2018 UPDATE
STATE OF MONTANA
Multi-Hazard Mitigation Plan
Statewide Hazard Assessment

Prepared for:

Montana Department of Military Affairs
Disaster and Emergency Services
Helena Montana

Prepared by:

Tetra Tech
Helena Montana

July 2018

STATE OF MONTANA
MULTI-HAZARD MITIGATION PLAN &
STATEWIDE HAZARD ASSESSMENT

2018 UPDATE

Prepared for:

The State of Montana
Department of Military Affairs
Disaster and Emergency Services
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July 2018

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September 24, 2018

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Mr. dePalo:

Thank you for your final review and approval of the 2018 Update to the State of Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment. I hereby adopt this plan as Governor on behalf of the State of Montana.

Wildfires, floods, severe storms, earthquakes, landslides and other natural events disrupt lives and may pose serious hazards to our citizens. It is our policy to study and learn from past natural hazard events and apply the knowledge gained to our State Mitigation Plan. Experience has taught us that acting from a broad information base enhances our ability to reduce the threat of natural disasters to people, property, and resources without further adverse impacts to the environment. Implementation of the recommendations contained in the plan will contribute greatly to the safety and well-being of the citizens of the Big Sky State.

The Montana Disaster and Emergency Services Division prepared this current plan update with the assistance of personnel from state and federal agencies, local governments, private businesses, associations, and other stakeholders. Montana state agencies have been more active in mitigation actions and preparedness. You will find that this plan provides a clear opportunity for our State to work cooperatively and creatively to mitigate damages in future events.

The plan identifies and profiles the range of hazards affecting the State, assesses the State's risk and vulnerability to natural and man-made hazards, examines existing hazard mitigation capabilities, develops statewide mitigation goals and strategies, and establishes a framework for implementing those goals and strategies as well as for monitoring, evaluating, and updating the plan.

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This plan is in full compliance with the planning requirements of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288 as amended, and the Interim Final Rule (44 CFR Parts 201 and 206), thus keeping the State of Montana qualified to receive funding under all FEMA disaster assistance and hazard mitigation assistance programs. Montana will comply with all applicable federal statutes and regulations in effect with respect to the periods in which it receives grant funding and will amend its plan whenever necessary to reflect changes in state and federal laws and statutes, as required in 44 CFR 13.11 (c) and (d). On an annual basis, Montana will convene the Montana Mitigation Advisory Group to review the plan as required and update as needed.

We would like to thank your staff for their valuable guidance and assistance in the completion of this plan.

Sincerely,

STEVE BULLOCK
Governor

Enclosure

EXECUTIVE SUMMARY

Disasters can strike at any time in any place. In many cases, actions can be taken before disasters strike to reduce or eliminate the negative impacts. These actions, termed mitigation, often protect life, property, the economy, and other values. This State of Montana Updated Multi-Hazard Mitigation Plan (MHMP) addresses the major hazards with respect to risk and vulnerabilities statewide.

A multi-disciplinary Planning Team contributed their expertise in the development of this Plan. This group represents the various state agencies involved in hazard mitigation in Montana and their local and federal partners. The Planning Team met bi-weekly from September to December 2017 to identify and prioritize the hazards profiled in this Plan and to update the mitigation strategy. This group has been established as the Permanent Montana Mitigation Team and will meet annually to discuss the MHMP, share mitigation opportunities, and collaborate on projects.

Eleven (11) natural and manmade hazards are profiled in the 2018 State of Montana MHMP. They are presented below according to their prioritized rank:

1. Wildland and Rangeland Fire
2. Flooding
3. Earthquakes
4. Drought
5. Severe Weather
6. Transportation Accidents and Hazardous Material Incidents
7. Disease (Public Health, Agriculture and Wildlife)
8. Landslide and Avalanche
9. Dam Failure
10. Terrorism, Violence, Civil Unrest and Cyber Security
11. Volcanic Ash

Each hazard is profiled in terms of a hazard description, history of occurrence, probability and magnitude, mapping (where possible), vulnerabilities to, projected variability associated with a changing climate, data limitations and other factors. Vulnerabilities to critical facilities, the general building stock, population and future development are evaluated for each hazard with loss estimates presented where appropriate.

The State believes that this MHMP Update contains vastly improved hazard analysis based not only on the availability of 2016 U.S. Census estimates, but on a refined risk assessment methodology that utilizes a spatial structures database that was linked to parcel data to analyze building exposure. This approach is a more accurate representation of the vulnerability of the general building stock to the various hazards because structure locations are pinpointed within each parcel. A significant effort was employed to correct redundant structure values in the database in order to present a more accurate exposure analysis. The methodology for estimating at-risk population was also modified and utilizes U.S. Census estimates for the number of individuals residing in each residential structure including those under 18 years and over 65. Population estimates presented in the 2013 Plan were derived from an analysis of census block data which over-reported societal

risk. Finally, the 2018 MHMP includes a hazard analysis of cultural resources in the State of Montana which identifies those most vulnerable to natural disasters and hazard events.

In order to comply with the requirement that states consider changes to climate conditions that may affect and influence their long-term vulnerability to natural hazards, the 2018 Montana MHMP has relied on data from the National Oceanic and Atmospheric Administration (NOAA) associated with the FEMA Region VIII publication for Montana entitled "*Assessing Future Conditions, Meeting FEMA's State Mitigation Plan Requirement*" and the 2017 Montana Climate Assessment (*Whitlock C., Cross W., Maxell B, Silverman N, Wade AA, 2017*). As such, probability includes considerations for changing future conditions, including the effects of long-term changes in weather patterns and climate on the identified hazards.

The 2018 Montana mitigation strategy was updated with much more input from state agencies than in previous Plan updates. One goal was established for each hazard along with an All Hazard goal. Mitigation objectives were updated in accordance with FEMA planning guidance to include prevention, property protection, structural, natural resource protection, public education and awareness, emergency service, and mapping/planning project types. Implementation details were established including planned activities over the next five years, and progress made was documented. Sixty-two (62) updated local (county and tribal) hazard mitigation plans were reviewed and evaluated for consistency with the state mitigation strategy. Local plans are linked electronically to the 2018 Montana MHMP.

Since the 2013 Montana MHMP was adopted, MT Disaster and Emergency Services has restructured and the capability assessment in *Section 6* of the Plan discusses this new organization and the state's administrative, technical and financial capabilities to perform hazard mitigation. The state's mitigation accomplishments are presented in this section as well as a local capability assessment.

The final section of the Plan discusses the state's approach to maintaining this MHMP to make certain it remains relevant. A process to monitor and evaluate mitigation projects has also been refined to ensure accountability and communication of mitigation successes. A commitment from the Montana Permanent Mitigation Team, under the direction of the State Hazard Mitigation Officer, will move hazard mitigation forward in Montana.

LIST OF ACRONYMS

A&E	Architecture and Engineering
AG	Attorney General
AIS	Aquatic Invasive Species
AM/FM	Association of Montana Floodplain Managers
ANSS	Advanced National Seismic System
APHIS	Animal and Plant Health Inspection Service
ARC	American Red Cross
ARM	Administrative Rules of Montana
ARS	Agricultural Research Service
BAER	Burned Area Emergency Response
BCA	Benefit-Cost Analysis
BIA	Bureau of Indian Affairs (U.S.)
BLM	Bureau of Land Management (U.S.)
CAH	Critical Access Hospitals
CAIC	Colorado Avalanche Information Center
CAP	Community Action Partnership
CDBG	Community Development Block Grant
CDC	Center for Disease Control
CEIC	Census & Economic Information Center
CoCoRaHs	Community Collaborative Rain, Hail, Snow Network
COG	Continuity of Government
COOP	Continuity of Operations Plan
CPRI	Calculated Priority Risk Index
CRP	Conservation Reserve Program
CRREL	Cold Regions Research and Engineering Laboratory
CRS	Community Rating System
CSKT	Confederated Salish and Kootenai Tribes
CWD	Chronic Wasting Disease
CWPP	Community Wildfire Protection Plan
DEM	Digital Elevation Model
DES	Disaster and Emergency Services
DEQ	Department of Environmental Quality (Montana)
DFIRM	Digital Flood Insurance Rate Map
DFO	District Field Officer
DHS	Department of Homeland Security (U.S.)
DLI	Department of Labor and Industry (Montana)
DMA	Disaster Mitigation Act
DMA	Dept. of Military Affairs (Montana)
DNRC	Department of Natural Resources and Conservation (Montana)
DOA	Department of Administration (Montana)
DOJ	Department of Justice
DPHHS	Department of Public Health and Human Services (Montana)
DSA	Designated Surveillance Area
EAP	Emergency Action Plan

LIST OF ACRONYMS

EF	Enhanced Fujita
EFR	Effective Fire Response
EMPG	Emergency Management Performance Grant
EMS	Emergency Medical Service
EO	Executive Order
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency (U.S.)
EPCRA	Emergency Planning and Community Right-to-Know Act
ESF	Emergency Support Function
FAC	Fire Adapted Community
FAD	Foreign Animal Disease
FBI	Federal Bureau of Investigation
FEI	Fire Effects Index
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FMA	Flood Mitigation Assistance
FMAG	Fire Management Assistance Grant
FRI	Fire Risk Index
FSA	Farm Service Agency
FSA	Federal Suppression Assistance
FTI	Fire Threat Index
FWP	Fish, Wildlife and Parks (Montana)
FWS	Fish and Wildlife Service (U.S.)
FY	Fiscal Year
GDP	Gross Domestic Product
GIS	Geographic Information Systems
GSA	General Services Administration
HAZUS-MH	Hazards of the United States-Multi Hazard
HES	High Emission Scenario
HMEP	Hazardous Materials Emergency Preparedness
HMGP	Hazard Mitigation Grant Program
HSGP	Homeland Securities Grant Program
IA	Individual Assistance
IBC	International Business Code
ICS	Incident Command System
IDSS	Impact-based Decision Support Services
IRC	International Residential Code
LEPC	Local Emergency Preparedness Committee
LES	Low-Emission Scenario
LIDAR	Light Detection and Ranging

LIST OF ACRONYMS

LOMAR	Letter of Map Revision
MACD	Montana Association of Conservation Districts
MACO	Montana Association of Counties
MAP	Montana Association of Planners
MBMG	Montana Bureau of Mines and Geology
MCA	Montana Code Annotated
MDF	Mule Deer Foundation
MDOR	Montana Department of Revenue
MDT	Montana Department of Transportation
MERF	Montana Emergency Response Framework
MHM	Multi-Hazard Mitigation
MHMP	Multi-Hazard Mitigation Plan
MRCI	Montana Ready Communities Initiative
MSL	Montana State Library
MSU	Montana State University
NCD	Natural Channel Design
NCDC	National Climatic Data Center
NDD	Natural Disaster Determination
NDMC	National Drought Mitigation Center
NEHRP	National Earthquake Hazards Reduction Program Earthquake
NFIP	National Flood Insurance Program
NGO	Non-Government Organization
NID	National Inventory of Dams
NIFC	National Interagency Fire Center
NISEE	National Information Service for Earthquake Engineering
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service (U.S.)
NRC	National Response Center (U.S.)
NRCS	Natural Resources Conservation Service
NRIS	Natural Resource Information System
NTSB	National Transportation and Safety Board
NWR	NOAA Weather Radio
NWS	National Weather Service (U.S.)
OPI	Office of Public Instruction (Montana)
PA	Public Assistance
PCIIS	Property Casualty Insurance Information System
PDM	Pre-Disaster Mitigation
PDMC	Pre-Disaster Mitigation-Competitive
PDSI	Palmer Drought Severity Index
PKD	Prolific Kidney Disease
PMR	Preliminary Map Revision
PSC	Public Service Commission

LIST OF ACRONYMS

PSR	Prevention, Suppression, and Restoration
RC&D	Resource Conservation and Development
REC	Rural Electric Cooperatives
RL	Resilient Landscapes
RL	Repetitive Loss
RMEF	Rocky Mountain Elk Foundation
RML	Rocky Mountain Laboratories
RMTD	Risk Management and Tort Defense (Division)
ROW	Right-of-Way
RRGL	Renewable Resource Grant and Loan Program;
RWIS	Road Weather Information System;
SAC	Senior Advisory Committee
SBA	Small Business Administration
SERC	State Emergency Response Commission
SHELDUS	Spatial Hazard Events & Loss Database
SHMO	State Hazard Mitigation Officer
SHPO	State Historic Preservation Officer
SP	State Park
SPLC	Southern Poverty Law Center
SPR	State Preparedness Report
SRL	Severe Repetitive Loss
SWSI	Surface Water Supply Index
TERC	Tribal Emergency Response Commission
THIRA	Threat Hazard Identification Risk Assessment
TIMS	Traffic Incident Management System
TRI	Toxics Release Inventory
UM	The University of Montana
USACE	United States Army of Corps of Engineers
USBR	U.S. Bureau of Reclamation
USDA	United States Department of Agriculture
USDM	United States Drought Monitor
USFS	United States Forest Service
USFWS	United States Fish and Wildfire Service
USGS	United States Geological Survey
VEI	Volcanic Explosive Index
WDA	Wildland Development Areas
WHO	World Health Organization
WMA	Wildlife Management Area
WRN	Weather Ready Nation
WUA	Water User Association
WUI	Wildland/Urban Interface

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SECTION 1. INTRODUCTION

The State of Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment is the State's primary hazard mitigation document. It is the product of extensive input from governmental and tribal agencies, non-governmental organizations, in-depth research, and hazards analysis. The results are stand-alone sections, statewide in nature, useful for many entities throughout the State of Montana, and expandable as events occur and better data is developed. The document establishes a process for broad governmental and organizational involvement, provides a comprehensive and detailed statewide hazard assessment, and demonstrates the overarching mitigation strategy for the State of Montana.

1.1 PURPOSE AND AUTHORITY

The State of Montana Multi-Hazard Mitigation Plan (MHMP) and Statewide Hazard Assessment was developed with the purpose of documenting historical hazard events and vulnerabilities, and strategies for mitigation that will make Montana a more disaster resistant State. This comprehensive and relevant document is intended to present hazard information and actions that can be taken to prevent damages. As is the case with all disaster plans, this Plan does not identify or list every possible hazard. Furthermore, events listed may not occur in the manner identified. The Plan is a tool that identifies actions that will reduce impacts to human health and property from the effects of natural, man-made, and technological hazards.

The authority governing the Plan's development and contents is Section 322 (Mitigation Planning) of the Robert T. Stafford Disaster Relief and Emergency Assistance Act enacted by Section 104 of the Disaster Mitigation Act of 2000 (P.L. 106-390). Specifically, the plan must meet the requirements of the Interim Final Rule published in the Federal Register on February 26, 2002 at 44 CFR Part 201 and the State Mitigation Plan Review Guide, effective March 2016 (FP 302-094-2), developed by the Federal Emergency Management Agency (FEMA). Meeting these requirements will allow the State and communities with approved local plans to apply for federal mitigation assistance, both pre- and post-disaster. The State of Montana hereby provides assurance that it will manage and administer FEMA funding in accordance with applicable federal statutes and regulations.

1.2 PLAN DESCRIPTION

The scope of this Plan is to meet the required elements of a Standard Level State Plan with the potential to expand to an Enhanced Plan at a future date. Funding for the development of this plan was provided by FEMA through the Pre-Disaster Mitigation (PDM) grant program in fiscal year 2017. Updates of the initial plan, as required by the Disaster Mitigation Act (DMA) of 2000, were funded through the FEMA PDM grant program in 2006 and 2009 and mitigation planning funds associated with the DR-1996 Presidential Disaster in 2012. The scope of the State of Montana MHMP and Statewide Hazard Assessment will continue to expand over time and will be dictated by available funding and by the availability of more information. Below is a description of the organization of the 2018 State of Montana MHMP

Section 2 contains a discussion of the Planning Process utilized for development of this document and the integration of this document with other State Plans and Programs. **Appendix A** presents documentation from the Planning Process.

Section 3 provides a State Profile including sections on climate, economy and population.

Section 4, the Risk Assessment, identifies and profiles the following major hazards in Montana (listed by rank):

- Wildland and Rangeland Fires
- Flooding
- Earthquake
- Drought
- Severe Weather
- Hazardous Materials and Transportation Accidents
- Disease (Public Health, Agro-Security, and Wildlife)
- Landslide and Avalanche
- Dam Failure
- Terrorism, Violence, Civil Unrest, and Cyber Security
- Volcanic Ash

The history of occurrence, the probability of occurrence, the severity resulting from, and the vulnerability to each of these hazards is individually discussed. Where possible, data is mapped to show vulnerability by jurisdiction, and in particular, to state-owned facilities. For greater detail by jurisdiction, local data was incorporated where practicable and available. Local Hazard Mitigation Plans (both original and updated versions) are linked electronically to this document. The 2018 Statewide Hazard Assessment considers the probability of future hazard events due to changing conditions associated with the effects of long-term changes in weather patterns and climate. **Appendix B** presents documentation from the Risk Assessment including losses from the local hazard mitigation plans to the various hazards.

Section 5, the Mitigation Strategy, looks at the mitigation structure in Montana and identifies actions that can be implemented to reduce damages and losses and assist local jurisdictions to mitigate impacts associated with the natural, man-made, and technological events identified in the hazard assessment. This section presents: statewide mitigation goals, objectives, and projects; implementation details identifying the responsible agency/department, progress made, planned activities, schedule, and potential funding source; the prioritization scheme used to rank the projects; mitigation funding sources; and the status of Montana's mitigation program. The mitigation strategy does not establish or redefine mitigation in Montana, but rather provides a comprehensive look at the system for achieving disaster resistance. Integration of the approved local Hazard Mitigation Plans into the State of Montana MHMP is also discussed in this section. **Appendix C** presents Mitigation documentation including an evaluation of the consistency between the State and local mitigation strategies. **Appendix D** present electronic links to the local mitigation plans.

Section 6 contains a Capability Assessment that looks at the administrative, technical, and financial capabilities at both the state and local level available to perform pre- and post-disaster mitigation planning and project implementation. This section also presents an evaluation of state laws and regulations specific to hazard mitigation and development in hazard-prone areas.

Section 7 discusses Plan Maintenance Procedures including evaluation of the State of Montana MHMP and mitigation project monitoring and evaluation procedures.

Section 8 consolidates references cited in the Plan.

The State of Montana MHMP and Statewide Hazard Assessment strives to clearly identify and profile the hazards that pose the greatest threat to the state and prevent damages and losses in the future. The ultimate objective is to make the State of Montana a safer place to live, work, and visit.

This document comprises the 2018 Update to the State of Montana's MHMP and Statewide Hazard Assessment. It has been prepared for the State of Montana, Department of Military Affairs-Disaster and Emergency Services Division by Tetra Tech Inc., under Contract No. DMA2017-0010, executed on July 31, 2017 under the direction of the State Hazard Mitigation Officer (SHMO). The State of Montana will amend this MHMP whenever necessary to reflect changes in state or federal laws and statues. At a minimum, State Plans must be updated every 5 years, as required in 44 CFR 13.11 (d).

The original Montana State MHMP was prepared by Resource Management Services, Inc. (Prime Contractor), Land and Water Consulting (subcontractor), and Big Sky Hazard Management, Inc. (subcontractor) under Contract No. MIL04-785J executed on November 10, 2003. The 2007, 2010, and 2013 updates were prepared by Tetra Tech, Inc. under Contracts No. MIL07-13730, 100035, and 130015 executed on November 14, 2006, November 2, 2009, and October 24, 2012 respectively.

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SECTION 2. PLANNING PROCESS

2.1 PLANNING PROCESS DOCUMENTATION

The planning process for the 2018 update to the State of Montana MHMP and Statewide Hazard Assessment (the Plan) was designed and developed to maximize participation and information exchange. To initiate the update process, the State of Montana, Department of Military Affairs, Disaster and Emergency Services (MT DES) Division via Contract No. DMA2017-0010 (executed on July 31, 2017) retained Tetra Tech, Inc. to assist with the Plan update. The Contractor implemented the planning initiative under the direction and guidance of the State Hazard Mitigation Officer.

A sixteen (16) month timeframe was needed to complete the 2018 Montana MHMP update. The project was initiated in August 2017; the Planning Team meetings were held from September through December 2017; the contractor prepared the draft Plan from January through mid-June 2018; stakeholder meetings were held during March through June 2018; and a draft deliverable was produced for a 30-day review on June 15, 2018. The draft document was revised and submitted to FEMA for a 60-day review on August 1, 2018. A final revision was completed and the Plan was submitted to the Governor for adoption on October 1, 2018.

A system for completing the necessary elements of a Standard State Mitigation Plan was created to provide an efficient way for participants to become active in the planning process and to facilitate an informational exchange of the most current data and programs throughout the State. During development of the original plan (2004) the planning process was focused on an Advisory Group, Hazard Technical Groups, and a Stakeholders Group. The planning process for subsequent updates (2007, 2010, and 2013) focused on a State Planning Team and Stakeholders Group (which included local jurisdictions). For this 2018 update, workshops were held with the Montana Multi-Hazard Mitigation Planning Team to rank hazards and update the mitigation strategy, with briefings delivered to project stakeholders during the drafting phase of the plan.

2.1.1 Multi-Hazard Mitigation Planning Team

The Multi-Hazard Mitigation (MHM) Planning Team was designated as the main advisory group to address development of the 2018 State of Montana MHMP. The *National Mitigation Framework* emphasizes the valuable role of collaboration among various sectors to ensure mitigation capabilities continually develop and that comprehensive mitigation includes strategies for all community systems. As such, the MHM Planning Team included a cross-section of project stakeholders who have a common set of values and widespread support for directing financial, technical, and human resources to Montana's mitigation strategy. The MHM Planning Team represents the permanent Montana Mitigation Advisory Group.

Members of the MHM Planning Team were requested to participate based on their expert knowledge of hazards and/or their active role in mitigation activities in Montana, as shown in **Table 2.1-1**. They were also requested to participate because they represent a state/federal agency or non-government organization with a vested interest in hazard mitigation in the State.

Table 2.1-1. State MHM Planning Team - 2018

Agency/Organization	Name	Expertise
STATE AGENCIES		
Montana Bureau of Mines & Geology	Michael Stickney	Earthquakes, Avalanche, Landslide
Montana Dept. of Administration, Architecture & Engineering	Jim Whaley	Earthquakes
Montana Dept. of Agriculture	Kim Mangold	Drought, Agro-Security
Montana Dept. of Commerce	Taylor Crowl, Maria Jackson, Galen Steffens	All Hazards, Housing
Montana Dept. of Environmental Quality	Bob Habeck, Julie Merkel, Liz Ulrich	Wildfire, Hazardous Materials
Montana Dept. of Justice	Anne Dormady, Andy Rumley	Terrorism
Montana Dept. of Livestock	Emily Kaleczyc	Drought, Agro-Security
Montana Dept. of Military Affairs, Disaster and Emergency Services	Rachel Catron, Jake Ganieany, Ed Greiberis, Burke Honzel, Ryan Lee, J. Lee Okeson, Nadene Wadsworth	All Hazards
Montana Dept. Military Affairs, National Guard	Jeremy Hedges, Erin Helm	Terrorism
Montana Dept. of Natural Resources & Conservation, Forestry Division	Crystal Beckman	Wildfire
Montana Dept. of Natural Resources & Conservation, Water Resources	Michael Downey, Ann Schwend	Drought
Montana Dept. of Natural Resources & Conservation, Water Resources	Michele LeMieux, Tiffany Lyden, Traci Sears	Flooding, Dam Failure
Montana Department of Public Health and Human Services	Kevin O'Loughlin	Communicable Disease
Montana Dept. of Transportation	Walt Kerttula	Hazardous Materials, Landslides, Transportation Accidents
Montana Fish, Wildlife & Parks	Renee Lemon, Charlie Sperry	Wildlife Disease
Montana Historical Society	Stan Wilmoth	Cultural Resources
FEDERAL AGENCIES		
Bureau of Land Management	Chris Barth	Wildfire
National Weather Service	Donald Britton, Christian Cassell, Kevin Gilmore, Roger Martin, Arin Peters, Megan Syner,	Severe Weather
U.S. Army Corps of Engineers	Tony D. Krause	Flooding, Dam Failure
U.S. Dept. Homeland Security	Randy Middlebrook	Terrorism, Cyber Security
U.S. Forest Service	Marty Mitzkus	Wildfire
NON-GOVERNMENT ORGANIZATIONS		
MT Association of Conservation Districts	Elena Evans	Drought
MT Association of County DES Coordinators	Bill Ellis, Paul Spengler	All Hazards
FireSafe Montana	Pat McKelvey, Roy Prill	Wildfire

The MHM Planning Team met seven times during the drafting stage of the plan and reviewed items as necessary throughout the planning process. The mitigation planning process was integrated to the extent possible with other state planning efforts, as outlined below:

Meeting No. 1 - The initial meeting of the MHM Planning Team was held at the MT DES office at Fort Harrison on September 13, 2017. At this meeting, the 2013 State MHMP was reviewed and the approach and schedule for the 2018 update was presented. Hazards to be profiled in the 2018 State Plan Update were determined and prioritized. Hazard ranking was accomplished via survey, as described in *Section 4.1.* Twenty-four (24) people attended this meeting including representatives from the following state agencies: Montana Dept. of Administration, Agriculture, Livestock, Natural Resources and Conservation (DNRC), Transportation, Military Affairs (National Guard and DES), Bureau of Mines and Geology, Historical Society, Commerce, and Fish, Wildfire and Parks (FWP). Other meeting participants included the National Weather Service (NWS), FireSafe MT, the MT Association of Conservation Districts, and, the MT Association of County DES Coordinators.

Meeting No. 2 - The second meeting of the MHM Planning Team was held at the MT DES office at Fort Harrison on October 4, 2017. The agenda for this meeting was to review and update the mitigation strategy for the Earthquake, Landslide, Avalanche, and Volcanic Ash hazards. Thirteen (13) individuals attended this meeting representing the following state agencies: MT Dept. of Administration, Transportation, Military Affairs (DES), Bureau of Mines and Geology, and Commerce. Other meeting participants included the NWS and the MT Association of County DES Coordinators.

Meeting No. 3 - The third meeting of the MHM Planning Team was held at the MT DES office at Fort Harrison on October 17, 2017. The agenda for this meeting was to review and update the mitigation strategy for the Flooding and Dam Failure hazards. Seventeen (17) individuals attended this meeting representing the following state agencies: MT DNRC (Water Resources and Dam Safety divisions), Transportation, Military Affairs (DES), and Commerce. Other meeting participants included the NWS, U.S. Army Corps of Engineers, MT Association of Conservation Districts, and MT Association of County DES Coordinators. This meeting was held in conjunction with the Montana Silver Jackets November meeting. The Silver Jackets organization is a partnership of federal and state agencies who coordinate flood risk reduction and floodplain protection.

Meeting No. 4 - The fourth meeting of the MHM Planning Team was held at the Montana DNRC office in Helena on November 2, 2017. The agenda for this meeting was to review and update the mitigation strategy for the Severe Weather and Drought hazards. Sixteen (16) individuals attended this meeting representing the following state agencies: MT DNRC, Transportation, Military Affairs (DES), FWP, Agriculture, Livestock, Administration, and Commerce. Other meeting participants included the NWS, and MT Association of Conservation Districts. This meeting was held as the afternoon session of the Governor's Drought and Water Supply Advisory Committee meeting.

Meeting No. 5 - The fifth meeting of the MHM Planning Team was held at the MT DES office at Fort Harrison on November 15, 2017. The agenda for this meeting was to review and update the mitigation strategy for the Disease hazard (Public Health, Agriculture, and Wildlife), Hazardous Material Incidents, and Transportation Accidents hazards. Eleven (11) individuals attended this meeting representing the following state agencies: MT Dept. of Public Health and Human Services (DPHHS), Transportation, Military Affairs (DES), FWP, Agriculture, Livestock, Environmental Quality (DEQ), and Commerce. Other meeting participants included the MT Association of County DES Coordinators.

Meeting No. 6 - The sixth meeting of the MHM Planning Team was held at the MT DES office at Fort Harrison on December 6, 2017. The agenda for this meeting was to review and update the mitigation strategy for the Wildfire hazard. Nineteen (19) individuals attended this meeting representing the following state agencies: MT DNRC (Forestry Division), Transportation, DPHHS, FWP, DEQ, Military Affairs (DES), and Commerce. Other meeting participants included the Bureau of Land Management (BLM), U.S Forest Service, FireSafe Montana, and the NWS.

Meeting No. 7 - The seventh meeting of the MHM Planning Team was held at the MT DES office at Fort Harrison on December 13, 2017. The agenda for this meeting was to review and update the mitigation strategy for the Terrorism, Violence, Civil Unrest, Cyber Security hazards and All Hazard projects. Seventeen (17) individuals attended this meeting representing the following state agencies: MT Dept. of Transportation, DPHHS, FWP, Justice, and Military Affairs (National Guard and DES). Other meeting participants included the NWS and U.S. Dept. of Homeland Security.

The MHM Planning Team workshops were facilitated by the Contractor. In advance of each meeting, individuals on the Planning Team were asked to review the 2013 mitigation strategy assigned to their agency for implementation and determine what had been accomplished over the past five years. Team Members were also asked to list other actions to be taken in the next five years going forward. **Appendix A** contains the sign-in sheets from the MHM Planning Team workshops and meeting notes.

2.1.2 Stakeholders Group

A Stakeholders Group was created to include federal, tribal, state, and local governmental agencies as well as businesses, non-governmental organizations and utilities. The Stakeholders Group represented a cross-section of private and public groups with interests in mitigating the impacts of hazards and risks across the State of Montana. Many of the stakeholders represent the entire state through their position and/or academic expertise while others hold positions representing the best interests of the public they serve.

The Stakeholders Group included representatives from most State agencies, the Montana university system, and Federal partners including the BLM, Bureau of Reclamation, FEMA, NWS, U.S. Geological Survey, U.S. Army Corps of Engineers, U.S. Forest Service, and U.S. Fish and Wildlife Service. Also included were members of the Montana Floodplain Association, Montana Conservation Districts, Montana Rural Electric Cooperatives, and County/Tribal Emergency Managers (DES Coordinators). Non-government organizations included on the stakeholders list included the American Red Cross, Resource Conservation Districts [RC&Ds], and wildfire organizations. Business entities included dam owners, railroads, and hazardous waste generators. Members of the 2018 Stakeholders Group are listed in **Appendix A**. During the course of the project, stakeholders received various e-mails inviting them to participate in the planning process, attend public meetings, and review the draft Plan.

Since approval of the previous State Plan there has been an increase in mitigation planning efforts among state agencies, federal partners, and non-governmental organizations because of the increase in frequency and magnitude of wildfire, drought, and severe weather in the State due, in part, to the changing climate. An atmosphere of cooperation and collaboration has emerged from an awareness of the importance of mitigation, and recognition that with an approved MHMP, the State is eligible for the following pre- and post-disaster FEMA funding programs: Hazard Mitigation Grants Program

(HMGP), Public Assistance Categories C-G funding, Fire Management Assistance Grants (FMAG), Pre-Disaster Mitigation Program (PDM) grants, Flood Mitigation Assistance (FMA) grants; as well as funding from other federal agencies (BLM, USACE, others).

2.1.3 Stakeholder Meetings

A summary of the MHMP update was presented at six meetings located around the State. In order to reach the maximum number of stakeholders, the project was added to the agenda of meetings scheduled by other relevant groups, as shown in **Table 2.1-2**. These meetings were targeted for a specific audience but open to the public and advertised locally, as appropriate.

Table 2.1-2. Stakeholder Meeting Summary - 2018

Location	Date	# Attending	Agencies/Organizations Attending
Great Falls	March 7, 2018	118	Presentation made at annual meeting of the Association of Montana Floodplain Managers.
Bozeman	April 10, 2018	35	Presentation made at Tribal Transportation Summit.
Butte	May 8, 2018	41	Presentation made at Forest Stewardship Program Cooperator Summit. Attendees included Big Hole Watershed Group, Bitter Root RC&D, Blackfoot Challenge, Flathead Economic Policy Center, Frenchtown Rural Fire Dept., Gallatin Co. Extension, Gallatin Valley Land Trust, Madison Co., Red Lodge Fire Rescue, Rosebud CD, Stillwater Valley Watershed Council, Swan Valley Connections, MT DNRC, USFS, NRCS, MT DES, BLM.
Butte	June 11, 2018	22	Presentation made at DES Coordinator Regional Meeting. Emergency managers from Western District attending.
Miles City	June 13, 2018	23	Presentation made at DES Coordinator Regional Meeting. Emergency managers from Eastern District attending.
Lewistown	June 14, 2018	20	Presentation made at DES Coordinator Regional Meeting Emergency managers from Central District attending.

Briefings on the 2018 MHMP update were delivered by the MT DES Mitigation Coordinator and included a PowerPoint presentation on the MHMP update process, a review of hazards profiled in the Plan, and a review of the draft mitigation strategy. Most meetings were one hour in duration. Email addresses from meeting participants were added to the Stakeholders List in order to provide notification when the draft Plan was available for review and comment.

2.1.4 Plan Update Process

The scope of work for the 2018 update was defined by MT DES prior to the start of the project. The ultimate objective of the project was to produce a FEMA-approved Standard State of Montana MHMP. The Contractor, in consultation with the MHM Planning Team, reviewed and analyzed each section of the 2013 Montana MHMP. Important considerations for the 2018 MHMP update are summarized below.

Section 1.0 - Introduction: Update introductory materials as needed.

Section 2.0 - Planning Process: Organize a permanent Montana Mitigation Advisory Group to serve as the MHM Planning Team and guide update of the State Plan and mitigation strategy. Engage state agencies, federal partners, non-government organizations, and others in the planning process. Conduct stakeholder meetings across the State as part. Describe how the planning process is integrated with other ongoing state planning efforts.

Section 3.0 - State Profile: Provide information on the State of Montana; its climate, population, and economy. Include information on the effects of climate change.

Section 4.0 - Risk Assessment: Examine existing hazard profiles and determine whether changed conditions have affected the risk assessment. Identify new hazards that should be considered in the Plan update and re-rank hazards to identify state priorities. Determine whether the State's vulnerability has changed based on local plans and state risk assessment. Evaluate whether changes in development have affected jurisdictions in hazard prone areas. Include the following elements in the new risk assessment:

- Utilize new hazard data such as recent events, current probability data, loss estimation models and/or new flood studies as well as information from local and tribal mitigation plans.
- Utilize Geographic Information Systems (GIS) technology to estimate potential dollar losses to state assets, the general building stock, and vulnerable population located in identified hazard areas using data from:
    - Fire incident/reporting systems for wildfire occurrence.
    - Hazards of the United States (HAZUS) and FEMA RISK Map data to define flood vulnerabilities.
    - Spatial Hazard Events and Losses Database for the United States (SHELDUS) for hazard data unavailable elsewhere.
    - Tier I and Tier II reports indicating state buildings vulnerable to seismic risk.
    - Inundation areas for high hazard dam risk.
    - Incorporate components of the Montana Drought Plan.
- Develop maps showing percent change of population by county and cities/town and exposure to hazard prone areas.
- Consider the long-term vulnerability and probability of future hazard events including projected changes in occurrence in terms of location, extent, intensity, frequency, and/or duration considering the effects of long-term changes in weather patterns and climate.

Section 5.0 – Mitigation Strategy: Current mitigation goals and objectives were reviewed to determine whether they adequately guide selection of mitigation actions. Where needed, goals and objectives were updated, as outlined in *Section 5*. Mitigation projects were carefully reviewed and revised to reflect progress made since the 2013 Montana MHMP was adopted and activities planned for the next five years. State and federal agencies and non-government organizations assigned responsibility for implementation of mitigation strategy were engaged in the review and update of the mitigation strategy to capture their accomplishments and challenges.

A qualitative benefit/cost analysis was used to demonstrate the cost effectiveness of the mitigation projects included in the Plan. Prioritization criteria for selecting mitigation actions for funding was established to include consideration of the State's vulnerabilities identified in the risk assessment, repetitive losses, and development pressure.

Local mitigation plans were reviewed for mitigation actions implemented during their update and evaluated for consistency with the State's mitigation strategy. Updated local mitigation plans were hyperlinked to the 2018 MHMP.

Section 6.0 – Capability Assessment: State and local hazard management practices were analyzed and changes in administrative capabilities were discussed. Methods of providing technical assistance and funding to implement mitigation strategies were reviewed and updated as was the discussion of existing programs used to implement the State's mitigation strategy. The capabilities assessment discusses pre- and post- mitigation policies, programs and funding, identifies funding sources, and describes the process of reviewing local plans and prioritizing local assistance.

Section 7.0 – Plan Maintenance Procedures: Current procedures were reviewed to determine effectiveness in evaluating and maintaining the Plan with recommendations offered for the next five-year planning period. The process for monitoring and evaluating mitigation projects was updated including development of a form to be used during annual reviews. Guidelines for continued state agency/stakeholder involvement in hazard mitigation were also provided.

A mechanism for tracking revisions to the MHMP was utilized during the 2018 update process. A Revision Form was completed for each section of the document indicating what revisions were made (**Appendix A**). Many of the revisions amounted to updating statistics; however, other changes involved total re-writes of a section and changes in analysis methods. As appropriate, the meaning or significance behind the change was listed.

2.1.5 Plan Review and Adoption Process

A draft version of the 2018 MHMP was uploaded to the MT DES website (www.ready andsafe.mt.gov) on June 18, 2018 for a 30 day review. The draft Plan was available by section with line numbers on each page so reviewers could accurately provide direction/recommendations for text additions or deletions. The MHM Planning Team and individuals on the Stakeholder's list were notified of the availability of the draft Plan via e-mail. Commentors were asked to use the comment form on the MT DES website to enter their comments. All comment forms were submitted to the MT DES, who reviewed the comments and reconciled any conflicting comments. The SHMO provided the Contractor with a consolidated list of comments giving direction on what to change in the draft document at the conclusion of the review period.

The Contractor then prepared a revised draft document for FEMA review and posted it on the MT DES website on August 1, 2018. A 45-day review period provided FEMA the opportunity to review the proposed 2018 State of Montana MHMP to determine if it met the requirements of DMA 2000, the Stafford Act and, their 2016 Plan Review Guidance. During the 45-day review period, stakeholders were given a second opportunity to review the revised Plan and offer comments. Upon receipt of comments from both FEMA and project stakeholders, the SHMO provided direction to the Contractor on changes needed and a final document was prepared.

On October 1, 2018, the final MHMP was submitted to the Governor of the State of Montana for adoption. Adoption of the Plan by the Governor demonstrates the State's continued commitment to fulfilling the mitigation objectives outlined in the plan, legitimizes the plan, and authorizes the responsible agencies identified to execute their responsibilities. A copy of the resolution of adoption will be submitted to FEMA for final approval.

The resolution adopting the updated plan includes assurances that the State of Montana will comply with all applicable Federal statutes and regulations in effect with respect to the periods for which it

received grant funding, in compliance with 44 CFR 13.11c. The MHMP will be amended whenever necessary to reflect changes in State or Federal laws and statutes as required in 44 CFR 13.11d.

2.2 INTEGRATION WITH OTHER STATE PLANS AND PROGRAMS

An assessment of planning efforts at the State level was conducted by the Contractor after researching and contacting various federal and state agencies. A description of the initiatives, goals in common, and opportunities for the integration of mitigation measures found is provided below.

State of Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment

The State of Montana MHMP and Statewide Hazard Assessment (created in 2004 and updated in 2007, 2010, 2013, and 2018) was developed to comply with the requirements of the Disaster Mitigation Act of 2000. State Hazard Mitigation Plans are required by FEMA to be updated every five years; therefore, this Plan will be incorporated into and – will be replaced by the 2023 Montana MHMP Update. The Plan is maintained at MT DES by the SHMO.

The Montana Emergency Response Framework (MERF)

The overall objective of the MERF is to ensure the effective management of emergency efforts in responding to and recovering from situations associated with disaster emergencies through aligning, collaborating, and integrating local, Tribal, and state agency emergency operations plans (EOPs). The operation strategies provided in the MERF are illustrated through 14 Emergency Support Functions (ESF) which are used to organize resources and capabilities through identification and coordination of primary and support agencies based on authorities and availability of resources in a given functional area. The MERF is maintained at MT DES.

Threat and Hazard Identification and Risk Assessment (THIRA)

This process is a tool that helps communities identify and assess threats and hazards and how they may impact a community, estimate capability requirements, and determine resource requirements. The THIRA process assists communities in determining what to prepare for, what actions can lessen or eliminate the identified threats and hazards, and what impacts need to be incorporated into the community's preparedness planning. The THIRA is maintained at MT DES. **Appendix B-12** presents the Executive Summary from the THIRA.

The Stakeholder Preparedness Report (SPR)

This report is a self-assessment of a jurisdiction's current capability when compared to the targets identified in the THIRA. The SPR helps to identify state preparedness capability gaps and is used to help make programmatic decisions to build and sustain capabilities, plan to deliver capabilities, and validate capabilities. The outputs of this process inform a variety of emergency management efforts, including: emergency operations planning, mutual aid agreements, and hazard mitigation planning. The SPR is maintained at MT DES. **Appendix B-12** presents the Executive Summary from the SPR.

Montana Continuity of Operations Plans and Continuity of Government Plans

The State of Montana prepared a Continuity of Operations (COOP) Plan, an agency-wide effort to ensure the continued performance of essential government functions during times of natural

disaster, security intrusions and/or acts of terrorism. Ten (10) state agencies, identified as having a lead responsibility in emergency coordination, determined their agency's critical or essential function(s), staffing and resource requirements, critical systems, vital files, records or databases(s), and alternate facility needs. A software product was then used to generate agency-specific COOP plans which were incorporated into Montana's Continuity of Government (COG) Plan (Volume XV). Disaster mitigation is a key consideration in COOP and COG planning (e.g. non-structural mitigation projects are needed to protect data center equipment from non-catastrophic earthquakes). The Montana COOP Plan is maintained by MT Dept. of Administration with information technology responsibilities being managed by the Montana Dept. of Administration, Information Technology Services Division.

Montana Dept. of Commerce – Montana Ready Communities Initiative

The goal of the Montana Ready Communities Initiative (MRCI) is to create a state composed of resilient communities—with healthy people, dynamic economies, strong systems, and abundant natural resources—that overcome natural disasters and adverse events in a way that supports and ultimately betters Montana's economy, environment, and quality of life.

MRCI plans for long-term resilience to natural disasters and strengthens the capacity of individuals, communities, and the state to survive, adapt, and grow in the face of adverse events. The goal of the MRCI is to lessen the probability of devastating effects from natural disasters while integrating resiliency into the fabric of everyday life at the local, regional, and state level.

Hazard Mitigation Grant Program Administrative Plan

The Hazard Mitigation Grant Program (HMGP) Administrative Plan required for the HMGP post-disaster mitigation is an important guiding document for managing HMGP projects. This administrative plan describes the process used to solicit communities for projects, select projects, and then manage the grant program to fund the projects. Attachments include sample press releases, letters, and reports and instructions for National Emergency Management Information System procedures. The Pre-Disaster Mitigation (PDM) program is managed in a very similar fashion, and therefore, the HMGP Administrative Plan serves as an initial management guide for the PDM program. The current HMGP administrative plan is maintained at MT DES by the SHMO.

Montana Public Assistance Administrative Plan

The Montana Public Assistance (PA) Administrative Plan focuses on the recovery of public assets and expenses following a disaster. The PA program provides assistance with repairing damaged public buildings, roads, bridges, water control facilities, utility systems, parks, and other publicly owned entities. Section 406 of the Stafford Act allows for the funding of mitigation to damaged facilities and infrastructure to prevent similar losses in the future. Therefore, following a disaster, mitigation activities to be conducted as part of the facility or infrastructure repair are guided by this administrative plan. The MHMP will be incorporated into the PA Administrative Plan where applicable. In addition, future updates of this Plan will outline the details related to the Disaster Mitigation Act of 2000 and mitigation planning. MT DES maintains the Montana PA Administrative Plan.

Montana Individual & Family Grant Program Administrative Plan

The Montana Individual & Family Grant Program Administrative Plan addresses the procedures used to provide Individual and Family Grant assistance to customers. This program provides financial assistance for housing, personal property, transportation, medical and funeral expenses, and other personal necessities following a Presidential disaster declaration. As it relates to mitigation, this Administrative Plan addresses the flood insurance purchase requirements, rebuilding to current building code standards, and fuels reduction activities for individuals during the recovery from a disaster. The program, by design, encourages mitigation following an event and will continue to do so. MT DES maintains the Individual & Family Grant Program Administrative Plan.

Long Range Building Program

The Long Range Building Program is Montana's program for capital projects of State-owned facilities. The six year schedule of capital expenditures lists needed projects and estimated costs. This program, established by the legislature in 1965, is the financial mechanism for constructing and providing significant maintenance to state buildings. It is the "single, comprehensive and prioritized plan to allocate state resources."

Projects are submitted by state agencies during even numbered years for consideration. Each agency prioritizes its own projects based on their capital improvement goals prior to submission. The proposed projects are then reviewed by the Dept. of Administration, Architecture and Engineering (A&E) Division and prioritized statewide. This list of prioritized projects is then submitted to the Governor for inclusion in the Governor's Budget presented to the state legislature. Once approved by the legislature, the projects can be initiated, when funded.

This program is critically important to the mitigation of hazards on state owned facilities, including the universities. All capital improvements over $150,000, including those funded federally or otherwise, are submitted through this program. The factors considered during the prioritization process include the project justification, program impact, cost, relationship to any overall long range strategic and site plans, and other pertinent factors. The project's ability to receive approval from the legislature and how well it balances the agency's needs are additional important factors.

Aspects of hazard mitigation are considered during the proposed project's evaluation such as determining if the structure is or will be in the floodplain and requiring new buildings to meet building code standards. Special consideration for life, safety, and hazard mitigation is given when identified by the submitting agency. In addition, evaluators from the A&E Division are educated on hazards on a regular basis.

Montana Floodplain Management Strategic Plan

A strategic plan for mapping and coordinating the management of the floodplains in Montana under the National Flood Insurance Program and the Map Modernization Program is currently in development by the State Floodplain Manager, Montana DNRC. This strategic plan guides the important mitigation task of updating floodplain mapping and information.

Montana Ground Water Plan

The Montana Ground Water Plan, initiated in 1992 as required by Montana Law, addresses ground water issues and "...must set out a progressive program for the conservation, development, and utilization of the state's water resources…" (Montana Code Annotated <MCA> 85-1-203) Protection, education, and remediation are the three major subsections of the plan. This plan is important to hazard mitigation as it relates to flooding, drought, hazardous materials spills, and public health. The primary focus of the plan is on ground water issues such as supply and contamination and not those specifically related to disaster mitigation. For legislation related to this plan see Title 85, Chapter 1, Part 2 MCA. The Montana Ground Water Plan is maintained by the Montana DNRC.

Montana Drought Response Plan

The Montana Drought Response Plan was written to enable the Montana Drought Advisory Committee "…to take measures appropriate for the mitigation of drought impacts to the people and natural resources of Montana." The Response Plan serves as a guide for assessing the impacts of drought and making recommendations for actions that mitigate its effects on the population, economy, and environment. The Plan also describes the different agency responsibilities as they relate to drought. Although drought mitigation is mentioned numerous times in the Plan, the actions are in response to existing or forecast drought conditions, not actions that can be taken prior to a drought developing. This plan is maintained by the Montana Drought Advisory Committee, a multi-agency committee required by state law, MCA 2-15-3308.

Montana Wildfire Event Action Plan for the Mitigation of Public Health Impacts Caused by Smoke from Wildfire Events

The Montana Wildfire Event Action Plan for the Mitigation of Public Health Impacts Caused by Smoke from Wildfire Events focuses on the monitoring and notification actions to be taken by the State for air quality during wildfire events. The issue of public information and suggested actions such as staying indoors, etc. is addressed. This course of action is in line with the objectives of the MHMP. Additional integration of mitigation measures is not required. The Wildfire Event Action Plan is maintained by the Montana DEQ, Air Resources Management Bureau.

State and Local Human Disease and Public Health (Pandemic Influenza) Emergency Plan

The State of Montana, as well as local counties and tribes, have been involved in pandemic influenza preparedness efforts. States and local communities are responsible under their own authorities for responding to an outbreak within their jurisdictions and having comprehensive pandemic preparedness plans and measures in place to protect their citizens. The focus of these planning efforts is on practical, community-based procedures that could prevent or delay the spread of pandemic influenza and help to reduce the burden of illness communities would contend with during an outbreak. With all "preparedness" plans there is a mitigation component. The Montana DPHHS maintains the State's Pandemic Influenza Emergency Plan and County/Tribal Health Departments maintain local plans.

Montana Dept. of Agriculture Emergency Response Plan

The Montana Dept. of Agriculture has developed an Agro-Emergency Response Plan to address policies and procedures that will minimize the impact of a deliberate or unintentional incident related to the State's crop production. The purpose of the plan is to provide for rapid response to significant threats to plants that may impact food safety and public health. The plan provides guidance to mitigate against exotic plant pests and other agricultural emergencies.

Guidelines for Montana Agricultural Emergencies for Local and Tribal Governments

Montana Depts. of Livestock, Agriculture, Fish Wildlife and Parks, and DPHHS are charged with protecting public health, the safety of the food supply, and the integrity of animal and plant agriculture industries in Montana. These agencies have developed guidelines for Montana Agricultural Emergencies for Local and Tribal Governments to heighten biosecurity awareness and give direction to address agricultural emergency.

Montana Dept. of Livestock Foreign Animal Disease (FAD) Response Plan

The Animal Health Division is responsible for the prevention, control and eradication of animal diseases and maintain the Foreign Animal Disease Response Plan. This involves safeguarding the health and food production capacity of the State's livestock and poultry and preventing the transmission of animal diseases to man. The prevention and control of domestic animal diseases are achieved through four major areas of activity: Import/Export, Disease Control, Alternative Livestock, and Field Operations.

Montana Fish, Wildlife & Parks Rapid Response Plans

Montana FWP maintains rapid response plans to minimize the spread of fish and wildlife disease. In addition, as part of the statewide effort to address the risks of invasive mussels, a new bureau was created at FWP to manage the prevention, detection and control of aquatic invasive species. Implementation of rapid response plans often require coordination among multiple agencies, partners, and stakeholders, while mobilizing and redirecting resources to address threats.

Montana Dept. of Transportation

The Montana Dept. of Transportation (MDT) has hazard mitigation integrated into the planning, design, and engineering of its road, bridge, and facility projects. Hazards, such as flooding, avalanche, landslide, and earthquake, are considered by designers and engineers when developing construction projects. Hazards are typically mitigated during major road repairs, and when possible, are prevented through minor repair projects and regular maintenance. In addition to the road infrastructure, hazards are considered during facility design as well. Snow loads, in addition to the other hazards, are considered when designing those facilities, especially considering operational MDT facilities are often critical for response operations during a disaster. MDT maintains the Montana Comprehensive Highway Safety Plan that mitigates the transportation accident hazard.

Montana University System Pre-Disaster Mitigation Plans

The Montana University System received a PDM planning grant to prepare Pre-Disaster Mitigation Plans for eight of its Montana campuses in 2007 including: The University of Montana (UM)-

Missoula, UM-Western, UM-Helena College of Technology, Montana Tech of UM, Montana State University (MSU)-Bozeman, MSU-Billings, MSU-Northern, and MSU-Great Falls College of Technology. These plans outline mitigation strategies to create Disaster Resistant Universities and have been reviewed and when finalized will be incorporated into the Montana MHMP where applicable. Montana Tech and MSU-Bozeman received funding (via DR-1996) to update their PDM Plans in 2013/2014.

Local Multi-Hazard Mitigation Plans

The Local MHMPs (also known as PDM Plans), both County and Tribal Plans, are a vital piece of the State's mitigation strategy. These plans have been reviewed and incorporated into the State Plan, both electronically as linked documents and as annexes to the State Plan. Approved Local MHMPs are maintained by the respective local jurisdictions and must be reviewed and resubmitted for approval by the State annually and at least every five years by FEMA, per State and FEMA requirements.

Local Emergency Operations Plans

Most counties and tribes in Montana have Emergency Operations Plans. The primary purpose of these plans is to maximize survival of people, prevent and/or minimize injuries, and preserve property and resources by making use of all available manpower, equipment, and other resources in the event of a natural, man-made, or national security emergency/disaster. Concepts of operations include mitigation and mitigation measures, increased readiness, emergency actions, and recovery actions. Mitigation typically involves restricting development in hazardous areas, promoting fire prevention, working with commerce and industry to improve hazardous materials storage, use, transportation and disposal, and maintaining shelter/mass care and evacuation annexes. Local Emergency Operations Plans are typically maintained by local disaster and emergency management coordinators and are integrated into local hazard mitigation plans.

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SECTION 3. STATE PROFILE

Montana is a large, sparsely-populated State with an economy that has historically depended on agriculture and natural resource-linked industries. The open plains of central and eastern Montana provide land for grain farming, grazing for large herds of beef cattle, oil and gas fields, and rich coal deposits. The mountainous regions of western Montana yield timber for wood products manufacturing and minerals for mining. Recent years, however, have seen the state relying less on its wood products industry and a boom in the natural resource driven economy of energy development. Recreationally, the State has much to offer, with two National Parks, many large lakes, numerous trout streams, abundant big game supplies, and a number of good ski slopes.

The Continental Divide runs through Montana along the crests of the Rocky Mountains from Canada to Mexico, literally dividing the waters of the North American Continent. Montana is known as the headwaters state because much of the water which flows to the rest of the nation comes from the mountains of Montana. Two of the nation's major river systems, the Missouri and Columbia, are born high in the Rocky Mountains of Montana. **Table 3-1** presents facts about the State of Montana.

Table 3-1. Montana State Facts

Topic	Statistic
Admitted to the United States:	Nov. 8, 1889, the 41st state
Population:	1,050,493 (2017 Census estimate). Increase of 5.4% since 2010 census. According to the 2010 Census, Montana has 6.8 persons per square mile and is the 44th most populous state
Capital City:	Helena, population is 31,169 (2016 Census estimate). Increase of 10.5% since 2010 census.
Largest City:	Billings, population is 110,323 (2016 Census estimate). Increase of 5.8 % since 2010 census.
State Name:	"Montana" is from the Latin word for "mountainous region"
Size:	147,046 square miles in total area 145,556 square miles in land area 1,490 square miles in water area 94,109,440 total acres 4th largest state Greatest distance from East to West boundary: approx. 550 miles Greatest distance from North to South boundary: approx. 320 miles in western Montana and approx. 280 miles in eastern Montana
USGS Physiographic Regions:	Rocky Mountain Region in the west; Great Plains in the east
Number of Counties:	56
Number of Tribal Reservations:	7
Number of Incorporated Cities and Towns:	126
Longitude and Latitude:	Between 44 degrees 26' and 49 degrees North Latitude and 104 degrees 2' and 116 degrees 2' West Longitude
Highest Point:	12,799 feet (3,901 meters) above sea level at the summit of Granite Peak in Park County near the south central boundary
Lowest Point:	1,820 feet in Lincoln County in the northwest corner where the Kootenai River enters Idaho
Mean Elevation:	3,400 feet
Length of Canada/ US Border	545 miles

3.1 Climate

The climate of Montana, as described by the Western Regional Climate Center, is presented below. (http://www.wrcc.dri.edu/narratives/MONTANA.htm)

Topography – Montana, with an area of 145,556 square miles, has large climatic variations. The half of the State southwest of a line from the southeastern corner to the Canadian Border north of Cut Bank in Glacier County is very mountainous, while the northeastern half is very much like Great Plains country, broken occasionally by wide valleys and isolated groups of hills. The extent of the climatic variations is indicated by the range in elevation of from 1,800 feet above sea level where the Kootenai River enters Idaho to 12,850 feet at Granite Peak near Yellowstone Park. Half the State lies over 4,000 feet above sea level.

The Continental Divide traverses the western half of the State in roughly a north-south direction. To the west of the Divide, Montana is drained by the Kootenai, Clark Fork, and Flathead Rivers into the Pacific Ocean through the Columbia River. Many of the tributary streams in this region have their origin in the high western slopes of the Rockies. Most streams traverse narrow canyons, at least through parts of their length, affording many valuable waterpower sites. A relatively small area located between the Hudson Bay Divide and the Rocky Mountains is drained by the St. Mary River, which finds its way to Hudson Bay through the Saskatchewan River. The remainder of the State is drained by the Missouri River, which is formed by the confluence of the Gallatin, Madison, and Jefferson Rivers at Three Forks, and travels northward through deep canyons in the Big Belt Mountains, and flows through the lower lying northeastern portion of the State. The Yellowstone River, the principal tributary of the Missouri in Montana and which has its source in Wyoming, drains the southeastern section of the State and has its confluence with the Missouri just east of the Montana-North Dakota line.

The Continental Divide exerts a marked influence on the climate of adjacent areas. West of the Divide the climate might be termed a modified north Pacific coast type, while to the east, climatic characteristics are decidedly continental. On the west of the mountain barrier winters are milder, precipitation is more evenly distributed throughout the year, summers are cooler in general, and winds are lighter than on the eastern side. There is more cloudiness in the west in all seasons, humidity runs a bit higher, and the growing season is shorter than in the eastern plains areas.

Temperature – Cold waves, which cover parts of Montana on the average of 6 to 12 times a winter, are confined mostly to the sections northeast of a Glacier Park – Miles City line. A few of these cold waves cover the entire area east of the Divide, and will cover the State all the way from the Dakotas to Idaho. These cold waves do not now hold the dangers they did years ago before transportation, roads, communications, and even heating plants developed to their present levels. However, with temperatures well below zero accompanied by strong winds with blowing snow, these cold waves can be very inconvenient and even dangerous to the careless or inexperienced. In small areas ideally situated for radiation cooling, low temperatures can fall to -50° F or lower. The coldest ever observed was -70° F at Rogers Pass, 40 miles northwest of Helena, on January 20, 1954. This is the coldest of record for the entire United States, exclusive of Alaska. The low at Helena that morning was -36°F.

During the summer months hot weather occurs fairly often in the eastern parts of the State. The highest ever observed was 117° at Glendive on July 20, 1893, and Medicine Lake on July 5, 1937. Temperatures of over 100° sometimes occur in the lower elevation areas west of the Divide during the summer, but hot spells are less frequent and of shorter duration than in the plains sections. Hot spells nowhere become oppressive, however, because summer nights almost invariably are cool and pleasant. In the areas with elevations above 4,000 feet, extremely hot weather is almost unknown. Summer days, however, are usually warm enough for light summer clothing.

Winters, while usually cold, have few extended cold spells. Between cold waves there are periods, sometimes longer than 10 days, of mild but often windy weather. These warm, windy winter periods occur almost entirely along the eastern slopes of the Divide and are popularly known as "Chinook" weather. The so-called "Chinook" belt extends from the Browning-Shelby area southeastward to the Yellowstone Valley above Billings. Through this belt, "Chinook" winds frequently reach speeds of 25 to 50 mph or more and can persist, with little interruptions, for several days. In January, the coldest month, temperature averages range from 11° F in the northeastern portion of the State to 22° F for the south-central region (upper Yellowstone Valley). In some areas east of the Continental Divide, January or February can average zero or below, but such occurrences range from infrequent to about once in 10 to 15 years in the coldest spots. Most Montana lakes freeze over every winter, but Flathead Lake between Polson and Kalispell, freezes over completely only during the coldest winters, about 1 year in 10. All rivers carry floating ice during the late winter or early spring. Few streams freeze solid; water generally continues to flow beneath the ice. During the coldest winters "anchor" ice, which builds from the bottom of shallow streams, on rare occasions causes some flooding.

In July, the warmest month, temperature averages range from 74° in the southeastern portion of the State to 64° F in the southwest. This mid-summer warmth is fairly steady, very seldom severe, and is tempered by normal nighttime minimums in the 50's and 60's. Miles City, one of the State's warmest places in July, has a July average minimum temperature of 60° and an average maximum of 90° F. Generally, adequate moisture permits rapid plant and crop development during most growing seasons.

The world record for a 24-hour temperature change occurred in Loma (Chouteau Co.) on January 15, 1972. The temperature rose 103 degrees, from -54°F to 49°F. The coldest temperature ever recorded in Montana was -70°F at Rogers Pass north of Helena (Lewis and Clark Co.), on January 20, 1954, a national record for the lower 48 states. Montana has reached 117°F twice in recorded history – the first time in Glendive (Dawson Co.) on July 20, 1893 and then again in Medicine Lake (Sheridan Co.) on July 5, 1937. **Figure 3.1-1** presents the maximum mean annual temperature observed between 1949 and 2009 by county.

Precipitation – Precipitation varies widely and depends largely upon topographic influences. Areas adjacent to mountain ranges in general are the wettest, although there are a few exceptions where the "rain shadow" effect appears. Generally, nearly half the annual long-term average total falls from May through July. This is perhaps the main reason why Montana in consistently one of the largest producers of dryland grain crops. The western portion of the State is the wettest and the north-central the driest. There are a few valleys in the western portion of the State that are relatively dry, as reflected by Deer Lodge and Lonepine averages of 11.00 and 11.46 inches respectively. Probably

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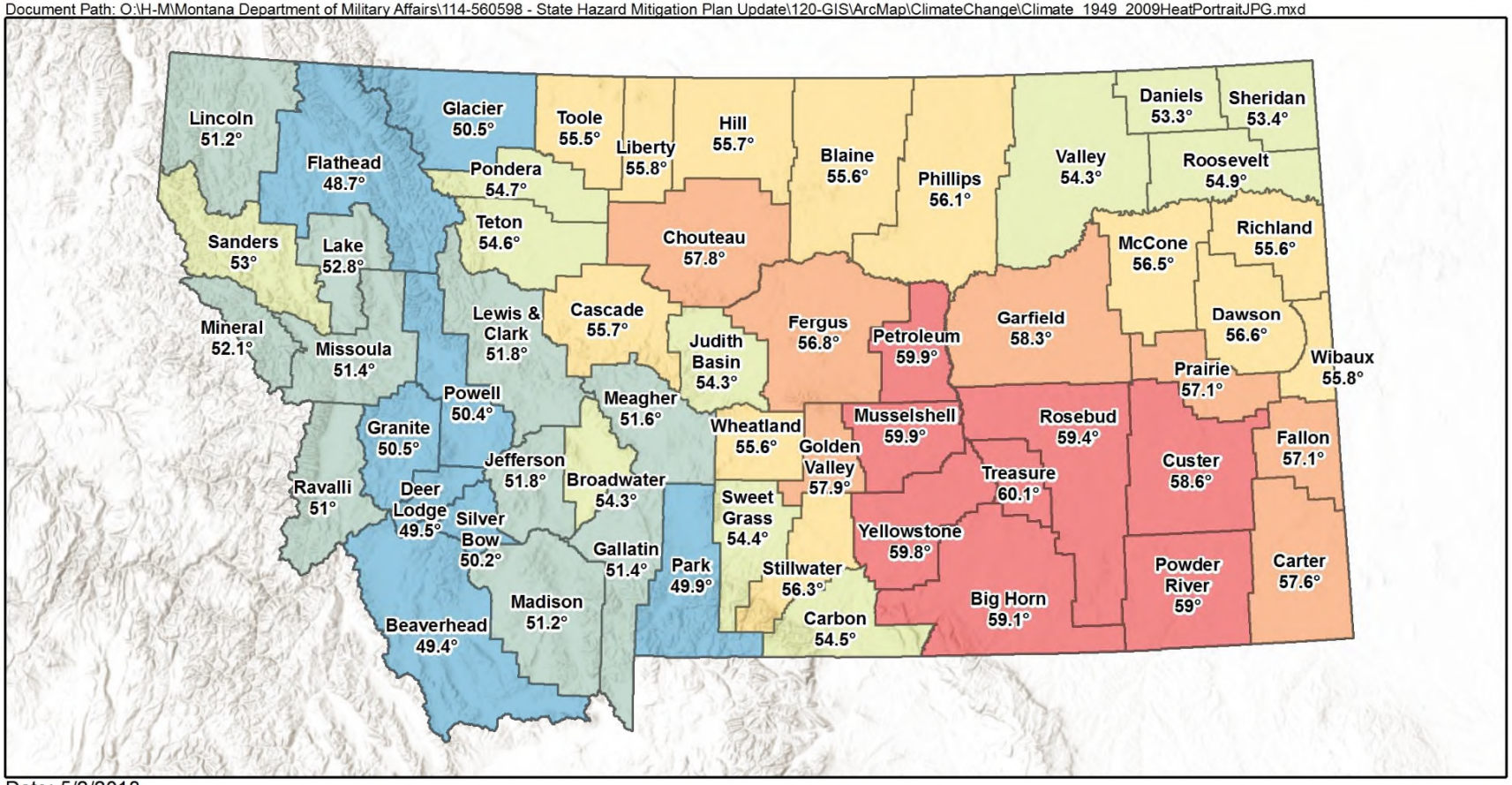

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48.7 - 50.5	54.91 - 56.6
50.51 - 52.8	56.61 - 58.3
52.81 - 54.9	58.31 - 60.1

Figure 3.1-1
Maximum Mean Annual Temperature Observed between 1949 and 2009 by County
State of Montana MHMP 2018 Update

the driest part of the State is along the Clark Fork of the Yellowstone River in Carbon County. In this area, 8 miles south-southwest of Belfry, the average precipitation for a 16-year period is 6.59 inches. The highest average in the State is 34.70 inches at Heron.

Annual snowfall varies from quite heavy, 300 inches, in some parts of the mountains in the western half of the State, to around 20 inches in the northern portion of the State east of the Continental Divide. Most of the larger cities have annual snowfall within the 30 to 50 inch range. Most snow falls during the November-March period, but heavy snowstorms can occur as early as mid-September or as late as May 1 in the higher southwestern half of the State. In eastern areas early or late season snows are not very common. Mountain snowpack in the wetter areas often exceed 100 inches in depth as the annual snow season approaches its end around April 1 to 15. **Figure 3.1-2** presents the maximum mean annual precipitation observed between 1949 and 2009 by County by season.

The greatest volume of flow of Montana's rivers occurs during the spring and early summer months with the melting of the winter snowpack. Heavy rains falling during the spring thaw constitute a serious flood threat. Ice jams, which occur during the spring breakup, usually in March, cause backwater flooding. Flash floods, although restricted in scope, are probably the most numerous and result from locally heavy rainstorms in the spring and summer.

Other Climatic Features – Severe storms of several types can occur, but the most troublesome are hailstorms which cause crop and property damage averaging about $5 million annually. This is not unusually large for an area of 146,000 square miles, however, and their occurrence is limited mainly to July and August, infrequently in June and September.

Tornadoes develop infrequently (about 2 per year) and occur almost entirely east of the Divide, largely in the eastern third of the State. Severe windstorms of a general nature are rare but can occur locally, mainly east of the Divide, from a few to several times a year. Drought in its most severe form is practically unknown, but dry years do occur in some sections. All parts of the State rarely suffer from dryness at the same time. The only exceptions on record occurred during the 1930 decade. Drought infrequently lasts 2 or 3 years in one or two of the State's climatic subdivisions.

Water supplies in the mountainous southwestern half of the State are generally ample and of excellent quality. In the northeastern half of the State water supplies are generally dependable, but the water has a variable "hard" quality, particularly where wells are used. There are numerous irrigation projects for which water supplies are usually sufficient. Irrigated crops which do well are potatoes, sugar beets, sorghums, alfalfa, and many varieties of grain. Smaller quantities of other fairly hardy crops are grown under irrigation. Wide open areas of rangeland provide excellent quality grass for an extensive livestock industry. Between livestock and other agriculture, Montana has developed into an important food supply State. In spite of figures that may indicate winters on the cold side, growing seasons (freeze-free periods) are 4 months or more in length in much of the agricultural area. In parts of the middle Yellowstone Valley, in fact, the freeze-free period runs as long as the 150-day average at Miles City. Much of the State has average freeze-free periods longer than 130 days, allowing plenty of time for growing a wide variety of crops. There is no freeze-free period in many higher valleys of the western mountains, but hardy and nourishing grasses thrive in such places, producing large amounts of high-quality grazing for stock.

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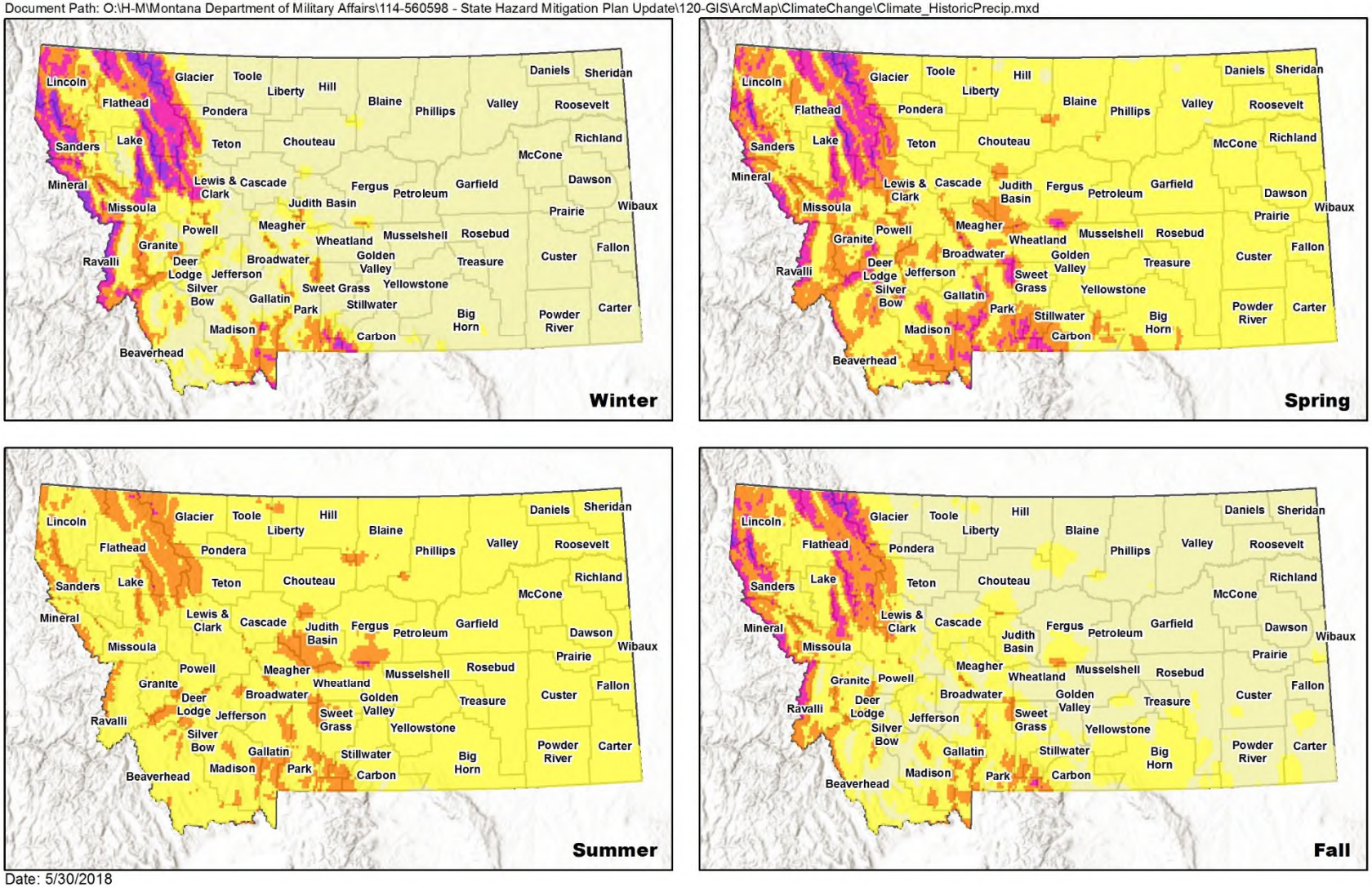

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Seasonal Precipitation (Inches)

- 0.51 - 3.00
- 3.01 - 7.02
- 7.03 - 12.29
- 12.30 - 18.94
- 18.95 - 35.84

Figure 3.1-2
Mean Seasonal Precipitation Observed between 1971 and 2000 by County
State of Montana MHMP 2018 Update

Climate Change in Montana

Understanding climate change and projecting future climate trends is of vital importance, both for the economy and well-being of Montana's citizens. Climate change, as defined by the U.S. Global Change Research Program is described as: *Changes in average weather conditions that persist over multiple decades or longer. Climate change encompasses both increases and decreases in temperature, as well as shifts in precipitation, changing risk or certain types of severe weather events, and changes to other features of the climate system.* Such changes are driven in large part by the greenhouse effect, the trapping of greenhouse gases in Earth's atmosphere and consequent warming of the planet. The rapid rate of climate change since the Industrial Revolution has resulted from changes in atmospheric chemistry, specifically increases in greenhouse gases due to increased combustion of fossil fuels.

The U.S. Environmental Protection Agency published an article on *Climate Change and Montana* (EPA, 1997) which indicated that climate change poses risks to human health and important economic resources such as agriculture, forestry and water resources. In 2017, the Montana Climate Assessment was published (Whitlock, Cross, Maxwell, Silverman, and Wade, 2017) which explored how future projected climate change would affect these sectors to better plan for the future. Two emission scenarios were evaluated. The low-emissions scenario assumes that global emissions of the greenhouse gases that cause changes in climate conditions peak in the year 2040 and then decline. The high-emissions scenario assumes that global emissions of greenhouse gases remain largely unabated through the 21st century. A summary of the analysis conducted for the Montana Climate Assessment (Whitlock, et.al, 2017) is presented below.

- Annual average temperatures, including daily minimums, maximums, and averages, have risen across the state between 1950 and 2015. The increases range between 2.0-3.0°F
- Despite no historical changes in average annual precipitation between 1950 and 2015, there have been changes in average seasonal precipitation over the same period. Average winter precipitation decreased by 0.9 inches, which can largely be attributed to natural variability and an increase in El Niño events, especially in the western and central parts of the state. A significant increase in spring precipitation (1.2-2.0 inches) also occurred during this period for the eastern part of the state.
- Montana is projected to continue to warm in all geographic locations, seasons, and under both emission scenarios throughout the 21st century. My mid-century, Montana temperatures are projected to increase by approximately 4.5-6.0°F depending on the emission scenario. By the end of the century, Montana temperatures are projected to increase 5.6-9.8°F depending on the emission scenario. These state-level changes are larger than the average changes projected globally and nationally.
- Across the state, precipitation is projected to increase in winter, spring, and fall; precipitation is projected to decrease in summer. The largest increases are expected to occur during spring in the southern part of the state. The largest decreases are expected to occur during summer in the central and southern parts of the state.

<u>*Impacts to Water Resources*</u>

Montana depends on an adequate supply of clean water for nearly every aspect of our economy, including food production, hydroelectric power, domestic and industrial uses, and sustaining our

natural ecosystems. Groundwater is another large and important component of the water cycle in Montana, with most groundwater coming from shallow sand or gravel aquifers in river floodplains. Groundwater resources are critical for water users, but also contribute significantly to natural streamflow throughout the year. In Montana much of the winter snowfall that accumulates in the mountains melts in springs to produce streamflow and recharge groundwater aquifers.

Major findings of the Montana Climate Assessment (Whitlock, et.al, 2017) with regard to water resources indicate the following:

- Montana's snowpack has declined since the 1930s in mountains west and east of the Continental Divide; this decline has been most pronounced since the 1980s.
- Warming temperatures over the next century, especially during spring, are likely to reduce snowpack at mid- and low elevations.
- Historical observations show a shift toward earlier snowmelt and an earlier peak in spring runoff in the Mountain West. Projections suggest that these patterns are very likely to continue into the future as temperatures increase.
- Earlier onset of snowmelt and spring runoff will reduce late-summer water availability in snowmelt-dominated watersheds.
- Groundwater demand will likely increase as elevated temperatures and changing seasonal availability of traditional surface water sources force water users to seek alternatives.

A warmer climate would lead to earlier spring snowmelt, resulting in higher stream flows in winter and spring and lower stream flows in summer and fall. Earlier spring snowmelt could reduce the performance of the reservoir system in western Montana, thus reducing summer and fall runoff, which is critical for power generation, fisheries protection, recreation, and other uses. Increased rainfall could mitigate some of these effects, but it also could lead to increased flooding.

Impacts to Agriculture

In Montana, agriculture is a $1.8 billion annual industry, one-half of which comes from livestock, mainly cattle. Just over 20 percent of the crop acreage is irrigated. The mix of crop and livestock production is influenced by climatic conditions and water availability. Increases in climate variability could make adaptation by farmers more difficult. Warmer climates and less soil moisture due to increased evaporation may increase the need for irrigation. However, these same conditions could decrease water supplies, which also may be needed by natural ecosystems, urban populations, industry, and other sectors.

Rising temperatures will exacerbate persistent drought periods that are a natural part of Montana's climate. The Montana Climate Assessment (Whitlock, et.al, 2017) presents the following key messages with regard to impacts on agriculture:

- Decreasing mountain snowpack will continue to lead to decreased streamflow and less reliability irrigation capacity during the late growing season.
- Changes in snowpack and runoff timing will likely increase the frequency and duration of drought during late summer and early fall.

- Multi-year and decadal-scale droughts have been, and will continue to be, a natural feature of Montana's climate; rising temperatures will likely exacerbate drought when and where it occurs.

Impacts to Forestry

Trees and forests are adapted to specific climate conditions, and as climate warms, forests will change. These changes could include changes in species, geographic range, and health and productivity. If conditions also become drier, the current range and density of forests could be reduced and replaced by grasslands and pasture. Drier conditions could reduce the range and health of lodgepole and Douglas fir forests, and increase their susceptibility to fire. Milder winters could increase the likelihood of insect outbreaks and of subsequent wildfires in the dead fuel left after such an outbreak. These changes would significantly affect the character of Montana forests and the activities that depend on them.

The Montana Climate Assessment (Whitlock, et.al, 2017) suggests that indirect effects of climate change will impact Montana's forests in several ways:

- An increase in fire risk (probability of occurrence), including an increase in size and possible frequency and/or severity, is expected in the coming century as a result of prolonged fire seasons due to increased temperatures, and increased fuel loads from past fire suppression.
- Rising temperatures are likely to increase bark beetle survival, but climate-induced changes to other insects and forest pathogens are more varied and less certain.

Impacts to Human Health

Higher temperatures and increased frequency of heat waves may increase the number of heat-related deaths and the incidence of heat-related illnesses. Montana, with its irregular, intense heat waves, could be susceptible. The elderly, particularly those living alone, are at greatest risk.

Warming and other climate changes may expand the habitat and infectivity of disease-carrying insects, thus increasing the potential for transmission of diseases. A 5-9°F temperature increase would cause a significant northern shift in Western equine encephalitis outbreaks. Mosquitos capable of transmitting this disease already are present in Montana. If Montana's climate becomes warmer and wetter, mosquito populations could increase and conditions may become more favorable for disease transmission.

Section 4 presents additional information on the potential impacts of climate change in Montana.

3.2 Inventory of Assets

Natural and man-made hazards have the potential to impact the State in various ways. They can increase the risk of death or injury to residents and visitors; cause damage to the built environment and the State's investment in public office buildings, colleges, hospitals, and prisons; interrupt the State's infrastructure, including highways, telecommunications, power distribution systems, conveyance of water, and collection of wastewater; and, adversely affect the State economy. This Section of the MHMP describes the State's assets, including facilities that, if damaged during a disaster, could affect the State's ability to respond and protect its population.

State-Owned Buildings and Property

The State of Montana owns and leases over 5,000 buildings with a total estimated value of $5.1 billion including contents. Buildings are located in every county in the State with government complexes concentrated in Helena and higher education complexes in Missoula, Bozeman, Butte, Billings, Havre, Dillon, and Great Falls.

Table 3.2-1 summarizes the buildings by agency, including square footage, building value, building content value, and special content value available, from the Property Casualty Insurance Information System (PCIIS) database of the Montana Dept. of Administration, Risk Management and Tort Defense Division. The University System has the largest complex of buildings (approximately 1,381 or 27% of the total), with an estimated value of $3.44 billion including content value. The Dept. of Administration has the next largest group of buildings, primarily associated with the State Capitol Complex in Helena with an estimated total value of $433.5 million (with contents), including the $145 million Capitol building. The State building complexes and large facilities, with structure value over $10 million, are summarized in **Table 3.2-2**.

The State of Montana owns real property scattered throughout the state, including State highways, government office property, land in waterways, and School Trust property. The most significant land holdings are classified as School Trust property. A summary of the State real property, exclusive of highways and waterways, is shown in **Table 3.2-3**.

The Montana DNRC administers all School Trust land granted to the State through the Federal Enabling Act of 1899. This act provided over 5 million acres to the State to be managed for common school support. The trust beneficiaries include the K-12 public schools, institutions for higher education, Pine Hills Youth Correctional Facility, Montana School for the Deaf and Blind, and Montana Veteran's Home. The current surface acreage is less than the original grant due to land exchanges, incorporation by tribal reservations, and lands deeded before the Enabling Act.

