figure H-12 Lewis and Clark County Bridges**



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

#### **H.4.8 Hazardous Materials Incident**

Lewis and Clark County has ranked hazardous materials incidents as a medium overall significance hazard. Lewis and Clark County has one Risk Management Program (RMP) facility. Additionally, the NRC has recorded 125 hazardous material incidents that have occurred in Lewis and Clark County since 1990, which is the highest number of incidents out of all counties in the Western Region. Lewis and Clark County also has gas transmission and hazardous liquid pipelines that traverse the county and the city of Helena. US Highway 12 and Interstate 15 are heavily traveled shipping and transportation routes for the state and country as a whole. Both of these transportation routes are likely locations for future occurrences of hazmat incidents in transit.

Refer to Chapter 4 for a discussion of the hazardous materials incident risk relative to Lewis and Clark County and the Western Region.

#### **H.4.9 Landslide**

Landslides are ranked as a medium overall significance hazard in Lewis and Clark County. As mentioned previously, about 70 percent of the County is mountainous and has several intermountain valleys between major mountain ranges. Elevation ranges from 3,400 feet on the Missouri River to peaks more than 8,000 feet along the Continental Divide, with steep slopes throughout. Due to this mountainous terrain, geologic data indicates a high confidence in history of past landslides in the county. There have been at least 4 known landslides according to the USGS. Lewis and Clark County has an elevated chance of annual occurrence within the Western Region, with an annualized landslide frequency of 0.07-0.10. The county also has a relatively high expected annual loss rating and relatively moderate overall risk rating according to the NRI. For more information, refer to Chapter 4 for a discussion of the landslide risk relative to Lewis and Clark County and the Western Region.

#### **H.4.10 Severe Summer Weather**

Lewis and Clark County ranked severe summer weather as a high overall significance hazard. Lewis and Clark County experienced the second greatest number of total severe summer weather events in Western Region, including 110 hail events, 19 heavy rain events and one lightning event. There was no recorded excessive heat event in the county that resulted in losses, however, excessive heat events still occur in the county. Property losses from severe summer weather in Lewis and Clark County totaled to \$2,000 from 1955 to 2022 (less than 1% of total losses in the Western Region). There were no recorded crop losses due to severe summer weather events in Lewis and Clark County. Although all property and people are equally vulnerable to severe summer weather events in the County, greatest property losses are likely to occur in the City of Helena, where people and infrastructure are concentrated.

Refer to Chapter 4 for a discussion of the severe summer weather risk relative to Lewis and Clark County and the Western Region.

#### **H.4.11 Severe Winter Weather**

Lewis and Clark County ranked severe winter weather as a low overall significance hazard. The Southern Lewis and Clark Zone experienced the sixth greatest number of recorded severe winter weather events in the Western Region and the NRI rated Lewis and Clark County as one of the six counties with a "relatively moderate" risk index rating for winter weather. Property losses recorded in Lewis and Clark County totaled \$1,615,000. All people and property in the county are equally vulnerable to future losses from severe winter weather events. (Source: [NPMS Public Viewer \(dot.gov\)](#))

Refer to Chapter 4 for a discussion of the severe winter weather risk relative to Lewis and Clark County and the Western Region.

#### **H.4.12 Human Conflict**

Human conflict is ranked as an overall medium significance for Lewis and Clark County, along with nearly all other counties in the Western Region. In total, three terrorist attacks occurred between 1970-2020, 221 civil unrest/protest events between January 2017 and January 2021, and no active shooter events occurred in the Montana Western Region. Two of these terrorist attacks occurred in the City of Helena, one in 1992 and one in 1994. Additionally, the City of Helena experienced 51 reported protest events from January 2018 to January 2021, while no protest events were reported in the City of East Helena, therefore, the risk of human conflict in the City of Helena is rated as high.

Refer to Chapter 4 for a discussion of the human conflict risk relative to Lewis and Clark County and the Western Region.

#### **H.4.13 Tornadoes & Windstorms**

Lewis and Clark County ranked tornadoes and windstorms as a medium overall significance hazard. The Southern Rocky Mountain Front and Southern Lewis and Clark Zones experienced the greatest number of high wind and strong wind events in the Western Region, with 523 total events. Additionally, Lewis and Clark County experienced the second greatest number of thunderstorm wind events and tornado events. Lewis and Clark County experienced a total of \$20,000 in property losses due to thunderstorm wind events. All people and property are vulnerable to tornado and windstorms in Lewis and Clark County.

Refer to Chapter 4 for a discussion of the tornadoes and windstorms risk relative to Lewis and Clark County and the Western Region.

#### **H.4.14 Transportation Accidents**

Lewis and Clark County ranked transportation accidents as an overall medium significance hazard. Lewis and Clark County saw 8,193 roadway crashes from 2016-2020, an average of more than 2,000 per year and the second highest overall number of roadway crashes in the Region. While transportation accidents can occur along any type of transportation route in the county and region, a greater frequency of accidents occur along heavily traveled roadways, such as US Highway 12 and Interstate 15 which run through the county. Due to the presence of these roads in the City of Helena, along with the Helena Regional Airport and the greater population density, the City of Helena ranked transportation accidents as high, where the rest of the jurisdictions in the county are ranked as medium.

Refer to Chapter 4 for a discussion of the transportation accident risk relative to Lewis and Clark County and the Western Region.

#### **H.4.15 Volcanic Ash**

All counties in the Western Region and all jurisdictions within Lewis and Clark 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. The County Planning Team did note that the May 18, 1980, volcanic eruption of Mt. St. Helens, as well as continuing volcanic and seismic activity in places as nearby as Yellowstone National Park, has made the threat of future volcanic eruptions a reality. With proper wind currents, a major eruption on either Mt. St. Helens or Mt. Hood could cause a sizeable amount of ash to fall in our area and create a significant threat to the health and safety of every citizen in the County.

Refer to Chapter 4 for a discussion of the volcanic ash risk relative to Lewis and Clark County and the Western Region.

## H.4.16 Wildfire

Lewis and Clark County ranked Wildfire as a high significance hazard. Lewis and Clark County has the second greatest number of individuals, improved parcels, and total property value in the Western Region in wildfire risk areas, with a total of 59,095 people and \$9.8 billion in total property value exposed in fire risk areas. Figure H-13 below displays the wildfire risk in Lewis and Clark County. As shown in the map, much of the southern portions of the county, including the cities of Helena and East Helena, are in very high or extreme wildfire risk areas.

Lewis and Clark County has been included in 7 federal disaster declarations for wildfire. The CPT also noted several fires which have occurred in recent years and the impacts caused in the county. According to the CPT and the 2017 county HMP, Lewis and Clark County has witnessed a number of wildfires that have destroyed property and affected wildlife habitat, scenic resources, and air quality. DNRC and U.S. Forest Service data on wildfires over 100 acres, indicates that in the past 32 years, at least 80 large wildfires have occurred in Lewis and Clark County, burning over 442,700 acres and costing over \$61.6 million to suppress. 46 structures were lost to fires between 2000-2016. The City of Helena specifically also noted an event in 2021, which burned 4 acres in the Knob Hill City Park. Events similar to the size and scale of these fires are very likely to occur again in the event of a dry summer.

Table H-15 below summarizes the estimated exposed value of improvements in each wildfire risk category. Based on this analysis, roughly 26,386 improved parcels are exposed to low/medium or higher wildfire risk, totaling about \$9.8 billion in improved building and content value. 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 H-15 Lewis and Clark 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	East Helena	724	\$98,292,351	\$51,421,453	\$149,713,804	1,659
	Helena	5,939	\$1,454,752,581	\$780,938,726	\$2,235,691,307	13,597
	County	4,143	\$685,955,877	\$347,825,977	\$1,033,781,854	9,553
	<b>Total</b>	<b>10,806</b>	<b>\$2,239,000,809</b>	<b>\$1,180,186,156</b>	<b>\$3,419,186,965</b>	<b>24,809</b>
At Risk to Very High Wildfire Hazards	East Helena	54	\$7,958,999	\$4,121,231	\$12,080,230	120
	Helena	1,886	\$670,696,157	\$421,947,817	\$1,092,643,974	4,223
	County	9,942	\$2,032,202,719	\$1,057,536,607	\$3,089,739,326	22,562
	<b>Total</b>	<b>11,882</b>	<b>\$2,710,857,875</b>	<b>\$1,483,605,654</b>	<b>\$4,194,463,529</b>	<b>26,905</b>
At Risk to High Wildfire Hazards	Helena	74	\$102,151,861	\$53,234,825	\$155,386,686	160
	County	681	\$162,352,905	\$103,515,973	\$265,868,878	1,201
	<b>Total</b>	<b>755</b>	<b>\$264,504,766</b>	<b>\$156,750,798</b>	<b>\$421,255,564</b>	<b>1,361</b>

Source: MSDI 2022, MWRA

Table H-16 summarizes the potential impact of wildfire on critical facilities and lifelines in Lewis and Clark County and its associated jurisdictions. The table highlights the type and number of facilities in each jurisdiction in the County in Wildfire risk areas. See Chapter 4 for the methodology of the critical facilities at risk analysis.