Table 3.2-1. Content and Structure Value by State Agency

Agency	Square Feet	No. of Buildings	Building Structure Value	Building Content Value	Special Content Value	Total Value
Auditor's Office	28,242	1	$28,242	$28,242	$28,242	$28,242
Board of Public Education	166,099	15	$21,674,990	$3,187,652	$490,000	$25,518,759
Department of Administration	1,401,274	65	$339,830,214	$44,302,645	$49,326,375	$434,863,879
Department of Agriculture	33,096	24	$626,675	$3,287,965	$384,717	$4,332,592
Department of Commerce	208,325	7	$29,732,703	$2,013,745	$469,162	$32,424,116
Department of Corrections	1,266,933	171	$192,592,524	$32,264,536	$7,366,292	$233,491,306
Department of Environmental Quality	412,798	43	$3,461,940	$2,951,239	$5,276,237	$12,102,310
Department of Fish, Wildlife and Parks	1,030,672	1,618	$0	$11,510,697	$34,525,618	$126,572,480
Department of Justice	341,702	85	$18,929,114	$12,626,270	$15,700,932	$47,598,801
Department of Labor & Industry	224,636	53	$10,267,220	$7,470,845	$1,556,191	$19,519,538
Department of Livestock	10,089	14	$0	$516,534	$262,233	$788,902
Department of Military Affairs	739,013	91	$104,308,796	$21,260,179	$386,000	$126,694,144
Department of Natural Resources	432,656	209	$38,544,708	$22,015,055	$8,699,704	$69,692,775
Department of Revenue	239,697	61	$7,180,798	$7,467,168	$14,943,866	$29,832,071
Department of Transportation	2,175,339	786	$179,019,544	$28,289,125	$12,233,364	$221,719,323
Legislative Branch	2,451	2	$0	$72,686	$3,047,311	$3,122,582
Montana Art's Council	3,285	1	$0	$113,176	$0	$113,176
Montana Heritage Commission	193,858	253	$30,964,996	$1,055,447	$967,300	$33,181,871
Montana Historical Society	55,283	4	$5,745,604	$231,629	$6,859,146	$12,893,404
Montana State Library	-	-	$0	$0	$2,171,555	$2,171,734
Office of Public Instruction	38,112	34	$627,021	$535,158	$23,250	$1,223,607
Public Defenders Office	75,087	16	$0	$3,520,848	$174,966	$3,771,141
Public Employees Retirement Division	14,686	1	$0	$733,697	$0	$733,697
Public Health & Human Services	1,376,970	182	$112,109,680	$44,460,263	$26,846,688	$184,800,017
Public Service Commission	15,600	1	$0	$494,453	$49,500	$543,953
Secretary of State	-	-	$0	$0	$407,250	$407,282
State Fund	120,862	6	$38,320,125	$38,320,125	$38,320,125	$38,320,125
Supreme Court – Judiciary	29,829	3	$252,108	$859,393	$10,322,152	$11,463,746
University System	14,601,330	1,390	$2,496,872,246	$518,997,031	$427,354,750	$3,457,840,207
TOTALS	**25,266,166**	**5,137**	**$3,631,117,490**	**$808,614,045**	**$668,221,168**	**$5,135,627,905**

Source: DOA-RMTD, 2017
Note: Those structure values of $0 represent leased buildings, not state-owned.

Table 3.2-2. Major State Buildings/Complexes

Agency	Complex/Building	Location	Structure Value	Aggregate Content Value	Employees
Administration					
	Capitol Complex	Helena	$339,830,214	$95,033,665	3,306
Department of Corrections					
	Women's Prison Complex	Billings	$25,151,982	$2,077,487	33
	Pine Hills School	Miles City	$23,946,890	$3,325,887	135
	Riverside Youth Corrections	Boulder	$6,201,361	$1,139,206	34
	State Prison	Deer Lodge	$88,444,968	$10,703,137	300
Transportation					
	Helena Headquarters Complex	Helena	$38,078,331	$15,038,191	710
Health & Human Services					
	Veteran's Home	Columbia Falls	$18,119,731	$3,116,621	130
	State Hospital	Warm Spr.	$47,122,246	$11,003,032	429
Board of Education					
	School for the Deaf & Blind	Great Falls	$21,674,990	$3,816,039	-
Montana University System					
	Helena College	Helena	$36,281,413	$12,885,065	88
	MSU-Billings	Billings	$206,607,817	$74,157,047	574
	MSU-Bozeman	Bozeman	$931,515,642	$395,971,003	8,691
	MSU-Northern	Havre	$100,099,580	$26,877,149	169
	Montana Tech	Butte	$165,575,319	$71,985,877	349
	Great Falls College	Great Falls	$42,627,786	$16,650,345	126
	UM-Missoula	Missoula	$870,424,519	$325,794,212	2,605
	UM-Western	Dillon	$102,777,126	$22,463,649	722

Source: DOA-RMTD, 2017

Table 3.2-3. Montana State Trust Land Acreage

Land Grant	Total Agriculture Acres	Total Grazing Acres	Total Forest Acres	Total Other Acres	Total Oil/Gas Acres	Total Tract Acres
Acquired Lands - Public Schools	0	0	32,295	0	172,323	204,618
Capitol Buildings	4,344	106,642	71,841	1,827	5,597,340	5,781,994
Common Schools	558,326	3,694,247	346,810	17,553	41,171	4,658,107
Deaf & Blind School	1,409	24,217	10,399	436	46,598	83,059
Montana State University	84	8,603	22,320	843	86,267	118,118
Montana Tech	7,560	36,837	15,771	444	77,929	138,541
MSU Morrill	2,030	55,240	5,522	681	74,107	137,579
Pine Hills School	996	48,695	18,007	83	33,755	101,535
Sir Trust - 00	477	2,123	0	0	1,276	3,875
University of Montana	2,003	13,799	1,440	21	80,455	97,718
Veterans Home	90	1,270	0	57	172,323	173,741
TOTALS	**579,748**	**4,037,482**	**539,065**	**191**	**5,179,148**	**10,335,633**

Source: DNRC, 2018

Essential Facilities

Trauma Centers and acute care hospitals provide essential healthcare services to the ill and injured during any public health emergency and the subsequent recovery period. The loss of healthcare services provided by such facilities severely impacts both the community and Montana's ability to provide critical healthcare services to Montana citizens. Supporting Montana's Trauma Centers and larger acute care hospitals is a network 65 Critical Access Hospitals (CAHs) providing immediate emergency care in smaller communities. Most CAHs have received designation in the Montana Trauma System as either Community Trauma Hospitals or Trauma Receiving Facilities ensuring the timely evaluation and transfer of patients to appropriate levels of care. Major hospitals and trauma centers in Montana are listed in **Table 3.2-4**.

Table 3.2-4. Major Hospitals and Trauma Centers in Montana

Hospital Name	Address	City	Trauma	No. of Beds
Billings Clinic	2800 10th Ave N	Billings	Level II	388
St Vincent Healthcare	1233 North 30th Street	Billings	Level II	206
Bozeman Health	915 Highland Blvd	Bozeman	Level III	70
St. James Healthcare	400 S. Clark Street	Butte	Level III	58
Benefis Healthcare	1101 26th Street South	Great Falls	Level II	438
Kalispell Regional Medical Center	310 Sunny view Lane	Kalispell	Level III	163
Providence St Patrick Hospital	500 West Broadway	Missoula	Level II	134

Emergency operations centers are essential for coordinating and conducting disaster response. They include local police and fire stations, local and State emergency operations centers, National Guard headquarters and operations, and Federal military facilities. Loss of function of these centers may adversely affect communication and direct response activities. Other facilities, such as schools and armories, are used for emergency shelters to house displaced populations. State and Federal emergency operations centers are shown in **Table 3.2-5**.

Table 3.2-5. Emergency Operations Centers

Name	Address	City	Function
Montana Army National Guard	Fort Harrison	Helena	National Guard support for disaster response
Army Aviation Support Facility	Helena Airport	Helena	Helicopter support to the Army National Guard
Montana Air National Guard	Malmstrom Air Force Base	Great Falls	Personnel and air support for natural disasters. Civil engineering support for base and contingency operations.
Air Force ICBM Operations Groups	Malmstrom Air Force Base	Great Falls	Launch, monitoring, and security for the Intercontinental Ballistic Missile complex
Montana Highway Patrol	Prospect Ave.	Helena	Law enforcement support for disaster response
Montana Disaster & Emergency Services Division	Fort Harrison	Helena	Coordination, logistics, and communications for disaster response

Transportation Systems

Transportation Systems are critical for the movement of the population, mobilization of resources to respond to disasters, and the ability to import resources to restore normality to the population. There are approximately 75,008 miles of public roads and highways in Montana. Approximately 112,946 miles of highway and over 4,510 bridges and culverts are maintained by the Montana Department of Transportation (MDT, 2016).

Approximately 5-10 percent of Montana Dept. of Transportation (MDT) interstate, National Highway System, and primary brides were structurally deficient with 78 percent in good condition (MDT, 2016 and 2017). The National Highway System, consisting of the Interstate System as well as other roads important to the nation's economy, defense, and mobility, includes of 4,182 miles within the State of Montana.

Approximately 3,375 miles of rail lines traverse Montana. The major rail system operators are Burlington Northern, Montana Rail Link, and Union Pacific, respectively, maintaining 1,939, 817, and 125 miles of active track. Amtrak has 12 passenger stations; all located along the section of northern Montana termed the Hi-Line (area flanked by Highway 2) in northern Montana. Roadways intersect railroads in numerous locations. Montana has 1,359 public, at grade rail crossings.

Montana has 124 public-use airports; 13 commercial service airports and 111 general use airports. The following cities are serviced by regional or commercial carriers: Billings, Bozeman, Butte, Glasgow, Glendive, Great Falls, Havre, Helena, Kalispell, Missoula, Sidney, West Yellowstone, and Wolf Point.

Utilities and Energy

The most essential utility systems in Montana include major electrical generating facilities, transmission networks, natural gas pipelines and petroleum pipelines. These facilities maintain light, heat, and energy resources for Montana and much of the northwestern United States. The location of these facilities in hazard areas increases vulnerability to service disruption and shortages of energy resources. Other critical utility systems, such as potable water supply and wastewater facilities, are owned and operated at the local level. The U.S. Energy Information Administration (https://www.eia.gov/state/print.php?sid=MT) prepared the following energy profile for Montana.

Montana is the fourth largest state and a substantial supplier of energy to the rest of the nation. The state is rich in both fossil and renewable resources. About one-fourth of the nation's demonstrated coal reserve base is in Montana, and the northern and eastern areas of the state contain large deposits of crude oil and natural gas.

Montana has four operating oil refineries with a combined crude oil processing capacity of about 205,000 barrels per day. Three refineries are in the Billings area, and one is in Great Falls. Those refineries receive crude oil mainly from Canada and Wyoming and produce a wide range of refined products, including motor gasoline, ultra-low sulfur diesel fuels, aviation fuels, butane, propane, petroleum coke, and asphalt. Pipelines and railroads are used to ship crude oil to the refineries and also transport the facilities' refined products throughout Montana and to nearby states. Several pipelines carry Montana crude oil to refineries in other states as well.

Montana accounts for almost 1 percent of U.S. total proved crude oil reserves, and the state produces almost 1 in every 100 barrels of U.S. oil. Most of Montana's oil production operations are concentrated in the northeastern part of the state near the North Dakota border. Montana's Elm Coulee field was initially the most prolific oil field in the Williston Basin, a geologic basin that spreads from eastern Montana into North Dakota and Canada. However, the state's oil production declined from its 2006 peak as drilling activity moved to North Dakota, where the productive Bakken Shale formation is thicker.

Montana has the nation's largest estimated recoverable coal reserves and holds one-fourth of the nation's demonstrated coal reserve base. The state produces almost 5 percent of the nation's coal from half a dozen mines. Most of the state's coal production comes from several large surface mines in the Powder River Basin in southeastern Montana. One of Montana's largest coal mines, the Rosebud surface mine, supplies almost all of its production to the state's largest electricity generating station, the 2,100-megawatt, coal-fired power plant located next to the mine at Colstrip, Montana. In 2016, more than one-fourth of the coal mined in Montana was consumed in the state, and almost all that coal was used by the electric power sector. Half of Montana's coal production was sent to other states in 2016, and most of that coal was also used for electricity generation. The remaining one-fifth of Montana's coal production was exported to western Canada, where much of it continued on to Asia.

More than half of Montana's net electricity generation comes from coal. Five coal-fired power plants are in operation in the state. Most of the rest of Montana's electricity generation comes from hydroelectric power plants. Wind power accounts for the third-largest share, almost 8 percent, of the state's generation, and natural gas and petroleum coke each provide about 1.5 percent of generation. Montanans use about half of the electricity generated in the state. The rest is sent to other western states by high-voltage transmission lines.

Montana has substantial renewable energy resources. In 2016, Montana was the fifth-largest producer of hydroelectric power in the nation. The state has 23 hydroelectric dams. Six of Montana's 10 largest power plants by generating capacity are hydroelectric facilities.

Almost 8 percent of Montana's electricity is produced by utility-scale wind turbines. The first utility-scale wind farm in the state came online in 2005. By 2017, Montana had about 700 megawatts of wind-powered electricity generating capacity in operation from utility-scale wind farms with almost 500 turbines.

Military Facilities

Montana has a large military complex in Great Falls, which includes the 120th Fighter Wing of the Montana Air National Guard and the United States Air Force 819th Red Horse Squadron. In addition, the Montana Army National Guard has readiness centers in the following cities: Anaconda, Belgrade, Billings, Butte, Culbertson, Dillon, Glasgow, Great Falls, Havre, Helena, Kalispell, Lewistown, Livingston, Malta, Miles City, and Missoula. There are also a small number of Army and Navy Reserve Center components in the State of Montana in various locations.

Montana is the home of approximately 200 Minuteman Inter-Continental Ballistic Missiles, which are overseen by Malmstrom Air Force Base in Great Falls. The Minuteman silos are scattered over various locations in north-central and north-eastern Montana. The missile silos are over 50 years old, and have been updated with new warheads several times. Under the Start II Treaty, the Air Force will "deMIRV" the remaining Minuteman III Missiles now in service, changing them from three-warhead to single-warhead weapons. (Great Falls Tribune, 2014).

Colleges and Universities

Colleges and universities are considered potential high loss facilities for several reasons. Almost 50,000 students attend colleges and universities in Montana many of whom are housed on-site during the academic year. These facilities often house expensive research equipment, much of it owned by the State. All colleges and universities home based in Montana, not just those that are state-owned, are listed in **Table 3.2-6**.

Table 3.2-6. Universities and Colleges in Montana

College	Average Enrollment	College	Average Enrollment
Montana State University		**Tribal Colleges**	
Montana State University-Bozeman	16,069	Aaniiih Nakoda College, Harlem	236
Montana State University-Billings	2,830	Blackfeet Community College, Browning	471
Montana State University-Northern, Havre	1,154	Chief Dull Knife College, Lame Deer	472
Gallatin College	634	Fort Peck Community College, Poplar	422
Great Falls College	1,691	Little Big Horn College, Crow Agency	317
City College at MSU Billings	1,571	Salish Kootenai College, Pablo	1,088
University of Montana		Stone Child College, Box Elder	240
University of Montana-Missoula	10,092	**Private Colleges**	
Montana Tech, Butte	1,909	Carroll College, Helena	1,373
University of Montana-Western, Dillon	1,454	University of Providence, Great Falls	1,117
Missoula College-UM, Missoula	1,773	Rocky Mountain College, Billings	908
Highlands College of MT Tech, Butte	769		
Helena College-UM	1,424		
Community Colleges			
Dawson Community College, Glendive	332	Miles Com. College, Miles City	459
Flathead Valley Community College, Kalispell	2,256	Dawson Com. College, Glendive	332

Sources: Montana University System, 2018 (https://mus.edu/data/dashboards/headcount.asp); Peterson's, 2018, (https://www.petersons.com/).

The eight main campuses of the Montana University System (UM-Missoula, MSU-Bozeman, Montana Tech of UM (Butte), MSU-Billings, UM-Helena, MSU-Great Falls, MSU-Northern (Havre), and UM-Western (Dillon) completed Pre-Disaster Mitigation (PDM)/Disaster Resistant University (DRU) plans in 2007 that included detailed hazard assessments. MSU-Bozeman and Montana Tech updated their PDM Plans in 2013.

Research Facilities

The majority of university research in Montana, on a wide variety of topics, is conducted at the two universities: UM-Missoula and MSU-Bozeman. In addition, several Federal agencies conduct research in Montana, including the U.S. Department of Agriculture (USDA) Agricultural Research Service, U.S. Forest Service, Natural Resource Conservation Service) and U.S. Department of Interior (Bureau of Land Management, Fish and Wildlife Service, and the National Park Service). University and Federal agencies often establish long-term working relationships at fixed facilities scattered around the state.

Three bio-medical research laboratories are located in Montana: Rocky Mountain Labs, GlaskoSmithKline, and the McLaughlin Research Institute. The McLaughlin Research Institute is an independent, non-profit research organization in Great Falls. Research at the institute focuses on

neurogenetic research on Alzheimer's, Parkinson's, and other degenerative nerve diseases using the mouse as a model system (MRI, 2018).

Rocky Mountain Labs (RML) in Hamilton is a Bio-Safety Level-2, -3, and -4 laboratory that studies infectious microbes that cause disease in humans and animals. RML is part of the National Institute of Allergy and Infectious Diseases, a component of the National Institutes of Health that conducts and supports research that strives to understand, treat, and ultimately prevent infectious, immunologic and allergic diseases that threaten hundreds of millions of people worldwide (RML, 2018).

GlaskoSmithKline is one of the largest pharmaceutical, biologics, vaccine and consumer health care companies in the world. Their facility inn Hamilton is the sole manufacturing site of a product called MPL (Monophosphoryl lipid A). MPL is an additive that improves the effectiveness of vaccines, including the company's human papillomavirus vaccine and a hepatitis B vaccine. GlaxoSmithKline currently employees 211 people in Hamilton.

3.3 Montana Economy

An analysis of the economy, prepared by the Montana Dept. of Labor and Industry, Research and Analysis Bureau in 2015, is summarized below.

Montana's economy has been outperforming the national economy since the turn of the century. However, not all areas of the state have performed equally. In general, the Eastern region has posted rapid economic growth in the past decade, with rapid expansion of employment and rising wages for many counties affected by the development of the Bakken oil fields. Many counties in the eastern edge of the state have experienced the very low unemployment rates indicative of worker shortages. The Northwest and Southwest regions of Montana experienced strong growth leading up to the recession, but the concentration of construction and wood product manufacturing employment resulted in the loss of over 8,000 jobs during the recession. While the Southwest region rebounded quickly, the Northwest suffered through an extended recession and still has elevated unemployment rates. Montana's seven reservation areas also posted economic growth for the last decade, but remain some of the most economically sensitive areas of the state, often with unemployment levels two to three times higher than the surrounding regions.

The diversification of Montana's economy over the last sixty years has also influenced the composition and performance of Montana's economy. Like the U.S. and other developed countries worldwide, Montana has become more of a service-based industry over time as consumers have demanded more services than goods. The goods-based industries of manufacturing, construction, mining, and agriculture now comprise about 24 percent of Montana's personal income derived from work. Although the service-based industries are often described as low-paying industries with undesirable jobs, like retail or tourism jobs, the service sector also includes high-paying, high-skill jobs that require advanced degrees, such as those in the professional services, health care, or financial services industries. Service-based industries also contribute to Montana's exports, bringing new money into Montana from the sale of their services, and make a sizable contribution to the state's gross domestic product.

Compared to the U.S., Montana has a much smaller share of manufacturing (12.5% in the U.S. compared to 7% in MT). However, larger concentrations in agriculture, mining, and construction

make up this shortfall. Montana's manufacturing is likely stymied by the long distance from Montana to major consumer cities and ports, which increase transportation costs for manufactured goods. The transportation sector comprises a larger share of Montana's economy compared to the U.S., likely because Montana's large size and rural nature requires a lot of transportation to ship goods to consumers. Montana's share of health care is larger than the U.S., partially due to Montana's older population.

The largest private industries in terms of employment are health care, trade, and leisure activities. These three industries combined employ nearly 45 percent of Montana's workers. Government is also a large employer with roughly 18.8 percent of employment, most of whom are employed by local governments.

Personal Income

Personal income is calculated as the personal income of the residents of a given area divided by the resident population of the area. In computing per capita personal income, the U.S. Dept. of Commerce uses the Census Bureau's annual mid-year population estimates. All state and local area dollar estimates are in adjusted for inflation in 2013 dollars. **Table 3.3-1** shows the highest and lowest per capita income for 2013 by county and city/town. The counties/cities/town with energy resource exploration show higher personal incomes. **Figure 3.3-1** shows per capita personal income in 2016 for the five highest and lowest counties.

Table 3.3-1. Per Capita Personal Income by Montana County

Highest Per Capita Income County	2016	Highest Per Capita Income City/Town	2016
Richland County	$33,949	Fort Peck (Valley County)	$41,034
Daniels County	$33,909	Westby (Sheridan County)	$34,522
Liberty County	$32,427	Froid (Roosevelt County)	$33,145
Sheridan County	$31,997	Bainville (Roosevelt County)	$33,107
Fallon County	$31,902	Colstrip (Rosebud County)	$32,847
Highest Per Capita Income County	**2016**	**Lowest Per Capita Income City/Town**	**2016**
Glacier County	$16,284	Lodge Grass (Big Horn County)	$10,537
Roosevelt County	$ 16,885	Pinesdale (Ravalli County)	$10,601
Blaine County	$17,080	Browning (Glacier County)	$12,366
Big Horn County	$17,352	Alberton (Mineral County)	$13,970
Wheatland County	$19,407	Darby (Ravalli County)	$14,273

Source: U.S. Census 2016 Estimates

Figure 3.3-2 shows the percent change in per capita income by county from 2010 to 2016. Liberty, Broadwater and Carter counties experienced the greatest increase in per capita income, while Madison, Phillips, and Roosevelt counties experienced the greatest decrease from 2010 to 2016.

The Census Bureau compared annual income to several factors to determine the poverty levels. Those factors include family size, number of children, and age of householder. If the family's before tax money income is less than the dollar value of their threshold, then the family is considered to be in poverty.

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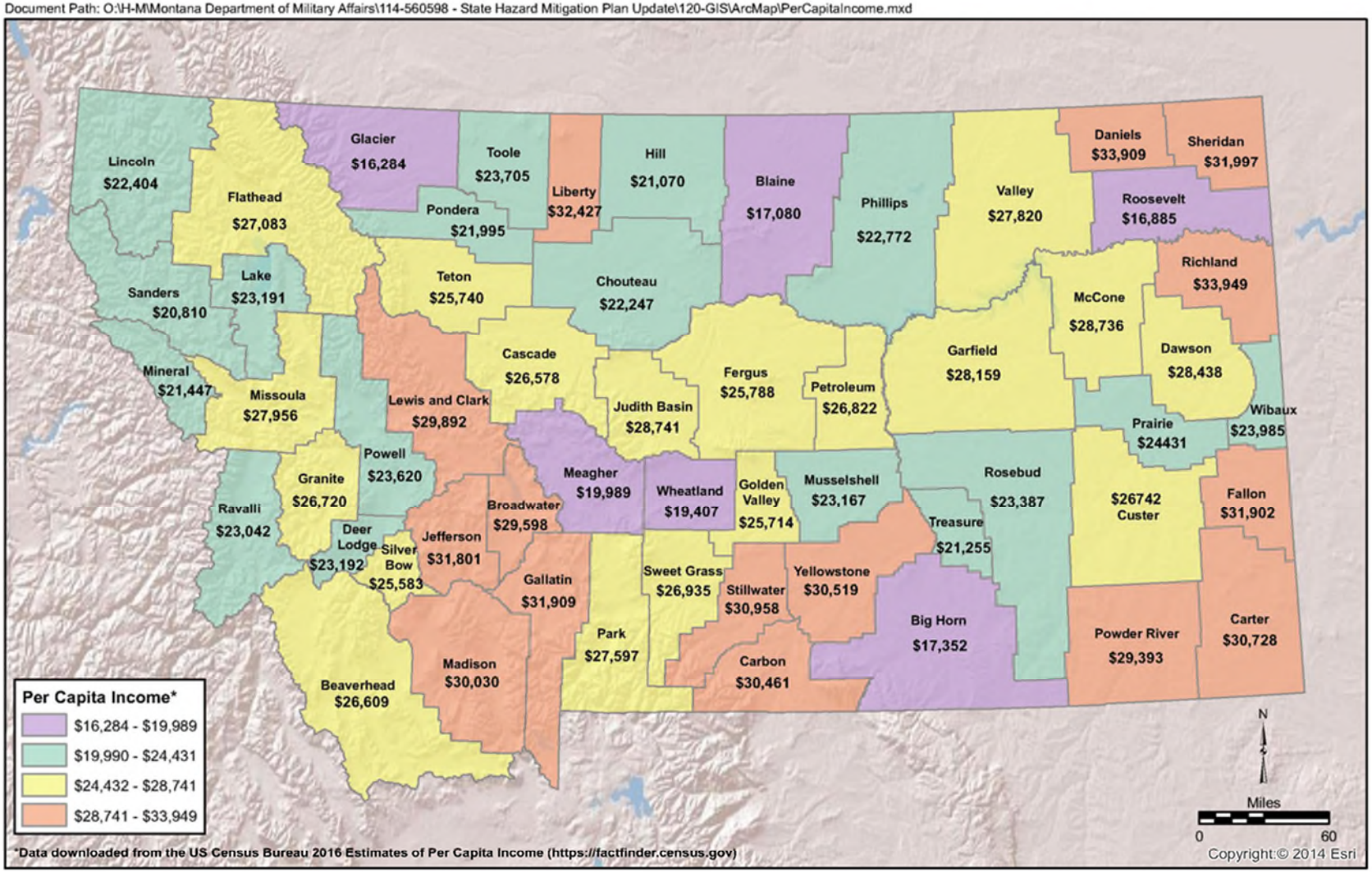

Date: 5/2/2018

Figure 3.3-1
Montana Per Capita Personal Income by County - 2016
State of Montana MHMP 2018 Update

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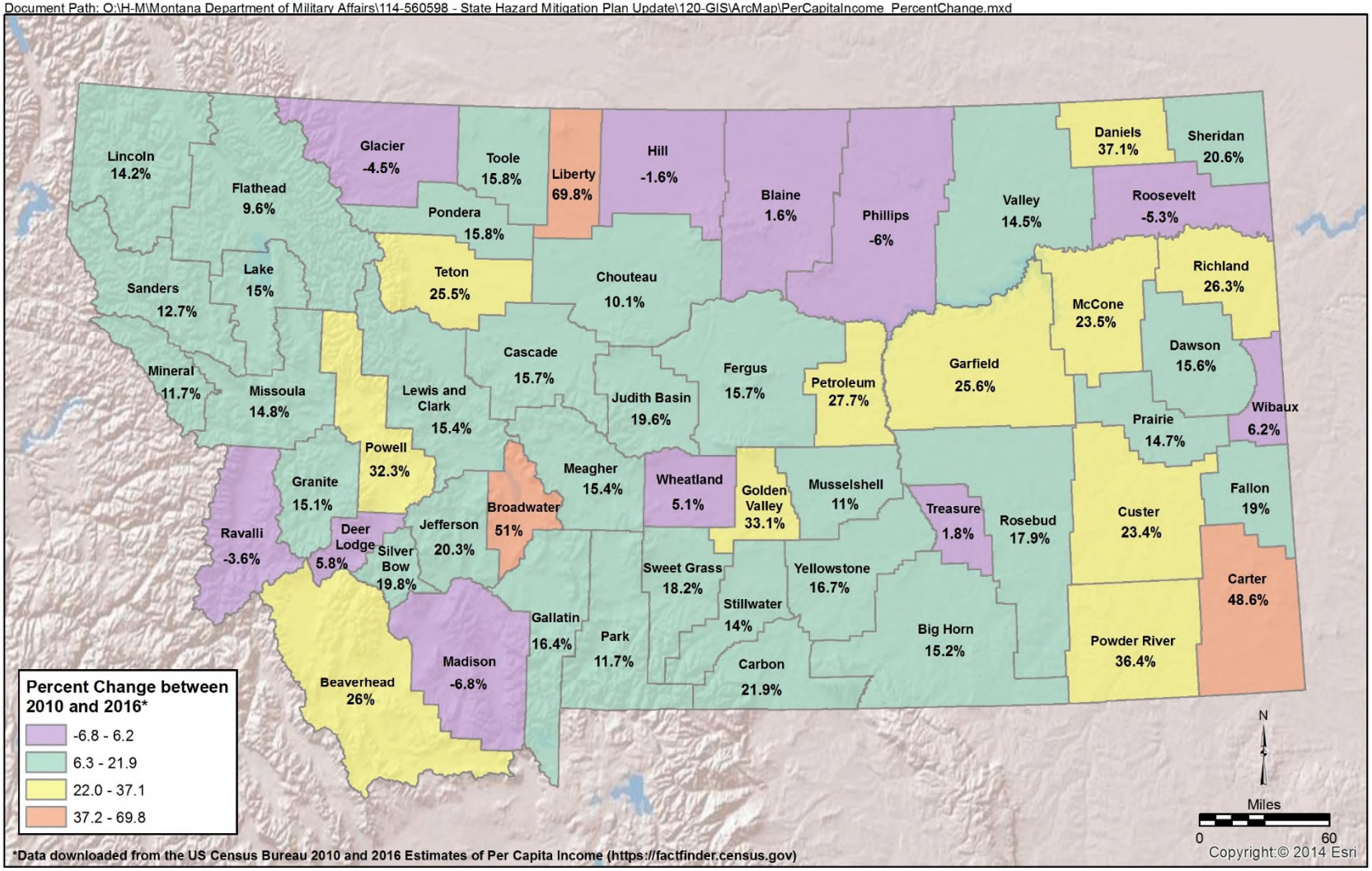

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Figure 3.3-2
Montana Per Capita Personal Income
Percent Change by County - 2010-2016
State of Montana MHMP 2018 Update

According to U.S. Census estimates, 14.9 percent of the Montana's population was living below the poverty level in 2016 compared to 15.1 percent in the U.S. Counties with the highest poverty rates include Glacier (33.3%), Blaine (28.6%), Big Horn (27.8%) and Roosevelt (26.9%). **Figure 3.3-3** presents a map showing poverty in Montana by county in 2016.

3.4 Population

With 104,170 (2016 estimate) persons, Montana ranks 44th in total state population in the U.S. Montana is predominantly white with approximately 89 percent of the 2010 population reporting Caucasian as the primary race, compared to 78 percent in the nation. Eleven (11) American Indian tribes make up the largest minority population in Montana, representing approximately 6.3 percent of the total population, the 5th highest state in the nation. **Table 3.4-1** presents provides statistics on Montana's tribal communities.

Table 3.4-1. Montana's Tribal Communities

Names and Reservation Headquarters	Date Established	Resident Tribes	Population (2010 Census)
Blackfeet Reservation, Browning	1851	Blackfeet	10,405
Crow Reservation, Crow Agency	1851	Crow	6,863
Flathead Reservation, Pablo,	1855	Salish Kootenai	28,359
Fort Belknap Reservation, Harlem	1888	Assiniboine Gros Ventre	2,851
Fort Peck Reservation, Poplar	1888	Assiniboine Sioux	10,008
Northern Cheyenne Reservation, Lame Deer	1884	Northern Cheyenne	4,789
Rocky Boy's Reservation, Box Elder	1916	Chippewa-Cree	3,323
Little Shell*, Great Falls	2000	Chippewa-Cree	N/A

Notes: *The Little Shell Tribe does not have a reservation.
Sources: US Census Bureau, 2010

Montana is ranked 48th amongst other states for population density, with 6.8 persons per square mile, compared to a national average of 87.4 persons per square mile. **Figure 3.4-1** presents Montana's population density by county in 2010. The data indicates that the highest density counties were Yellowstone, Silver Bow, Missoula and Gallatin, while the lowest density counties were Garfield, Petroleum, Carter, and Prairie.

Figure 3.4-2 presents the change in population density between 2010 and 2016 for Montana's counties. Counties which have experienced the greatest increase in population density include Richland (17.8%), Gallatin (16.7%), and Granite (9.4%) while counties which have decreased in density include Toole (-6.5%), Judith Basin (-6.4%) and Golden Valley (6.0%).

Growth in population varies greatly across the state but generally, counties with the largest cities have the highest populations while some of Montana's rural counties continue to lose population. **Table 3.4-2** lists the counties with the highest and lowest populations from 2016 census estimates and shows the percent change compared to the 2010 census.

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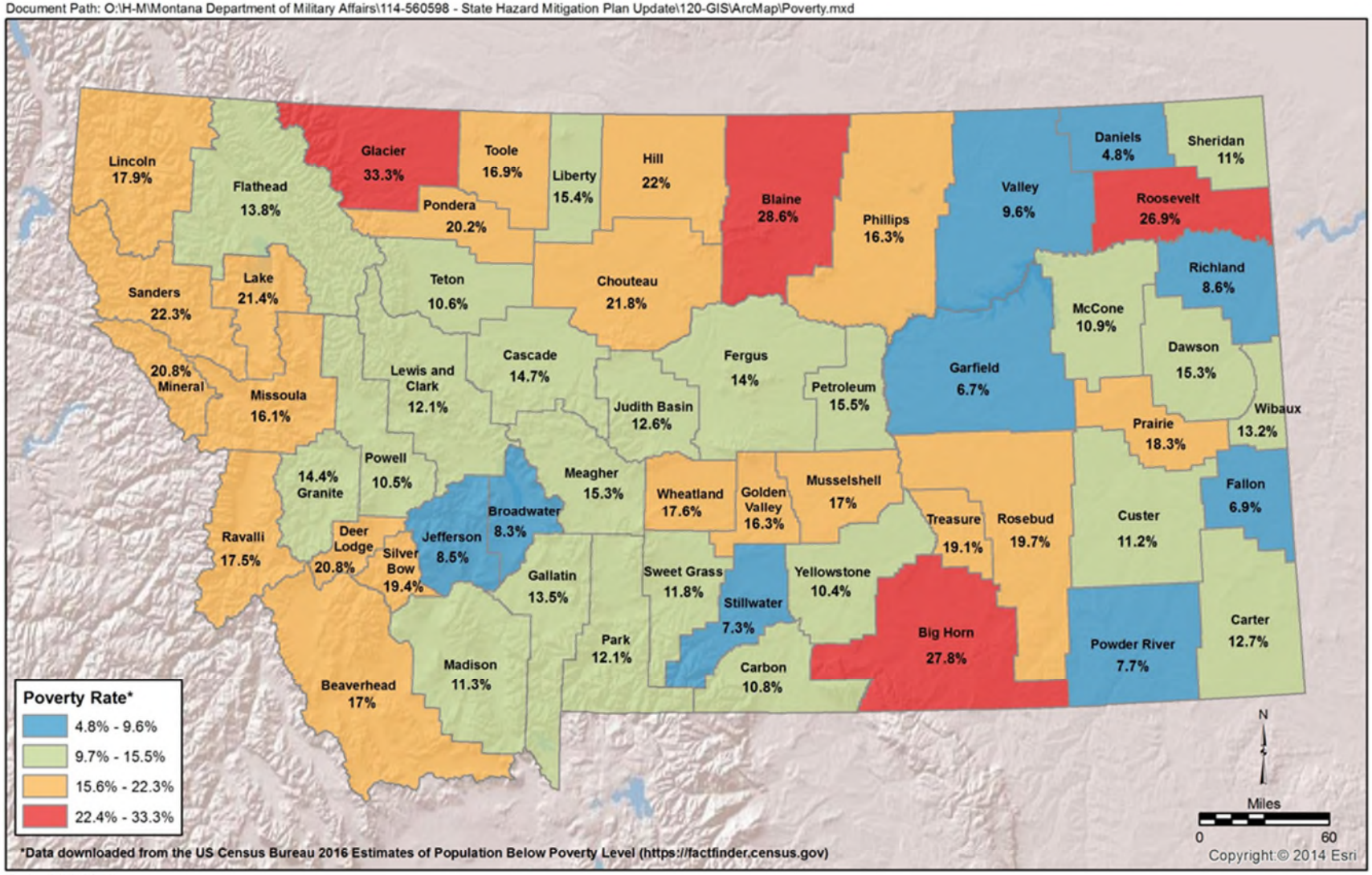

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Figure 3.3-3
Poverty In Montana - 2016
State of Montana MHMP 2018 Update

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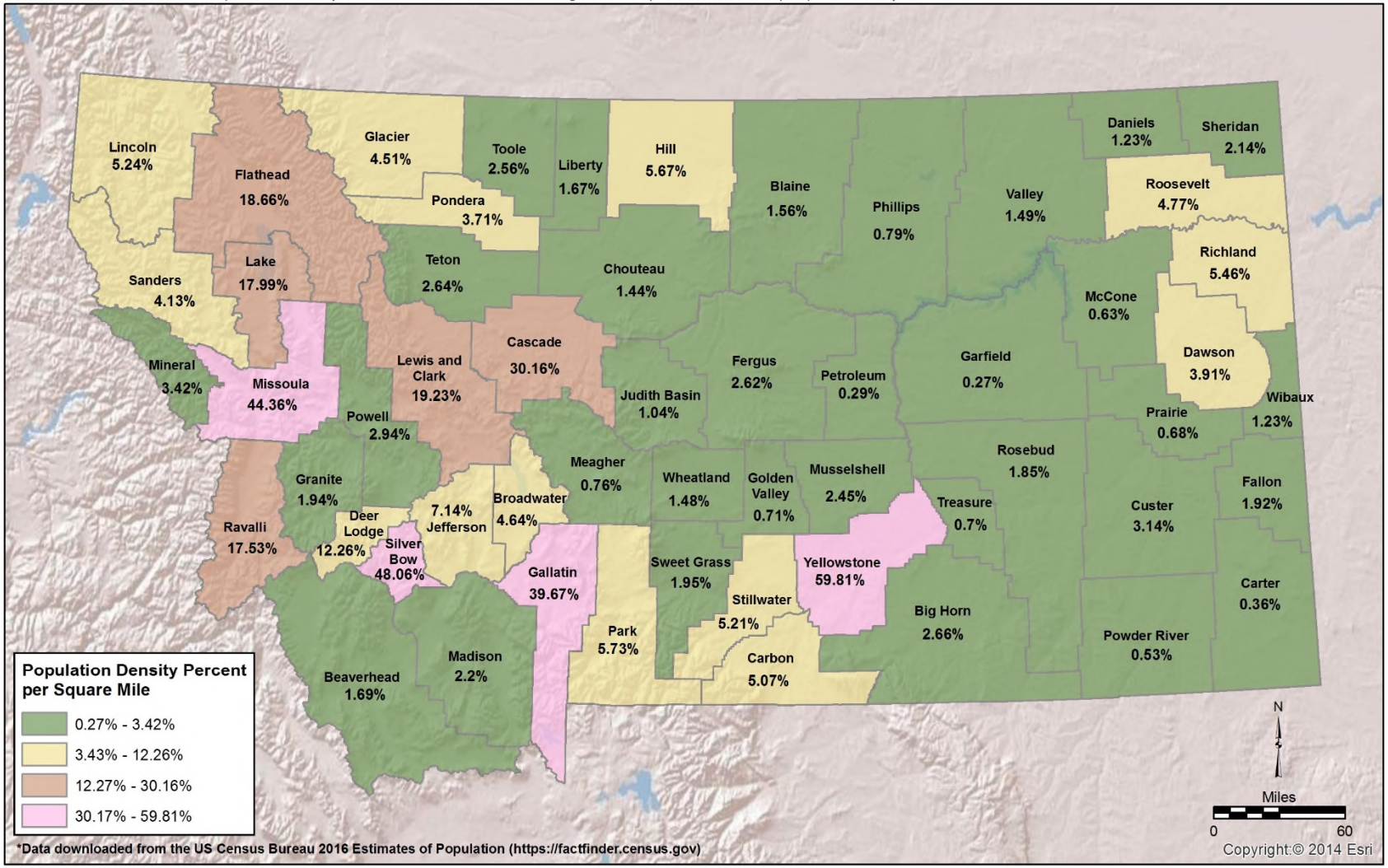

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Figure 3.4-1
Montana County Population Density - 2010
State of Montana MHMP 2018 Update

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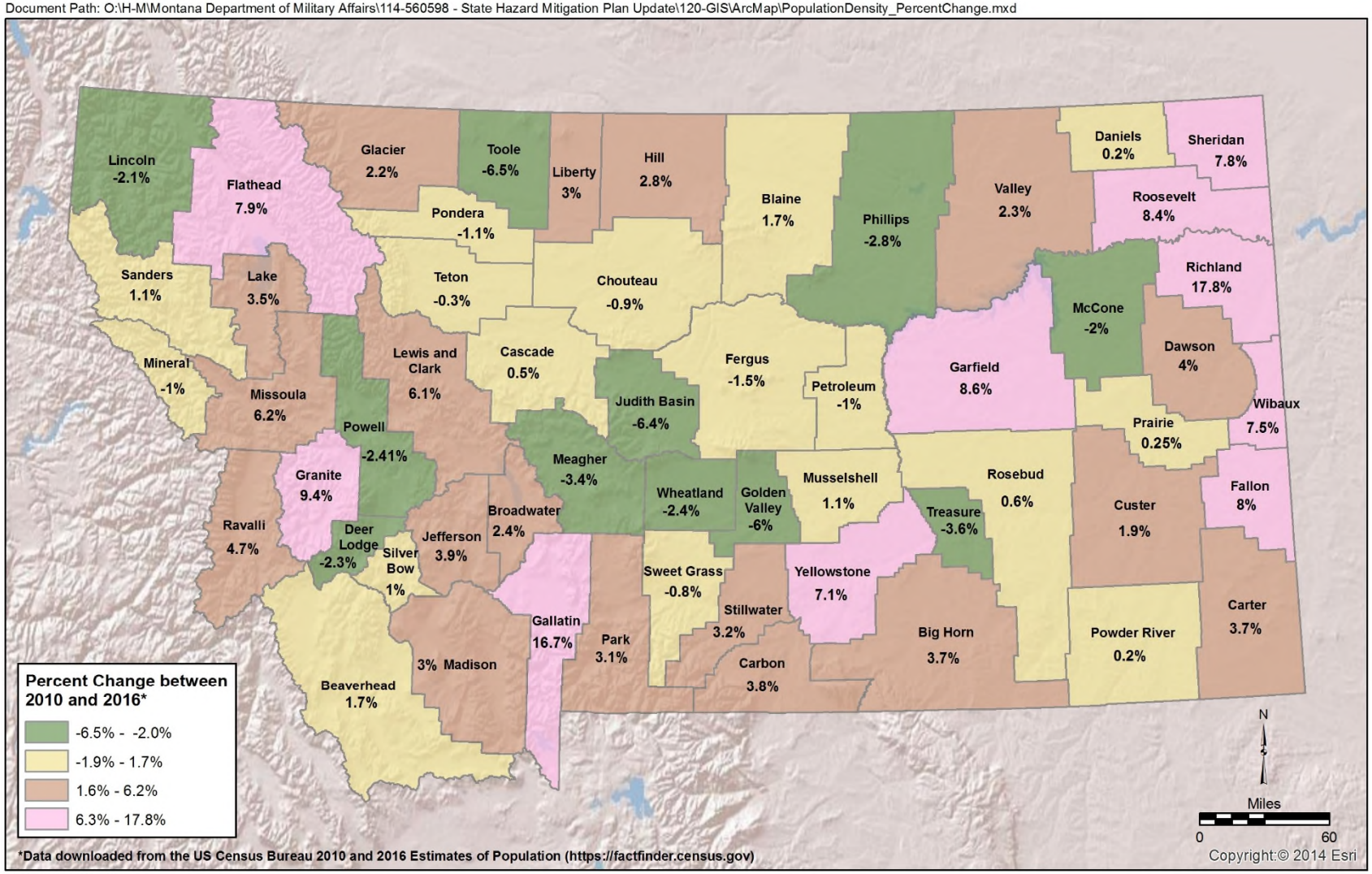

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Figure 3.4-2
Montana County Population Density Percent Change between Census 2010 and 2016
State of Montana MHMP 2018 Update

Table 3.4-2. Counties with the Highest and Lowest Populations (2016 Estimates)

Counties with Highest Population	2016 Census Est.	2010 Census	Percent Change
Yellowstone County	158,437	147,972	6.61%
Missoula County	116,130	109,299	5.88%
Gallatin County	104,502	89,513	14.34%
Flathead County	98,082	90,928	7.29%
Cascade County	81,755	81,327	0.52%
Counties with Lowest Population	**2016 Census Est.**	**2010 Census**	**Percent Change**
Petroleum County	489	494	-1.02%
Treasure County	692	718	-3.76%
Golden Valley County	831	884	-6.38%
Wibaux County	1,093	1,017	6.95%
Prairie County	1,182	1,179	0.25%

Source: US Census, 2018

Table 3.4-3 lists the cities/towns with the highest and lowest populations between 2010 and 2016.

Table 3.4-3. Cities & Towns with the Highest and Lowest Populations (2016 Estimates)

Cities with Highest Population	2016 Census Est.	2010 Census	Percent Change
Billings (Yellowstone County)	110,323	104,170	5.58%
Missoula (Missoula County)	72,364	66,788	7.71%
Great Falls (Cascade County)	59,178	58,505	1.14%
Bozeman (Gallatin County)	45,250	37,280	17.61%
Helena (Lewis and Clark County)	31,169	28,190	9.56%
Towns with Lowest Population	**2016 Census Est.**	**2010 Census**	**Percent Change**
Ismay (Custer County)	21	19	9.52%
Neihart (Cascade County)	50	51	-2.00%
Outlook (Sheridan County	52	47	9.62%
Flaxville (Daniels County)	71	71	0.00%
Bearcreek (Carbon County	84	79	5.95%

Source: US Census, 2018

Tables 3.4-4 and 3.4-5 list the top six counties and cities/towns, respectively, with the greatest percent population gains and losses between 2010 and 2016. This data shows that in general, counties and cities/towns in northeastern Montana which support populations working in the Bakken oil field grew most rapidly, while rural counties and towns in north and central Montana had the greatest population loss. Unrelated to the oil boom, Gallatin and Granite counties, the city of Bozeman (Gallatin County) and towns of Rexford (Lincoln County) and Fairfield (Teton County) experienced the highest population growth during this period.

Table 3.4-4. Counties with the Greatest Population Gains and Losses in Montana

Counties with Greatest Population Gain	2016 Census Est.	2010 Census	Percent Change
Richland County	11,482	9,746	15.12%
Gallatin County	104,502	89,513	14.34%
Granite County	3,368	3,079	8.58%
Garfield County	1,310	1,206	7.94%
Roosevelt County	11,305	10,425	7.78%
Fallon County	3,120	2,890	7.37%

Table 3.4-4. Counties with the Greatest Population Gains and Losses in Montana

Counties with Greatest Population Loss	2016 Census Est.	2010 Census	Percent Change
Toole County	4,977	5,324	-6.97%
Judith Basin County	1,940	2,072	-6.80%
Golden Valley County	831	884	-6.38%
Treasure County	692	718	-3.76%
Meagher County	1,827	1,891	-3.50%

Source: US Census, 2018

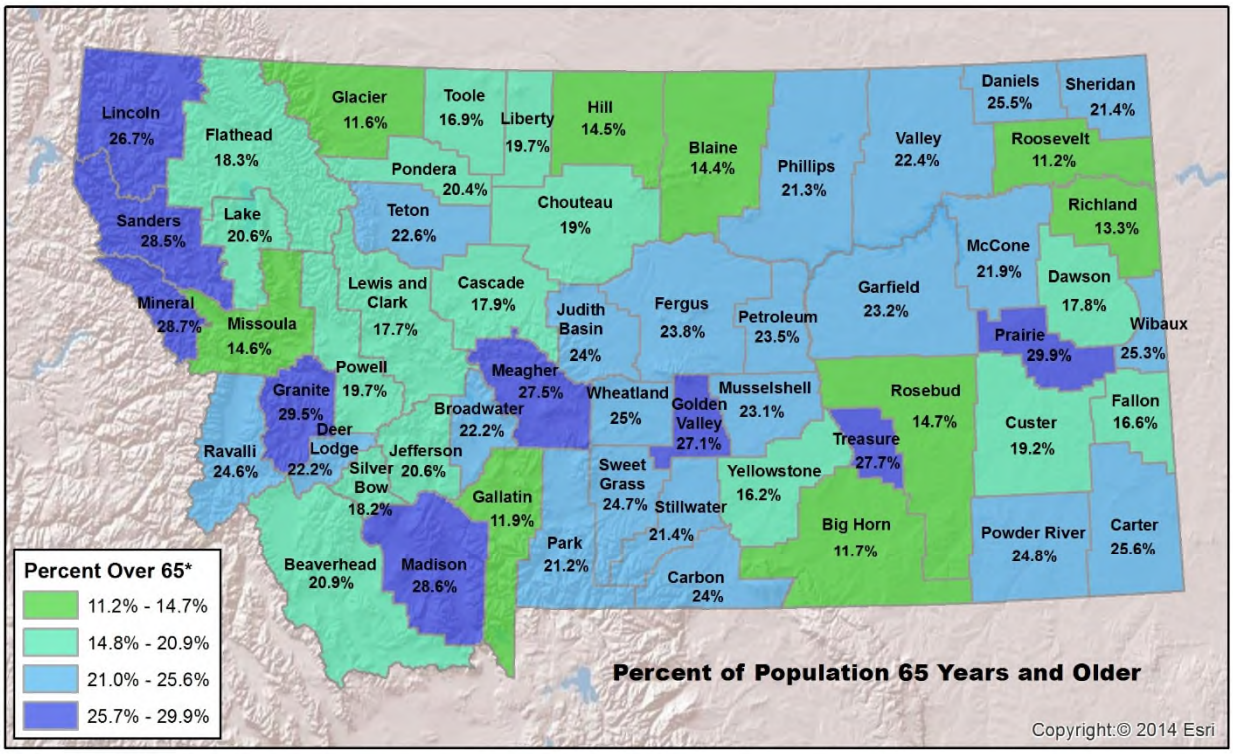
Table 3.4-5. Cities & Towns with the Greatest Population Gains and Losses in Montana

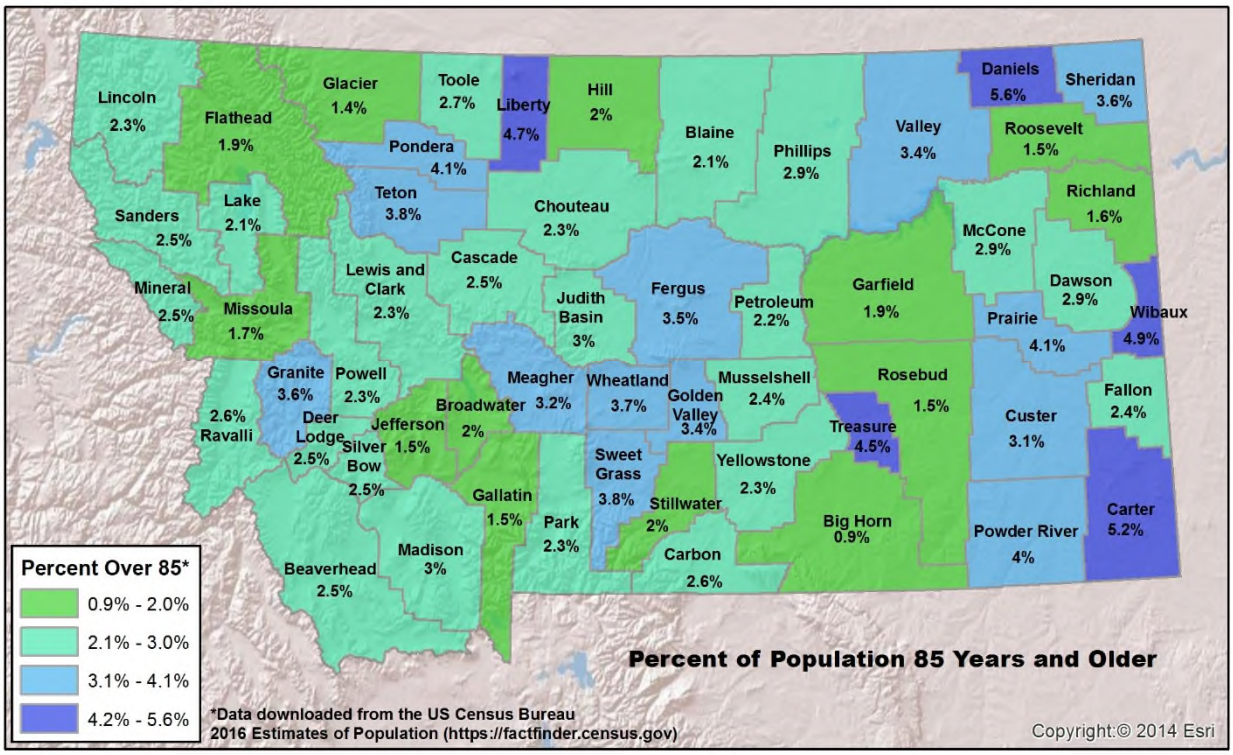
Cities/Towns with Greatest Population Gain	2016 Census Est.	2010 Census	Percent Change
Opheim (Valley County)	290	85	70.69%
Bainville (Roosevelt County)	314	208	33.76%
Rexford (Lincoln County)	151	105	30.46%
Fairfield (Teton County)	922	708	23.21%
Sidney (Richland County)	6,566	5,191	20.94%
Bozeman (Gallatin County	45,250	37,280	17.61%
Cities/Towns with Greatest Population Loss	**2016 Census Est.**	**2010 Census**	**Percent Change**
Kevin (Toole County)	138	154	-11.59%
Sunburst (Toole County)	338	375	-10.95%
Lavina (Golden Valley County)	173	187	-8.09%
Troy (Lincoln County)	890	938	-5.39%
Shelby (Toole County)	3,216	3,376	-4.98%

Source: US Census, 2018

Elderly

The percentage of elderly population (65 and over) in Montana increased from 14.8 percent to 17.7 percent between 2010 and 2016. This trend is expected to accelerate in the next 20 years, so that by 2025, Montana will experience one of the most dramatic demographic transformations in its history. **Figure 3.4-3** presents Montana's population over age 65 and over age 85 by County. As the Baby Boom generation (those born between 1946 and 1964) reaches retirement age, the proportion of Montana's population classified as elderly is expected to increase to 25 percent in 2030.





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Date: 5/30/2018

Figure 3.4-3
Percent of Population 65 Years and Older and 85 Years and Older
State of Montana MHMP 2018 Update

3.5 References

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SECTION 4. RISK ASSESSMENT AND VULNERABILITY ANALYSIS

The Risk Assessment portion of this document provides a detailed description of the hazards in Montana, an assessment of the State's vulnerability to those hazards, and a basis for the mitigation goals and activities proposed in the Mitigation Strategy portion of the document. This Risk Assessment section examines natural, man-made, and technological hazards that can impact the State, determines which areas of the State are most vulnerable to each hazard, estimates potential losses to State facilities, and analyzes the potential changes in frequency and magnitude of the hazards from climate change. Supporting documentation is presented in **Appendix B**.

4.1 Risk Assessment Methodology

The methodology used to conduct the 2018 MHMP risk assessment involved an analysis of a number of hazard and their effect on State-owned critical facilities, the general building stock, cultural resources, and population. A description of the process used to identify and prioritize hazards is presented first, followed by a summary of the content in each hazard profile. The final sections describe the sources of data used in the risk assessment and methodology for estimating damages and structural loss.

4.1.1 Hazard Identification

Hazards included in this Plan were identified and validated by the MHM Planning Team. Review of the 2013 MHMP formed the basis of hazard discussions and new and emerging hazards were identified by subject-matter experts who comprised the Planning Team. As part of the update process, the Planning Team considering the following criteria:

- Prior knowledge of the relative risk associated with each of the hazards;
- Identification of hazard events and disasters that had occurred within the past five years;
- Identification of emerging hazards with the ability to impact public health, damage structures, and impact the State's economy;
- Changes in hazard impacts associated with climate change; and
- Review of hazards identified in local jurisdiction plans.

The natural, man-made, and technological hazards evaluated in the 2018 Montana MHMP include (in alphabetical order): Avalanche, Civil Unrest, Cyber Security, Dam Failure, Disease, Drought, Earthquake, Flooding, Hazardous Material Incidents, Landslide, Severe Weather, Terrorism, Transportation Accidents, Violence, Volcanic Ash, and Wildfire. These hazards were deemed most critical in Montana today and most likely to cause future losses.

4.1.2 Hazard Ranking and Prioritization

As was done for the 2013 Montana MHMP, hazards were ranked using the Calculated Priority Risk Index (CPRI). The 2013 CPRI examined four ranking criteria for each hazard (probability, magnitude/severity, warning time, and duration). For each hazard, an index value was assigned for

each CPRI category from 0 to 4 with "0" being the least hazardous and "4" being the most hazardous situation. This value was then assigned a weighting factor and the result was a hazard ranking score. For the 2018 MHMP update, the CPRI was expanded to include a fifth criterion, economic impact. The weighting factor across the five ranking criteria was adjusted, as shown in **Table 4.1-1**. The modified CPRI was administered through a survey to MHM Planning Team members. **Table 4.1-2** presents the results of the CPRI scoring for all hazards.

Table 4.1-1. Calculated Priority Risk Index

CPRI Category	Degree of Risk			Assigned Weighting Factor
	Level ID	Description	Index Value	
Probability	Unlikely	Rare with no documented history of occurrences of events.	1	30%
		Annual probability of less than 0.01.		
	Possible	Infrequent occurrences with at least one documented or anecdotal historic event.	2	
		Annual probability that is between 0.1 and 0.01		
	Likely	Frequent occurrences with at least two or more documented historic events	3	
		Annual probability that is between 1 and 0.1		
	Highly Likely	Common events with a well-documented history of occurrence.	4	
		Annual probability that is greater than 1		
Magnitude/ Severity	Negligible	Negligible property damages (less than 5% of critical and non-critical facilities and infrastructure).	1	25%
		Injuries or illnesses are treatable with first aid and there are no deaths.		
		Negligible quality of life lost.		
		Shut down of critical facilities for less than 24 hours.		
	Limited	Slight property damages (greater than 5% and less than 25% of critical and non-critical facilities and infrastructure).	2	
		Injuries or illnesses do not result in permanent disability and there are no deaths.		
		Moderate quality of life lost		
		Shut down of critical facilities for more than 1 day and less than 1 week.		
	Critical	Moderate property damages (greater than 25% and less than 50% of critical and non-critical facilities and infrastructure).	3	
		Injuries or illnesses result in permanent disability and at least one death.		
		Shut down of critical facilities for more than 1 week and less than 1 month		
	Catastrophic	Severe property damages (greater than 50% of critical and non-critical facilities an infrastructure).	4	
		Injuries or illnesses result in permanent disability and multiple deaths.		
		Shut down of critical facilities for more than 1 month.		
Economic Impact	Negligible	Little to no annual economic impact.	1	20%
	Limited	<$1 million annual economic impact.	2	
	Critical	<$1 billion but >$1 million in annual economic impact.	3	
	Catastrophic	>$1 billion annual economic impact.	4	
Warning Time	Less than 6 hours	Self-explanatory.	4	15%
	6 to 12 hours	Self-explanatory.	3	
	12 to 24 hours	Self-explanatory.	2	
	More than 24 hours	Self-explanatory.	1	
Duration	Less than 6 hours	Self-explanatory.	1	10%
	Less than 24 hours	Self-explanatory.	2	
	Less than one week	Self-explanatory.	3	
	More than one week	Self-explanatory.	4	

Table 4.1-2. Calculated Priority Ranking Index Summary

Hazard	Probability	Magnitude / Severity	Economic Impact	Warning Time	Duration	CPRI Score
Wildfire	Highly Likely	Critical	Critical	<6 hours	>1 week	3.37
Drought	Highly Likely	Critical	Critical	>24 hours	>1 week	2.95
Earthquake	Possible	Critical	Critical	<6 hours	<6 hours	2.93
Flooding	Likely	Critical	Critical	6-12 hours	<1 week	2.83
Severe Weather	Highly Likely	Limited	Limited	6-12 hours	<1 week	2.75
Haz-Mat/ Transportation Accidents	Possible	Limited	Limited	<6 hours	<6 hours	2.62
Disease (Agro-Security - livestock disease/crop parasites)	Possible	Limited	Critical	>24 hours	>1 week	2.57
Dam Failure	Possible	Critical	Limited	>24 hours	>1 week	2.56
Terrorism, Violence, Civil Unrest, Cyber Security	Possible	Limited	Limited	<6 hours	<24 hours	2.41
Disease (public health)	Possible	Critical	Negligible	>24 hours	>1 week	2.40
Disease (Wildlife Security - (invasive mussels, fish disease)	Possible	Limited	Critical	>24 hours	>1 week	2.39
Avalanche	Likely	Limited	Limited	<6 hours	<6 hours	2.39
Volcanic Ash	Unlikely	Catastrophic	Limited	<6 hours	>1 week	2.33
Landslide	Possible	Limited	Negligible	<6 hours	>1 week	2.23

The MHMP Planning Team felt that with the CPRI ranking did not accurately represent hazard priorities for the State of Montana. They therefore, prioritized the hazards as shown in **Table 4.1-3**. Hazard profiles are arranged in the remainder of this section in this order. Changes in prioritization from the 2013 MHMP are also shown in **Table 4.1-3**.

Table 4.1-3. Prioritized Hazards for 2018 MHMP

Prioritized Rank for 2018	Hazard Profile	Comments	Prioritized Rank in 2013 Plan
1	Wildfire	Included in both 2013 and 2018 MHMP.	1
2	Flooding	Included in both 2013 and 2018 MHMP.	2
3	Earthquake	Included in both 2013 and 2018 MHMP.	3
4	Drought	Included in both 2013 and 2018 MHMP.	8
5	Severe Weather	Combined summer and winter weather hazards into one profile instead of two.	4 & 5
6	Haz-Mat & Trans-portation Accidents	Transportation Accidents is a new hazard for the 2018 MHMP. It is combined with haz-mat incidents since they often occur together.	7
7	Disease	Changed name from "Communicable Disease" to "Disease" and expanded profile to include public health, agriculture and wildlife security.	6
8	Landslide & Avalanche	Avalanche is a new hazard for the 2018 MHMP. It is combined with the landslide profile since the same geologic forces cause both hazards.	10
9	Dam Failure	Included in both 2013 and 2018 MHMP.	9
10	Terrorism, Violence, Civil Unrest & Cyber	Added discussion on violence, civil unrest, and cyber security to the terrorism hazard profile.	11
11	Volcanic Ash	Included in both 2013 and 2018 MHMP.	12

In order to recognize regional differences across the State, County and Tribal Emergency Managers were asked to complete a survey identifying hazard priorities in their area. **Table 4.1-4** presents survey results by DES District. **Figure 4.1-1** presents a map showing the DES Districts used to report the results of the hazard ranking and risk assessment. In addition, the local MHMPs were reviewed for their hazard rankings and these are presented in **Appendix B-1**. Local hazard rankings were generally consistent with the hazards ranked for the State MHMP.

It should be noted that reorganization of the MT DES Preparedness Bureau went into effect on January 1, 2018 after the State MHMP 2018 update had been underway for four months. As such, the local hazard ranking and risk assessment results in this Plan are reported in accordance with the former structure which had the State divided into six districts. **Figure 6.2-1** presents a map of the new organizational structural. Which combined Districts 1 and 3 into the Western District, Districts 2 and four counties in District 6 into the Central District, and Districts 4 and 5 plus four counties in District 6 into the Eastern District. The 2023 State of Montana MHMP will present the local hazard ranking and risk assessment results in accordance with the new Montana DES Preparedness Bureau organizational structure.

4.1.3 Hazard Profiles

Hazard profiles were prepared for each of the identified hazards which include a description of the hazard, history of occurrence, vulnerability and area of impact, probability and magnitude of future events, an evaluation of how future development is being managed to reduce risk, and how climate change may impact long term vulnerability to hazards. The methodology used to report each topic in the hazard profile is further described below. The level of detail for each hazard profile is generally limited by the amount of data available.

Description and History

A number of databases were used to describe and compile the history of hazard events profiled in this plan. This data was supplemented by records of past Federal and State disaster declarations, newspaper accounts, and internet research. The two primary databases used included the National Climatic Data Center (NCDC) Storm Events Database and Spatial Hazard Events and Losses Database for the United States (SHELDUS).

The NCDC Storm Events database receives Storm Data from the National Weather Service (NWS). The NWS service receives their information from a variety of sources, including County, State and Federal emergency management officials, local law enforcement officials, skywarn spotters, NWS damage surveys, newspaper clipping services, the insurance industry and the general public. Storm Data is an official publication of the National Oceanic and Atmospheric Administration (NOAA) which documents the occurrence of storms and other significant weather phenomena having sufficient intensity to cause loss of life, injuries, significant property damage, and/or disruption to commerce.

SHELDUS is a county-level hazard data set for the United States for 18 different natural hazard event types. For each event, the database includes the date, location, property losses, crop losses, injuries, and fatalities that affected each county. In order to compensate for the under-reporting of losses in general and to provide more loss-info for rural counties, SHELDUS now reports U.S. Department of Agriculture (USDA) data, which breaks down losses by floods, droughts, etc. just like the traditional

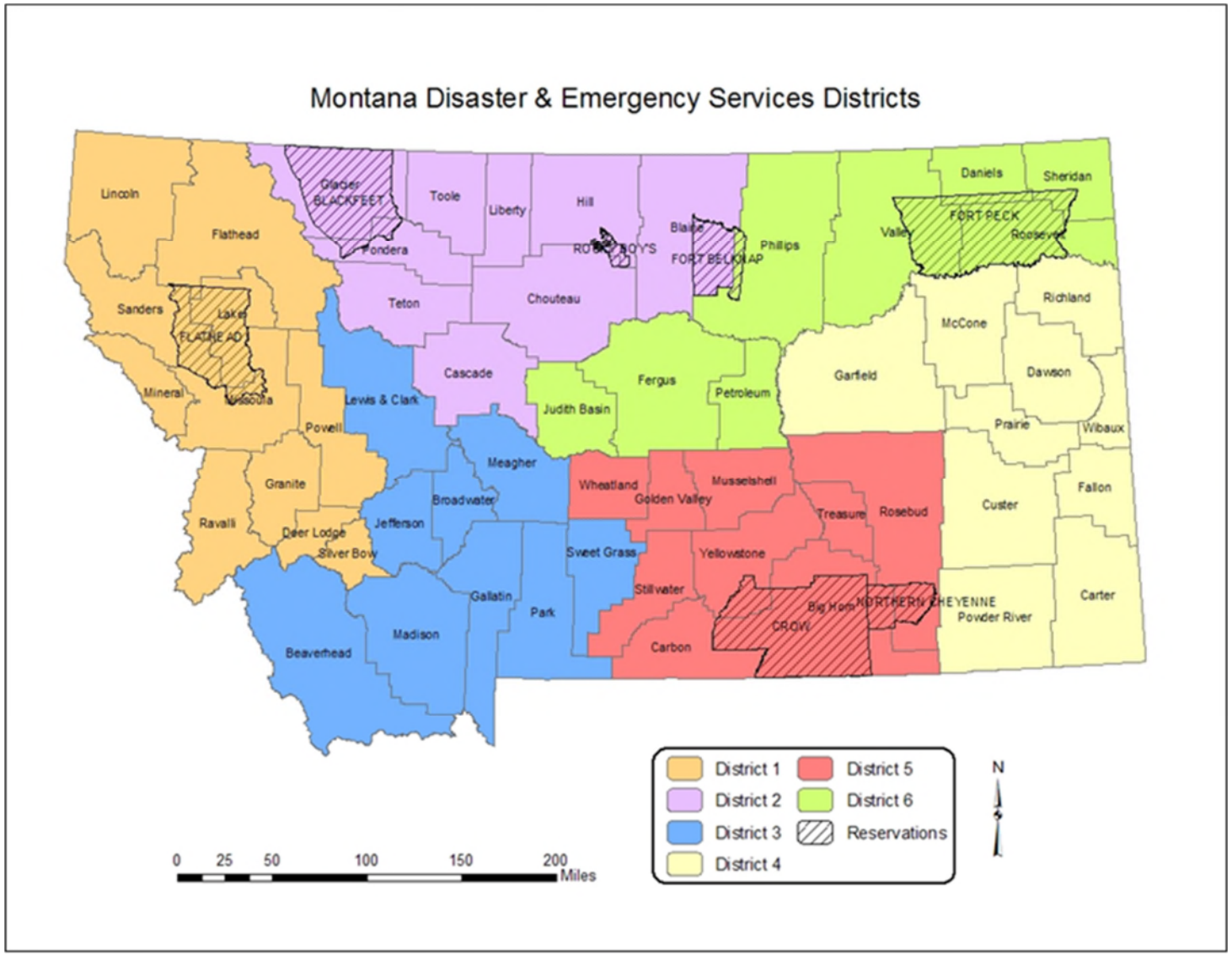
Table 4.1-4. Montana Regional Hazard Priorities

Hazard Rank	District 1	District 2	District 3	District 4	District 5	District 6
# Survey Responses	4	6	5	6	4	5
#1 Hazard	Wildfire	Severe Weather	Wildfire	Severe Weather	Wildfire	Severe Weather
#2 Hazard	Flooding	Wildfire	Flooding	Wildfire	Severe Weather	Flooding
#3 Hazard	Severe Weather	Flooding	Severe Weather	Drought	Flooding	Drought
#4 Hazard	Haz-Mat Incidents	Haz-Mat Incidents	Haz-Mat Incidents	Transp. Accidents	Haz-Mat Incidents	Transp. Accidents
#5 Hazard	Transp. Accidents	Transp. Accidents	Drought	Haz-Mat Incidents	Drought	Wildfire
#6 Hazard	Com. Disease	Com. Disease	Transp. Accidents	Flooding	Transp. Accidents	Haz-Mat Incidents
#7 Hazard	Earthquake	Drought	Earthquake	Com. Disease	Agro-Security	Dam Failure
#8 Hazard	Drought	Terrorism	Dam Failure	Agro-Security	Terrorism	Agro-Security
#9 Hazard	Avalanche	Agro-Security	Com. Disease	Terrorism	Dam Failure	Terrorism
#10 Hazard	Dam Failure	Dam Failure	Terrorism	Dam Failure	Com. Disease	Com. Disease

Former Organizational Structure of Montana DES Preparedness Bureau

- DES District 1 = Deer Lodge, Flathead, Granite, Lake, Lincoln, Mineral, Missoula, Powell, Ravalli, Sanders, Butte-Silver Bow, Flathead Reservation [Confederated Salish & Kootenai Tribe]
- DES District 2 = Blaine, Cascade, Chouteau, Glacier, Hill, Liberty, Pondera, Teton, Toole, Blackfeet, Fort Belknap, Rocky Boy [Chippewa Cree Tribe]
- DES District 3 = Beaverhead, Broadwater, Gallatin, Jefferson, Lewis & Clark, Madison, Meagher, Park, Sweet Grass
- DES District 4 = Carter, Custer, Dawson, Fallon, Garfield, McCone, Powder River, Prairie, Richland, Wibaux
- DES District 5 = Big Horn, Carbon, Golden Valley, Musselshell, Rosebud, Stillwater, Treasure, Wheatland, Yellowstone, Crow, No. Cheyenne
- DES District 6 = Daniels, Fergus, Judith Basin, Petroleum, Phillips, Roosevelt, Sheridan, Valley, Fort Peck Reservation

Figure 4.1-1. Montana DES Districts Used to Report Results of 2018 MHMP Risk Assessment



SHELDUS data. However, the USDA data are all insured losses, i.e. disaster crop insurance payments (indemnity payments).

Vulnerability and Area of Impact

Vulnerability is discussed in terms of statewide vulnerability, potential losses in local hazard mitigation plans, and vulnerability of state facilities. Statewide vulnerability includes an analysis of the general building stock and population. Local plans were reviewed for building, societal, and economic exposure. Analysis of state facilities includes critical facilities and cultural resources. The sources of the data used to evaluate vulnerability in the 2018 MHMP risk assessment are described below.

Critical facilities used in this analysis are a subset of the state-owned buildings listed in the Property Casualty Insurance Information System (PCIIS) database of the Montana Dept. of Administration, Risk Management and Tort Defense Division. This database provides building information including location, square footage, construction type, and insured values for structures, contents, and special equipment. Critical facilities include buildings essential for continuity of government including, but not limited to, state agency buildings, Montana National Guard armories and readiness centers, aeronautic facilities, communication sites, university research facilities, and state fire facilities. Critical facilities also include those facilities that have large vulnerable populations including the state hospital, detention facilities and dormitories, dining facilities, and lecture halls associated with the universities. **Appendix B-2** presents the State-owned critical facilities included in the analysis. Digital locations were used in the analysis but are not provided for security purposes.

Cultural resources are among the other "values" evaluated in the MHMP risk assessment. Information on historic properties and cultural resources is housed at the Montana State Historic Preservation Office (SHPO). However, locational information for most properties is restricted as releasing this information could undermine protection of these resources. Tetra Tech consulted with MT SHPO to identify state-owned historic properties and cultural resources considered significant and appropriate for inclusion in hazard analysis. A total of 65 state-owned properties were identified; all of these sites are either listed in the National Register of Historic Places or are designated a National Historic Landmark.

Historic properties and cultural resources determined eligible, but not listed, in the NRHP were not included in the hazard analysis. These properties number in the thousands and as many sites represent prehistoric occupations, locational information is restricted for site protection.

Montana SHPO maintains a cultural resource database on known historic, archaeological, traditional cultural, and paleontological sites that is available for public use (http://svc.mt.gov/adsams/). The database can be accessed through online searches of spatial areas by Township, Section, Range; County; City; or Latitude/Longitude. Results indicate whether or not sites are present/absent within the search location. This tool can be used by project planners to identify cultural properties for disaster grant planning or if ground disturbance is anticipated. State-owned properties are subject to the Montana State Antiquities Act and consultation with SHPO is required.

Data used to evaluate vulnerability of the general building stock was obtained from the Montana Dept. of Revenue (MDOR) Cadastral Mapping Program and Montana State Library (MSL) Structures Framework. The cadastral dataset includes land parcel data across the state and appraised building

values. The Structures Framework includes the location of buildings across the state. Details on the analysis methods are presented in *Section 4.1.4*, below.

Population data used in the statewide vulnerability analysis was from the U.S. Census, 2016 estimates. Details on the analysis methods are presented in *Section 4.1.4*, below.

Hazard impact areas describe the geographic extent to which a hazard can impact a jurisdiction and are uniquely defined on a hazard-by-hazard basis. Mapping of the hazards, where spatial differences exist, allows for hazard analysis by geographic location. Some hazards can have varying levels of risk based on location. Other hazards cover larger geographic areas and affect the area uniformly. **Table 4.1-5** below, describes the sources of data used to develop area of impact maps showing the variability of the hazards evaluated in the risk assessment.

Table 4.1-5. Area of Impact Hazard Map Data Sources

Hazard	Vulnerability Assessment Methods
Wildland and Rangeland Fires	The wildfire hazard area consists of the following three datasets: -WUI layer from Region 1 Healthy Forest Restoration Act (R1HFRA) that modeled communities at risk, population density, and topography; -*Community Zones Threatened by Large Geographic Scale Fire* layer developed by the US Forest Service, Northern Region, Engineering, Geospatial Group. This dataset was developed based on fuels layers, fire behavior potential assessment, and communities identified as Urban Wildland Interface Communities at risk. -WUI layer developed by Tetra Tech that buffered interface communities with a population density equal or greater than 250 people. The communities were buffered by four miles but incorporated town areas were extracted from the dataset as these places tend to be protected by fire departments. For local analysis, a 1,000-ft. buffer around incorporated town represented the wildfire hazard area. Development of this WUI layer follows a method presented in the Tri-County Regional Community Wildfire Protection Plan (CWPP) 2015 Update for Lewis & Clark, Jefferson, and Broadwater counties. Agricultural areas (hay/pasture and crop) displayed on wildfire hazard maps provided by the Montana Natural Heritage Program.
Flooding	The flood hazard area created for the current analyses represents a combination of datasets with the primary being the 2017 National Flood Hazard Layer geodatabase downloaded from the FEMA Flood Map Service Center. This geodatabase represents digital Flood Insurance Rate Maps (FIRMs) for over 30 counties in Montana. Data collected to represent missing counties come from the MT DNRC (digitized FIRMs of Golden Valley, Musselshell, and Wheatland counties), the Montana State Library (Channel Migration Zones for Prickly Pear Creek and the Yellowstone, Ruby, Flathead, and Big Hole rivers, and a FEMA HAZUS-derived flood risk map of Montana completed in 2010. The HAZUS scenario was for a simulated 100-year flood using National Elevation Dataset, a flood frequency discharge table that references a specific discharge per return period for a given point (stream gage derived) and regression equations used between stream gage areas. The current flood hazard area represents the 100-Year floodplain boundary. Flood hazard maps also display levee locations provided by the US Army Corps of Engineers, and 2017 fire location data provided by MT DNRC.
Earthquake	A GIS shapefile of Peak Ground Acceleration seismic zones was downloaded from the U.S. Geological Survey. This earthquake hazard layer for 18%g and greater used in the analysis.
Drought	Drought has a variable risk across the State that changes on a monthly basis. It doesn't impact structures or the population but has significant economic consequences. The MHMP analysis looked at five counties in eastern Montana and yields for winter wheat for a non-drought year compared to several drought years. The difference in yields were quantified by calculating lost income, adjusted for inflation. Secondary impacts to main street businesses were not considered in the analysis.

Table 4.1-5. Area of Impact Hazard Map Data Sources

Hazard	Vulnerability Assessment Methods
Severe Weather	Climate event datasets were downloaded from the National Oceanic and Atmospheric Administration, National Centers for Environmental Information for the years 1995-2018. The datasets were filtered for hail (over 0.75-inch), strong wind and thunderstorm wind (over 50 knots), and tornadoes. The datasets provided latitude/longitude coordinates and these points were brought into ArcGIS software. Individual datasets were created for hail, wind, and tornado and the Aggregate Points tool in GIS was used to identify clusters of point features located no more than 20 miles apart. The clusters represent areas where hail, wind, and tornado events are likely to occur based on over 20 years of climatic event documentation.
Haz-Mat Incidents and Transportation Accidents	A GIS layer was created by buffering Federal interstates and highways, Montana highways, railroads, and Toxic Release Inventory (TRI) facilities by 0.25 mile. TRI data obtained from the U.S. EPA.
Disease	The disease hazard is considered to have a uniform risk across the State and was therefore, generally analyzed in the risk assessment. The hazard profile includes public health, agricultural (livestock and crops), and wildlife disease issues.
Landslide / Avalanche	The Landslide hazard area consists of two datasets, terrain with slopes 30 degrees and greater, and mapped landslide areas from surficial geology datasets downloaded from the Montana Bureau of Mines and Geology (MBMG). The 30+ degree terrain dataset was created in GIS by downloading a Digital Elevation Model (DEM) and using a spatial analyst tool to produce a slope dataset. The DEM, downloaded from the Montana State Library (1992), has a resolution of 90 meters which is considered rather low. An attempt was made to process a dataset with a higher resolution; however, the dataset was simply too big for GIS processing. As a result, the terrain dataset represents general areas where slopes 30 degrees and greater can be found; these areas are considered susceptible to landslides. A total of 77 digital geologic maps were downloaded from the MBMG website. These datasets were filtered for areas mapped as Quaternary Landslide and merged together. The resulting dataset also has some limitations as the entire state of Montana is not represented by digital geologic maps. Additionally, different specialists mapped landslides over a number of years and it is likely the criteria for identifying past landslides varied.
Dam Failure	A GIS layer was created of the inundation areas, digitized from EAPs, associated with federal, state, local and private high hazard dams. High hazard dam data provided by MT DNRC.
Terrorism, Violence, Civil Unrest, Cyber Security	The terrorism hazard is considered to have a uniform risk across the State. Montana DES completed a Threat Hazard Identification Risk Assessment (THIRA) on May 15, 2018. The THIRA is included in **Appendix B-12** to address the Terrorism hazard.
Volcanic Ash	The volcanic ash hazard was generally analyzed in the risk assessment. Counties located adjacent to Yellowstone Park are considered vulnerable to impacts from volcanic eruptions, mudflows, and ashfall. Counties west of the Continental Divide are considered vulnerable to impacts from volcanic eruptions in the Cascade Range in Washington State.

Local plans were completed by various authors using different methods making it difficult to compare risk assessment results. As such, local plans were reviewed with details captured in a spreadsheet for each hazard in terms of their effect on buildings, society, and the economy, as outlined below:

- Building exposure is presented either as a dollar value or high-moderate-low rating and typically refers to the vulnerability of residential structures and/or critical facilities from the hazard.
- Societal exposure is presented either as the number of lives at risk or as a high-moderate-low rating representing the vulnerability of human life from the hazard.
- Economic exposure is presented as a dollar value or high-moderate-low rating referring to the potential impact to the economy from the hazard.

Probability and Magnitude

The risk assessment provides a summary of the probability of future hazard events that includes projected changes in occurrences for each natural hazard in terms of location, extent, intensity, frequency, and/or duration. Probability of a hazard event was assessed based on hazard frequency over a 100-year period. Hazard frequency was based on the number of times the hazard event occurred divided by the period of record. If the hazard lacked a definitive historical record, the probability was assessed qualitatively based on regional history and other contributing factors. Probability was broken down as follows:

- Highly Likely – greater than 1 event per year (frequency greater than 1).
- Likely – less than 1 event per year but greater than 1 event every 10 years (frequency greater than 0.1 but less than 1).
- Possible – less than 1 event every 10 years but greater than 1 event every 100 years (frequency greater than 0. 01 but less than 0.1).
- Unlikely – less than 1 event every 100 years (frequency less than 0.01)

Probability also included consideration of changing future conditions, including the effects of long-term changes in weather patterns and climate on the identified hazards.

Magnitude is a measure of the strength of a hazard event and is usually determined using technical measures specific to the hazard. Magnitude was calculated for each hazard where property damage data was available. Magnitude is expressed as a percentage according to the following formula:

- (Property Damage / Number of Incidents) / $ of Building Stock Exposure

Future Development

The impact to future development was assessed based on potential opportunities to limit or regulate development in hazardous areas such as zoning and subdivision regulations. The impacts were assessed through a narrative on how future development could be impacted by the hazard. Plans, ordinances and/or codes currently in place were identified that protect future development in the State from damage caused by natural and man-made hazards.

Climate Change

An essential aspect of hazard mitigation is predicting the likelihood of hazard events occurring in a planning area. For hazards that are affected by climate conditions, the assumption that future behavior will be equivalent to past behavior is not valid if climate conditions are changing. As flooding is generally associated with precipitation frequency and quantity, for example, the frequency of flooding will not remain constant if broad precipitation patterns change over time. Specifically, as hydrology changes, storms currently considered to be a 1 percent annual chance event (100-year flood) might strike more often, leaving many communities at greater risk. The risks of landslide, severe storms, extreme heat and wildfire are all affected by climate patterns as well. For this reason, an understanding of climate change is pertinent to efforts to mitigate natural hazards.

FEMA's Climate Change Adaptation Policy (2011-OPPA-01) directs FEMA programs and policies to integrate considerations of climate change adaptation. As such, FEMA requires States to consider

changes in weather patterns and climate in their MHMPs in order to reduce risk from changes that may affect and influence long-term vulnerability to natural hazards. The FEMA Region VIII publication for Montana entitled "*Assessing Future Conditions, Meeting FEMA's State* Mitigation Plan Requirement" was used in the risk assessment, including temperature and precipitation projections by NOAA for mid- and end-of century for low- and high-emission scenarios. The low-emissions scenario assumes that global emissions of the greenhouse gases than cause changes in climate conditions peak in the year 2040 and then decline. The high-emissions scenario assumes that global emissions of greenhouse gases remain largely unabated through the 21st century.

At the end of each hazard profile there is a discussion on climate change. The information provides insight on how the hazard may be impacted by climate change and how these impacts may alter current exposure and vulnerability for the population, property, and critical facilities. The risk assessment provides further analysis, as appropriate, to project the changes in frequency and magnitude to hazard events in Montana due to climate change.

4.1.4 Assessing Vulnerability – Estimating Potential Losses

The 2018 MHMP risk assessment builds on what was presented in 2013 Plan and has been updated to provide an updated methodology for assessing vulnerability and estimating potential losses. Enhancements made for the 2018 MHMP include adding the State's cultural resources into the analysis as well as a strengthening the risk assessment through more precise reporting of structural and societal exposure. Further details are presented below.

Methodologies for assessing vulnerability depended upon the hazard, the type of losses, and available data. For some hazards, models have been developed to assess potential exposure and calculate loss. For others, vulnerability was qualitatively assessed and loss estimates are general in nature. Potential losses were estimated at both the state and local level. The state vulnerability assessment presents the exposure of State-owned critical facilities and cultural features. The local vulnerability assessment presents exposure of the general building stock and population. Data is reported according to the six Montana DES Districts described in *Section 4.1.2* above, and shown in **Figure 4.1-1. Appendices B-3 through B-13** present results of the analysis for each county and incorporated community.

Risk assessment results from the local MHMPs were reviewed and are compiled for each hazard for structure, population and economic exposure. The local plans did not use a common methodology so results are not necessarily comparable. **Appendix D-2** summarizes the local plan references and loss estimation methodology. **Appendices B-3 through B-13** present risk assessment results from the local MHMPs for each hazard.

Methods used in this risk assessment represent the best readily-available statewide data. For hazards that are not uniform across the State and occur in specific areas (e.g. wildfire, flooding, severe weather hazardous material incidents, landslide, dam failure) the area of impact factored into the loss estimation calculations (see **Table 4.1-5** for a description of the sources used to develop the area of impact hazard maps). Building stock data from the MDOR Cadastral Mapping Program was linked to the MSL Structures Framework, based on parcel number. This enabled the location of structures to be connected to their appraised value. Using GIS, hazard impact areas were intersected with the Structures dataset to identify the number of structures and exposure due to each hazard.

The Structures dataset consists of over 615,000 entries and includes information on parcel identification numbers, addresses, owners, and structure types. This dataset was reviewed to eliminate multiple entries for a single structure which reduced the dataset to just over 475,000 records. Due to the large number of records, it was not possible to visually inspect each structure against an aerial background in GIS to assess information accuracy so the database was filtered to identify duplicate parcel numbers and addresses. However, duplicate entries could not be automatically deleted as one parcel number or address could contain more than one primary building. For this analysis, primary building refers to principal structures (e.g., residential dwelling or farmstead dwelling) and not any associated outbuildings. Many structures in question were viewed in GIS but errors undoubtedly exist in the dataset as not all structures were visually examined for accuracy.

The structure types found within the Structures Framework dataset include 80 different categories ranging from single-family dwelling to restaurants, radio facilities, post offices, hospitals, colleges, and power substations. **Table 4.1-6** presents a list of structure types and the eight different structure classes assigned to each type for GIS analysis purposes.

Table 4.1-6. Structure Types within Structures Framework Dataset

Structure Type	Structure Class	Structure Type	Structure Class
Agriculture, food or livestock facility	Commercial	Federal Government facility	Government
Airport	Commercial	Fire station	Government
Ambulance Service	Commercial	Government or military facility	Government
Automobile Rental/Service	Commercial	Information or communications facility	Government
Banking or finance facility	Commercial	Law Enforcement	Government
Bus station/dispatch facility	Commercial	Library	Government
Cabin/Guest House	Commercial	Local Government facility	Government
Cemetery	Commercial	Military facility	Government
Commercial or retail site	Commercial	Museum	Government
Daycare Facility	Commercial	Park/Recreation Area	Government
Farm/Ranch	Commercial	Post Office	Government
Funeral Home	Commercial	Rest stop/Roadside Park	Government
Gas Station	Commercial	State capitol	Government
Grain Elevator	Commercial	State Government facility	Government
Grocery Store	Commercial	Tribal government facility	Government
Hotel/Motel	Commercial	Church/Place of worship	Institutional
Industrial or manufacturing facility	Commercial	Institutional residence/dorm/ barrack	Institutional
Lumber Products facility	Commercial	Public Attraction or Landmark	Institutional
Mail or shipping facility	Commercial	Health or medical facility	Medical
Office Building	Commercial	Heliport	Medical
Parking Site	Commercial	Hospital/Medical Center	Medical
Pharmacy	Commercial	Outpatient Clinic	Medical
Railroad Facility	Commercial	Public Health Office	Medical
Restaurant/Bar	Commercial	Rehabilitation Center	Medical
Shopping Mall/Center	Commercial	Dwelling, Multi-Family	Residential
Sports facility	Commercial	Dwelling, Single Family	Residential
Veterinary Hospital/Clinic	Commercial	Mobile Home	Residential
Communication Tower	Communication	Nursing Home/Long Term Care	Residential
Radio/TV Broadcast facility	Communication	College/University facility	School
Telephone facility	Communication	Education Facility	School
Border crossing/port of entry	Government	School (K-12)	School
City/Town Hall	Government	Dam Site	Utility
Civic/Community Center	Government	Electric Facility	Utility

Table 4.1-6. Structure Types within Structures Framework Dataset

Structure Type	Structure Class	Structure Type	Structure Class
Correctional Facility	Government	Energy or utility facility	Utility
Courthouse	Government	Hydroelectric facility	Utility
Disposal Site	Government	Oil/Gas facility	Utility
Emergency Operations Center	Government	Power Substation	Utility
Emergency services/law enforcement	Government	Water Supply/Treatment facility	Utility
Emergency Shelter	Government	Water tower/tank	Utility
Fairgrounds	Government	Wind facility	Utility

As previously described, the Structures dataset was linked to the MDOR Cadastral Mapping Program to provide building values. However, a small percent of the parcels display a zero building value. As this could deflate the dollar exposure of buildings in the hazard analyses, average residential and commercial building values were calculated for each county and this value was assigned to zero value properties.

Multi-family dwellings and nursing homes with no value were assigned a statewide average value of $319,819 and $1,739,607, respectively. In the Cadastral dataset, mobile homes are considered a commercial property and each home is assigned the value of the entire mobile home property. In one case, this resulted in 50 mobile homes each valued in excess of one million dollars. As this would erroneously inflate residential building values, all mobile homes were assigned an average value. US Mobile Home Pros (www.mobilehomesell.com) estimates the value of a used double-wide mobile home to range between $20,000 and $50,000. Based on this information, an average value of $35,000 was assigned to each mobile home.

In addition to the Structures dataset, hazard impact areas were also intersected with critical facility data and cultural resources using GIS to determine the number and exposure to each hazard.

For hazards with loss data (i.e. severe weather, flooding) the methodology presented below was used to determine annual property loss.

- Exposure x Frequency x Magnitude

Where:

- Exposure = building stock, vulnerable population, or critical facilities at risk
- Frequency = annual number of events determined by calculating the number of hazard events / period of record
- Magnitude = percent of damage expected calculated by: (property damage/# incidents)/ building stock or critical facility exposure

Using the number of residential structures in each hazard impact area, vulnerable population was estimated by assigning U.S. Census county estimates on number of persons residing in each structure, percent of population over age 65 years, and under age 18. The number of residential buildings within a hazard impact area was multiplied by its respective county average number of people residing in a household in Montana (US Census Quick Facts July 1, 2016). Exceptions include structures typed as "Multi-Family" residential dwellings and "Nursing Home". Multi-Family structures (e.g., apartment buildings) were estimated at 18 people and nursing homes were estimated at 40 people. Census data also provided county percentages for persons under 18 years

and persons 65 years and over. These percentages were multiplied by the total population number within a hazard area to calculate people at risk under 18 and age 65 years or more.

4.1.5 Data Limitations

Risk assessment and vulnerability analysis results are only a general representation of the potential loss that may be experienced from a hazard event and there are many inherent inaccuracies with the methodology used. Output is only as good as the data sources used and the State may wish to consider alternate data for future MHMP updates.

Data limitations identified in the 2013 MHMP suggested that the risk assessment analysis may have over-reported building exposure when parcel size was large because the spatial location of structures within each parcel was not provided. The enhanced approach for the 2018 MHMP risk assessment corrected this deficiency by joining the MDOR Cadastral Parcel dataset with the MSL Structures Framework dataset. As such, the 2018 MHMP analysis provides more accurate reporting of building exposure.

The 2013 MHMP risk assessment methodology assigned societal risk based on whether a census block was located within the hazard impact area then totaling those census block populations. This approach over-reported population exposure because even when a census block was only marginally clipped by the hazard impact area its entire population was considered in the total. The 2018 MHMP risk assessment corrected this limitation by utilizing U.S. Census estimates for occupancy of residential structures. As such, the 2018 MHMP analysis provides more accurate reporting of societal exposure. Further details on this methodology are presented below.

There are, however, limitations with this method of estimating societal exposure as well. The 2018 MHMP risk assessment method of estimating vulnerable population assumes that all residential structures are occupied, and that all residential structure types are occupied in accordance with 2016 U.S. Census estimates. This method could lead to over-reporting vulnerable populations where seasonal-use structures exist, or under-reporting vulnerable population where more than the county average number of people reside in each structure. It is most appropriate when hazard areas are small (flooding) or linear (haz-mat).

The remainder of this section presents hazard profiles organized in general accordance with State priority followed by a risk assessment summary. Further data limitations are presented in the hazard profiles.

4.2 Wildland and Rangeland Fire

CPRI SCORE = 3.37

Description and History

A wildland or rangeland fire is any fire occurring in grassland, forestland, or other vegetation types, regardless of ignition sources, damages or benefits. Three factors influence extreme wildland fire behavior: weather, topography, and fuel. These components affect and increase the likelihood of a fire starting, the speed and direction at which a fire will travel, the intensity at which it burns, and the ability to control and extinguish it.

Fuel is required for any fire to burn. Wildland fire fuels consist of live and dead vegetation, including trees, shrubs, grasses and their debris. Forest fuels are of primary concern in western Montana where crown fire potential is high in many areas, including some areas along the wildland-urban interface. Dry grass and sagebrush associated with agricultural areas and rangeland, as well as acreage in the Conservation Reserve Program (CRP), are the primary fuels for eastern Montana wildfires. From 1981 to 2013, forty-seven (47) percent of wildfires were started by lightning and 53 percent were human caused. The primary sources of human caused fires include debris burns, campfires, equipment-caused fires, and railroad starts (DNRC, 2018). Burning coal seams are a frequent cause of wildfire ignition in eastern Montana. These consist of subsurface coal seams that ignite during wildfires then keep smoldering thereafter and reignite starting other fires. Coal seam fires are difficult to extinguish. Embers play a large role in spreading wildfires. Since embers are typically burnt debris and thus small and lightweight, they can easily become airborne. During a large fire, with the right wind conditions, embers can be blown far ahead of the fire front, starting spot fires several miles away.

Wildland and rangeland fires occur every year; they are part of the normal vegetative cycle for forest and grasslands in the state. The frequency at which they occur depends on the forest and vegetation type and the prevailing weather conditions. Historically, vegetation types influenced the fire recurrence intervals, but fire regimes have been altered through fire suppression and changes in the landscape. Fire suppression has increased the amount of fuels available to burn and decreased the separation of fuels, resulting in greater undergrowth and denser vegetation. These changes have increased fire severity and frequency, compared to the fire regime prior to the 20th century. An added factor in fire recurrence is the weather and drought resulting from climate change or natural cycles, including extended periods of low precipitation, fuel moisture content, insect infestation, and heat that increase the potential severity of a fire season. When these conditions mix with high winds, low humidity, high temperatures, and/or dry lightning storms, the fires can be devastating.

Dry, hot and windy weather along with lightning increase the likelihood of a major wildfire occurring. These conditions make ignition easier, allow fuels to burn more rapidly, and increase fire intensity. Since heat rises, steepness of slope greatly influences fire behavior and rate of fire spread. Slopes with south and southwest aspects tend to be drier and more prone to ignition. Steep, narrow drainages and canyons act like chimneys when wildfires occur (FireSafe Montana, 2009). Red flag warnings are issued when conditions occur, such as windy weather, that could sustain extensive wildfire activity in conjunction with “Very High” or “Extreme” fire danger.

When people choose to build or buy homes in high-hazard fire areas their homes are potential fuel. The wildland/urban interface (WUI) is defined as the zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuel. Over 46 million homes in 70,000 communities are at risk of WUI fires, which have destroyed an average of 3,000 structures annually over the last decade. WUI fires are a rapidly growing threat with an annual loss of over $14 billion. Protection of public and private property in the WUI is the largest cost driver for both federal and state wildfire suppression operations (FEMA, 2016).

In Montana, wildfires have burned nearly two million acres in the last five years, threatening lives, destroying dozens of homes, and costing millions of dollars. From 2000 through 2014, there were more than 240 large wildfires (>5,000 acres) within 10 miles of Montana communities, affecting more than 230,000 Montana residents. Wildland fires near communities impact public health and safety, water quality, transportation infrastructure, regional economies, and quality of life.

By all historical records, the Great Idaho fire of 1910 in northern Idaho and western Montana was the largest forest fire in American history. The fire burned 3 million acres, killed 86 people, and destroyed numerous towns in northern Idaho and western Montana. By some accounts, most of the destruction occurred in 6 hours. The hurricane winds of August 20 and 21, 1910 turned numerous fires scattered throughout the region into a blow-torch. The fire occurred when the U.S. Forest Service was a fledgling agency that lacked the personnel, equipment, and communications to effectively address wildfire. Even with today's technology and resources devoted to wildland firefighting, that magnitude of fire could occur again, given similar conditions.

Grassland fires in eastern Montana have been equally devastating. In July 1999, the Fishel Creek Fire threatened the town of Musselshell. The fire burned 33,000 acres, one home and threatened the evacuation of Musselshell. Later that same year, a grassfire burned 18,000 acres and a portion of the town of Outlook, causing $4 million in damages. In all, about 105,000 acres burned in five hours in eastern Montana that night. In July 2003, the Missouri Breaks Complex in eastern Garfield County burned 125,927 acres and destroyed eight structures and 610 miles of fence.

During the early summer 2012, extremely hazardous wildland fire conditions existed throughout the entire State of Montana, including near-record temperatures, continual wind and low relative humidity. Statewide there were 2,206 fires that burned 1,174,691 acres. The 2013 Montana State MHMP describes many of these wildfires.

Table 4.2-1 lists some of the most serious wildland fires in Montana history prior to 2013. Some were significant because of their size, others because of the value of the resources lost or the number of lives lost. In the past 30 years, Montana has experienced an increase in the size and intensity of fires due to changes in land management practices, forest health, and changing climate conditions.

Table 4.2-1. Historically Significant Wildland Fires in Montana Prior to 2013

Year	Fire Name	Location	Acres	Significance
1910	Great Idaho	ID and MT	3,000,000 acres (4,690 square miles)	86 lives lost
1949	Mann Gulch	Montana	4,339	13 smokejumpers killed
1988	Greater Yellowstone NP	MT, ID, WY	2,281,800	52 buildings worth $3M destroyed or damaged.; 2 fatalities; $120M in suppression costs.
1988	Canyon Creek	Scapegoat & Bob Marshall Wilderness	250,000	Acreage burned. 180,000 acres burned in 16 hours. Burned to edge of Augusta.

Table 4.2-1. Historically Significant Wildland Fires in Montana Prior to 2013

Year	Fire Name	Location	Acres	Significance
1997	Outlook	Sheridan County	18,000	Railroad ignition. Burned portion of town of Outlook. $4 million in damages.
2000	Bitterroot Complex and others	MT, ID, AK, OR, WA, WY	8M acres nationwide; 1.16M acres in MT	Acreage burned; $2.1B in suppression costs nationwide
2003	Various	Montana	378,000	5 residences lost; 2,800 buildings threatened; $168.6M in suppression costs
2006	Derby/Jungle Fires	So. of Big Timber & Livingston	237,000	26 homes and 20 outbuildings lost; $20M in suppression costs
2012	Dahl Fire	Musselshell Co.	22,045	74 residences and 149 outbuildings lost.
2012	Ash Creek and Rosebud Complex	Rosebud County	423,332	Acreage burned; 20 residences lost; decimated grazing for >8,000 cattle.

Source: NIFC, 2018.

Table 4.2-2 presents wildfire statistics from the BLM for the period 1992 to 2015. This data includes wildfires located on land managed by the Bureau of Indian Affairs (BIA), BLM, U.S. Forest Service (USFS), U.S. Fish and Wildlife Service (FWS), National Park Service (NPS), State, Tribal, County, and private land. Fires as small as 0.01 acres are reported. The data indicates that during this 24-year period there was an average 1,698 fires per year which burned an average 261,647 acres (BLM, 2018). The worst fire years were in 2012, followed by 2006 and 2000.

Table 4.2-2. BLM Data of Montana Wildfires; 1992-2015

Year	No. of Fires	Total Acres	Year	No. of Fires	Total Acres
1992	1,642	38,592	2004	1,503	22,868
1993	744	12,598	2005	1,497	114,588
1994	2,985	265,689	2006	2,460	866,652
1995	1,052	25,184	2007	1,997	744,543
1996	1,993	208,840	2008	1,532	169,869
1997	993	11,343	2009	1,662	53,706
1998	1,909	101,357	2010	1,140	57,476
1999	2,089	117,459	2011	1,190	139,286
2000	2,428	822,860	2012	1,854	1,007,210
2001	1,603	162,549	2013	1,359	77,404
2002	1,595	126,100	2014	1,203	34,920
2003	2,471	748,396	2015	1,866	350,034
			TOTAL	**40,767**	**6,279,523**

Source: BLM, 2018

Table 4.2-3 presents similar data compiled by the National Interagency Fire Center (NIFC) for the years 2003 to 2017, including an acreage breakdown by landownership. There are variations in number of fires and acreage burned between these two data sources. The NIFC data indicates that the severity of the 2017 fire season surpassed that of the previously worst fire years; 2012 and 2006.

Table 4.2-3. National Interagency Fire Center Data of Montana Wildfires; 2003-2017

Year/ Agency	# Wildland Fires	# Wildland Acres	Year/ Agency	# Wildland Fires	# Wildland Acres	Year/ Agency	# Wildland Fires	# Wildland Acres
2003			**2004**			**2005**		
BIA	607	85,600	BIA	448	3,076	BIA	321	18,515
BLM	71	69,435	BLM	63	1,564	BLM	59	7,607
FWS	15	22,405	FWS	8	708	FWS	18	9,093
NPS	17	141,281	NPS	5	1	Other	57	365

Table 4.2-3. National Interagency Fire Center Data of Montana Wildfires; 2003-2017

Year/ Agency	# Wildland Fires	# Wildland Acres	Year/ Agency	# Wildland Fires	# Wildland Acres	Year/ Agency	# Wildland Fires	# Wildland Acres
Other	55	107	Other	55	105	Private	313	17,732
State	507	126,263	State	299	9,249	State	95	3,734
USFS	1,054	290,528	USFS	577	3,743	USFS	453	46,221
TOTAL	**2,326**	**735,619**	**TOTAL**	**1,455**	**18,446**	**TOTAL**	**1,316**	**103,267**
2006			**2007**			**2008**		
BIA	749	53,284	BIA	453	49,803	BIA	543	10,103
BLM	61	115,860	BLM	67	11,260	BLM	84	15,083
FWS	25	82,037	FWS	9	620	FWS	11	3,381
NPS	12	17,222	NPS	11	10	NPS	5	0
Private	433	327,026	Private	349	70,685	Private	30	94,340
State	282	143,927	State	249	175,048	State	294	30,734
USFS	749	307,967	USFS	737	470,653	USFS	454	13,199
TOTAL	**2,311**	**1,047,323**	**TOTAL**	**1,875**	**778,079**	**TOTAL**	**1,421**	**166,840**
2009			**2010**			**2011**		
BIA	637	4,052	BIA	300	3,434	BIA	414	30,249
BLM	144	1,484	BLM	76	17,478	BLM	98	57,671
FWS	10	38	FWS	9	14,542	FWS	3	412
NPS	13	0	NPS	5	0	NPS	6	6
Private	40	3,071	Private	66	10,886	Private	102	5,351
State	312	20,542	State	199	2,160	State	230	9,775
USFS	575	19,725	USFS	395	8,211	USFS	482	64,546
TOTAL	**1,731**	**48,912**	**TOTAL**	**1,050**	**56,711**	**TOTAL**	**1,335**	**168,010**
2012			**2013**			**2014**		
BIA	603	434,748	BIA	338	7,609	BIA	322	6,572
BLM	231	307,377	BLM	76	739	BLM	91	6,689
			County	408	5,280	County	507	20,179
FWS	27	10,411	FWS	7	66	FWS	6	1,221
NPS	4	169	NPS	5	7	NPS	6	2
Private	431	198,231	Private	0	0	Other	1	55
State	321	40,636	State	297	12,771	State	267	628
USFS	596	229,083	USFS	592	97,737	USFS	446	2,772
TOTAL	**2,213**	**1,220,655**	**TOTAL**	**1,723**	**124,209**	**TOTAL**	**1,646**	**38,118**
2015			**2016**			**2017**		
BIA	437	27,206	BIA	400	12,597	BIA	415	76,608
BLM	94	14,925	BLM	95	4,743	BLM	103	387,479
County	839	68,678	County	895	52,412	County	1,163	193,051
FWS	6	704	FWS	5	580	FWS	8	77
NPS	20	23,859	NPS	5	757	NPS	24	22,294
State	339	3,511	State	238	2,310	State	282	6,927
USFS	697	212,381	USFS	388	41,195	USFS	427	680,062
TOTAL	**2,432**	**351,264**	**TOTAL**	**2,026**	**114,594**	**TOTAL**	**2,422**	**1,366,498**

Source: NIFC, 2018. Notes: BIA = Bureau of Indian Affairs, BLM = Bureau of Land Management; FWS = U.S. Fish and Wildlife Service; NPS = National Park Service; USFS = U.S. Forest Service.

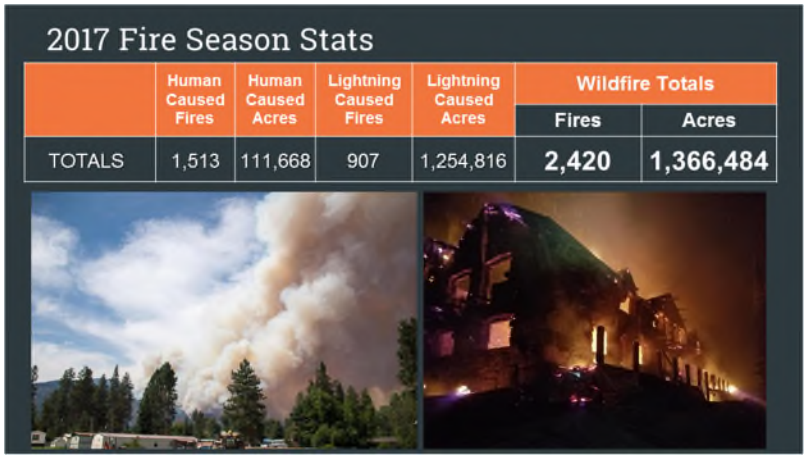
Several significant wildfires that occurred since the last MHMP was completed in 2013 are described below.

West Mullan Fire – During July 2013, the West Mullan fire threatened several north-side homes and a cluster of businesses, including two local bars, a bank, auto parts store and a lumber yard, in the Mineral County town of Superior. Backfires were used to keep the main wildfire away from homes and structures. The fire's persistent growth on the Lolo National Forest prompted evacuation orders for all of Superior north of the Clark Fork River. By the time the fire was contained it had burned 6,282 acres (Missoulian, *4,150-acre West Mullan Fire at Doorstep of Superior Homes, Businesses*, July 18, 2013).

Roaring Lion Fire – Ignited during July 2016, the Roaring Lion fire, five miles south of Hamilton, burned more than 8,000 acres. In about three hours it grew to become a massive fire due to strong winds from the north and northwest sustained at 30 to 40 mph with gusts to 50 mph. Approximately 850 homes were evacuated. One elderly man died as a result of a medical condition during the evacuation. The fire destroyed 16 homes. It was determined to have started from a campfire. At least one insurance company sent their own firefighters to the fire to save what they could of the homes they insure. The fire burned 8,274 acres and over $7 million in suppression costs.

The Roaring Lion Fire on July 31, only hours after it started. Credit: Inciweb

The 2017 fire season set records in some locations for days in extreme fire danger with prolonged hot and dry weather stoking blazes and stretching resources thin. Fire suppression costs ran close to $400 million in Montana, including about $62 million of state dollars. The state received eight federal grants that payed for 75 percent of eligible costs. More than 1.2 million acres (2,190 square miles), including about 300,000 acres on DNRC-protected state and private lands, burned in 2017. The fire season began a month earlier than usual and months of June through August were the hottest and driest on record for Montana. Rain and snow slowed most fire growth by the end of September. The State's previous top fire season was 2012 when 1,875 square miles burned. (Independent Record, *$400M Spent on Montana Wildfires*, September 30, 2017). A summary of Montana's largest fires in 2017 by size is presented below, followed by further description of a few of these fires. According to the Northern Rockies Coordination Center, there were over 2400 wildfires in Montana in 2017 with nearly 1.4 million acres burned. Of those acres, approximately 1.25 million of those acres were the result of lightning-caused fires with over 110,000 burned acres from human-caused fires. Even though there were more human-caused wildfires in 2017, more acres burned from lightning-caused fires.



2017 Fire Season Stats

	Human Caused Fires	Human Caused Acres	Lightning Caused Fires	Lightning Caused Acres	Wildfire Totals	
					Fires	Acres
TOTALS	1,513	111,668	907	1,254,816	2,420	1,366,484

2017 Wildfires Over 100,000 acres

- Lodgepole Complex Fire, public and private land, 52 miles WNW of Jordan. 270,723 acres.
- Rice Ridge Fire, Lolo National Forest, near Seeley Lake. 160,163 acres. See description above.

2017 Wildfires Over 50,000 acres

- Meyers Fire, Beaverhead-Deerlodge National Forest, 25 miles southwest of Phillipsburg. 62,034 acres. Residents of Moose Lake evacuated and 119 structures threatened. Suppression costs estimated at $32.5 million.
- Lolo Peak Fire, Lolo National Forest. 53,902 acres.

2017 Wildfires Over 50,000 acres

- Sapphire Complex Fire, Lolo National Forest, 43,733 acres.
- Little Hogback Fire, Lolo National Forest, 29,654 acres.
- Alice Creek, Helena-Lewis and Clark National Forest, near Lincoln, 29,252 acres.
- Tongue River Complex Fire, Custer-Gallatin National Forest, 28,957 acres.
- Liberty Fire, Flathead Reservation, 28,689 acres.
- Sunrise Fire. Lolo National Forest, 26,310 acres.
- Highway 200 Complex, Lolo-Kootenai National Forest near Plains and Thompson Falls in Sanders County, 48,417 acres.
- Caribou Fire, Kootenai National Forest, near Eureka in Lincoln County, 24.753 acres.
- East Fork Fire, State land in Bears Paw Mountains, south of Havre, 21.896 acres.
- Strawberry Fire, Flathead National Forest, near Dupuyer, 20,894 acres.
- Scalp Fire, Flathead National Forest, 20,810.
- West Fork Fire, Kootenai National Forest, 20,072 acres.

Lodgepole Complex Fire - During July 2017, the Lodgepole Fire torched more than two dozen buildings and charred hundreds of square miles of Montana prairie, an estimated 270,000 acres of sagebrush, grasslands and timber near the Missouri River in Garfield County, eastern Montana. A local resident said "A house is considered a major loss, but the livelihood of most people here is the livestock, the pasture and grazing land. The majority of these people would have rather lost their homes than their grassland." (Reuters, *Crews Gain Ground Against Montana Wildfire, Largest in U.S.,* July 26, 2017).

The Lolo Peak Fire began by lightning strikes on the western flank of Lolo Peak, 10 miles southwest of Lolo (Missoula County) on July 15, 2017. The fire burned a total of 53,902 acres. One firefighter was killed working the fire and another was injured. Two homes and eight other structures were destroyed, over 3,000 people were evacuated and 1,150 residences threatened. The fire threatened homes along Highway 12 and Highway 93, impacting recreational activities in the area and the communities of Lolo and Florence. Suppression costs are estimated at $48 million.

The Sapphire Complex Fire in Granite County, 25 miles southeast of Missoula, burned over 43,733 acres with evacuations in the Rock Creek and Willow Creek drainages. The complex consisted of the Goat Creek Fire at 8,056 acres, the Little Hogback Fire at 29,654 acres, and the Sliderock Fire at 860 acres. Private property and 315 structures in the Rock Creek drainage were threatened as well as a Bonneville Power Administration power line and several communication sites. One cabin and nine outbuildings were destroyed. Suppression costs are estimated at $36 million.

The Rice Ridge Fire, located two miles northeast of Seeley Lake in Missoula County burned over 160,000 acres and caused hazardous smoke levels across the Seeley-Swan area for weeks. Over 1,000 structures were threatened and the entire town of Seeley Lake was evacuated at one point. The Rice Ridge Fire was identified as the nation's top wildfire priority, after it rapidly expanded from about 40,000 acres to over 100,000 acres. Suppression costs are estimated at $47.9 million.

Sprague Fire. High winds pushed the Sprague fire into Glacier National Park's historic Sperry Chalet, burning it down. The chalet had been closed since August 15th, after the discovery of the Sprague fire, which was sparked by a lightning storm on August 10th. The fire burned through steep, heavily forested terrain that had not burned since the 1700s. Firefighters used an extensive hose lay pump system to defend the chalet and its outbuildings, but a Red Flag Warning that had been in effect for more than a day picked up the fire and made a big push. One small spot fire started on the cookhouse roof, but they were able to put it out. Shortly after 6 pm, the Sperry Chalet main building was completely engulfed in flames. The destruction of the chalet came a day after the park's Lake McDonald Lodge closed for the season because of hazardous levels of smoke. (Missoulian, *Glacier Park's Historic Sperry Chalet Burns Down*, August 31, 2017).

Declared Disasters

Requests for public assistance for wildland and rangeland fires can be from the State and/or Federal level. The Governor of Montana may declare an Executive Order (EO) that will permit the use of State funds or activation of the Montana National Guard. FEMA may authorize Fire Management Assistance Grants, formerly known as Fire Suppression Assistance (FSA), to local and State agencies for fire suppression. These funds are exclusive of other firefighting costs on Federal land by Federal agencies. In extreme fire years, the Governor may request a Presidential-Declared Disaster for a wildland fire. **Table 4.2-4** shows wildfire disasters or emergencies declared in Montana.

Table 4.2-4. Montana Disaster Declarations from Wildfire; 2000 - 2017

Date	Event	Federal	State	Local
7/24/2000	**FEMA-2314-FSA-MT:** Maudlow-Toston, Broadwater Co.; Canyon Ferry Complex, Lewis & Clark Co.; Boulder Complex, Jefferson Co.	$23,568,300	-	$128,986
7/27/2000	Wildland Fires (EO 18-00). Clear Creek Divide Complex, Town of Hot Springs; Willie Fire, Carbon Co.; Mussigbord Fires, Beaverhead Co.; Average Bad Day Fire, Musselshell Co.; All Counties in the State and activation of MT National Guard.	-	$43,444	$98,446
7/27/2000	**FEMA-2317-FSA-MT.** Deer Lodge, Granite, Mineral, Missoula, Powell; Blodgett & Valley Complex, Ravalli.; and Silver Bow Co.	$13,339,160	-	$8,1976
	FEMA-2318-FSA-MT. Beaverhead and Madison Counties.	$143,900	-	$4,807
	FEMA-2320-FSA-MT. Northwest Zone 1 Fire Complex. Flathead, Lake, Lincoln, and Sanders Counties	$5,361,546	$5,640	$40,378
8/16/2000	Wildland Fires (EO 20-00). All Counties in the State and activation of MT National Guard.			
	FEMA-1340-DR-MT: 48 counties and 6 Indian nations.	$11,579,000	-	-
	FEMA-2321-FSA: South Central Zone 4 Fire Complex	$91,940	-	-
	FEMA-2326-FSA:	$70,842	$21,483	$36,150

Table 4.2-4. Montana Disaster Declarations from Wildfire; 2000 - 2017

Date	Event	Federal	State	Local
8/16/2001	Wildland Fires (EO 20-01). 19 counties. Activation of MT Nat'l Guard			
9/3/2001	Wildland Fires (EO 22-01). 22 counties. Activation of MT Nat'l Guard			
7/18/2003	Wildland Fires (EO 14-03). All counties in the State and activation of MT National Guard.			
	FEMA-2483-FM-MT. Missouri Breaks Complex, Garfield Co.	$256,726	$58,897	$8,885
	FEMA-2484-FM-MT. Robert Fire, Flathead County.	$420,963	$112,208	$20,871
	FEMA-2485-FM-MT. Wedge Canyon Fire, Flathead Co.	$351,321	$6,730	$110,377
8/7/2003	Wildland Fires (EO 16-03). All counties in the State and activation of MT National Guard.			
	FEMA-2488-FM-MT, Hobble Fire, Sweet Grass, Stillwater Cos.	$1,094,812	$32,988	$30,130
	FEMA-2489-FM-MT, Cherry Creek Fire, Sanders County.	$3,865	$769	$519
	FEMA-2490-FM-MT, Mineral & Missoula Fire Zone & Cooney Ridge Fire Complex, Mineral, Missoula and Ravalli Counties	$9,044,295	$2,944,971	$40,147
	FEMA-2492-FM-MT, Lincoln Complex, Lewis & Clark and Powell Counties.	$740,657	$243,476	$3,410
	FEMA-2494-FM-MT, Flathead Fire Zone, Flathead County	$637,540	$4,832	$81,680
8/4/2005	Wildland Fires (EO 16-2005). Fire bucket training with MT National Guard	-	$32,503.41	-
7/11/2006	Wildfires (EO 34-06). Activation of MT National Guard			
8/1/2006	Wildfires (EO 36-06). Activation of MT National Guard			
8/21/2006	Wildfire (EO 39-06). Statewide disaster.			
	FEMA-2652FM-MT-Sanders Fire, Stillwater County	$644,522	$205,053	$9788
	FEMA-2669-FM-MT-Emerald Hills Fire, Yellowstone County	$770,747	$240,527	$16,389
	FEMA-2671-FM-MT Derby Fire, Stillwater & Sweet Grass Co.	$6,243,071	$2,049,006	$32,018
8/4/2007	**FEMA-2718-FM-MT** Jocko Lakes Fire *	$16,964,927	$5,608,853	$46,122
8/16/2007	**FEMA-2721-FM-MT** Black Cat Fire*	$4,369,591	$1,408,798	$47,732
8/19/2007	**FEMA-2723-FM-MT** Ford Road Fire*	$57,568	$19,189	$0
9/16/2007	**FEMA-2730-FM-MT** Country Club Fire, Lewis & Clark County	Request withdrawn		
8/4/2009	**FEMA-2837-FM-MT** East Mount Fire	$195,000	$56,250	$8,750
2011	**FEMA-2950-FM-MT** Canyon Creek Fire, Yellowstone County	$569,418	$183,793	$6,013
2012	**FEMA-2987-FM-MT** Corral Fire, Lewis & Clark County	$825,109	$260,744	$14,292
2012	**FEMA-2988-FM-MT** Dahl Fire, Musselshell County	$1,997,341	$649,989	$15,791
2012	**FEMA-2989-FM-MT** Ash Creek Fire. Rose Bud, Power River Co.	$1,514,966	$445,368	$46,699
2012	**FEMA-4074-DR-MT** Major disaster for Rosebud and Powder River Counties and Northern Cheyenne Tribe	$1,400,000	$120,000	$400,000
2012	**FEMA-5008-FM-MT** 19 Fire, Jefferson County	$1,690,214	$120,000	$400,000
2012	**FEMA-5016-FM-MT** Sawtooth Fire, Ravalli County	$3,135	$0	$1,045
2013	**FEMA-5035-FM-MT** West Mullan Fire, Mineral	$10,456	$0	$3,485
2016	**FEMA-5143-FM-MT** Roaring Lion Fire, Ravalli County	-	-	-
2017	**FEMA-5194-FM-MT** Lodgepole Fire Complex, Garfield County	-	-	-
Totals		**$90,621,772**	**$14,826,427**	**$1,502,647**

Source: DES, 2018; FEMA, 2018 (https://www.fema.gov/disasters/)

Wildfires have a profound effect on the forest product industry and recreational businesses. The U.S. Small Business Administration (SBA) can make declarations to provide assistance to businesses that are directly affected by forest fires.

Magnitude and Probability

Since 1933, 45 wildland fire fatalities occurred in Montana. Twenty-five (25) of these deaths were from burnovers (such as the Mann Gulch Tragedy), seven were associated with aircraft crashes, and the others were from falling snags, training accidents, motor vehicle accidents, hypothermia, and heart attacks (National Interagency Fire Center, 2018).

Wildfire losses are also measured in terms of acres burned and structures lost. **Table 4.2-5** displays counties that have sustained the greatest cumulative wildfire losses from DNRC data through 2017. **Table 4.2-6** displays data from the U.S. Forest Service indicating wildfire losses for the National Forests in Montana. Wildfire suppression costs on National Forest land in Montana totaled over $1.085 billion from 1992 to 2014. Data on structures lost (residences and outbuildings) was collected from 2003 to 2013 by DNRC and from 2008 to 2014 by the Forest Service. Information from newspaper accounts has been added for recent fires. The combined total of structures lost in Montana from wildfire is estimated at 323 residences and 414 outbuildings in the past 15 years.

From 2006-2015, ninety-five (95) percent of wildfires were suppressed at a cost of $13 billion (Independent Record, *Wildfires, the Smoking Gun of Western Climate Change,* September 15, 2017). Factors contributing to wildfire involve both forest management and climate conditions.

Table 4.2-5. Counties with Highest Wildfire Losses

Counties with Most Acres Burned: 1992-2017		Counties with Most Structures Lost: 2004-2017		
County	Acres	County	Homes Lost	Outbuildings Lost
Rosebud	612,218	Musselshell	78	12
Flathead	574,412	Stillwater	60	81
Ravalli	452,619	Rosebud	20	-
Big Horn	436,322	Missoula	18	32
Lewis & Clark	365,364	Ravalli	17	0
Powder River	323,530	Park	15	18
Garfield	291,194	Garfield	12	33
Sweet Grass	288,122	Lewis & Clark	12	24
Yellowstone	252,735	Jefferson	10	1
Sanders	188,049	Sweet Grass	7	38
Custer	168,599	Granite	6	3
Missoula	158,492	Hill	5	0
Lincoln	143,480	Flathead	4	9
Park	141,602	Granite	3	6
Carter	130,484	Phillips	1	5
Powell	126,769	Mineral	1	3

Source: DNRC, 2018; BLM, 2018; USFS, 2018.

Table 4.2-6. U.S. Forest Service Wildfire Statistics 1986 - 2017

National Forest	Total # Fires	# Fires >=1 Acre	Suppression Cost	Acres Burned	Homes Lost	Outbuildings Lost
Beaverhead/ Deerlodge	2,293	521	$109,751,539	251,305	21	37
Bitterroot	3,142	589	$199,588,611	548,433	17	0
Custer -Gallatin	2,918	1,034	$185,171,731	1,516,147	25	46
Flathead	2,119	406	$170,536,714	750,174	2	8
Helena-Lewis & Clark	2,085	436	$110,977,718	808,953	0	8
Kootenai	4,570	818	$92,638,749	258,242	0	1
Lolo	4,704	741	$216,929,870	377,729	1	3
TOTAL	**21,831**	**4,545**	**$1,085,594,932**	**4,510,983**	**66**	**103**

Source: USFS, 2018; Notes: Suppression costs not available for 2015 to 2017 fires.

Montana's wildfire suppression costs for the DNRC continue to rise each year; 2017 fire suppression costs totaled $70 million with 1,323 fires burning 743,313 acres. DNRC's fire suppression costs in the last ten years averaged $20.8 million annually. Fires in the wildland interface continue to pose costly challenges. Community preparedness and homeowner risk reduction efforts continue to be a priority

to better protect life, property, natural resources and reduce suppression costs. **Table 4.2-7** displays the magnitude of the largest and most destructive fires in Montana over the past 25 years in terms of the acres burned, structures lost, and suppression costs.

Probability for this MHMP was assessed based on hazard frequency over a 10-year period. The Planning Team rated the frequency of wildland and rangeland fires has a "Highly Likely" probability rating; an event that will occur more than once each year. The probability of wildfire is expected to increase due to Montana's changing climate.

Table 4.2-7. Largest and Most Destructive Wildfires

Name of Fire	Date	County	Cause	Acres	Homes Lost	Out-buildings Lost	Estimated Suppression Cost
Largest Fires; 1992 - 2017							
Bitterroot Valley Complex	2000	Ravalli	Lightning	292,070	-	-	-
Lodgepole Complex	7/19/2017	Garfield	Lightning	270,000	-	-	-
Ash Creek	6/25/2012	Rosebud	Lightning	249,562	18	-	-
Derby	8/22/2006	Sweet Grass	Lightning	207,115	0	0	$23,000,000
Rosebud Complex	8/2/2012	Rosebud	Lightning	171,444	-	-	-
Rice Ridge	7/18/2017	Missoula	Lightning	160,187	0	1	-
Bear Creek	7/31/2000	Flathead	Lightning	145,040	-	-	-
Chalky	8/1/2012	Rosebud	Lightning	131,000	2	-	-
Missouri Breaks	7/19/2003	Garfield	Lightning	130,927	-	-	-
Pine Ridge Complex	7/12/2006	Big Horn	Lightning	121,210	-	-	$2,504,785
Black Pulaski Complex	7/17/2006	Garfield	Lightning	117,292	-	-	-
Dunn Mountain	8/22/2008	Yellowstone	Lightning	102,383	1	4	$1,970,867
Sartin Draw	9/4/2017	Rosebud	Lightning	99,714	0	1	-
Chippy Creek	7/31/2007	Sanders	Miscellaneous	99,090	-	-	-
Most Structures Burned: 1992 - 2017							
Dahl	6/26/2012	Musselshell	Lightning	22,045	74	149	-
Roaring Lion	7/30/2016	Ravalli	Other	8,685	16	-	-
19 Mile	8/28/2012	Jefferson	Lightning	2,758	10	-	-
Big Creek	7/29/2006	Park	Lightning	2,578	9	17	$800,066
West Fork 2	8/17/2013	Missoula	Lightning	6,000	5	4	-
Pine Creek	8/29/2012	Park	Equipment	3,100	5	-	-
Hobble	8/8/2003	Sweet Grass	Lightning	36,180	4	11	$4,397,227
Corral	6/25/2012	Lewis & Clark	Debris Burning	1,851	4	-	-
Chi Chi	11/12/2007	Sweet Grass	Campfire	17,954	3	26	$86,739
Black Mountain #2	8/9/2003	Missoula	Lightning	95	3	2	$187,667
Saunders	7/10/2006	Stillwater	Debris Burning	3,150	3	-	$863,401
Rumsey Gulch	5/13/2013	Granite	Powerline	60	3	2	$2,500,000
Lolo Peak	7/15/2017	Missoula	Lightning	53,902	2	8	$48,000,000
Country Club	9/16/2007	Lewis & Clark	Arson	43	2	8	$7,074

Table 4.2-7. Largest and Most Destructive Wildfires

Name of Fire	Date	County	Cause	Acres	Homes Lost	Out-buildings Lost	Estimated Suppression Cost
Costliest Fires to Suppress: 1992 – 2017*							
Lolo Peak	7/15/2017	Missoula	Lightning	53,902	2	8	$48,000,000
Rice Ridge	7/18/2017	Missoula	Lightning	160,187	0	0	$48,000,000
Sapphire Complex	2017	Missoula	Lightning	43,733	1	9	$36,000,000
Bear	7/31/2000	Ravalli	Lightning	145,040	0	0	$35,000,000
Wedge Canyon	7/17/2003	Flathead	Lightning	50,981	0	0	$34,000,000
Meyers	2017	Granite	Lightning	62,034	0	0	$32,500,000
Jocko Lakes	8/3/2007	Missoula	Lightning	32,462	1	-	$26,076,455
Derby	8/22/2006	Sweet Grass	Lightning	207,115	0	0	$23,000,000
Mineral/Primm	8/8/2003	Mineral	Lightning	25,202	0	0	$22,900,000
Brush Creek	7/26/2007	Flathead	Lightning	29,921	0	0	$19,500,000
Moose	8/14/2001	Flathead	Lightning	71,000	0	0	$19,460,000
Blackfoot Lake	8/19/2003	Flathead	Lightning	14,194	0	0	$19,000,000
Ahorn	6/28/2007	Lewis & Clark	Lightning	52,505	0	0	$17,580,650
Thompson Creek	8/8/2003	Lolo NF	Lightning	33,948	0	0	$14,000,000

Source: DNRC, 2018; BLM, 2018; NIFC, 2018; USFS, 2018. Notes: "-"= not available. NF = National Forest. *Suppression costs for 2015-2017 fires not available from DNRC or BLM. Suppression costs for 2017 fires from newspaper accounts. Suppression costs have not been adjusted for inflation.

Vulnerability and Area of Impact

All of Montana is vulnerable in one form or another to wildland and rangeland fires. The probability and severity of fires are highly dependent upon weather conditions and fuel conditions and thus will change from year to year. Fire is predicated based on drought conditions, and Montana's forests and rangeland are more capable of supporting fires following and during drought years. Longer fire seasons caused by changing climate, lower precipitation, and reduced snow pack have also contributed to the increased level of fire activity in Montana.

Exclusive of weather, other factors can contribute to the probability and intensity of fires, thus making the fires burn hotter, become harder to suppress, and result in structure loss and loss of life. More than 100 years of excluding fire from forested areas, combined with past land-use practices, have altered the landscape. The resulting changes include a heavy buildup of dead vegetation, dense stands of trees, a shift to species that have not evolved and adapted to fire, and, occasionally, even an increase in non-native fire-prone plants.

Increased fuel loads are also attributable to infestations of spruce budworm and pine bark beetle in Montana's forests that have increased tree mortality since 2005, when central and southwestern Montana forests faced the largest known mountain pine beetle epidemic on record. However, a 2011 aerial check showed signs that the State's beetle infestation has abated. The *Montana Forest Insect and Disease Conditions* report recorded beetle-caused mortality on over 1 million acres as compared to 2 million in 2010 and 3.6 million acres in 2009. The survey identified almost 1.2 million total acres defoliated by the western spruce budworm, compared to about 326,000 acres affected in 2010 and 2.6 million acres affected in 2009. Lincoln, Flathead, and Sanders Counties in northwestern Montana were the counties with the highest number acres affected (U.S. Forest Service and MT DNRC, 2011). Tree mortality associated with these conditions, has caused fires to be larger, burn hotter, and spread farther and faster, making them more severe, more dangerous, and costlier in human, economic, and ecologic terms.

In central and eastern Montana, rangelands are also vulnerable to wildfires. Most fires burn in grass and sagebrush fuel types and although larger, generally are suppressed more quickly. The USDA Farm Service Agency's (FSA) Conservation Reserve Program is a voluntary program available to agricultural producers to help them safeguard environmentally sensitive land. Producers enrolled in CRP establish long-term, resource-conserving covers to improve the quality of water, control soil erosion, and enhance wildlife habitat. In return, FSA provides participants with rental payments and cost-share assistance. Generally, CRP acreage may not be hayed or grazed during the primary nesting season for certain wildlife unless under emergency or managed conditions. Although the CRP may benefit the environment in many respects, the program may also increase the fire risk in nearby communities (FSA, 2007).

Homes located in the WUI are extremely vulnerable to wildfire. Untreated wood shake and shingle roofs, narrow roads, limited access, lack of FireWise landscaping, inadequate water supplies, and inadequately planned subdivisions increase the risk of wildfire to people and their property.

Wildland fires are one of the many natural sources of airborne particulate matter which can lead to serious health problems. A 2016 study suggests that smoke days will increase by almost two-thirds as the climate warms through the end of the century. Big fire areas like California, Oregon, and Idaho send their smoke straight to Western Montana because continental wind patterns move from the Pacific Ocean in an easterly or northeasterly path. The study demonstrated that smoke waves are likely to be longer, more intense, and more frequent and Western Montana counties could see smoke wave seasons ranging from 25 to 69 days. Wildfire smoke raises health, ecological and economic concerns. Children and the elderly are going to the hospital with respiratory problems during wildfires. Smoke also affects things like road safety, tourism and property values as lingering smoke lowers visibility. (Independent Record, *Wildfire Smoke Affecting Montana,* August 21, 2016).

Post wildfire conditions can pose risks to human life and property and further destabilize or degrade the burned lands. The Forest Service Burned Area Emergency Response (BAER) program addresses these situations with the goal of protecting life, property, water quality, and deteriorated ecosystems from further damage after the fire is out. Loss of vegetation exposes soil to erosion; runoff may increase and cause flash flooding, sediments may move downstream and damage houses or fill reservoirs, and put endangered species and community water supplies at risk.

Statewide Vulnerability

A wildfire risk assessment, known as the West-Wide Wildfire Risk Assessment, was completed in 2012 for 17 western states including Montana. The purpose of the project was to quantify the magnitude of the current wildfire problem and level of risk to communities and resources in the West with results comparable across geographic areas. Results for Montana counties are summarized in the following table. The project provides data compiled by County for four areas of wildfire risk, as described below and in **Table 4.2-8**.

Table 4.2-8. West-Wide Wildfire Assessment - Montana

Fire Risk Index - Acres by County					
County	**Wildland Acres**	**Non-Wildland Acres**	**FRI 7**	**FRI 8**	**FRI 9**
Missoula	1,605,418	68,272	127,106	68,751	63,524
Ravalli	1,474,702	60,007	90,934	46,850	61,538
Gallatin	1,430,875	252,782	194,258	87,310	42,886
Flathead	3,094,306	267,357	169,146	75,150	40,994
Park	1,612,892	186,747	233,497	76,807	29,790
Carbon	1,100,202	219,325	68,144	35,395	21,812
Lewis & Clark	2,078,137	157,697	65,485	30,842	20,234
Jefferson	1,027,232	33,462	42,048	20,175	19,808
Big Horn	2,899,380	308,586	75,987	34,420	19,572
Silver Bow	440,541	19,222	45,876	23,052	19,073
Fire Threat Index (FTI) - Acres by County					
County	**Wildland Acres**	**Non-Wildland Acres**	**FTI7**	**FTI8**	**FTI9**
Ravalli	1,474,702	60,007	136,386	56,928	63,558
Missoula	1,605,418	68,272	151,860	70,282	54,269
Gallatin	1,430,875	252,782	191,076	74,456	25,408
Flathead	3,094,306	267,357	140,808	46,416	22,624
Big Horn	2,899,380	308,586	117,667	43,039	21,923
Richland	872,237	472,293	10,539	10,470	17,813
Park	1,612,892	186,747	200,902	61,991	16,650
Silver Bow	440,541	19,222	40,099	34,076	15,393
Carbon	1,100,202	219,325	84,670	38,845	14,131
Glacier	1,463,117	479,263	40,783	9,569	14,064
Fire Effects Index (FEI) - Acres by County					
County	**Wildland Acres**	**Non-Wildland Acres**	**FEI7**	**FEI8**	**FEI9**
Phillips	2,869,536	463,763	6,894	13,341	38,767
Rosebud	3,022,690	191,309	7,154	26,282	36,512
Custer	2,236,861	188,290	2,030	13,538	34,524
Flathead	3,094,306	267,357	400,815	84,855	29,160
Madison	2,156,274	148,840	147,508	29,188	29,013
Dawson	1,078,234	445,157	2,314	7,928	28,833
Garfield	2,706,203	392,505	4,752	4,010	26,216
Roosevelt	811,420	704,034	3,097	4,683	25,851
Lincoln	2,297,986	52,718	306,568	67,137	24,899
Gallatin	1,430,875	252,782	118,735	56,649	24,702
Wildland Development Areas (WDA) - Acres by County					
County	**Total WDA**	**WD4**	**WD5**	**WDA6**	**WDA7**
Flathead	152,334	25,626	22,146	14,746	26
Gallatin	120,932	16,944	13,765	8,519	14
Missoula	84,991	15,113	14,619	8,644	14
Lake	105,087	14,032	10,144	4,295	12
Yellowstone	113,323	14,193	10,550	6,075	9
Cascade	88,533	9,063	6,239	4,175	9
Ravalli	139,521	24,822	17,036	4,612	7
Lewis & Clark	94,529	12,039	9,740	5,413	6
Dawson	35,203	1,292	1,014	972	5
Glacier	59,262	2,536	1,104	1,224	5

Source: West Wide Wildfire Risk Assessment Final Report (Sanborn, 2012)

- **Fire Risk Index (FRI) -** Measure of overall wildfire risk. Data from the assessment shows that Missoula, Ravalli, Gallatin, Flathead, and Park Counties have the highest FRI rating.

- **Fire Effects Index (FEI) -** Identifies areas with important values affected by wildland fire and/or that are costly to suppress. FEI is a weighted combination of the Values Impacted Rating and Suppression Difficulty Rating data. Data from the assessment shows that Ravalli, Gallatin, Missoula, Flathead, and Big Horn Counties have the highest FEI rating.
- **Fire Threat Index (FTI) -** Wildfire threat is an index related to the likelihood of an acre to burn. The FTI integrates the probability of an acre igniting and the expected final fire size, based on the rate of spread in four weather percentile categories, into a single measure of wildfire threat. Data from the assessment shows that Phillips, Rosebud, Custer, Flathead, and Madison Counties have the highest FTI rating.
- **Wildland Development Areas (WDA) -** Describes where people are living in wildland areas. This dataset is derived from the LandScan population count data and represents the number of housing units per acre. Data from the assessment shows that Flathead, Gallatin, Missoula, Lake and Yellowstone Counties have the highest WDA rating.

Increased population growth over the past two decades in Montana has resulted in an expanded WUI. Fires in these WUI areas have become much larger and burned with greater intensity. The BLM completed a Communities At-Risk Analysis across the state, identifying fire risk factors immediately around Montana communities (Dannenberg, 2004). Data was collected on vegetation, slope, aspect, weather factors, development density, and building materials within a 5-mile radius of 622 towns and cities in Montana. The results of the BLM communities risk assessment showed that 213 of the 622 communities in Montana (34 percent) were rated with an extreme or high fire danger rating.

As residential areas expand into relatively untouched forest land, people living in the WUI are increasingly threatened by forest fires. An estimated 360,000 people live in homes in the WUI in the Northern Rockies that are directly vulnerable to wildfire. The value of their homes is estimated at $21 billion. A 2010 analysis of WUI areas across the West found that in Montana around 9.4 percent of the WUI has homes. Around nine percent of all new homes in Montana are being constructed in the WUI, and 31 percent of these are second homes (Headwaters Economics, 2017). Fires in WUI areas pose extreme risk to human life and property, increase the cost of fire suppression activities, endanger the lives of firefighters that must contain and prevent losses in these areas, and have significant social, economic, and natural resources impacts.

Federal and state wildfire management agencies, as well as public non-profit wildfire organizations were involved in the planning process for the 2018 Montana MHMP. Their cohesive wildfire strategy is defined by three objectives including; creating fire adapted communities, fire resilient landscapes, and safe and effective fire response. A fire adapted community is a human community consisting of informed and prepared citizens collaboratively planning and taking action to safely coexist with wildland fire. More fully, fire adapted communities are knowledgeable, engaged communities where actions of residents and agencies in relation to infrastructure, buildings, landscaping and the surrounding ecosystem lessen the need for extensive protection actions and enable the communities to safely accept fire as part of the surrounding landscape. Because every community is unique, the steps and strategies they take to improve their wildfire resilience will vary from place to place.

Creating wildland fire resilient landscapes is a new approach to achieve fire resiliency goals across landscapes with collaborative efforts. This wildland fire approach uses an integrated, place-based approach of partnerships among programs, activities, and organizations to increase resilience to fire.

Close collaboration between the wildland fire and resource management programs is essential to address broad land-health outcomes and the ecological role of fire in fire-adapted ecosystems.

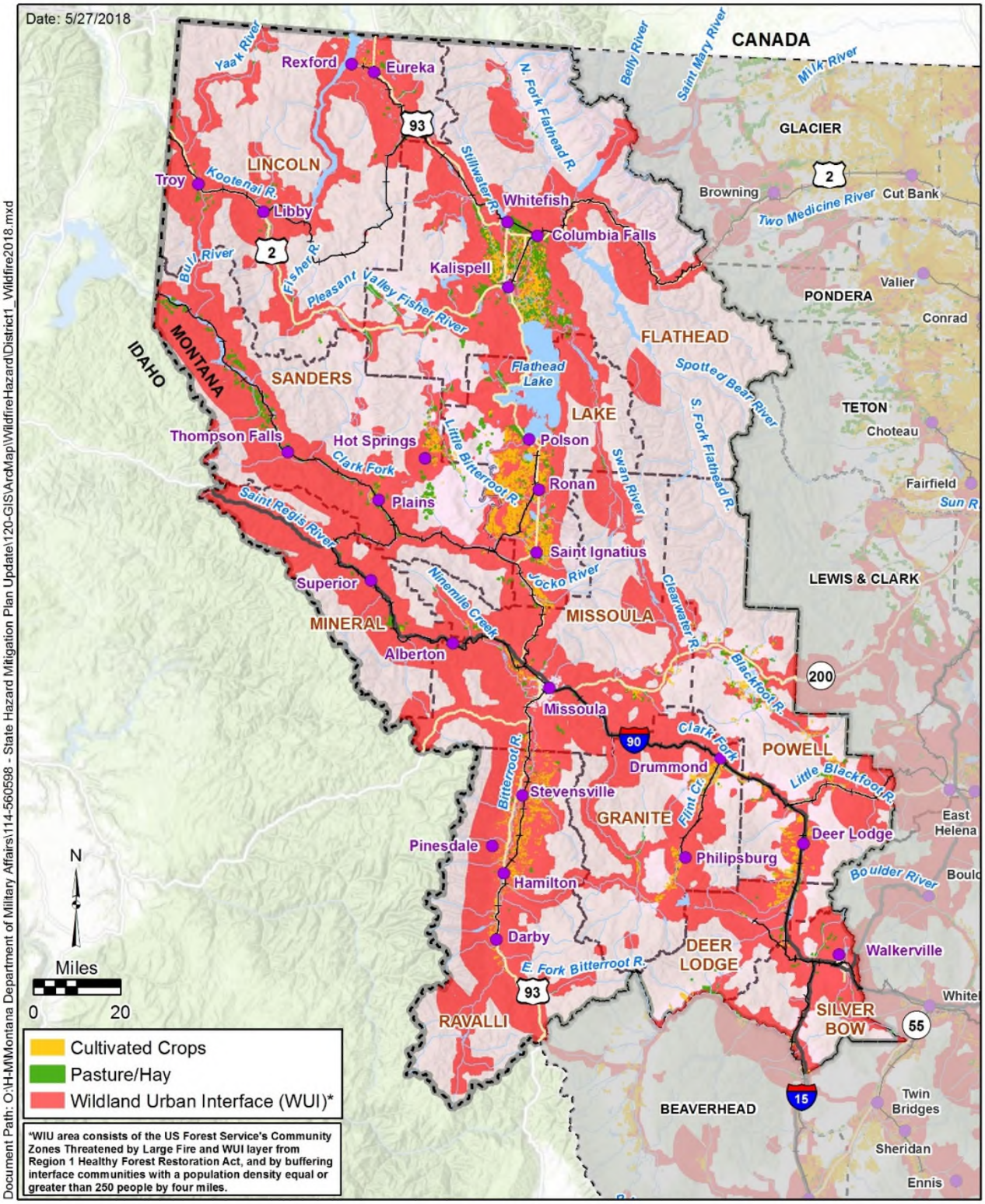
The wildfire hazard is not considered a uniform hazard across the State. Therefore, a GIS layer was created of the wildfire hazard impact area of the WUI and other values at risk including agricultural land (cultivated crops and pasture/hay) acreage. **Table 4.1-5** in *Section 4.1.3* presents a description of the wildfire hazard area used for the MHMP analysis. **Figures 4.2-1A-F** depict the wildfire risk area by DES District.

To complete the vulnerability analysis for the wildfire hazard, GIS was used to intersect the wildfire hazard layer with both the general building stock, critical facility, and cultural resource datasets. Estimates of vulnerable population were calculated using U.S. Census county estimates. Exposure values are presented in **Table 4.2-9**. **Appendix B-3** presents supporting documentation from the risk assessment including a list of critical facilities in the wildfire hazard area and loss estimates by county.

Table 4.2-9. Wildfire Exposure Summary by DES District

Item	District 1	District 2	District 3	District 4	District 5	District 6
WUI (Square Miles)	11,690.3	6,409.1	8,627.4	3,851.4	5,859.5	3,866.6
Percent WUI	46.5%	26.5%	34.2%	14.4%	26.6%	16.3%
Residential Building Exposure ($)	$16,671,492,566	$1,731,825,096	$10,790,406,887	$555,948,978	$4,031,737,202	$471,817,199
Residential Building Exposure (# structures)	93,322	12,271	49,724	4,242	22,897	3,962
Commercial, Ag, Industrial Building Exposure ($)	$6,149,297,729	$1,915,427,149	$3,529,272,501	$698,770,655	$1,797,425,805	$653,455,360
Commercial, Ag, Industrial Building Exposure (# structures)	19,358	6,955	9,648	4,013	6,040	3,686
Critical Facility Exposure ($)	$453,885,786	$10,136,632	$48,786,124	$52,686,027	$1,934,295	$5,397,145
Critical Facility Exposure (# structures)	135	16	54	18	10	15
Cultural Resources (# features)	27	17	28	6	13	5
Agricultural Land at Risk (acres)	413,546	6,614,251	882,122	2,603,457	1,733,612	4,176,905
Population Living in Hazard Area	169,656	18,248	82,190	5,934	34,682	5,718
Population Under 18 Living in Hazard Area	60,351	7,698	26,535	2,302	14,307	2,388
Population Over 65 Living in Hazard Area	62,352	5,660	25,166	2,150	11,227	2,596

Risk assessment results show that DES District 1 has the highest exposure for residential and commercial/ag/industrial structures as well as critical facilities and population. District 3 follows with the second highest exposure in these categories. District 2 has the most agricultural acreage at risk from wildfire followed by District 6. District 3 has the most cultural features at risk from wildfire.



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 1 County
- County

Figure 4.2-1A
Wildfire Hazard Area
DES District 1
State of Montana MHMP 2018 Update

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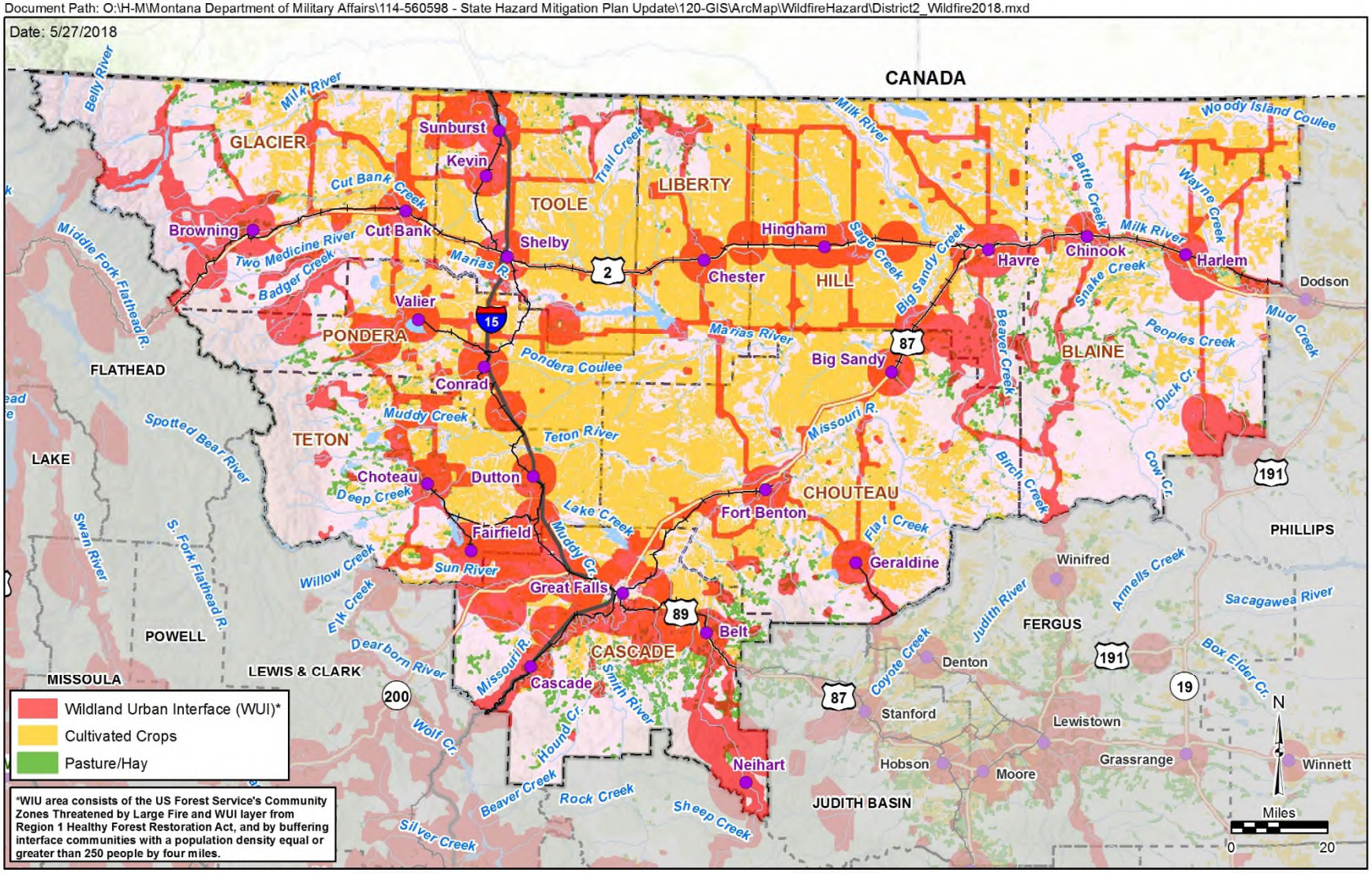
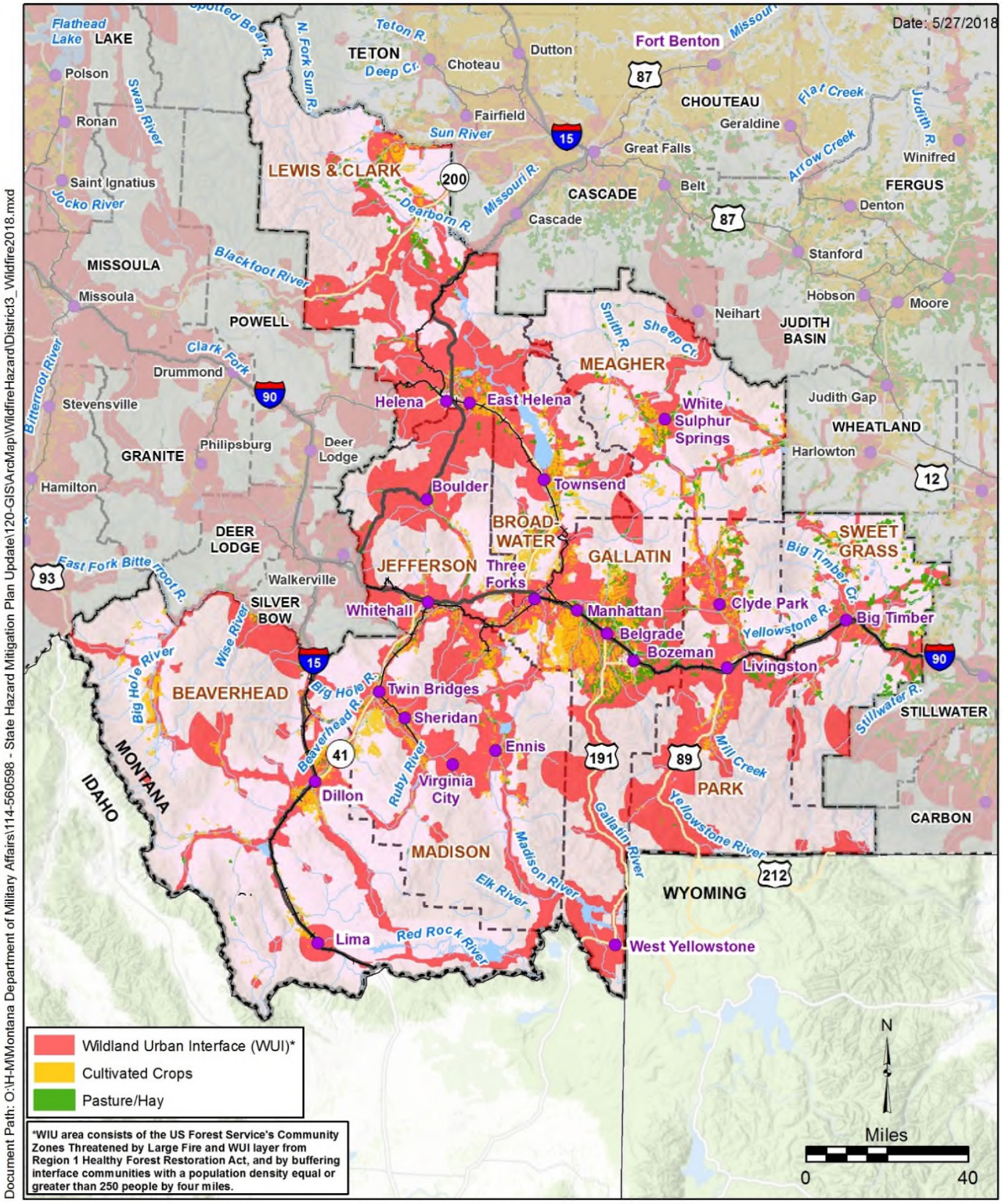


Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 2 County
- County

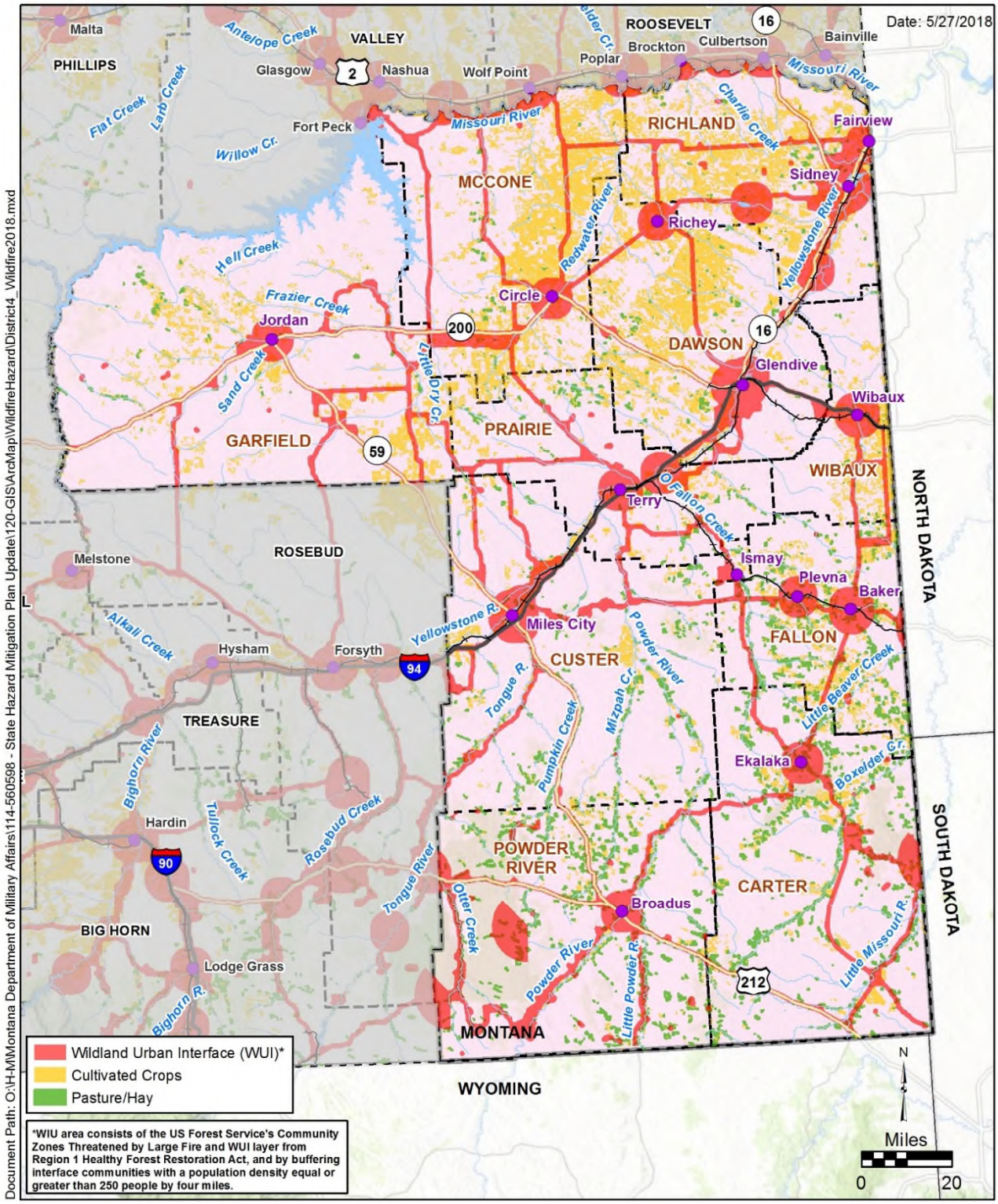
Figure 4.2-1B
Wildfire Hazard Area
DES District 2
State of Montana MHMP 2018 Update



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 3 County
- County

Figure 4.2-1C
Wildfire Hazard Area
DES District 3
State of Montana MHMP 2018 Update



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- County
- DES District 4 County

Figure 4.2-1D
Wildfire Hazard Area
DES District 4
State of Montana MHMP 2018 Update

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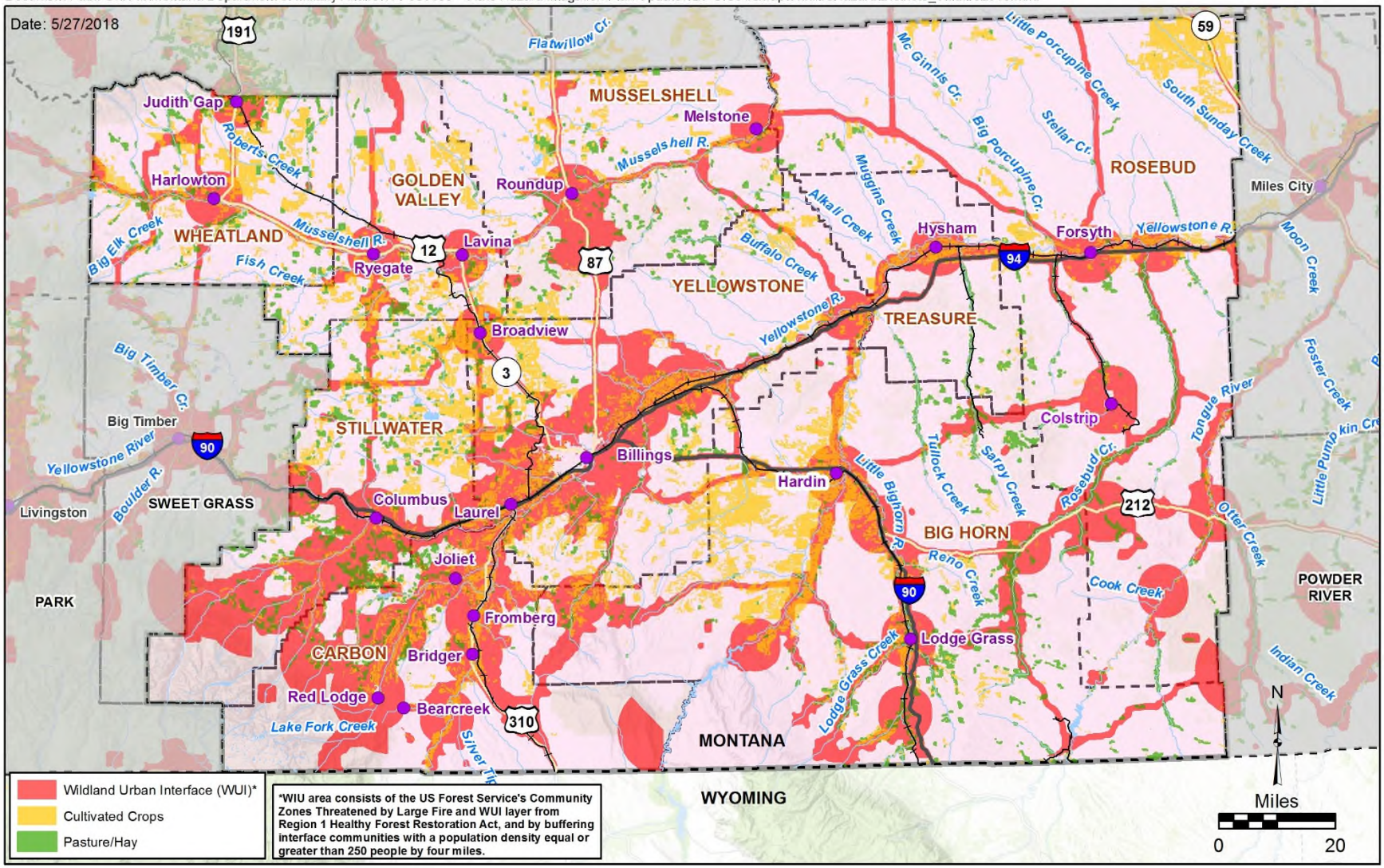

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 5 County
- County

Figure 4.2-1E
Wildfire Hazard Area
DES District 5
State of Montana MHMP 2018 Update

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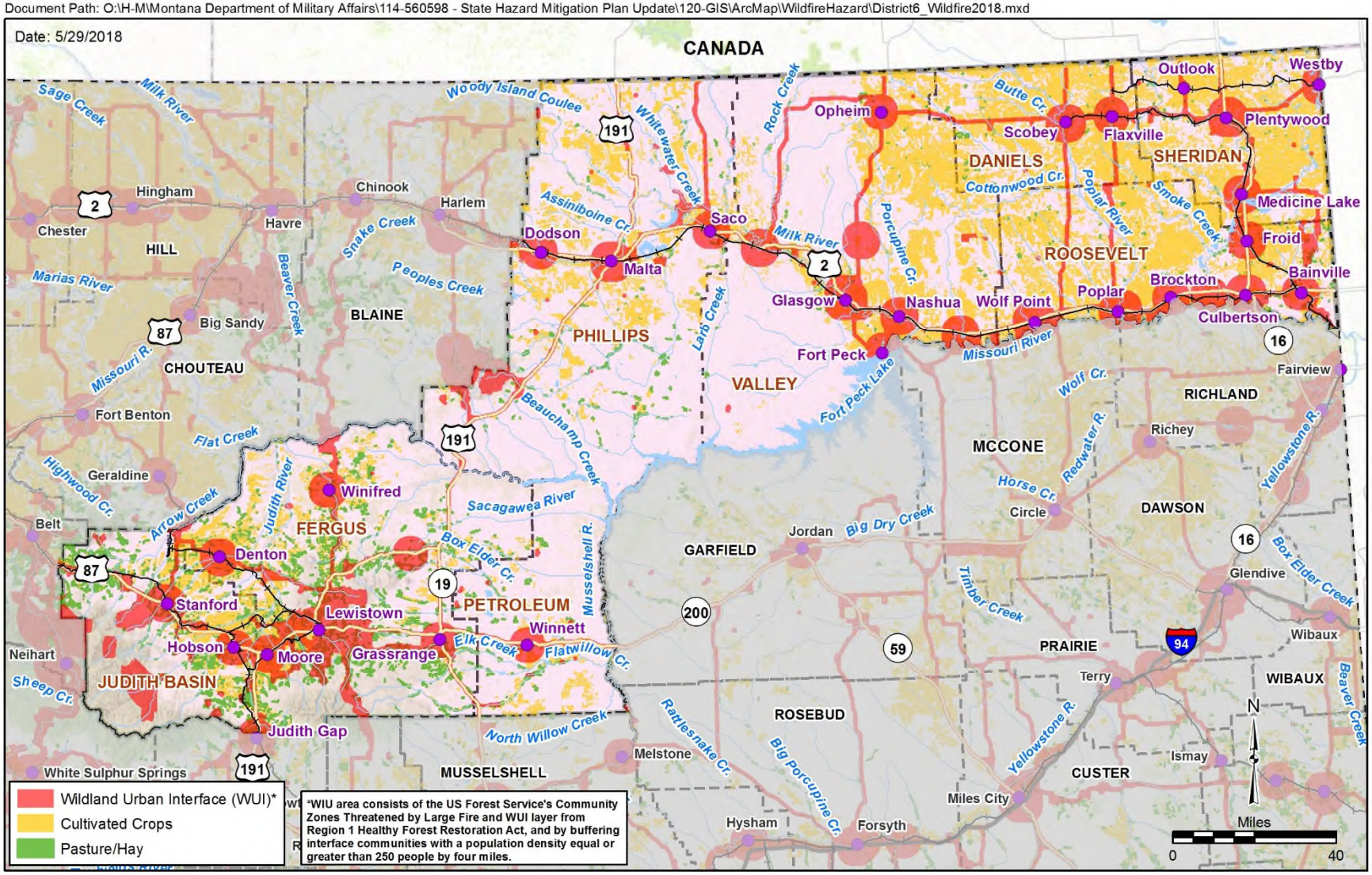

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 6 County
- County

Figure 4.2-1F
Wildfire Hazard Area
DES District 6
State of Montana MHMP 2018 Update

Table 4.2-10 presents a vulnerability summary of the wildfire hazard as it relates to percent exposure and growth rates in Montana's counties, cities and towns. Percent exposure was derived by dividing the value of residential and commercial/agricultural/industrial building stock exposed to the hazard into the total value of the building stock. Percent exposure is a more accurate way of displaying vulnerability than presenting jurisdictions with the highest exposure because it reflects areas with the greatest risk opposed to those with high value real estate. A complete ranking is presented in **Appendix B-3**.