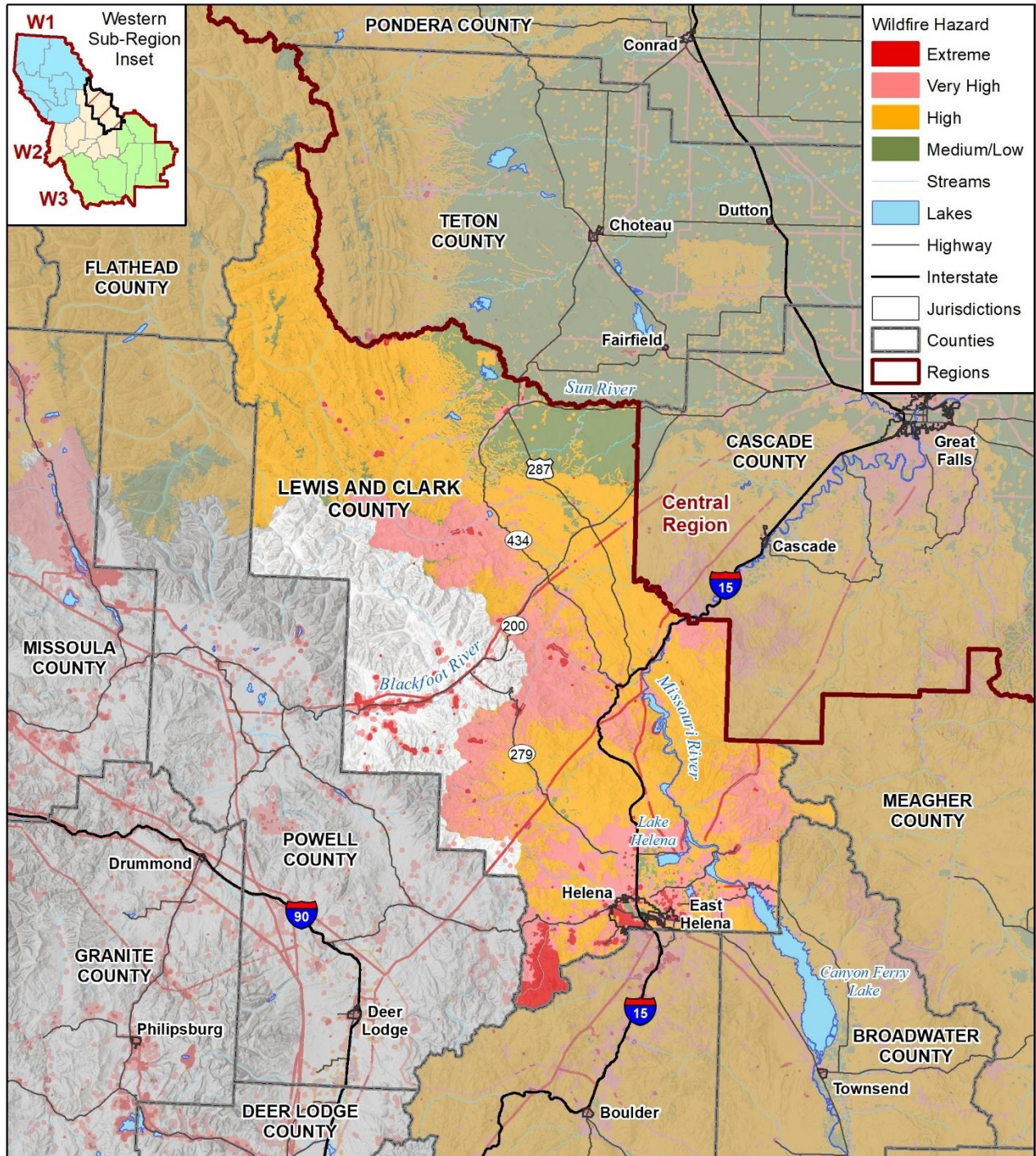


**Table H-16 Critical Facilities at Risk to Wildfire Hazards by Jurisdiction, Facility Type, and Risk Rating**

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	East Helena	1	-	1	-	-	3	2	<b>7</b>
	Helena	20	1	9	-	-	18	4	<b>52</b>
	Lewis and Clark County	69	8	5	1	3	17	21	<b>124</b>
	<b>Total</b>	<b>90</b>	<b>9</b>	<b>15</b>	<b>1</b>	<b>3</b>	<b>38</b>	<b>27</b>	<b>183</b>
At Risk to <b>Very High</b> Wildfire Hazards	East Helena	1	-	-	1	-	1	1	<b>4</b>
	Helena	14	-	6	-	-	13	2	<b>35</b>
	Lewis and Clark County	14	10	15	3	1	21	87	<b>151</b>
	<b>Total</b>	<b>29</b>	<b>10</b>	<b>21</b>	<b>4</b>	<b>1</b>	<b>35</b>	<b>90</b>	<b>190</b>
At Risk to <b>High</b> Wildfire Hazards	Helena	4	-	2	-	1	2	4	<b>13</b>
	Lewis and Clark County	12	-	4	1	-	-	42	<b>59</b>
	<b>Total</b>	<b>16</b>	<b>0</b>	<b>6</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>46</b>	<b>72</b>
At Risk to <b>Medium/Low</b> Wildfire Hazards	East Helena	-	2	1	2	-	1	-	<b>6</b>
	Helena	40	5	4	3	-	27	6	<b>85</b>
	Lewis and Clark County	9	6	1	1	-	10	39	<b>66</b>
	<b>Total</b>	<b>49</b>	<b>13</b>	<b>6</b>	<b>6</b>	<b>0</b>	<b>38</b>	<b>45</b>	<b>157</b>

Source: HIFLD 2022, Montana DES, NBI, MWRA

Figure H-13 Lewis and Clark County Wildfire Hazard



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

0 25 50 Miles



## H.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.

### H.5.1 Regulatory Mitigation Capabilities

Table H-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 Western Region and each participating jurisdiction.

**Table H-17 Lewis and Clark County and Jurisdictions Regulatory Mitigation Capabilities**

Plans and Regulations	Lewis and Clark County	City of Helena	City of East Helena
Building Codes	No	Yes	Yes
Building Codes Year	N/A	2018	2021
BCEGS Rating	No	No	No
Capital Improvements Program (CIP) or Plan	Yes	Yes	Yes
Community Rating System (CRS)	Yes (Class 8)	No	No
Community Wildfire Protection Plan (CWPP)	Yes (Tri-County Plan with Jefferson & Broadwater)	Yes	No
Comprehensive, Master, or General Plan	Yes	Yes	No
Economic Development Plan	Yes	No	No
Elevation Certificates	Yes	No	No
Emergency Operations Plan	Yes	Yes, County Plan	Yes, County Plan
Erosion/Sediment Control Program	Yes	No	No
Floodplain Management Plan	Yes	Yes	Yes
Flood Insurance Study	Yes	No	No
Growth Management Ordinance	Yes	Yes	Yes
Hazard-Specific Ordinance or Plan (Floodplain, Steep Slope, Wildfire)	Yes	Yes	Yes
National Flood Insurance Program (NFIP)	Yes (04/01/81)	Yes (04/15/81)	Yes (06/04/80)
Site Plan Review Requirements	Yes	Yes	Yes
Stormwater Program, Plan, or Ordinance	Yes	Yes	No

Plans and Regulations	Lewis and Clark County	City of Helena	City of East Helena
Zoning Code or Ordinance	Yes	Yes	Yes
Other?	Yes	Yes	Yes

### Discussion on Existing Regulatory Mitigation Capabilities

The Lewis and Clark County Community Development and Planning department handles the existing land usage, development ordinances or regulations and hazard specific issues. Lewis and Clark County Subdivision Regulations from 2016 is what the planning department uses to ensure compliance and regulation. The County is in the process of updating the regulations. The Cities of Helena and East Helena maintain subdivision and zoning regulations for their respective jurisdictions.

The Cities of Helena and East Helena documented that their planning departments regulate the floodplain, zoning ordinances, and long-range plans. The City of Helena Building Department utilizes building codes and the Fire Department implements the fire code. The two departments work together to manage risk throughout the community. The City updates their building codes as the state adopts the most recent regulations.

Building regulations are addressed in Cities' code of ordinance which addresses zoning, setbacks and lot coverage on new or additions. There are also design requirements enforced to mitigate seismic activity, snow, wind, and ice and frost. Helena has some hazard specific regulations in its ordinance including a Hazardous Material Incident Cost Recovery ordinance, Fire Prevention Codes, floodplain regulations, and regulations for snow and ice in public ways and property.