Counties with the highest wildfire exposure include: Jefferson, Lake, Ravalli, Lincoln, Madison, Sanders, and Stillwater counties; while the top cities/towns (with population over 500) include: Billings (Yellowstone Co.), Kalispell and Whitefish (Flathead Co.), Missoula (Missoula Co.), Bozeman (Gallatin Co.), Great Falls (Cascade Co.), and Helena (Lewis and Clark Co.). **Figure 4.2-2** presents percent exposure for the top counties and cities/towns showing regional vulnerability.

Percent exposure was multiplied by the change in population between the 2010 U.S. Census and 2016 census estimates to present the jurisdictions with the highest risk that are experiencing the fastest growth. The number of residential building permits is also listed for the top-ranking jurisdictions. A complete ranking is presented in **Appendix B-3**.

Counties with the highest wildfire exposure experiencing the fastest population growth include: Gallatin, Richland, Granite, Flathead, Ravalli, Missoula, and Jefferson counties; while the top cities/towns (with population over 500) are Fairfield (Teton Co.), Sidney (Richland Co.), Bozeman (Gallatin Co.), Whitefish and Kalispell (Flathead Co.), Baker (Fallon Co.), and Culbertson (Roosevelt Co.). **Figure 4.2-3** presents percent exposure and population change for the top counties and cities/towns showing the most vulnerable areas experiencing the fastest population growth.

Review of Potential Losses in Local Hazard Mitigation Plans

All of the Local Hazard Mitigation plans evaluated the wildfire hazard in their risk assessment. Those jurisdictions that ranked wildfire among their top two hazards are listed below:

- #1 Hazard – Blaine, Broadwater, Chouteau, Custer, Deer Lodge, Flathead, Gallatin, Granite, Hill, Jefferson, Lake, Lewis and Clark, Lincoln, Mineral, Missoula, Phillips, Powell, Ravalli, Sanders, Stillwater, Sweet Grass, and Treasure counties and the Flathead Reservation.
- #2 Hazard – Caster, Cascade, Glacier, Golden Valley, Judith Basin, Musselshell, Park, Petroleum, Prairie, and Silver Bow counties and the Blackfeet, Fort Peck, Fort Belknap, Northern Cheyenne, and Rocky Boys reservations.

Appendix B-3 present a summary of potential wildfire losses from the Local Hazard Mitigation Plans.

Ravalli County supports the Fuels for Schools project which demonstrates that pellets or chipped wood can more efficiently and economically fire boilers to heat public buildings than other means. The project utilizes conventionally unmerchantable wood from wildfire hazard reduction forest thinning operations on lands of all ownerships in the Bitterroot Valley. Both the Darby and Victor schools have biomass boilers and serve as demonstration projects for other communities.

Table 4.2-10. Wildfire Exposure Summary for Top Counties, Cities and Towns

County	% Wildfire Exposure	% Growth (2010 to 2016)	# of Building Permits (2010 to 2016)	$ Residential Exposure	# Residences at Risk	$ Commercial/ Ag/Industrial Exposure	# Commercial/ Ag/Industrial Buildings at Risk	$ Critical Facilities Exposure	# Critical Facilities at Risk
Counties with Highest Percent Exposure ($ Residential + $ Commercial- Ag- Industrial Exposure in Hazard Area / Total Exposure)									
Jefferson	88.2%	3.77%	5	$666,633,319	3,270	$93,104,554	546	$6,000,418	9
Lake	87.6%	3.40%	44	$2,722,313,162	14,361	$739,718,859	3,562	$14,144,458	16
Ravalli	81.8%	4.46%	20	$3,027,142,936	15,328	$755,053,284	2,679	$65,040	2
Lincoln	81.6%	-2.22%	8	$1,371,574,805	10,937	$655,327,245	3,304	$17,834	2
Madison	79.1%	2.94%	7	$638,414,658	3,098	$289,290,638	1,003	$33,224	2
Sanders	77.4%	1.05%	0	$424,746,831	3,355	$265,640,556	1,545	$0	0
Stillwater	76.7%	3.07%	0	$405,340,408	2,268	$115,950,452	652	$10,000	1
Cities/Towns with Highest Percent Exposure (Towns with Pop. > 500) (1,000-foot buffer from city limits) ($ Residential + $ Commercial- Ag- Industrial Exposure in Hazard Area / Total Exposure)									
Billings	100%	5.58%	NA	$313,263,288	1,712	$220,869,613	217	$0	0
Kalispell	100%	12.45%	NA	$336,446,136	1,901	$62,711,679	150	$0	0
Missoula	100%	7.71%	NA	$324,557,070	2,195	$53,666,576	83	$774,142	1
Bozeman	100%	17.61%	NA	$225,933,512	1,089	$82,532,652	93	$0	0
Whitefish	100%	12.67%	NA	$254,626,742	755	$29,521,341	45	$0	0
Great Falls	100%	1.14%	NA	$146,111,511	808	$91,567,457	194	$2,555,427	2
Helena	100%	9.56%	NA	$127,379,215	830	$53,185,483	137	$0	0
Counties with Greatest Exposure Which Have Fastest Growth Rates (% Exposure X % Population Change 2010 to 2016)									
Gallatin	45.5%	14.34%	1,550	$5,323,042,335	18,391	$1,545,329,899	2,976	$14,226,562	14
Richland	42.7%	15.12%	16	$153,993,022	899	$245,656,775	864	$15,417	1
Granite	72.3%	8.58%	NA	$140,247,480	927	$125,723,720	366	0	0
Flathead	65.7%	7.29%	316	$5,901,543,909	27,905	$2,266,664,982	5,466	$2,142,524	8
Ravalli	81.8%	4.46%	20	$3,027,142,936	15,328	$755,053,284	2,679	$65,040	2
Missoula	60.3%	5.88%	930	$1,870,221,229	11,880	$549,050,839	936	$28,756,528	13
Jefferson	88.2%	3.77%	5	$666,633,319	3,270	$93,104,554	546	$6,000,418	9
Cities/Towns with Highest Percent Exposure Which Have Fastest Growth Rates (Towns with Pop. > 500) (1,000-foot buffer from city limits) (% Exposure X % Population Change 2010 to 2016)									
Fairfield	100%	23.21%	NA	$5,570,704	36	$2,723,377	14	0	0
Sidney	100%	20.94%	NA	$21,149,600	98	$39,038,012	107	0	0
Bozeman	100%	17.61%	NA	$225,933,512	1,089	$82,532,652	93	0	0
Whitefish	100%	12.67%	NA	$254,626,742	755	$29,521,341	45	0	0
Baker	100%	12.51%	NA	$5,823,706	62	$1,937,344	17	$15,822	1
Kalispell	100%	12.45%	NA	$336,446,136	1,901	$62,711,679	150	0	0
Culbertson	100%	11.19%	NA	$1,359,628	12	$1,864,675	6	$2,215,519	1

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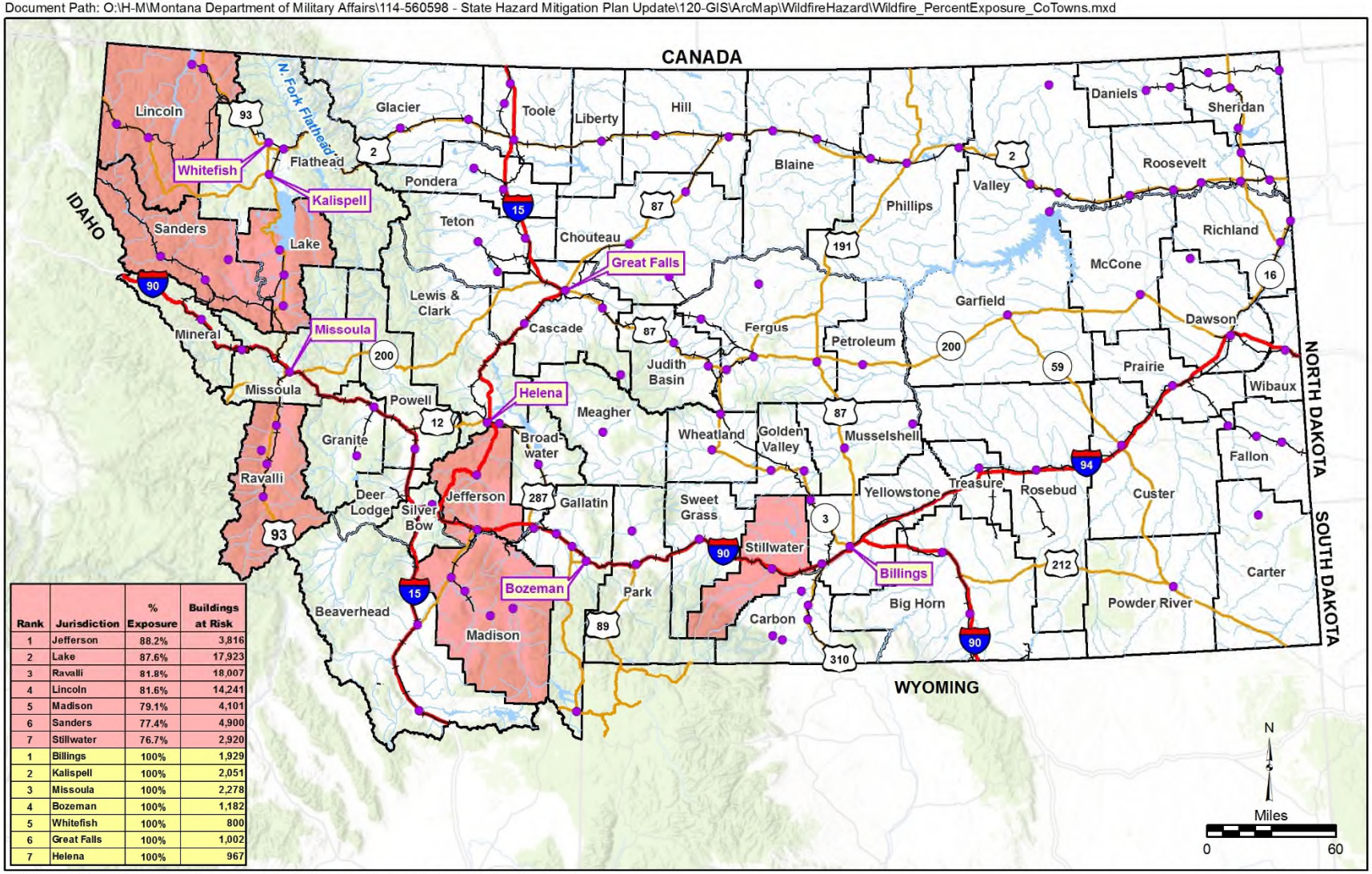

Rank	Jurisdiction	% Exposure	Buildings at Risk
1	Jefferson	88.2%	3,816
2	Lake	87.6%	17,923
3	Ravalli	81.8%	18,007
4	Lincoln	81.6%	14,241
5	Madison	79.1%	4,101
6	Sanders	77.4%	4,900
7	Stillwater	76.7%	2,920
1	Billings	100%	1,929
2	Kalispell	100%	2,051
3	Missoula	100%	2,278
4	Bozeman	100%	1,182
5	Whitefish	100%	800
6	Great Falls	100%	1,002
7	Helena	100%	967

Buildings at Risk = Residences, Commercial, Agricultural, and Industrial structures in hazard area.

Date: 6/2/2018

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- County

Figure 4.2-2
Wildfire - Percent Exposure for Top Counties and Cities/Towns
State of Montana MHMP 2018 Update

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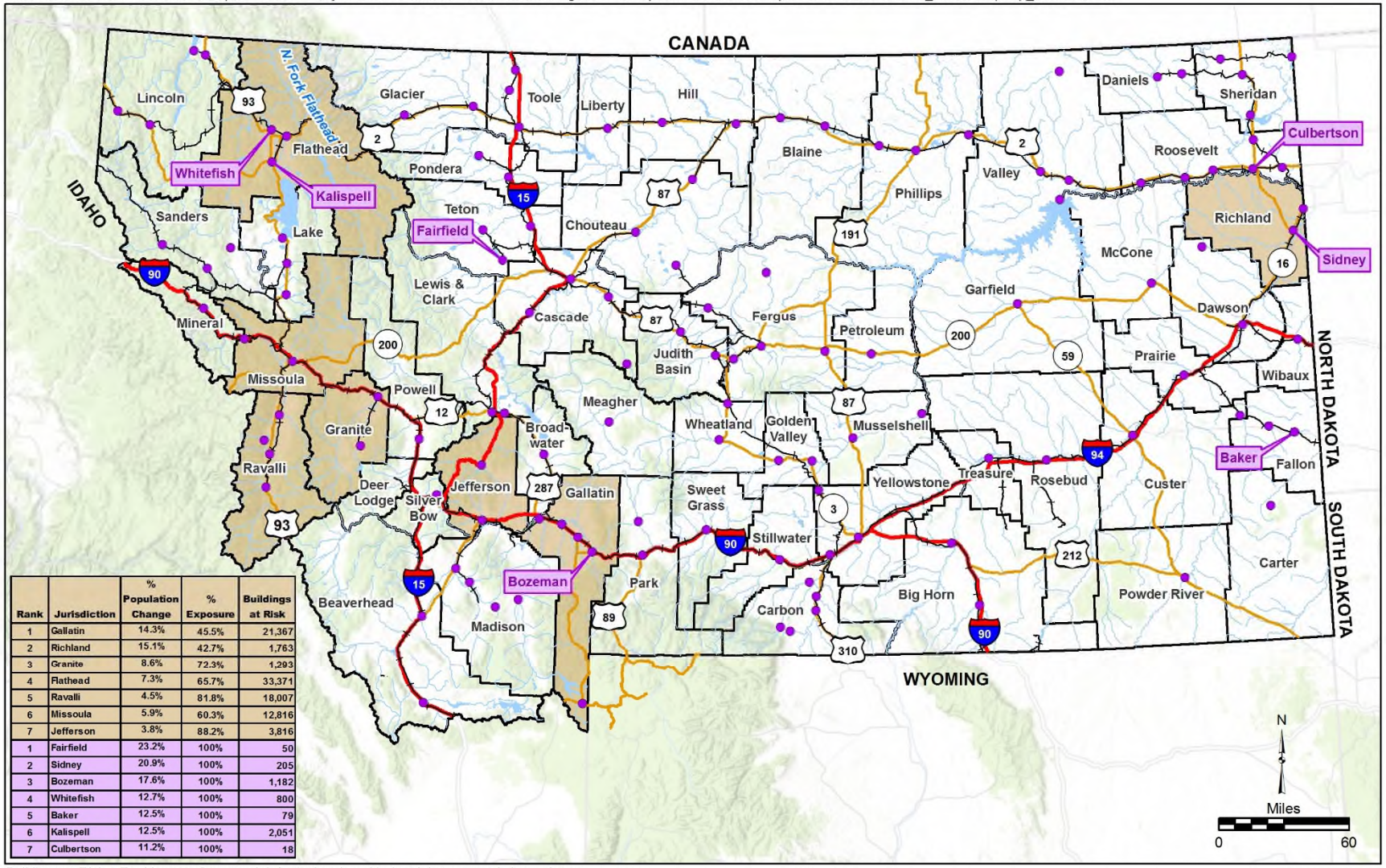

Rank	Jurisdiction	% Population Change	% Exposure	Buildings at Risk
1	Gallatin	14.3%	45.5%	21,367
2	Richland	15.1%	42.7%	1,763
3	Granite	8.6%	72.3%	1,293
4	Flathead	7.3%	65.7%	33,371
5	Ravalli	4.5%	81.8%	18,007
6	Missoula	5.9%	60.3%	12,816
7	Jefferson	3.8%	88.2%	3,816
1	Fairfield	23.2%	100%	50
2	Sidney	20.9%	100%	205
3	Bozeman	17.6%	100%	1,182
4	Whitefish	12.7%	100%	800
5	Baker	12.5%	100%	79
6	Kalispell	12.5%	100%	2,051
7	Culbertson	11.2%	100%	18

Buildings at Risk = Residences, Commercial, Agricultural, and Industrial structures in hazard area.

Date: 6/2/2018

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- County

Figure 4.2-3

Wildfire - Percent Exposure x Percent Population Change for Top Counties and Cities/Towns

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Vulnerability of State Facilities

State critical facilities located in the wildfire hazard impact area are listed in **Appendix B-3**. While structure loss can occur from wildland fire, most of the losses on state-owned land are related to state forest and crop/grazing land. Leased cropland and grazing leases return approximately $27.9 million annually to the state. Timber production from state-owned timber tracts returned $9.7 million in fiscal year 2017 (DNRC, 2018).

Future Development

The WUI is a popular place to live in Montana. Development in this hazard area has increased in recent years and has amplified the vulnerabilities in the unincorporated parts of the State. Regulating growth in these areas is a delicate balance between protecting private property rights and promoting public safety. Montana land use planning strategies to reduce wildfire risk include growth policies, subdivision regulations, zoning guidelines, and building codes.

The 2007 Montana Legislative session passed a bill specific to wildfire and the WUI that reduces the impact of wildfire and rangeland fire on future development. Senate Bill 51, which took effect on October 1, 2009, revised growth policy and subdivision law requiring the consideration of wildland fire. The law requires that growth policies include an evaluation of the potential for wildland fire, including whether or not there is need to delineate the WUI or adopt regulations that require defensible space around structures, adequate ingress and egress to and from structures to facilitate

fire suppression activities, and/or adequate water supply for fire protection. Growth policies provide the legal basis and rationale to create rules for the WUI, but are not regulatory documents and don't have the weight of law. Growth policies provide an opportunity to discuss risks and improvement projects with federal and state officials, fire districts, and landowners.

Montana Code Annotated section 76-13-104(8) required that DNRC adopt administrative rules that address development within the WUI. This included best practices for development within the WUI and criteria for providing grant and loan assistance to local governments to encourage them to adopt those practices. It also directed DNRC to develop rules addressing a potential means of enforcement. (DNRC, 2009).

Building Codes and the WUI Code

The Montana Legislature passed *The Wildland-Urban Interface Code of Montana* in 2012. This code applies to the construction, alteration, movement, repair, addition, change-of-use or remodeling of any building, structure, or premises within the designated WUI within a jurisdiction. The WUI Code primarily addresses fire-resistant construction materials such as noncombustible roof coverings, walls, windows, vent coverings, and similar matters, but also includes a wide-ranging appendix covering vegetation management and certain land use practices.

The objective of the Montana WUI Code is to establish minimum regulations consistent with nationally recognized good practice for the safeguarding of life and property. Regulations in this code are intended to mitigate the risk to life and structures from intrusion of fire from wildland fire exposures and fire exposures from adjacent structures and to mitigate structure fires from spreading to wildland fuels. The extent of this regulation is intended to be tiered commensurate with the relative level of hazard present.

The WUI Code states that the governmental body or official state or local agency must declare the WUI areas within the jurisdiction based on mapping, boundary designations, or wildland fire plans. Cities, counties, and towns that have adopted the International Building Code or the International Residential Code in connection with their certification to enforce building codes will, if they elect to enforce the International WUI Code, record the official WUI areas on maps available for inspection by the public.

According to the Montana DLI website, only seven of Montana's 56 counties have adopted building codes and none has adopted the WUI code. General resistance to regulation and personnel capacity issues are likely reasons that only a few counties have adopted building codes or the WUI code.

Where local governments have not adopted building codes, DLI administers building codes (including the WUI code) for all commercial structures, plumbing and electrical permits for all structures, and also construction materials and techniques for residential structures consisting of five or more units. However, because much of the development in the WUI consists of single-family residential homes, DLI does not have authority to address fire-related construction issues in most instances (Headwaters Economics, 2017).

Subdivision Guidelines

Senate Bill 51 also amended subdivision regulations to require every county, city and town to reasonably avoid subdivisions where there is danger of injury to health, safety, or welfare by reason of natural hazard, including but not limited to fire and wildland fire. The regulations prohibit subdivisions in these areas unless the hazards can be eliminated or overcome by approved construction techniques or mitigation measures such as requiring sprinklers in certain circumstances or prohibiting cedar shake roofs.

Subdivision guidelines provide a list of recommendations that can be incorporated into local subdivision regulations (development of lots in new subdivisions):

- Wildland fuel mitigation discussing defensible space and the preparation of vegetation management plans;
- Site development discussing steep slopes, fire chimneys, and improvements prior to construction;
- Fuel breaks and greenbelts;
- Means of access including ingress and egress roads, gates, and signage;
- Water supply requirements and guidelines;
- Alternative development; and
- A miscellaneous category which discusses mapping of fire protection features and maintenance of equipment and features.

When the Montana DLI defines what construction techniques or other mitigation measures are appropriate for use in mitigating hazards during the subdivision process, local government can choose to adopt them into their county subdivision regulations as well. The disadvantages of subdivision regulations are that there is no regulatory mechanism to ensure water supplies and vegetation are maintained over time; covenants, which may not be adhered to, are necessary to ensure the construction techniques are implemented; and, the requirements only apply to new

subdivisions while WUI development issues also include existing lots and structures (Headwaters Economics, 2017).

Zoning Ordinances

Montana land use planning statutes authorize counties and municipalities to adopt zoning with the express purpose of providing for public health, safety, and general welfare. Zoning can be adopted by local governments, with great flexibility for how much detail to include. The zoning guidelines can be adopted as part of the regulations for a new zoning district, as an amendment to regulations for an existing zoning district or regulations for an overlay zoning district. Zoning is optional, meaning local governments are not required to adopt it.

Zoning can be designed to address specific areas of WUI. The state's zoning guidelines provide a list of recommendations that can be incorporated into city/county zoning regulations for issues such as maintenance of vegetation management on existing lots, construction of driveways on existing lots, and development of lots in subdivisions. If a local government adopts zoning to address development in the WUI, it is necessary to avoid items that are included in building codes such as roofing materials, windows, and vents. Instead, zoning can be used to designate minimum lot sizes or densities in the WUI, fuels reduction requirements, and other elements.

Climate Change

Montana has been on a steady warming trend for decades, up over 3 degrees F since 1950, and all projections are that it will continue. The summer of 2017 was the second warmest on record since 1950 at 4 degrees F above average, and the persistent high temperatures coupled with the record lowest rainfall in July and August shifted the relatively wet conditions of spring into extreme drought by mid-summer followed by a severe wildfire season (Whitlock et.al., 2017).

The climate future with respect to wildfire will include additional warming with less precipitation in the summer months which set the stage for drier conditions and more fires. Over the next century, extreme heat days (above 90 degrees F) are projected to increase by an additional 5-35 days across the state (See **Table 4.6-13** in the *Severe Weather* section). And, as a result of greater drought, forest fires will likely increase in size, frequency, and possibly severity.

In a given year, warmer weather and less precipitation dries out fuel loads and creates conditions for rapid fire spread. Fire records dating back decades to millennia show a clear link between warmer temperatures, lower precipitation and an increase in the number of fires and acres burned. Since 1986, wildfire seasons are nearly 80 days longer, with increases in large fires and fires at high wildfires are burning up to 10,000 feet (Whitlock et.al., 2017).

Larger, more severe, and more frequent fires may impact the people, property and critical facilities by increasing the risk from ignition from nearby fire sources. Climate change also may increase winds that spread fires. Faster fires are harder to contain, and thus are more likely to expand into residential neighborhoods.

Secondary impacts, such as air quality concerns and public health issues, will likely increase due to smoke from wildfire. Wildfire smoke generates a lot of particulate matter 2.5 microns or less in diameter. Those particles are so small, they easily bypass most of the human body's defenses and move directly from the lungs into the bloodstream. A recent study demonstrates that smoke waves

are likely to be longer, more intense, and more frequent under climate change, which raises health, ecologic and economic concerns.

Data Limitations

Risk assessment results for wildfire are only a general representation of potential vulnerabilities. The wildfire hazard impact area developed for this project many not be accurate for all jurisdictions; it was however, developed with the best available information as of the date of this Plan.

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4.3 Flooding

CPRI SCORE = 2.83

Description and History

Floods are the result of a multitude of naturally-occurring and human-induced factors, but they all can be defined as the accumulation of too much water in too little time in a specific area. Types of floods that affect Montana include regional floods, flash floods, and ice-jam floods. Dam failure flooding is discussed in *Section 4.4.10*.

Worldwide, from 1980 to 2009, floods caused more than 500,000 deaths and affected more than 2.8 billion people. In the U.S., floods caused 4,586 deaths from 1959 to 2005 while property and crop damage averaged nearly 2.8 billion dollars per year from 1995 through 2016. Flooding is the second most deadly weather-related event behind extreme heat. The risks from future floods are significant, given expanded development in coastal areas and floodplains, unabated urbanization, land-use changes, and human-induced climate change (Whitlock, et.al, 2017).

Regional flooding occurs in river systems whose tributaries drain large geographic areas and include many independent river basins. Significant flooding can cause impacts to roads and homes on individual streams. Factors that directly affect the amount of flood runoff include frozen versus unfrozen precipitation amount, intensity and distribution, the amount of soil moisture, seasonal variation in vegetation, snow depth and water-resistance of the surface due to urbanization. The duration of riverine floods may vary from a few hours to many days.

Floodplains are lands bordering rivers and streams that normally are dry but are covered with water during floods. Buildings and fill material in the floodplain can change the pattern of water flow and increase flooding and flood damage on adjacent property by blocking the flow of water and increasing the width, depth, or velocity of flood waters. Buildings or other structures placed in floodplains can be damaged by floods.

Many communities in Montana are protected from flood hazards by levees and dikes. With the production of new Digital Flood Insurance Rate Maps (DFIRMs) through FEMA's Map Modernization Program, communities must demonstrate they can meet federal regulations by having their levees certified by a registered professional engineer or federal agency with responsibility for levee design. Without a new certification, the DFIRMs would show that no levee exists, requiring homeowners to purchase costly flood insurance through the National Flood Insurance Program (NFIP) and property values would drop. The U.S. Army Corps of Engineers (USACE), which built many of the levees, is no longer doing certification, which is why many flood districts have been slow to move, saying they can't afford the certification. **Figures 4.3-2A-F** show of location of many of the levees in Montana.

Flash floods are local floods of great volume and short duration. In contrast to riverine flooding, flash floods usually result from a torrential rain on a relatively small drainage area. Flash floods can occur within several seconds to several hours, with little warning. They can be deadly because they produce rapid rises in water levels and have devastating flow velocities. Factors contributing to flash flooding include: rainfall intensity, rainfall duration, surface conditions, and topography and slope of the receiving basin. Urban areas are susceptible to flash floods because a high percentage of the surface area is composed of impervious streets, roofs, and parking lots where runoff occurs very rapidly. Mountainous areas also are susceptible to flash floods, as steep topography may funnel runoff into a narrow canyon. Flash floods and debris floods often occur in areas recently burned by wildfire.

An ice jam is an accumulation of ice in a river that restricts water flow and may cause backwater that floods low-lying areas upstream from the jam. Downstream areas also can be flooded if the jam releases suddenly, sending a flash flood downstream. Ice jam flooding is more likely to occur in break-up events as opposed to freeze-up events. Sudden seasonal changes are the greatest factor increasing the risk of ice jam flooding. Prolonged cold periods causing significant ice formation followed by unseasonably warm periods in the winter or spring are likely formulas for ice jams.

Damages resulting from ice jams can affect roads, bridges, buildings, and homes, and can cost the affected community thousands to millions of dollars. In most instances, ice jams result in highly localized, yet serious damages, which makes it difficult to obtain the type of disaster assistance available for large-scale flooding events.

Flooding is a common occurrence in Montana. The following discussion summarizes historical flooding in each major Montana watershed incorporating local plan information.

Regional Flooding - Columbia River Basin

June 1908 - The June 1908 flood in Missoula County involved nearly every major stream and river. This event was the result of unseasonably warm temperatures and 33 consecutive days of rain.

June 1964 - Approximately 15 inches of rain accumulated over a 30-hour period in the upper Flathead drainage. The resulting flood damaged more than 350 houses near Kalispell. The USACE estimated $25 million in damages in the Flathead Basin.

January 1974 - Lincoln, Sanders, Flathead, Glacier, Mineral, Missoula and Deer Lodge counties were hit by flood waters which caused approximately $16 million worth of damage to Forest Service roads, bridges, and facilities, and private property.

June 1975 - Lincoln, Sanders, Flathead, Glacier, Mineral, Missoula and Deer Lodge counties suffered flood related losses again in June 1975, totaling nearly $35 million.

May 2017 – Missoula County experienced 100-year flooding on the Clark Fork River due to a late-season rapid melting of a record snow pack. Damage estimates have not been calculated as of the date of this report.

Regional Flooding - Missouri River Basin

June 1964 - This event was initiated by 8 to 10 inches of rain over three days on a deeper-than-average snow pack. The principal rivers involved were the Dearborn, Sun, Teton and Marias. All counties situated along the Continental Divide were affected to some degree; however, the greatest damage was received by the City of Great Falls. The flood included the failure of two dams; Swift Reservoir on Birch Creek and Two Medicine Dam on Two Medicine Creek on the Blackfeet Reservation. The disaster resulted in the loss of 30 lives and an estimated $55 million in damages, with the greatest damage in the city of Great Falls. The USACE has since completed a $12 million flood control levee along the north bank of the Sun River near Great Falls, which protects over 500 homes and businesses.

1984 - The combination of snowmelt and spring rains with frequent ice jams caused flooding on the Beaverhead River near Dillon. Crews successfully prevented major damage by channeling floodwaters through town on streets lined with sandbags and straw. The Clark Canyon Dam above Dillon and emergency dikes built on the river near town reduced potential damages.

April 1952 - Heavy snow, the associated snowmelt, and ice jams caused the greatest flood on record for this river in April 1952. Over $6 million in damages were recorded between Havre and the river's mouth below Nashua, causing significant economic impacts during this month-long flood. Over 1,000 homes flooded and almost 3,000 people evacuated. Levees offered limited protection to the communities of Havre, Chinook, Malta, Saco, Glasgow, and Nashua.

May 1981 - The 1981 flood in Lewis and Clark County was the result of a combination of snowmelt and heavy rainfall. Records from the NWS indicate that 6 inches of precipitation fell in May 1981. Of that amount, 3.4 inches fell during the three days leading to the flood on May 21st. Peak flows reached 3,290 cubic feet per second and were estimated to equate to a 500-year event. Flooding resulting in over $4.3 million in damages to Lewis and Clark County and nine other counties.

September 1986 - Significant flood caused by thunderstorms impacted those along the Milk River from Havre to Nashua causing over $3 million in FEMA reimbursed damages and one death, but some sources indicate over $36 million in total damages were incurred.

November 2006 - On November 5, 2006, unprecedented heavy rains caused catastrophic flooding in Glacier National Park. Going to the Sun Road was washed out in several areas with several bridges washed out. The Many Glacier Hotel was also flooded. The Associated Press reported $7 million in damages.

June 2011 - This flood was the result of snowmelt and heavy rainfall, and affected numerous areas causing extensive damage in the Helena Valley due to the inadequate capacity of the main roadside ditches, culverts and catchments which led to overland sheet flow, and flooding of streets, yards and structures. Lewis and Clark County and 30 other Montana counties and four reservations received over $62 million in flood-related damages. (see description of this event in the *Declared Disaster Section*, below).

May 2017 – Lewis and Clark County has sustained flood damages due to runoff from a record snow pack. Many of the same areas affected by the 2011 flood are impacted again. Flood damages are not yet available from this flood event.

Regional Flooding - Yellowstone River Basin

Glendive - Large floods have affected the Glendive area near the end of the Yellowstone River, typically as a result of ice jams. Flooding in 1899 took 12 lives and destroyed a new bridge. In 1936, another ice jam isolated Glendive for 10 days. The USACE's built a levee in 1959, which protects a portion of the town, but does not provide adequate protection from even 50-year ice jam floods.

Miles City, located at the junction of the Tongue River and lower Yellowstone River is one of the more flood prone cities in the state. Ice-jam flooding along both the Yellowstone and Tongue Rivers has been a major concern throughout the city's history. Limited protection of the city is afforded by levees. Flood maps adopted in 2010 place well over 80 percent of the city limits inside the 100-year floodplain and do not recognize the protection offered by the levee system and as such, a total of 3,384

structures are located in the 100-year floodplain with 324 in the floodway. The estimated value of structure and content values at risk is $311 million (USACE, 2016). Miles City recently updated their local MHMP and identified reconstruction of their levees as a high priority mitigation action. To reconstruct the levee to a 100-year standard would cost an estimated $37 million, while the 500-year standard would cost an estimated $39 million. In 2017, Miles City applied to FEMA for a Flood Mitigation Assistance Grant.

Livingston - The upper Yellowstone River flows along the southern border of Livingston where it forks several times and creates a number of islands. The largest of these, 9th Street Island, has over 40 homes and businesses on it. In June 2008 flood waters destabilized one of the pylons of the 9th Street Island Bridge, built in the late 1950's and damaged by previous flooding events, causing it to sink several feet into the river. In turn, the bridge buckled slightly at one end and badly damaged the road surface. An evacuation of the island was issued so that people wouldn't be stranded since the bridge is the only access to the island.

Federal and state funding has been spent for replacement of the bridge by Park County; however, the 40+ residences on 9th Street Island are still a major concern for the State with regards to mitigation actions, particularly as they reside in an extremely obvious flood hazard area. A DFIRM for Livingston and this area of Park County clearly shows nearly the entire surface of the islands are in the floodway with only a small portion in the floodplain. The State still considers acquisition/demolition or relocation of these homes and structures a high priority mitigation action item.

Roundup - The town of Roundup was devastated by the floods of 2011 when the Musselshell River gushed into low-lying neighborhoods twice in two weeks. Much of the town was inundated for almost a week (see description of this event in the *Declared Disaster* section, below). Since the last State MHMP in 2013, several FEMA grant projects have funded acquisitions in Roundup to remove homes from flood prone areas.

Flash Flooding

Flash flooding is common in some areas of the state during the summer storm season. The best examples of this type of flooding have occurred in the Billings area. Flooding of the tributaries of the Yellowstone River has resulted from intense summer thunderstorms, typically short in duration, which produce high peak flows. Major flooding of this type occurred in 1923 and 1937 and continues to cause property damage in downtown Billings where there are inadequate storm drains to handle the runoff. Flash flooding is also common along drainages in northwestern Montana during the summer storm season. Flash flooding can occur anywhere in Montana with slow moving thunderstorms and intense rain. Numerous people were killed in Terry at the turn of the century when a train was swept off of its tracks by flash flooding.

Burned soil can be as water repellant as pavement. Rainfall that would normally be absorbed by soil may run off extremely quickly after a wildfire. These conditions, along with wet weather, can lead to flash flooding and mudflows for several seasons.

Ice Jam Flooding

Since 1894, over 4,500 ice jam events have been recorded in Montana, the most of any other state. Ice jams occur most frequently in the months of February (21%) and March (45%) and have been reported on 380 different streams and rivers (USACE-CRREL, 2018). Recorded ice jams do not always indicate flooding occurred with the ice jam, just the presence of an ice jam and the increased risk of flooding. **Table 4.3-1** summarizes some of the damages caused by ice jams.

Table 4.3-1. Ice Jam Damages in Montana

Year	Degree of Damage
Loss of Life	
1894	Three men died while trying to escape ice jam flood waters in the Glendive area.
1899	12 people lost their lives to an ice-jam and flash flood in the Glendive area on the Yellowstone River.
1996	A volunteer in Fort Benton collapsed and died from a heart attack as he was helping to load sandbags.
1996	Two died because of ice jam flooding.
Property Damage	
1881	Main Street in Miles City filled with water from an ice jam in March. Residents evacuated to higher ground for one week, which they spent in tents, waiting for the floodwaters to recede.
1944	An ice jam on the Tongue and Yellowstone Rivers in Miles City caused 300 to 500 people to be evacuated from their homes.
Environmental Damage	
1996	Fish killed in the Blackfoot River by habitat destruction and disruption of spawning activity.
1996	Fish killed in Clark Fork River by ice jam scouring and releases of soils contaminated with toxic metals.

Source: USACE CRREL, 1998

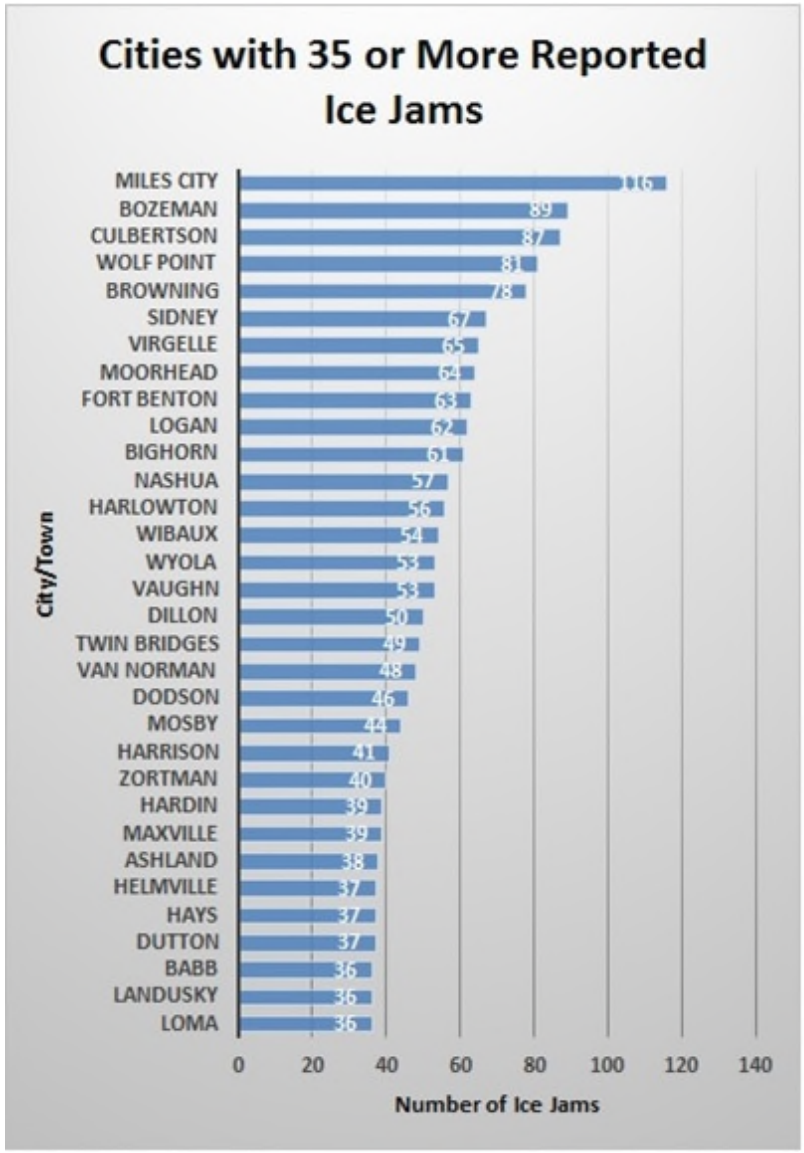
Figure 4.3-1 presents ice jam statistics for Montana communities and streams with data from the USACE Coldwater Regions Research and Engineering Laboratory (CRREL). The majority of ice jams occur east of the Continental Divide with the most events occurring in Miles City (116), Bozeman (89), Culbertson (87), Wolf Point (81), and Browning (78). The most ice jams reported for one river have occurred on the Missouri River (411), followed by the Milk River (223), the Yellowstone River (201), and the Musselshell River (137), all east of the Continental Divide. West of the divide, ice jams occur most frequently on the Clark Fork River with 35 events. The CRREL data indicated a large number of ice jams at the International Boundary with no specific location; as such, these events were not included in **Figure 4.3-1**. Ice jams attributed to the place referred to as "Locate" were also not charted as there is no location in Montana by that name.

Declared Disasters

Montana counties with emergency and disaster declarations for floods are shown in **Tables 4.3-2 and 4.3-3.** During this period there have been 15 Presidential flood disaster declarations with over $68 million in public assistance granted. During a similar period, there have been 52 state flood emergencies granting over $6.3 million in public assistance to Montana counties, cities, and towns. A description of several recent flood disasters follow these tables.

Figure 4.3-1 Montana Cities and Streams with Most Reported Ice Jams

Source: USACE-CRREL 2018



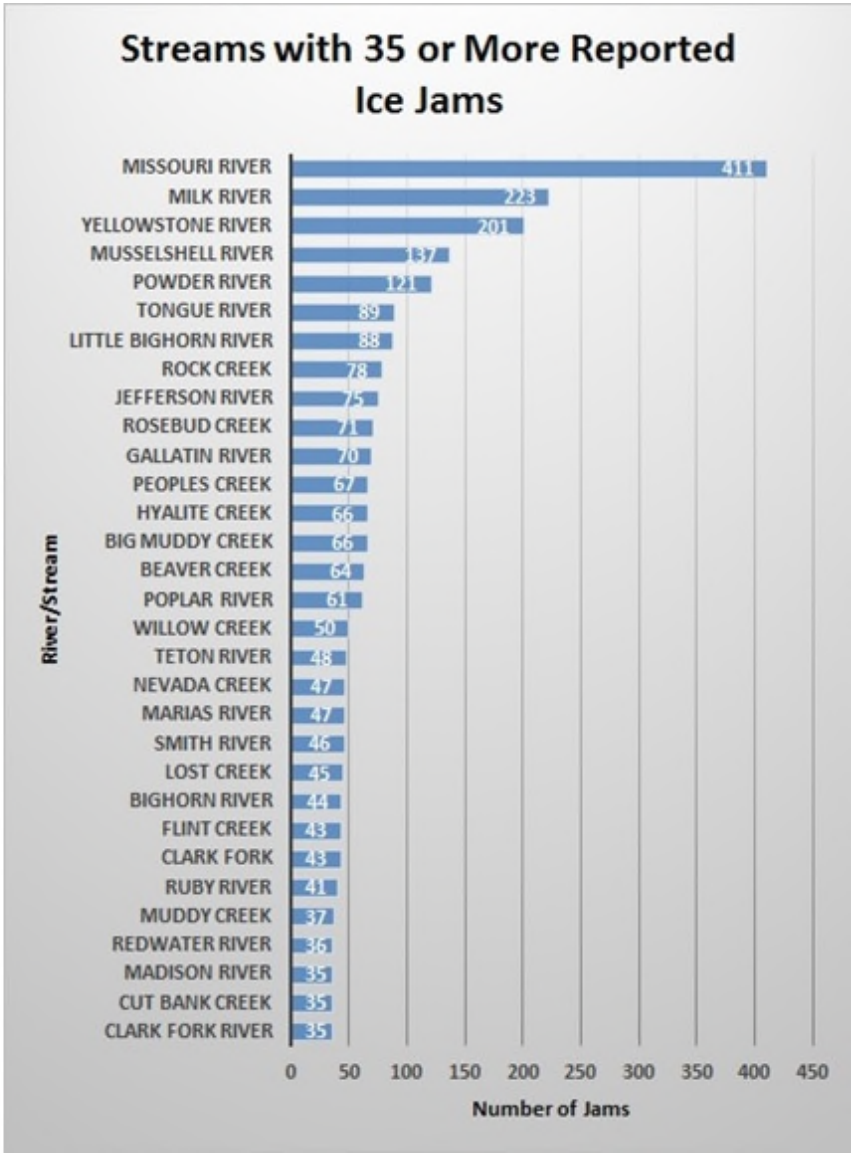


Table 4.3-2. Federal Disaster Declarations for Flooding (1974 - 2017) Source: DES,2017

Year	Federal Declarations	Counties/Reservations	Public Assistance			Total
			Federal	State	Local	
1974	FDAA-417-DR-MT	Deer Lodge, Flathead, Glacier, Lincoln, Mineral, Missoula, Sanders	$603,144	-	-	$603,144
1975	FDAA-472-DR-MT	Broadwater, Cascade, Fergus, Flathead, Glacier, Jefferson, Judith Basin, Lewis & Clark, Meagher, Pondera, Powell, Teton, Toole, Wheatland	$2,070,551	-	-	$2,583,915
1978	FDAA-558-DR-MT	Big Horn, Carbon, Powder River, Rosebud, Stillwater, Sweet Grass, Treasure, Yellowstone	$3,838,126	-	-	$3,838,126
1981	FEMA-640-DR-MT	Broadwater, Cascade, Gallatin, Granite, Jefferson, Lewis & Clark, Meagher, Missoula, Powell, Silver Bow	$4,339,082	$762,796	$313,286	$5,443,164
1986	FEMA-761-DR-MT	Chouteau, Daniels, Dawson, Deer Lodge, Fergus, Glacier, Granite, Liberty, Petroleum, Phillips, Pondera, Powell, Sanders, Teton, Toole, Valley	$1,497,290	$177,421	$321,673	$1,996,384
1986	FEMA-777-DR-MT	Blaine, Garfield, McCone, Phillips, Rosebud, Valley	$893,564	$35,021	$262,829	$1,191,414
1996	FEMA-1105-DR-MT	Chouteau, Deer Lodge, Gallatin, Jefferson, Lewis & Clark, Lincoln, Meagher, Mineral, Missoula, Park, Powell, Ravalli, Sanders, Silver Bow	$1,820,739	$241,888	$365,006	$2,427,633
1996	FEMA-1113-DR-MT	Blaine, Flathead, Hill, Liberty, Phillips, Toole	$1,480,471	$179,892	$313,594	$1,973,957
1997	FEMA-1183-DR-MT	Broadwater, Carbon, Dawson, Deer Lodge, Flathead, Judith Basin, Lincoln, Madison, Meagher, Missoula, Musselshell, Park, Prairie, Ravalli, Richland, Roosevelt, Sanders, Sweet Grass, Treasure, Valley, Wheatland, Yellowstone, Flathead Reservation	$5,762,964	$544,458	$1,379,520	$7,696,015
2010	FEMA-1922-DR-MT	Hill, Chouteau	$517,982	$94,141	$77,185	$689,308
2010	FEMA-1922-DR-MT	Rocky Boy's Reservation	$6,196,753	-	$24,000,000	$30,196,753
2011	FEMA-1996-DR-MT	48 Counties, 5 Reservations	$33,593,227	$8,380,000	$2,784,000	$6,000,000
2013	FEMA-4127-DR-MT	Hill, Blaine, Chouteau, Custer, Dawson, Fergus, Garfield, McCone, Musselshell, Petroleum, Rosebud, Valley Counties, Rocky Boy's, Fort Belknap, Fort Peck Reservations.	$2,847,969	$643,852	$298,895	$3,790,716
2014	FEMA-4172-DR-MT	Broadwater, Dawson, Golden Valley, Jefferson, Lake, Musselshell, Park, Pondera, Prairie, Ravalli, Richland, Rosebud, Sanders, Stillwater, Wheatland	$1,929,381	$155,243	$482,702	$2,567,327
TOTAL			**$65,461,862**	**$11,059,469**	**$29,437,388**	**$68,430,529**

Table 4.3-3. State Emergency Declarations for Flooding (1974 - 2017) Source: DES, 2017

Year	State Declaration/ Public Assistance	County/City/Town	Public Assistance		Total
			State	Local	
1976	PA-ST-76-1	Froid (Roosevelt)	$31,268	$718	$31,986
1978	E0-13-78; PA-ST-78-11	Winnett (Petroleum)	$16,442	$238	$16,680
1978	E0-13-78; PA-ST-78-12	Petroleum County	$119,279	$25,638	$144,917
1979	PA-ST-79-10	Denton (Fergus)	$97,048	$885	$97,933
1979	PA-ST-79-11	Petroleum County	$85,544	-	$85,544
1980	E0-4-80; PA-ST-80-1	Lake County	$8,320	$47,102	$55,422
1984	PA ST-84-2	Beaverhead County	$388,784	$23,699	$412,483
1984	PA ST-84-1	Madison County	$191,245	$27,860	$219,105
1991	EO-12-91; MT-1-91	Teton County	$74,191	$25,622	$74,191
1991	EO-15-91; MT-2-91	Blaine County	$54,203	$23,130	$77,333
1991	EO-24-91; MT-3-91	Richland County	$442,065	$46,097	$488,162
1991	EO-33-91; MT-4-91	Blaine County	$49,882	-	$49,882
1993	EO-11-93; MT-1-93	Custer County	$105,630	$15,910	$121,540
1994	EO-04-94; MT-1-94	Petroleum County	$59,179	$4,099	$63,278
1994	EO-05-94; MT-2-94	Winnett (Petroleum)	$4,977	$240	$5,217
1995	EO-1-95; MT-1-95	Lima (Beaverhead)	$38,994	$385	$39,379
1996	EO-12-96; MT-1-96	Sweet Grass County	$29,899	$18,364	$48,263
1996	EO-12-96; MT-2-96	Park County	$107,445	$38,934	$146,379
1996	EO-12-96; MT-3-96	Livingston (Park)	$18,399	$17,888	$36,287
1996	EO-12-96; MT-4-96	Stillwater County	$27,876	$38,454	$66,330
1996	EO-12-96; MT-5-96	Miles City (Custer)	$11,024	$14,844	$25,868
1997	EO-4-97; MT-2-97	Miles City (Custer)	$41,788	$15,842	$57,630
1997	EO-14-97; MT-3-97	Libby (Lincoln)	$57,549	$6,434	$63,983
1997	EO-16-97; MT-4-97	Wolf Point (Roosevelt)	$13,833	$3,994	$17,827
1998	EO-10-98; MT-1-98	Custer County	$21,993	$17,982	$39,975
1998	EO-10-98; MT-2-98	Hill County	$134,124	$47,550	$181,674
1998	EO-10-98; MT-3-98	Jefferson County	$50,453	$45,260	$95,713
1998	EO-10-98; MT-4-98	Roosevelt County	$110,899	$46,552	$157,451
1998	EO-10-98; MT-5-98	Culbertson (Roosevelt)	$15,474	$1,184	$16,658
1999	EO-3-99 ; MT-1-99	Daniels County	$546,305	$10,062	$556,367
2001	EO-19-01; MT-1-01	Custer County	$56,322	$15,424	$71,746
2003	EO-5-03; MT-1-03	Roosevelt County	$14,260	$92,898	$107,158
2005	EO-09-05; MT-1-05	Sweet Grass County	$148,159	$27,782	$175,941
2005	EO-11-2005 ; MT-2-05	Chouteau County	$220,826	$3,218	$224,044
2005	EO-11-2005 ; MT-3-05	McCone County	$89,311	$35,496	$124,807
2005	EO-11-2005 ; MT-4-05	Ronan (Lake)	$303,517	$10,524	$314,041
2005	EO-15-2005 ; MT-5-05	Dawson County	$80,729	$21,200	$101,929
2006	EO-39-06; MT-2-06	Ravalli County	$184,576	$143,374	$327,950
2007	EO-13-07; MT-2-07	Nashua (Valley)	$4,364	$390	$4,754
2007	EO-13-07; MT-3-07	Glasgow (Valley)	$144,492	$5,082	$149,574
2007	EO-13-07; MT-4-07	Melstone (Musselshell)	$600	$400	$1,000
2008	EO-34-2008; MT-2-08	Livingston (Park)	$255,237	$48,356	$303,593
2009	EO-6-2009; MT-1-09	Brockton (Roosevelt)	$6,473	$160	$6,633
2009	EO-8-2009; MT-2-09	Custer County	$32,184	$17,067	$49,251
2010	EO-16-2010; MT-1-10	Custer County	$90,824	-	$90,824
2010	EO-20-2010 ; MT-2-10	Dawson County	$44,409	$23,738	$68,147
2010	EO- 21-2010; MT-3-10	Roosevelt County	$32,209	$36,732	$68,941
2010	EO- 21-2010; MT-4-10	Petroleum County	$72,940	$3,136	$76,076
2011	EO-3-2011; MT-1-11	Libby (Lincoln)	$68,165	$5,570	$73,735
2014	EO-3-2014; MT- 01-14	Manhattan, (Gallatin)	$59,479	$5,276	$64,755
2015	EO-07-2015; MT-01-15	Powder River County	$198,071	$17,914	$215,985
2017	EO-04-2017; MT-06-2017	Daniels County	$178,451	$11,898	$190,349
TOTAL			**$5,239,710**	**$930,686**	**$6,304,690**

2010 Presidential Flood Disaster: Between June13-17, 2010, the Rocky Boy's Reservation in Hill and Choteau Counties received 4.8 inches of precipitation which caused major flooding. The floods left 300 homes without running water on the reservation and caused major disruption to daily life. Thirty (30) families were evacuated and eight miles of water lines were destroyed. More than 200 homes were without drinking water and about 500 housing units had water damage. In addition, flood waters destroyed many bridges, culverts and driveways.

The main concern was the road leading to the health clinic and tribal offices which was completely destroyed. Rushing waters moved the $12 million clinic several inches, damaging a weight-bearing wall and rendering the facility a total loss. A Presidential disaster declaration was received and $30.2 million in public assistance was granted.

2011 Presidential Flood Disaster: A Presidential disaster declaration was declared on June 17, 2011 for the State of Montana. Flooding resulting from heavy rains (4-10 inches in 24 hours) and run off from snow melt of record snows occurred throughout the state. Out of the 56 counties, 46 were affected along with 6 of the 7 Tribal Nations. Damages were over $60 million statewide.

Roundup was one of the hardest-hit towns as record flooding struck twice in two weeks forcing residents to flee homes as the Musselshell River gushed into low-lying neighborhoods. Cars and trucks left behind were nearly submerged, and the ground floors of some homes were swamped by the river before it began receding. Officials evacuated between 30 and 35 residences and businesses on the southern end of town. It was a repeat of a scene that occurred two weeks prior when the Musselshell flooded dozens of homes and businesses in Roundup. Much of the town was inundated for almost a week.

Town of Roundup under water. Photo: Billings Gazette

Flood warnings also covered much of the rest of the state, stretching from southwestern Missoula to northeastern Glasgow. The Lewis and Clark County Commission declared a flood emergency and officials issued an evacuation advisory for at least a half-dozen homes in East Helena. Upstream from Missoula, the Clark Fork River rose two feet above major flood stage, threatening East Missoula homes and roadways in the area.

2013 Presidential Flood Disaster: A disaster was declared on July 10, 2013 due to flooding which resulted from heavy rains. Near record amounts of rain caused infrastructure damage for 8 counties and 3 Tribal Nations. Damages were almost $3.8 million.

2014 Presidential Flood Disaster. A rain on snow event in March 2014 caused wide-spread flooding in 15 counties. A blizzard the week before dumped a massive amount of snow on the state and then warm temperatures and a half-inch of rain caused numerous flash floods. The Ravalli County town of Florence was particularly hit hard because of a high density of homes in the high-water zone.

Magnitude and Probability

The magnitude of a flood event can be measured in terms of severity; how much precipitation occurred and under what conditions, how many evacuations were required, and level of response necessary. Hydrologists often use terms like "100-year flood" or "500-year flood" to convey the flood's magnitude. These numbers are developed by extrapolating historical data to longer time periods. The term "100-year flood" means that, in any given year there is a one in 100 chance of a flood of that particular magnitude. In other words, the probability of a flood of that particular magnitude in any given year is 1/100 or 1 percent. The actual amount of water that causes a particular flood (e.g., a 100-year flood) varies from river to river.

Approximately 11 percent of the reported ice jams in Montana have known damages. The most common damages include bridge and residential damage, road flooding, evacuations, dike and levee damage, and agricultural damage. There have been at least 17 deaths from ice jam flooding in Montana. The majority of these deaths were due to flash floods released during ice jam break-up (USACE CRREL, 2007).

SHELDUS data on Montana's flood losses between 1960 and 2017 (adjusted for inflation) indicate that there have been 11 fatalities (but not all fatalities may have been recorded), $84.9 million in property damage and $19.6 million in crop damage across the state. DES District 4 counties cumulatively had the highest flood losses with $28.6 million in property damage, while District 5 counties had the second highest property damage from flooding with $18.6 million. **Table 4.3-4** presents the counties with the most property damage from flooding during this 50+ year period.

Table 4.3-4. Top 20 Counties with Flood Losses (2016 Dollars): 1960 – 2017

County	Property Loss	Crop Loss	County	Crop Loss	Property Loss
Musselshell	$7,924,710	$298,138	Roosevelt	$2,133,078	$3,685,141
Flathead	$6,898,758	$169,269	Valley	$1,472,181	$3,458,221
Custer	$6,748,877	$342,164	Richland	$1,377,579	$1,931,775
Sweet Grass	$4,678,725	$322,836	Dawson	$1,274,506	$2,757,057
Big Horn	$4,485,408	$140,755	Daniels	$1,265,819	$1,597,616
Lincoln	$3,734,484	$2,463	Sheridan	$1,257,363	$1,414,047
Roosevelt	$3,685,141	$2,133,078	Garfield	$1,099,990	$1,636,799
Yellowstone	$3,666,897	$151,057	Phillips	$1,040,837	$1,062,355
Fallon	$3,595,764	$33,220	McCone	$1,038,461	$1,439,932
Valley	$3,458,221	$1,472,181	Wibaux	$988,467	$1,178,567
Powder River	$3,340,464	$57,854	Madison	$935,034	$490,549
Dawson	$2,757,057	$1,274,506	Chouteau	$926,125	$1,231,347
Stillwater	$2,231,327	$22,037	Blaine	$891,568	$2,183,949
Blaine	$2,183,949	$891,568	Hill	$888,863	$1,541,026
Richland	$1,931,775	$1,377,579	Custer	$342,164	$6,748,877
Carbon	$1,790,343	$21,140	Sweet Grass	$322,836	$4,678,725
Garfield	$1,636,799	$1,099,990	Musselshell	$298,138	$7,924,710
Daniels	$1,597,616	$1,265,819	Treasure	$170,030	$158,522
Hill	$1,541,026	$888,863	Flathead	$169,269	$6,898,758
McCone	$1,439,932	$1,038,461	Prairie	$167,787	$393,683

Source: SHELDUS, 2017

Probability is based on hazard frequency over a 10-year period. The MHMP Planning Team rated flooding as "Likely". A likely rating indicates that flooding will not likely occur every year but will

occur more than once every 10 years. The *Climate Change* section below discusses the potential change in frequency of flooding associated with the changing climate.

National Flood Insurance Program

The National Flood Insurance Program (NFIP) is the primary insurer for flood insurance in the United States. Currently, there are 136 Montana communities that participate in the NFIP. Of these, 12 have no special flood hazard and 36 are minimally flood prone (FEMA, 2018). As of December 31, 2017, Montana had 4,874 NFIP policies in-force insuring over $1 billion in property. From 1978 through December 31, 2017, the NFIP has paid over $10.6 million associated with 1,931 claims from the flooding of insured properties (FEMA, 2018). Counties and cities with the highest flood insurance claims are shown below in **Table 4.3-5.** Note that although flood insurance claims are being used to show past losses, this data is not an entirely accurate representation of flood losses. Many homeowners without flood insurance may have sustained flood damages and those losses would not be reflected in these figures.

Table 4.3-5. Communities with Highest Flood Insurance Claims (1/1978 to 9/30/2017)

County	Insurance Claim Amount	Cities	Insurance Claim Amount
Valley County	$1,396,360	Roundup (Musselshell Co.)	$866,500
Yellowstone County	$777,408	Miles City (Custer Co.)	$403,335
Park County	$718,644	Billings (Yellowstone Co.)	$355,409
Missoula County	$550,793	Bozeman (Gallatin Co.)	$183,990
Flathead County	$538,070	Great Falls (Cascade Co.)	$152,464

Source: FEMA, 2017 (https://bsa.nfipstat.fema.gov/reports/1040.htm#30)

Nine (9) communities in Montana do not participate in the NFIP (**Table 4.3-6**). According to FEMA, all nine have been identified in a flood hazard area (FEMA, 2018).

Table 4.3-6. Counties & Communities Not Participating in NFIP (12/31/2017)

Counties	Cities/Towns
Garfield County	Grass Range, Town of (Fergus)
McCone County	Poplar, City of (Roosevelt)
Prairie County	Thompson Falls, Town of (Sanders)
Wibaux County	Medicine Lake, Town of (Sheridan)
	Sunburst, Town of (Toole)

Source: FEMA, 2018 (https://www.fema.gov/cis/MT.html)

The Biggert-Waters Flood Insurance Reform Act of 2012 was signed into law on July 6, 2012, calling for changes to the NFIP to make it more sustainable. Key provisions of the legislation will require the NFIP to raise rates to reflect true flood risk, make the program more financially stable, and change how Flood Insurance Rate Map (FIRM) updates impact policyholders. On March 21, 2014, President Obama signed the Homeowner Flood Insurance Affordability Act of 2014 into law. This law repeals and modifies certain provisions of the Biggert-Waters Flood Insurance Reform Act and makes additional program changes to other aspects of the program not covered by that Act.

Montana has 162 repetitive losses through the NFIP (**Table 4.3-7**), most of which have been in unmapped areas. A repetitive loss property is any insurable building for which two or more claims of more than $1,000 were paid by the NFIP within any rolling ten-year period, since 1978. Valley County has had the majority of these (55) followed by Yellowstone County (16). There are no Severe Repetitive Loss (SRL) properties in the State. Severe repetitive loss properties have had at least four

NFIP claim payments over $5,000 each and the cumulative amount exceeding $20,000; or, where at least two separate claim payments have been made with the cumulative amount exceeding the market value of the building.

Table 4.3-7. Communities with Highest Number of NFIP Repetitive Losses as of 3/31/2018

Community	RL Buildings	RL Buildings Insured	RL Losses Total	RL Losses Insured	$ Losses Total	$ Losses Insured
Billings, City of	6	1	13	2	$72,744	$8,863
Carbon County	3	0	7	0	$76,356	$0
Fergus County	1	0	2	0	$93,252	$0
Flathead County	1	0	2	0	$9,156	$0
Gallatin County	1	1	2	2	$13,001	$13,001
Glasgow, City of	2	0	4	0	$69,109	$0
Hill County	1	1	2	2	$23,447	$23,447
Lake County	1	1	2	2	$7,359	$7,359
Lewis and Clark County	1	0	3	0	$36,989	$0
Lewistown, City of	1	1	2	2	$6,620	$6,620
Lincoln County	2	0	4	0	$58,275	$0
Malta, City of	1	0	2	0	$4,662	$0
Meagher County	1	1	2	2	$56,021	$56,021
Missoula County	6	1	14	2	$125,294	$15,934
Musselshell County	1	1	3	3	$79,199	$79,199
Park County	7	2	15	5	$156,521	$62,881
Phillips County	1	0	2	0	$10,943	$0
Ravalli County	1	0	2	0	$29,260	$0
Roundup, City of	3	2	8	5	$394,297	$328,671
Valley County	23	2	55	9	$676,972	$107,253
Yellowstone County	5	2	16	7	$331,726	$109,092
TOTAL	**69**	**16**	**162**	**43**	**$2,339,982**	**$818,395**

Source: FEMA, 2018. Notes: RL = Repetitive Loss.

RL Buildings = Total number of properties for each state.
RL Buildings Insured = Total number of properties that are currently insured.
RL Losses Total = Total number of losses for the properties in each state.
RL Losses Insured = Total number of losses for the properties in each state that are currently insured.
$ Losses Total = Total payments on losses for the properties in each state.
$ Losses Insured = Total payments on losses for the properties in each state that are currently insured.

The State's strategy to reduce NFIP repetitive loss properties is to work with local communities to review repetitive loss structures and to utilize previous mitigation plans and/or develop project plans which would identify willing and voluntary homeowners desiring to mitigate their Repetitive Loss structures. The State succeeded in the acquisition of seven substantially damaged homes and one business from the floods of 2011, 2013, and 2014 (DR-1996, DR-4127 and DR-4198) and considers this considerable progress since no acquisitions/elevations had been done in Montana in well over 15 years. Acquisitions were made within the City of Deer Lodge (Powell County), the City of Missoula, Musselshell County, and in Fergus County. An acquisition project of repetitive loss properties in the town of Harlem (Blaine County) failed. The home owners had agreed to sell; however, their homes weren't worth enough to make it feasible to move them.

Valley, Yellowstone and Park Counties together have had over 50 percent of the NFIP repetitive losses for the state and will remain as viable targets for Repetitive Loss Strategy actions in the foreseeable future. Floodplain mitigation planning work has already been completed in these

communities. Section 6.0, *Capabilities Assessment*, discusses the State's intention to utilize the FEMA Flood Mitigation Assistance (FMA) grant as part of its Repetitive Loss Strategy.

The NFIP Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. CRS discounts on flood insurance premiums range from 5 percent up to 45 percent. Those discounts provide an incentive for new flood protection activities that can help save lives and property in the event of a flood. To participate in the CRS, a community can choose to undertake some of the 18 public information and floodplain management activities. Based on the total number of points a community earns, the CRS assigns you to one of ten classes. The discount on flood insurance premiums is based on your class. **Table 4.3-8** presents the Montana communities that participate in the CRS.

Table 4.3-8. Community Rating System Eligible Communities as of 10/1/2017

Community Name	Current Effective Date	Current Class (% Discount)	Community Name	Current Effective Date	Current Class (% Discount)
Belt, Town of	10/1/1992	8 - (10%)	Lewis and Clark	10/1/2002	8 - (10%)
Bozeman, City of	10/1/2009	8 - (10%)	Miles City, City of	5/1/2014	8 - (10%)
Cascade County	5/1/2013	8 - (10%)	Missoula, City of	5/1/2002	8 - (10%)
Circle, Town of	5/1/2015	10 - (0%)	Missoula County	10/1/2017	7 - (15%)
Flathead County	10/1/2007	8 - (10%)	Three Forks, Town	10/1/1998	8 - (10%)
Gallatin County	10/1/2015	8 - (10%)	Yellowstone	5/1/2003	8 - (10%)
Great Falls, City	10/1/2017	7 - (15%)			

Source: FEMA, 2017 (https://www.fema.gov/media-library-data/1503240360683-30b35cc754f462fe2c15d857519a71ec/20_crs_508_oct2017.pdf30b35cc754f462fe2c15d857519a71ec/20_crs_508_oct2017.pdf)

Vulnerability and Area of Impact

Flooding becomes a hazard when people compete with nature for the use of floodplains. If floodplain areas were left in their natural state, flooding would not cause major damage. Urban, industrial and other surface development in natural floodplain areas of Montana has increased the vulnerability to serious flooding. The extent of artificial surface area created by development prevents rainfall from soaking into the ground and increases the rate of runoff.

Vulnerability to flooding is also dependent on local weather conditions and site-specific flood water constraints. Some areas can be completely immune to flooding because the steeply incised river banks have physically impeded development near the river, limiting flood damage when floodwaters arrive. Other areas experience flooding annually where meandering rivers have created broad floodplains and development has encroached and impeded floodwaters. Because local conditions have a significant impact on the vulnerability to flooding, historic data on occurrence and loss is the best means to assess flooding vulnerability statewide.

There is an increased risk of flash flooding and debris flows in Montana as a result of recent active fire seasons. Most burn areas will be prone to flash flooding and debris flows for at least 2 years after the fire. Locations downhill and downstream from burned areas are most susceptible, especially near steep terrain. Rainfall that would normally be absorbed will run off extremely quickly after a wildfire, as burned soil can be as water repellant as pavement. As a result much less rainfall is required to produce a flash flood. As water runs downhill through burned areas it can create major erosion and pick up large amounts of ash, sand, silt, rocks and burned vegetation. The force of the rushing water

and debris can damage or destroy culverts, bridges, roadways, and buildings even miles away from the burned area (NWS, 2013).

Statewide Vulnerability

The flood hazard does not pose a uniform risk across the State. As such, the MHMP analysis was completed using Digital Flood Insurance Rate Maps (DFIRMs) adopted by the communities. In addition, and to illustrate the potential for increased flooding due to climate change, channel migration maps were added to the impact area for flooding, as well as data from a flood model completed by FEMA in 2010 using Hazards of the U.S. (HAZUS) software.

Figures 4.3-2 A-F present the flood hazard impact area used in the MHMP analysis by DES District. These maps also show the perimeters of the wildfires from 2017 to indicate where flash flooding and debris flows may occur over the next several years; however, this data was not included in the MHMP flood analysis.

To complete the vulnerability analysis for the flood hazard, GIS was used to intersect the flood hazard impact area with both the general building stock, critical facility, cultural resource datasets. Vulnerable population was calculated based on U.S. Census county estimates. Exposure values are presented in **Table 4.3-9**. **Appendix B-4** presents supporting documentation from the risk assessment including a list of critical facilities in the flood hazard area and loss estimates for counties and incorporated cities and towns.

Table 4.3-9. Flooding Exposure Summary by DES District

Item	District 1	District 2	District 3	District 4	District 5	District 6
Flood Hazard Area (Square Miles)	885.2	1,058.5	681.5	1,065.0	791.8	1,278.3
Percent Flood Hazard Area	3.5%	4.4%	2.7%	4.0%	3.6%	5.4%
Residential Building Exposure ($)	$1,641,205,506	$690,899,632	$820,883,904	$380,375,588	$783,410,924	$129,715,418
Residential Building Exposure (# structures)	9,936	5,413	5,161	3,828	5,534	1,285
Commercial, Ag, Industrial Building Exposure ($)	$732,808,157	$420,852,703	$545,045,361	$150,694,946	$647,486,255	$123,369,955
Commercial, Ag, Industrial Building Exposure (# structures)	1,826	1,548	1,432	872	1,325	792
Annual Loss	$275,367	$192,235	$154,751	$525,570	$384,187	$341,711
Critical Facility Exposure ($)	$2,232,510	$0	$106,698,849	$14,935,997	$2,835,741	$1,382,229
Critical Facility Exposure (# structures)	9	0	25	2	1	2
Cultural Resources (# features)	5	13	19	6	9	4
Population Living in Hazard Area	25,193	9,472	10,052	5,388	8,301	1,781
Population Under 18 Living in Hazard Area	8,735	3,873	3,247	1,993	3,437	751
Population Over 65 Living in Hazard Area	8,526	2,994	2,898	2,443	2,848	748

Risk assessment results indicate that DES District 1 has the highest building stock exposure in terms of number of structures at risk from flooding, followed by Districts 2, 5 and 3. 3 has the highest number of critical facilities and cultural resources at risk from flooding, while District 1 has the most population at risk. Annual loss is highest in District 4 followed by Districts 5 and 6.

Table 4.3-10 presents a vulnerability summary of the flooding hazard as it relates to percent exposure and growth rates in Montana's counties, cities and towns. Percent exposure was derived by dividing the value of residential and commercial/agricultural/industrial building stock exposed to the hazard into the total value of the building stock. Percent exposure is a more accurate way of displaying vulnerability than presenting jurisdictions with the highest exposure because it reflects areas with the greatest risk opposed to those with high value real estate. A complete ranking of percent exposure is presented in the *Flooding* section of **Appendix B-4**.

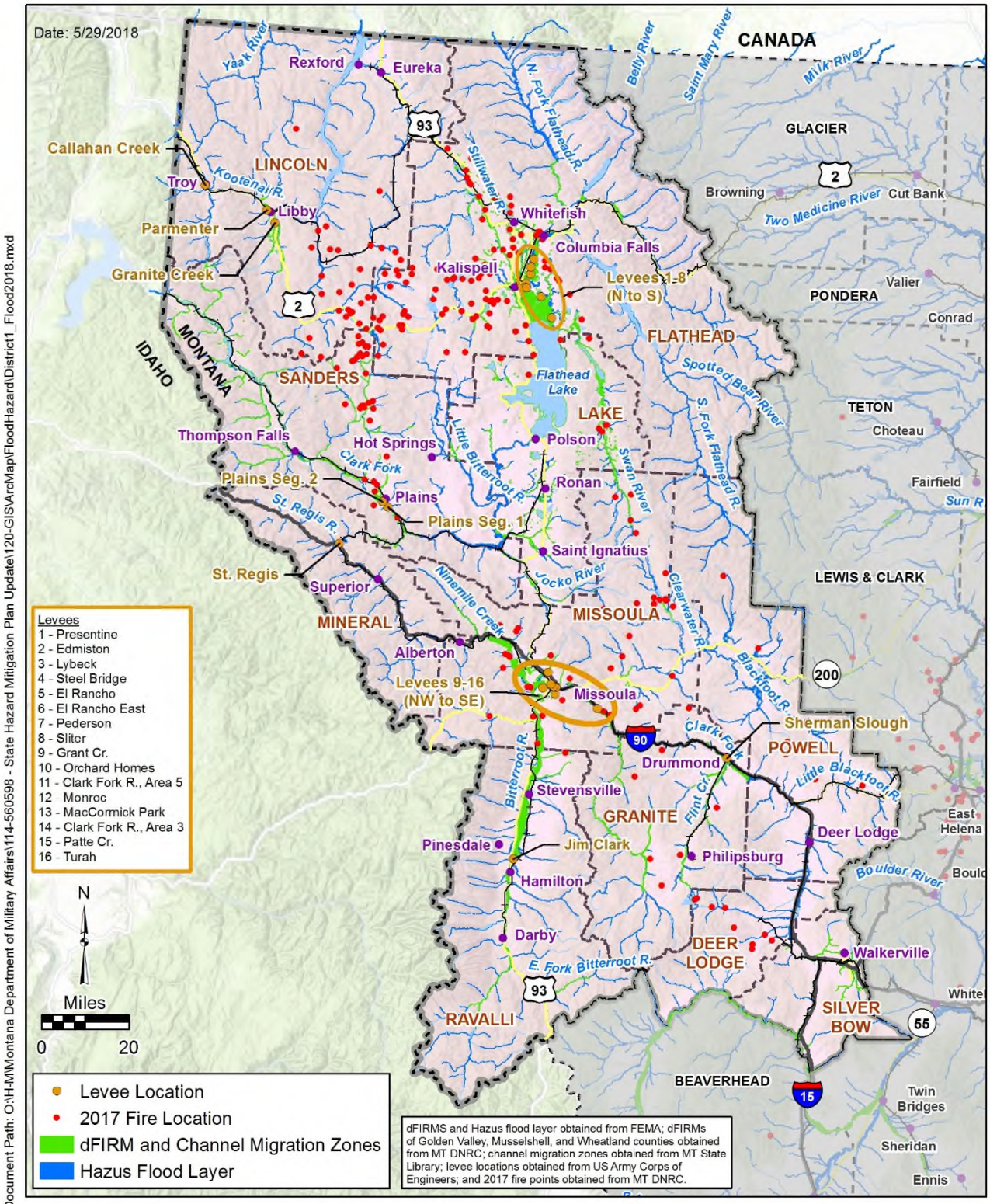
Counties with the highest exposure from flooding include: Custer, Phillips, Blaine, Sanders, and Hill; while the top cities/towns include: Miles City (Custer), Three Forks (Gallatin Co.), Belt (Cascade Co.), Fort Benton (Chouteau Co.), and Malta (Phillips Co.). **Figure 4.3-3** presents percent exposure for the top counties and cities/towns showing regional vulnerability.

Percent exposure was multiplied by the change in population between the 2010 U.S. Census and 2016 census estimates to present the jurisdictions with the highest risk that are experiencing the fastest growth. The number of residential building permits is also listed for the top-ranking jurisdictions. A complete ranking is presented in the *Flooding* section of **Appendix B-4**.

Counties with the highest exposure from flooding that are experiencing the fastest population growth include: Richland, Custer, Granite, Flathead, and Sheridan; while the top cities/towns (with population over 500) are Sidney (Richland Co.), Three Forks (Gallatin Co.), Miles City (Custer Co.), Plentywood (Sheridan Co.), and Havre (Hill Co.). **Figure 4.3-4** presents percent exposure and population change for the top counties and cities/towns showing the most vulnerable areas experiencing the fastest population growth.

Table 4.3-10. Flooding Exposure Summary for Top Counties, Cities and Towns

County	% Flood Exposure	% Growth (2010 to 2016)	# of Building Permits (2010 to 2016)	$ Residential Exposure	# Residences at Risk	$ Commercial/ Ag/Industrial Exposure	# Commercial/ Ag/Industrial Buildings at Risk	$ Critical Facilities Exposure	# Critical Facilities at Risk
Counties with Highest Percent Exposure ($ Residential + $ Commercial-Ag- Industrial Exposure in Hazard Area / Total Exposure)									
Custer	43.7%	1.89%	0	$286,568,842	3,015	$75,764,259	435	$14,935,997	2
Phillips	20.6%	-2.90%	2	$42,726,325	405	$40,593,806	272	$0	0
Blaine	16.6%	1.67%	0	$31,231,440	384	$48,183,851	428	$1,379,812	1
Sanders	16.1%	1.05%	0	$104,637,583	732	$38,551,934	205	$0	0
Hill	14.6%	2.70%	4	$117,144,721	1,152	$62,924,716	266	$0	0
Mineral	14.1%	-0.93%	1	$28,279,240	211	$12,320,415	48	$0	0
Treasure	14.1%	-3.76%	0	$807,559	24	$7,516,399	72	$0	0
Cities/Towns with Highest Percent Exposure (Towns with Pop. > 500) ($ Residential + $ Commercial- Ag- Industrial Exposure in Hazard Area / Total Exposure)									
Miles City	64.1%	2.74%	NA	$248,756,573	2,549	$51,264,038	284	$2,399,029	1
Three Forks	53.9%	3.86%	NA	$56,359,313	454	$11,375,864	53	$251,183	1
Belt	47.6%	-1.53%	NA	$4,367,519	44	$2,465,070	10	$0	0
Fort Benton	38.5%	-0.55%	NA	$37,643,607	207	$9,282,023	63	$0	0
Malta	32.0%	-2.41%	NA	$29,990,979	280	$12,340,104	72	$0	0
Browning	26.3%	1.45%	NA	$2,570,682	64	$1,983,274	7	$0	0
Chinook	25.9%	2.43%	NA	$20,400,471	243	$186,780	2	$0	0
Counties with Highest Percent Exposure Which Have Fastest Growth Rates (% Exposure X % Population Change 2010 to 2016)									
Richland	9.9%	15.12%	16	$56,268,184	352	$35,976,344	118	0	0
Custer	43.7%	1.89%	0	$286,568,842	3,015	$75,764,259	435	$14,935,997	2
Granite	8.7%	8.58%	NA	$18,249,972	152	$13,842,389	36	0	0
Flathead	9.5%	7.29%	316	$845,565,815	4,885	$338,299,562	838	0	0
Sheridan	7.5%	7.24%	2	$19,840,841	176	$4,025,324	47	0	0
Missoula	9.2%	5.88%	930	$253,146,901	1,265	$117,968,849	143	$2,170,263	7
Roosevelt	6.7%	7.78%	1	$11,501,280	123	$17,896,550	142	$2,417	1
Cities/Towns with Highest Percent Exposure Which Have Fastest Growth Rates (Towns with Pop. > 500) (% Exposure X % Population Change 2010 to 2016)									
Sidney	11.4%	20.94%	NA	$42,654,619	246	$6,280,585	24	0	0
Three Forks	53.9%	3.86%	NA	$56,359,313	454	$11,375,864	53	$251,183	1
Miles City	64.1%	2.74%	NA	$248,756,573	2,549	$51,264,038	284	$2,399,029	1
Plentywood	17.8%	8.93%	NA	$18,685,097	155	$291,498	3	0	0
Havre	22.0%	5.44%	NA	$64,504,993	613	$41,006,384	120	0	0
Forsyth	21.3%	4.92%	NA	$20,798,655	265	$884,443	6	0	0
Chester	23.5%	4.19%	NA	$7,514,841	89	$4,140,429	34	0	0



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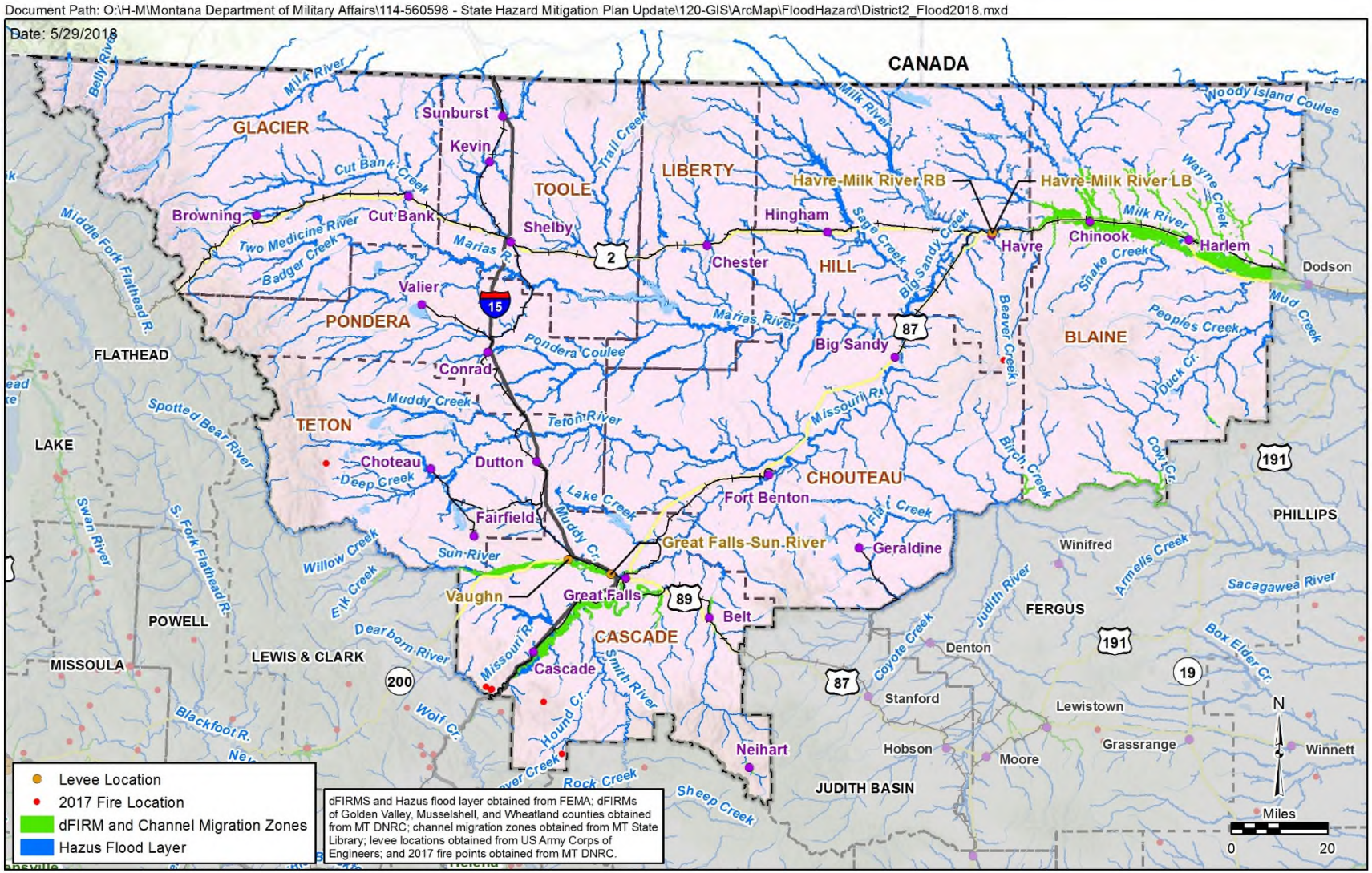
Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 1 County
- County

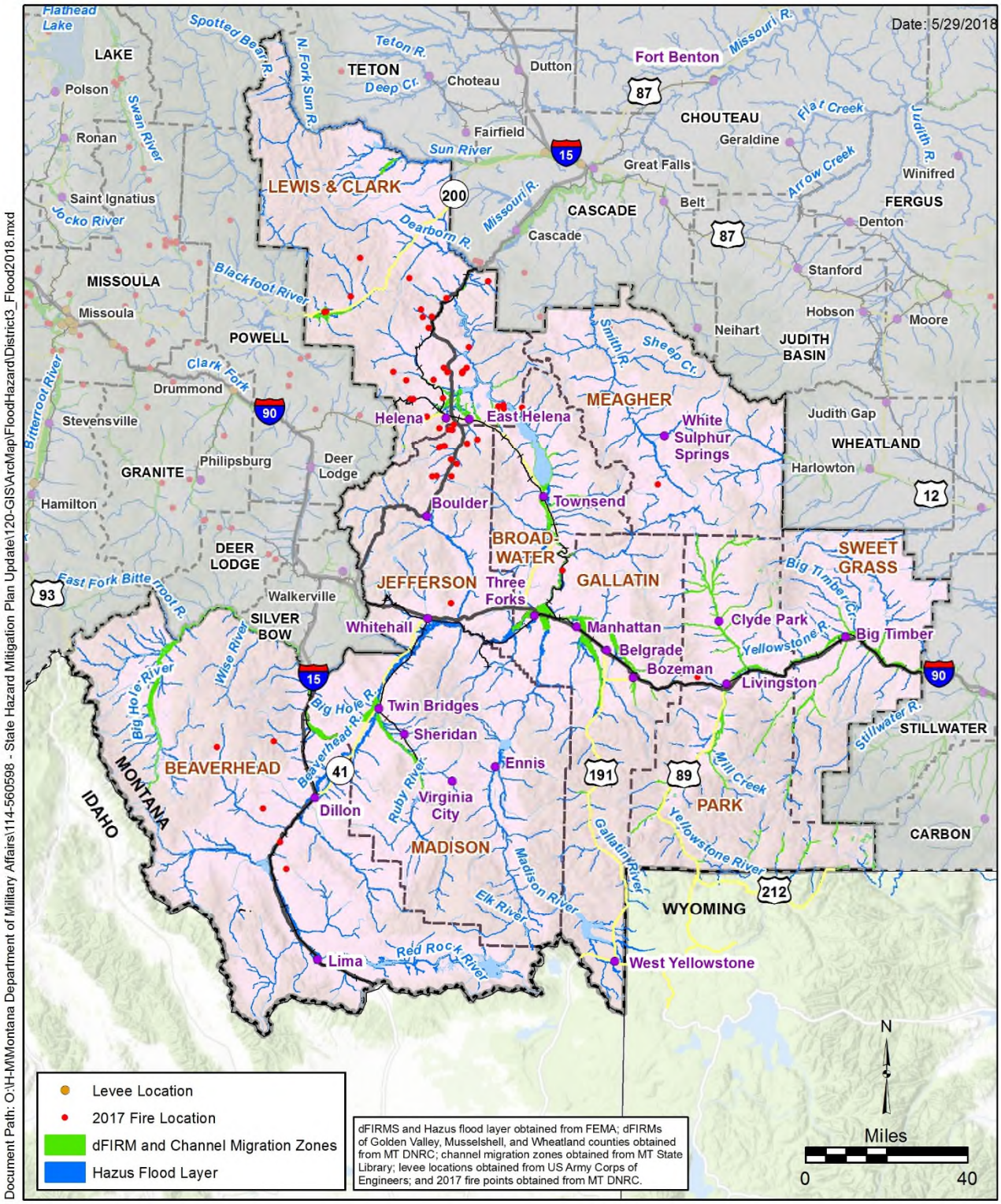
Figure 4.3-2A
Flood Hazard Area
DES District 1
State of Montana MHMP 2018 Update



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 2 County
- County

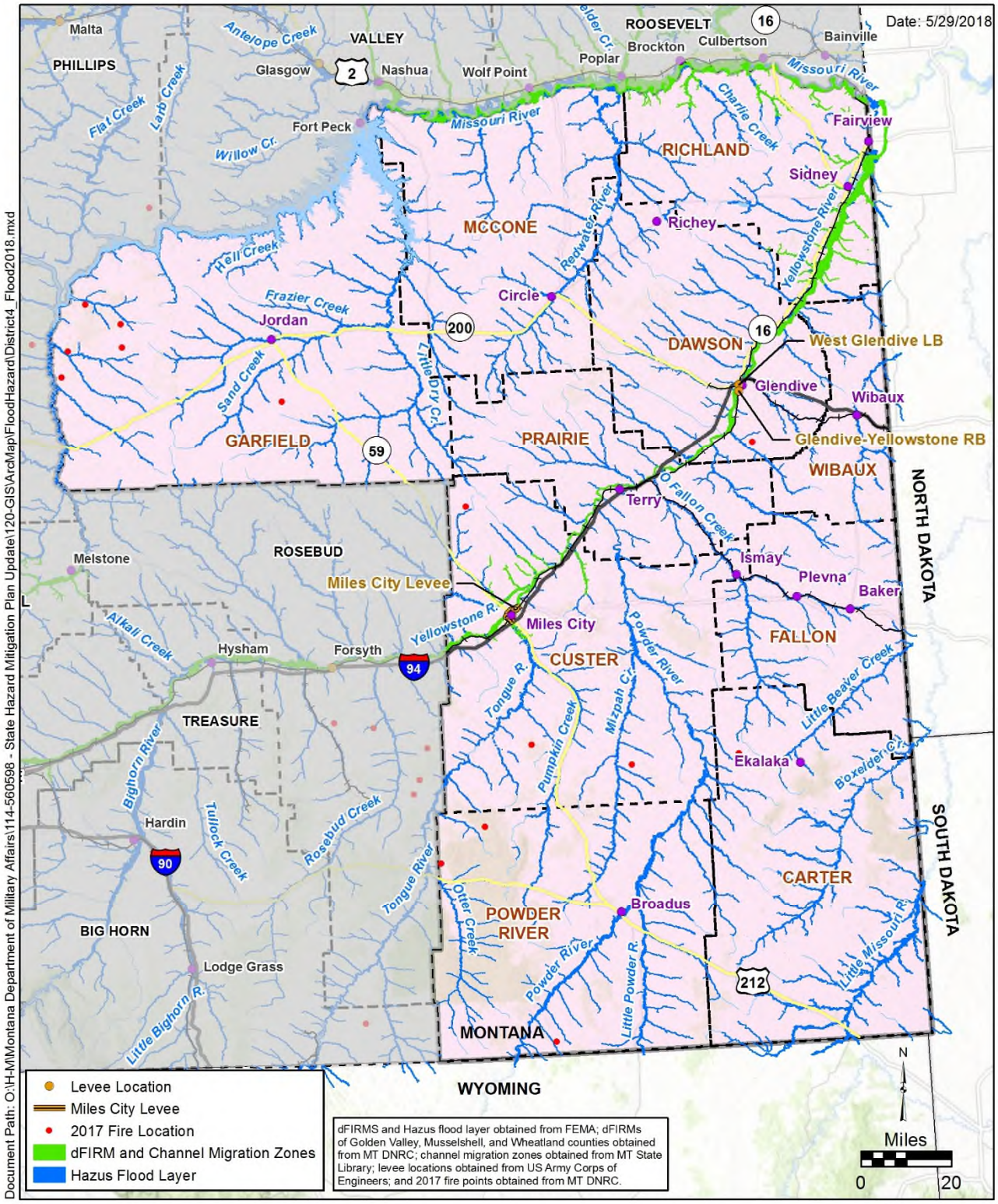
Figure 4.3-2B
Flood Hazard Area
DES District 2
State of Montana MHMP 2018 Update



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 3 County
- County

Figure 4.3-2C
Flood Hazard Area
DES District 3
State of Montana MHMP 2018 Update



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- County
- DES District 4 County

Figure 4.3-2D
Flood Hazard Area
DES District 4
State of Montana MHMP 2018 Update

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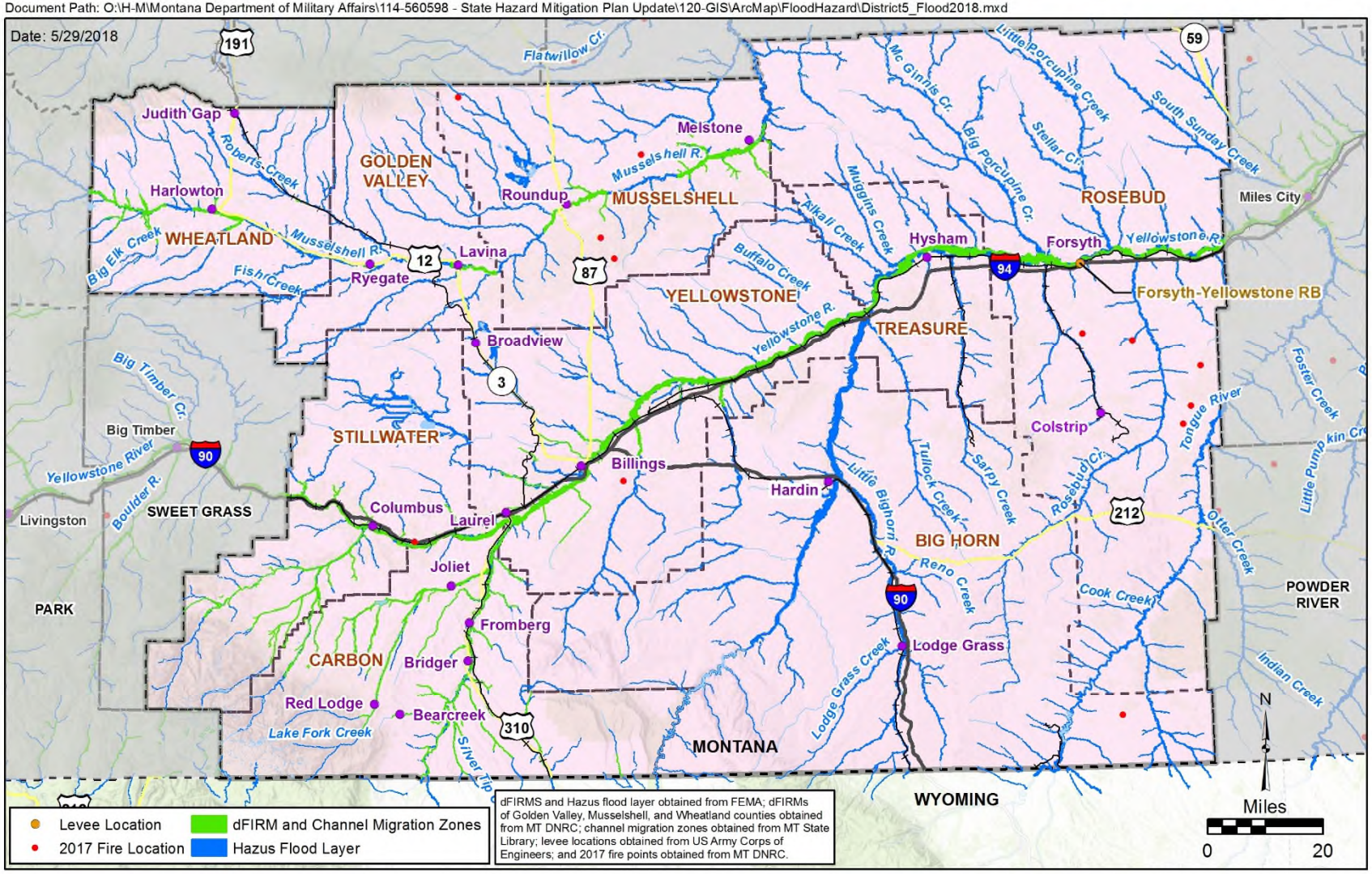

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 5 County
- County

Figure 4.3-2E
Flood Hazard Area
DES District 5
State of Montana MHMP 2018 Update

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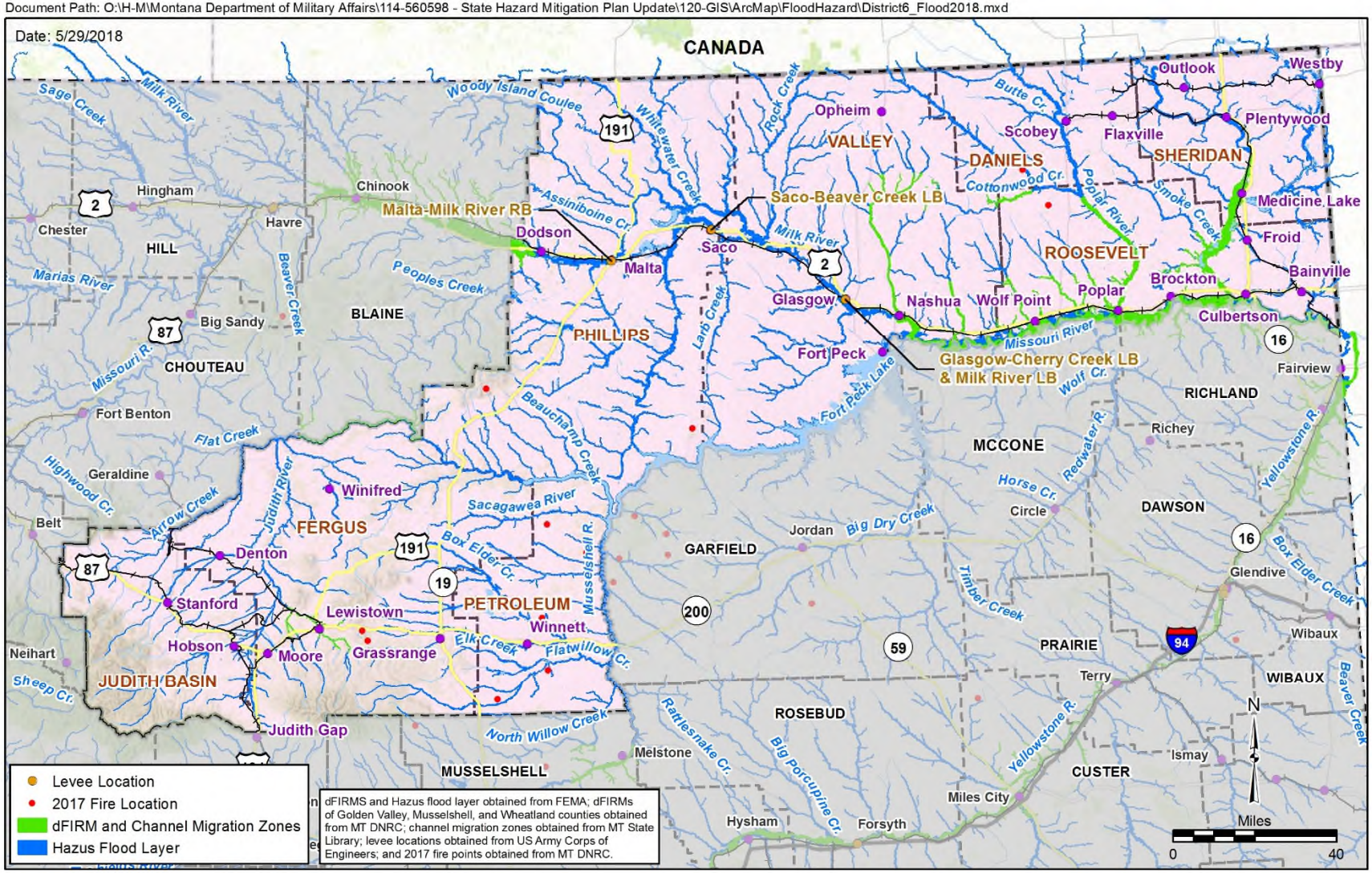

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 6 County
- County

Figure 4.3-2F
Flood Hazard Area
DES District 6
State of Montana MHMP 2018 Update

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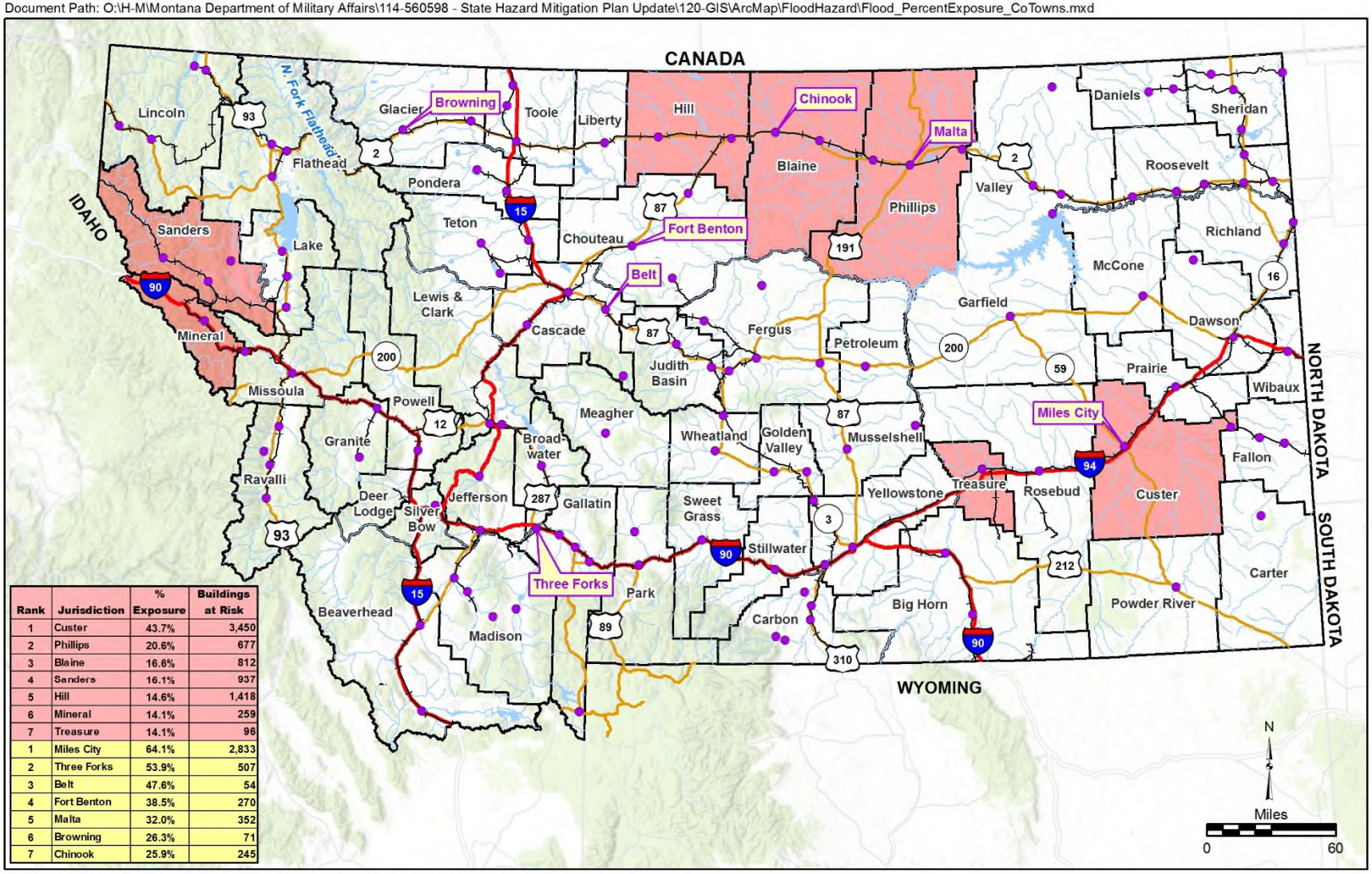

Rank	Jurisdiction	% Exposure	Buildings at Risk
1	Custer	43.7%	3,450
2	Phillips	20.6%	677
3	Blaine	16.6%	812
4	Sanders	16.1%	937
5	Hill	14.6%	1,418
6	Mineral	14.1%	259
7	Treasure	14.1%	96
1	Miles City	64.1%	2,833
2	Three Forks	53.9%	507
3	Belt	47.6%	54
4	Fort Benton	38.5%	270
5	Malta	32.0%	352
6	Browning	26.3%	71
7	Chinook	25.9%	245

Buildings at Risk = Residences, Commercial, Agricultural, and Industrial structures in hazard area.

Date: 6/2/2018

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- County

Figure 4.3-3
Flooding - Percent Exposure for Top Counties and Cities/Towns
State of Montana MHMP 2018 Update

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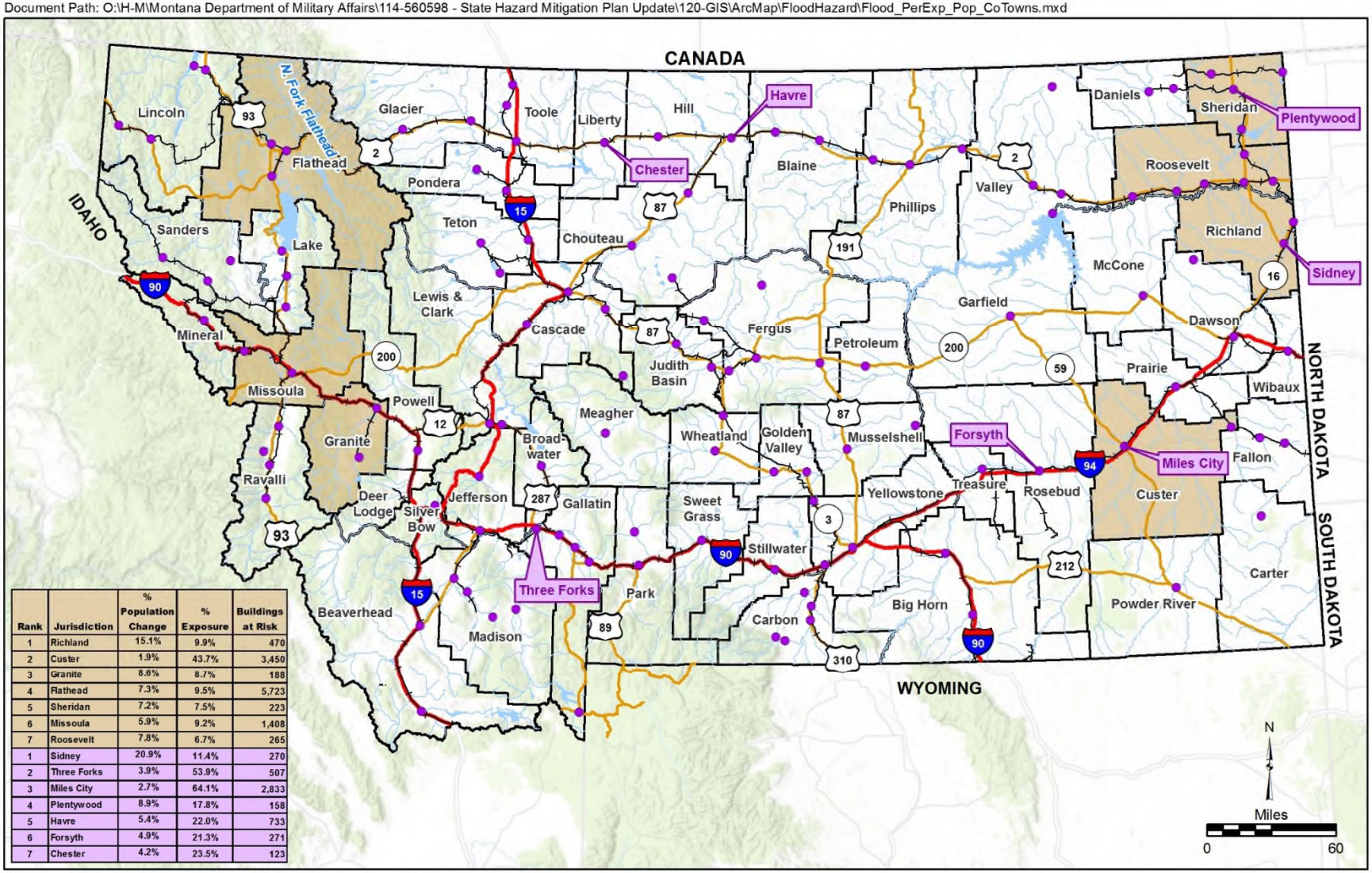

Rank	Jurisdiction	% Population Change	% Exposure	Buildings at Risk
1	Richland	15.1%	9.9%	470
2	Custer	1.9%	43.7%	3,450
3	Granite	8.6%	8.7%	188
4	Flathead	7.3%	9.5%	5,723
5	Sheridan	7.2%	7.5%	223
6	Missoula	5.9%	9.2%	1,408
7	Roosevelt	7.8%	6.7%	265
1	Sidney	20.9%	11.4%	270
2	Three Forks	3.9%	53.9%	507
3	Miles City	2.7%	64.1%	2,833
4	Plentywood	8.9%	17.8%	158
5	Havre	5.4%	22.0%	733
6	Forsyth	4.9%	21.3%	271
7	Chester	4.2%	23.5%	123

Buildings at Risk = Residences, Commercial, Agricultural, and Industrial structures in hazard area.

Date: 6/2/2018

Legend

- Incorporated Place
- Flood_PopTopTown
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- County

Figure 4.3-4

Flooding - Percent Exposure x Percent Population Change for Top Counties and Cities/Towns

State of Montana MHMP 2018 Update

Review of Potential Losses in Local Hazard Mitigation Plans

All of the local MHMPs evaluated the flooding hazard in their risk assessment. Local jurisdictions that ranked flooding as one their top three hazards are presented below.

- #1 Hazard – Dawson, Golden Valley, Musselshell, Park, Richland, Sheridan, and Valley counties and the Blackfeet, Fort Peck and Rocky Boy reservations.
- #2 Hazard – Beaverhead, Big Horn, Fergus, Flathead, Garfield, Granite, Lewis and Clark, Madison, Powder River, Powell, Ravalli, Roosevelt, Sweet Grass, Teton and Yellowstone counties.
- #3 Hazard – Deer Lodge, Glacier, Hill, Judith Basin, Lincoln, McCone, Missoula, Phillips Pondera, and Wheatland counties and the Fort Belknap Reservation.

The Local Plan Exposure Summary table in the *Flooding* section of **Appendix B-4** presents a summary of potential flood losses from the Local Hazard Mitigation Plans.

Vulnerability of State Facilities

Table 4.3-11 presents loss claims associated with flooding of state-owned facilities. The results of the 2018 MHMP risk assessment identified a number of state critical facilities within the flood hazard area (**Appendix B-4**).

Table 4.3-11. Loss Claims for State Facilities Caused by Flooding

Agency	City/County	Date of Loss	Claim Description	Total
Dept. Fish, Wildlife & Parks				
P-22230	Pryor	5/24/2011	Riverine flood damage	$41,811
P-22511	Denton	6/1/2011	Riverine flood damage	$15,000
P-22810	Townsend	1/24/2012	Ice jam flood damage	$4,015
Canyon Ferry	Lewis & Clark	1/24/2012	Ice dam flooded building	$17,718
Fisheries	-	6/6/2013	Runoff caused river to change channels and wash equipment away	$11,902
Bannack State Park	Beaverhead	7/17/2013	Hangman Gulch flood	$1,243,805
Les Mason	-	8/3/2013	Neighbor's dam broke and flooded park	$5,221
Smith River	Meagher	3/15/2014	Rapid ice out flood	$2,147
Fisheries	-	3/9/2017	Abrupt ice out flood	$66,828
Bannack State Park	Beaverhead	3/14/2017	Grasshopper creek flooding	$58,681
Dept. of Justice				
Law Enforcement Ac.	Helena	6/8/2011	Flood damage	$13,023
University System				
Ag Experiment Sta.	Bozeman	7/22/2008	Riverine flood damage	$250,000
P-20079	Dillon	7/24/2008	Flood damage due to heavy rains.	$11,636
TOTAL				**$1,741,787**

Source: DOA-RMTD, 2017

Montana FWP completed a flood mitigation project at Bannack State Park in 2017. Bannack is Montana's first territorial capital and has many structures that are unique and historically significant. In recent years, flooding has caused considerable damage to Bannack's historic structures and natural resources, and raised concerns about public safety. The newly completed flood detention facility will protect the park by holding flash flood waters and safely redirecting flows away from the townsite and into a storm drainage channel and aqueduct.

Many of Montana's bridges have been compromised by scour associated with flooding. Scour is the hole left behind when sediment (sand and rocks) is washed away from the bottom of a river. Although scour may occur at any time, scour action is especially strong during floods. Swiftly flowing water has more energy than calm water to lift and carry sediment down river. The Montana Dept. of Transportation has identified 103 bridges in the state which have critical scour potential. **Table 4.3-12** identifies the 23 state-owned bridges with critical scour potential while the State critical facilities in the flood hazard area identified in **Appendix B-4**.

Table 4.3-12. State-Owned Bridges with Critical Scour Potential

County	Water-Body Crossed	Location	Main Span Material	Structure Condition	Comments
Beaverhead	Big Hole River	Browns Bridge Road	Steel	Poor	Structurally Deficient & FO
Custer	Yellowstone River	Tussler Road	Steel	Fair	Functionally Obsolete
Daniels	Coal Creek	Coal Creek Road	Wood	Fair	Functionally Obsolete
Daniels	Poplar River	Old Scobey Road	Steel	Poor	Structurally Deficient
Daniels	Butte Creek	N Four Buttes Road	Wood	Poor	Structurally Deficient
Fergus	S Fk McDonald Crk	Forest Grove Road	Steel	Fair	Functionally Obsolete
Fergus	S Fk McDonald Crk	Forest Grove Road	Wood	Fair	Functionally Obsolete
Flathead	Stillwater River	Whitefish Stage Road	Concrete	Fair	Functionally Obsolete
Gallatin	Jefferson River	Williams Bridge Road	Steel	Fair	Functionally Obsolete
Lake	Post Creek	Fish Hatchery Road	Concrete	Fair	Functionally Obsolete
Lewis & Clark	Prickly Pear Creek	York Road	Steel	Fair	Functionally Obsolete
Lewis & Clark	Elk Creek	Elk Creek Road	Wood	Poor	Structurally Deficient & FO
Lincoln	Big Cherry Creek	Granite Creek Road	Concrete	Poor	Structurally Deficient & FO
Madison	Madison River	S. 249/Varney Road	Steel	Poor	Structurally Deficient & FO
Madison	Ruby River	Seyler Lane	Concrete	Poor	Structurally Deficient
McCone	Prairie Elk Creek	S 528	Concrete	Good	Functionally Obsolete
Meagher	Musselshell River	County Road 128	Steel	Poor	Structurally Deficient & FO
Missoula	Crow Creek	Valley Road	Wood	Poor	Structurally Deficient
Musselshell	Musselshell River	4-H Road	Wood	Fair	Functionally Obsolete
Park	Woody Creek	Soda Creek Trl/Republic St	Steel	Poor	Structurally Deficient & FO
Park	Shields River	Convict Grade Road	Wood	Good	Structurally Deficient
Park	Ferry Creek	Old Clyde Park Road	Concrete	Fair	Functionally Obsolete
Park	Shields River	Elk Creek Road	Steel	Fair	Functionally Obsolete
Park	Drainage	Bannock Trail	Steel	Good	Functionally Obsolete
Petroleum	Box Elder Creek	Old Cat Creek Road	Steel	Poor	Structurally Deficient & FO
Pondera	Dupuyer Creek	Dupuyer Creek Road	Wood	Good	Functionally Obsolete
Powder River	N Fk Horse Creek	Powderville Rd. East	Steel	Good	Functionally Obsolete
Powder River	Powder River	Moorhead Road	Concrete	Fair	Functionally Obsolete
Powell	Clark Road River	Conley Ave. Deer Lodge	Concrete	Poor	Structurally Deficient & FO
Prairie	Yellowstone RIver	Milwaukee Road	Steel	Fair	Functionally Obsolete
Ravalli	Bitterroot River	Woodside Cutoff Road	Steel	Good	Functionally Obsolete
Ravalli	Bear Creek	Meridian Road	Steel	Poor	Structurally Deficient
Ravalli	Rye Creek	Thorning Loop	Steel	Good	Functionally Obsolete
Sheridan	Antelope Creek	Twin Bridges Road	Steel	Poor	Structurally Deficient
Teton	Big Coulee	2nd Road SW	Steel	N/A	Structurally Deficient
Treasure	Irrigation Ditch	River Road	Wood	Fair	Functionally Obsolete
Valley	W Fk Poplar River	N. Bench Road	Steel	Good	Functionally Obsolete
Valley	Beaver Creek	Milk River Road	Steel	Poor	Structurally Deficient & FO
Yellowstone	Yellowstone River	Old Highway 312	Steel	Poor	Structurally Deficient

Source: MDT, 2018 (https://app.mdt.mt.gov/applications/smsapp/default.aspx#/Inventory)

Notes: FO = Functionally Obsolete

Future Development

Montana law prevents development of structures in the floodway but with a permit, structures may be developed in 100-year floodplains. Many counties have more stringent floodplain regulations than the state that are enforced. Floodplain regulations are in place to promote the public health, safety and general welfare, to minimize flood losses in areas subject to flood hazards and to promote wise use of the floodplain. The state floodplain requirement of a freeboard of two feet reduces the vulnerability of new development in the mapped flood zones. This proactive approach to floodplain management helps in making new construction less prone to flood damages. However, the program is only as good as the mapping, and in some instances, development may be occurring in unmapped, flood prone areas. Development of new Model Floodplain Hazard Management Regulations were completed in 2014 and revised in 2017. There model regulations are available for use by communities to utilize and update or establish local regulations.

Much of the growth in Montana is occurring near rivers and streams. The Montana Floodplain Association is advocating adoption of the No Adverse Impact approach for floodplain management. No Adverse Impact standards can be incorporated into a community's zoning ordinances, subdivision regulations, building and health codes, and/or special purpose ordinances recognizing that future development can cause impacts elsewhere in the watershed.

Progress has been made on the incorporation of flood-resistant construction standards in both the International Building and Residential Codes. Incorporation of standards for flood-resistant construction in these codes will help ensure that building officials become involved in that part of the floodplain management process that deals with how buildings are constructed.

Climate Change

Many scientists agree that climate change will increase heavy rainfall and storms across the U.S., which will result in elevated water levels that may lead to a higher frequency of flooding. The Montana Climate Assessment (2017) provides a well-referenced discussion on the effects of climate change on flooding, as summarized below.

Across Montana, precipitation is projected to increase in winter, spring, and fall. The largest increases are expected to occur during spring in the southern part of the state. Warming will continue to reduce mountain snowpack, and this could reduce flood risk related to rain-on-snow events by reducing the quantity of water available for release stored as snow. Yet warming is also likely to increase the amount of winter and spring precipitation that falls as rain (particularly in rain-snow transition zones), which will accelerate snowmelt and could increase flood risk, depending on antecedent snowpack, soil moisture, and other conditions. As such, rising temperatures alone will influence flood risk, regardless of trends in precipitation; yet the effects will likely be location- and event-specific and therefore, difficult to predict.

Future precipitation projections show a general increase in extreme events at a global scale and regional climate models also consistently predict increases in extreme precipitation in the northwestern U.S. In Montana, the frequency of wet events (days with > 1 inch of rain) and variability in precipitation are both projected to increase slightly in western Montana by end-of-century.

Table 4.3-13 shows the most flood prone counties (based on SHELDUS data) with projected median 1-inch rain days at mid- and end-of-century according to the low- and high-emission scenarios compared to observed data from 1950 through 2006. The data suggests that fewer 1-inch rain days are expected in these flood-prone counties which could mean less flooding since most precipitation is expected to occur in spring compared to other seasons. It should be noted that many other variables contribute to flood risk including runoff from upstream counties. As such, this analysis may not be appropriate to speculate on future flood risk.

Table 4.3-13. Counties with Highest Flood Losses and Projected Median 1-Inch Rain Days at Mid- and End-Century

County	Observed Mean 1950-2006 (Days/Yr)	Low Emission Scenario (Days/Yr)	Change from Observed (Days/Yr)	High Emission Scenario (Days/Yr)	Change from Observed (Days/Yr)
Mid-Century (2050)					
Musselshell	0.9	0.2	-0.8	0.0	-0.9
Custer	1.0	0.9	-0.2	0.6	-0.5
Flathead	5.2	3.1	-2.1	3.4	-1.8
Roosevelt	1.3	1.1	-0.2	0.6	-0.7
Sweet Grass	2.0	0.9	-1.1	1.0	-1.0
Valley	0.9	0.4	-0.5	0.3	-0.6
Big Horn	1.1	0.5	-0.6	0.2	-0.9
Dawson	1.2	0.6	-0.6	0.3	-0.9
Yellowstone	0.8	0.4	-0.4	0.3	-0.5
Lincoln	3.8	1.9	-1.8	2.5	-1.3
Fallon	1.1	0.5	-0.6	0.4	-0.7
Powder River	1.0	0.8	-0.2	0.3	-0.7
Richland	1.5	1.0	-0.5	0.8	-0.8
Blaine	1.0	0.4	-0.6	0.4	-0.6
End of Century (2099)					
Musselshell	0.9	0.0	-0.9	0.4	-0.5
Custer	1.0	0.1	-1.0	0.7	-0.3
Flathead	5.2	0.0	-0.9	0.4	-0.5
Roosevelt	1.3	0.2	-1.1	0.3	-0.9
Sweet Grass	2.0	0.4	-1.6	1.3	-0.7
Valley	0.9	0.2	-0.7	0.4	-0.6
Big Horn	1.1	0.0	-1.1	0.7	-0.4
Dawson	1.2	0.1	-1.0	0.6	-0.6
Yellowstone	0.8	0.1	-0.8	0.5	-0.4
Lincoln	3.8	1.9	-1.9	4.1	0.3
Fallon	1.1	0.0	-1.1	0.5	-0.6
Powder River	1.0	0.2	-0.8	0.6	-0.4
Richland	1.5	0.2	-1.3	0.7	-0.8
Blaine	1.0	0.3	-0.7	0.3	-0.8

Source: FEMA and NOAA, 2017. Notes: Flood losses from SHELDUS 1960-2017 Property Damage + Crop Damage. The low-emissions scenario assumes that global emissions of the greenhouse gases than cause changes in climate conditions peak in the year 2040 and then decline. The high-emissions scenario assumes that global emissions of greenhouse gases remain largely unabated through the 21st century.

Table 4.3-14 presents counties with the highest projected median 1-inch rain days at mid- and end-of century according to the low- and high-emission scenarios. The data projects that by the end of the century, several counties in western Montana are expected to receive more 1-inch rain days which could may mean increased flooding since increases in precipitation are projected to occur in the spring compared to other seasons (**Figure 4.3-5**).

Table 4-3-14. Counties with Projected Highest Number of Median Days with 1-Inch Rain at Mid- and End-Century

County	Observed Mean 1950-2006 (Days/Yr)	Low Emission Scenario (Days/Yr)	Change from Observed (Days/Yr)	High Emission Scenario (Days/Yr)	Change from Observed (Days/Yr)
Mid-Century (2050)					
Garfield	1.1	-0.9	-0.9	0.7	-0.3
Hill	0.9	-0.4	-0.4	0.5	-0.4
Custer	1.0	-0.2	-0.2	0.6	-0.5
Toole	1.0	-0.7	-0.7	0.6	-0.5
Yellowstone	0.8	-0.4	-0.4	0.3	-0.5
Phillips	0.9	-0.5	-0.5	0.3	-0.6
Wibaux	1.1	-0.6	-0.6	0.5	-0.6
Blaine	1.0	-0.6	-0.6	0.4	-0.6
Golden Valley	0.9	-0.7	-0.7	0.3	-0.6
Liberty	1.0	-0.7	-0.7	0.3	-0.6
Jefferson	1.0	-0.8	-0.8	0.4	-0.6
Silver Bow	0.9	-0.6	-0.6	0.2	-0.6
End of Century (2099)					
Mineral	7.2	3.4	-3.8	7.7	0.5
Lincoln	3.8	1.9	-1.9	4.1	0.3
Sanders	4.4	2.2	-2.2	4.5	0.2
Flathead	5.2	3.0	-2.2	5.4	0.2
Silver Bow	0.9	0.1	-0.7	1.0	0.2
Rosebud	0.9	0.0	-0.9	1.0	0.1
Ravalli	4.6	1.8	-2.8	4.6	0.0
Prairie	1.0	0.0	-1.0	0.8	-0.2
Treasure	1.0	0.0	-1.0	0.8	-0.2
Stillwater	1.8	0.5	-1.3	1.5	-0.3
Glacier	4.3	2.5	-1.8	4.0	-0.3
Petroleum	0.9	0.0	-0.9	0.6	-0.3

Source: FEMA and NOAA, 2017. Notes: The low-emissions scenario assumes that global emissions of the greenhouse gases than cause changes in climate conditions peak in the year 2040 and then decline. The high-emissions scenario assumes that global emissions of greenhouse gases remain largely unabated through the 21st century.

There is considerable uncertainty surrounding future flood risk in response to climate change, and some research suggests that extreme precipitation events can actually intensify more quickly than what is projected by general circulation models. Additionally, flood risk depends on specific storm characteristics that are difficult to capture in most models. Moreover, the particular effects of projected changes in temperature and precipitation on flood risk will depend on location, elevation, and antecedent weather conditions, as well as human practices (Whitlock C., et.al, 2017).

Population, property, and critical facility flood exposure may increase as a result of climate change. Runoff patterns may change resulting in flooding in areas where it has not previously occurred with an increased risk to facilities that have not historically flooded.

The significance of increased flooding is great. Besides impacting communities, destroying homes, and causing deaths, floods can cause drinking water to become contaminated, Floods can also cause hazards such as disease-carrying animals and spills of chemicals or other hazardous materials. Overall, if flooding is to increase from climate change it will also pose risks to people's health and to entire communities.

Data Limitations

The MHMP analysis utilized a flood hazard layer that was derived from a combination of a HAZUS flood model, DFIRMs, and channel migration zones. DFIRMs are not available for the entire State but as they become available in the future, the flood hazard layer for the State will be appended with this data. **Figure 4.3-5** shows the status of the Montana Map Modernization Project. *Section 6.1.2* presents additional information on this project.

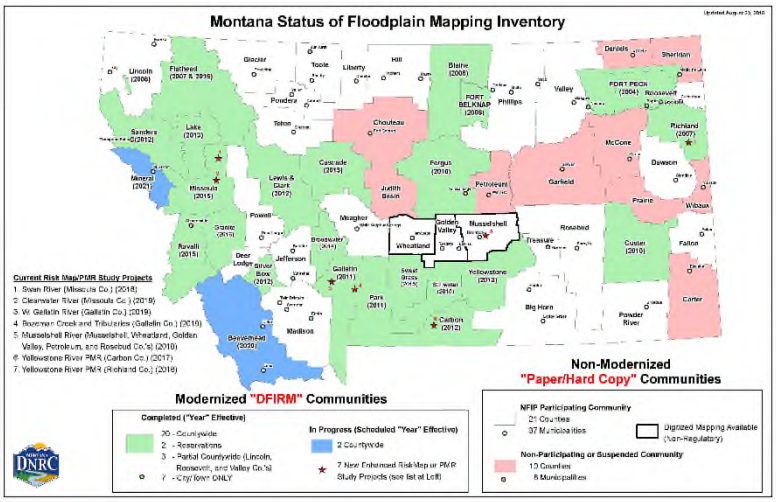

Figure 4.3-5
Montana Map Modernization DFIRM Production Status
Source: Montana DNRC, 2018

Some areas shown at risk from flooding by the HAZUS model may be misleading. One example is Last Chance Gulch in Helena, which is channeled below ground and does not pose a flood risk, but is shown by HAZUS as having flood risk. As such, the MHMP analysis incorrectly identified several buildings in this area as being in the flood hazard area. There may be other examples where buildings are mistakenly identified to have flood risk in unmapped areas due to the HAZUS model.

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4.4 Earthquake

CPRI SCORE =2.93

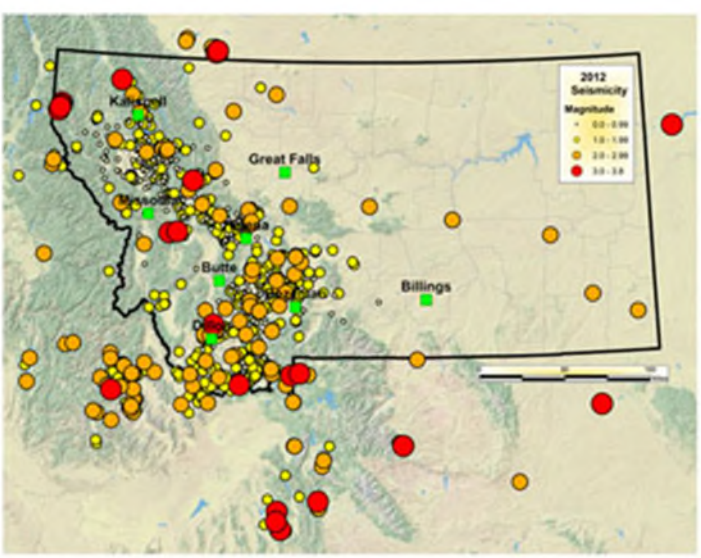
Description and History

An earthquake is ground shaking and radiated seismic energy caused most commonly by a sudden slip on a fault, volcanic or magmatic activity, or other sudden stress changes in the earth. Magnitude and intensity are used to describe the size and effects of earthquakes. Magnitude is a measure of the total energy released. Each earthquake assigned a magnitude, usually measured on the Richter Scale or the similar but more modern Moment Magnitude Scale. Intensity is used to describe the effects of the earthquake at a particular place. Intensity is typically greatest near the epicenter and decreases with greater distance from the epicenter. Intensities are reported using the Modified Mercalli Intensity Scale (using Roman numerals) that range from I (barely felt) to XII (total destruction).

An earthquake of magnitude 8 or larger on the Richter Scale is termed a great earthquake. Montana has not experienced a great earthquake in recorded history. A great earthquake is not likely in Montana but a major earthquake (magnitude 7.0-7.9) occurred near Hebgen Lake in 1959 and dozens of active faults have generated magnitude 6.5-7.5 earthquakes during recent geologic time.

Thousands of faults have been mapped in Montana, but scientists think only about 95 of these have been active in the past 1.6 million years (the Quaternary Period). Although it has been over six decades since the last destructive earthquake in Montana, small earthquakes are common in the region, occurring at an average rate of 4-5 earthquakes per day. Scientists continue to study faults in Montana to determine future earthquake potential.

A belt of seismicity known as the Intermountain Seismic Belt extends through western Montana, from the Flathead Lake region in the northwest corner of the state to the Yellowstone National Park region (**Figure 4.4-1**). Seismic events may lead to landslides, uneven ground settling, flooding, and damage to homes, dams, levees, buildings, power and telephone lines, roads, tunnels, and railways. Broken natural gas lines may cause fires.



Montana is one of the most seismically-active states in the United States. Since 1925, the state has experienced five shocks that reached intensity VIII or greater (Modified Mercalli Scale). During the same interval, hundreds of less severe tremors were felt within the state. Montana's earthquake activity is concentrated mostly in the mountainous western third of the state, which lies within the Intermountain Seismic Belt (**Figure 4.4-1**).

Figure 4.4-1 Intermountain Seismic Belt

(Source: MBMG, 2018)

Table 4.4-1 shows the historic earthquakes of Montana and surrounding regions with magnitude of 5.5 or greater since 1900. Although one significant earthquake occurred in eastern Montana in 1909, the majority have occurred along the Intermountain Seismic Belt and Centennial Tectonic Belt in western Montana.

Table 4.4-1. Historic Earthquakes of Montana and Surrounding Regions with Magnitudes of 5.5 or Greater Since 1900

Date	Magnitude	Approximate Location	Date	Magnitude	Approximate Location
5/16/1909	5.5	Northeast Montana	8/18/1959	6.0	Hebgen Lake, MT
6/28/1925	6.6	Clarkston Valley, MT	8/18/1959	5.6	Hebgen Lake, MT
2/16/1929	5.6	Clarkston Valley, MT	8/18/1959	6.3	Hebgen Lake, MT
10/12/1935	5.9	Helena, MT	8/19/1959	6.0	Hebgen Lake, MT
10/19/1935	6.3	Helena, MT	10/21/1964	5.6	Hebgen Lake, MT
10/31/1935	6.0	Helena, MT	6/30/1975	5.9	Yellowstone Park
7/12/1944	6.1	Central Idaho	12/08/1976	5.5	Yellowstone Park
2/14/1945	6.0	Central Idaho	10/28/1983	7.3	Challis, ID
9/23/1945	5.5	Flathead Valley	10/29/1983	5.5	Challis, ID
11/23/1947	6.1	Virginia City, MT	10/29/1983	5.5	Challis, ID
4/01/1952	5.7	Swan Range, MT	8/22/1984	5.6	Challis, ID
8/18/1959	7.5	Hebgen Lake, MT	7/26/2005	5.6	Beaverhead Co., MT
8/18/1959	6.5	Hebgen Lake, MT	7/6/2017	5.8	Lincoln MT

Source: Stickney and others, 2000; newspapers accounts.

1959 Hebgen Lake Earthquake - The Hebgen Lake magnitude 7.5 earthquake, which occurred on August 18, 1959, was the largest earthquake in Montana and the 14th largest earthquake in the contiguous U.S. in historic times (Stover and Coffman, 1993). This earthquake caused 29 fatalities and about $11 million in damage to highways and timber. It was characterized by extensive fault scarps, subsidence and uplift, a massive landslide, and a seiche (large wave) in Hebgen Lake. A maximum Intensity X or greater (Modified Mercalli Scale) was assigned to the epicentral area.

Aerial View of Madison Canyon Slide with Earthquake Lake in the background. The Hebgen fault crosses the dark forested spur near the head of lake. Madison County, Montana. August 1959. Source: USGS, 2004

The most spectacular and disastrous effect of the earthquake was the huge landslide of rock, soil and trees that cascaded from the steep south wall of the Madison River Canyon. This slide formed a barrier that blocked the gorge and stopped the flow of the Madison River and, within a few weeks, created a lake almost 174 feet deep. The volume of material that blocked the Madison River below Hebgen Dam was estimated at 989 to 1,165 cubic feet. All but 3 of the 29 deaths were caused by rockslides that covered the Rock Creek public campground on the Madison River, about 5.9 miles below Hebgen Dam. Two people were killed by rock fall near Cliff Lake 6.5 miles west of the Madison Canyon landslide and a lone climber was killed by rock fall on north face of Granite Peak 83 miles to the northeast.

Hebgen Earthquake, Red Canyon Fault Scarp (1959) where it cut through the Blarneystone Ranch. The house sits on the down-thrown block. The fault scarp here is 10 to 12 feet high. The roof of a small collapsed shed is visible on the up-thrown block. Source: USGS, 2004

New fault scarps as high as 20 feet formed near Hebgen Lake during this earthquake. The major fault scarps formed along pre-existing normal faults northeast of Hebgen Lake. The earth-fill Hebgen Dam sustained significant cracks in its concrete core and spillway and a seiche (water wave) overtopped the dam several times in the hour following the earthquake, but it continued to be an effective structure.

Many summer houses in the Hebgen Lake area were damaged; houses and cabins shifted off their foundations, chimneys fell, and pipelines broke. Most small-unit masonry structures and wooden buildings along the major fault scarps survived with little damage when subjected only to vibratory forces. Roadways were cracked and shifted extensively, and much timber was destroyed. Highway damage near Hebgen Lake was due to landslides slumping vertically and flowing laterally beneath pavements and bridges, which caused severe cracks and destruction. Rocks fell from road cuts and steep slopes partly or completely blocking roads in many places. Three of the five reinforced bridges in the epicentral area also sustained significant damage.

High intensity earth movements were observed in the northwest section of Yellowstone National Park where new geysers erupted, and massive slumping caused large cracks in the ground from which steam emitted. Many hot springs became muddy.

<u>1935 Helena Earthquakes</u> – Starting with a small tremor on October 3, the City of Helena suffered through a devastating series of several hundred earthquake shocks in 1935, including three damaging earthquakes with magnitudes of 5.8, 6.3, and 6.0 on October 12th, 18th, and the 31st. Although no surface ruptures occurred during this earthquake sequence, shaking from the earthquakes damaged more than half of Helena's buildings. The epicenters of the 1935 earthquake series are not precisely known, but were probably located about 3.7 to 14 miles north of the city, possibly along the Prickly Pear fault zone (Qamar and Stickney, 1983) and the Helena Valley fault (Doser, 1989).

The following description of the earthquake is from the National Information Service for Earthquake Engineering (NISEE, 1998). Previous to the cluster of Helena earthquake tremors there had been little recorded seismic activity in the Helena area. The earthquakes disproved a then-popular misconception that all seismic activity within the U.S. occurred solely in California and Alaska. Before October 1935, the sense of immunity from natural disaster contributed to an atmosphere of uncontrolled construction in Helena. Earthquake-resistant design methods were disregarded. Older, antiquated construction in Helena behaved predictably during the tremors.

Damage in Helena included collapsed chimneys, fallen parapets, gables, and end walls, shattered walls parallel to interior framing, with partial or total collapse of structures as the ultimate end. Most buildings with unreinforced masonry-bearing walls were severely damaged within the month-long barrage of seismic activity. Likewise, industrial smoke stacks built almost entirely of brick fell down.

The October 18th earthquake brought serious damage to City Hall, as well as the area to the east of the mercantile district along Main Street. There, many chimneys fell down, brick dwellings were seriously damaged or partly collapsed, brick veneer was thrown off, and many commercial, school, and public buildings were greatly affected, some destroyed. The worst wreckage occurred in structures on the softer alluvial soil toward the valley, notably the new High School and the Bryant School.

Bryant Elementary School in Helena suffered increasing damage in the series of 1935 earthquakes. Until reconstruction was completed, its 276 students attended school in the basement of Central School. Source: Utah NEHRP, 2004

The last large shock of October 31st caused the collapse of parts of buildings which previously had been seriously affected, but which remained standing, including the new High School and the Kessler Brewery.

2005 Dillon Earthquake - On the evening of July 25, 2005 at 10:08 p.m. a magnitude 5.6 earthquake occurred in southwestern Montana 10 miles north of Dillon. The Intensity VI shaking at Dillon caused damage to some masonry structures, particularly older chimneys. A large chimney on Old Main Hall on The University of Montana-Western campus in Dillon sustained severe damage and was subsequently removed to prevent total collapse. Beaverhead County DES personnel estimated that that up to 60 percent of the older masonry chimneys in Dillon were damaged. An overpass above Interstate-15 located 4 miles southwest of the epicenter experienced sheared anchor bolts and spalled concrete but remained in good service. Ground cracks formed in weakly consolidated deposits approximately 2 miles southwest of the epicenter, apparently a result of strong ground shaking in weak soils but were unrelated to primary faulting. The Dillon earthquake occurred on a previously unknown fault that apparently lacked surface expression (Stickney, 2007).

2017 Lincoln Earthquake – One of more than 1,700 seismic events detected near Helena in 2017, a 5.8 magnitude earthquake centered six miles south of Lincoln on July 6 was the biggest ever recorded west of the Continental Divide in Montana and the strongest to hit the state in more than 40 years. The U.S. Geological Survey (USGS) recorded at least nine tremors within an hour of the initial 12:30 am quake, and they ranged in magnitude from 4.9 to 3.1. The earthquakes were strong enough to knock items off walls and shelves as far away as Helena and Missoula, cause a temporary power outage in Lincoln, and cause a gas leak in Helena. Though some businesses suffered a financial loss, no serious damages or injuries were reported. The earthquake occurred near a fault line that was not previously mapped by seismologists. (Independent Record, *Biggest Stories of 2017: Western Montana's Biggest Earthquake Rattles Nerves,* December 22, 2017)

Declared Disasters

No federal or state disasters have been declared due to earthquakes as all of Montana's significant earthquakes occurred prior to the disaster declaration process.

Magnitude and Probability

The largest earthquake in Montana, the 1959 Hebgen Lake event, caused more than $11 million in damage ($93.7 million in 2018 dollars). The second most-damaging earthquakes were the October 1935 Helena earthquakes, which caused more than $4 million in damage ($72.4 million in 2018 dollars).

Qamar and Stickney (1983) developed earthquake recurrence intervals for high-incidence seismic zones in the state based on historic earthquake information. Wong and others (2005) compiled a more complete historic earthquake catalog and used it to develop improved recurrence relations for five regional seismic source zones in Montana. The five regional source zones are: Northern Intermountain Seismic Belt, Centennial Tectonic Belt, Northern Rocky Mountains, Middle Rocky Mountains, and Northern Great Plains. These results suggest that a magnitude 6 or larger earthquake may strike the Northern Intermountain Seismic Belt once in a 23-year period (**Table 4.4-2**). This seismic source zone includes the cities of Kalispell, Missoula, Helena, Bozeman, and Livingston, as well as the rapidly growing rural population and infrastructure surrounding those cities.

Table 4.4-2. Earthquake Recurrence Rates by Seismic Source Zone

Seismic Source Zone	M*5	M*6	M*7	# Quakes M >=6
Northern Intermountain Seismic Belt	3.84	22.6	133.	2
Centennial Tectonic Belt	8.69	75.7	659.	2
Northern Rocky Mountains	36.6	420.	4821.	0
Middle Rocky Mountains	237.	1,754.	13,000.	0
Northern Great Plains	26.8	184.	1281.	0

* Predicted return time (in years) of earthquakes with magnitude M or greater.
Note: These values reflect recurrence times in the entire source zone. Source: Wong and others, 2005

The probabilistic peak ground acceleration for western Montana (**Figure 4.4-2**) suggests that the magnitude of future earthquakes in Montana could cause significant damage. According to Qamar (2008), at 9.2%g an earthquake is felt by all with many frightened. Some heavy furniture is moved with a few instances of fallen plaster. Damage is considered slight. At 18%g, damage is negligible in buildings of good design and construction, slight to moderate in well-built ordinary structures, and considerable in poorly-built of badly designed structures. Some chimneys may be broken, and the shaking is noticed by people driving cars. At 34%g, damage is slight in specially designed structures, considerable in ordinary substantial buildings with partial collapse, and great in poorly built structures. Chimneys and walls may fall and heavy furniture is overturned. Areas of western Montana have a 2 percent probability in a 50-year period that ground shaking due to earthquakes will reach the 40%g range.

Hazard probability for the MHMP was assessed based on hazard frequency over a 10-year period. Since the earthquake hazard does not occur with an intensity to cause significant property damage or loss of life more than once every 10 years it was given an "Possible" probability rating.

Vulnerability and Area of Impact

Earthquakes will continue to occur in Montana; however the precise time, location, and magnitude of future events cannot be predicted. As discussed above, earthquake hazard areas in Montana are concentrated in the western portion of the state, which is part of the Intermountain Seismic Belt (**Figure 4.4-1**). Numerous factors contribute to determining areas of vulnerability: historical

earthquake occurrence, proximity to faults, soil characteristics, building construction, and population density, to mention a few.

During, the summer of 2017, a previously unmapped fault scarp was discovered in the Bitterroot Valley in Ravalli County. A geologist with the Montana Bureau of Mines and Geology (MBMG) was using Light Detection and Ranging (LIDAR) equipment as part of a floodplain study. LIDAR uses laser to map the ground, showing what the land is like devoid of homes, grasses and trees. Mike Stickney, senior research geologist and director of earthquake studies at the MBMG was watching a presentation on the LIDAR study and realized he was seeing something that looked like a fault scarp in the Bitterroots. He was surprised to find evidence of movement on a fault in an area shown on national maps as having low seismicity. The scarp appears to travel along the lower east face of the Bitterroots, quite possibly through the Lake Como Dam and at least up to Victor, according to the LIDAR images. Stickney said it's difficult to know if it goes through the dam due to glacial deposits that cover part of the scarp. It is not known when the fault might produce another earthquake. (Missoulian, *LIDAR Turns Up New Bitterroot Fault Line*, September 18, 2017).

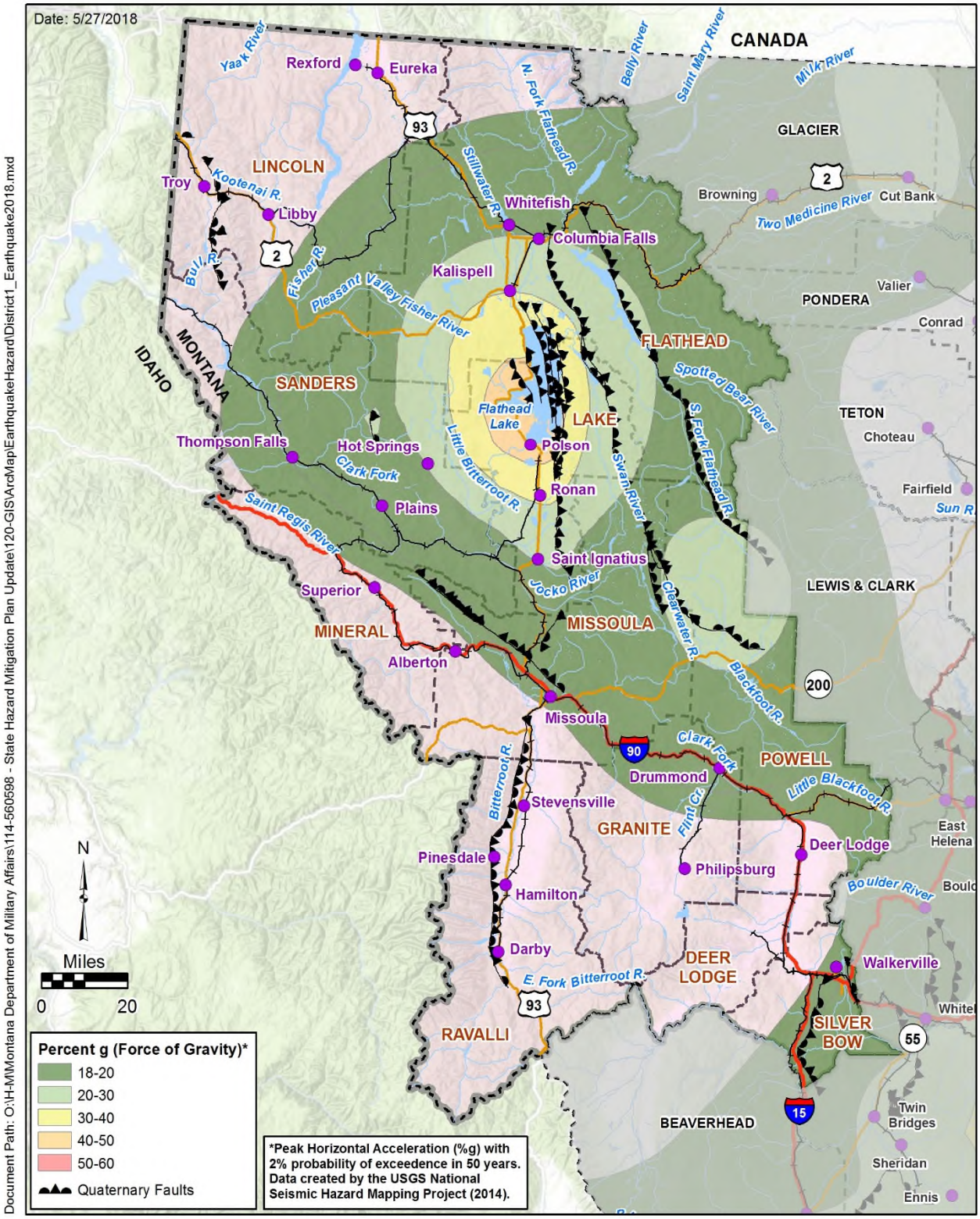
Another vulnerability associated with the earthquake hazard is liquefaction. Soil liquefaction describes a phenomenon whereby a saturated soil substantially loses strength and stiffness in response to an applied stress, usually earthquake shaking or other sudden change in stress condition, causing it to behave like a liquid. Consequently, the fluid pressure of the liquefied region may cause tilting or breaking of walls, failure of basement floors, and if the foundations are weak severe damage to the structures may occur. Western Montana valleys within the Intermountain Seismic Belt may be susceptible to liquefaction including locations where thousands of people reside. Conditions needed to create a liquefaction hazard include partially consolidated sediments (alluvial deposits that contain sand and silt) that are saturated with groundwater.

Vigilant Guard is a National Guard Bureau exercise that is conducted in four states each year. It was held in and around Great Falls in February 2018. The exercise gives the local agencies opportunities to practice activating emergency operations plans. The exercise included a mock earthquake near Hebgen Dam, causing dam failures leading to Great Falls.

Statewide Vulnerability

The USGS has developed earthquake hazard maps showing ground acceleration for the United States. The peak ground acceleration values applicable to Montana are shown in **Figures 4.4-2A-D.** The contour values show the earthquake ground motions (with acceleration expressed as a percentage of the acceleration of gravity) with a two percent probability of being exceeded in 50 years. The figure shows that peak ground acceleration is most intense along the Intermountain Seismic Belt with centers around Flathead Lake in Lake County and adjacent to the northwest corner of Yellowstone National Park in Madison County.

To complete the vulnerability analysis for the earthquake hazard, GIS was used to intersect the USGS peak ground acceleration zones with 18%g and greater with the general building stock, critical facility, and cultural resource datasets. Estimates of vulnerable population were calculated using U.S. Census county estimates. Exposure values are presented in **Table 4.4-3**. **Appendix B-5** presents supporting documentation from the risk assessment including a list of critical facilities in the 18%g seismic zone and exposure estimated by county and city/town.



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 1 County
- County

Figure 4.4-2A
Earthquake Hazard Area
DES District 1
State of Montana MHMP 2018 Update

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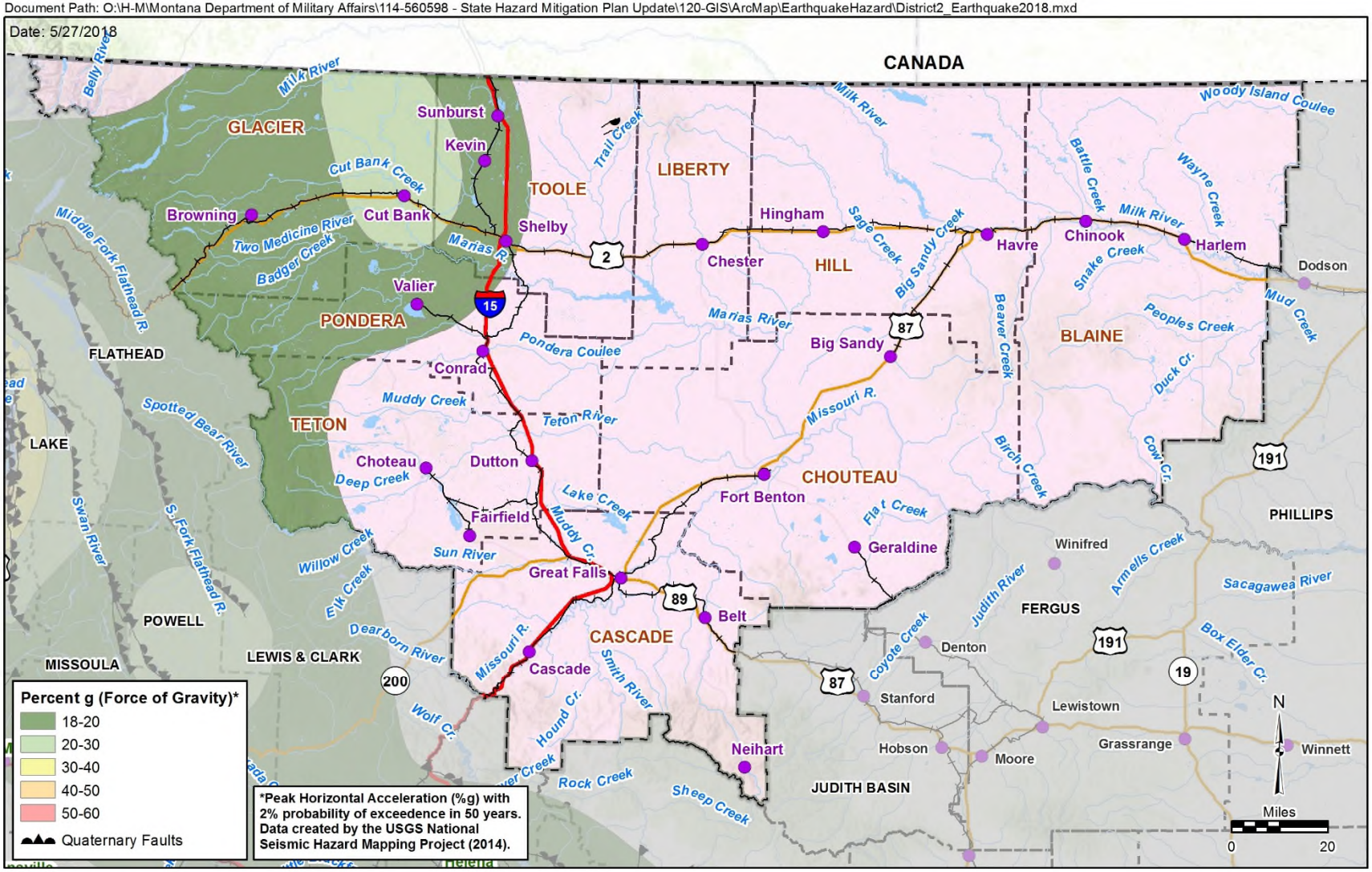
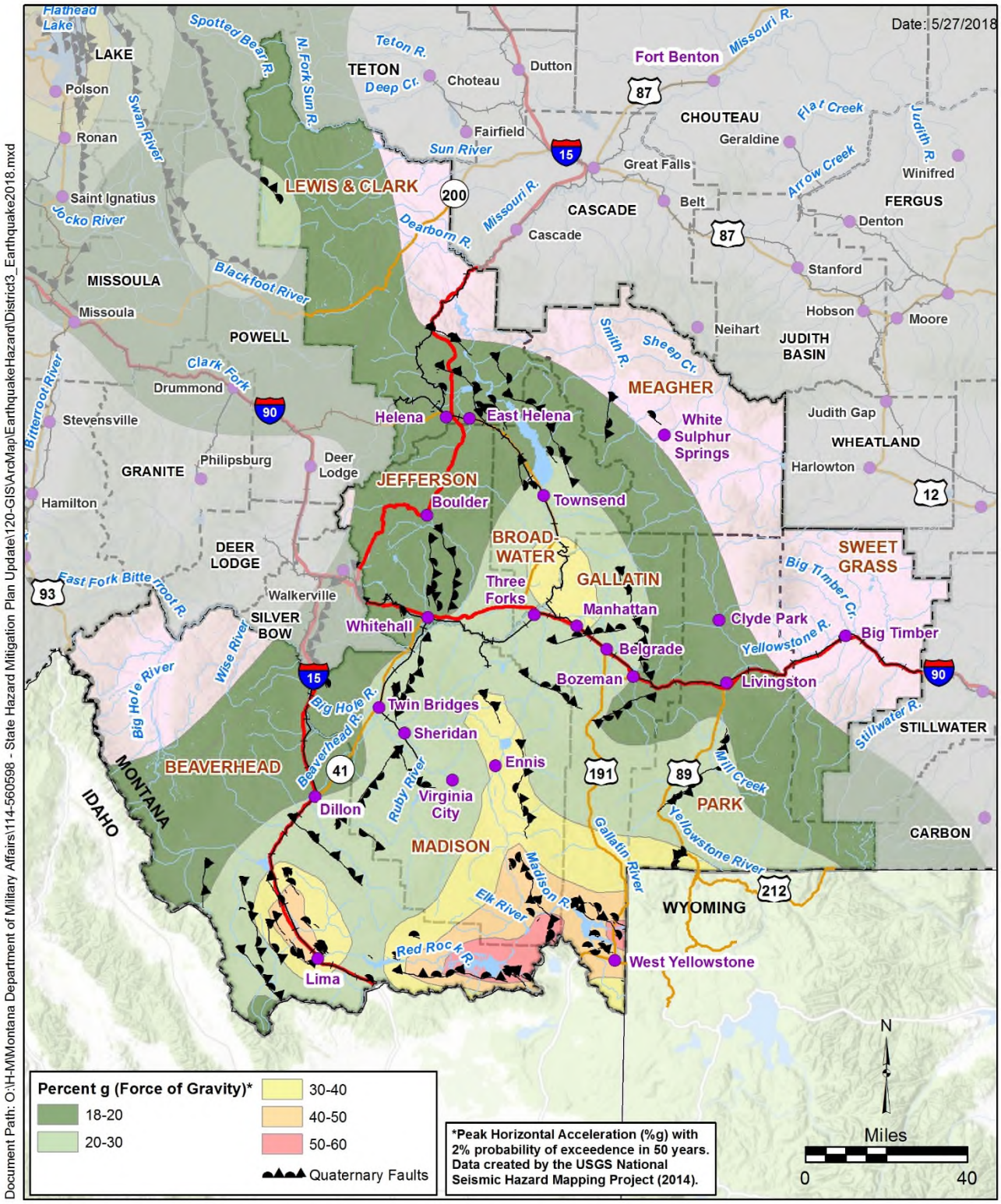


Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 2 County
- County

Figure 4.4-2B
Earthquake Hazard Area
DES District 2
State of Montana MHMP 2018 Update



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 3 County
- County

Figure 4.4-2C
Earthquake Hazard Area
DES District 3
State of Montana MHMP 2018 Update

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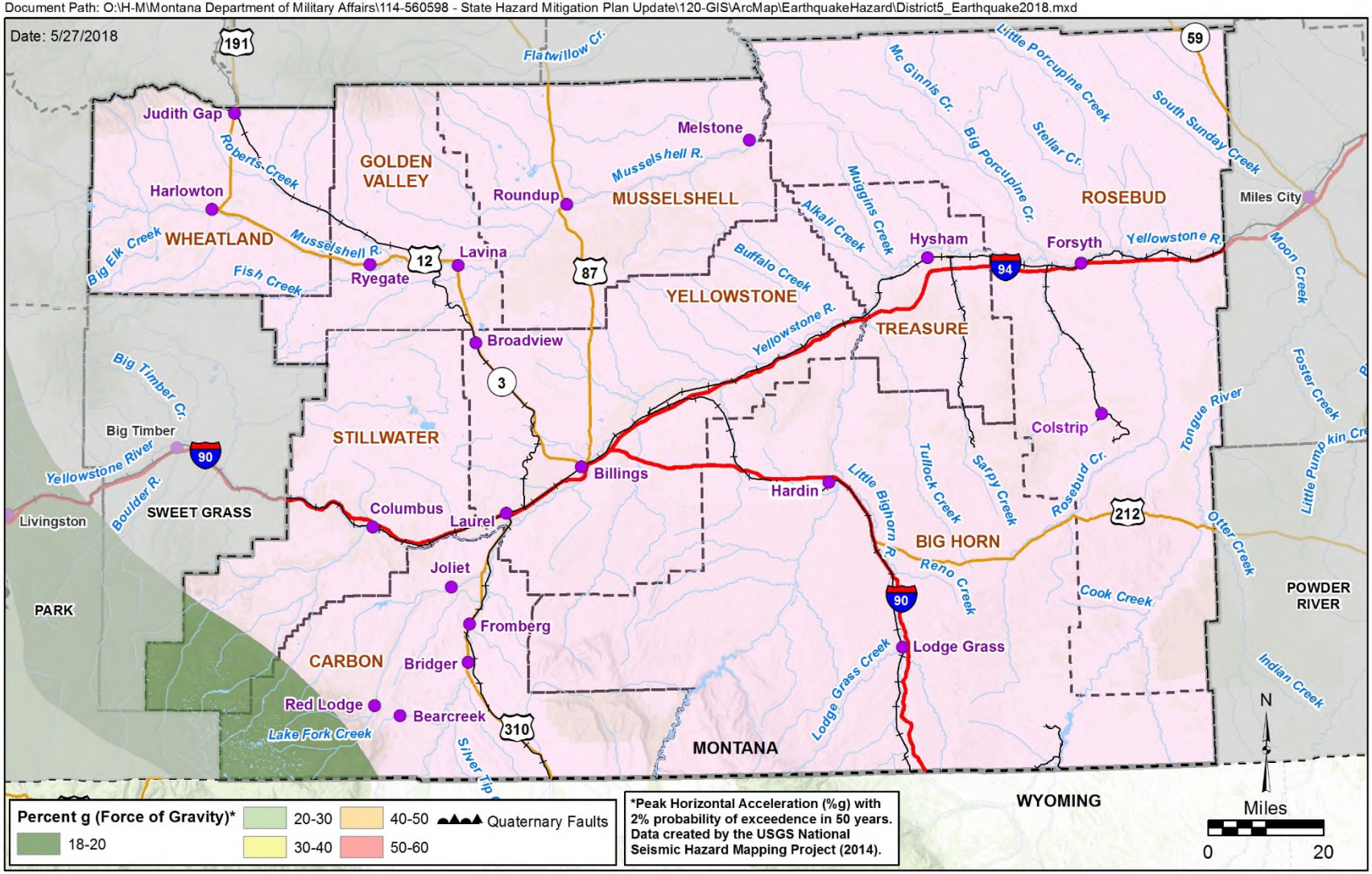

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 5 County
- County

Figure 4.4-2D
Earthquake Hazard Area
DES District 5
State of Montana MHMP 2018 Update

Table 4.4-3. Earthquake Exposure Summary by DES District

Item	District 1	District 2	District 3	District 4	District 5	District 6
Earthquake Hazard Area (Square Miles)	14,726	4,941	19,495	0	661	0
Percent Earthquake Hazard Area	58.6%	20.4%	77.2%	0%	3.0%	0%
Residential Building Exposure ($)	$15,795,294,146	$369,172,581	$19,248,209,397	$0	$31,148,635	$0
Residential Building Exposure (# structures)	90,346	4,297	87,807	0	133	0
Commercial, Ag, Industrial Building Exposure ($)	$6,639,697,309	$758,173,657	$7,481,931,768	$0	$2,067,192	$0
Commercial, Ag, Industrial Building Exposure (# structures)	17,289	2,004	14,203	0	16	0
Critical Facility Exposure ($)	$1,303,052,775	$349,453	$1,685,862,677	$0	$0	$0
Critical Facility Exposure (# structures)	260	8	334	0	0	0
Cultural Resources (# features)	18	2	37	0	1	0
Population Living in Hazard Area	228,751.0	7,976.8	271,803.9	0	180	0
Population Under 18 Living in Hazard Area	82,255.6	3,412.0	85,938.9	0	61	0
Population Over 65 Living in Hazard Area	77,083.7	2,444.2	69,641.9	0	71	0

Risk assessment results shows that DES District 3 has the highest residential and commercial/ agricultural/industrial building exposure from the earthquake hazard as well as population at risk. District 1 follows closely with some exposure in Districts 2 and 5 and none in Districts 4 or 6. District 3 has the most critical facility and cultural resource exposure followed by District 1.

Table 4.4-4 presents a vulnerability summary of the earthquake hazard as it relates to percent exposure and growth rates in Montana's counties, cities and towns. Percent exposure was derived by dividing the value of residential and commercial/agricultural/industrial building stock exposed to the hazard into the total value of the building stock. Percent exposure is a more accurate way of displaying vulnerability than presenting jurisdictions with the highest exposure because it reflects areas with the greatest risk opposed to those with high value real estate. A complete ranking of percent exposure is presented in **Appendix B-5**.

Counties with the highest percent exposure to earthquake include: Gallatin, Lake, Madison, Jefferson, Broadwater, Flathead and Glacier; while top cities/towns include: Bozeman and Belgrade (Gallatin Co.), Helena (Lewis and Clark Co.), Kalispell and Whitefish (Flathead Co.), Livingston (Park Co.) and Missoula (Missoula Co.). **Figure 4.4-3** presents percent exposure for the top counties and cities/towns showing regional vulnerability.

Percent exposure was multiplied by the change in population between the 2010 and 2016 census to present the jurisdictions with the highest risk that are experiencing the fastest growth. The number of residential building permits, as estimated by the U.S. Census Bureau, is also listed for the top-ranking Counties. A complete ranking is presented in **Appendix B-5**.