The Public Works Department for both Helena and East Helena manage much of the cities' infrastructure including storm water, wastewater, and various infrastructure projects. They also maintain a capital improvements plan which helps outline future infrastructure investments.

### Discussion on NFIP Participation and Compliance

Lewis and Clark County is a participant of the National Flood Insurance Program. The Lewis and Clark County Planning Department oversees floodplain activities and where the Floodplain Administrator operates from. Lewis and Clark County follows the Floodplain provisions outlined in the County's subdivision regulations. The cities of Helena and East Helena both have a floodplain administrator, and floodplain regulations are actively enforced. Floodplain permits are granted on a case-by-case basis. Developments are sternly advised against in the floodplain areas of the county. All jurisdictions within Lewis and Clark County participate in the NFIP.

## H.5.2 Administrative and Technical Mitigation Capabilities

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

**Table H-18 Lewis and Clark County Jurisdictions Administrative/Technical Mitigation Capabilities**

Administrative and Technical	Lewis and Clark County	City of Helena	City of East Helena
Emergency Manager	Yes, Sierra Anderson	Yes	No
Floodplain Administrator/ Position/ Department	Yes, Worby McNamee	Yes	Yes
Community Planning:	Yes	Yes	Yes

Administrative and Technical	Lewis and Clark County	City of Helena	City of East Helena
- Planner/Engineer (Land Development)	Yes	Yes	Yes
- Planner/Engineer/ Scientist (Natural Hazards)	Yes	No	No
- Engineer/Professional (Construction)	Yes	Yes	No
- Resiliency Planner	Yes	Yes	No
- Transportation Planner	Yes	Yes	No
Full-Time Building Official	Yes	Yes	No
GIS Specialist and Capability	Yes	Yes	No
Grant Manager, Writer, or Specialist	Yes	Yes	No
Housing Authority	Yes	No	No
Warning Systems: (list the hazards each system is used for)	Yes	Yes	No
- Sirens	Yes, NW Energy Hauser Dam	No	No
- Reverse 911	Yes, All Hazards	Yes	No
- IPAWS/Wireless Emergency Alerts (WEA)	Yes	Yes	No
- Opt-In Notifications (CodeRed, Everbridge, etc.)	Yes	Yes	No
- Other system	Yes	No	No
Other?	Yes	No	

Community Development and Planning Department administers the Lewis and Clark County Floodplain Program. The County has a designated floodplain manager. The floodplain manager is tasked with administering the day-to-day operations of the floodplain program. They also are responsible for the implementation of any substantial damage/substantial improvement provisions. In the event of a disaster, the floodplain manager would work with the Lewis and Clark County DES Coordinator and request immediate assistance from the Montana DNRC Floodplain Program/State of Montana National Flood Insurance Program Coordinator to mobilize personnel to initiate the process of making determinations. The floodplain manager, which works within the Community Development and Planning Department at Lewis and Clark County, could also rely on personnel from the Planning Department to help with implementation of floodplain management provisions after a disaster.

The CPT noted that County Disaster and Emergency Services Department (DES) has had staffing challenges as there has been decent turnover for the DES coordination position.

Helena and East Helena have their own floodplain regulations and the Planning Department is responsible for administering and promoting participation in the NFIP.

### H.5.3 Financial Capabilities

Table H-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 H-19 Lewis and Clark County Jurisdictions Financial Capabilities**

Financial Capabilities	Lewis and Clark County	City of Helena	City of East Helena
Ability to fund projects through Capital Improvements funding	Yes	Yes	Yes
Ability to incur debt through general obligation bonds	Yes	Yes	No
Ability to incur debt through private activities		No	No
Ability to incur debt through special tax bonds	Yes	Yes	No
Authority to levy taxes for a specific purpose with voter approval	Yes	Yes	No
Authority to withhold spending in hazard prone areas	Yes	No	No
Community Development Block Grants	Yes	Yes	No
FEMA Hazard Mitigation Assistance grants	Yes	Yes	No
FEMA Public Assistance funds	Yes	No	No
Stormwater Service Fees	Yes	Yes	No
System Development Fee	Yes	Yes	No
Utility fees (water, sewer, gas, electric, etc.)	Yes	Yes	Yes
Other?	Yes	No	No

The CPT noted that Lewis and Clark County has had opportunities to support mitigation efforts, however, there has been limited funding to support these projects due to a few constraints. Staffing has been a recent issue for the DES department and the County has had difficulty with meeting FEMA BCA requirements.

The CPT also noted that Lewis and Clark County Trap Club Mitigation work has been completed. There is an Augusta hydrology and hydraulic study-work in progress. In the past, the County has completed earthquake mitigation projects on some of the schools (windows) and other key buildings, as well as some "hardening" of water treatment plants and facilities.

#### 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. Lewis and Clark County and its jurisdictions have participated in several of these hazard mitigation assistance projects, summarized in the Table H-20 below.

**Table H-20 Lewis and Clark County Hazard Mitigation Assistance Projects**

Program	Date Approved	Project Type	Status	Location
FMA	2018-08-01	91.3: Local Multi-Hazard Mitigation Plan - UPDATE	Closed	Lewis and Clark County
PDMC	2010-09-15	91.1: Local Multi-Hazard Mitigation Plan	Closed	Lewis & Clark and Jefferson Counties
PDMC	2009-03-25	300.2: Vegetation Management - Wildfire	Closed	City of Helena
DR	1998-01-09	402.1: Infrastructure Protective Measures (Roads and Bridges)	Closed	Lewis And Clark County
DR	2021-04-27	403.1: Stormwater Management - Culverts;	Closed	City of Helena
DR	2022-04-11	403.2: Stormwater Management - Diversions"	Approved	Lewis and Clark County
DR	2016-12-27	100.1: Public Awareness and Education (Brochures, Workshops, Videos, etc.);	Closed	City of Helena
PDMC	2016-02-11	205.1: Retrofitting Private Structures - Wildfire;	Closed	Lewis & Clark County
DR	2005-08-09	300.2: Vegetation Management - Wildfire"	Closed	Lewis and Clark County
PDMC	2008-06-12	401.1: Water and Sanitary Sewer System Protective Measures	Closed	Tri-County Fire Safe Working Group/City of Helena
DR	2015-04-03	91.1: Local Multi- Hazard Mitigation Plan	Closed	City of Helena
DR	2005-06-07	300.2: Vegetation Management - Wildfire	Closed	Lewis and Clark County
DR	2020-07-23	300.2: Vegetation Management - Wildfire	Approved	Lewis and Clark County
DR	2021-09-08	300.2: Vegetation Management - Wildfire	Approved	Lewis and Clark County
PDMC	2012-03-13	300.2: Vegetation Management - Wildfire	Closed	City of Helena

Source: FEMA Opendata

#### H.5.4 Education and Outreach Capabilities

Table H-21 identifies the education and outreach programs in place at the County and participating jurisdictions are or could be used to help promote mitigation activities.

**Table H-21 Lewis and Clark County Education and Outreach Capabilities**

Education & Outreach Programs	Lewis and Clark County	City of Helena	City of East Helena
Ongoing public education programs (fire safety, responsible water use, household preparedness, etc)	Yes	Yes	No
Local citizen groups that communicate hazard risks	Yes	Yes	No
Firewise or other fire mitigation program	Yes	Yes	No
National Weather Service StormReady	Yes	Yes	No

The CPT noted that a current challenge that the County is facing is getting the residents familiar with the floodplain program. Residents in the County often see the floodplain permitting process as a burden and are unaware that the program provides other resources available to residents besides permitting.

Lewis and Clark County has a Local Emergency Preparedness Committee that meet quarterly to discuss and coordinate preparedness for all hazards. The County also actively pursues public input for the County's hazard mitigation plan update.

There is an emergency alert system that provides 24-hour radio warnings to the public for emergencies and disasters.

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

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

**Table H-22 Lewis and Clark County Non-Governmental Organizations (NGOs)**

Non-Governmental Organizations (NGOs)	Lewis and Clark County	City of Helena	City of East Helena
American Red Cross	Yes	Yes	Yes
Chamber of Commerce	Yes	Yes	No
Community Organizations (Lions, Kiwanis, etc.)	Yes	Yes	Yes
Environmental Groups	Yes	Yes	No
Homeowner Associations	Yes	Yes	Yes
Neighborhood Associations	Yes	Yes	No
Salvation Army	Yes	Yes	No
Veterans Groups	Yes	Yes	No
Other?	Yes - MBAC, Big Sky Trust Fund, Montana Main Street, United Way, Good Sam, God's Love, Habitat for Humanity	No	No



### **H.5.6 Opportunities for Enhancement**

Lewis and Clark County has significant mitigation capabilities. The County's regulatory capability is strong as it has updated floodplain regulations, a growth management plan, and comprehensive plan. As the County continues to implement these plans it should consider ways to integrate mitigation activities, particularly when it comes to long range planning initiatives.