Table 4.4-4. Earthquake Exposure Summary for Top Counties, Cities and Towns

County	% Earthquake Exposure	% Growth (2010 to 2016)	# of Building Permits (2010 to 2016)	$ Residential Exposure	# Residences at Risk	$ Commercial/ Ag/Industrial Exposure	# Commercial/ Ag/Industrial Buildings at Risk	$ Critical Facilities Exposure	# Critical Facilities at Risk
Counties with Highest Percent Exposure ($ Residential + $ Commercial-Ag-Industrial Exposure in Hazard Area / Total Exposure)									
Gallatin	100%	14.34%	1,550	$10,930,545,091	40,035	$4,169,858,220	5,191	$963,139,971	207
Lake	100%	3.40%	44	$3,043,596,291	16,674	$907,884,902	4,157	$14,144,458	16
Madison	100%	2.94%	7	$804,105,665	4,154	$368,696,283	1,301	$270,203	3
Jefferson	100%	3.77%	5	$744,240,161	4,016	$117,529,005	694	$19,263,180	19
Broadwater	100%	2.35%	0	$370,999,657	2,797	$153,085,694	795	$29,038,899	3
Flathead	99.50%	7.29%	316	$8,583,838,429	41,189	$3,789,813,701	7,977	$38,896,279	20
Glacier	99.40%	2.15%	0	$173,488,939	2,171	$509,858,560	1,191	$166,089	4
Cities/Towns with Highest Percent Exposure (Towns with Pop. > 500) ($ Residential + $ Commercial-Ag-Industrial Exposure in Hazard Area / Total Exposure)									
Bozeman	100%	17.61%	NA	$4,743,491,928	16,722	$2,235,363,972	1,511	$948,662,225	192
Helena	100%	9.56%	NA	$2,070,264,423	10,487	$1,127,469,517	1,613	$528,727,307	53
Kalispell	100%	12.45%	NA	$1,271,291,249	7,553	$1,065,757,780	1,714	$19,802,332	10
Whitefish	100%	12.67%	NA	$1,153,743,638	4,029	$350,353,977	522	$0	0
Belgrade	100%	10.48%	NA	$496,929,312	2,764	$120,870,378	204	$0	0
Livingston	100%	4.82%	NA	$392,434,781	2,567	$198,955,646	537	$2,254,253	1
Missoula	85.6%	7.71%	NA	$862,532,275	4,547	$489,664,882	422	$1,003,483,589	190
Counties with Greatest Percent Exposure Which Have Fastest Growth Rates (% Exposure X % Population Change 2010 to 2016)									
Gallatin	100%	14.34%	1,550	$10,930,545,091	40,035	$4,169,858,220	5,191	$963,139,971	207
Flathead	99.50%	7.29%	316	$8,583,838,429	41,189	$3,789,813,701	7,977	$38,896,279	20
Lewis & Clark	97.10%	5.78%	176	$4,707,033,051	27,172	$1,435,375,165	2,755	$551,696,179	77
Missoula	74.50%	5.88%	930	$2,058,762,320	13,273	$931,869,616	1,184	$1,022,350,226	198
Jefferson	100%	3.77%	5	$744,240,161	4,016	$117,529,005	694	$19,263,180	19
Lake	100%	3.40%	44	$3,043,596,291	16,674	$907,884,902	4,157	$14,144,458	16
Madison	100%	2.94%	7	$804,105,665	4,154	$368,696,283	1,301	$270,203	3
Cities/Towns with Highest Percent Exposure Which Have Fastest Growth Rates (Towns with Pop. > 500) (% Exposure X % Population Change 2010 to 2016)									
Bozeman	100%	17.61%	NA	$4,743,491,928	16,722	$2,235,363,972	1,511	$948,662,225	192
Whitefish	100%	12.67%	NA	$1,153,743,638	4,029	$350,353,977	522	$0	0
Kalispell	100%	12.45%	NA	$1,271,291,249	7,553	$1,065,757,780	1,714	$19,802,332	10
Columbia Falls	100%	10.55%	NA	$255,171,515	1,739	$117,184,528	327	$16,951,424	2
Belgrade	100%	10.48%	NA	$496,929,312	2,764	$120,870,378	204	$0	0
Manhattan	100%	10.11%	NA	$115,292,092	657	$33,496,346	71	$0	0
Helena	100%	9.56%	NA	$2,070,264,423	10,487	$1,127,469,517	1,613	$528,727,307	53

Counties with the highest earthquake exposure experiencing the fastest growth include: Gallatin, Flathead, Lewis and Clark, Missoula, Jefferson, Lake and Madison Counties; while the top cities/towns (with population over 500) are Bozeman, Belgrade, and Manhattan (Gallatin Co.), Kalispell, Columbia Falls and Whitefish (Flathead Co.) and Helena (Lewis and Clark County). **Figure 4.4-4** presents percent exposure and population change for the top counties and cities/towns showing the most vulnerable areas experiencing the fastest population growth.

Seasonal tourism increases exposure to seismic hazards in all areas, but the greatest exposure is in the Yellowstone National Park-Hebgen Lake region, where several million people visit annually.

Vulnerability of State Facilities

Counties located in the Intermountain Seismic Belt are shown in **Table 4.4-5** with the total value of state buildings and contents, numbers of state employees. It is assumed that these state assets are most vulnerable to the earthquake hazard.

Table 4.4-5. State-Owned Buildings in Counties Highly Vulnerable to Earthquake Loss

County	Building Value	Contents Value	Total Value	State Employee Count
Gallatin	$963,969,286	$402,009,820	$1,371,912,423	9,013
Missoula	$893,521,957	$340,880,832	$1,239,620,652	3,192
Lewis and Clark	$514,462,216	$226,162,513	$743,967,737	9,055
Silver Bow	$177,626,970	$78,004,103	$256,746,224	583
Powell	$119,646,082	$29,749,518	$150,271,584	472
Beaverhead	$123,091,872	$25,460,187	$148,552,060	764
Deer Lodge	$69,575,244	$15,627,686	$85,635,043	471
Flathead	$57,229,726	$20,677,633	$78,511,996	521
Madison	$31,888,918	$2,569,449	$34,705,516	25
Jefferson	$25,565,364	$5,806,733	$31,372,097	237
Broadwater	$15,531,155	$14,763,225	$30,331,359	7
Lake	$14,463,375	$5,679,327	$20,290,673	3,035
Park	$4,236,197	$1,529,477	$5,825,498	46
Sanders	$2,198,903	$1,553,619	$3,796,310	30
TOTALS				

Source: DOA-RMTD, 2017

The MHMP analysis indicates that 600 critical facilities are located in the earthquake hazard area, as shown in **Appendix B-5**.

From 2009 to 2012, the Montana Dept. of Administration received a FEMA grant to complete Tier 1 seismic evaluations of state buildings located in the Intermountain Seismic Belt. This project evaluated State-owned facilities including: the State Capitol Complex and Law Enforcement Academy in Helena; State Hospital in Warm Springs; Montana Veterans Home in Columbia Falls; Montana Developmental Center in Boulder; State Prison in Deer Lodge; Montana University System campuses in Butte, Dillon, Helena, Missoula, and Bozeman; Montana Department of Transportation facilities in West Yellowstone, and Montana National Guard facilities in Anaconda, Livingston and Helena. Eighty-seven (87) Tier 1 evaluations were completed by a structural engineering firm. The earthquake appendix of the 2013 State of Montana MHMP contains the individual Tier 1 reports with a summary of structural and non-structural deficiencies.

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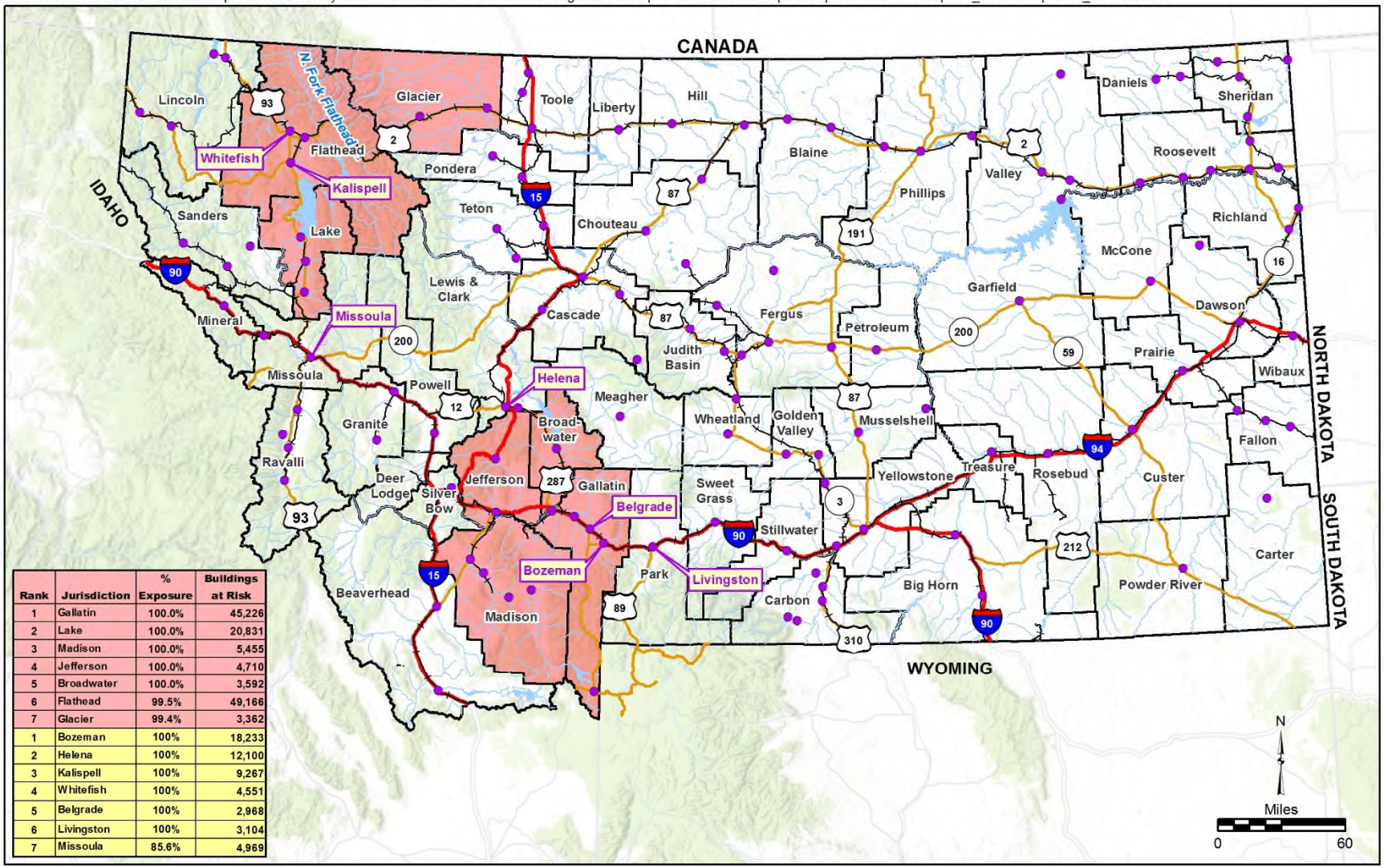

Rank	Jurisdiction	% Exposure	Buildings at Risk
1	Gallatin	100.0%	45,226
2	Lake	100.0%	20,831
3	Madison	100.0%	5,455
4	Jefferson	100.0%	4,710
5	Broadwater	100.0%	3,592
6	Flathead	99.5%	49,166
7	Glacier	99.4%	3,362
1	Bozeman	100%	18,233
2	Helena	100%	12,100
3	Kalispell	100%	9,267
4	Whitefish	100%	4,551
5	Belgrade	100%	2,968
6	Livingston	100%	3,104
7	Missoula	85.6%	4,969

Buildings at Risk = Residences, Commercial, Agricultural, and Industrial structures in hazard area.

Date: 6/2/2018

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- County

Figure 4.4-3
Earthquake - Percent Exposure for Top Counties and Cities/Towns
State of Montana MHMP 2018 Update

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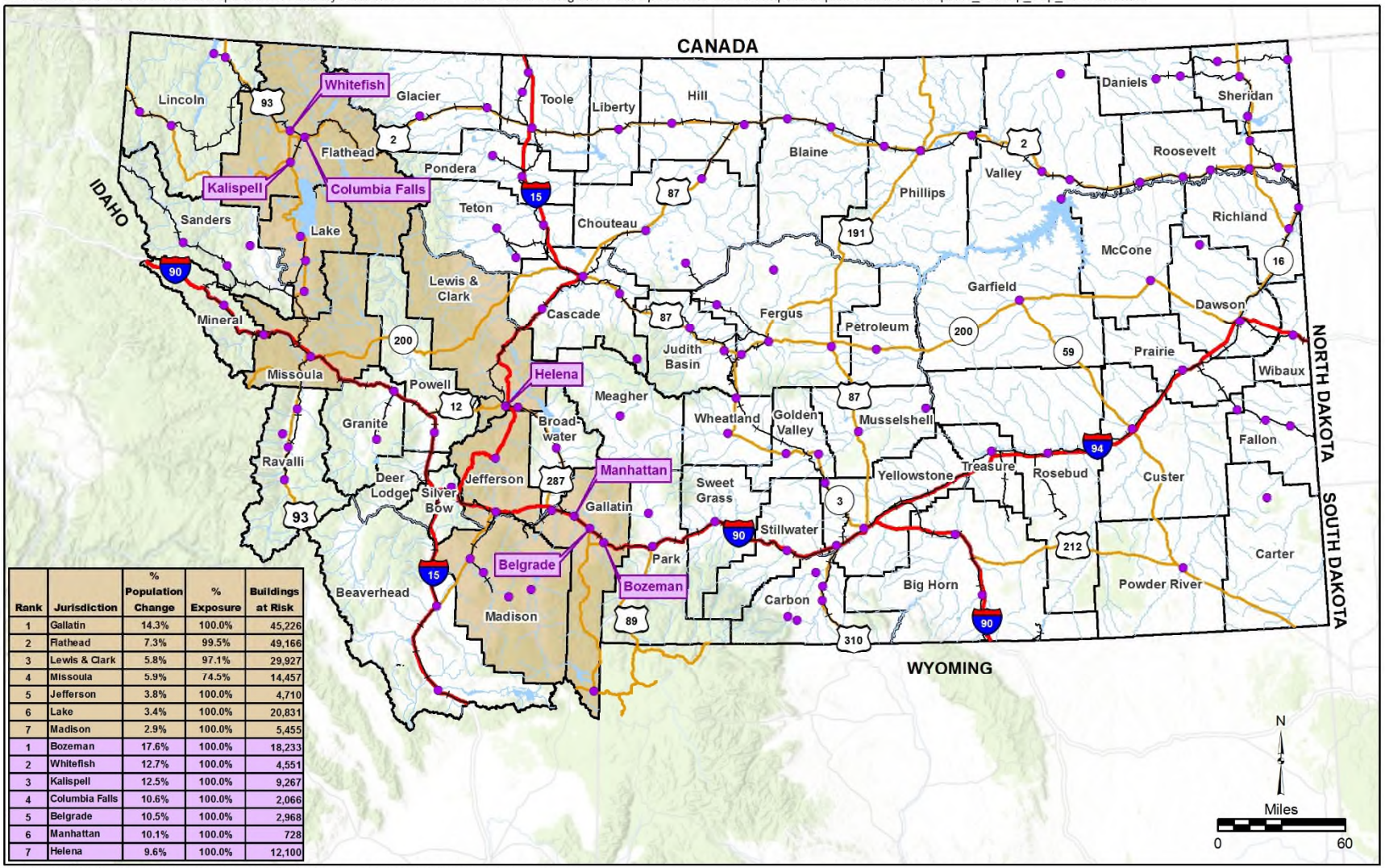

Rank	Jurisdiction	% Population Change	% Exposure	Buildings at Risk
1	Gallatin	14.3%	100.0%	45,226
2	Flathead	7.3%	99.5%	49,166
3	Lewis & Clark	5.8%	97.1%	29,927
4	Missoula	5.9%	74.5%	14,457
5	Jefferson	3.8%	100.0%	4,710
6	Lake	3.4%	100.0%	20,831
7	Madison	2.9%	100.0%	5,455
1	Bozeman	17.6%	100.0%	18,233
2	Whitefish	12.7%	100.0%	4,551
3	Kalispell	12.5%	100.0%	9,267
4	Columbia Falls	10.6%	100.0%	2,066
5	Belgrade	10.5%	100.0%	2,968
6	Manhattan	10.1%	100.0%	728
7	Helena	9.6%	100.0%	12,100

Buildings at Risk = Residences, Commercial, Agricultural, and Industrial structures in hazard area.

Date: 6/2/2018

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- County

Figure 4.4-4

Earthquake - Percent Exposure x Percent Population Change for Top Counties and Cities/Towns
State of Montana MHMP 2018 Update

Table 4.4-6 presents the facilities where critical structural issues were identified and additional evaluation was recommended along with building and content values. A Level II HAZUS analysis was conducted to analyze the vulnerability (percent loss) of the individual facilities. Earthquake scenarios used in the analysis were selected based on past events. Tier 2 seismic evaluations were recommended for these facilities to: evaluate lateral systems and connections, investigate evidence of structural distress and deterioration, and investigate non-compliant issues. Two seismically vulnerable buildings have been removed from **Table 4.4-6** since the 2013 State MHMP was completed: the former Dept. of Corrections facility in Helena was demolished and a new state building was constructed on the site (DNRC); and, the Montana Developmental Center in Boulder is no longer in use, its occupants transferred to other facilities.

Table 4.4-6. Summary of State Buildings with Structural Issues and their Value

Campus/Building	Building & Contents Value (2017)	% Loss (HAZUS)	Estimated Loss
Montana Tech, Butte			
Engineering Hall	$3,892,937	36.45%	$1,418,976
Health Sciences (aka Petroleum Building)	$7,799,478	29.42%	$2,294,606
Museum Building	$9,416,756	45.56%	$4,290,274
Student Union Building	$9,604,045	12.33%	$1,184,179
Montana State Prison, Deer Lodge			
Infirmary	$1,782,952	0.04%	$713
UM-Western, Dillon			
Heating Plant and Garage	$2,001,967	48.03%	$961,545
IT Metals (Art Annex)	$440,821	7.62%	$33,591
IT Woods (Business & Technology Building)	$5,817,260	58.82%	$3,421,712
Library Administration	$15,267,576	29.72%	$4,537,524
Montana Law Enforcement Academy, Helena			
Administration/School	$2,183,940	33.51%	$731,838
Aspen Cottage	$588,381	38.22%	$224,879
Gymnasium	$655,664	27.54%	$180,570
Maple Cottage	$2,190,662	38.38%	$840,776
Spruce Cottage	$1,781,371	26.71%	$475,804
State Capitol Complex, Helena			
Aeronautics Operations Building	$1,520,713	27.74%	$421,846
Airport Hangar Building	$379,020	27.95%	$105,936
Aviation & Support Facility Shop	$3,381,386	30.41%	$1,028,279
Capitol Building	$145,098,564	36.51%	$52,975,486
Cogswell Building	$23,751,374	29.73%	$7,061,283
Dept of Public Health and Human Services	$10,694,849	23.18%	$2,479,066
Margaret Condon Building	$11,895,004	16.55%	$1,968,623
Mitchell Building	$32,876,695	16.85%	$5,539,723
Scott Hart Building	$16,805,048	33.57%	$5,641,455
Veterans & Pioneer Memorial Building	$19,073,783	20.77%	$3,961,625
Walt Sullivan Building	$11,538,734	22.72%	$2,621,600
UM-Helena			
College of Technology Airport Campus	$25,162,367	8.35%	$2,101,058

Source: DOA-RMTD, 2017; FEMA, 2001. Notes: ND = Not Determined.

Most of the State-owned buildings evaluated had non-compliant non-structural issues, including:

- Lack of seismic supports and diagonal bracing suspended lights, ceilings, gas lines, steam lines, ductwork and mechanical piping and equipment.
- Interior non-bearing walls not connected at top and require top restraint for seismic stability.
- Shelving and IT equipment not anchored.
- Masonry chimneys with limited connection to structures.

The Montana Dept. of Administration and Montana University System submitted grant applications to FEMA to fund seismic retrofits. Three projects were funded including: seismic retrofit of the Creative Arts Center at Montana State University (MSU)-Bozeman ($2,240,750 federal share); seismic retrofit of Mathews Hall at University of Montana (UM)-Western in Dillon ($857,904 federal share) and non-structural retrofits at the Montana Law Enforcement Academy in Helena ($94,209 federal share). These projects are now complete and offer their occupants enhanced safety from seismic hazards.

Review of Potential Losses in Local Hazard Mitigation Plans

Approximately 40 percent of the local Hazard Mitigation Plans evaluated the earthquake hazard in their risk assessment. Local jurisdictions that ranked earthquake as their #1 hazard included: Beaverhead and Madison counties. Gallatin and Deer Lodge county ranked earthquake as their #2 hazard. Granite, Lewis and Clark, Park, Powell, Silver Bow and Teton counties ranked it #3.

Appendix B-5 present a summary of potential earthquake losses from the Local Hazard Mitigation Plans.

Future Development

New construction in the Intermountain Seismic Belt is taking place in areas vulnerable to earthquake damage. The State of Montana has adopted the International Building Code (IBC), 2012 edition. Seismic provisions or requirements found in the IBC are what the state requires for commercial buildings built in Montana.

Seismic requirements are found throughout the code and are not condensed into a table or chart of requirements. Different building types, different occupancies and different uses all have varying degrees of seismic requirements and even different materials utilized in those different buildings and occupancies carry additional or different requirements i.e. wood construction of a police station would have different seismic requirements than a masonry built police station. A building with an occupant load of over 300 people would require additional seismic considerations than if the building held less than 300 (same use, same materials). The staff of architects and engineers at the Montana Dept. of Labor and Industry, Bureau of Building and Measurement Standards perform plan reviews to ensure designers have included the seismic provisions and requirements found in the building code.

The IBC recognizes the differences in seismic activity by evaluating three main parameters; 1) amount of motion – this is a site specific value derived from software using a location's zip code, 2) site class or soil type for a specific building site, and 3) the seismic use group which is the type of building use. These three parameters are analyzed to arrive at a "seismic design category" which the

code then provides for specific requirements based on a project's seismic design category label. For example a project located in an area where the ground motion has been determined to be high, the soil type at the site is determined to be such that not much dampening of that motion is likely to occur (not hard rock – silt or loose soil present) and the building is considered an "essential facility" such as a police station or hospital then the seismic design category will calculate out to be such that higher seismic requirements will be placed on that structure. The same motion and same soil type for a building that is not essential (could be right across the street from the police station) would require a lower seismic design.

The IBC does not cover single family residences. The State of Montana has adopted the International Residential Code (IRC), 2012 edition for one and two-family residences and townhouses. The Dept. of Labor does not have jurisdiction over single family residences (they are exempt from the requirements of a building permit by law). Local jurisdictions (cities, counties and towns) can elect to become certified to take on enforcement of single family residences. Currently there are 46 certified jurisdictions including seven counties (**Table 4.4-7**) that are certified to enforce building codes; however, they must adopt the same codes and operate under the same process as the State of Montana.

Table 4.4-7. Jurisdictions Certified to Enforce Building Codes within Intermountain Seismic Belt

County	Jurisdiction Enforcing Building Codes	Area of Enforcement
Broadwater	Townsend	Within city limits
Deer Lodge	Anaconda/Deer Lodge County	Entire county
Flathead	Columbia Falls, Kalispell, Whitefish	Within city limits
Gallatin	Belgrade, Bozeman, Manhattan, West Yellowstone*	Within city limits
Glacier	Cut Bank	Within city limits
Lake	Polson, Ronan	Within city limits
Lewis and Clark	East Helena, Helena	Within city limits
Lincoln	Libby, Troy	Within city limits
Missoula	Missoula	Within city limits
Missoula	Missoula County	County
Park	Livingston	Within city limits
Ravalli	Darby, Hamilton, Stevensville	Within city limits
Silver Bow	Butte/Silver Bow County	Entire county
Teton	Choteau	Within city limits

Notes: * indicates enforcing residential building codes only
Source: Montana DLI, 2018 http://bsd.dli.mt.gov/building-codes-permits/certified-government

Provided future development complies with State building codes, earthquake damage of new structures should be minimized. However, damage to new buildings and infrastructure will occur if earthquakes stronger than the "seismic design categories" in the building codes take place.

Climate Change

The impacts of global climate change on earthquake probability are unknown. Some scientists say that melting glaciers could induce tectonic activity. As ice melts and water runs off, tremendous amounts of weight are shifted on the earth's crust. As newly freed crust returns to its original, pre-glacier shape, it could cause seismic plates to slip and stimulate volcanic activity, according to research into prehistoric earthquakes and volcanic activity. NASA and USGS scientists found that retreating glaciers in southern Alaska may be opening the way for future earthquakes (NASA, 2004).

Because impacts on the earthquake hazard are not well understood, increases in exposure and vulnerability of the local resources are not able to be determined.

Data Limitations

Fault mapping and specific local-level hazard mapping (such as liquefaction) is incomplete across the State. Many faults within the State are believed to be unmapped or not studied. Continuing research in the areas of geology and earthquakes could significantly improve the vulnerability analysis.

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4.5 Drought

CPRI SCORE = 2.95

Description and History

Drought is the second costliest weather disaster in the U.S. However, unlike wildfire, tornadoes, and floods, which can create immediate and visible damage, drought develops quietly and slowly, often without apparent impacts until water shortages become severe and crops wither. Economic losses from drought account for roughly 24 percent of all losses from major weather events. Vulnerability to drought will likely increase in the future with a warming climate (NOAA, 2017).

Drought is an extended period of below normal precipitation which causes damage to crops and other ground cover; diminishes natural streamflow; depletes soil and subsoil moisture; and because of these effects, causes social, environmental, and economic impacts in Montana. Identifying the point at which drought begins and ends is difficult because physical water supply and moisture conditions translate into different consequences for natural resources and various economic activities.

Drought is usually considered relative to some long-term average condition of balance between precipitation and evapotranspiration perceived as "normal". Drought is related to the timing (i.e., principal season of occurrence, delays in the start of the rainy season, occurrence of rains in relation to principal crop growth stages) and the effectiveness (i.e., rainfall intensity, number of rainfall events) of the rains.

Drought can have a widespread impact on the environment and the economy, depending upon its severity, although it typically does not result in loss of life or damage to property, as do other natural hazards. The effects become apparent when the drought is severe and more moisture-related activities are affected. In agriculture, non-irrigated croplands are most susceptible to moisture shortages. Rangeland and irrigated agricultural lands do not feel the effects of drought as quickly as non-irrigated, cultivated acreage, but their yields can also be greatly reduced due to drought. Reductions in yields due to moisture shortages are often aggravated by wind-induced soil erosion. Drought can have a devastating effect on the quality and quantity of livestock food supplies.

An additional hazard resulting from drought conditions is insect infestation. In the Northern Great Plains, rangeland grasshopper outbreaks have caused considerable damage to the agricultural economy. Grasshopper populations tend to increase with both livestock grazing rates and dry conditions, and they can double, triple, or quadruple with each successive year of drought. During a severe grasshopper outbreak, grasshoppers often remove more vegetation than cattle in the same pasture (NDMC, 2004; Branson, 2002).

Drought impacts resources and services on forest and rangeland. Drought results in lower plant growth rates, higher plant stress, and greater susceptibility to disease. Extended drought may lead to loss of plant cover, shifts in plant composition, and increases in invasive species abundance which leads to loss of forage and water for herbivores (both wild and domestic). Drought causes streamflows to decrease and stream temperatures to increase, with negative consequences for some aquatic species, especially cold water-dependent species like bull trout. Drought decreases water quality and quantity for other human uses (USDA, 2017).

Both drought and prolonged dry conditions produce more high-intensity fires due to very low plant and forest fuel moisture. Under extreme drought conditions, lakes, reservoirs, and rivers can be

subject to severe water shortages, impacting irrigation, drinking water, fish populations, and fire suppression water supplies. Drought affects groundwater resources which can lead to reduced pumping capacity, wells going dry, and degraded groundwater quality. Additionally, drought threatens the supply of hydropower produced in the state.

The U.S. Drought Monitor (USDM) uses analysis and weather data to create drought designations. The designations reported each week describe drought conditions across the county, from abnormal dryness to exceptional drought. The USDM consolidates information from drought indicators, climate and hydrological data, soil measurements, models, and local observations.

The Palmer Drought Severity Index (PDSI) and Surface Water Supply Index (SWSI) are also indices used as indicators of drought. The PDSI is a soil moisture index based on measured precipitation, estimated evaporation and evapotranspiration, and climatic characteristics. PDSI figures are available for over 140 stations statewide. The SWSI projects streamflow for runoff and snowmelt-driven hydrologic regimes. The SWSI is based on snowpack, mountain precipitation, soil moisture, and reservoir storage. The Natural Resources Conservation Service (NRCS) calculates SWSIs for over 50 individual Montana river basins.

History of Drought in Montana

In the last 100 years, the first drought impacts occurred shortly after homesteaders flooded the state. The homestead boom of 1906 through 1918 "busted" when severe drought swept the state from 1917 through 1923. The drought was compounded by plummeting market prices and banks demanding repayments (Montana Historical Society, 2004). The Dust Bowl years further impacted agricultural production and economies throughout the state. The period from 1928 through 1939 was the driest in the historic record.

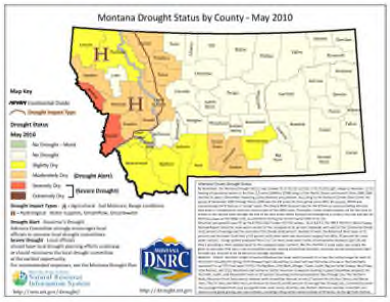
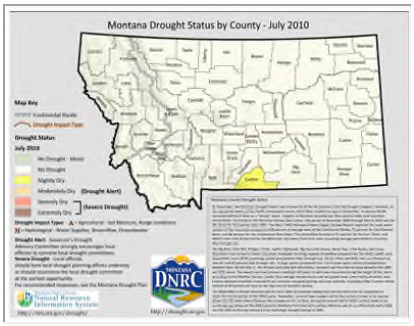
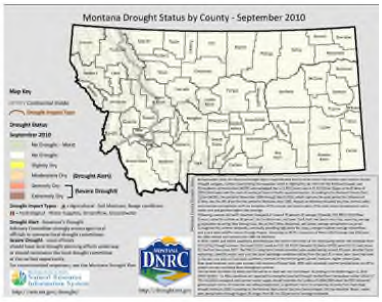
The drought of the 1930s was exacerbated by poor farming practices, low market prices and a depressed economy. A variety of adjustments ensued: improved farmland management, the establishment of insurance programs, liberalization of credit, and diversification of the regional economy. As a result, impacts caused by the drought of the 1950s were much less severe than those of the 1930s, even though the conditions were similar to those of the dust bowl era of the 1930s (Montana Drought Response Plan, 1995).

From 1976 through the present, Montana has endured a period largely characterized by years of below average precipitation, punctuated by the extremely dry years of 1977, 1987-88, 1992, 1994, 2004, and 2017. The drought from 2000-2007 suggests the dryness and hydrologic deficit mimics the Dust Bowl years in everything but duration. According to the Palmer Drought Index, Montana has been in severe and extreme drought between 10 and 20 percent of the time in the last one hundred years.

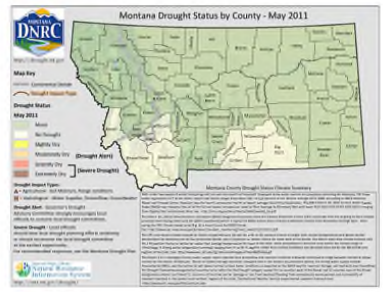
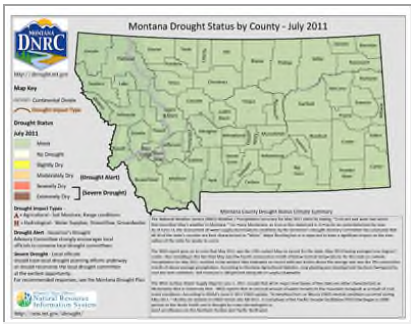
Montana's drought status (now known as its water supply and moisture conditions) for May, July and September for the period 2010 through 2017 are shown in **Figure 4.5-1** (Source: https://mslservices.mt.gov/Geographic_Information/Maps/drought/)

Figure 4.5-1. Montana Drought Status 2010 - 2017

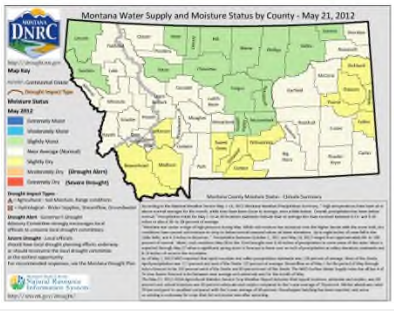
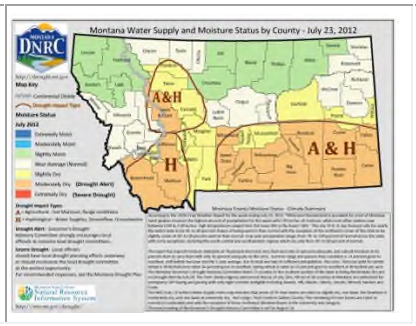
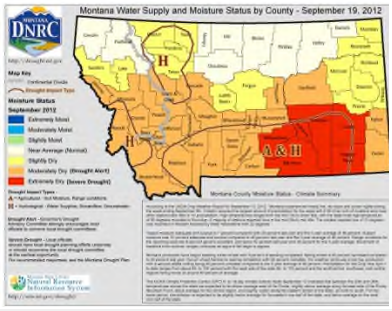
2010 Montana Drought Status by County

May	July	September
		

2011 Montana Drought Status by County

May	July	September
		

2012 Montana Water Supply and Moisture Conditions by County

May	July	September
		

2013 Montana Water Supply and Moisture Conditions by County

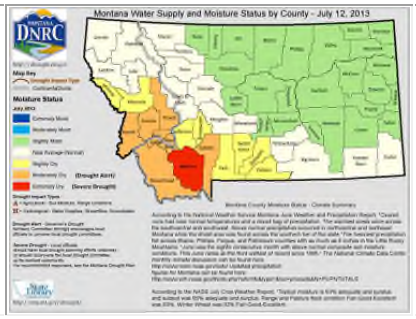
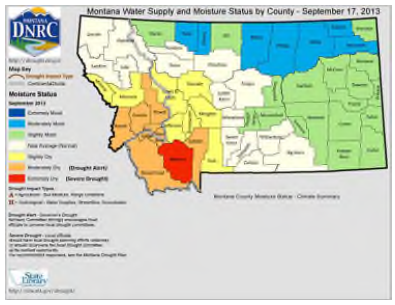
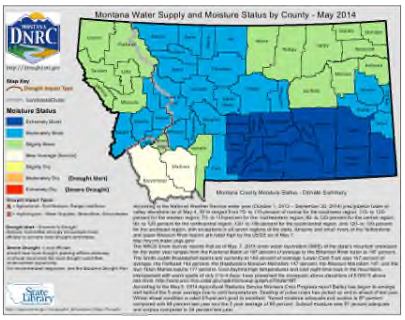
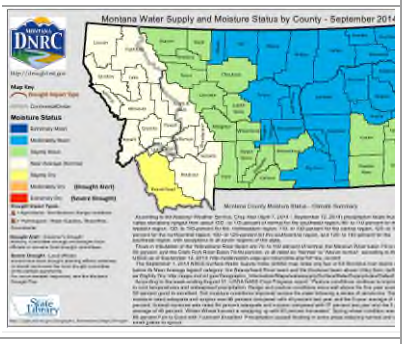
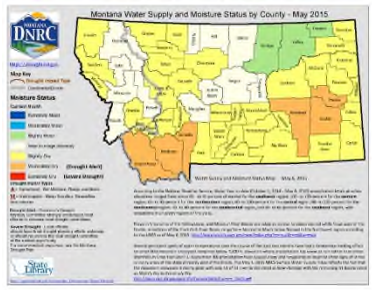
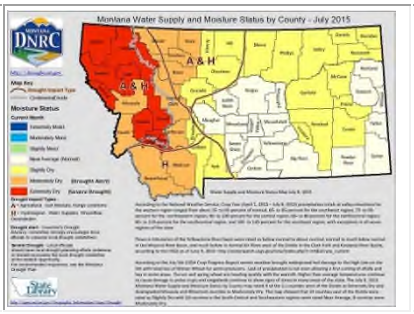
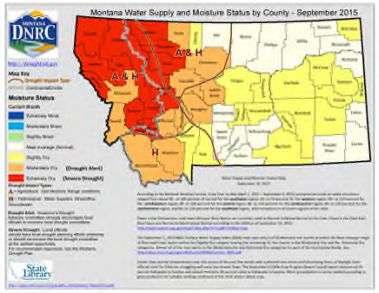
May	July	September
		

Figure 4.5-1. Montana Drought Status 2010 - 2017

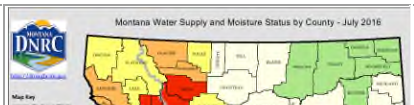
2014 Montana Water Supply and Moisture Conditions by County

May	July	September
		

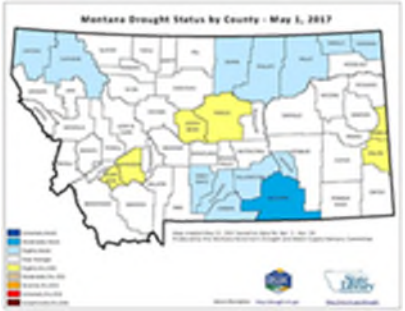
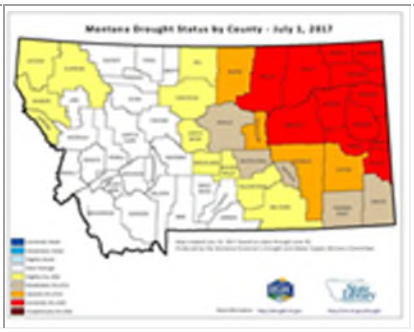
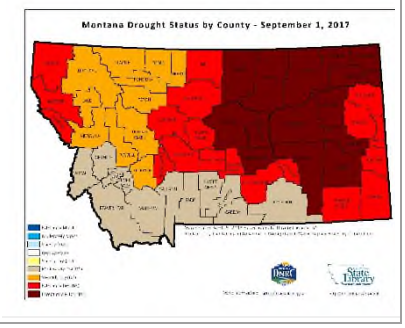
2015 Montana Water Supply and Moisture Conditions by County

May	July	September
		

2016 Montana Water Supply and Moisture Conditions by County

May	July	September
		

2017 Montana Water Supply and Moisture Conditions by County

May	July	September
		

The drought of 2017 was of epic proportions stretching 680 miles west to east from Noxon to Sidney. This was the first summer in 10 years that so much of the state experienced drought at the same time and the first year since 2004 that more than 10 percent of the state was in extreme drought. The summer of 2017 was the second warmest on record since 1950 at 4 degrees above average, and the persistent high temperatures coupled with the record lowest rainfall in July and August shifted the relatively wet conditions of spring into extreme drought by mid-summer. The speed of the transition from wet to dry was so rapid that the term "flash drought" has been coined. (Billings Gazette, *Montana Drought Drives Cattle to Market Early*, October 14, 2017; Billings Gazette, *Nearly all of Montana is in Drought*, August 19, 2017; Bozeman Daily Chronical, *The Worst Drought We've Ever Had: Farmers, Ranchers Across the State Struggle with Historic Dry Spell*, September 3, 2017).

Declared Disasters

Drought disasters are unique; they typically do not require evacuations or constitute an imminent threat to life or property. As a result, disaster declarations and assistance are typically provided by agencies such as the USDA Farm Service Agency (FSA) and Small Business Administration (SBA). There have been no Presidential disaster declarations for drought, except for those related to wildland fires. The declarations at the federal level have been from the Secretary of Agriculture and are referred to as Natural Disaster Determinations (NDD). NDDs allow various assistance programs, such as the low-interest FSA Emergency Loans to Eligible Producers, and assistance through the Crop Disaster Program, Livestock Compensation Program, and Livestock Indemnity Program, among others. State disaster declarations and assistance were provided for grasshopper infestations in Valley County in 1975; Judith Basin, Pondera, Prairie, Sheridan and Wibaux Counties in 1985; and, Carter, Daniels, Golden Valley, Petroleum, Richland, Roosevelt, Sheridan, Treasure, and Wibaux Counties in 1986. Drought and agricultural disaster declarations in Montana are summarized in **Table 4.5-1.**

Table 4.5-1. Montana Drought and other Agricultural Disasters

Date	Event	Damages
1930-1938	Dust Bowl	
1938	Grasshopper Infestation affecting 17 counties with populations "between 40 and 500 hoppers per square yard".	$6,500,000
1956	20 counties applied for Federal disaster aid due to reduced precipitation.	
1961	17 counties requested designation as federal disaster areas due to lack of moisture, higher than normal temperatures, and grasshopper infestation.	
August 1961	24 counties applied for federal drought disaster aid.	Federal: $420,000
1966	Below-normal precipitation for a 10-month period recorded in 10 weather stations across the state.	
August 1975	Grasshopper Infestation, Valley County. Up to 110-120 hoppers per square yard in hay fields. 40,000 acres sprayed.	State: $60,000 Local: $60,000
May 1977	Soil damaged by winds in western and southern part of state over a 7-month period.	250,000 acres of farmland damaged
June 1977	Hydroelectric water supplies critical; Governor Judge issued an energy supply alert and ordered 10% reduction in electricity use by state and local governments.	
1980	Record-low precipitation in eastern Montana since 1979. In Richland Co. alone, 600 of the county's 800 farmers applied for federal payments for drought. Grasshopper infestations in isolated areas, little wheat planted, large numbers of livestock sold due to hay and water shortages.	Est. economic loss: $380 million
1981	Drought starting in 1979 continued. March snow pack 50-60% of normal.	
1984	By July, many Hi-Line cities experienced water shortages and rationing schedules were put into effect. Numerous forest and range fires.	Est. crop losses: $12 to $15 million

Table 4.5-1. Montana Drought and other Agricultural Disasters

Date	Event	Damages
1985	All 56 counties received disaster declarations for drought during this year. From 1982 to 1985, cattle herds reduced by one-third. Smallest wheat crop in 45 years. Extended effects of drought: loss of off-farm jobs, closing of implement dealerships and Production Credit Associations.	Est. economic loss: $3 million
June 1986	Grasshopper Infestation. Carter, Daniels, Golden Valley, Petroleum, Richland, Roosevelt, Sheridan, Treasure & Wibaux counties.	State: $350,000 Local: $350,000
June 1992	Drought Emergency (EO 13-92). All areas of the state suspend certain regulatory authorities relating to the issuance of beneficial water use permits by DNRC because of drought.	
June 1992	Drought Disaster (EO 14-92). All areas of the state continue the suspension of certain regulatory authorities relating to the issuance of beneficial water use permits by DNRC because of drought.	
August 1994	Drought emergencies were declared in a number of Montana counties with 83% of the State reporting drought conditions at mid-month. Stress to stream fisheries (low water levels, high temp.); crop yields, wildfires.	
2000	Severe drought and persistent heat causing significant losses to agriculture and related industries.	$4.2 billion in damage/costs and 140 deaths nationwide
2000- 2002	USDA issued NDD for drought for entire state of Montana for 2000, 2001, and 2002. This designation entitled counties to low interest loans for producers, SBA loans, and an Internal Revenue Service provision deferring capital gains.	
2003	USDA issued NDD for drought for 35 Montana counties on 12/3/2003. This designation made farmers and ranchers eligible for FSA emergency farm loans.	$154,012,122 paid by FSA in Montana
2004	USDA issued NDD for drought for 20 Montana counties on 4/23/2004. This designation made farmers and ranchers eligible for FSA emergency farm loans.	
2017	Unprecedented drought; "As dry as it's been in recorded history" according to the NWS in Glasgow. By late August, the U.S. Drought Monitor classified all of Montana in some stage of drought, with 65% of the state in extreme or exceptional drought. More than half of spring planted dryland crops rated in poor to very poor condition with production off by 29 million bushels. Per acre, spring wheat yields at 21.5 bushels, the worst yield since 1943. (Billings Gazette, *Nearly all of Montana is in Drought*, August 19, 2017).	Crop losses in hundreds of millions of dollars

Sources: DES, 1998, 2004 and 2007; NOAA, 2004; NCDC, 2004; US-SBA, 2004.

Magnitude and Probability

The magnitude of drought can be measured by damage to the agricultural industry, including: reduced rangeland productivity, forced reduction of foundation stock, reduced grazing availability on public lands, cost of acquiring supplemental feed or finding new pasture, disruption of reproduction cycles, high cost/unavailability of water for livestock, and wildfire threat to rangeland, increased fuel and labor costs associated with replanting second crops, and reduced revenues to main street businesses in agricultural communities.

Farmers and ranchers have said that 2017 was the worst drought they'd ever had. By late August, the eastern half of the state was considered under extreme or exceptional drought, with some areas recording their lowest rainfall totals in more than a century. Per acre, the spring wheat yields were 21.5 bushels, compared to 29 million in 2016, the worst yield since 1943. The state's Duram wheat crop was down 66 percent, or 31.3 million bushels from 2016. Ranchers were forced to sell off calves early because there was little grass to feed them. Stockyards moved 6,000 more animals than in 2016, and 11,000 more than in 2015. A dry year like 2017 could mean that cattle end up weighing 50 pounds less than average, cutting roughly $100 off their sale price, which, when considering hundreds or thousands of animals per ranch, makes a huge impact. (Billings Gazette, *Nearly all of*

Montana is in Drought, August 19, 2017; Billings Gazette, *Montana Drought Drives Cattle to Market Early*, October 14, 2017).

The National Drought Mitigation Center tracks indemnity payments for losses suffered due to drought on a county basis. **Table 4.5-2** presents drought damages for a 25-year period (1989 to 2014) listing the top four counties for each year. The data shows that 2001 had the greatest indemnity payments from drought for the State with $132 million, followed by 2002 with $108 million, and 2008 with $75 million. Over the 25-year period of record, Chouteau County has had $100.1 million in indemnity payments from drought, followed by Hill County at $64.8 million, Liberty County at $51.8 million, Toole County at $41.7 million, and Pondera County at $35.9 million. The State of Montana sustained a total of over $754 million in indemnity payments from drought between 1989 and 2014. Indemnity payments account for only a portion of the economic loss associated with drought.

The MHMP risk assessment looked at the economic impact of drought on five local jurisdictions in eastern Montana including Dawson, Garfield, McCone, Richland, and Wibaux counties. **Table 4.5-3** shows how drought has impacted the yield of spring wheat for five documented drought years. The year 2010, considered a non-drought year, is used for comparison purposes and prices are adjusted for inflation. Yield data was obtained from the USDA National Agricultural Statistics Service. The analysis shows that drought has caused tens of millions of dollars in lost revenue for agricultural producers.

Probability for the MHMP is based on hazard frequency over a 10-year period. According to the National Drought Mitigation Center, drought losses are sustained every year in Montana. Although some years are more severe than others, the probability that drought will continue to occur somewhere in Montana on an annual basis resulted in the drought hazard being assigned a "Highly Likely" probability rating.

Vulnerability and Area of Impact

State actions to mitigate drought impacts vary due to Montana's diverse topography and precipitation regimes. Annual precipitation ranges from 6 inches in the southcentral prairies to 120 inches in the northwest mountains. The mountainous regions of the state receive 55 to 80 percent of annual precipitation between October and April. Most of this precipitation is snow that is stored as snowpack until spring runoff. Records indicate that in years when snow packs are below normal by March 1st, and soil moisture levels are low, stream flows most likely will be low in coming months (MT Drought Response Plan, 1995).

In contrast, the eastern two-thirds of the state, which is primarily characterized by prairie topography, receives 55 to 65 percent of its annual precipitation between April and August. The prairie dryland farming regions must receive spring and summer rains to avert the impacts of drought. Drought mitigation management for this region consists primarily of conservation farming practices, use of drought-resistant grain varieties, and participation in programs that remove land from production such as the Conservation Reserve Program (MT Drought Response Plan, 1995).

Table 4.5-2. Drought Insurance Claims; 1989 - 2014

Year	State Total	Top 4 Counties		Year	State Total	Top 4Counties		Year	State Total	Top 4 Counties	
1989	$14,361,948	Valley	$2,796,432	1998	$18,201,060	Chouteau	$3,611,610	2007	$22,015,676	Toole	$4,805,757
		Sheridan	$2,431,510			Liberty	$3,030,160			Glacier	$4,442,653
		Roosevelt	$2,017,595			Hill	$1,898,949			Pondera	$2,614,556
		Daniels	$1,553,283			Toole	$1,789,324			Liberty	$2,574,847
1990	$29,146,575	Valley	$6,215,237	1999	$19,189,328	Liberty	$2,936,675	2008	$74,979,811	Sheridan	$13,847,520
		Roosevelt	$5,146,184			Chouteau	$2,661,108			Roosevelt	$11,679,299
		Daniels	$2,984,917			Hill	$2,490,130			Daniels	$8,432,009
		Richland	$2,295,067			Glacier	$2,471,959			Richland	$6,611,614
1991	$2,775,746	Meagher	$290,716	2000	$44,989,149	Chouteau	$5,314,398	2009	$30,435,526	Valley	$6,002,619
		Chouteau	$249,008			Glacier	$5,218,814			Roosevelt	$3,406,429
		Beaverhead	$204,296			Hill	$4,390,966			Chouteau	$2,773,980
		Big Horn	$196,608			Toole	$3,996,866			McCone	$2,021,015
1992	$37,767,835	Chouteau	$15,629,080	2001	$131,976,513	Chouteau	$27,002,598	2010	$587,480	Stillwater	$145,848
		Hill	$4,789,465			Hill	$20,335,635			Yellowstone	$144,766
		Teton	$3,969,401			Liberty	$15,502,810			Carbon	$63,052
		Pondera	$3,622,761			Toole	$14,954,687			Wheatland	$50,420
1993	$344,432	Carbon	$54,348	2002	$108,139,519	Chouteau	$23,761,975	2011	$5,289,266	Fergus	$957,420
		Valley	$35,762			Hill	$13,922,966			Judith Basin	$488,680
		McCone	$31,654			Liberty	$12,301,739			Glacier	$368,232
		Big Horn	$30,323			Pondera	$6,629,182			Wheatland	$359,082
1994	$5,539,598	Chouteau	$1,303,418	2003	$41,148,170	Chouteau	$5,187,498	2012	$52,075,321	Teton	$3,071,636
		Teton	$883,405			Liberty	$3,089,480			Fallon	$2,808,571
		Pondera	$760,837			Fergus	$2,819,858			Hill	$2,753,411
		Blaine	$420,591			Blaine	$2,805,712			Cascade	$2,683,806
1995	$2,413,758	Chouteau	$530,250	2004	$29,427,194	Carter	$2,687,355	2013	$10,055,101	Broadwater	$1819043
		Cascade	$379,512			Powder River	$2,079,390			Teton	$1,022,160
		Pondera	$328,719			Fallon	$1,916,447			Yellowstone	$715,288
		Hill	$284,760			Wheatland	$1,477,212			Cascade	$480,870
1996	$10,637,521	Chouteau	$1,512,172	2005	$5,905,724	Fergus	$949,023	2014	$11,670,134	Fergus	$2321671
		Blaine	$1,005,464			Chouteau	$668,516			Chouteau	$1799317
		Cascade	$881,542			Hill	$584,163			Hill	$1,190,044
		Phillips	$777,522			Judith Basin	$558,075			Valley	$975,146
1997	$3,830,310	Chouteau	$526,998	2006	$41,483,327	Sheridan	$6,982,442			Phillips	$649,474
		Liberty	$487,803			Valley	$6,521,425			Roosevelt	$607,714
		Sheridan	$287,265			Roosevelt	$4,996,648			Liberty	$595,578
		Toole	$284,591			Daniels	$4,818,308	**TOTAL**	**$754,386,022**		

Source: National Drought Mitigation Center, 2018. (http://drought.unl.edu/Planning/Impacts/DroughtIndemnityData.aspx)

Table 4.5-3. Economic Loss from Drought for Five Montana Counties

Year	Spring Wheat					
	Spring Wheat Yield (bu/acre)	Spring Wheat (acres harvested)	Price Per Bushel (2018 $)	Economic Value in 2018 $	Drought Yield Reduction	Drought Loss in 2018 $
Dawson County						
2010 ND	37.7	154,200	$7.18	$41,739,781		
2008	18.5				50.90%	$21,245,549
1988	9				76.10%	$31,763,973
1980	14				62.90%	$26,254,322
1959	8.4				77.70%	$32,431,810
1934	3.5				90.70%	$37,857,982
Garfield County						
2010 ND	30.2	51,000	$7.18	$11,058,636		
2002	14				53.60%	$5,927,429
1988	4				86.80%	$9,598,896
1961	4.2				86.10%	$9,521,486
1949	4.8				84.10%	$9,300,313
1937	1.8				94.00%	$10,395,118
McCone County						
2010 ND	37.4	183,900	$7.18	$49,383,035		
2008	19				49.20%	$24,296,453
1988	8				78.60%	$38,815,065
1980	14				62.60%	$30,913,780
1959	8				78.60%	$38,815,065
1934	3.5				90.60%	$44,741,030
Richland County						
2010 ND	37.2	154,000	$7.18	$41,132,784		
2008	16.5				55.60%	$22,869,828
1988	10				73.10%	$30,068,065
1980	16				57.00%	$23,445,687
1959	10.9				70.70%	$29,080,878
1934	4				89.20%	$36,690,443
Wibaux County						
2010 ND	30.9	21,700	$7.18	$4,814,405		
2008	16.5				46.60%	$2,243,513
2004	15				51.50%	$2,479,419
1988	6				80.60%	$3,880,411
1980	13				57.90%	$2,787,541
1977	18.3				40.80%	$1,964,277

Source: USDA National Agricultural Statistics Service; KLJ, 2014. Notes: ND = No Drought

Statewide Vulnerability

Any place in the state can be considered vulnerable to drought. Weather cycles will dictate the availability of water and the extreme temperatures to exacerbate drought. The ability to have adequate storage of water, to change to drought resistant crops, to implement conservation measures during extended dry periods, all help to reduce negative impacts. Agriculture, and those who directly depend on the agricultural economy are most vulnerable to drought. Drought has the most profound impact on growing crops and providing enough feed for livestock.

Since Montana's population and water usage is continuing to grow, demand for water is rising at a steady rate. Available supplies have also increased over the years through a variety of structural

(dams) and non-structural (conservation) means, but the State's ability to create new levels of supply is marginal. In recent years, demands on water have been increasing faster than supplies, so that tolerance to deal with water shortages is diminishing. The balance between supply and demand is likely to be disrupted more and more often, and in the future, water shortages are likely to be more frequent and costly. Water shortages force conservation and water use restrictions, can reduce recreation opportunities, and can increase the threat of wildland and rangeland fire.

Drought impacts related to surface water shortages can often be mitigated by changes in water management practices. Adjustments of water management during drought can be effective in mountainous regions of the state that are dependent on mountain snowpack runoff for irrigation. This approach will hold true for central and eastern regions of the state that depend on irrigation water from rivers and reservoirs fed by snowmelt from nearby and distant mountain ranges. Reliable water supply forecasts for irrigation and instream flows can be made early for runoff-dependent regions of the state in contrast to dryland farming regions, which depend on timely precipitation to provide soil moisture for crop growth. (MT Drought Response Plan, 1995)

The Governor's Drought Advisory Committee was established by an act of the Montana State Legislature in 1991 following the drought years of the late 1980s, including the highly publicized Yellowstone National Park wildfire year of 1988. The rationale behind the initiative to create a state drought advisory committee was that if state, local, and federal officials who monitor water supply and moisture conditions can be brought together on a regular basis, and ahead of the seasons when impacts are most likely to occur to Montana's economy and natural resources, advance measures could be taken to lessen the degree of those impacts. House Bill 59 signed by the Governor changed the name to Drought and Water Supply Advisory Committee.

The drought advisory committee serves as a clearinghouse for the sharing of water supply and moisture conditions on a monthly basis among state and local agency officials with responsibility to manage natural resources and support constituents most likely affected by drought. The drought statute provides guidance on the membership of the committee and its responsibilities, including development of a state drought plan which specifies actions to be taken that correspond with the state of current and expected conditions. In its monthly assessment of conditions, the committee considers various scientific indicators that quantify and forecast precipitation, mountain snowpack, streamflow, soil moisture, reservoir contents, and agricultural and livestock production. The committee also provides planning support and information sharing with watershed groups and county drought committees through this Internet website and staff contact.

State voting member agencies include the Governor's Office, DNRC, DEQ, FWP, Agriculture, Livestock, Commerce, and Disaster Services. Federal reporting partners include the Bureau of Reclamation, U.S. Geological Survey, Natural Resource Conservation Service, Agricultural Statistics Service, and the National Weather Service. Other reporters include the multi-agency Northern Rockies Coordination Center for fire conditions, Montana Tech's Groundwater Information Center, Montana Climate Office, USDA Farm Service Agency, U.S. Congressional delegation representatives, U.S. Small Business Administration, Rural Development, and Montana State University Extension Service. The committee chair is held by the Governor's representative, traditionally the Lieutenant Governor. The committee is required to meet in April and October at a minimum and monthly between those months as warranted by current and expected conditions.

Other State agencies have plans and policies to mitigate the impact of drought. FWP maintains a Fisheries Division Drought Contingency Plan in recognition that Montana supports some of North America's most popular fisheries. While natural events cannot be controlled, the additive impact of angling mortality during the stressful conditions created by drought can be limited, to help aquatic communities survive the crisis with a better chance to recover quickly. FWP's drought strategy is an attempt to balance recreational opportunity with resource protections based on biological considerations, and to some extent, social parameters. FWP asks that irrigators, anglers and others make sacrifices in times of drought. to mitigate, to some extent, the impacts of reduced flows and high temperatures and reducing the stress on wild trout by leaving water in streams and limiting angling pressure where necessary. During periods of drought, the FWP Wildlife Division monitors wildlife populations, documents drought impacts, informs the public of how wildlife populations are faring and takes appropriate management actions in accordance with a Wildlife Drought Contingency Plan.

Federal agencies have mobilized to provide improved information and data, emergency and planning assistance, landscape-scale land management improvements, and investments in new technologies and approaches to water resource management. Continued drought conditions in the West and projections of more extreme droughts in the future underscore the urgency to pursue long term solutions for protecting water resources and the communities and ecosystems that depend on them. In partnership with the Montana DNRC and other state and local collaborators, the Missouri Headwaters Basin was selected as a national drought resilience pilot project. Partners are leveraging multiple resources to engage communities in drought preparedness planning and to implement projects that build resiliency. Goals of the project include: providing tools for monitoring, assessing and forecasting; developing local and regional capacity to plan for drought; and, implementing local projects to build regional resilience. Both the Big Hole and Jefferson River Water Councils have developed Drought Management Plans. The purpose of these plans is to reduce resource damage and to aid in the equitable distribution of water resources during water critical periods.

Review of Potential Losses in Local Hazard Mitigation Plans

Approximately 60 percent of the local Hazard Mitigation Plans evaluated the drought hazard in their risk assessment. Local jurisdictions that ranked drought as their #1 hazard included Big Horn, Judith Basin, Teton, and Toole counties and the Fort Belknap Reservation. Those who ranked drought as their #3 hazard included Carter, Cascade, Custer, Jefferson and Ravalli counties.

Drought loss is described in terms of its effect on the economy, either as a dollar value or high-moderate-low rating referring to the potential impact to the economy from the hazard. **Appendix B-6** presents a summary of potential drought losses from the Local PDM Plans.

Vulnerability of State Property

State land would be more prone to wildland fire and lands leased for agricultural purposes could generate lower lease payments if the availability of forage for livestock grazing and/or water availability for irrigation is reduced or diminished. State-owned facilities are not generally considered vulnerable to drought; however, there is a greater threat of structure damage in a drought-affected area, as drought increases the risk of wildfire and my create water shortages that inhibit adequate fire response.

Future Development

The impact of future development on the drought hazard would be through limiting groundwater resources. The Montana DEQ carefully monitors and regulates public water systems, the impact of future development with respect to drought is considered low.

Climate Change

Future changes in climate are likely to increase the incidence of drought. Montana has been on a steady warming trend for decades, up over 3 degrees F since 1950, and all projections are that it will continue. Montana can expect additional warming with less precipitation in the summer months. Over the next century, extreme heat days (above 90 degrees F) are projected to increase by an additional 5-35 days across the state. Projected warming in winter and spring will likely lead to a higher proportion of the annual flow leaving Montana watersheds earlier in the year, resulting in lower flows during the summer months (Whitlock et.al., 2017).

Table 4.5-4 presents the median 95-degree days projected for the low- and high-emission scenarios for mid-century and end-of-century. The data is presented for the top crop- and livestock-producing counties based on 2014 cash sales. The data shows that Yellowstone County, the top livestock-producing county, is projected to experience between 26 and 29 more 95-degree days at mid-century. Chouteau County, the top crop producing county, is projected to experience between 17 and 21 more 95-degree days at mid-century. These predictions are even more extreme at the end-of-the century. Extreme heat will likely exacerbate future drought conditions.

Table 4.5-4. Top Agricultural Counties with Highest Projected Median Days per Year Over 95 Degrees at Mid- and End-Century

County	Observed Mean 1950-2006 (Days/Yr)	Low Emission Scenario (Days/Yr)	Change from Observed (Days/Yr)	High Emission Scenario (Days/Yr)	Change from Observed (Days/Yr)
Mid-Century (2050)					
1L-Yellowstone	8.1	33.9	25.8	37.0	28.9
2L-Beaverhead	0.1	0.6	0.5	1.0	0.9
3L-Custer	14.5	42.8	28.3	46.0	31.5
4L-Fergus	4.7	16.4	11.7	19.8	15.1
5L-Carter	8.7	30.8	22.1	33.3	24.6
6L-Rosebud	12.3	39.5	27.2	44.6	32.2
7L-Judith Basin	0.9	5.8	4.8	8.0	7.1
1C-Chouteau	6.4	23.7	17.2	27.1	20.7
2C-Hill	5.4	19.5	14.1	21.4	15.9
3C-Roosevelt	8.2	26.2	18.0	29.2	20.9
4C-Richland	7.8	26.9	19.0	31.1	23.2
5C-Teton	0.8	6.6	5.8	8.6	7.8
6C-Valley	6.4	19.8	13.4	22.6	16.2
7C-Pondera	1.0	7.0	5.9	10.2	9.2
8C-Sheridan	5.6	19.5	14.0	20.2	14.6
End of Century (2099)					
1L-Yellowstone	8.1	40.5	32.4	76.7	68.6
2L-Beaverhead	0.1	1.3	1.2	12.7	12.6
3L-Custer	14.5	47.4	32.9	80.6	66.1
4L-Fergus	4.7	23.4	18.8	51.6	46.9
5L-Carter	8.7	36.1	27.4	73.1	64.4

Table 4.5-4. Top Agricultural Counties with Highest Projected Median Days per Year Over 95 Degrees at Mid- and End-Century

County	Observed Mean 1950-2006 (Days/Yr)	Low Emission Scenario (Days/Yr)	Change from Observed (Days/Yr)	High Emission Scenario (Days/Yr)	Change from Observed (Days/Yr)
6L-Rosebud	12.3	45.4	33.1	78.8	66.4
7L-Judith Basin	0.9	8.8	7.9	35.9	34.9
1C-Chouteau	6.4	29.9	23.4	61.5	55.1
2C-Hill	5.4	25.0	19.5	57.0	51.5
3C-Roosevelt	8.2	30.3	22.1	65.4	57.2
4C-Richland	7.8	33.8	26.0	67.7	59.8
5C-Teton	0.8	10.7	9.9	35.0	34.2
6C-Valley	6.4	25.8	19.4	56.4	50.0
7C-Pondera	1.0	12.8	11.8	39.6	38.6
8C-Sheridan	5.6	20.6	15.0	56.9	51.3

Source: FEMA and NOAA, 2017. Notes: #C = Rank in crop cash receipts from 2014; #L = Rank in livestock cash receipts from 2014. The low-emissions scenario assumes that global emissions of the greenhouse gases than cause changes in climate conditions peak in the year 2040 and then decline. The high-emissions scenario assumes that global emissions of greenhouse gases remain largely unabated through the 21st century.

The effects of climate change can harm agricultural activities, both crops and livestock. The changes in temperature and precipitation brought on by climate change can make it harder to grow some crops. Evaporation and the higher rate at which plants lose moisture through their leaves both increase with temperature. Unless higher evapotranspiration rates are matched by increases in precipitation, environments will tend to dry, promoting drought conditions. Intense rains can increase runoff and deprive plants of nutrient-rich topsoil and changes in temperatures may cause crops to mature earlier, which can expose them to harsh weather. Warmer temperatures can introduce new agricultural pests to the region or make conditions better for pests already present, including weeds and invasive plants that can crowd out crops. Maintaining agricultural activities on marginal lands may no longer be sustainable (FEMA, 2016).

According to a 2016 report prepared for the Montana Farmers Union, by the middle of the century the effects of climate change are projected to reduce cattle and grain production in Montana by 20 and 25 percent, respectively, resulting in a loss of 25,000 jobs and $736 million in earnings (Bozeman Daily Chronical, *The Worst Drought We've Ever Had: Farmers, Ranchers Across the State Struggle with Historic Dry Spell*, September 3, 2017). Farmers and others directly affected by drought are figuring out how to make it through. Some ranchers are declaring an end to their farming days. With irrigation too expensive for small farming operations, it leaves crops at the mercy of climate. It's a lot of pressure and taking a toll on farmers and ranchers psychologically (The Guardian, *The Unprecedented Drought That's Crippling Montana and North Dakota*, September 7, 2017).

Short-term drought during the season of highest demand can have severe consequences for natural systems. Changes in stream temperature due to lower flows and rising air temperature are likely to have catastrophic impacts on some aquatic species, with ripple effects on Montana's important river-based recreation industry. Studies show that distributions of brown trout and bull trout have shifted upstream as fish seek to access cooler habitats. In larger rivers at lower elevations, warming trends may result in more frequent fishing season closures and disease outbreaks. Some sections of rivers that currently support trout fisheries may transition gradually into bass fisheries (Whitlock, et.al, 2017).

Maintaining stream flows during warm season months will likely necessitate reconsideration of water storage practices and reservoir management. Changing seasonality of water availability will likely put additional stress on the water rights system, making it difficult to access water at crucial times (Whitlock, et.al, 2017).

Population exposure to drought is likely to increase as a result of climate change. Some people without access to backup water supplies may suffer water shortages and a greater number of people may need to engage in behavior change such as water conservation. The societal impact from extreme heat is also discussed in the *Severe Weather* section.

Property exposure and vulnerability may increase as a result of increased drought resulting from climate change. Indirect impacts of drought, such as wildfire, may increase the threat to structures.

Critical facility exposure to drought is not expected to increase as a result of climate change; however, facility operators may need to alter standard management practices and actively manage resources, particularly in the water-related service sector.

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4.6 Severe Weather

CPRI SCORE = 2.75

Description and History

Severe summer and winter weather have been combined into one hazard profile for the 2018 MHMP. Drought is profiled separately in *Section 4.5*. Thunderstorms, hailstorms, high winds, extreme heat, heavy snow, freezing rain and sleet occur multiple times each year. Wind gusts in excess of 70 mph are not uncommon.

Severe Winter Weather

Severe winter weather presents one of the greatest threats to life of any hazard in Montana. Statistics on winter deaths are difficult to obtain, but nationwide there are on average 100 lives directly and indirectly lost to winter weather, more than lightning, hurricanes, or tornadoes. Winter storms are considered to be deceptive killers because most deaths are indirectly related to the storm. People die in traffic accidents on snow- or ice-covered roads, from hypothermia due to prolonged exposure to cold, and from heart attacks due to overexertion. About 70 percent of the winter deaths in the U.S. occur in automobiles and nearly 25 percent are from people caught out in the storm (NOAA, 2001).

Winter storms may be categorized as ice storms, heavy snowfall, or blizzards. These storms vary in size and intensity and may affect a small part of the state or several states at once. Blizzards are common in Montana. A blizzard is a storm that has sustained winds or frequent gusts of 35 miles per hour or higher with snow and blowing snow reducing visibility to near zero. Blowing and rapid snowfall can overwhelm the plowing resources, making roadways impassable, and severely reduce visibility. Particularly heavy snows, early or late season snows, and ice events can damage infrastructure such as power lines, and block roads or damage structures with downed trees.

A deputy Sheriff Directs Traffic around a Crash in a Blizzard along U.S. Highway 2 near Columbia Falls on January 27, 2004.

Cold temperatures into the negative numbers are also common throughout the winter months in Montana. The coldest places in Montana are in Valley, Sheridan and Roosevelt Counties where average daily low temperatures have ranged from -5.8°F to -2.0°F. The coldest temperature ever recorded in Montana was -70°F at Rogers Pass north of Helena, on January 20, 1954. Extended cold periods, especially when coupled with strong winds, can create dangerous situations for those outdoors or those without heat, such as in the case of a utility disruption.

Major problems typically only occur during record snowfalls and extended periods of below zero temperatures. Initial consequences include threats to vulnerable populations from utility interruption, freezing pipes, and snow removal costs. Economic losses include commercial aviation delays/cancellations, medical flights unable to transport patients, and loss in revenue to hotels and

restaurants when large events are canceled (school sports, etc.). Residual effects from high snowpack winters include potential spring flooding from rapid snow melt.

Most Montana residents are prepared for winter weather each year. Every community receives snow on an annual basis, so residents expect measurable snow several times each winter. Winter storms are generally slow in developing, often taking one to three days to mature. This does not in any way diminish their importance, nor their potential for causing loss of life and destruction. What it does mean is that the National Weather Service is often able to provide advance notice of winter storms, in some cases, lead times of one to two days. Winter weather typically affects the state from November to April each year but late storms can extend into June, causing extreme impacts to the agricultural industry.

Highway 191 near Malta, December 28, 2003. The highway was closed for several days following record snowfalls in northeastern Montana. Many drivers were stranded during the storm that created this snow drift (NWS, 2004).

Severe winter weather impacts the state annually with blowing and drifting snow, extreme cold, hazardous driving conditions, and utility interruption. From 2012 through 2017 there were 27 severe winter weather events causing either loss of life or property damage (SHELDUS, 2017). A description of several severe winter weather events is presented below.

February 22, 2018 - An unrelenting series of snowstorms, gale force winds and subzero temperatures drained emergency resources on the Blackfeet Reservation. Many families living in more remote locations were blocked in their homes for weeks without access to food, medicine and heat. Emergency coordinators finally caught a break and managed to clear out some of the snow accumulation, which totaled six feet in some areas, carving a narrow two-lane path through highway arteries that had been intermittently closed for weeks, cutting off supplies to the reservation and making travel virtually impossible. The brutal weather prompted the Blackfeet Nation to declare a state of emergency in early January, while Governor Steve Bullock followed up with a declaration on February 27, sending a semi-load of food and two shipments of firewood to the beleaguered communities of Browning, Hearth Butte, East Glacier, Babb, and St. Mary. (Flathead Beacon, *Clobbered by Snow, Beleaguered Blackfeet Communities Begin to Gain Ground,* March 3, 2018).

October 2, 2017 - A sudden winter storm struck north-central Montana the first week of October and dropped an unusual amount of snow and carried high winds along with it. Many of the trees in communities up and down the Hi-Line were still full of leaves making the weight they had to bare even more. Thousands of trees as well as hundreds of power poles were knocked down due to the storm and left many residents without power for several days. (Blaine County Journal, *It was a Storm that will be Remembered*, December 27, 2017).

March 2011 – A state of emergency was declared by Glacier County and the Blackfeet Tribe due to huge snow drifts and blizzard-like condition. In some areas snow nearly reached rooftops and covered doors and windows. In East Glacier, 13 inches fell on top of 51 inches already on the ground. Browning had 20 hours of whiteout condition when approximately 20 motorists were stranded temporarily and the viaduct at the U.S. Highway 2 and U.S. 89 intersection was snowed under. Three

people were seriously injured in a head-on collision caused when one driver couldn't see through the blowing snow and drifted into the other lane just west of Browning. The deep snow made it impossible for emergency responders to land a helicopter.

June 2002 - A major late season winter storm affected much of the Rocky Mountain Front. Heavy snow fell for three days with snow accumulations ranging from 3 to 4 feet over the valleys, to 5 to 7 feet above 5,000 feet. This snow had a very high moisture content, which caused 301 power poles to break, 232 power pole cross arms to snap off, 521 splices, and over 30 miles of destroyed power lines. The power was out to over 2,500 customers, some for several days. Roads were closed over the entire Rocky Mountain Front region for 2 days. The deep snow cover resulted in the loss of over 3,200 livestock. Property damage was estimated at $3.2 million. The storm received a Presidential disaster declaration.

November 2000 - Eastern Montana suffered an ice storm and blizzard in November 2000 which knocked out power to many homes and businesses from Plentywood to Ekalaka. Some locations did not have power restored for several weeks. Estimated damages were $3 million. The storm received a Presidential disaster declaration.

Severe Summer Weather

Severe summer weather includes thunderstorms, high winds, hail, lightning, tornadoes, extreme heat, and microbursts that typically occur between May and October of each year in Montana. A brief description of these weather phenomena is presented below.

A thunderstorm is formed from a combination of moisture, rapidly rising warm air, and a force capable of lifting air, such as a warm and cold front or a mountain. A severe thunderstorm is a thunderstorm which produces tornadoes, hail 1 inch or more in diameter, or winds of 50 knots (58 mph) or more. All thunderstorms contain lightning. Thunderstorms may occur singly, in clusters, or in lines. Thus, it is possible for several thunderstorms to affect one location in the course of a few hours. Straight-line winds are responsible for most thunderstorm damage.

High winds can occur with strong pressure gradients or gusty frontal passages. These winds can affect the entire State with wind speeds in excess of 75-100 mph. A Chinook is a warm wind that develops down the east slopes of the Rocky Mountains. At times, these winds can reach several hundreds of miles into the high plains.

Lightning is an electrical discharge that results from the buildup of positive and negative charges within a thunderstorm and the earth's surface. When the buildup becomes strong enough, lightning appears as a "bolt". This flash of light usually occurs within the clouds or between the clouds and the ground. Lightning's electrical charge and intense heat can electrocute on contact, split trees, ignite fires, and cause electrical failures.

Extreme Heat often results in the highest number of annual deaths among all weather-related hazards. In most of the United States, extreme heat is defined as a long period (2 to 3 days) of high heat and humidity with temperatures above 90 degrees. In extreme heat, evaporation is slowed and the body must work extra hard to maintain a normal temperature. This can lead to death by overworking the human body.

A microburst is a very localized column of sinking air, producing damaging divergent and straight-line winds at the surface that are similar to, but distinguishable from, tornadoes. The scale and suddenness of a microburst makes it a great danger to aircraft due to the low-level wind shear caused by its gust front, with several fatal crashes having been attributed to the phenomenon over the past several decades. Microbursts in forested regions have flattened acres of standing timber.

A tornado is a violently rotating column of air in contact with the ground and extending from the base of a thunderstorm. Until 2006, tornadoes were categorized by the Fujita scale based on the tornado's wind speed. The Enhanced Fujita (EF) Scale was implemented in place of the Fujita scale and began operational use on February 1, 2007. A comparison of the Fujita and EF scales and wind speeds are summarized in **Table 4.6-1.** The EF scale has six categories from zero to five representing increasing degrees of damage. It was revised to reflect better align wind speeds more closely with associated storm damage. It also adds more types of structures as well as vegetation, expands degrees of damage, and better accounts for variables such as differences in construction quality. The EF-scale is a set of wind estimates based on damage. It uses three-second estimated gusts at the point of damage. These estimates vary with height and exposure. Forensic meteorologists use 28 damage indicators and up to 9 degrees of damage to assign estimated speeds to the wind gusts.

Table 4.6-1. Comparison of Fujita and Enhanced Fujita Tornado Scale

Fujita Scale			Enhanced Fujita (EF) Scale		
Scale	Wind Speed (mph)	Typical Damage	Scale	3-Second Gust Speed (mph)	Typical Damage
F0	<73	Light Damage - Some damage to chimneys; branches broken off trees; shallow-rooted trees pushed over; sign boards damaged.	EF0	66-85	Light Damage – Causes some damage to siding and shingles.
F1	73-112	Moderate Damage - Peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos blown off roads.	EF1	86-110	Moderate Damage – Considerable roof damage. Winds uproot tees and overturn mobile homes. Flagpoles bend.
F2	113-157	Considerable Damage - Roofs torn off frame houses; mobile homes demolished; boxcars overturned; large trees snapped or uprooted; light object missiles generated; cars lifted off ground.	EF2	111-135	Considerable Damage – Most single-wide mobile homes destroyed. Permanent homes can shift off foundations. Flagpoles collapse. Softwood trees debarked.
F3	158-206	Severe Damage - Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off ground and thrown.	EF3	136-165	Severe Damage – Hardwood trees debarked. All but small portions of houses destroyed.
F4	207-260	Devastating Damage - Well-built houses leveled; structures with weak foundations blown away some distance; cars thrown and large missiles generated.	EF4	166-200	Devastating damage – Complete destruction of well-built residences, and large sections of school buildings.
F5	261-318	Incredible Damage - Strong frame houses lifted off foundations and swept away; automobile sized missiles fly through the air in excess of 100 meters.	EF5	>200	Incredible Damage – Significant structural deformation of mid- and High-rise buildings.

Source: NOAA-Storm Prediction Center, 2012

In Montana, most tornadoes occur in June, followed closely by the month of July. From 1952 to 2017, Montana had an annual average of six tornadoes. From 1952 to 2017, 130 of the 381 recorded tornado events (34%) in Montana were considered F1/EF0 speeds or greater. Montana had seven deaths and at least 77 injuries from tornadoes from 1880 to 2017 (**Table 4.6-2**).

Table 4.6-2. Tornadoes Causing At Least One Death or Three Injuries in MT (1880 to 2017)

Date	Event	Deaths	Injuries
May 15, 1883	Homes and other buildings destroyed at a mining community, eight miles south of Butte.	0	6
June 10, 1923	Two men killed by a falling tree as a tornado hit a copper mine near Rivulet in Mineral County.	2	0
June 15, 1924	Three homes destroyed at farming community northwest of Great Falls.	0	7
July 4, 1927	Barns destroyed and livestock killed eight miles southwest of Suffolk, Fergus County.	0	6
May 22, 1933	10 buildings destroyed in Bainville, Roosevelt Co. Injuries were in a cafe.	0	12
May 8, 1934	Roofs blown off 12 homes and two service stations destroyed in Plentywood, Sheridan County.	0	7
June 27, 1936	Seven injured by an F1 tornado in Blaine County.	0	7
June 7, 1946	One killed and one injured by an F3 tornado in Roosevelt County.	1	1
September 16, 1946	A small home destroyed near Sidney, Richland County.	0	8
July 19, 1952	Large farm near North Dakota border completely destroyed in Wibaux Co.	1	2
July 10, 1965	F1 tornado injured 5 and caused $2.5M in property damage in Chouteau Co.	0	5
July 9, 1983	As the tornado passed near Vida, McCone County, it threw a car, with two people, for 200 yards.	1	1
July 20, 1993	Two mobile homes destroyed in Rosebud Co., two miles south of Lame Deer	0	3
August 14, 1999	Two miles east of Lewistown (Fergus County)	0	3
July 26, 2010	EF3 tornado in Sheridan County causing 300 K in property damage and two fatalities at the Smith Ranch near Medicine Lake (Sheridan County).	2	1
June 13, 2016	EF-3 tornado touched down in Baker (Fallon County)	0	7
TOTAL		**7**	**77**

Source: TPO, 2007; NCDC, 2018

Table 4.6-3 shows the counties with the highest frequency of severe summer weather events. Valley County has had the greatest number of tornadoes, large hail, and high thunderstorm wind events followed by Yellowstone County. The highest number of synoptic wind events occur along the Rocky Mountain Front (Glacier, Teton, and Cascade Counties) and the Beartooth Foothills (Park and Stillwater Counties). Concentrations of these recorded events identify patterns of where they are likely to occur in the future.

Table 4.6-3. Counties with High Frequency of Severe Weather Events: 1950 - 2017

Tornadoes (≥ EF0)		Hail (≥2-inch diameter)		Thunderstorm Wind (≥ 80 mph)		Synoptic Wind (≥ 80 mph)	
1950-2017		1955-2017		1955-2017		1993-2017	
County	#	County	#	County	#	Zone	#
Valley	38	Valley	37	Valley	44	Northern Rocky Mtn Front	64
Fergus	27	Powder River	28	Yellowstone	34	Beartooth Foothills	22
Yellowstone	19	Yellowstone	27	Custer	29	Southern Rocky Mt Front	20
Powder River	16	Rosebud	26	Roosevelt	24	Rocky Mountain Front	10
Roosevelt	15	Carter	25	Rosebud	23	Livingston Area	9
Chouteau	14	Garfield	23	Dawson	21	Eastern Teton	9
Dawson	14	McCone	20	Big Horn	19	Wheatland/Park/Sweet Grass	9
Richland	12	Custer	17	Richland	15	Liberty	7
Judith Basin	12	Fergus	17	McCone	14	Cascade	7
Garfield	12	Fallon	16	Carter	13	Butte/Blackfoot	6
Beaverhead	11	Big Horn	15	Prairie	9	Eastern Glacier	6

Table 4.6-3. Counties with High Frequency of Severe Weather Events: 1950 - 2017

Tornadoes (≥ EF0)		Hail (≥2-inch diameter)		Thunderstorm Wind (≥ 80 mph)		Synoptic Wind (≥ 80 mph)	
1950-2017		1955-2017		1955-2017		1993-2017	
Cascade	11	Phillips	14	Powder River	9	West Glacier Region	6
Carter	11	Daniels	13	Hill	9	Yellowstone	6

Source: NCDC, 2018

Several severe summer weather events are described below.

June 13, 2016 - Six people were injured and a slew of homes damaged after an EF3 tornado touched down in Baker (Fallon Co.). The tornado touched down on Baker Lake and traveled northeast into a subdivision around 7 pm, lasting about 10 minutes and traveling about half a mile. It destroyed at least six homes and damaged more than 50. Estimated damages were more than $1 million. Montanans have experienced EF3 tornadoes four times since record keeping began in 1950 including in Wibaux County in 1952, Choteau County in 1988, Sheridan County in 2010 and Carter County in 2014. One person died in Wibaux County and the Sheridan County storm resulted in two deaths. (Billings Gazette, *Baker Tornado Matches Strongest Recorded in Montana*, June 13, 2016).

July 27, 2015 - A severe thunderstorm with up to 120 mph winds hit Glendive (Dawson Co.) leaving much of the city without electricity. A National Weather Service report said that powerful straight-line winds damaged buildings, tipped over grain bins and flattened power lines. Wind speeds were measured at 90 mph at the airport before the measurement instrument was blown off the roof and an airplane hangar was destroyed. Five metal electrical transmission towers west of Glendive along Highway 200 crumbled. Several wooden power poles in the area were snapped. Significant damage was incurred by the areas trees and power lines. Crews removed debris from city streets and repaired a broken water main. Most of the damage was fallen limbs and downed power lines, but structural damage was reported, mainly on private property. NWS officials determined that wind speeds exceeded 100 mph in several areas around Glendive while examining damage like roofs peeled off buildings, garage doors blown in and a collapsed barn. (Billings Gazette, *Glendive Pounded by Winds up to 120 mph on Monday*, July 28, 2015)

June 20, 2010 - An EF2 tornado hit Billings on Sunday June 20, 2010 (Yellowstone Co.). The tornado was on the ground for about 15 minutes and took the roof off the Rimrock Auto Arena at MetraPark, a 10,000 seat arena, and heavily damaged numerous businesses. The storm was accompanied by high

winds and a major hail storm that caused severe damage and flash flooding in the Heights section of the city. Two people were on the MetraPark grounds when the tornado hit, but neither was hurt. A day earlier, thousands of people were inside the arena for an Indoor Football League game. The twister hovered for about 15 minutes over the arena. Wind speeds were estimated at 111 to 135 mph. The winds damaged homes, snapped trees and telephone poles and left tangles of insulation and metal roofing strewn for hundreds of yards — some of it hanging from power lines. The tornado severely damaged a coin-operated laundry and hair salon in the same building as the dance academy, and ripped most of the roof off at a marina and motorcycle shop, while causing minor damage at a bar and several other businesses. (Fox News, *Tornado Tears through Montana City, Ripping Roof Off a Sports Arena*, June 20, 2010).

June 30, 2010 - A large hailstorm stuck Bozeman and the Gallatin Valley. Golfball-size hail started pounding Bozeman around 4 pm and continued to fall for about a half hour. The Montana State University campus was directly in the path of the hailstorm, which bombarded building, cars and people with hailstones up to 2.5 inches across. The hail broke 800 to 1,000 windows on campus. Windows on the west- and south-facing walls suffered the most damage. Most of the windows on the west side of Roberts Hall were broken, along with quite a few windows in North and South Hedges, two of the university's high-rise residence halls. The hailstorm resulted in over $500,000 in damages from repair to windows, roofs and tree damage on the campus and to other state-owned facilities in Bozeman.

July 26, 2010 - An EF3 tornado struck the Smith Ranch, about 11 miles northwest of Medicine Lake in Sheridan County. This tornado was one of the strongest and most deadly in Montana history. Ranch buildings were demolished by the storm, with three members of the Smith family in the main home when the tornado hit, two of which died. In addition to the significant property damage, including a two-story house that was completely destroyed, a single-wide trailer was blown away, numerous outbuildings and ranch vehicles destroyed, and there were also livestock and crop losses reported. Sheridan Electric Cooperative had six miles of down power poles and lines. The strong tornadic winds were estimated to be approximately 150 miles per hour.

Magnitude and Probability

The magnitude of severe weather is measured by the severity of the event and the resulting damage. Winter storms are generally slow in developing and advance notice often lessens their effects on the population. Severe winter weather that results in loss of life, extended road closures, long-term power outages, or significant isolation problems represent high magnitude weather events for Montana. Routine damages to property are largely due to frozen pipes. Collapsed roofs from snow load are not common due to the low percent moisture in typical snow loads.

Severe summer weather can cause damage to buildings, homes, and other property but rarely cause death, serious injury, or long-lasting health effects. Straight-line winds are responsible for most thunderstorm damage. The NWS reports that severe summer weather has caused $51.5 million in property damage and $26.3 million in crop damage over the past 60 years in Montana. Eight deaths and 31 injuries were attributed to lightning strikes. Across the country, large hail results in nearly $1 billion in damage annually to property and crops.

The SHELDUS database includes losses from severe weather over the past 57 years. These losses are shown by county within each DES District in **Table 4.6-4**.

Table 4.6-4. Severe Weather Losses (2016 Dollars): 1960 – 2017

DES District	Jurisdiction	Crop Loss	Property Loss	Injuries(1)	Fatalities(1)
1	Deer Lodge County	$221,782	$1,375,942	59.85	2.38
1	Flathead County	$2,685,915	$7,081,974	23.39	3.63
1	Flathead Reservation – included in Lake and Sanders County totals				
1	Granite County	$131,934	$4,523,185	7.72	2.80
1	Lake County	$930,267	$5,390,782	7.99	4.88
1	Lincoln County	$326,392	$6,501,923	10.32	2.63
1	Mineral County	$209,905	$3,811,477	2.04	4.55
1	Missoula County	$298,537	$9,254,828	39.49	9.80
1	Powell County	$240,561	$4,677,103	4.45	3.80
1	Ravalli County	$553,916	$7,176,773	7.64	2.55
1	Sanders County	$894,779	$3,683,380	3.74	2.63
1	Silver Bow County	$225,712	$2,140,033	51.00	3.42
District 1 Total		**$6,719,700**	**$55,617,400**	**217.63**	**43.07**
2	Blackfeet Reservation – included in Glacier County total				
2	Blaine County	$5,114,802	$4,787,048	1.62	2.04
2	Cascade County	$6,930,710	$13,280,522	14.97	7.58
2	Chouteau County	$18,477,185	$5,942,085	10.66	2.24
2	Fort Belknap Reservation – included in Blaine County total				
2	Glacier County	$4,781,069	$7,382,276	22.06	5.58
2	Hill County	$7,317,380	$4,643,146	5.66	2.24
2	Liberty County	$5,835,175	$2,479,876	1.33	1.04
2	Pondera County	$3,684,000	$4,017,541	6.13	1.58
2	Rocky Boy's Reservation – included in Hill County total				
2	Teton County	$7,046,732	$4,484,908	4.46	2.58
2	Toole County	$19,512,339	$2,677,346	6.67	4.58
District 2 Total		**$78,699,392**	**$49,694,748**	**73.56**	**29.46**
3	Beaverhead County	$2,750,657	$1,554,205	54.95	4.20
3	Broadwater County	$686,033	$1,998,089	52.78	3.74
3	Gallatin County	$398,507	$70,188,739	54.84	5.24
3	Jefferson County	$239,526	$1,994,916	51.41	1.24
3	Lewis & Clark County	$977,260	$22,159,336	65.11	13.25
3	Madison County	$202,830	$1,242,958	51.86	1.24
3	Meagher County	$4,472,137	$2,413,978	51.60	1.24
3	Park County	$705,652	$38,167,441	9.98	4.24
3	Sweet Grass County	$550,034	$1,044,494	3.56	1.24
District 3 Total		**$10,982,636**	**$140,764,156**	**396.09**	**35.63**
4	Carter County	$2,365,037	$3,843,402	0.53	2.00
4	Custer County	$9,789,017	$11,399,755	4.80	3.00
4	Dawson County	$10,232,839	$14,699,869	6.92	1.99
4	Fallon County	$3,799,845	$6,368,223	0.76	0.00
4	Garfield County	$10,923,273	$3,298,749	3.99	2.19
4	McCone County	$13,268,730	$6,202,451	5.36	1.36
4	Powder River County	$7,118,382	$8,362,692	4.53	0.00
4	Prairie County	$4,634,397	$4,437,708	3.22	2.21
4	Richland County	$18,950,678	$10,716,878	5.06	4.49
4	Wibaux County	$5,883,899	$4,390,869	3.65	3.99
District 4 Total		**$86,966,097**	**$73,720,596**	**38.82**	**21.23**
5	Big Horn County	$4,864,137	$7,974,056	6.17	5.00
5	Carbon County	$861,613	$18,420,577	18.71	4.04
5	Crow Reservation – included in Big Horn, Carbon and Yellowstone County totals				
5	Golden Valley Co.	$1,056,455	$1,758,395	0.40	0.04
5	Musselshell County	$1,907,403	$2,515,035	1.36	1.50
5	Northern Cheyenne Reservation – included in Rosebud and Big Horn County totals				
5	Rosebud County	$4,616,261	$7,234,612	16.84	6.00
5	Stillwater County	$1,401,152	$1,025,490	0.38	0.04
5	Treasure County	$4,718,594	$3,409,027	0.20	0.00
5	Wheatland County	$889,216	$2,565,056	1.56	1.24

Table 4.6-4. Severe Weather Losses (2016 Dollars): 1960 – 2017

DES District	Jurisdiction	Crop Loss	Property Loss	Injuries(1)	Fatalities(1)
5	Yellowstone County	$7,944,268	$67,430,229	5.27	5.00
District 5 Total		**$28,259,099**	**$112,332,477**	**50.89**	**22.86**
6	Daniels County	$11,435,598	$3,101,210	3.06	1.32
6	Fergus County	$8,276,948	$9,947,716	4.77	1.54
6	Fort Peck Reservation – included in Valley and Roosevelt County totals				
6	Judith Basin County	$1,590,107	$3,059,314	1.40	2.74
6	Petroleum County	$2,271,268	$3,133,134	3.10	1.08
6	Phillips County	$7,479,930	$5,271,194	9.06	3.12
6	Roosevelt County	$12,728,659	$12,882,006	4.31	2.32
6	Sheridan County	$10,241,521	$6,091,254	8.31	2.32
6	Valley County	$43,980,164	$24,139,549	7.06	1.73
District 6 Total		**$98,004,195**	**$67,625,377**	**41.07**	**16.17**
Total		**$309,631,119**	**$499,754,754**	**818.06**	**168.42**

Source: SHELDUS, 2017
Note: Often casualties and damage information are listed without sufficient spatial reference. In order to assign the damage amount to a specific county, the fatalities, injuries and dollar losses were divided by the number of counties affected from this event.

The SHELDUS data indicates that between 1960 and 2017, District 3 counties cumulatively had the greatest number of injuries and most property damage from severe weather, using dollar values adjusted for inflation. District 6 had the most crop damage, while District 1 had the most fatalities during this period. **Table 4.6-5** presents the top 20 counties with severe weather losses.

Table 4.6-5. Top Counties with Severe Weather Losses (2016 Dollars): 1960 – 2017

County	Property Damage	County	Crop Damage	County	Injuries/ Fatalities
Hail					
Gallatin	$67,687,131	Valley	$33,303,861	None reported	None reported
Yellowstone	$24,375,848	Toole	$16,653,577	None reported	None reported
Valley	$17,922,830	McCone	$8,801,342	None reported	None reported
Lewis and Clark	$14,952,221	Chouteau	$8,140,110	None reported	None reported
Cascade	$3,469,023	Richland	$6,941,164	None reported	None reported
Ravalli	$2,794,151	Yellowstone	$5,695,749	None reported	None reported
Blaine	$2,623,119	Daniels	$4,004,472	None reported	None reported
Chouteau	$2,329,261	Hill	$3,976,748	None reported	None reported
Richland	$2,140,796	Fergus	$3,896,162	None reported	None reported
Dawson	$1,653,299	Teton	$3,858,562	None reported	None reported
Rosebud	$1,170,767	Cascade	$3,794,031	None reported	None reported
Lightning					
Yellowstone	$872,545	Powder River	$3,950,772	Carbon	9/2
Flathead	$859,061	Meagher	$3,772,834	Deer Lodge	5/0
Lincoln	$736,800	Fergus	$2,567,231	Lewis and Clark	5/1
Glacier	$654,186	Phillips	$2,078,762	Ravalli	4/0
Hill	$654,165	Yellowstone	$193,826	Rosebud	4/0
Custer	$653,340	Garfield	$192,891	Beaverhead	3/1
Musselshell	$653,340	McCone	$181,223	Glacier	3/1
Lewis and Clark	$653,340	Carter	$179,581	Yellowstone	2/2
Big Horn	$653,340	Custer	$179,581	Gallatin	1/2
Ravalli	$503,147	Daniels	$179,581	Musselshell	1/2
Missoula	$487,212	Dawson	$179,581	Big Horn	0/2
Thunderstorm Winds					
Dawson	$4,717,770	Richland	$7,982,583	Lincoln	4/1
Cascade	$4,226,240	Valley	$7,400,191	Big Horn	2/1
Roosevelt	$4,185,617	Roosevelt	$6,308,156	Flathead	2/2
Powder River	$3,846,046	Daniels	$5,370,157	Phillips	2/1
Custer	$3,721,401	Sheridan	$5,270,880	Garfield	2/0
Fallon	$3,623,225	Chouteau	$4,483,362	Lewis and Clark	1/4

Table 4.6-5. Top Counties with Severe Weather Losses (2016 Dollars): 1960 – 2017

County	Property Damage	County	Crop Damage	County	Injuries/ Fatalities
Yellowstone	$3,519,801	Dawson	$4,080,535	Gallatin	1/1
Richland	$3,323,684	Garfield	$3,618,270	Deer Lodge	1/1
Missoula	$2,749,491	Custer	$2,552,368	Granite	1/1
Rosebud	$2,498,104	Cascade	$1,870,573	Richland	1/1
Valley	$1,843,641	Blaine	$1,773,808	Dawson	1/0
Tornados					
Park	$36,422,432	Beaverhead	$2,147,392	Chouteau	5/0
Yellowstone	$33,649,618	Chouteau	$1,996,857	Fergus	3/0
Fergus	$6,116,721	Cascade	$226,445	Rosebud	3/0
Chouteau	$2,133,112	Roosevelt	$119,938	Cascade	2/0
Dawson	$1,243,394	Phillips	$107,653	Hill	2/0
Roosevelt	$1,445,625	Dawson	$102,163	Powder River	1/0
Valley	$757,072	Big Horn	$75,930	Judith Basin	1/0
Powder River	$744,092	Fergus	$64,458	Ravalli	1/0
Phillips	$635,157	Powder River	$58,757	Sheridan	1/2
McCone	$558,070	Petroleum	$39,913	McCone	1/1
Treasure	$449,767	Judith Basin	$39,446	Richland	1
Winter Weather					
Lewis and Clark	$4,269,781	Big Horn	$467,358	Lewis and Clark	51/2
Flathead	$3,394,360	Yellowstone	$467,274	Beaverhead	51/1
Glacier	$3,379,913	Rosebud	$466,388	Silver Bow	50/1
Lake	$3,120,024	Powder River	$466,114	Deer Lodge	50/0
Big Horn	$3,061,320	Fallon	$466,114	Gallatin	50/0
Missoula	$3,057,910	Carter	$466,114	Madison	50/0
Ravalli	$3,026,978	Custer	$466,030	Jefferson	50/0
Powell	$2,905,773	Treasure	$466,030	Meagher	50/0
Granite	$2,904,918	Musselshell	$465,981	Broadwater	50/0
Sanders	$2,893,276	Wibaux	$458,757	Missoula	31/6
Lincoln	$2,718,528	Prairie	$458,673	Rosebud	1/5
Winds					
Dawson	$5,449,438	Chouteau	$3,853,240	Glacier	12/3
Roosevelt	$5,210,261	Richland	$3,399,452	Rosebud	9/0
Cascade	$4,505,770	Garfield	$3,341,482	Carbon	9/1
Yellowstone	$4,166,548	Dawson	$2,991,847	Cascade	8/3
Richland	$3,496,553	Custer	$2,927,738	Park	6/1
McCone	$3,448,616	Valley	$2,647,407	Missoula	6/1
Custer	$2,985,003	McCone	$2,599,704	Lincoln	6/1
Missoula	$2,930,926	Hill	$2,474,530	Lewis and Clark	5/6
Glacier	$2,831,544	Roosevelt	$1,921,204	Toole	5/2
Valley	$2,708,472	Wibaux	$1,795,625	Sheridan	4/0
Sheridan	$2,487,114	Phillips	$1,693,179	Lake	4/0

Source: SHELDUS, 2017

Annual loss was calculated for the severe weather hazard using damage data from the SHELDUS database and the formula: frequency x magnitude x exposure, as described in *Section 4.1.4* and shown in **Table 4.6-6**. District 6 has the highest annual loss, followed by Districts 4 and 3. Counties with the highest annual loss and fastest growth rates are also shown in **Table 4.6-6**. Annual loss could not be computed for cities and town because SHELDUS data is reported only by county. An annual loss summary for all counties is presented in **Appendix B-7**.

Table 4.6-6. Severe Weather Annual Loss Summary

Annual Loss By DES District		Counties With Highest Annual Loss		Counties With Fastest Growth Rates	
District	Annual Loss	County	Annual Loss	County	Annual Loss
District 1	$1,093,633	Yellowstone	$1,322,360	Richland	$520,484
		Gallatin	$1,238,374	Gallatin	$1,238,374
District 2	$2,252,529	Valley	$1,195,083	Granite	$81,669
		Park	$681,984	Garfield	$249,509
District 3	$2,662,224	Richland	$520,484	Roosevelt	$449,310
		Roosevelt	$449,310	Fallon	$178,387
District 4	$2,819,065	Dawson	$437,416	Flathead	$171,367
		Chouteau	$428,408	Sheridan	$286,540
District 5	$2,466,519	Lewis & Clark	$405,907	Wibaux	$180,259
		Toole	$389,293	Yellowstone	$1,322,360
District 6	$2,905,782	Custer	$371,733	Missoula	$167,604
		Cascade	$354,583	Lewis & Clark	$405,907

Probability of the severe weather hazard for this MHMP was assessed based on a 10-year period. Severe weather occurs several times per year and as such, has been assigned a "Highly Likely" probability rating. Higher temperatures associated with climate change are expected to increase the frequency and probability of future severe weather events.

Declared Disasters

Numerous disasters have been declared in Montana due to severe weather. **Table 4.6-7** summarizes federal disaster declarations from 2000 to 2017.

Table 4.6-7. Federal Disaster Declarations for Severe Weather (1974 - 2017)

Year	Declaration No./ Type	Counties / Reservations	Public Assistance ($)			
			Federal	State	Local	Total
2000	FEMA-1350-DR-MT; Winter Storm	Daniels, Dawson, Richland, Roosevelt, Sheridan	$2,049,746	$2,229	$681,019	$2,732,994
2001	FEMA-1377-DR-MT; Winter Storm	Big Horn, Crow Reservation	$705,644	$439	$234,776	$940,859
2001	FEMA-1385-DR-MT; Winter Storm	Gallatin, Missoula, Powell	$922,154	$18,938	$288,447	$1,229,539
2002	FEMA-1424-DR-MT; Severe Storm/Flooding	Glacier, Hill, Liberty, Toole, Blackfeet Reservation	$1,361,886	$23,885	$430,077	$1,815,847
2008	FEMA-1767-DR-MT; Severe Storm	Carter, Custer, Fallon, Power River	$3,312,191	$314,258	$779,410	$4,379,314
2014	FEMA-4198-DR-MT; Straight Line Winds	Blaine, Carter, Musselshell, Petroleum, Valley	$1,617,822	$383,055	$152,512	$2,153,389
2016	FEMA-4271-DR-MT; Line Winds	Glacier, Liberty, Pondera, Teton, Toole	$1,696,751	$251,235	$310,075	$2,258,061
2016	FEMA-4275-DR-MT; Tornado	Baker (Fallon Co.)	$3,236,436	$990,869	$84,622	$4,311,927
TOTALS			**$14,902,630**	**$359,749**	**$2,413,729**	**$19,821,930**

Source: DES, 2017; FEMA, 2017

Table 4.6-8 lists the state emergency declaration for severe weather in Montana since 1978 from MT DES records.

Table 4.6-8. State Emergency Declarations for Severe Weather (1978 – 2017)

Year	Declaration No.; Public Assistance No./ Type	County/City/Town	Public Assistance		
			State	Local	Total
1978	EO-6-78; ST-78-1/ Winter Storm	Blaine County	$117,620	$23,714	$141,334
1978	EO-6-78; ST-78-2/ Winter Storm	Havre (Hill)	$19,495	$18,200	$37,695
1978	EO-6-78; ST-78-3/ Winter Storm	Phillips County	$121,075	$22,085	$143,160
1978	EO-6-78; ST-78-4/ Winter Storm	Carter County	$76,008	$14,135	$90,143
1978	EO-6-78; ST-78-5/ Winter Storm	Valley County	$22,349	$29,681	$52,030
1978	EO-6-78; ST-78-6/ Winter Storm	Dawson County	$31,524	$27,508	$59,032
1978	EO-6-78; ST-78-7/ Winter Storm	Garfield County	$114,937	$41,484	$156,421
1978	EO-6-78; ST-78-8/ Winter Storm	Wibaux County	$47,990	$18,728	$66,718
1978	EO-6-78; ST-78-9/ Winter Storm	McCone County	$14,944	$19,117	$34,061
1978	EO-6-78; ST-78-10/ Winter Storm	Wolf Point (Roosevelt)	$10,231	$5,040	$15,271
1979	EO-1-79; ST-79-1/ Winter Storm	Judith Basin County	$201,825	$17,320	$219,145
1979	EO-3-79; ST-79-2/ Winter Storm	Sweet Grass County	$34,145	$10,174	$44,319
1979	EO-1-79; ST-79-3/ Winter Storm	Teton County	$247,818	$24,210	$272,028
1979	EO-2-79; ST-79-4/ Winter Storm	Golden Valley County	$66,693	$7,746	$74,439
1979	EO-6-79; ST-79-5/ Winter Storm	Carter County	$95,672	$13,370	$109,042
1979	EO-6-79; ST-79-6/ Winter Storm	Garfield County	$88,387	$13,800	$102,187
1979	EO-3-79; ST-79-7/ Winter Storm	McCone County	$15,790	$21,680	$37,470
1979	EO-6-79; ST-79-8/ Winter Storm	Wibaux County	$39,559	$15,650	$55,209
1979	EO-6-79; ST-79-9/ Winter Storm	Dawson County	$75,947	$20,949	$96,896
1985	MT-85-1/Winter Freeze	Neihart (Cascade)	$12,542	$243	$12,785
1990	EO-16-90; MT-2-90/ Winter Storm	Browning (Glacier)	$2,493	$806	$3,299
1999	EO-7-99; MT-2-99/ Tornado	Opheim (Valley)	$10,366	$206	$10,572
1999	EO-11-99; MT-3-00/ Tornado	Lewistown (Fergus)	$298,609	$11,544	$310,153
2004	EO-3-04; MT-1-04/ Winter Storm	Petroleum County	$11,282	$2,936	$14,218
2004	EO-8-04; MT-2-04/ Winter Storm	Roosevelt County	$46,392	$43,444	$89,836
2004	EO-8-04; MT-3-04/ Winter Storm	Culbertson (Roosevelt)	$1,496	$857	$2,353
2004	EO-8-04; MT-4-04/ Winter Storm	Wolf Point (Roosevelt)	$6,665	$2,910	$9,575
2004	EO-8-04; MT-5-04/ Winter Storm	Froid (Roosevelt)	$2,052	$200	$2,252
2004	EO-8-04; MT-6-04/ Winter Storm	Garfield County	$31,389	$0	$31,389
2004	EO-8-04; MT-7-04/ Winter Storm	Jordan (Garfield)	$2,525	$430	$2,955
2004	EO-8-04; MT-8-04/ Winter Storm	Glasgow (Valley)	$33,657	$5,442	$39,099
2004	EO-8-04; MT-9-04/ Winter Storm	Nashua (Valley)	$2,066	$400	$2,466
2004	EO-8-04; MT-10-04/ Winter Storm	Opheim (Valley)	$3,110	$142	$3,252
2004	EO-8-04; MT-11-04/ Winter Storm	Fort Peck (Valley)	$1,310	$396	$1,706
2004	EO-8-04; MT-12-04/ Winter Storm	Richland County	$45,162	$22,294	$67,456
2004	EO-8-04; MT-13-04/ Winter Storm	Sidney (Richland)	$7,555	$7,102	$14,657
2004	EO-8-04; MT-14-04/ Winter Storm	Daniels County	$22,504	$9,373	$31,877
2004	EO-8-04; MT-15-04/ Winter Storm	Scobey (Daniels)	$4,168	$1,420	$5,588
2004	EO-8-04; MT-16-04/ Winter Storm	Flaxville (Daniels)	$688	$84	$772
2004	EO-8-04; MT-17-04/ Winter Storm	Sheridan County	$26,239	$12,575	$38,814
2004	EO-8-04; MT-18-04/ Winter Storm	Medicine Lk (Sheridan)	$1,420	$236	$1,656
2005	EO-23-05; MT-6-05/ Winter Storm	Glendive (Dawson)	$26,242	$0	$26,242
2006	EO-35-06; MT-1-06/ Wind Storm	Glendive (Dawson)	$30,056	$0	$30,056
2008	EO 27-08; MT-1-08/ Snow Removal	Libby (Lincoln)	$16,409	$5,602	$22,011
2015	EO-17-2015; MT-02-15/ High Winds	Glendive (Dawson)	$24,578	$11,328	$35,906
2016	EO-16-2016; MT-1-16/ High Winds	FT Peck Tribe (Valley)	$34,936	$0	$34,936
2017	EO-2-2017; MT-01-17/ Winter Storm	Libby (Lincoln)	$76,525	$4,964	$81,489
2017	EO-2-2017; MT-02-17/ Winter Storm	Troy (Lincoln)	$12,666	$1,386	$14,052
2017	EO-2-2017; MT-03-17/ Winter Storm	Eureka (Lincoln)	$6,257	$2,466	$8,723
2017	EO-2-2017; MT-04-2017/ Winter Storm	Black Feet Tribe (Glacier)	$43,713	$0	$43,713
2017	EO-03-2017; MT-05-2017/ Winter Storm-Frozen Water System	Rocky Boys Reservation (Hill)	$10,020	$0	$10,020
2017	EO-14-2017; MT-07-2017/ Winter Storm	FT Belknap Tribe (Blaine)	$49,199	$0	$49,199
2017	EO-14-2017; MT-08-2017/ Winter Storm	Havre (Hill)	$72,152	$24,848	$97,000
TOTALS			**$2,418,452**	**$538,225**	**$2,956,677**

Vulnerability and Area of Impact

Electric utilities in Montana are usually the first entities to experience loss from severe weather. Losses to local electric utilities can be expensive to replace and put a major burden on other emergency services during these critical times by not having electricity available.

Statewide Vulnerability

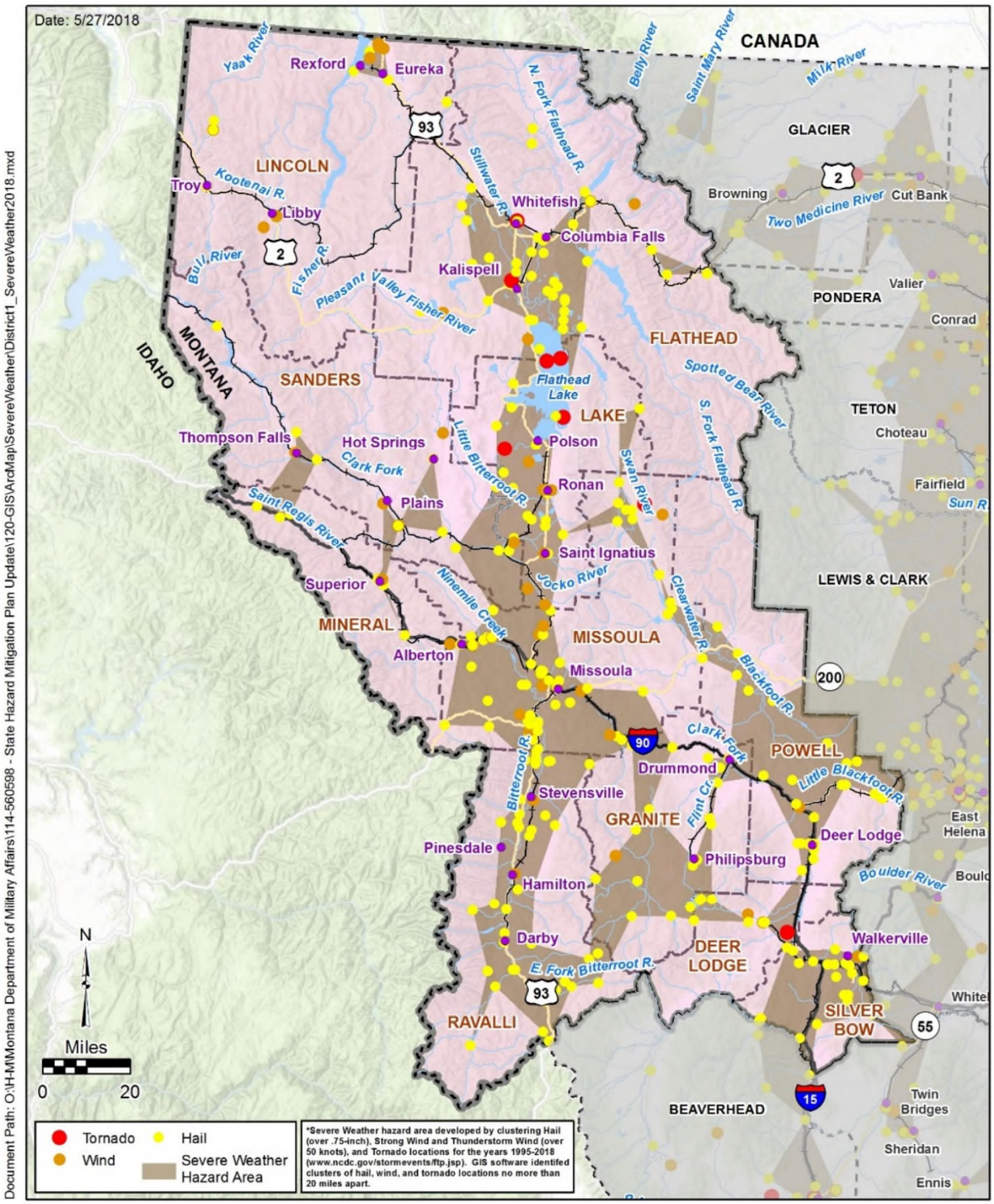
The entire State is considered equally vulnerable to severe winter weather. Arctic cold fronts typically enter the state from the northeast and may cross the Continental Divide, affecting the western portion of the State. Arctic fronts meeting wet maritime fronts often combine to cause heavy snowfall, which can occur in all parts of the State. The lowest temperatures are typically experienced in the northeast, whereas the heaviest snowfall most often occurs in the mountain regions.

Regional variation is apparent when looking at where summer weather hazards occur in Montana. To create an impact area map for the MHMP analysis, spatial data from the National Climatic Data Center was used to map occurrences of tornadoes, hail, and wind over a 60-year period. **Table 4.1-5** in *Section 4.1.3* describes the methods used to create this hazard map. **Figures 4.6-1A-F** present the severe weather hazard impact areas by DES District.

To complete the vulnerability analysis, GIS was used to intersect the hazard area with the general building stock, critical facility, and cultural resource datasets. Vulnerable population was calculated using U.S. Census county estimates. Exposure values are presented in **Table 4.6-9**. **Appendix B-7** presents supporting documentation including loss estimates for counties and incorporated cities and towns.

Table 4.6-9. Severe Weather Exposure Summary by DES District

Item	District 1	District 2	District 3	District 4	District 5	District 6
Severe Weather Hazard Area (Square Miles)	6026.2	13862.9	6935.4	24101.9	15131.5	19242.9
Percent Severe Weather Hazard Area	23.9%	57.3%	27.5%	90.3%	68.8%	81.4%
Residential Building Exposure ($)	$17,788,983,944	$6,053,566,004	$15,389,289,830	$1,724,936,509	$12,974,055,018	$1,531,585,373
Residential Building Exposure (# structures)	102,722	44,609	72,680	14,297	73,679	14,382
Commercial, Ag, Industrial Building Exposure ($)	$6,941,809,811	$4,333,203,950	$5,905,948,124	$1,510,660,028	$5,597,642,989	$1,453,611,966
Commercial, Ag, Industrial Building Exposure (# structures)	16,896	12,144	10,352	9,327	11,458	9,025
Critical Facility Exposure ($)	$1,399,697,717	$146,318,669	$1,658,007,572	$82,530,401	$151,029,674	$29,761,080
Critical Facility Exposure (# structures)	299	51	310	33	32	27
Cultural Resources (# features)	31	20	26	8	17	6
Population Living in Hazard Area	233,541	76,646	247,179	20,284	113,320	25,169
Population Under 18 Living in Hazard Area	81,815	30,745	78,642	7,912	45,460	10,747
Population Over 65 Living in Hazard Area	82,458	27,857	62,339	8,455	38,116	10,732



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 1 County
- County

Figure 4.6-1A
Severe Weather Hazard Area
DES District 1
State of Montana MHMP 2018 Update

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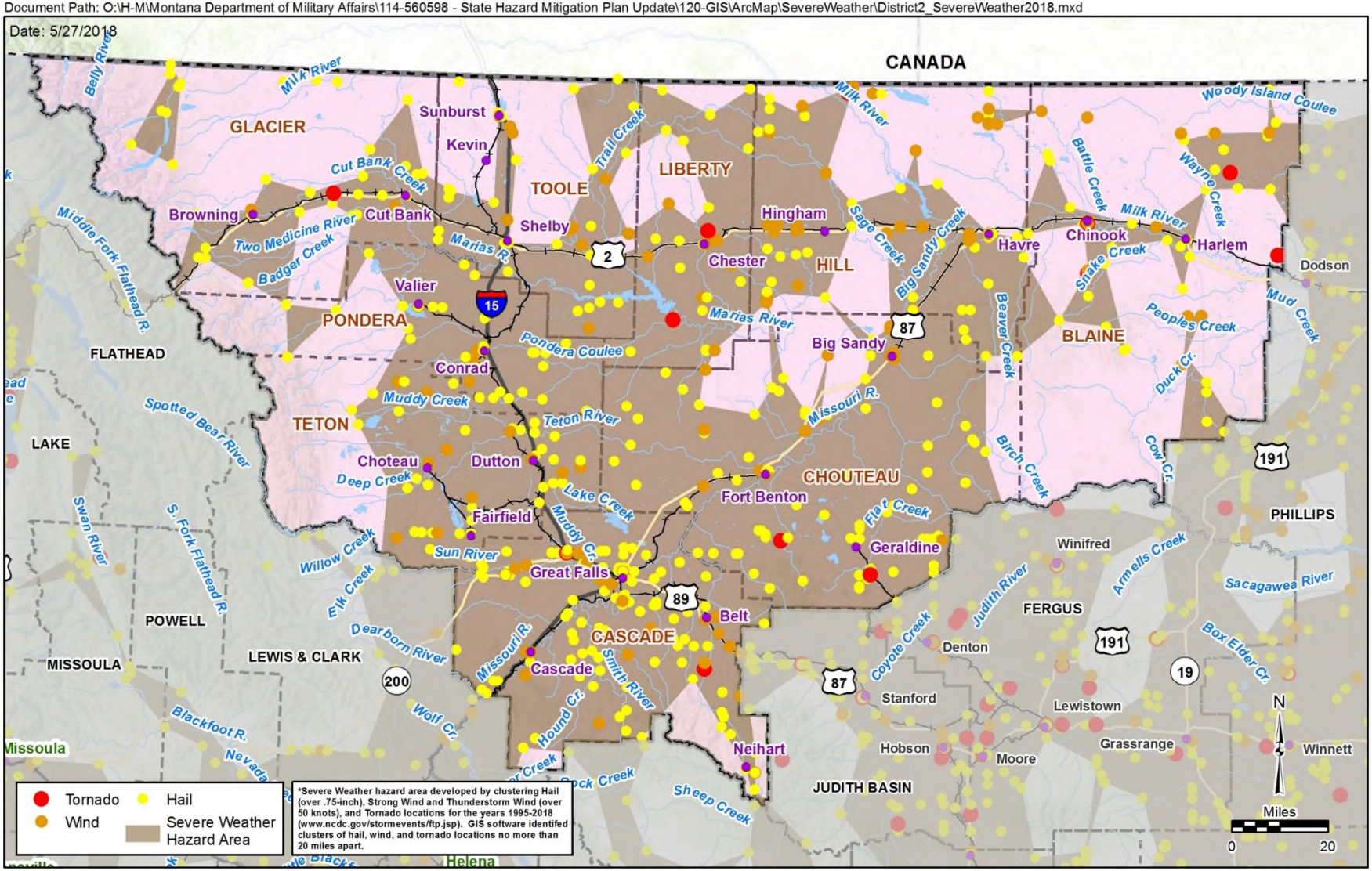
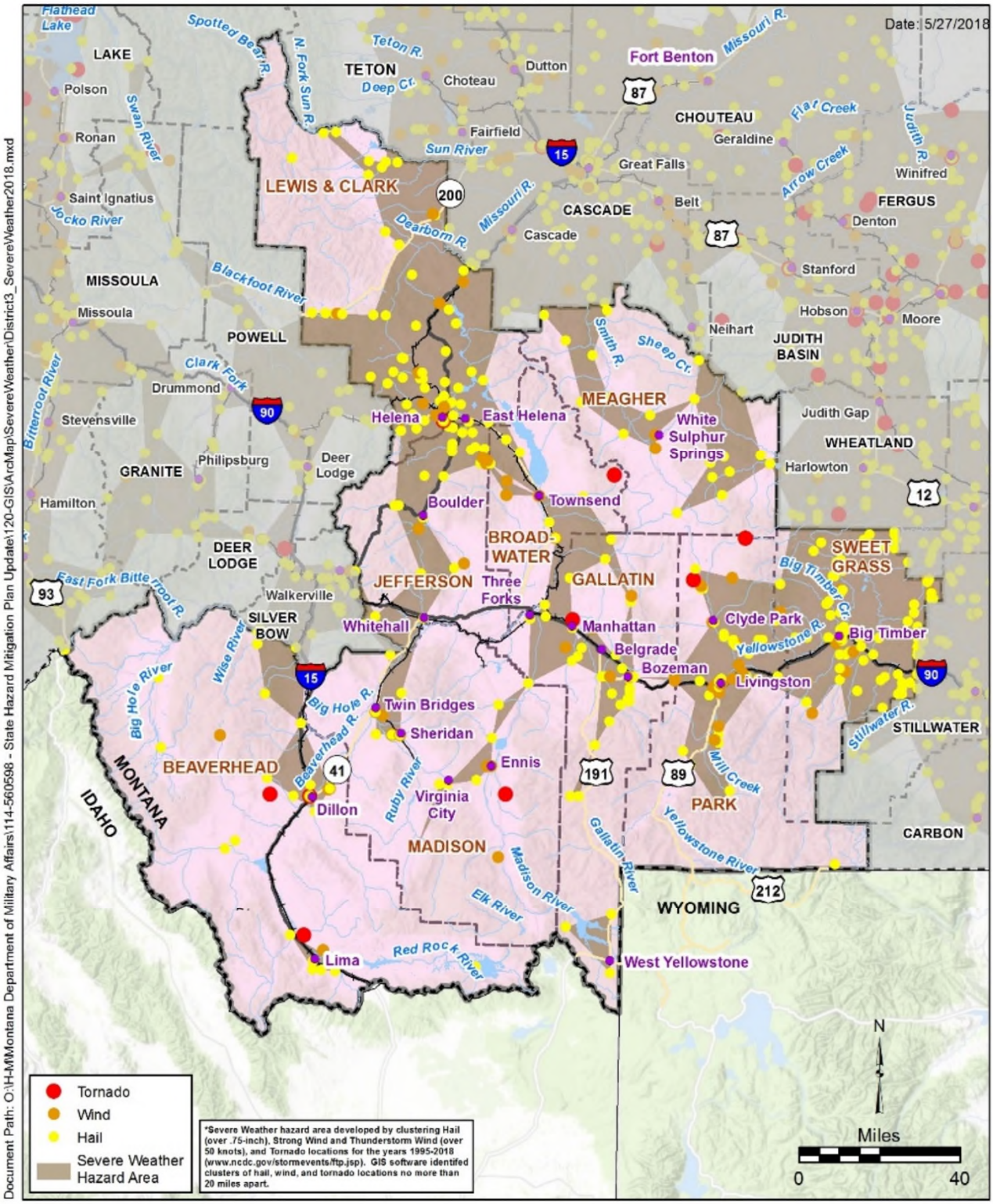


Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 2 County
- County

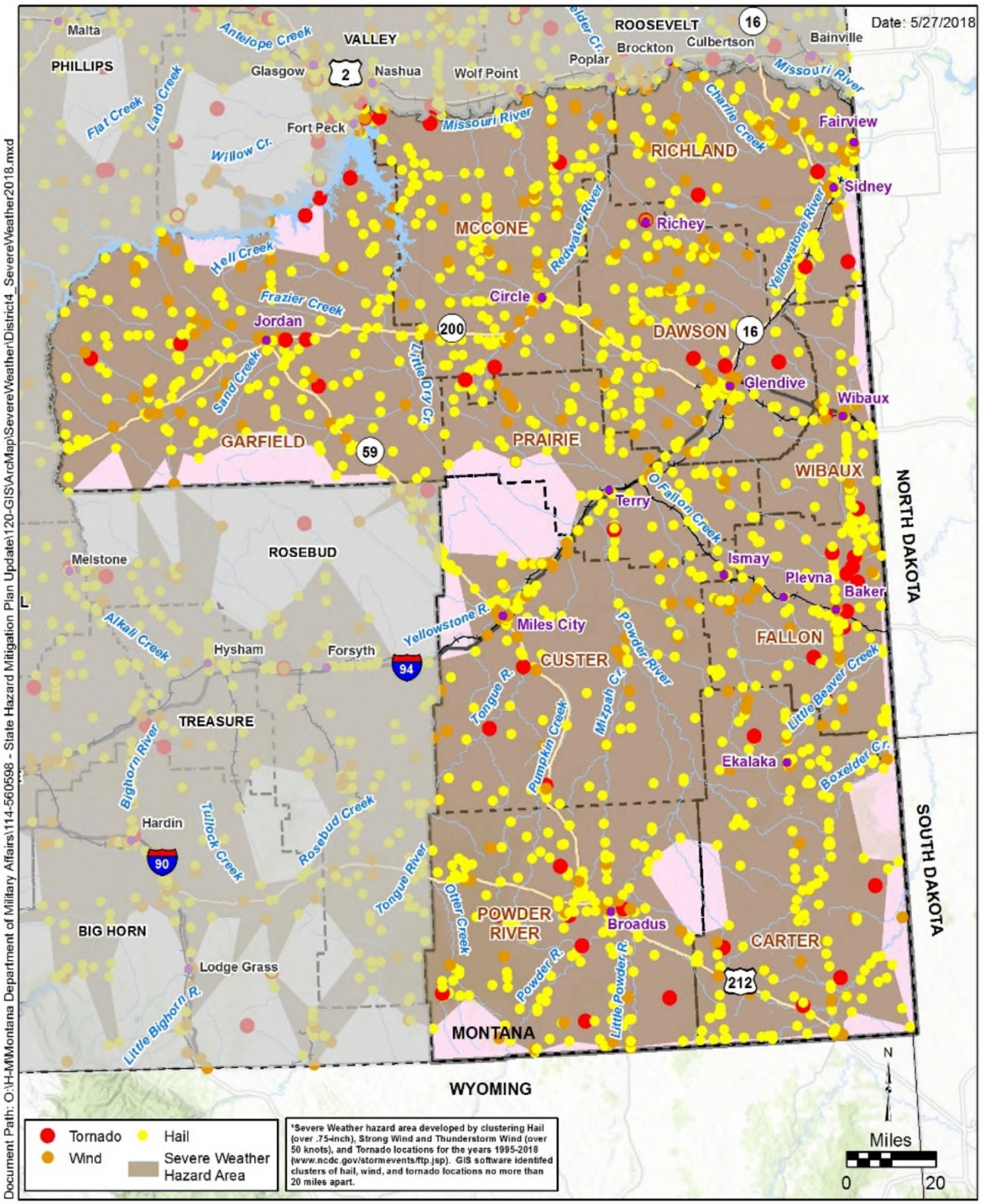
Figure 4.6-1B
Severe Weather Hazard Area
DES District 2
State of Montana MHMP 2018 Update



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 3 County
- County

Figure 4.6-1C
Severe Weather Hazard Area
DES District 3
State of Montana MHMP 2018 Update



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- County
- DES District 4 County

Figure 4.6-1D
Severe Weather Hazard Area
DES District 4
State of Montana MHMP 2018 Update

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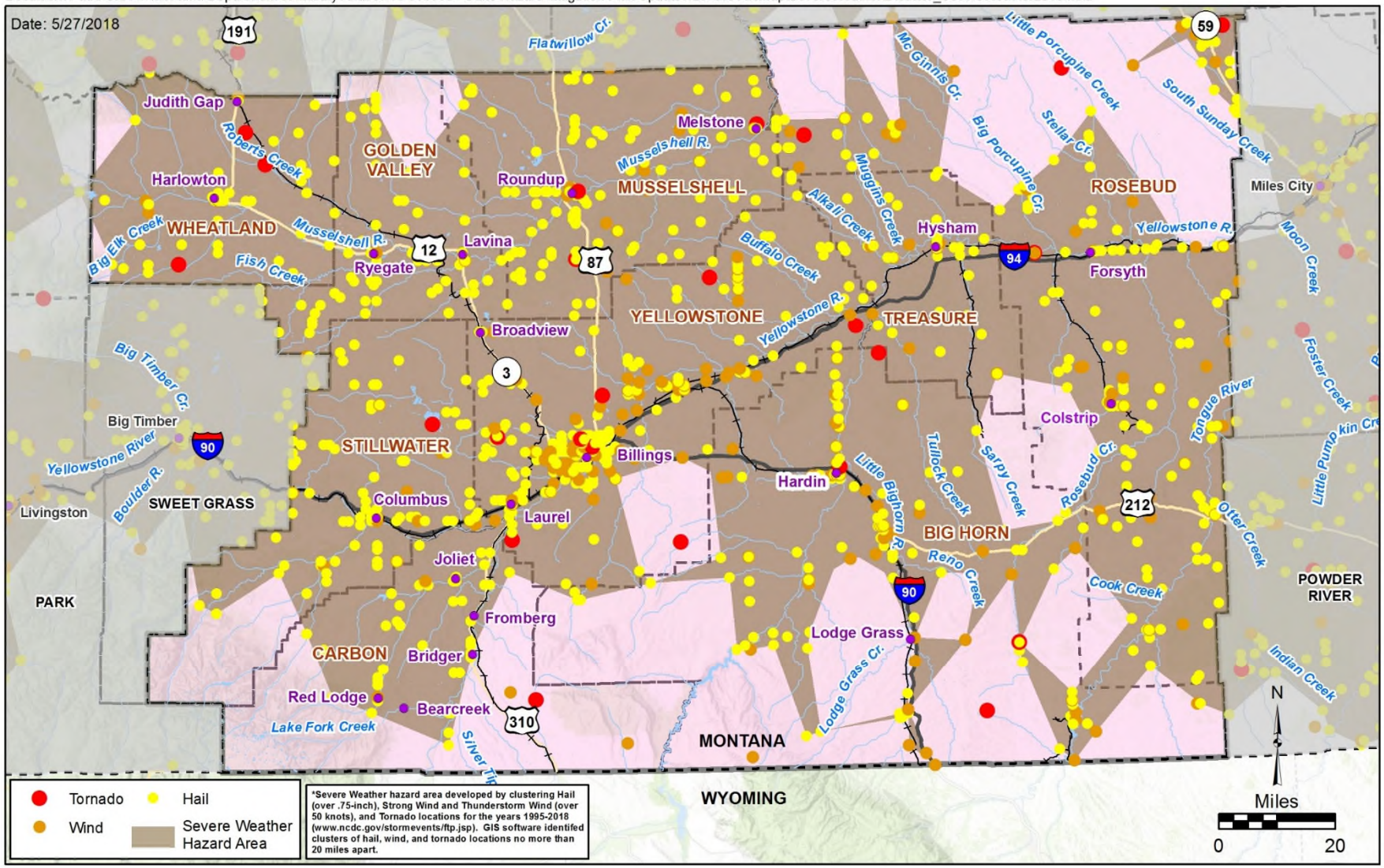

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 5 County
- County

Figure 4.6-1E
Severe Weather Hazard Area
DES District 5
State of Montana MHMP 2018 Update

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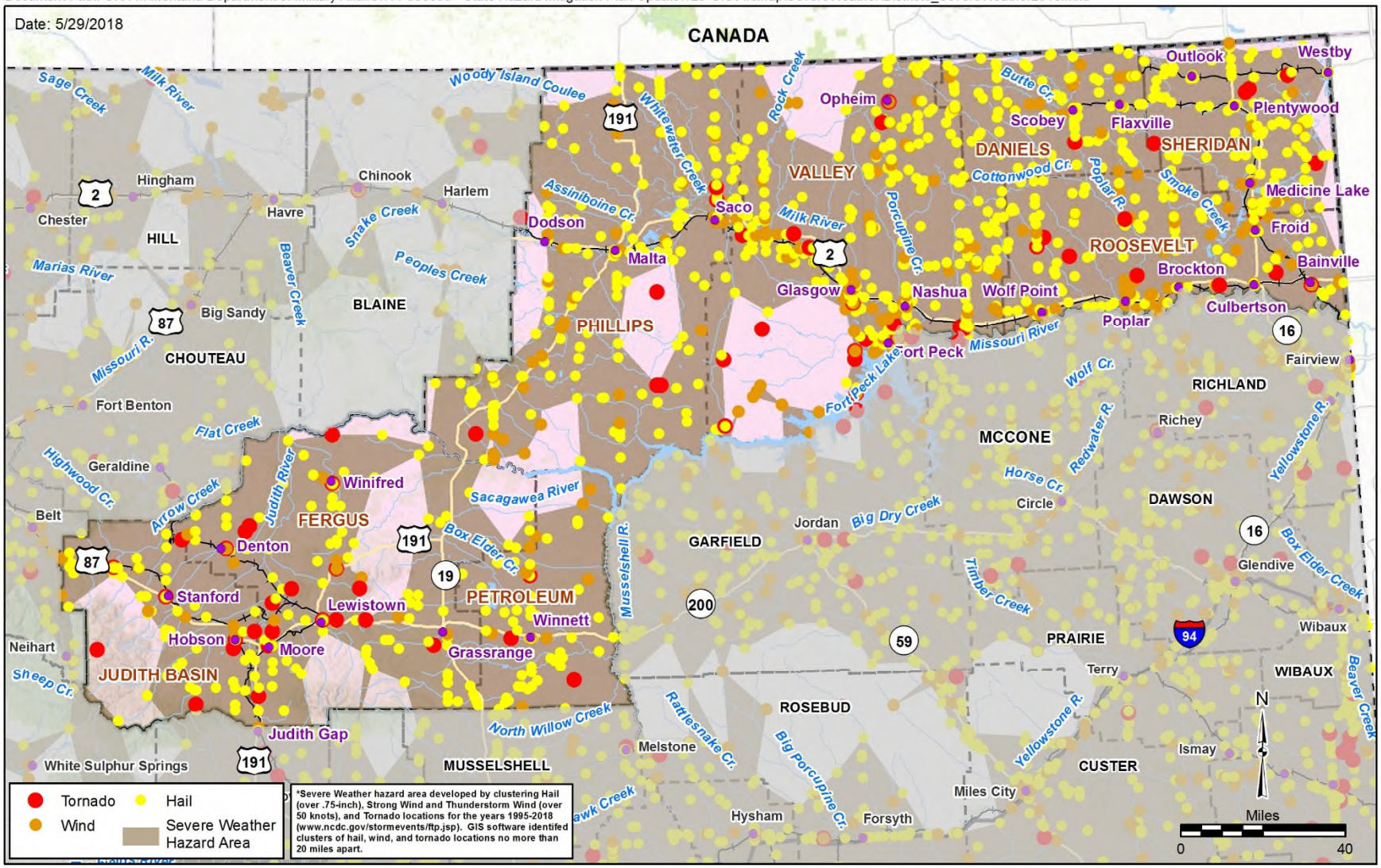

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 6 County
- County

Figure 4.6-1F
Severe Weather Hazard Area
DES District 6
State of Montana MHMP 2018 Update

Table 4.6-10 presents a vulnerability summary of the severe weather hazard as it relates to percent exposure and growth rates in Montana's counties, cities and towns. Percent exposure was derived by dividing the value of residential and commercial/agricultural/industrial building stock exposed to the hazard into the total value of the building stock. Percent exposure is a more accurate way of displaying vulnerability than presenting jurisdictions with the highest exposure because it reflects areas with the greatest risk opposed to those with high value real estate. A complete ranking of percent exposure is presented in **Appendix B-7**.

Counties with the highest exposure from severe weather include: Dawson, McCone, Yellowstone, Musselshell, Cascade, Petroleum, and Valley counties. Cities and town (over 500 in population) with the highest exposure include Billings (Yellowstone Co.), Great Falls (Cascade Co.), Helena (Lewis and Clark Co.), Kalispell (Flathead Co.), Missoula (Missoula Co.), Livingston (Park Co.), and Hamilton (Ravalli Co.). **Figure 4.6-2** presents percent exposure for the top counties and cities/towns showing regional vulnerability.

Percent exposure was multiplied by the change in population between the 2010 U.S. Census and 2016 census estimates to present the jurisdictions with the highest risk that are experiencing the fastest growth. The number of residential building permits is also listed for the top-ranking jurisdictions. A complete ranking is presented in **Appendix B-7**.

Counties with the highest exposure from severe weather that are experiencing the fastest population growth include: Richland, Gallatin, Roosevelt, Garfield, Fallon, Sheridan, and Yellowstone counties. Top cities and towns (with population over 500) with the highest exposure that are experiencing the fastest population growth include: Fairfield (Teton Co.), Sidney (Richland Co.), Bozeman and Belgrade (Gallatin Co.), Baker (Fallon Co.), Kalispell (Flathead Co.), and Culbertson (Roosevelt Co). **Figure 4.6-3** presents percent exposure and population change for the top counties and cities/towns showing the most vulnerable areas experiencing the fastest population growth.

Review of Potential Losses in Local Hazard Mitigation Plans

All of the local plans evaluated the severe weather hazard in their risk assessment. Local jurisdiction ranking of the severe weather hazard is summarized below.

- #1 Hazard: Carter, Daniels, Glacier, Liberty, McCone, Petroleum, Prairie, Wheatland, Yellowstone counties and the Northern Cheyenne Reservation.
- #2 Hazard: Chouteau, Custer, Fallon, Hill, Mineral, Phillips, Pondera, Rosebud, Sheridan, Treasure, Wibaux counties and the Crow Reservation.
- #3 Hazard: Big Horn, Cascade, Dawson, Golden Valley, Jefferson, Powder River, Ravalli, Richland, Roosevelt, Stillwater, Sweet Grass counties and the Blackfeet, Fort Peck and Rocky Boy reservations.

Most of the local plans treated severe weather as a uniform hazard across their jurisdiction; as such, all building stock was at risk. Jurisdictions with higher population had more individuals at risk.

The Local Plan Exposure Summary table in **Appendix B-7** presents a summary of potential severe weather losses from the Local Hazard Mitigation Plans.

Table 4.6-10. Severe Weather Exposure Summary for Top Counties, Cities and Towns

County	% Severe Weather Exposure	% Growth (2010 to 2016)	# of Building Permits (2010 to 2016)	$ Residential Exposure	# Residences at Risk	$ Commercial/ Ag/Industrial Exposure	# Commercial/ Ag/Industrial Buildings at Risk	$ Critical Facilities Exposure	# Critical Facilities at Risk
Counties with Highest Percent Exposure ($ Residential + $ Commercial-Ag- Industrial Exposure in Hazard Area / Total Exposure)									
Dawson	100.0%	3.87%	1	$409,229,017	3,163	$162,010,623	908	$20,985,926	10
McCone	100.0%	-2.00%	0	$44,530,155	532	$82,125,293	679	$141,360	3
Yellowstone	99.9%	6.61%	1,198	$10,955,979,555	58,823	$4,493,061,939	5,398	$148,531,721	19
Musselshell	99.9%	1.11%	1	$148,155,396	1,730	$146,294,881	731	$45,908	2
Cascade	99.8%	0.52%	242	$4,347,249,198	28,922	$2,545,192,089	4,235	$90,365,664	20
Petroleum	99.7%	-1.02%	NA	$23,060,809	183	$28,710,321	202	$0	0
Valley	99.5%	2.25%	4	$365,588,943	2,863	$205,811,719	1,184	$2,866,994	6
Cities/Towns with Highest Percent Exposure (Towns with Pop. >500) ($ Residential + Commercial-Ag-Industrial Exposure in Hazard Area / Total Exposure)									
Billings	100.0%	5.58%	NA	$7,866,273,265	41,447	$3,285,025,446	3,014	$146,675,677	15
Great Falls	100.0%	1.14%	NA	$3,214,111,195	21,838	$1,834,875,305	1,980	$87,655,358	15
Helena	100.0%	9.56%	NA	$2,070,264,423	10,487	$1,127,469,517	1,613	$516,100,384	52
Kalispell	100.0%	12.45%	NA	$1,271,291,249	7,553	$1,065,757,780	1,714	$19,802,332	10
Missoula	100.0%	7.71%	NA	$984,652,873	4,975	$595,032,016	470	$1,003,483,589	190
Livingston	100.0%	4.82%	NA	$392,434,781	2,567	$198,955,646	537	$2,254,253	1
Hamilton	100.0%	6.97%	NA	$402,402,609	2,371	$138,471,668	207	$1,014,737	1
Counties with Highest Percent Exposure Which Have Fastest Growth Rates (% Exposure X % Population Change 2010 to 2016)									
Richland	95.6%	15.12%	16	$486,420,545	2,681	$408,674,588	1,580	$1,434,990	4
Gallatin	77.1%	14.34%	1,550	$8,368,756,382	32,052	$3,277,008,720	3,436	$961,723,453	201
Roosevelt	99.1%	7.78%	1	$172,781,506	2,085	$263,793,126	1,651	$3,703,234	4
Garfield	92.9%	7.94%	0	$34,125,713	469	$94,725,621	792	$2,417	1
Fallon	99.4%	7.37%	35	$120,021,746	1,222	$155,804,391	1,264	$15,822	1
Sheridan	93.5%	7.24%	2	$142,370,829	1,493	$154,212,358	1,333	$59,996	2
Yellowstone	99.9%	6.61%	1,198	$10,955,979,555	58,823	$4,493,061,939	5,398	$148,531,721	19
Cities/Towns with Highest Percent Exposure Which Have Fastest Growth Rates (Towns with Pop. > 500) (% Exposure X % Population Change 2010 to 2016)									
Fairfield	100.0%	23.21%	NA	$30,208,145	266	$13,369,957	46	$0	0
Sidney	100.0%	20.94%	NA	$319,755,649	1,697	$108,260,768	342	$1,419,573	3
Bozeman	98.6%	17.61%	NA	$4,673,527,862	16,577	$2,209,741,252	1,453	$948,662,225	192
Baker	100.0%	12.51%	NA	$83,620,710	882	$33,873,913	144	$0	0
Kalispell	100.0%	12.45%	NA	$1,271,291,249	7,553	$1,065,757,780	1,714	$19,802,332	10
Culbertson	100.0%	11.19%	NA	$46,606,757	452	$11,849,589	78	$0	0
Belgrade	93.1%	10.48%	NA	$455,406,819	2,539	$119,926,092	202	$0	0

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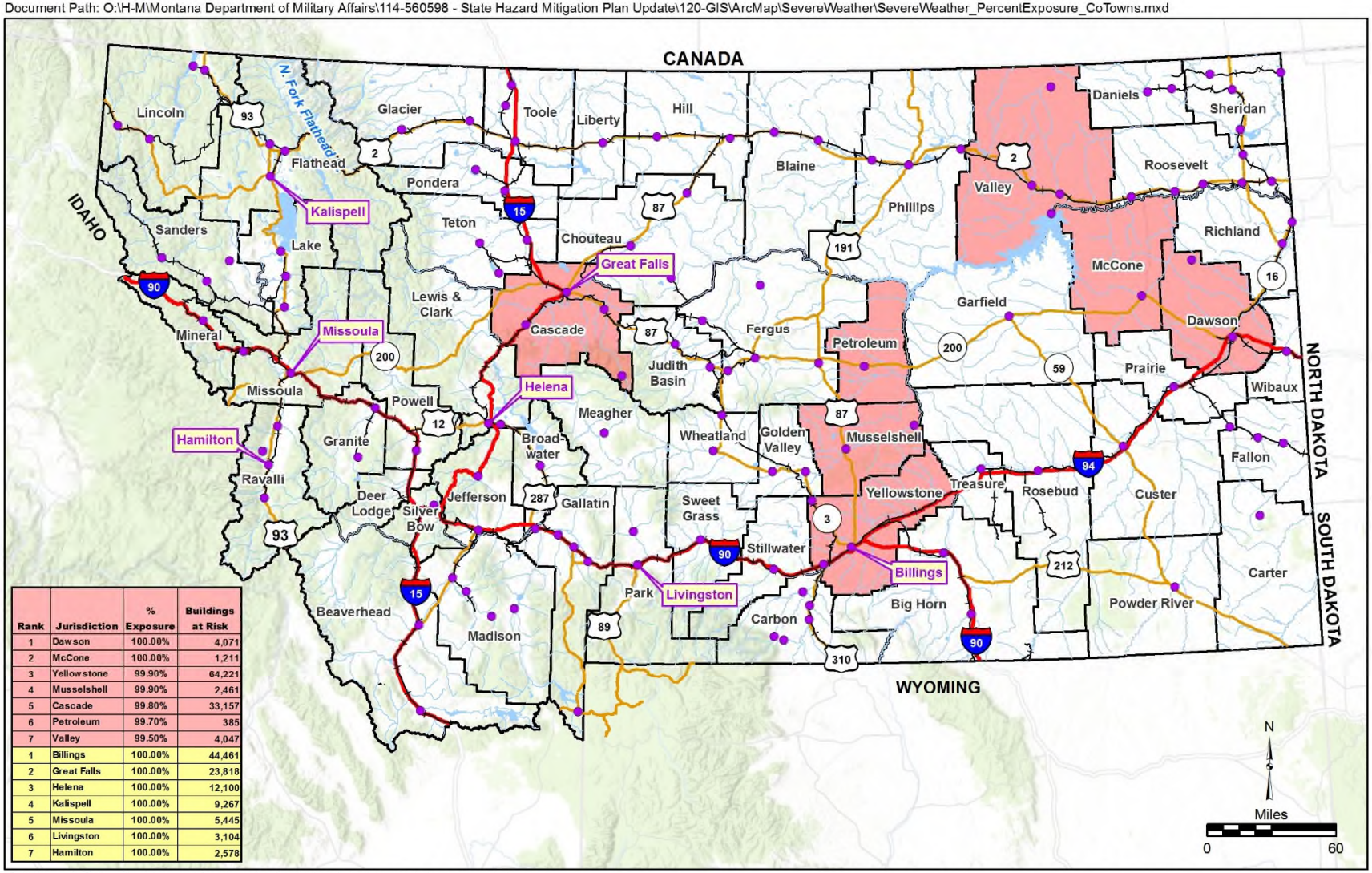

Rank	Jurisdiction	% Exposure	Buildings at Risk
1	Dawson	100.00%	4,071
2	McCone	100.00%	1,211
3	Yellowstone	99.90%	64,221
4	Musselshell	99.90%	2,461
5	Cascade	99.80%	33,157
6	Petroleum	99.70%	385
7	Valley	99.50%	4,047
1	Billings	100.00%	44,461
2	Great Falls	100.00%	23,818
3	Helena	100.00%	12,100
4	Kalispell	100.00%	9,267
5	Missoula	100.00%	5,445
6	Livingston	100.00%	3,104
7	Hamilton	100.00%	2,578

Buildings at Risk = Residences, Commercial, Agricultural, and Industrial structures in hazard area.

Date: 6/2/2018

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- County

Figure 4.6-3
Severe Weather - Percent Exposure for Top Counties and Cities/Towns
State of Montana MHMP 2018 Update

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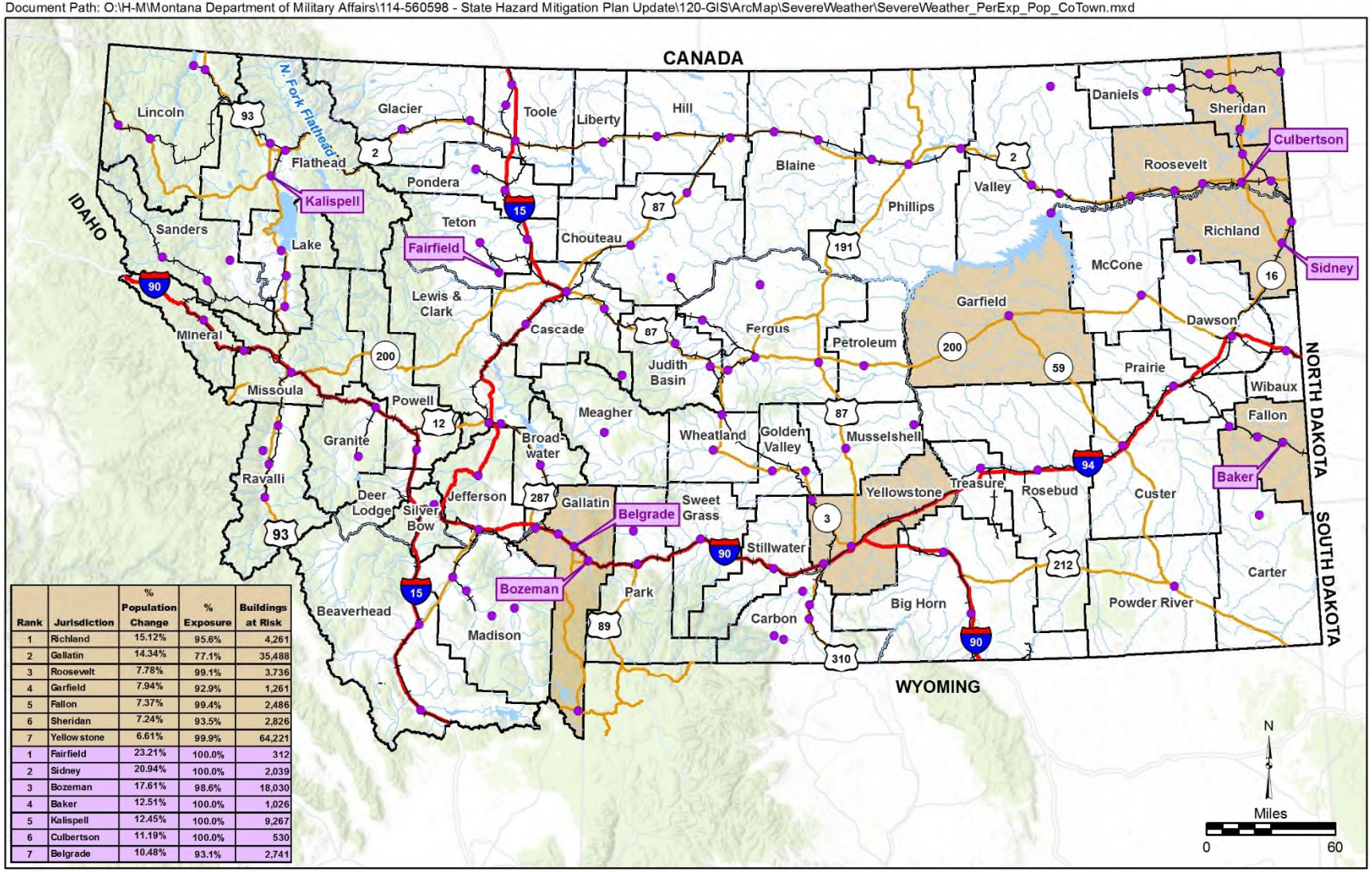

Rank	Jurisdiction	% Population Change	% Exposure	Buildings at Risk
1	Richland	15.12%	95.6%	4,261
2	Gallatin	14.34%	77.1%	35,488
3	Roosevelt	7.78%	99.1%	3,736
4	Garfield	7.94%	92.9%	1,261
5	Fallon	7.37%	99.4%	2,486
6	Sheridan	7.24%	93.5%	2,826
7	Yellowstone	6.61%	99.9%	64,221
1	Fairfield	23.21%	100.0%	312
2	Sidney	20.94%	100.0%	2,039
3	Bozeman	17.61%	98.6%	18,030
4	Baker	12.51%	100.0%	1,026
5	Kalispell	12.45%	100.0%	9,267
6	Culbertson	11.19%	100.0%	530
7	Belgrade	10.48%	93.1%	2,741

Date: 6/2/2018

Figure 4.6-4
Severe Weather - Percent Exposure x Percent Population Change for Top Counties and Cities/Towns
State of Montana MHMP 2018 Update

Vulnerability of State Property

All state property is vulnerable to severe weather; however, most property damage is from frozen water pipes, severe wind, and hail. **Table 4.6-11** shows totals by state agency and university for insurance claims related to severe weather. The highest total claims are from the university campuses in Bozeman and Missoula. Many of these losses are related to flooding from frozen pipes.

Table 4.6-11. Loss Claims for State Facilities Caused by Severe Weather (2012-2017)

Agency	City	Date of Loss	Claim Description	Total
Dept. of Administration				
Scott Hart Building	Helena	6/13/2017	Rain water entered basement	$12,611
Capitol	Helena	1/8/2017	Waterline ruptured offices, basement flooded	$7,347
General Services Div.	Helena	8/14/2015	Storm caused several quick power outages	$5,716
Capitol	Helena	12/5/2013	Pipe in south entrance froze and broke	$6,318
Capitol Complex	Helena	12/9/2015	Storm blew trees down shut power down	$4,287
Walt Sullivan Bldg.	Helena	2/8/2014	Extreme cold weather	$44,370
General Services Div.	Helena	8/15/2014	Capitol roof hail damage	$2,978
Public Defenders	Helena	6/13/2016	Storm caused power surge	$615
Dept. of Commerce				
Board of Housing	Laurel	4/17/2015	Wind blew shingles off	$580
Dept. of Corrections				
Women's Prison	Billings	2/17/2017	Roof leak during heavy snow build-up	$12,950
Prison	Deer Lodge	7/8/2013	Major hail storm	$2,161
Dept. Fish, Wildlife & Parks				
FWP	Great Falls	6/11/2016	Vehicle hail damage	$10,214
Bannack State Park	Beaverhead	3/14/2017	Grasshopper creek flooding	$58,681
Bannack State Park	Beaverhead	6/24/2017	Tree fell on building	$6,525
First People's B Jump	Cascade	5/24/2017	Wind damaged shop roof	$500
Fisheries	-	12/19/2016	Wind damaged vehicle	$268
Giant Springs SP	Great Falls	7/8/2013	Wind damaged landscape trees	$1,280
Makoshika	Dawson	7/21/2016	Hail damage to roof and fence	$840
Placid Lake	Seeley	3/13/2017	Tree fess on day use boat dock	$11,555
Wall Creek WMA	Madison	1/25/2014	Roof shingles missing from wind	$3,291
West Shore SP	Lake	5/21/2013	Wind damaged floating dock	$998
Yellowstone Hatcher	-	6/3/2016	Hail damage	$20,127
Department of Justice				
Crime Lab		1/6/2015	Roof leak from snow and rain	$1,083
Crime Lab		3/4/2014	Drains on roof froze, pipes burst	$16,587
Crime Lab		1/14/2016	Roof drains froze, ice melting flooded building	$5,606
Crime Lab		6/3/2013	Weather related outage damaged equip.	$10,146
Highway Patrol	Anaconda	6/3/2017	Lightning struck tower	$9,702
Law Enforce. Academy	Helena	6/2/2017	Lightning damaged equipment	$3,256
Law Enforce. Academy	Helena	4/22/2015	Lightning damaged phone, alarm system	$11,168
Dept. of Labor & Industry				
Butte Job Service	Butte	1/17/2017	Frozen supply line	$2,315
Job Service	-	7/8/2013	Large hail caused roof, siding damage	$436
Dept. of Natural Resources				
SWLO	-	11/10/2014	Tree fell on building, roof damage	$7,495
Trust Lands	-	1/10/2015	Ice dammed in gabled roof, water damage	$991
NWLO	Kalispell	2/6/2017	Ice dam on roof	$3,321
Oil & Gas	Billings	5/21/2016	Major hail storm	$45,626
Dept. of Transportation				
Airport	Bozeman	12/3/2012	Wind blew off airport roof	$8,521
Maintenance Shop	Glendive	7/8/2013	Major hail storm	$5,584

Table 4.6-11. Loss Claims for State Facilities Caused by Severe Weather (2012-2017)

Agency	City	Date of Loss	Claim Description	Total
Maintenance Shop	Glendive	7/10/2016	Major hail storm	$31,856
Winnett/Roy Section	Lewistown	7/10/2016	Major hail storm	$8,531
Bonner Shop	Missoula	2/22/2012	Wind blew over loader shed	$13,109
Historical Society				
Moss Mansion	Helena	3/20/2014	Roof leak, water damage	$10,560
Multiple Agencies				
Billings Hail	Billings	5/18/2014	Hail storm	$729,489
Billings Storm	Billings	9/7/2013	Storm with wind/rain, multiple locations	$547,248
Women's Prison	Billings	5/18/2014	Major hailstorm, greenhouse roof	$3,539
Corrections	Glendive	7/27/2015	120 mph wind tore down fence	$25,354
Missoula Wind	Missoula	8/10/2015	Hail winds blew roofs and downed trees	$120,076
MSU, NARC		7/4/2015	Tornado damaged buildings	$322,441
MSU-Northern	Havre	11/17/2015	Wind damage to gym	$59,323
Dept. Public Health & Human Services				
Developmental Center	Boulder	5/26/2015	Lightning storm damaged fire panel	$14,538
Veteran's Home	Glendive	3/14/2012	High winds blew down light pole	$3,350
Veteran's Home	Glendive	7/24/2012	Lightning strike damaged equipment	$5,886
Veteran's Home	Glendive	7/8/2013	Major hail storm	$631
University System				
MSU-Billings	Billings	12/9/2013	Frozen fire sprinkler	$9,756
MSU-Bozeman	Bozeman	6/8/2017	Microburst, wind damage to barn	$8,178
MSU-Bozeman	Bozeman	11/22/2013	Pipe frozen, water damage	$22,867
MSU-CARC	Bozeman	7/23/2016	Wind damaged metal and shingles, seed barn	$1,805
MSU-CARC	Bozeman	6/5/2012	Hail damage to 5 buildings	$1,789
MSU-EARC	Bozeman	6/19/2015	Hail and wind damage to various buildings	$90,462
MSU, EARC	Bozeman	8/10/2013	Hail damage to multiple buildings	$64,628
MSU-WTARC	Bozeman	8/13/2013	Lightning strike damaged computers, phones	$2,077
MSU-EARC	Bozeman	7/15/2012	Hail damage to buildings	$433
MSU-Post Farm	Bozeman	1/17/2012	Wind blew/bent metal roofing	$6,774
MSU-Bozeman	Bozeman	3/31/2012	Wind damage to tennis fence	$2,037
MSU-Bozeman	Bozeman	7/27/2015	Heavy rain with small hail	$3,546
MSU Hannon Hall	Bozeman	6/21/2015	Lightning strike	$122,486
MSU Microbiology	Bozeman	3/1/2016	Wind blew shingles and soffit off	$435
MSU Plan Biosciences	Bozeman	11/16/2014	Frozen water pipes	$7,276
MSU Renne/Plew	Bozeman	6/29/2013	Backup of rainwater	$39,511
MT Tech-Highlands	Butte	11/12/2014	HVAC coils froze	$16,682
MT Tech	Butte	12/10/2013	Pipes froze, water damage to Residence Life	$3,371
MT Tech	Butte	8/18/2016	Computer damage due to power outage	$590
MT Tech-Highlands	Butte	10/7/2015	Hail damage on HVAC coils	$25,401
MSU-Northern	Havre	3/28/2015	Power outage, surge due to high winds	$6,872
MSU-Northern	Havre	6/6/2012	Tree fell on roof of Morgan Hall	$5,544
MSU-Northern	Havre	1/5/2016	Frozen heater pipe in housing	$701
MSU-Northern	Havre	2/6/2016	Wind damage to roof	$1,335
UM-Missoula	Missoula	3/20/2017	Water leak damaged Daly Mansion	$2,239
UM-Missoula -Kiln An	Missoula	3/2/2014	Large amount of snow caused roof to collapse	$12,993
UM-Msla Banch Rch	Missoula	1/21/2012	Heavy snow, high wind, hayshed roof collapse	$39,950
UM-Msla Adams Cent	Missoula	3/10/2014	Snow drift on roof caused drain damage	$1,903
UM-Msla Forestry	Missoula	12/28/2016	Weight of snow caused roof collapse	$852
UM-Western	Dillon	10/21/2014	Water entered building	$13,902
TOTAL				**$2,758,375**

Source: DOA-RMTD, 2017

Future Development

The State of Montana has adopted the 2012 International Building Code (IBC). The IBC includes a provision that buildings must be constructed to withstand a wind load of 75 mph constant velocity and three second gusts of 90 mph. Buildings must be designed to withstand a snow load of 30 pounds per square foot minimum.

Local building codes could be developed in highly vulnerable areas to require shatter-proof glass on critical facilities and/or facilities housing vulnerable populations, higher standards for tying down roofs, and/or other methods to mitigate impacts from severe summer storms. Montana snow is generally dry and snow loads do not threaten roof collapse in most areas. However, the northwestern portion of the State where snow contains greater moisture content should consider building regulations that require a stricter design standard for flat roofs to ensure they can support maximum snow loads.

Climate Change

The frequency of severe weather events has increased steadily over the last century. The number of weather-related disasters during the 1990s was four times that of the 1950s, and cost 14 times as much in economic losses. Historical data shows that the probability for severe weather events increases in a warmer climate. There has been a sizable upward trend in the number of storms causing large financial and other losses. Climate change presents a challenge for risk management associated with severe weather.

Montana has seen an uptick in average temperature of about 2 degrees F in the last 50 years, while precipitation has stayed largely the same. At the same time, temperatures at the extremes – the absolute coldest and absolute warmest temperatures of the year have shifted upwards by about 10 degrees for the absolute low, with more days falling into the hotter extreme as well (Independent Record, *Temps Getting Warmer, Nobel-Winning Scientist Says*, March 6, 2018).

According to the National Climate Change Assessment (2014), climate change can and has altered the risk of certain types of extreme weather events. The number of heat waves has been increasing in recent years with the number being almost triple the long-term average. These increases in extreme heat will have many negative consequences, including increases in surface water losses, heat stress, and demand for air conditioning. Rising temperatures are leading to increased demand for water and energy. In parts of the region, this will constrain development, stress natural resources, and increase competition for water among communities, agriculture, energy production, and ecological needs.

The average daily maximum temperature averaged over the course of the year is an effective overall indicator of the effect of changing climate conditions on local temperatures. NOAA data are available from 1949 to 2009 with modeled projections for mid-century (2050) and end-of-century (2099) for the low and high emissions scenarios for each Montana county. **Figure 4.6-4** illustrates the projected change in temperature by county for mid-century and end-of-century for both emission scenarios. **Tables 4.6-12 and 4.6-13** present number of above 95° days at mid-century and end-of-century for the most populated counties and those counties experiencing the fastest population growth, respectively, according to the low- and high-emission scenarios.

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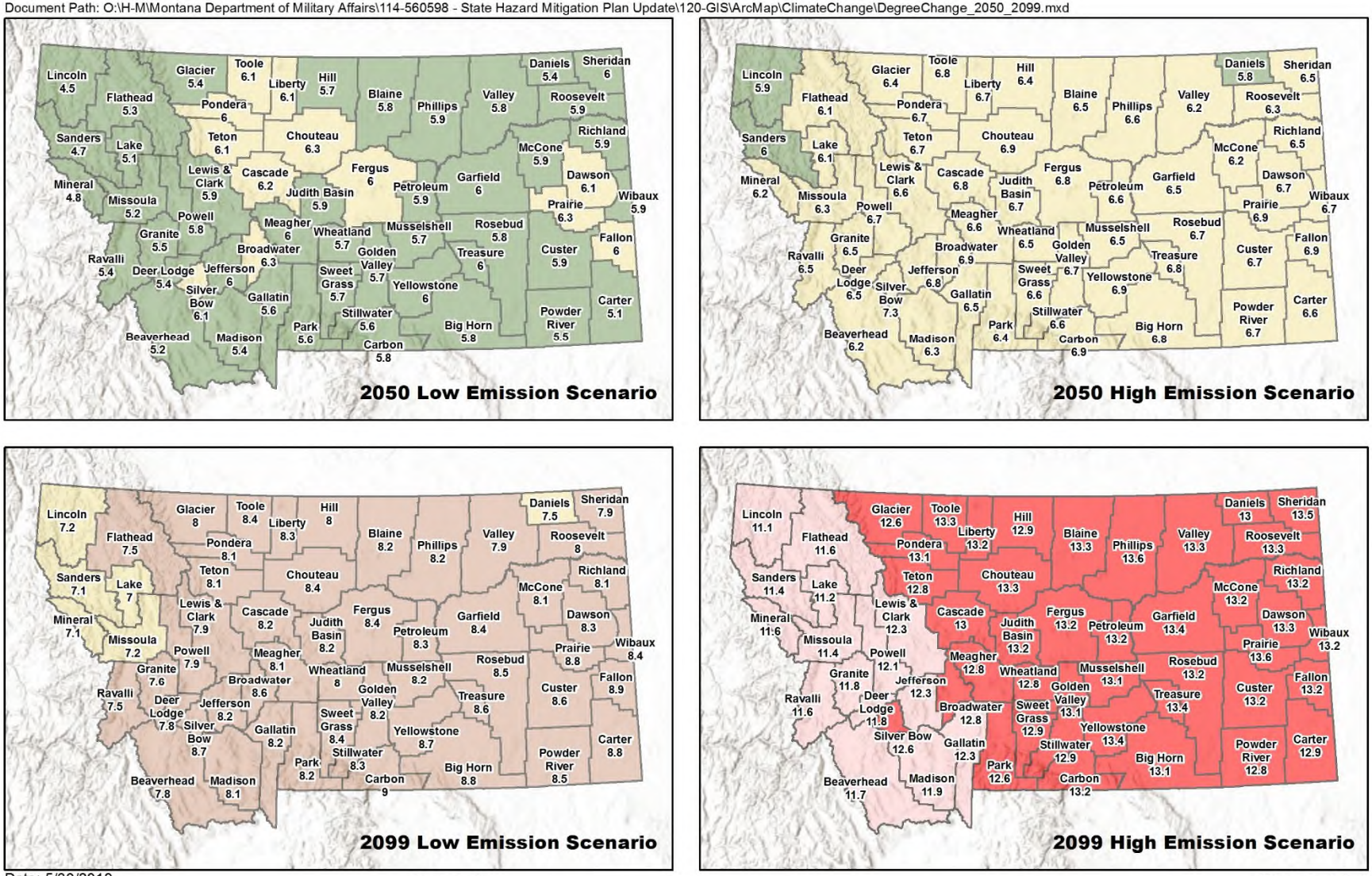

Date: 5/30/2018

Low emissions scenario assumes that global emmsions of the greenhouse gas that cause changes in climate conditions peak in the year 2040 and then decline. High emissions scenario assumes that global emissions of greenhouse gases remain largely unabated through the 21st century (FEMA 2017).