The County noted that staff shortages have been an obstacle especially for the Department of Emergency Services. Filling in administrative gaps will help support mitigation implementation. Additionally, the County could seek opportunities to enhance its public outreach and engagement on hazard mitigation, particularly for flood hazards. Educating the public on benefits of the NFIP could improve community understanding of floodplain regulations and mitigation.

The City of Helena also has strong mitigation capability. The city has several plans and regulations in place particularly policies that hazard-specific. There is opportunity to improve public education on hazards with the potential to impact the City. The City could provide more information on hazard preparedness on the City website or link to County resources. The City of East Helena could also consider similar actions to improve public awareness.

Compared to the County and Helena, East Helena has less capacity for hazard mitigation. East Helena has strong regulatory capability, however, when possible both the County and Helena could seek opportunities to support capability gaps identified for East Helena. GIS mapping and some public engagement activities could be implemented County-wide. The City may also consider working with local organizations in the region to support administrative gaps and help with implementation of mitigation initiatives.

In general, cross-jurisdictional communication and support would benefit all three jurisdictions. Integrated efforts to spread awareness through the development of brochures and using existing communication capabilities through social media or other media would help with these efforts. Other specific opportunities for improvement include:

- Lewis and Clark County:
  - Consider adopting building codes
  - Consider joining FEMA Community Rating System (CRS) to lower the cost of flood insurance and promote awareness of NFIP benefits
  - Work on long-term staffing for key emergency management positions
- City of Helena:
  - Consider joining FEMA Community Rating System (CRS) to lower the cost of flood insurance
  - Expand public outreach efforts and coordinate initiatives with the County and neighboring jurisdictions
- City of East Helena:
  - Additional partnerships with area agencies to further develop hazard mitigation programs.
  - Expand public outreach efforts through community partners and organizations, and enrollment in programs like Firewise and StormReady. Work with the County to expand/integrate existing efforts.

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

## **H.6 Mitigation Strategy**

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

## H.6.1 Goals

During the creation of the 2023 Regional Plan, the counties in the Montana Western 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: Promote education and outreach to the public around hazards and mitigation.
- Goal 4: Promote regional cooperation and leverage partnerships in mitigation solutions.
- Goal 5: Sustain and enhance jurisdictional capabilities to enact mitigation activities.
- Goal 6: Integrate hazard mitigation into other plans, processes, and regulations.
- Goal 7: Ensure local mitigation programs address underrepresented groups and protect socially vulnerable populations.

The 2017 Lewis and Clark County Hazard Mitigation Plan outlined the following goals:

- Goal 1: Reduce impacts from wildfire
- Goal 2: Reduce impacts from flooding
- Goal 3: Reduce impacts from earthquakes
- Goal 4: Reduce impacts from severe weather and drought
- Goal 5: Reduce impacts from hazardous material incidents
- Goal 6: Reduce impacts from communicable disease
- Goal 7: Reduce impacts from dam failure
- Goal 8: Reduce impacts from terrorism, violence, strikes, and civil unrest
- Goal 9: Reduce impacts from all hazards

## H.6.2 Progress on Previous Actions

During the 2023 planning process, the Lewis and Clark County Planning Team reviewed all the mitigation actions from the 2017 plan. As shown in Table H-23, of 95 actions in the previous plan, ten have been completed and three have been deleted.

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

ID	Action Name & Description	Hazard(s) Mitigated	Jurisdiction	Status
1.2.4	Participate in NFPA Firewise Communities Program	Wildfire	Lewis and Clark County	Deleted
1.5.2	Update WUI mapping	Wildfire	Lewis and Clark County	Completed
2.1.1	Use State model floodplain ordinance to revise county flood ordinance.	Flooding	Lewis and Clark County, Helena, East Helena	Completed
2.1.2	Adopt zoning for the Ten-mile Creek floodplain that addresses the development constraint of flooding in that area.	Flooding	Lewis and Clark County	Completed
2.2.1	Promote participation in the NFIP	Flooding	Lewis and Clark County, Helena, East Helena	Deleted
2.2.2	Provide education to communities on building in the floodplain	Flooding	Lewis and Clark County, Helena, East Helena	Deleted

ID	Action Name & Description	Hazard(s) Mitigated	Jurisdiction	Status
2.3.2	Implement and review use of detention ponds to mitigate flooding at problem areas within the county.	Flooding	Lewis and Clark County	Completed
2.3.6	Replace Elk Creek bridge 13 miles southwest of Augusta which has been damaged from flood scour.	Flooding	Lewis and Clark County	Completed
2.3.8	Analyze existing 36" culverts on Dalton Mtn Rd. in Lincoln and replace with appropriate structure(s).	Flooding	Lewis and Clark County	Completed
2.3.15	Design, fund and construct DNRC storm water pond improvements.	Flooding	Helena	Completed
2.5.2	Complete H&H study of the contributing waters to the D2 Drain, including Tenmile, Sevenmile, and Silver Creeks.	Flooding	Lewis and Clark County	Completed. Plan updated in 2022 to prioritize and model district project phases
9.1.3	Procure and equip all Emergency Services vehicles with AED's and provide CPR and First Aid training to ensure the public safety.	All Hazards	Lewis and Clark County	Completed
9.1.4	Develop train and equip emergency responders for dealing with mass trauma events.	All Hazards	Lewis and Clark County, Helena, East Helena	Completed

### H.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.

### H.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 Lewis and Clark County and its jurisdictions. The process used to identify, develop, and prioritize these actions is described in Chapter 5 of the base plan. Lewis and Clark County has 82 continuing or in progress mitigation actions carried over from the previous plan, and has added an additional 46 new actions.

Table H-24 lists the 2023 Mitigation Action Plan for Lewis and Clark County and its participating jurisdictions. 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. 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.

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 previous Lewis and Clark County Plan; little to no work has been completed.
- In Progress: project is carried over from the previous Lewis and Clark County Plan; work has begun on the project and is proceeding.
- Annual: project is carried over from the previous Lewis and Clark County 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 H-24 below lists the mitigation actions for each participating jurisdiction in Lewis and Clark County. All jurisdictions have developed mitigation actions for each identified hazard in the HMP.

**Table H-24 Mitigation Actions by Hazard and Jurisdiction Summary**

ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
1	Continue grants programs for landowners to create survivable space.	Wildfire	Lewis and Clark County	Fire Districts, TCFSWG, DES, Landowners	High	FEMA, DNRC, BLM, USPS	Ongoing	High	Annual Implementation. TCFSWG will continue to conduct wildfire risk assessments and cost-share with property owners on mitigation projects
2	Identify and perform fuel reduction along evacuation routes.	Wildfire	Lewis and Clark County	Fire Districts, TCFSWG, USFS, BLM, DNRC	High	FEMA, DNRC, BLM, USPS, RAC's	Ongoing	High	Annual Implementation. Planning proposal to update county CWPPs and identify ownership, hazards and projects along evacuation routes
3	Partner with utility companies to perform fuel reduction along utility corridors.	Wildfire	Lewis and Clark County	Fire Districts, TCFSWG, USFS, BLM, DNRC	High	Utility Companies	Ongoing	High	Annual Implementation. NEW reps have begun attending TCFSWG meetings. Communications and collaboration in effect
4	Encourage identification and completion of fuel mitigation projects by other land management and fire protection entities.	Wildfire	Lewis and Clark County	Fire Districts, TCFSWG, USFS, BLM, DNRC	High	County, FEMA, DNRC	Ongoing	High	Annual Implementation.
5	Support interagency collaboration on fuel management projects.	Wildfire	Lewis and Clark County	Fire Districts, TCFSWG, USFS, BLM, DNRC	High	TCFSWG	Ongoing	High	Annual Implementation.
6	Encourage contiguity in fuel management projects so there will be no gaps in treatment.	Wildfire	Lewis and Clark County	Fire Districts, TCFSWG, USFS, BLM, DNRC	High	TCFSWG	Ongoing	High	Annual Implementation. Future project planning utilizes this approach for continuity

ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
7	Work with the Tri-County Fire Safe Working Group and its local affiliates to integrate the rural growth management program with regional fire protection efforts.	Wildfire	Lewis and Clark County	LCC Planning Dept.	High	County Resources	Ongoing	Rural growth area	In Progress
8	Provide education to landowners on wildfire mitigation around homes and evacuation routes.	Wildfire	Lewis and Clark County, Helena, East Helena	TCFSWG, Fire Safe Montana, USFS, BLM, DES, Fire Depts., City & LCC Planning Depts.	High	TCFSWG, BLM, USFS, DNRC, Cities, County, DNRC, WFCOM	Ongoing	High	Annual Implementation.
9	Promote evacuation planning for landowners.	Wildfire	Lewis and Clark County, Helena, East Helena	Fire Districts, TCFSWG, DES, Fire Depts., City & LCC Planning Depts.	High	TCFSWG, BLM, USFS, DNRC, Cities, County	Ongoing	High	In Progress. Ongoing, Grant proposal to start new program in Helena to do wildfire risk assessments and evacuation preparedness.
10	Support Fire Safe Montana's efforts to provide info to home construction industry and landowners on fire-resistant construction.	Wildfire	Lewis and Clark County	DES, TCFSWG	High	County Resources	Ongoing	High	In Progress.
11	Expand county growth policy to address wildfire hazard in rural planning areas.	Wildfire	Lewis and Clark County	LCC Planning Dept., Commissioners	High	County Resources	Mid-Term	High	In Progress
12	Adopt rural fire protection standards for low-density development.	Wildfire	Lewis and Clark County	LCC Planning Dept.	High	County Resources	Short-Term	High	Not Started
13	Adopt an overlay zone for the WUI and other rural areas that applies to all development and includes enforceable measures to protect life and property.	Wildfire	Lewis and Clark County	LCC Planning Dept.	High	CPAW, County Resources	Short-Term	High	Not Started
14	Develop and/or update water supplies (well sand tanks) in	Wildfire	Lewis and Clark County	LCC Planning Dept., Commissioners	High	County Resources	Long-Term	High	In Progress

ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
	communities to enhance firefighting capabilities.								
15	Develop and implement an enhanced communication/alert system for notification of impending wildland fire activity or evacuation for outlying areas.	Wildfire	Lewis and Clark County	DES/ LE Dispatch	High	County Resources	Short-Term	High	In Progress
16	Procure and designate a wildland supply cache to outfit fire departments to ensure wildland firefighter safety.	Wildfire	Lewis and Clark County	Fire Council/Districts	High	Fire Districts, Fire Depts.	Short-Term	High	In Progress
17	Develop public-private partnerships to fund regional water sources for fire protection.	Wildfire	Lewis and Clark County	Fire Council/districts	High	Fire Districts, Fire Depts.	Mid-Term	High	In Progress
18	Develop map showing where fuel mitigation projects have been completed.	Wildfire	Lewis and Clark County, Helena	LCC GIS	High	County, CPAW	Mid-Term	Medium	In Progress.
19	Develop a plan for regional water sources for fire protection.	Wildfire	Lewis and Clark County	LCC Fire Council	High	County Resources	Mid-Term	High	In Progress
20	Upgrade City of Helena's water collection system replacing Chessman reservoir trestle with HDPE piping.	Wildfire	Helena	Helena Public Works	High	FEMA, City Resources	Short-Term	High	In Progress.
21	Install water storage tank at Fort Harrison and VA Hospital for resiliency of the system.	Wildfire	Helena	Helena Public Works	High	FEMA, City Resources	Short-Term	High	Not Started. Not part of the City's water system
22	Educate county residents on what must be done to manage storm water in the community.	Flooding	Lewis and Clark County, Helena, East Helena	City & LCC Planning Depts. and Public Works	High	County & City Resources	Ongoing	Medium	In Progress.

ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
23	Identify and install culverts as needed to improve drainage and handle storm water.	Flooding	Lewis and Clark County, Helena, East Helena	City & LCC Public Works	High	County & City Resources	Ongoing	High	In Progress.
24	Explore the possibility of constructing a stormwater system for the town of Lincoln.	Flooding	MDT	LCC Public Works	High	County Resources	Long-Term	Medium	In Progress.
25	Construct storm water pond in upper reaches of Davis Gulch.	Flooding	Helena	Helena Public Works	High	FEMA, City Resources	Long-Term	Low	Not Started
26	Evaluate with goal to increase carrying capacity of Prickly Pear Creek in East Helena.	Flooding	East Helena	East Helena Public Works	High	FEMA, City Resources	Mid- to Long-Term	Medium	Not Started
27	Evaluation and install structure(s) on Stemple Pass Road in Lincoln to stop water from running over the road.	Flooding	Lewis and Clark County	LCC Public Works	High	FEMA, County Resources	Mid-Term	High	In Progress. Design in progress. Working on funding after design completion.
28	Design, fund and construct West Side storm water conveyance improvements.	Flooding	Helena	Helena Public Works	High	FEMA, County Resources	Long-Term	Medium	Not Started.
29	Design, fund and construct West Side storm water pond improvements.	Flooding	Helena	Helena Public Works	High	FEMA, County Resources	Long-Term	Medium	Not Started.
30	Design, fund and construct Last Chance Gulch storm sewer replacement and capacity improvements.	Flooding	Helena	Helena Public Works	High	FEMA, County Resources	Long-Term	Medium	Not Started.
31	Design, fund and construct Nature Park storm water pond improvements.	Flooding	Helena	Helena Public Works	High	FEMA, County Resources	Long-Term	Medium	In Progress.
32	Design, fund and construct Upper Last Chance storm water pond siting and construction.	Flooding	Helena	Helena Public Works	High	FEMA, County Resources	Long-Term	Medium	Not Started.



ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
33	Design, fund and construct Davis Gulch storm sewer replacement and capacity improvements.	Flooding	Helena	Helena Public Works	High	FEMA, County Resources	Long-Term	Medium	Not Started.
34	Design, fund and construct Helena High storm water pond improvements.	Flooding	Helena	Helena Public Works	High	FEMA, County Resources	Long-Term	Medium	Not Started.
35	Design, fund and construct Bull Run storm sewer replacement and capacity improvements.	Flooding	Helena	Helena Public Works	High	FEMA, County Resources	Long-Term	Medium	Not Started.
36	Design, fund and construct Bull Run storm water pond improvements.	Flooding	Helena	Helena Public Works	High	FEMA, County Resources	Long-Term	Medium	Not Started.
37	Design, fund and construct Crystal Springs Creek improvements.	Flooding	Helena	Helena Public Works	High	FEMA, County Resources	Long-Term	Medium	Not Started.
38	Implement D2 drain improvements to increase the capacity of each canal crossing up to the capacity of the D2 drain.	Flooding	Lewis and Clark County	Commissioners, LCC Public Works	High	FEMA, County Resources	Short-Term	High	In Progress. ARPA funding to design replacements, construction slated for 2024
39	Implement Silver Creek/Sewell subdivision improvements to handle flood waters to the extent possible.	Flooding	Lewis and Clark County	Commissioners, LCC Public Works	High	FEMA, County Resources	Mid-Term	High	In Progress. Submitted unsuccessful grant application to HMGP
40	Implement Tenmile Creek improvements to increase the efficiency with which flood waters are conveyed down gradient to existing flood control infrastructures.	Flooding	Lewis and Clark County	Commissioners, LCC Public Works	High	FEMA, County Resources	Long-Term	High	In Progress. Updated valley specific mitigation plan - prioritized projects
41	Design, fund and install flood and storm water monitoring system.	Flooding	Lewis and Clark County	Helena Public Works	High	FEMA, County Resources	Long-Term	Medium	Not Started
42	Develop a storm water management plan for the Helena Valley.	Flooding	Lewis and Clark County	LCC Planning Dept.	High	County Resources	Mid-Term	High	Not Started

ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
43	Promote more frequent and complex earthquake drills in Lewis and Clark County.	Earthquakes	Lewis and Clark County, Helena, East Helena	DES, School District, Local/State/Federal Agencies, Private Businesses	High	FEMA, County Resources	Ongoing	High	Annual Implementation. Every school in HSD#1 has conducted 2023 earthquake drills
44	Encourage public to purchase earthquake insurance.	Earthquakes	Lewis and Clark County, Helena, East Helena	DES	High	County Resources	Ongoing	Medium	In Progress
45	Pursue structural and nonstructural mitigation projects for vulnerable schools and public infrastructure.	Earthquakes	Lewis and Clark County, Helena, East Helena	DES, School Districts	High	FEMA, Schools	Ongoing	High	In Progress
46	Encourage homeowners to perform structural and non-structural retrofits on their homes.	Earthquakes	Lewis and Clark County, Helena, East Helena	DES	High	FEMA, Homeowners	Long-Term	Medium	In Progress
47	Harden critical wireless emergency communications system.	Earthquakes	Lewis and Clark County, Helena, East Helena	Highway Patrol, Sheriff's Office/ Dispatch Center	High	City & County Resources, Grants	Mid-Term	High	In Progress.
48	Perform structural analysis for critical facilities and schools, as needed.	Earthquakes	Lewis and Clark County, Helena, East Helena	DES, Facility Managers	High	FEMA, County Resources	Long-Term	Medium	Not Started
49	Harden City of Helena's raw and treated water transmission mains by replacing with HDPE piping from collection system to water treatment plant and from water treatment plant to town.	Earthquakes	Helena	Helena Public Works	High	FEMA, County Resources	Short-Term	Medium	Not Started.

ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
50	Install wells for redundancy to enhance City's system to provide potable water.	Earthquakes	Helena	Helena Public Works	High	FEMA, County Resources	Short-Term	High	In Progress.
51	Partner with the National Weather Service to provide weather education presentations to educate the public on severe weather hazards.	Severe Weather	Lewis and Clark County, Helena, East Helena	DES, NWS	High	County Resources, NWS	Short-Term	High	In Progress
52	Encourage homeowners to install address plaques at proper height for rescue purposes.	Severe Weather	Lewis and Clark County	DES, Fire Districts, County Planning	High	County Resources	Ongoing	High	In Progress
53	Partner with the National Weather Service on the Weather Ready Nation Ambassador Program and increase participation in program.	Severe Weather	Lewis and Clark County, Helena, East Helena	DES, NWS	High	County Resources, NWS	Short-Term	High	In Progress
54	Change wastewater treatment plant relocation discharge to groundwater or ECO Park discharge.	Drought	Helena	Helena Public Works	High	FEMA, City of Helena	Short-Term	Medium	Not Started.
55	Educate residents, teachers and school staff near hazardous material facilities and transportation routes on how to limit exposure to students during a hazardous material incident.	Haz-Mat Incidents	Lewis and Clark County, Helena, East Helena	DES, School District, Fire Depts., Fire Districts	High	County, Schools	Ongoing	Medium	In Progress
56	Revisit idea of an east-west corridor through Helena as a truck by-pass.	Haz-Mat Incidents	Helena	Helena Planning & Public Works, Helena Fire Dept., MDT	High	MDT	Long-Term	Medium	Not Started
57	Continue training with regional hazmat team and civil support team at Fort Harrison.	Haz-Mat Incidents	Lewis and Clark County	Fire Council/ Hazmat Team	High	Regional Haz-Mat Team	Short-Term	High	In Progress

ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
58	Promote public education on preventing communicable disease.	Communicable Disease	Lewis and Clark County, Helena, East Helena	LCC Public Health	High	County Resources	Ongoing	High	Annual Implementation. This is an ongoing life safety priority
59	Provide education and/or training for Public Health Dept. staff.	Communicable Disease	Lewis and Clark County, Helena, East Helena	LCC Public Health	High	County Resources	Ongoing	High	Annual Implementation. This is an ongoing professional priority for competence
60	Procure, train, and supply all emergency responders for potential threats annually.	Communicable Disease	Lewis and Clark County, Helena, East Helena	LCC Public Health	High	County Resources	Ongoing	Medium	In Progress.
61	Expand list serve for Health Alert Network.	Communicable Disease	Lewis and Clark County, Helena, East Helena	LCC Public Health	High	County Resources	Ongoing	Medium	In Progress. This is done on an as needed basis
62	Prevent and control communicable disease by surveillance.	Communicable Disease	Lewis and Clark County, Helena, East Helena	LCC Public Health	High	County Resources	Ongoing	High	In Progress. This is an ongoing life safety priority
63	Prevent and control communicable disease by activities to raise and sustain vaccine coverage in all populations.	Communicable Disease	Lewis and Clark County, Helena, East Helena	LCC Public Health	High	County Resources	Ongoing	High	In Progress. This is an ongoing life safety priority
64	Conduct risk-based inspections of all food service establishments.	Communicable Disease	Lewis and Clark County, Helena, East Helena	LCC Public Health	High	County Resources	Ongoing	High	In Progress. This is an ongoing life safety priority

ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
65	Enforce sewage and solid waste disposal local and state regulations.	Communicable Disease	Lewis and Clark County, Helena, East Helena	LCC Public Health	High	County Resources	Ongoing	Medium	Annual Implementation. This is a day-to-day activity that may get suspended during emergencies
66	Initiate a public awareness campaign aimed at educating people who live in dam inundation areas.	Dam Failure	Lewis and Clark County, Helena, East Helena	DES/ Floodplain Dam owners	High	County, DNRC	Long-Term	Medium	Not Started
67	Promote installation of early warning systems on high hazard dams to interface with dispatch.	Dam Failure	Lewis and Clark County, Helena, East Helena	DES, Dam Owners	High	Dam Owners	Long-Term	Medium	Not Started
68	Continue to exercise dam failure with dam owners.	Dam Failure	Lewis and Clark County, Helena, East Helena	DES, Dam Owners	High	Dam Owners	Ongoing	High	In Progress
69	Request dam owners update EAPs, as needed.	Dam Failure	Lewis and Clark County, Helena, East Helena	DES, Dam Owners	High	Dam Owners	Short-Term	Medium	In Progress
70	Refurbish Chessman Dam.	Dam Failure	Helena	Helena Public Works	High	City of Helena Resources	Short-Term	Medium	Not Started. No project or plan to refurbish the dam
71	Refurbish Scott Reservoir Dam.	Dam Failure	Helena	Helena Public Works	High	City of Helena Resources	Short-Term	Medium	Not Started. No project or plan to refurbish the dam
72	Develop Emergency Action Plan for Scott Reservoir Dam.	Dam Failure	Helena	Helena Public Works	High	City of Helena Resources	Mid-Term	High	Not Started. No project or plan to refurbish the dam
73	Counter violent extremism (active shooter) training with schools and critical facilities.	Terrorism	Lewis and Clark County, Helena, East Helena	LCC Law Enforcement, City Police	High	County & City Resources	Ongoing	High	Annual Implementation. HSD#1 and HPD held 2 active shooter trainings in 2022 and 1 in 2023, planning more

ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
74	Integrate training with emergency services and real scenarios.	Terrorism	Lewis and Clark County, Helena, East Helena	LCC Law Enforcement, City Police	High	County & City Resources	Ongoing	High	In Progress
75	Promote See Something-Say Something Campaign to report unusual behavior.	Terrorism	Lewis and Clark County, Helena, East Helena	DES, VFDs, Sherriff's Office, Police Depts.	High	County & City Resources	Ongoing	High	In Progress
76	Conduct vulnerability assessment of city-county infrastructure (SCADA) systems.	Terrorism	Lewis and Clark County, Helena, East Helena	IT Depts.	High	County & City Resources, Grants	Short-Term	High	In Progress
77	Conduct audit of city-county operations security.	Terrorism	Lewis and Clark County, Helena, East Helena	IT Depts.	High	County & City Resources, Grants	Ongoing	High	In Progress
78	Implement recommendations from vulnerability assessment.	Terrorism	Lewis and Clark County, Helena, East Helena	IT Depts.	High	County & City Resources, Grants	Ongoing	High	In Progress
79	Obtain generators for critical infrastructure.	All Hazards	Lewis and Clark County, Helena, East Helena	DES	High	County & City Resources, GSA	Mid-Term	High	Not Started
80	Enhance, expand and upgrade communications for all emergency responders in Lewis and Clark County.	All Hazards	Lewis and Clark County	LCC Sheriff's Office	High	County Resources, Grants	Short-Term	High	In Progress.

ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
81	Promote registration of cell phones for Outbound notification system (reverse 911).	All Hazards	Lewis and Clark County, Helena, East Helena	LCC Sheriff's Office	High	County Resources, Grants	Short-Term	High	In Progress.
82	Promote grade separation for Montana Ave. for enhanced access.	All Hazards	Helena	Helena City Council	High	City of Helena	Long-Term	High	Not Started
83	Complete 1050 acres of forest fuel reduction maintenance within the city open lands system over the next 5 years	Wildfire	City of Helena	City of Helena Parks Department	Very High	FEMA HMA Grants	Medium Term	High	New in 2023
84	Developer Coordination for WF Mitigation. Tri-County Firesafe Working Group (TCFSWG) would educate developers and land assessments to mitigate WF risk. Landowner reimbursement.	Wildfire	City of Helena	TCFSWG	High	FEMA HMA Grants, USDA Community Wildfire Defense Grant (CWDG)	Medium Term	Medium	New in 2023
85	Individual Home Assessments mitigation on individual lots	Wildfire	City of Helena	TCFSWG	Medium	FEMA HMA Grants, USDA Community Wildfire Defense Grant (CWDG)	Short Term	Low	New in 2023
86	Urban conflagration exercise	Hazmat, Wildfire	Lewis and Clark County, City of Helena, East Helena	Fire Departments, Fire Districts, TCFSWG	Medium	FEMA HMA Grants, USDA Community Wildfire Defense Grant (CWDG)	Short Term	Medium	New in 2023
87	Hazmat Support Training. Fire council collab with Hazmat team to train together for tech support	Hazmat	Lewis and Clark County, City of	Fire Departments, Fire Districts	Low	Existing Budgets, FEMA HMA Grants	Short Term	Medium	New in 2023

ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
			Helena, East Helena						
88	North of end Glass Drive to Hauser Dam. Develop evacuation routes and conduct fuel reduction activities	Wildfire	Lewis and Clark County, City of Helena, East Helena	Fire Departments, Fire Districts, TCFSWG	Medium	FEMA HMA Grants, USDA Community Wildfire Defense Grant (CWDG)	Medium Term	High	New in 2023
89	West Shore Drive. Bureau of Reclamation. Prescribed (ID in CWPP) fuel mitigation	Wildfire	Lewis and Clark County, City of Helena, East Helena	Fire Departments, Fire Districts, TCFSWG	Medium	FEMA HMA Grants, USDA Community Wildfire Defense Grant (CWDG)	Medium Term	High	New in 2023
90	Remini. No defensible space 10 mile drain Hwy 12 though town small fires residents vulnerable	Wildfire	Lewis and Clark County, City of Helena, East Helena	Fire Departments, Fire Districts, TCFSWG	Medium	FEMA HMA Grants, USDA Community Wildfire Defense Grant (CWDG)	Medium Term	High	New in 2023
91	Colorado Gulch defensible space project	Wildfire	Lewis and Clark County, City of Helena, East Helena	Fire Departments, Fire Districts, TCFSWG	Medium	FEMA HMA Grants, USDA Community Wildfire Defense Grant (CWDG)	Medium Term	High	New in 2023



ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
92	Starlink for improved connectivity and reliability of communications, for emergency and first response.	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	Lewis and Clark County, City of Helena, East Helena	LCC Law Enforcement, City Police, Sheriff's Office, IT Departments, Fire Departments, Fire Districts, DES	Medium	FEMA HMA Grants, USDA Community Wildfire Defense Grant (CWDG)	Short Term	Medium	New in 2023
93	Fuel Reduction along PPP identified evacuation routes	Wildfire	Lewis and Clark County, City of Helena, East Helena	PW, Fire Council, TCFSWG	High	FEMA HMA Grants, USDA Community Wildfire Defense Grant (CWDG)	Short Term	High	New in 2023
94	Replace and Upgrade network to 911 center. Improve wireless network infrastructure to 911 center to accommodate next gen 911 upgrade requirements	Multi: Avalanche, Dam Failure, Earthquake, Flooding, Hazmat, Landslide, Summer Weather, Winter Weather, Human Conflict, Tornado/Wind, Transportation Accidents, Volcanic Ash, Wildfire	Lewis and Clark County, City of Helena, East Helena	IT, Helena PD/Dispatch	High	FEMA HMA Grants	Medium Term	Medium	New in 2023

ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
95	Generator Security Improvements and Security Hardening. Fencing and Camera	Human Conflict	Lewis and Clark County, City of Helena, East Helena	LCC Law Enforcement, City Police, Sheriff's Office, IT Departments, DES	Moderate	FEMA HMA Grants	Short Term	High	New in 2023
96	City-County Cyber Infrastructure Hardening. Cyber/Network Security	Human Conflict	Lewis and Clark County, City of Helena, East Helena	LCC Law Enforcement, City Police, Sheriff's Office, IT Departments, DES	Moderate	FEMA HMA Grants	Short Term	High	New in 2023
97	Cyber Security Training for Regional local IT depts	Cyber-Attack	Lewis and Clark County, City of Helena, East Helena	IT, Helena PD/Dispatch	Moderate	FEMA HMA Grants	Short Term	Medium	New in 2023
98	ESRI Small Gov Enterprise agreement. Contract that gives all access to ESRI w/ in all cite server tech tools. Purchase for 3 year cycle. Planning for emergencies public safety asset management. Community transparency	Multi: Avalanche, Communicable Disease, Cyber-Attack, Dam Failure, Drought, Earthquake, Flooding, Hazmat, Landslide, Summer Weather, Winter Weather, Human Conflict, Tornado/Wind, Transportation Accidents, Volcanic Ash, Wildfire	Lewis and Clark County, City of Helena, East Helena	GIS/IT, PW, LE Dispatch Rural Fire Council Planning dept	Moderate	Existing Budgets, FEMA HMA Grants	Short Term	High	New in 2023
99	STB Kits for Vehicles. PD (east Helena) Fentanyl testing to protect officers and first responders on scene when responding to OD	Human Conflict	City of East Helena	East Helena PD	Moderate	Local Budgets	Short Term	Low	New in 2023
100	LECS PD City Hall Retrofit	Earthquake	Lewis and Clark County, City of	LCC Law Enforcement, City Police, Sheriff's	Very High	Existing Budgets,	Long-Term	High	New in 2023

ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
			Helena, East Helena	Office, IT Departments, DES		FEMA HMA Grants, BRIC			
101	Drone with Training. Acquisition of drone for initial damage assessment and Search and Rescue	Multi: Avalanche, Communicable Disease, Cyber-Attack, Dam Failure, Drought, Earthquake, Flooding, Hazmat, Landslide, Summer Weather, Winter Weather, Human Conflict, Tornado/Wind, Transportation Accidents, Volcanic Ash, Wildfire	Lewis and Clark County, City of Helena, East Helena	LCC Law Enforcement, City Police, Sheriff's Office, IT Departments, DES	Moderate	Existing Budgets	Short Term	Medium	New in 2023
102	Training system for Emergency Response. Simulation training system for interactive training planning or decision making.	Multi: Avalanche, Communicable Disease, Cyber-Attack, Dam Failure, Drought, Earthquake, Flooding, Hazmat, Landslide, Summer Weather, Winter Weather, Human Conflict, Tornado/Wind, Transportation Accidents, Volcanic Ash, Wildfire	Lewis and Clark County, City of Helena, East Helena	LCC Law Enforcement, City Police, Sheriff's Office, IT Departments, DES	Moderate	Existing Budgets	Short Term	Medium	New in 2023

ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
103	Paging System for paging emergency services. The current system is outdated and features alpha numeric paging. Update tech for more reliable paging for areas not covered by cell.	Multi: Avalanche, Communicable Disease, Cyber-Attack, Dam Failure, Drought, Earthquake, Flooding, Hazmat, Landslide, Summer Weather, Winter Weather, Human Conflict, Tornado/Wind, Transportation Accidents, Volcanic Ash, Wildfire	Lewis and Clark County, City of Helena, East Helena	Dispatch/SO, IT	Moderate	Existing Budgets	Short Term	Low	New in 2023
104	Morgue Infrastructure Hardening. Provide exam room with plumbing to better isolate biological hazardous containment of disease	Communicable Disease	Lewis and Clark County, City of Helena, East Helena	SO	High	FEMA HMA Grants	Short Term	Medium	New in 2023
105	Negotiator Equipment. Outfit crisis reg team to communicate with terrorist or active threat negotiations	Human Conflict	Lewis and Clark County, City of Helena, East Helena	PD, EHPD and SO	Moderate	Existing Budgets, FEMA HMA Grants, BRIC	Short Term	Medium	New in 2023
106	Generator with Electrical Support. SO/PD	Multi: Cyber-Attack, Dam Failure, Earthquake, Flooding, Summer Weather, Winter Weather, Human Conflict, Tornado/Wind, Volcanic Ash, Wildfire	Lewis and Clark County, City of Helena, East Helena	LCC Law Enforcement, City Police, Sheriff's Office, DES	Moderate	Existing Budgets, FEMA HMA Grants, BRIC	Short Term	Medium	New in 2023

ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
107	Generator w/ East Helena PD	Multi: Cyber-Attack, Dam Failure, Earthquake, Flooding, Summer Weather, Winter Weather, Human Conflict, Tornado/Wind, Volcanic Ash, Wildfire	Lewis and Clark County, City of Helena, East Helena	LCC Law Enforcement, City Police, Sheriff's Office, DES	Moderate	Existing Budgets, FEMA HMA Grants, BRIC	Short Term	Medium	New in 2023
108	Universal Power source. LC and East Helena PD Dispatch	Multi: Cyber-Attack, Dam Failure, Earthquake, Flooding, Summer Weather, Winter Weather, Human Conflict, Tornado/Wind, Volcanic Ash, Wildfire	Lewis and Clark County, City of Helena, East Helena	LCC Law Enforcement, City Police, Sheriff's Office, DES	High	Existing Budgets, FEMA HMA Grants, BRIC	Medium Term	Medium	New in 2023
109	Creation of an "Unmet Needs" facility. Acquisition or MOU for a facility to support at risk populations. Resources or assistance for populations with unmet needs which are not addressed by emergency response. Provide staffing and training for the facility as well. Services, support, medical, power, resources, food, medical, shelter	Multi: Avalanche, Communicable Disease, Cyber-Attack, Dam Failure, Drought, Earthquake, Flooding, Hazmat, Landslide, Summer Weather, Winter Weather, Human Conflict, Tornado/Wind, Transportation Accidents, Volcanic Ash, Wildfire	Lewis and Clark County, City of Helena, East Helena	City of Helena, COAD, DES/PHEP county	High	FEMA HMA Grants; BRIC	Medium Term	Medium	New in 2023

ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
110	Mitigation Education and Outreach program.	Multi: Avalanche, Communicable Disease, Cyber-Attack, Dam Failure, Drought, Earthquake, Flooding, Hazmat, Landslide, Summer Weather, Winter Weather, Human Conflict, Tornado/Wind, Transportation Accidents, Volcanic Ash, Wildfire	Lewis and Clark County, City of Helena, East Helena	LCC Public Health	Moderate	Existing Budgets, Staff Time	Short Term	Medium	New in 2023
111	Air Quality Monitor Stations. Place air quality monitoring stations in Augusta, Lincoln and East Helena	Wildfire	Lewis and Clark County, City of Helena, East Helena	LCC Public Health	High	Existing Budgets, FEMA HMA Grants	Short Term	Medium	New in 2023
112	Water Quality PD Outreach ED Funds. storm water outreach and education develop SW education campaign to mitigate impacts of storm water on private property in health	Summer Weather, Winter Weather, Flooding	Lewis and Clark County, City of Helena, East Helena	LCC Public Health	High	Existing Budgets, FEMA HMA Grants	Medium Term	Low	New in 2023
113	Hazmat Vulnerability Analysis on Public Facilities. Identify vulnerable public facilities for hazmat spills/exposure. Include city and county owned facilities	Hazmat	Lewis and Clark County, City of Helena, East Helena	LCC Public Health	High	Existing Budgets, FEMA HMA Grants	Medium Term	Medium	New in 2023
114	Decontamination Team. Comprised of Public Health partners. Decontamination Certification and training to support hospital decontamination response. equipment purchases	Hazmat, Communicable Disease	Lewis and Clark County, City of Helena, East Helena	DES, Public Health, Hospital	High	Existing Budgets, FEMA HMA Grants	Medium Term	High	New in 2023

ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
115	Community health education program. 1 Staff with outreach materials budget emerging health issues (PFAS, COVID, RSV)	Communicable Disease	Lewis and Clark County, City of Helena, East Helena	LCC Public Health, DES	High	Existing Budgets, FEMA HMA Grants	Medium Term	High	New in 2023
116	Stormwater mitigation education. Educate homeowners on mitigation techniques to reduce storm water/flood damage to roads, water wells, surface water and L&C county	Flooding	Lewis and Clark County, City of Helena, East Helena	Lewis and Clark public health/water quality district	High	Existing Budgets, FEMA HMA Grants	Medium Term	Medium	New in 2023
117	Post Disaster Education Wildfire, scarring and runoff. After fire does runoff contaminate state water or impact drinking water wells. mitigation before the event community outreach.	Wildfire, Landslide, Flood, Summer Weather, Winter Weather	Lewis and Clark County, City of Helena, East Helena	LCC Public Health, DES	High	Existing Budgets, FEMA HMA Grants	Medium Term	Medium	New in 2023
118	Flood mitigation building within jail facility flood walls	Flooding	Lewis and Clark County, City of Helena, East Helena	Public Works Departments	High	USACE authorities, Silver Jackets	Long-Term	High	New in 2023
119	Portable Sump pump for jail flooding	Flooding	Lewis and Clark County, City of Helena, East Helena	Public Works Departments	High	USACE authorities, Silver Jackets	Long-Term	High	New in 2023
120	Generator Wiring for PW Facility	Multi: Cyber-Attack, Dam Failure, Earthquake, Flooding, Summer Weather, Winter Weather, Human Conflict, Tornado/Wind, Volcanic Ash, Wildfire	Lewis and Clark County, City of Helena, East Helena	Public Works Departments	Moderate	Existing Budgets, FEMA HMA Grants, BRIC	Short Term	Medium	New in 2023

ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
121	Security Hardening all county owned facilities	Terrorism	Lewis and Clark County, City of Helena, East Helena	LCC Law Enforcement, City Police, Sheriff's Office, DES	Moderate	Existing Budgets, FEMA HMA Grants, BRIC	Short Term	Low	New in 2023
122	All hazards evac route. Beartooth road erode into Holter lake emergency evacuation repairs/impacts in route needed. In addition, a long term effort to implement erosion issues and future impact	Multi: Dam Failure, Earthquake, Flooding, Hazmat, Landslide, Summer Weather, Winter Weather, Human Conflict, Tornado/Wind, Transportation Accidents, Volcanic Ash, Wildfire	Lewis and Clark County, City of Helena, East Helena	LCC Law Enforcement, City Police, Sheriff's Office, DES	Moderate	Existing Budgets, FEMA HMA Grants, BRIC	Short Term	Low	New in 2023
123	Evaluate and implement Installation of Snow fences and key drainages. Within L&C to help with drought/recovery and flood mitigation effort. In addition, it would help with winter response efforts and maintenance for public safety for snow removal	Drought, Winter Weather, Flooding	Lewis and Clark County, City of Helena, East Helena	Public Works Departments, LCC Law Enforcement	Moderate	Existing Budgets, FEMA HMA Grants, BRIC	Medium Term	Medium	New in 2023
124	Retrofitting and Earthquake hardening for county owned facilities	Earthquake	Lewis and Clark County, City of Helena, East Helena	Public Works Departments	Very High	Existing Budgets, FEMA HMA Grants, BRIC	Long-Term	High	New in 2023



ID	Action Name & Description	Hazards Mitigated	Jurisdictions	Lead Agency and Partners	Cost Estimate	Potential Funding	Timeline	Priority	Status & Implementation Notes
125	Evaluate and Prioritize areas for train overpasses to increase emergency route access	Multi: Dam Failure, Earthquake, Flooding, Hazmat, Landslide, Summer Weather, Winter Weather, Human Conflict, Tornado/Wind, Transportation Accidents, Volcanic Ash, Wildfire	Lewis and Clark County, City of Helena, East Helena	Public Works Departments, Road and Bridge, MTDOT	Very High	Existing Budgets, FEMA HMA Grants, BRIC	Long-Term	High	New in 2023
126	East Helena HWY 282 or 518 overpasses of train tracks for emergency route	Multi: Dam Failure, Earthquake, Flooding, Hazmat, Landslide, Summer Weather, Winter Weather, Human Conflict, Tornado/Wind, Transportation Accidents, Volcanic Ash, Wildfire	Lewis and Clark County, City of Helena, East Helena	Public Works Departments, Road and Bridge, MTDOT	Very High	Existing Budgets, FEMA HMA Grants, BRIC	Long-Term	High	New in 2023
127	Augusta Elk Creek Flooding. Channel and floodplain debris removal. Regular culvert maintenance. Culvert backwater prevention via flow redirection berm is preferred option. Flood bypass channel is secondary option.	Flooding	Lewis and Clark County, City of Helena, East Helena	Lewis and Clark County Public Works	Very High	Potential RID, Mill Levy, Gas Tax, FEMA HMA Grants, BRIC	Medium Term	High	New in 2023
128	Helena Valley (Tenmile, Seven mile, Silver Cr. Flooding. Monitor Tenmile Creek, D2 Ditch improvements, Silver creek flood bypass channel, Tenmile overflow forest vale road improvements, Sierra road improvements, Baseline improvements	Flooding	Lewis and Clark County, City of Helena, East Helena	Lewis and Clark County Public Works	Very High	Potential RID, Mill Levy, Gas Tax, FEMA HMA Grants, BRIC	Medium Term	High	New in 2023

## H.7 Plan Implementation and Maintenance

Moving forward the Lewis and Clark 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.

### H.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:

Lewis and Clark County:

- Lewis and Clark County Pre-Disaster Mitigation Plan, 2017
- Lewis and Clark County Growth Policy, 2015
- Lewis and Clark County Flood Insurance Study, 2012
- Lewis and Clark County Zoning Regulations
- Lewis and Clark County Subdivision Regulations, 2019
- Lewis and Clark County Floodplain Ordinance, 2022
- Lewis and Clark County Valley Flood Mitigation Master Plan – Hydrologic and Hydraulic Analysis, 2017

City of Helena:

- City of Helena Growth Policy, 2019
- City of Helena FIRMS, 2012
- City of Helena Floodplain Regulations Ordinance, 2012
- Downtown Helena Master Plan, 2016

City of East Helena:

- City of East Helena Water Master Plan, 2018
- City of East Helena Growth Policy, 2021
- City of East Helena Zoning Ordinance, 2022
- City of East Helena Subdivision Regulations, 2020

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.

The CPT noted that Lewis and Clark County has used the Montana State Hazard Mitigation Plan as a tool for floodplain management and mitigation. It directly correlates with the Lewis and Clark County Growth Policy's Goals and Objectives which are analyzed when doing zoning permitting, and subdivisions.

### H.7.2 Monitoring, Evaluation and Updating the Plan

Lewis and Clark County will follow the procedures to review and update this plan in accordance with Montana Western 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 Lewis and Clark County Annex to the Montana Western 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.

DRAFT