Legend

Degree Change (°F)

- 4.5 - 6.0
- 6.01 - 7.5
- 7.51 - 9.0
- 9.01 - 12.4
- 12.41 - 13.7

Figure 4.6-4

Degree Change in Maximum Median Annual Temperature Between 1949-2009 Maximum Mean and 2050/2099 Low and High Emission Scenarios State of Montana MHMP 2018 Update

Table 4.6-12. Counties with Greatest Population and Projected Median Days per Year Over 95 Degrees at Mid- and End-Century

County	Observed Mean 1950-2006 Days/Year >95°	Low Emission Scenario Median Days/Year >95°	Change from Observed Median Days/Year >95°	High Emission Scenario Median Days/Year >95°	Change from Observed Median Days/Year >95°
Mid-Century (2050)					
Yellowstone	8.1	33.9	25.8	37.0	28.9
Missoula	0.5	4.3	3.8	4.3	3.8
Gallatin	0.6	4.4	3.8	6.2	5.6
Flathead	0.1	1.0	0.9	1.4	1.3
Cascade	2.2	10.5	8.4	12.8	10.6
Lewis & Clark	0.4	3.3	2.9	5.0	4.6
Ravalli	0.3	2.1	1.8	3.2	2.8
Silver Bow	0.1	0.7	0.6	2.2	2.1
Lake	0.5	4.6	4.1	5.3	4.8
Lincoln	0.6	4.3	3.7	5.3	4.6
End-of-Century (2099)					
Yellowstone	8.1	40.5	32.4	76.7	68.6
Missoula	0.5	6.1	5.7	27.1	26.7
Gallatin	0.6	7.3	6.8	27.8	27.2
Flathead	0.1	1.9	1.8	15.2	15.1
Cascade	2.2	14.9	12.7	43.8	41.6
Lewis & Clark	0.4	5.9	5.5	26.5	26.1
Ravalli	0.3	3.9	3.5	21.6	21.3
Silver Bow	0.1	1.9	1.8	22.2	22.2
Lake	0.5	6.8	6.2	26.4	25.8
Lincoln	0.6	6.3	5.7	26.9	26.3

Source: FEMA and NOAA, 2017. Notes: Notes: The low-emissions scenario assumes that global emissions of the greenhouse gases than cause changes in climate conditions peak in the year 2040 and then decline. The high-emissions scenario assumes that global emissions of greenhouse gases remain largely unabated through the 21st century.

Temperature projections show that Yellowstone County, the county with the greatest population, will experience 26 more 95-degree days at mid-century according to the low-emissions scenario and 29 more according to the high-emissions scenario at mid-century. Projections for the end of the century are even higher. Cooling centers will likely be needed to manage extreme heat for vulnerable populations.

Table 4-6-13. Counties with Highest Number of Projected Median Days per Year Over 95 Degrees at Mid- and End-Century

County	Observed Mean 1950-2006 Days/Year >95°	Low Emission Scenario Median Days/Year >95°	Change from Observed Median Days/Year >95°	High Emission Scenario Median Days/Year >95°	Change from Observed Median Days/Year >95°
Mid-Century (2050)					
Treasure	12.0	41.7	29.7	43.0	31.0
Custer	14.5	42.8	28.3	46.0	31.5
Rosebud	12.3	39.5	27.2	44.6	32.2
Fallon	9.0	34.8	23.1	40.3	28.6
Yellowstone	8.1	33.9	25.8	37.0	28.9
Garfield	11.7	32.9	23.9	36.3	27.3
Petroleum	11.2	33.9	25.8	37.0	28.9
Musselshell	9.0	37.8	26.6	40.1	29.0
Powder River	11.1	29.8	20.9	33.9	24.9
Prairie	10.3	33.7	23.4	37.8	27.5

Table 4-6-13. Counties with Highest Number of Projected Median Days per Year Over 95 Degrees at Mid- and End-Century

County	Observed Mean 1950-2006 Days/Year >95°	Low Emission Scenario Median Days/Year >95°	Change from Observed Median Days/Year >95°	High Emission Scenario Median Days/Year >95°	Change from Observed Median Days/Year >95°
End-of- Century (2099)					
Treasure	12.0	45.6	33.6	81.5	69.5
Yellowstone	8.1	40.5	32.4	76.7	68.6
Big Horn	9.1	38.1	29.0	74.3	65.2
Rosebud	12.3	45.4	33.1	78.8	66.4
Custer	14.5	47.4	32.9	80.6	66.1
Carter	8.7	36.1	27.4	73.1	64.4
Petroleum	11.2	42.1	30.9	75.2	64.0
Musselshell	9.0	37.0	28.0	71.2	62.2
Fallon	9.0	36.9	27.9	73.1	64.0
Prairie	10.3	40.2	29.9	73.0	62.6

Source: FEMA and NOAA, 2017. Notes: The low-emissions scenario assumes that global emissions of the greenhouse gases than cause changes in climate conditions peak in the year 2040 and then decline. The high-emissions scenario assumes that global emissions of greenhouse gases remain largely unabated through the 21st century.

Temperature projections for the fastest growing counties shows that eastern Montana will have about twice as many 95-degree temperature days according to the low-emission scenario and about three times more for the high-emissions scenario at mid-century compared to the observed mean over the past 56 years.

Changes in average temperatures can impact vegetation growth and the location and extent of pests. Higher temperatures may also lead to increases in wildfire occurrences. Extreme heat will have a profound effect on vulnerable populations, as most Montana homes do not have air conditioning.

Changing extremes in precipitation are projected across all seasons, including higher likelihoods of both increasing heavy rain and snow events. Winter and spring precipitation is projected to increase in the northern states of the Great Plains, relative to the 1971-2000 average. Winter storms have increased in frequency and intensity since the 1950s, and their tracks have shifted northward over the U.S. Projected changes in summer and fall precipitation are small; however, the number of days with heavy precipitation is expected to increase by mid-century. **Table 4.3-15** in the *Flooding* section presents the counties with the projected highest median 1-inch rain days for both emission scenarios at mid- and end-of-century.

For other types of extreme weather events, such as tornadoes and severe thunderstorms, more research is needed to understand how climate change will affect them. These events occur over much smaller scales, which makes observations and modeling more challenging. Projecting the future influence of climate change on these events can also be complicated by the fact that some of the risk factors for these events may increase with climate change, while others may decrease.

Population exposure and vulnerability to severe weather are likely to increase as a result of climate change. Severe weather events may occur more frequently which would lead to increased exposure and vulnerability. Although all people may be affected by the health-related impacts of climate change, the elderly, young children, and people with weakened immune systems are often the most susceptible.

Property exposure and vulnerability may increase as a result of increased severe weather resulting from climate change. Increased structure damage from high winds, hail and snow load could result as well as damage to crops and landscaping. Secondary impacts, such as wildfire, may increase and threaten structures.

Changes to the frequency, severity, and affected area of climate-related hazards may have economic consequences. Potential decreases in agricultural outputs due to severe weather may affect the economy in farming and ranching areas. Communities that rely on tourism may see a decrease in visitors due to severe weather. If these economic effects become widespread, the impacts could be felt at a statewide or regional level (FEMA, 2016).

Critical facility exposure and vulnerability are unlikely to increase as a result of climate change impacts associated with severe weather; however, critical facility owners and operators may experience more frequent disruption to the services they provide. For example, extreme heat can decrease the effectiveness of electrical equipment, including power lines, which can lead to blackouts during very hot conditions. An increase in requests for medical assistance during a heat wave may challenge emergency response capabilities. The need for community cooling centers could result an increase in number of critical facilities.

Data Limitations

The recording of weather events is highly dependent upon the public's observations and reporting to the National Weather Service. While weather stations are used to document wind speeds and precipitation, the spotting of tornadoes and assessment of hail stone size is often recorded based on a person's observations. These observations may be more accurate in populated areas where weather stations and other observations can verify extreme events. Rural areas may go under reported because of the fewer people that observe or witness the events. As a result, records of storm events may indicate more frequent storms in recent history than in the past, a greater number of reports in populated areas versus rural areas, and more recent recording and documentation of losses related to severe thunderstorms.

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4.7 Hazardous Material Incidents and Transportation Accidents

CPRI = 2.62

Description and History

The hazardous material and transportation accident hazards have been combined into one profile because they often occur together. Transportation accidents can occur on the highways, railroad, or in the air and often result in fatalities and injuries but rarely in property loss unless hazardous materials are involved. Hazardous material incidents also occur at fixed facilities which include bulk propane facilities, gas stations and agricultural supply dealers. Besides highway and rail accidents, and from fixed facilities, petroleum releases also have the potential to occur from pipelines.

Hazardous materials are chemical substances, which if released or misused can pose a threat to the environment or health. Hazardous materials come in the form of explosives, flammable and combustible substances, poisons, and radioactive materials and can cause death, serious injury, long-lasting health effects, and damage to buildings, homes, and other property.

Varying quantities of hazardous materials are manufactured, used, or stored at an estimated 4.5 million facilities in the U.S. from major industrial plants to local dry-cleaning establishments and gardening supply stores. As many as 500,000 products pose physical or health hazards and can be defined as "hazardous chemicals" (FEMA, 2013). In 2012, there were 13,844 transportation-related hazardous materials incidents nationwide that resulted in 10 deaths and 160 injuries. The Montana Dept. of Transportation regulates transportation routes and speed limits used by carriers and monitors the types of hazardous materials crossing state lines.

The volume and type of hazardous materials that flow into, are stored, and flow through communities determine exposure to a potential release of hazardous materials. The Emergency Planning and Community Right-to-Know Act (EPCRA) was enacted in 1986 to inform communities and citizens of chemical hazards in their areas. EPCRA requires businesses to report the locations and quantities of chemicals stored on-site to State and local governments in order to help communities prepare to respond to chemical spills and similar emergencies. EPCRA also requires the U.S. Environmental Protection Agency (EPA) and the States to annually collect data on releases and transfers of certain toxic chemicals from industrial facilities, and make the data available to the public in the Toxics Release Inventory (TRI). In 1990 Congress passed the Pollution Prevention Act which required that additional data on waste management and source reduction activities be reported under TRI. The goal of TRI is to empower citizens, through information, to hold companies and local governments accountable in terms of how toxic chemicals are managed. **Table 4.7-1** presents TRI data for Montana facilities.

Table 4.7-2 shows a summary of the hazardous material incidents in Montana for a 10-year period, from 2008 to 2017 reported to the National Response Center (NRC) by type of release. During this time, 501 releases were reported. Of these, 40 percent were from fixed facilities compared to the national average of 36 percent. Mobile facilities, primarily highway accidents, accounted for 23 percent of the incidents, compared to the 14 percent national average. Eleven (11) percent of the releases were from pipelines and 10 percent were from railroad derailments.

Table 4.7-1. Toxic Release Inventory for Montana (2016)

DES District	County	Facilities	Total On-site Disposal (pounds)	Total Off-site Disposal (pounds)	Total On- and Off-site Disposal (pounds)
1	Deer Lodge	Dave Gates Generating Station, Anaconda	21,056.00	0	21,056.00
1	Flathead	Weyerhaeuser NR, Columbia Falls; JTL Group-Kalispell DBA Knife River - Kalispell; Weyerhaeuser NR, Kalispell	202,348.97		202,348.97
1	Lincoln	US CBP Roosville Port of Entry Eureka	398.06	0	398.06
1	Missoula	JTL Group Missoula (DBA Knife River-Missoula); Roseburg Forest Products Co. - Missoula Particleboard; Hexion Inc., Missoula; Phillips 66 Missoula Products Terminal, Missoula	138,318.03	71.994	138,390.03
1	Ravalli	Corixa Corp DBA Glaxosmithkline Vaccines - Hamilton; SSP-Simatrix, Victor	18,944.60	876	19,820.60
1	Sanders	Thompson River Lumber; US Antimony Corp., Thompson Falls	5,363.07	0	5,363.07
1	Silver Bow	Montana Resources LLP, Butte; REC Silicon, Butte; Montana Precision Products LLC, Butte	23,395,177.65	34302	23,429,479.65
2	Cascade	Calumet Montana Refining LLC, Great Falls; US DOD USAF Malmstrom AFB, CHS Great Falls Feed	98,598.25	7,129.47	105,727.72
2	Toole	US CBP Sweetgrass Port of Entry	0	0	0
3	Broadwater	Graymont Western US Inc. Indian Creek Lime Production, Townsend; US Army National Guard Limestone Hills Ranges, Townsend	32,973.19	0	32,973.19
3	Gallatin	Oldcastle Materials Cement Holdings - Trident Plant Three Forks; JTL Group Belgrade DBA Knife River; Darigold-Bozeman	23,470.88	0	23,470.88
3	Jefferson	Ash Grove Cement Co. Montana City Plant; Barrick Gold Corp-Golden Sunlight Mine, Whitehall.; Marks-Miller Post & Pole Inc., Clancy	153,456.90	0	153,456.90
3	Lewis and Clark	American Chemet Corp., East Helena; US Army National Guard Fort Harrison Ranges; Helena Sand & Gravel; Forterra Concrete Products - Helena	37,674.42	0	37,674.42
3	Sweet Grass	Stillwater Mining Co. East Boulder Mine, Big Timber	332,254.42	0	332,254.42
4	Custer	Optiblend Industries Inc-Miles City; Western Powders Inc., Miles City	0	0	0
4	Fallon	Nalco Company, Baker	595	0	595
4	Richland	Lewis & Clark Station, Sidney; Sidney Sugars Inc.; Nalco Company-Sidney	218,316.41	153,759.90	372,076.31
5	Big Horn	Decker Coal Company; Hardin Generating Station	22,447.42	74,770.00	97,217.42
5	Rosebud	Colstrip Energy LP Rosebud Power Plant; Colstrip Steam Electric Station	8,024,912.83	8,827.90	8,033,740.73
5	Stillwater	Montana Silversmiths, Columbus; SMC Nye Mine; SMC Precious Metals Smelter & Base Metals Refinery, Columbus	356,774.30	239,558.20	596,332.50
5	Yellowstone	Brenntag Pacific Inc., Billings; CHS Inc. Laurel Refinery; Phillips 66 Co. Billings Refinery; Exxonmobil Billings Refinery; JTL Group Billings (DBA - Knife River Billings); Jupiter Sulphur LLC, Billings; Knife River Billings East Site, Billings; Loveland Products Inc. - Billings (Formerly Transbas); True North Steel, Billings.; Western Sugar Cooperative, Billings; Montana Sulphur & Chemical Co., Billings; Forterra Concrete Products - Billings	807,379.82	12450.48962	819,830.31
6	Sheridan	Raymond Port of Entry	0	0	0
Total			**33,890,460**	**531,746**	**34,422,206**

Source: U.S. EPA, 2018 (https://iaspub.epa.gov/triexplorer/tri_release.facility)

Table 4.7-2. Hazardous Material Incidents in Montana (2008 - 2017)

Year	Fixed	Mobile	Pipeline	Railroad	Storage Tank	Other	Counties and # Incidents
2008	16	14	3	6	4	2	Big Horn (2), Carbon (2), Cascade (1), Dawson (1), Fallon (1), Fergus (2), Flathead (3), Gallatin (1), Glacier (2), Lake (3), Lincoln (1), Missoula (3), Musselshell (1), Pondera (1), Powder River (1), Richland (1), Rosebud (2), Sanders (2), Toole (1), Yellowstone (13)
2009	28	14	8	7	6	5	Big Horn (4), Carbon (2), Cascade (3), Dawson (1), Fallon (2), Fergus (1), Flathead (3), Gallatin (2), Glacier (4), Hill (1), Lake (2), Lewis and Clark (1), Lincoln (4), Mineral (1), Missoula (4), Petroleum (1), Pondera (2), Powder River (1), Richland (2), Roosevelt (4), Sanders (4), Valley (2), Yellowstone (16)
2010	15	12	3	5	5	3	Big Horn (3), Cascade (3), Custer (1), Dawson (1), Fallon (2), Flathead (1), Glacier (3), Jefferson (1), Lake (2), Lewis and Clark (1), Lincoln (1), Madison (1), Meagher (1), Missoula (2), Powder River (1), Powell (1), Ravalli (1), Richland (1), Sanders (1), Teton (1), Valley (1), Wheatland (1), Yellowstone (10)
2011	23	11	20	6	3	6	Big Horn (7), Blaine (2), Cascade (2), Dawson (3), Fallon (4), Flathead (3), Gallatin (1), Glacier (6), Golden Valley (1), Hill (2), Lake (1), Lewis and Clark (4), Lincoln (3), McCone (1), Mineral (1), Missoula (2), Musselshell (1), Phillips (1), Ravalli (1), Richland (3), Roosevelt (1), Sanders (1), Sweet Grass (1), Valley (2), Yellowstone (15)
2012	22	12	4	7	6	3	Big Horn (5), Blaine (2), Cascade (2), Fallon (1), Flathead (4), Gallatin (1), Glacier (3), Hill (2), Lake (2), Lewis and Clark (4), Liberty (1), McCone (1), Mineral (1), Missoula (2), Phillips (1), Pondera (1), Ravalli (1), Richland (4), Roosevelt (2), Rosebud (2), Sanders (2), Silver Bow (2), Teton (1), Valley (1), Yellowstone (10)
2013	20	14	3	2	8	4	Big Horn (3), Cascade (1), Chouteau (1), Custer (1), Dawson (1), Deer Lodge (1), Fergus (1), Glacier (5), Lewis and Clark (4), Lincoln (2), Park (2) Petroleum (1), Richland (5), Roosevelt (8), Rosebud (1), Sheridan (3), Sweet Grass (1), Toole (1), Wibaux (1), Yellowstone (9)
2014	21	13	5	6	6	2	Beaverhead (1), Big Horn (2), Blaine (1), Broadwater (1), Cascade (6), Dawson (1), Fallon (1), Fergus (1), Flathead (1), Gallatin (3), Glacier (4), Hill (1), Judith Basin (1), Lake (2), Lewis and Clark (1), Lincoln (1), Mineral (1), Missoula (3), Musselshell (1), Park (1) Richland (1), Roosevelt (2), Rosebud (1), Sanders (2), Valley (1), Wibaux (1), Yellowstone (11)
2015	12	6	4	4	3	2	Big Horn (2), Broadwater (1), Cascade (3), Dawson (3), Deer Lodge (1), Fergus (1), Flathead (2), Gallatin (3), Glacier (1), Lake (1), Lewis and Clark (1), Roosevelt (3), Silver Bow (2), Wheatland (1), Wibaux (1), Yellowstone (6)
2016	20	9	5	3	4	1	Blaine (1), Broadwater (1), Cascade (4), Dawson (2), Fallon (1), Flathead (2), Gallatin (2), Glacier (2), Hill (2), Lake (2), Lewis and Clark (1), Missoula (2), Phillips (1), Ravalli (2), Richland (2), Roosevelt (1), Sanders (2), Silver Bow (3), Teton (1), Valley (1), Yellowstone (7)
2017	23	10	0	3	5	4	Big Horn (4), Blaine (1), Carbon (2), Cascade (9), Custer (1), Flathead (2), Gallatin (1), Glacier (1), Granite (1), Hill (1), Lewis and Clark (2), Liberty (1), Lincoln (1), Madison (1), Mineral (1), Missoula (2), Petroleum (1), Pondera (1), Ravalli (1), Roosevelt (2), Sanders (1), Silver Bow (1), Sweet Grass (1), Teton (1), Valley (1), Yellowstone (5)
TOTAL	**200**	**115**	**55**	**49**	**50**	**32**	

Source: NRC, 2008-2017 (http://nrc.uscg.mil/)

The most likely location for a transportation-related hazardous material release is along Montana's highways, railroads, and pipelines. The source and location of transportation accidents vary but the response is typically the same. Response is focused on determining the presence of hazardous materials and then assisting the injured. Montana has six regional hazardous-material response teams including those located in Billings, Bozeman, Great Falls, Helena, Kalispell, and Missoula. Aviation accidents usually don't involve a hazardous material release but are often fatal to the occupants.

Car crashes occur in every community across the nation and can be devastating to families, friends, and communities. It is estimated that vehicle crashes cost the State approximately $595 million in wage loss, medical expenses, insurance administration, and property damage. This figure does not account for the indirect costs of human suffering and loss resulting from these tragedies. Vehicular accidents occur for a number of reasons including distracted drivers, driver fatigue, drunk driving, speeding, aggressive driving, and weather. In Montana, vehicle collisions with wildlife are a common occurrence. Statistics on various types of highway accidents are presented in **Table 4.7-3** for the past 10 years, including the top counties with fatalities and serious injuries. Information is not available on whether these incidents involved a hazardous material response. The data shows that over 35 percent of all crashes involving fatalities and serious injuries occurred in DES District 1, followed by over 13 percent in District 3, and over 9 percent in District 5.

Table 4.7-3. Vehicular Crash Data; 2007 – 2016

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
All Crashes											
Fatal Crash	249	209	199	164	187	192	203	176	204	172	**1,955**
Serious Injury	1,059	1,021	856	781	749	850	852	790	786	678	**8,422**
Total # Crashes	21,818	21,801	20,641	20,056	20,380	19,754	20,379	21,681	22,377	22,077	**210,964**
Top Counties with Fatal & Serious Injury Crashes	Flathead 10.5%, Missoula 7.4%, Yellowstone 6.7%, Gallatin 5.2%, Ravalli 4.5%, Lewis and Clark 4.5%, Cascade 3.5%, Lake 3.3%, Lincoln 3.3%, Jefferson 3.2%, Sanders 2.9%, Mineral 2.4%, Big Horn 2.4%, Glacier 2.4%, Carbon 2.3%										
Nighttime Crashes											
Fatal Crash	249	209	199	164	187	192	203	176	204	172	**1,955**
Serious Injury	1,059	1,021	856	781	749	850	852	790	786	678	**8,422**
Total # Crashes	21,818	21,801	20,641	20,056	20,380	19,754	20,379	21,681	22,377	22,077	**210,964**
Top Counties with Fatal & Serious Injury Crashes	Missoula 10.9%, Yellowstone 10.4%, Flathead 10.2%, Cascade 5.1%, Lewis and Clark 4.8%, Gallatin 4.5%, Ravalli 3.5%, Lake 3.2%, Big Horn 2.8%, Glacier 2.6%, Roosevelt 2.5%, Silver Bow 2.5%, Jefferson 2.3%, Lincoln 2.2%, Sanders 2.1%										
Rural Roadway Crashes											
Fatal Crash	229	183	174	146	157	177	183	158	179	158	**1,744**
Serious Injury	853	777	610	603	598	680	684	603	600	517	**6,525**
Total # Crashes	10,515	10,342	9,548	9,290	9,631	9,673	10,271	10,607	11,334	11,217	**102,428**
Top Counties with Fatal & Serious Injury Crashes	Flathead 10.5%, Missoula 7.4%, Yellowstone 6.7%, Gallatin 5.2%, Ravalli 4.5%, Lewis and Clark 4.5%, Cascade 3.5%, Lake 3.3%, Lincoln 3.3%, Jefferson 3.2%, Sanders 2.9%, Mineral 2.4%, Big Horn 2.4%, Glacier 2.4%, Carbon 2.3%										
Winter Crashes											
Fatal Crash	66	52	46	39	49	40	49	39	39	43	**462**
Serious Injury	279	263	216	196	184	224	221	216	202	170	**2,171**
Total # Crashes	8,268	8,928	7,572	8,117	8,192	7,420	7,777	9,251	8,637	8,281	**82,443**
Top Counties with Fatal & Serious Injury Crashes	Missoula 14.2%f, Yellowstone 10.0%, Flathead 9.4%, Gallatin 5.4%, Lewis and Clark 5.0%, Cascade 4.4%, Ravalli 3.9%, Lake 3.3%, Mineral 2.8%, Mineral 2.8%, Sanders 2.2%, Jefferson 2.1%, Park 2.0%, Silver Bow 2.0%, Roosevelt 1.7%										
Wild Animal Involved Crashes											
Fatal Crash	4	5	3	3	4	3	8	1	2	-	**33**
Serious Injury	46	27	29	25	21	36	32	25	29	-	**270**
Total # Crashes	2,008	1,859	2,098	1,898	1,893	2,049	2,067	2,087	2,951	-	**18,910**
Top Counties with Fatal & Serious Injury Crashes	Lincoln 10.6%, Flathead 10.0%, Missoula 8.3%, Ravalli 6.8%, Sanders 5.9%, Cascade 5.0%, Jefferson 4.1%, Gallatin 3.8%, Mineral 3.5%, Yellowstone 3.2%, Carbon 3.2%, Park 3.2%, Lewis and Clark 2.9%, Lake 2.9%, Madison 2.1%										

Source: MDT, 2018 (http://www.mdt.mt.gov/publications/datastats/crashdata.shtml); Notes "-"= Not Available

According to the National Transportation Safety Board (NTSB), 60 percent of all railroad accidents occur at unprotected or passive crossings. **Table 4.7-4** summarizes railroad accidents at crossings in Montana over the past 10 years with details on which counties sustained the most incidents.

Table 4.7-4. Accidents at Railroad Crossings; 2008 – 2017

Year	# of Vehicle/ Train Collisions	Counties and # Incidents	Fatalities	Injuries
2008	18	Big Horn (1), Broadwater (1), Cascade (1), Flathead (1), Glacier (1), Lake (1), Lewis and Clark (1), Lincoln (1), Richland (2), Silver Bow (1), Stillwater (2), Yellowstone (5)	2	4
2009	15	Big Horn (2), Blaine (1), Cascade (1), Flathead (3), Hill (1), Lewis and Clark (1), Mineral (1), Prairie (1), Roosevelt (2), Yellowstone (2)	1	3
2010	19	Beaverhead (1), Big Horn (2), Blaine (1), Gallatin (2), Glacier (1), Hill (2), Mineral (1), Phillips (1), Richland (2), Roosevelt (1), Rosebud (1), Treasure	2	6
2011	13	Flathead (1), Judith Basin (1), Missoula (1), Phillips (2), Richland (2), Roosevelt (4), Wheatland (1), Wibaux (1)	2	4
2012	10	Big Horn (1), Glacier (1), Liberty (1), Missoula (1), Richland (1), Roosevelt (2), Treasure (1), Yellowstone (2)	2	5
2013	13	Big Horn (2), Cascade (1), Judith Basin (2), Missoula (2), Park (1), Roosevelt (2), Treasure (1), Yellowstone (2)	1	6
2014	14	Gallatin (2), Hill (2), Lincoln (2), Missoula (1), Park (1), Roosevelt (1), Silver Bow (1), Toole (1), Treasure (1), Yellowstone (2)	2	2
2015	15	Big Horn (3), Carbon (1), Cascade (1), Gallatin (3), Glacier (1), Hill (1), Missoula (1), Roosevelt (1), Sweet Grass (1), Yellowstone (2)	5	2
2016	11	Big Horn (3), Flathead (2), Gallatin (1), Lewis and Clark (1), Missoula (2), Park (1), Powell (1)	1	3
2017	22	Big Horn (1), Broadwater (2), Glacier (1), Granite (1), Hill (2), Judith Basin (1), Lewis and Clark (1), Liberty (1), Gallatin (3), Missoula (1), Powell (1), Prairie (1), Roosevelt (1), Sweet Grass (1), Wibaux (2), Yellowstone (2)	0	6
TOTAL	**150**		**18**	**41**

Source: Federal Railroad Administration, 2018;
http://safetydata.fra.dot.gov/OfficeofSafety/publicsite/Query/ConsolidatedHwyRailIncidents.aspx

The data indicates that DES District 5 has had the most railroad/vehicle incidents at crossing (43 or 29%), followed by District 1 (27 or 18%), District 3 (24 or 16%), District 2 (22 or 15%), District 6 (21 or 14%) and District 4 (13 or 9%).

Federal Railroad Administration data indicates that between 2008 and 2017, 327 railroad accidents occurred in Montana, including 95 derailments involving trains that were carrying hazardous materials. The 95 train accidents included a total of 1,674 rail cars carrying hazardous materials; however, only 202 of these railcars actually derailed or were damaged. During this 10-year period, 18 railcars released hazardous materials to the environment in Montana. **Table 4.7-5** presents this data. Further analysis of the data indicates the DES District 2 has had the most railroad accidents in the past 10 years (85 or 26 percent), followed by District 1 (97 or 23 percent), District 5 (62 or 19%), District 3 (40 or 12 percent), District 6 (34 or 10 percent), and District 4 (30 or 9 percent).

Since the last MHMP Update in 2013, oil trains are a constant concern because of the catastrophic impacts that could result from a derailment that ruptures tanker cars in town or into waterways. Numerous oil trains pass through Montana communities each week with up to 1 million gallons of crude oil per train. The railroad has redesigned its tanker cars to make them less apt to rupture if derailed. Coal trains do not pose as great a public safety concern since rail sidings have been expanded to accommodate the train length to ensure that evacuations routes are not blocked. Derailment of coal trains into Montana's waterways could have water quality implications.

Table 4.7-5. Railroad Accidents; 2008 – 2017

Year	# Accidents	Counties and # Accidents	Cars Carrying Haz-Mat	Haz-Mat Cars Derailed	Haz-Mat Cars w/ Release	Fatalities	Injuries
2008	54	Big Horn (2), Carbon (1), Cascade (3), Custer (1), Dawson (1), Flathead (4), Gallatin (1), Glacier (2), Hill (3), Lewis and Clark (9), Liberty (1), Lincoln (2), Missoula (5), Park (2), Powell (1), Prairie (1), Rosebud (1), Sanders (1), Silver Bow (1), Toole (5), Yellowstone (7)	180	13	0	0	1
2009	15	Flathead (2), Glacier (1), Hill (2), Lewis and Clark (2), Mineral (1), Missoula (1), Pondera (1), Roosevelt (1), Yellowstone (4)	73	5	0	0	3
2010	46	Beaverhead (1), Big Horn (1), Broadwater (1), Cascade (3), Chouteau (1), Custer (1), Dawson (4), Fallon (1), Fergus (1), Glacier (1), Hill (3), Lewis and Clark (1), Lincoln (2), Mineral (1), Missoula (4), Powell (1), Richland (3), Roosevelt (4), Sheridan (2), Silver Bow (2), Teton (1), Toole (2), Yellowstone (5)	152	15	0	1	0
2011	48	Blaine (1), Cascade (4), Custer (2), Dawson (3), Flathead (4), Gallatin (1), Glacier (1), Hill (2), Jefferson (1), Lewis and Clark (2), Lincoln (2), Missoula (3), Park (2), Phillips (1), Pondera (1), Roosevelt (3), Sanders (1), Teton (2), Toole (1), Treasure (1), Valley (3), Wibaux (2), Yellowstone (5)	126	2	0	0	5
2012	31	Blaine (2), Cascade (2), Custer (2), Dawson (1), Fallon (1), Gallatin (1), Judith Basin (1), Lewis and Clark (1), Missoula (2), Park (1), Phillips (1), Powell (1), Richland (2), Roosevelt (3), Teton (2), Toole (2), Valley (1), Yellowstone (5)	272	40	13	1	4
2013	29	Big Horn (1), Cascade (3), Flathead (2), Gallatin (1), Hill (3), Lewis and Clark (1), Liberty (1), Mineral (2), Missoula (3), Park (1), Phillips (1), Roosevelt (1), Toole (2), Treasure (2), Yellowstone (5)	234	11	0	1	2
2014	36	Broadwater (1), Cascade (4), Chouteau (1), Flathead (1), Glacier (1), Hill (2), Lewis and Clark (2), Mineral (2), Missoula (4), Phillips (1), Prairie (2), Roosevelt (2), Sanders (1), Silver Bow (1), Stillwater (1), Teton (1), Toole (1), Valley (1), Yellowstone	232	45	0	0	3
2015	24	Big Horn (2), Cascade (3), Dawson (1), Flathead (1), Hill (1), Lincoln (2), Madison (1), Missoula (2), Park (1), Powell (2), Richland (1), Roosevelt (3), Silver Bow (2), Yellowstone (2)	186	44	5	0	0
2016	18	Beaverhead (1), Cascade (2), Dawson (1), Gallatin (1), Hill (1), Jefferson (1), Lewis and Clark (1), Missoula (2), Phillips (2), Pondera (1), Toole (1), Treasure (1), Yellowstone (3)	45	8	0	1	0
2017	25	Big Horn (2), Broadwater (1), Cascade (4), Flathead (2), Lewis and Clark (1), Mineral (2), Missoula (1), Musselshell (1), Phillips (1), Pondera (1), Prairie (1), Roosevelt (1), Sanders (1), Toole (3), Yellowstone (3)	174	19	0	0	3
TOTAL	**326**		**1,674**	**202**	**18**	**4**	**21**

Source: Federal Railroad Administration, 2018; http://safetydata.fra.dot.gov/OfficeofSafety/publicsite/Query/AccidentByStateRailroad.aspx

Some of the significant hazardous material and transportation accidents in Montana in the past 40 years are described below.

February 1, 1989. In the wee hours of the morning, a 48-car runaway freight train slammed into a parked train engine, setting off an explosion in Helena. Windows were blasted out up to three miles away from the impact near Carroll College. Most of the city lost power and residents were forced to evacuate in subzero weather. The wreck occurred when engineers traveling west toward Mullan Pass opted to switch the lead engine of a Montana Rail Link train because it lacked a working heater. In the process, the rest of the train began rolling and kept going until it crashed in Helena. A tank carrying isopropyl alcohol caught fire, sparking an explosion in an adjacent tank of hydrogen peroxide. No major injuries were reported.

While responders were relieved the incident wasn't more of a disaster, they were struggling with the frigid weather. When they attempted to put out the flames from the explosion with water, it would freeze. Carroll College's St. Charles Hall shook when the trains hit. Many of the windows in the women's dorm, Guadalupe Hall, were blown out. Students were sheltered at the National Guard Armory, which still had heat (Independent Record, *20 Years Ago Today, Helena Shook, Rattled and Froze,* February 1, 2009).

November 30, 1992 – Two C-141 U.S. Air Force's military Starlifter cargo planes collided and crashed 9 miles north of Harlem. As a result of the accident, 13 fatalities occurred. Air force public affairs officer reported that planes were involved in a four-plane exercise that involved refueling from a KC-135 tanker. The planes originated from McCord Air Force Base near Tacoma, Washington. Prior to the accident the planes had just finished refueling. Public onlookers reported an explosion in the sky occurred at approximately 9:30pm. Debris was scattered over an estimated 21 square mile area. Harlem city facilities were temporarily turned over to the Air Force to be used as a command center with the fire station set up as the disaster control center. In a combined effort, Blaine County Sheriff's office, Harlem Police Dept. and the Montana Highway Patrol helped to secure the crash area. (The Chinook Opinion*, 13 Dead in Air Collision, Air Force Cargo Planes Collide and Fall Harlem*, December 2, 1992).

April 11, 1996. Nineteen (19) cars from a Montana Rail Link freight train derailed near Alberton in Mineral County. Six of the derailed cars contained hazardous materials. One derailed tank car containing chlorine (a poison gas) ruptured, releasing 130,000 pounds of chlorine into the atmosphere; another tank car containing potassium hydroxide solution (potassium cresylate, a corrosive liquid) lost 17,000 gallons of product; and a covered hopper car containing sodium chlorate (an oxidizer) spilled 85 dry gallons onto the ground. This chlorine spill is the second largest in U.S. history.

Alberton, MT; KPAX TV video; Missoula, MT

About 1,000 people from the surrounding area were evacuated. Approximately 350 people were treated for chlorine inhalation, 123 of whom sustained injury. Nine people, including both members of the train crew, were hospitalized. A transient riding the train died from acute chlorine toxicity.

U.S. Interstate Highway 90 (I-90) is roughly parallel and about 150 yards north of the MRL tracks at the accident site. The hazardous material cloud drifted across I-90 resulting in multiple highway traffic accidents. Several motorists were stranded in the cloud after these accidents. I-90 was closed requiring an 81-mile detour. Monetary damage was estimated to be $10 million.

The Governor of Montana declared a state of emergency in Missoula and Mineral Counties. On April 14, 1996 the evacuation area was reduced to 15 square miles; residents were temporarily escorted into the area to feed and water livestock animals, retrieve some personal possessions, and locate pets (NTSB, 1998).

April 2008. A major toxic spill into Flathead Lake in Lake County occurred in April 2008 when a tanker truck crashed on Highway 35 and spilled 6,400 gallons of gasoline on the East Shore south of Finley Point. The crash forced five families who lived nearby from their lakeshore homes. The EPA ordered the trucking company to clean up the contamination associated with the spill in order to fully protect the health of local residents and the renowned aquatic and recreational resources provided by Flathead Lake. The cleanup involved removing contaminated soils and water and elimination of hazardous vapors in nearby residences. The 2008 tanker truck spill caused over $1 million in damages.

July 2011. The Exxon-Mobil pipeline broke near Laurel during flooding in July 2011 releasing 63,000 gallons of oil that washed up along an 85-mile stretch of riverbank. The EPA and U.S. Fish and Wildlife Service conducted an aerial survey that identified oil deposited along the river banks, and pools of oil in backwaters and eddies along the north and south banks of the river. At the time of the survey, oil was visible along the river for 45 miles downstream from the location where the pipeline broke. EPA ensured that the ExxonMobil Pipeline Company addressed all potential impacts of the spill and provided direction and oversight that cleanup and restoration of the Yellowstone River and people's health and the environment were protected. The company said it spent $135 million on the cleanup and other work. Montana and federal official notified Exxon that they intend to seek damages for injuries to birds, fish and other natural resources from the 2011 spill. The company also is being asked to pay for long-term environmental studies and for lost opportunities for fishing and recreation during and since the cleanup (CBSNews.com, *Cleanup After "Unfortunate Incident" in Yellowstone*, January 19, 2015).

August 4, 2012. A train west of Plevna in Fallon County derailed and eight cars carrying alcohol caught fire. Burlington Northern-Santa Fe (BNSF) reported that 15 rail cars went off the track and 14 of the cars were carrying denatured alcohol, which is used as a fuel additive. No lives or property were threatened. Six of the cars exploded, sending a flaming mushroom cloud into the sky. Fire crews rushed to put out grass fires. (Billings Gazette, *BNSF Train Derails, Catches Fire Near Plevna*, August 5, 2012).

January 2015 – A Bridger Pipeline Company oil pipeline breach spilled up to 50,000 gallons of oil into the Yellowstone River near Glendive. Tests at the City's water treatment plant indicated that at least some oil got into a water supply intake along the river serving about 6,000 people, raising concerns about a potential health risk. An oil sheen was seen near Sidney, almost 60 river miles downstream from Glendive. Crews were chopping holes into the ice in hopes they would be able to vacuum up crude as it came down the river. (CBSNews.com, *Yellowstone River Spill: Oil Detected in Water Supplies*, January 20, 2015).

Declared Disasters

Two separate incidents that occurred within one week of each other are the only two State emergency declarations for hazardous material release: the Alberton Chlorine Spill (EO-8-96) and another derailment involving a chlorine tanker car near Dodson (EO-9-96). The Dodson derailment

did not cause a chlorine release. There have been no federal disaster declarations associated with hazardous material incidents in Montana.

Magnitude and Probability

Hazardous materials incidents can cause death, serious injury, long-lasting health effects, and damage to buildings, homes, and the environment. The magnitude of the hazard is often expressed as a percentage of property damage caused by the incident. **Table 4.7-6** presents the most damaging transportation-related hazardous material incidents in Montana since 1990 from the U.S. Department of Transportation, Office of Hazardous Materials Safety. The complete dataset reveals that over $50 million in damages have resulted from hazardous material incidents during this period; $10 million from highway accidents and $40 million from railroad accidents.

Probability for the MHMP is based on the frequency of the hazard over a 10-year period. Since hazardous material incidents occur more than once per year, the probability rating is "Highly Likely" for this hazard. The MHMP Planning Team rated the hazardous material/transportation accident hazard as "Possible".

Vulnerability and Area of Impact

The volume and type of hazardous materials that flow into, are stored, and flow through communities will determine exposure to a potential release of hazardous materials. An accidental or intentional release of materials could produce a health hazard to those in the immediate area, downwind, and/or downstream.

Transportation of hazardous materials on highways, pipelines, and by the railroads could result in an accident that would have the potential to impact Montana residents. Large quantities of propane, anhydrous ammonia, agricultural chemicals, and petroleum products are stored in various locations and transported by rail and truck through the state.

The U.S. Department of Transportation issued an emergency restriction order on May 7, 2014 that requires railroad carriers to identify to the State Emergency Response Commission through which counties Bakken crude oil is being transported. The notification provides information regarding the estimated volumes and frequencies of train traffic per week and describes the petroleum crude oil expected to be transported and applicable emergency response information (USDOT, 2014). MT DES forwards copies of the notifications to county emergency managers for their information and dissemination.

Privately-owned vehicles provide transportation for individuals using the federal interstate system, state highways, as well as county and private roads. Trucks and trailers carry interstate and intrastate cargo. Highway accidents caused by severe weather and high speeds occur frequently. Railroad related hazards such as derailments, toxic spill contamination, and vehicle collisions are a constant concern. According to the NTSB, more than 80 percent of public railroad crossings do not have lights and gates, and 60 percent of all railroad accidents occur at these unprotected crossings.

Table 4.7-6. Top Highway and Railroad Hazardous Material Incidents; 1990 - 2017

Date of Incident	Mode of Transportation	Carrier/Reporter Name	County	City	Quantity Released (gallons)	Commodity	Damages
4/11/1996	Rail	Montana Rail Link Inc.	Mineral	Alberton	16,250	Chlorine	$10,000,000
					17,000	Potassium hydroxide	
					680	Sodium chlorate	
4/2/2008	Highway	Keller Transport Inc.	Lake	Polson	6,403	Gasoline	$1,019,000
3/4/2013	Highway	Simons Petroleum LLC	Richland	Sidney	3,000	Diesel	$720,000
7/11/1999	Rail	Montana Rail Link	Sanders	Paradise	55000	Corrosive liquid	$641,995
7/16/2015	Rail	BNSF Railway Company	Roosevelt	Culbertson	26,449	Petroleum crude oil	$640,110
5/18/2013	Highway	Keller Transport Inc.	Wibaux	Wibaux	6,000	Fuel Oil	$424,000
6/18/2006	Rail	Montana Rail Link Inc.	Missoula	Missoula	13,063	Alcohol	$414,858
10/14/2010	Highway	J & H Oilfield Services LLC	Richland	Fairview	2,859	Petroleum crude oil	$387,241
3/9/2017	Highway	City Service Valcon LLC	Yellowstone	Billings	8,000	Gasoline	$342,231
8/14/2013	Highway	Dixon Gros. Inc.	Chouteau	Big Sandy	2,940	Diesel	$341,956
7/26/2009	Highway	Farstad Oil Inc.	Carbon	Belfry	5,402	Gasoline	$310,500
1/16/1996	Highway	Koch Industries Inc.	Richland	Sidney	4,200	Petroleum crude oil	$302,300
4/20/2016	Highway	Tece Trucking Inc.	Mineral	Alberton	2,100	Gasoline	$276,745
1/10/2005	Highway	CHS Inc.	Jefferson	Montana City	3,048	Gasoline	$269,215
6/22/2004	Highway	Sanjel (USA) Inc.	Blaine	Chinook	5,660	Liquid Nitrogen	$266,944
9/10/2008	Highway	Curt Laingen Trucking Inc.	Fergus	Lewistown	12,500	Gasoline	$240,000
8/19/1993	Highway	Keller Transport Inc.	Gallatin	Bozeman	3,857	Gasoline	$235,168
1/1/2008	Highway	IBI Secured Transport	Yellowstone	Billings	1,520	Corrosive acid	$209,259
8/5/2012	Railroad	BNSF Railway Company	Fallon	Plevna	0	Combustible liquid	$197,200
1/5/2014	Highway	Heetco Inc. Kansas	Toole	Shelbina	0	Liquified petrol. gas	$182,620
12/22/2014	Highway	Story Distributing Company	Gallatin	Belgrade	200	Gasoline	$182,000
11/26/2013	Highway	Dixon Bros. Inc.	Petroleum	Winnett	3,000	Flammable liquid	$179,705
6/23/1995	Rail	Montana Rail Link Inc.	Lewis and Clark	Helena	16,700	Aviation fuel	$173,517
5/6/2005	Highway	CHS Inc.	Carbon	Belfry	3,066	Petroleum crude oil	$163,650
2/29/2016	Highway	CHS Inc.	Broadwater	Townsend	1,687	Denatured alcohol	$153,500
10/18/1995	Highway	Styer Transportation C.	Fergus	Grass Range	8	Flammable gas	$146.990
3/4/2007	Highway	Schneider National Inc.	Fergus	Lewistown	485	Combustible liquid	$140,000
9/1/2010	Highway	Ryan Brothers Trucking	Yellowstone	Billings	1,500	Elevated temp. liquid	$130,836
10/30/1995	Highway	Red Mountain Truck Lines	Broadwater	Townsend	95	Gasoline	$130,119
9/30/1999	Rail	Montana Rail Link Inc.	Granite	Drummond	26,000	Denatured alcohol	$126,556
11/20/1996	Highway	Gold Leaf Physical Therapy LLC	Gallatin	Bozeman	1	Liquefied petroleum gas	$125,001
1/11/2013	Highway	Savannah Transport Inc.	Stillwater	Columbus	20	Hazardous waste	$118,000
3/8/2017	Highway	Propane Services Inc.	Silver Bow	Butte	600	Petroleum gas	$112,800

Source: U.S. Dept Transportation, Office of Hazardous Material Safety, 2018. (https://hazmatonline.phmsa.dot.gov/IncidentReportsSearch/Welcome.aspx)

Statewide Vulnerability

To model hazardous material incident risk a GIS data layer of transportation arteries was developed which included highways, major roadways, railroads, and TRI facilities. Pipeline data was not available for analysis as these locations were deemed confidential. TRI facilities, highways, and railroad were buffered by 0.25 miles to represent the hazardous material hazard area, as shown by DES District in **Figures 4.7-1A-F**.

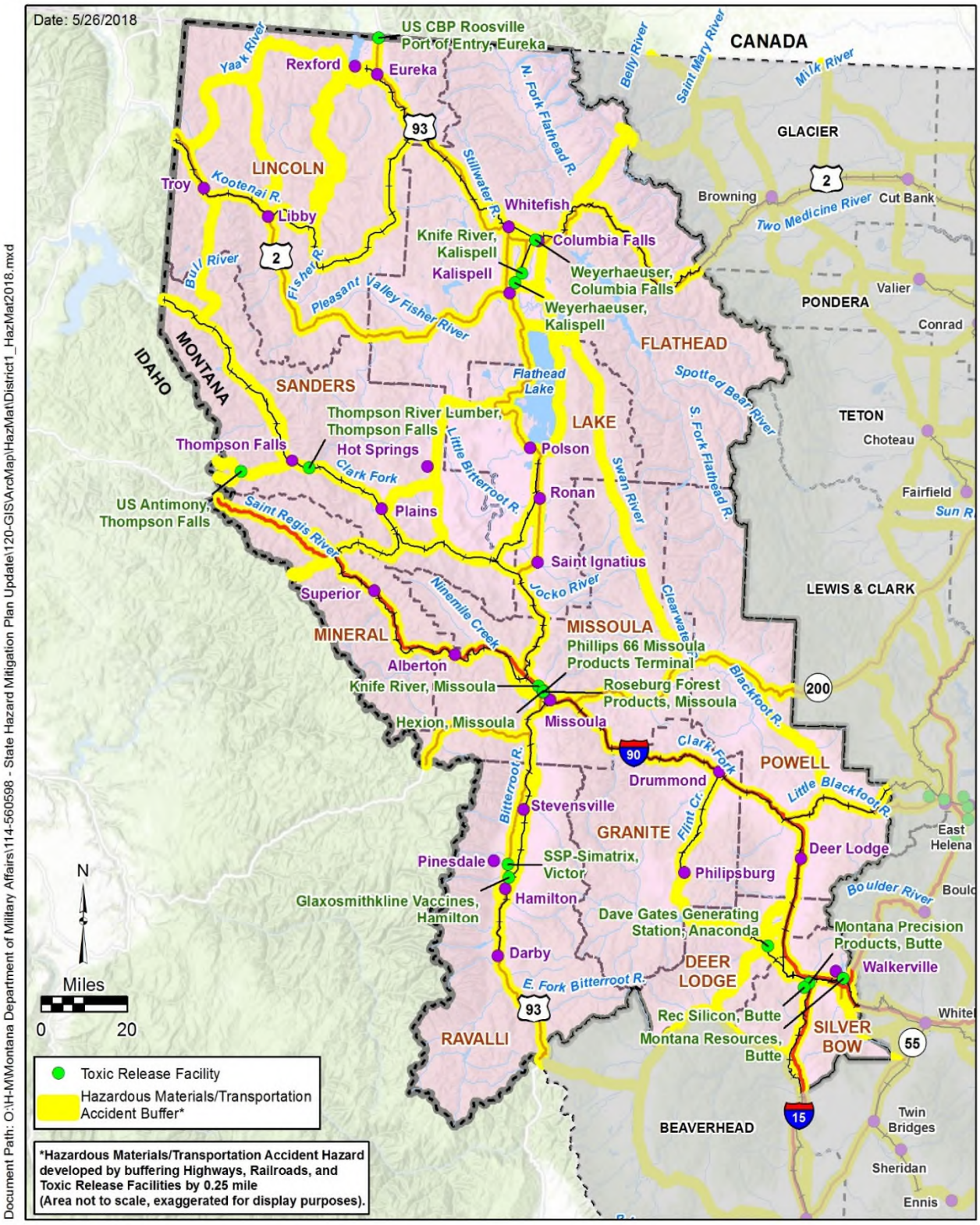
Exposure was calculated by intersecting the hazardous material buffer with the general building stock, critical facility, and cultural resources datasets. Estimates of vulnerable population were calculated using U.S. Census county estimates. Exposure values are presented in **Table 4.7-7**. **Appendix B-8** presents supporting documentation from the risk assessment including a list of critical facilities in the hazardous material incident buffer and exposure estimates by county and city/town.

Table 4.7-7. Hazardous Material Incident Exposure Summary by DES District

Item	District 1	District 2	District 3	District 4	District 5	District 6
Haz-Mat Hazard Area (Square Miles)	1,006.2	847.5	829.7	567.5	800.5	748.8
Percent Haz-Mat Hazard Area	4.0%	3.5%	3.3%	2.1%	3.6%	3.2%
Residential Building Exposure ($)	$7,165,217,863	$2,845,860,143	$5,475,358,971	$892,298,052	$4,381,375,944	$914,037,838
Residential Building Exposure (# structures)	53,678	23,733	30,853	7,796	28,422	9,346
Commercial, Ag & Industrial Building Exposure ($)	$4,656,624,546	$2,816,280,412	$4,019,729,594	$646,014,441	$3,469,149,486	$567,335,521
Commercial, Ag & Industrial Building Exposure (#	11,070	6,036	7,726	2,847	5,429	3,079
Critical Facility Exposure ($)	$484,848,791	$36,270,567	$449,232,285	$64,819,899	$146,196,385	$26,192,248
Critical Facility Exposure (# structures)	107	21	121	19	21	11
Cultural Resources (# features)	19	14	26	6	10	5
Population Living in Hazard Area	117,918.2	42,977.3	95,553.4	11,110.2	44,780.7	17,702.2
Population Under 18 Living in Hazard Area	40,202.1	17,078.0	30,522.4	4,363.4	18,401.7	7,526.3
Population Over 65 Living in Hazard Area	43,221.8	15,200.9	26,647.9	5,077.4	16,317.5	7,614.6

The vulnerability analysis indicates that DES District 1 has the highest residential and commercial/agricultural/industrial building exposure as well as societal risk to hazardous material incidents, followed by Districts 3 and 5. District 1 has the greatest critical facility exposure, followed by District 3. District 3 has the most cultural resources exposed to hazardous material incidents followed by District 1.

Table 4.7-8 presents a vulnerability summary of the hazardous material incident hazard as it relates to percent exposure and growth rates in Montana's counties, cities and towns. Percent exposure was derived by dividing the value of residential and commercial/agricultural/industrial building stock exposed to the hazard into the total value of the building stock. Percent exposure is a more accurate way of displaying vulnerability than presenting jurisdictions with the highest exposure because it



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 1 County
- County

Figure 4.7-1A
Hazardous Materials/Transportation Accident Hazard - DES District 1
State of Montana MHMP 2018 Update

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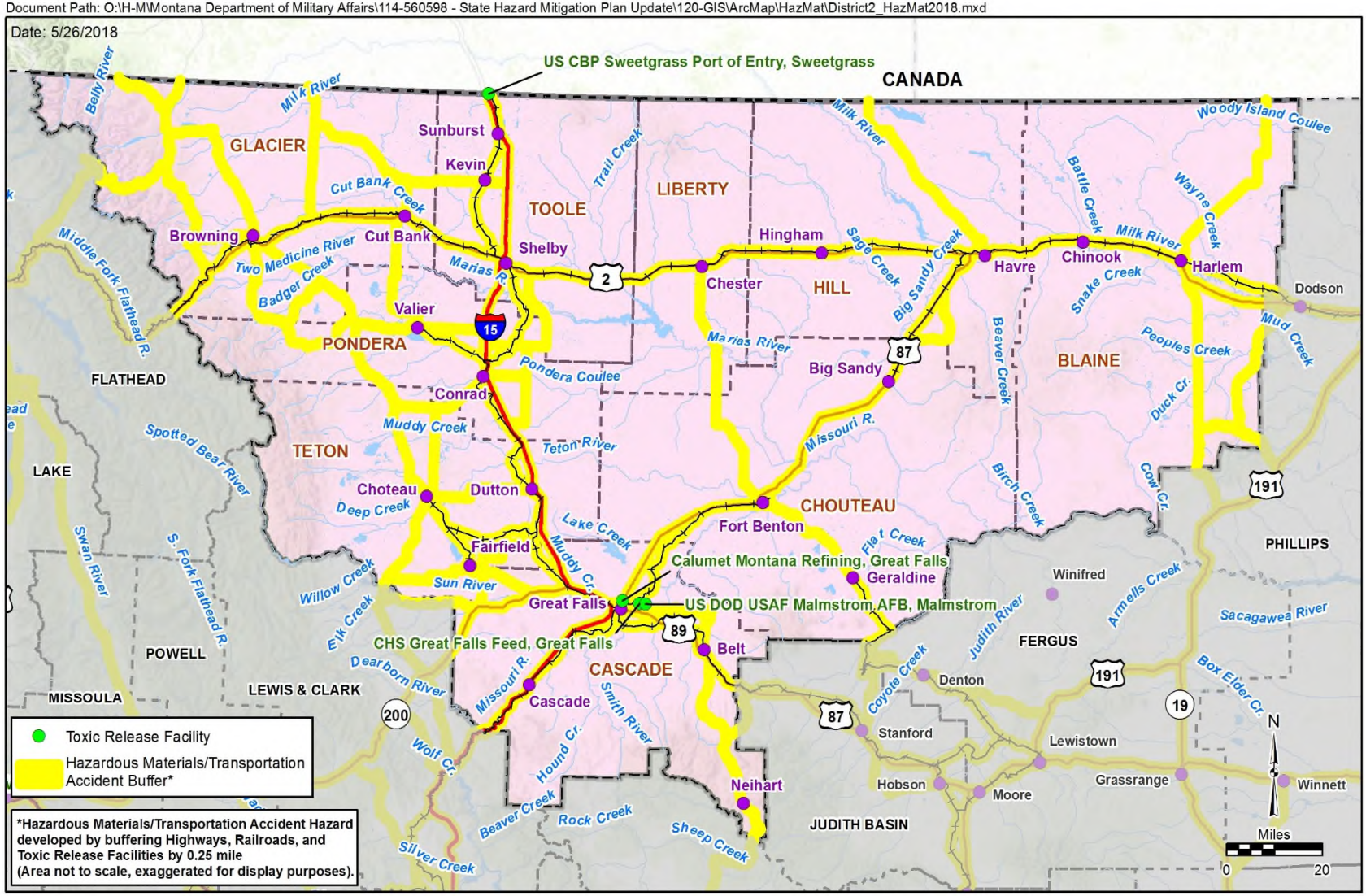
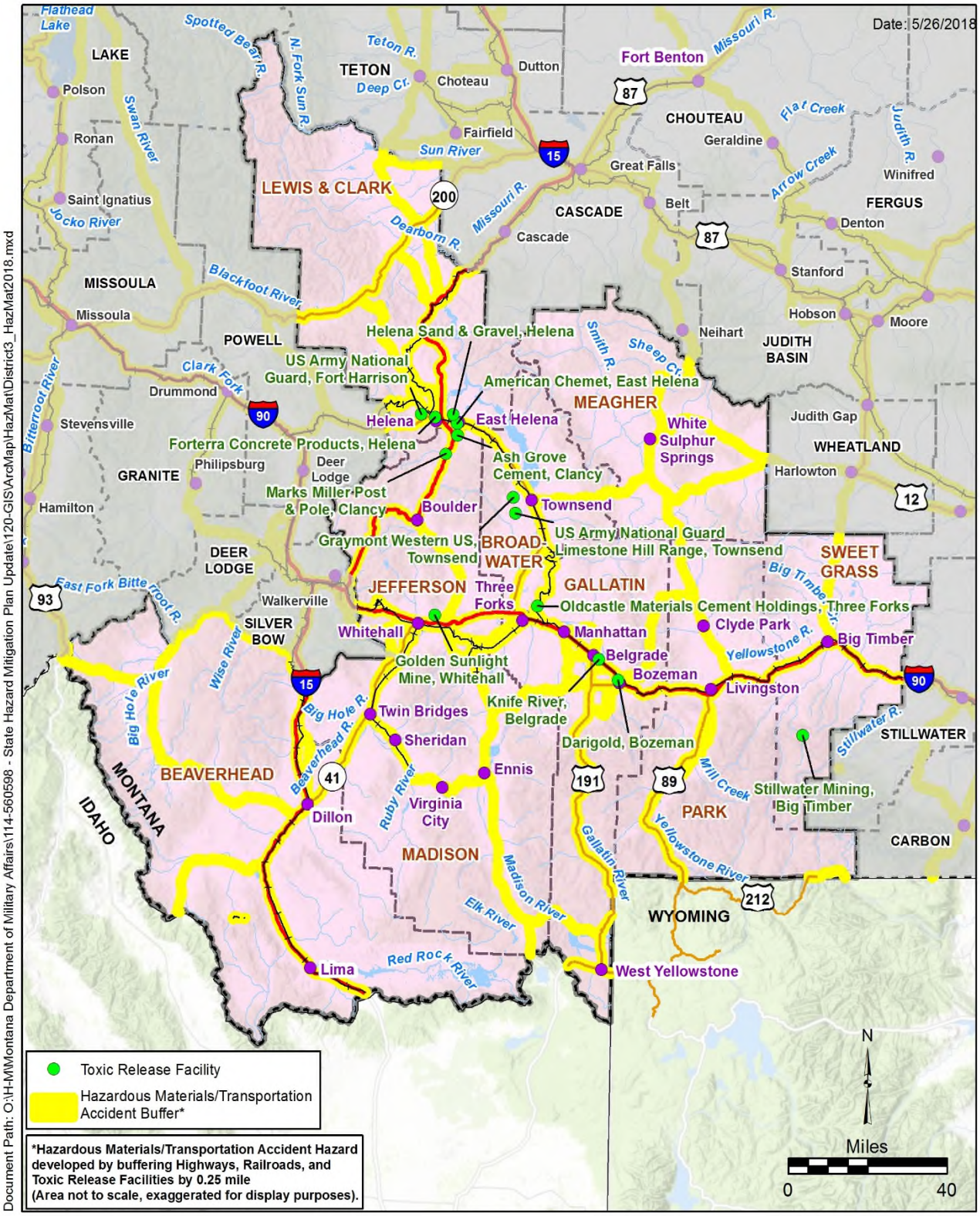


Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 2 County
- County

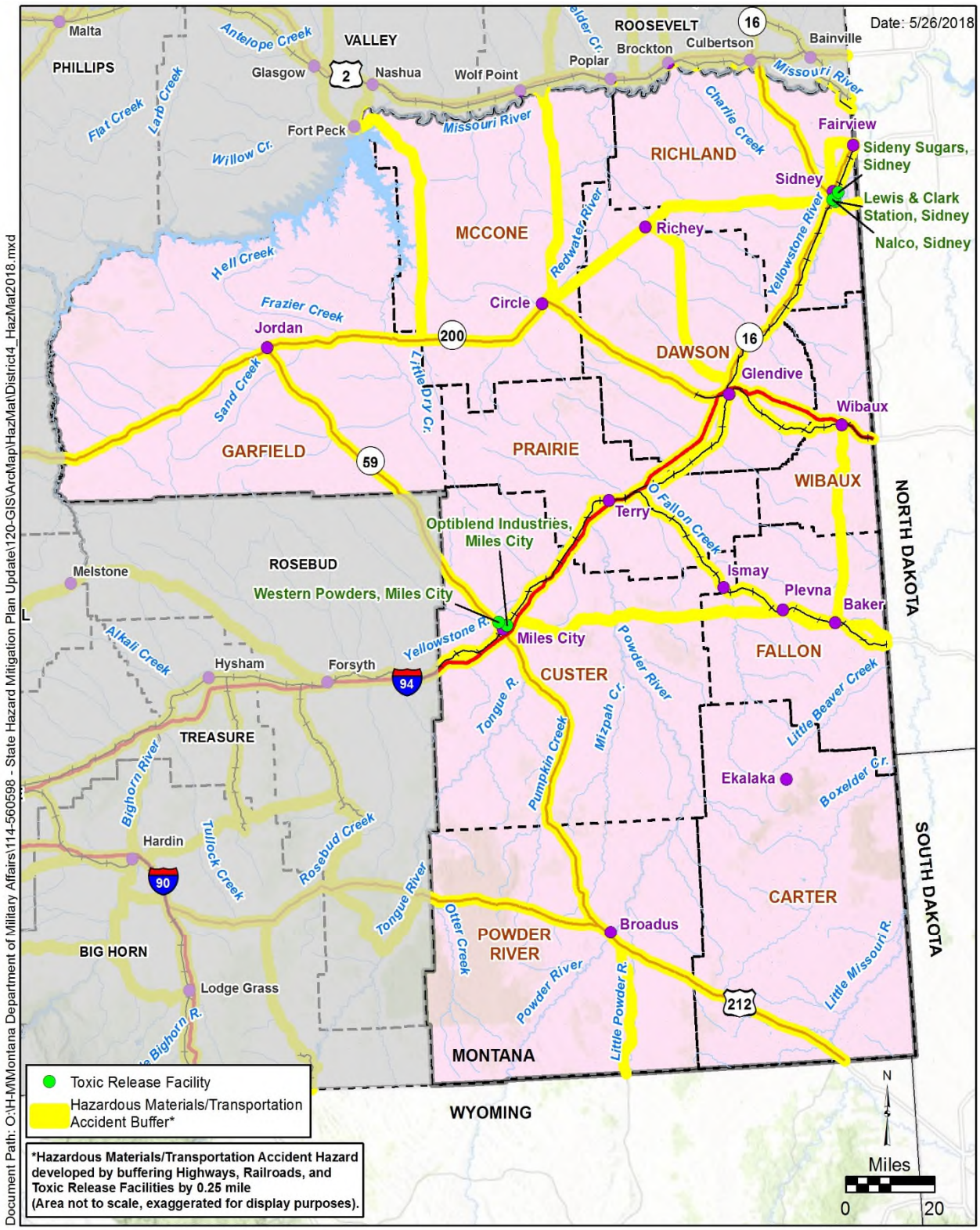
Figure 4.7-1B
Hazardous Materials/Transportation Accident Hazard - DES District 2
State of Montana MHMP 2018 Update



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 3 County
- County

Figure 4.7-1C
Hazardous Materials/Transportation Accident Hazard - DES District 3
State of Montana MHMP 2018 Update



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- County
- DES District 4 County

Figure 4.7-1D
Hazardous Materials/Transportation Accident Hazard - DES District 4
State of Montana MHMP 2018 Update

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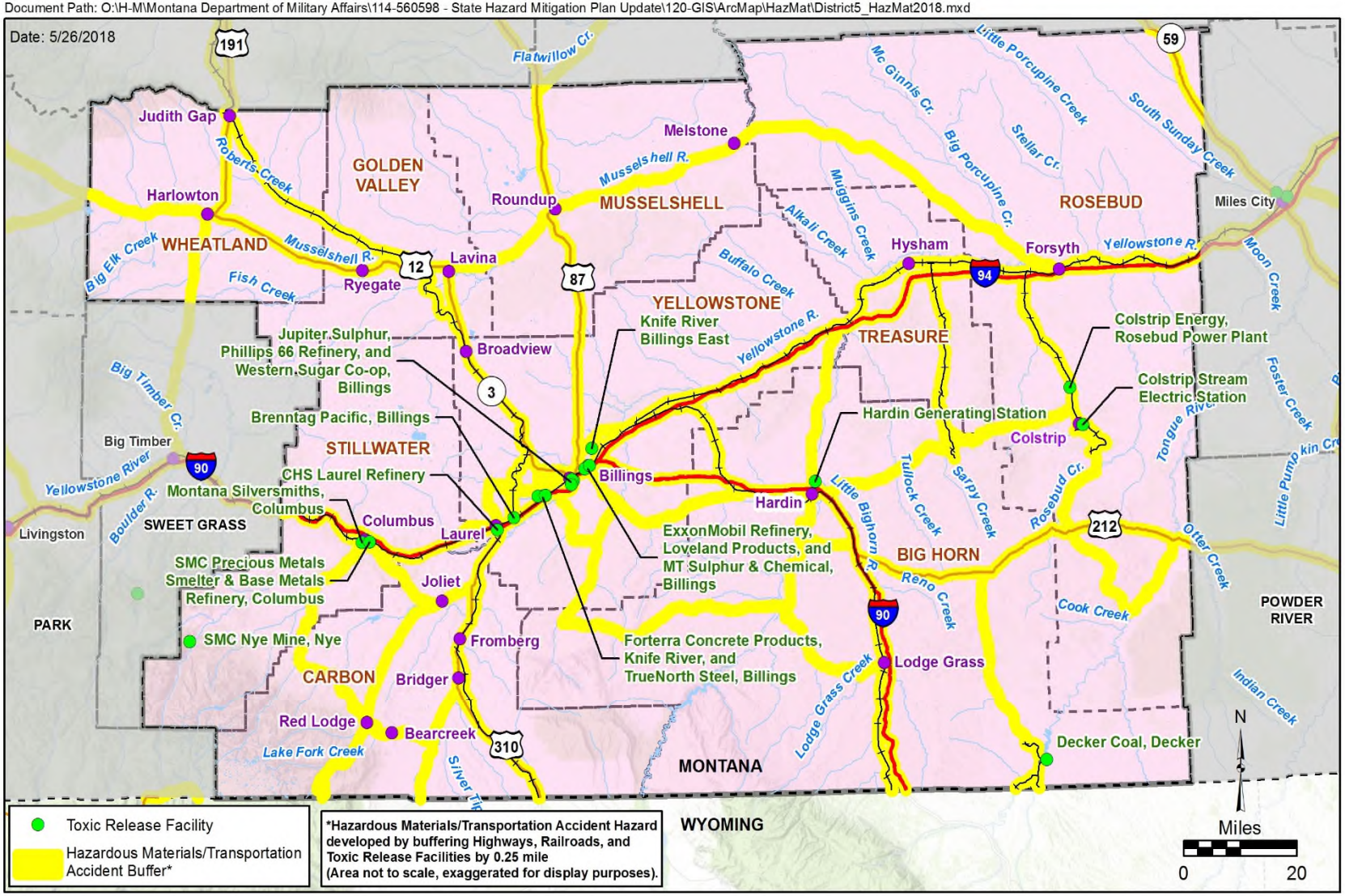

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 5 County
- County

Figure 4.7-1E
Hazardous Materials/Transportation Accident Hazard - DES District 5
State of Montana MHMP 2018 Update

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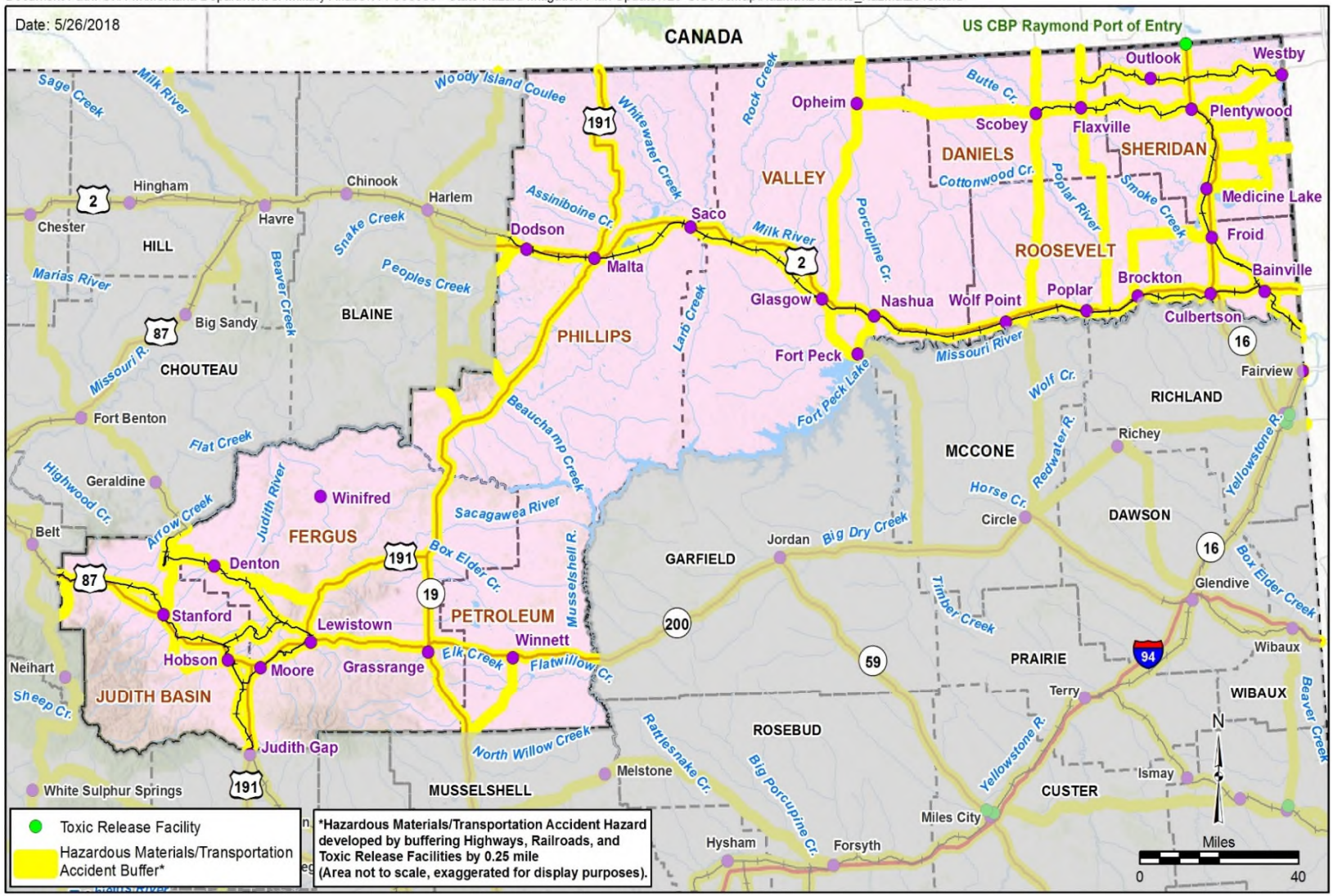

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 6 County
- County

Figure 4.7-1F
Hazardous Materials/Transportation Accident Hazard - DES District 6
State of Montana MHMP 2018 Update

Table 4.7-8. Hazardous Material Incident Exposure Summary for Top Counties, Cities and Towns

County	% HAZMAT Exposure	% Growth (2010 to 2016)	# of Building Permits (2010 to 2016)	$ Residential Exposure	# Residences at Risk	$ Commercial/ Ag/Industrial Exposure	# Commercial/ Ag/Industrial Buildings at Risk	$ Critical Facilities Exposure	# Critical Facilities at Risk
Counties with Highest Percent Exposure ($ Residential + $ Commercial-Ag-Industrial Exposure in Hazard Area / Total Exposure)									
Mineral	65.2%	-0.93%	1	$139,894,113	1,418	$48,187,016	220	$0	0
Deer Lodge	63.8%	-2.34%	17	$258,068,558	2,845	$67,290,237	366	$70,346,037	27
Glacier	59.9%	2.15%	0	$86,009,918	1,280	$325,343,989	560	$42,554	2
Richland	59.5%	15.12%	16	$294,815,783	1,791	$261,848,458	771	$1,419,573	3
Dawson	59.4%	3.87%	1	$239,307,338	2,010	$100,106,345	403	$3,422,169	3
Toole	56.5%	-6.97%	2	$116,712,371	1,335	$89,291,655	312	$109,002	2
Cascade	55.2%	0.52%	242	$2,005,614,207	14,592	$1,805,775,343	2,538	$32,047,940	13
Cities/Towns with Highest Percent Exposure (Towns with Pop. > 500) ($ Residential + $ Commercial-Ag-Industrial Exposure in Hazard Area / Total Exposure)									
Cascade	100.0%	0.44%	NA	$28,222,039	267	$9,822,750	61	$0	0
Culbertson	100.0%	11.19%	NA	$46,606,757	452	$11,849,589	78	$0	0
Poplar	100.0%	5.15%	NA	$11,492,367	239	$3,179,375	40	$0	0
Whitehall	99.1%	6.82%	NA	$32,480,446	322	$9,146,159	47	$0	0
Harlem	98.3%	1.82%	NA	$21,584,736	342	$8,956,732	68	$0	0
Troy	98.2%	-5.39%	NA	$41,296,342	531	$14,488,626	99	$0	0
Joliet	96.4%	7.03%	NA	$26,356,382	234	$2,267,652	20	$0	0
Counties with Greatest Percent Exposure Which Have Fastest Growth Rates (% Exposure X % Population Change 2010 to 2016)									
Richland	59.5%	15.12%	16	$294,815,783	1,791	$261,848,458	771	$1,419,573	3
Gallatin	32.3%	14.34%	1,550	$2,598,648,325	11,927	$2,282,472,076	3,063	$51,310,171	51
Roosevelt	51.1%	7.78%	1	$116,570,592	1,459	$108,526,484	594	$3,662,363	3
Sheridan	51.4%	7.24%	2	$105,500,146	1,193	$57,702,717	464	$0	0
Missoula	50.8%	5.88%	930	$1,131,933,383	7,912	$905,817,532	916	$354,089,504	63
Yellowstone	41.3%	6.61%	1,198	$3,352,957,255	19,605	$3,026,636,552	3,087	$144,276,178	14
Wibaux	36.9%	6.95%	8	$20,541,790	274	$10,313,707	105	$0	0
Cities/Towns with Highest Percent Exposure Which Have Fastest Growth Rates (Towns with Pop. > 500) (% Exposure X % Population Change 2010 to 2016)									
Fairfield	75.4%	23.21%	NA	$19,862,126	185	$12,975,534	43	$0	0
Sidney	65.6%	20.94%	NA	$176,569,493	954	$104,391,794	313	$1,419,573	3
Culbertson	100.0%	11.19%	NA	$46,606,757	452	$11,849,589	78	$0	0
Manhattan	91.8%	10.11%	NA	$104,106,290	598	$32,483,356	68	$0	0
Wibaux	93.2%	9.24%	NA	$19,109,054	264	$4,941,835	52	$0	0
Fairview	89.7%	8.89%	NA	$26,971,134	285	$6,013,753	34	$0	0
Plentywood	82.8%	8.93%	NA	$71,637,110	629	$16,847,010	128	$0	0

reflects areas with the greatest risk opposed to those with high value real estate. A complete ranking of percent exposure is presented in **Appendix B-8**.

Counties with the highest percent exposure to the haz-mat hazard include: Mineral, Deer Lodge, Glacier, Richland, Dawson, Toole, and Cascade counties; while top cities/towns (with population over 500) include: Cascade (Cascade Co.), Culbertson and Poplar (Roosevelt Co.), Whitehall (Jefferson Co.), Harlem (Blaine Co.), Troy (Lincoln Co.), and Joliet (Carbon Co.) **Figure 4.7-2** presents percent exposure for the top counties and cities/towns showing regional vulnerability.

Percent exposure was multiplied by the change in population between the 2010 and 2016 census to present the jurisdictions with the highest risk that are experiencing the fastest growth. The number of residential building permits, as estimated by the U.S. Census Bureau, is also listed for the top-ranking Counties. A complete ranking is presented in **Appendix B-8**.

Counties with the highest haz-mat exposure experiencing the fastest growth include: Richland, Gallatin, Roosevelt, Sheridan, Missoula, Yellowstone, and Wibaux counties; while the top cities/towns (with population over 500) are Fairfield (Teton Co.), Sidney and Fairview (Richland Co.), Culbertson (Roosevelt Co.), Manhattan (Gallatin Co.), Wibaux (Wibaux Co.), and Plentywood (Sheridan Co.). **Figure 4.7-3** presents percent exposure and population change for the top counties and cities/towns showing the most vulnerable areas experiencing the fastest population growth.

Vulnerability of State Facilities

Current data and history do not suggest that State property is highly vulnerable to hazardous material releases; however, depending on the proximity of State facilities to hazardous material transportation routes and fixed facilities, some locations may be more vulnerable than others. Critical facilities and bridges located in the hazard area are listed in the **Appendix B-8**.

Review of Potential Losses in Local Hazard Mitigation Plans

All the local Hazard Mitigation Plans evaluated the hazardous material incident hazard in their risk assessment and many of them included the transportation accident hazard. Five (5) counties ranked haz-mat as their #1 hazard including: Cascade, Fallon, Pondera, Butte-Silver Bow, and Wibaux. Eleven (10) counties ranked haz-mat as their #2 hazard including: Blaine, Broadwater, Dawson, Jefferson, Lake, Liberty, Missoula, Richland, Stillwater, and Toole. Six (6) counties ranked haz-mat as their #3 hazard including: Flathead, Gallatin, Musselshell, Sanders, Treasure and Valley.

Of those Plans with quantified results, the larger communities have the highest vulnerability as many of their critical facilities and building stock are within 0.25 – 0.5 mile of a highway or railroad. **Appendix B-8** present a summary of potential haz-mat losses from the Local Hazard Mitigation Plans.

Future Development

Much of the future development currently occurring in the State is off major roads and rail networks. The potential does exist for development of agricultural lands bordering the highways and railroad, particularly in unincorporated parts of the State. Very few restrictions are in place to prevent development in these areas.

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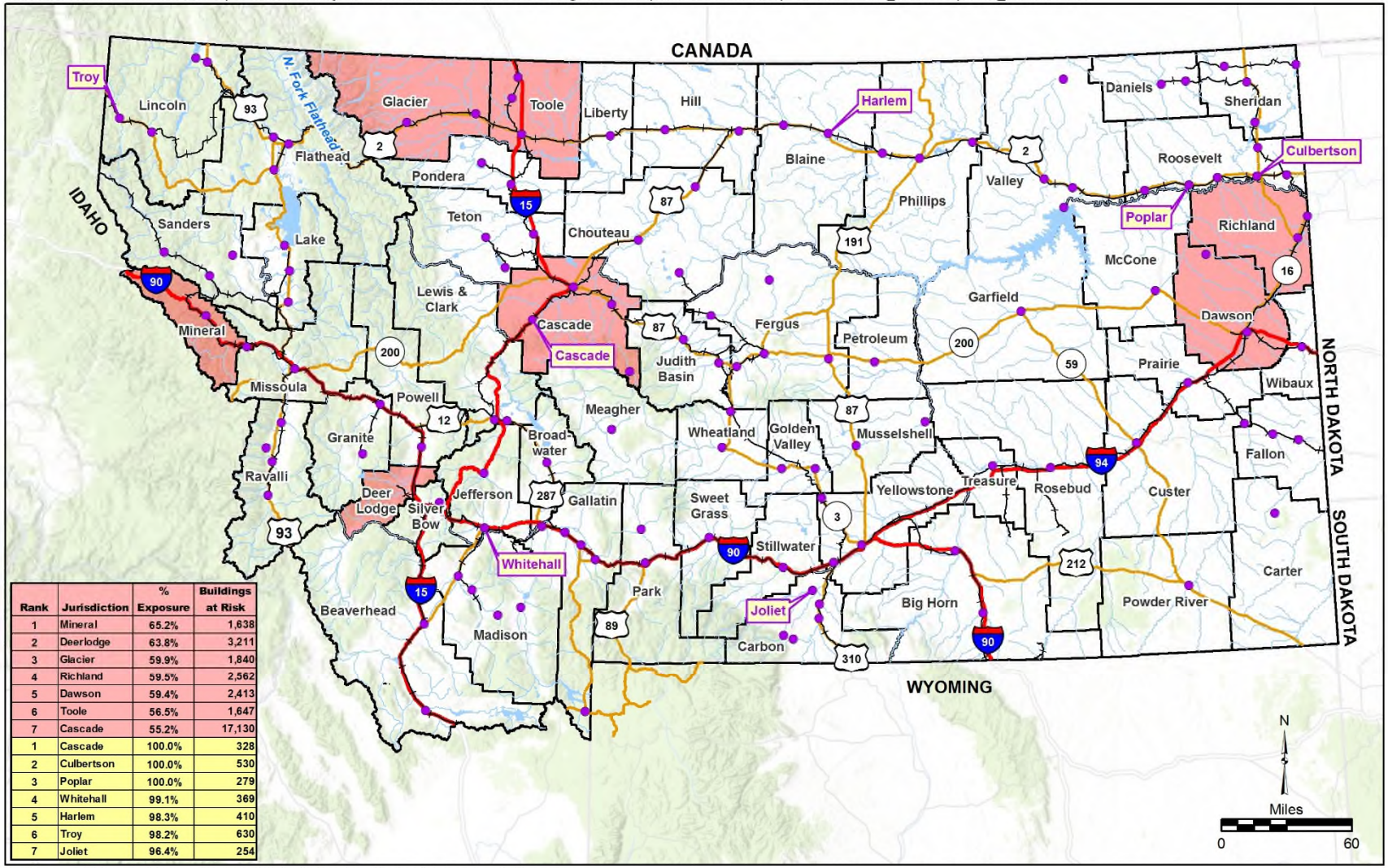


Rank	Jurisdiction	% Exposure	Buildings at Risk
1	Mineral	65.2%	1,638
2	Deerlodge	63.8%	3,211
3	Glacier	59.9%	1,840
4	Richland	59.5%	2,562
5	Dawson	59.4%	2,413
6	Toole	56.5%	1,647
7	Cascade	55.2%	17,130
1	Cascade	100.0%	328
2	Culbertson	100.0%	530
3	Poplar	100.0%	279
4	Whitehall	99.1%	369
5	Harlem	98.3%	410
6	Troy	98.2%	630
7	Joliet	96.4%	254

Buildings at Risk = Residences, Commercial, Agricultural, and Industrial structures in hazard area.

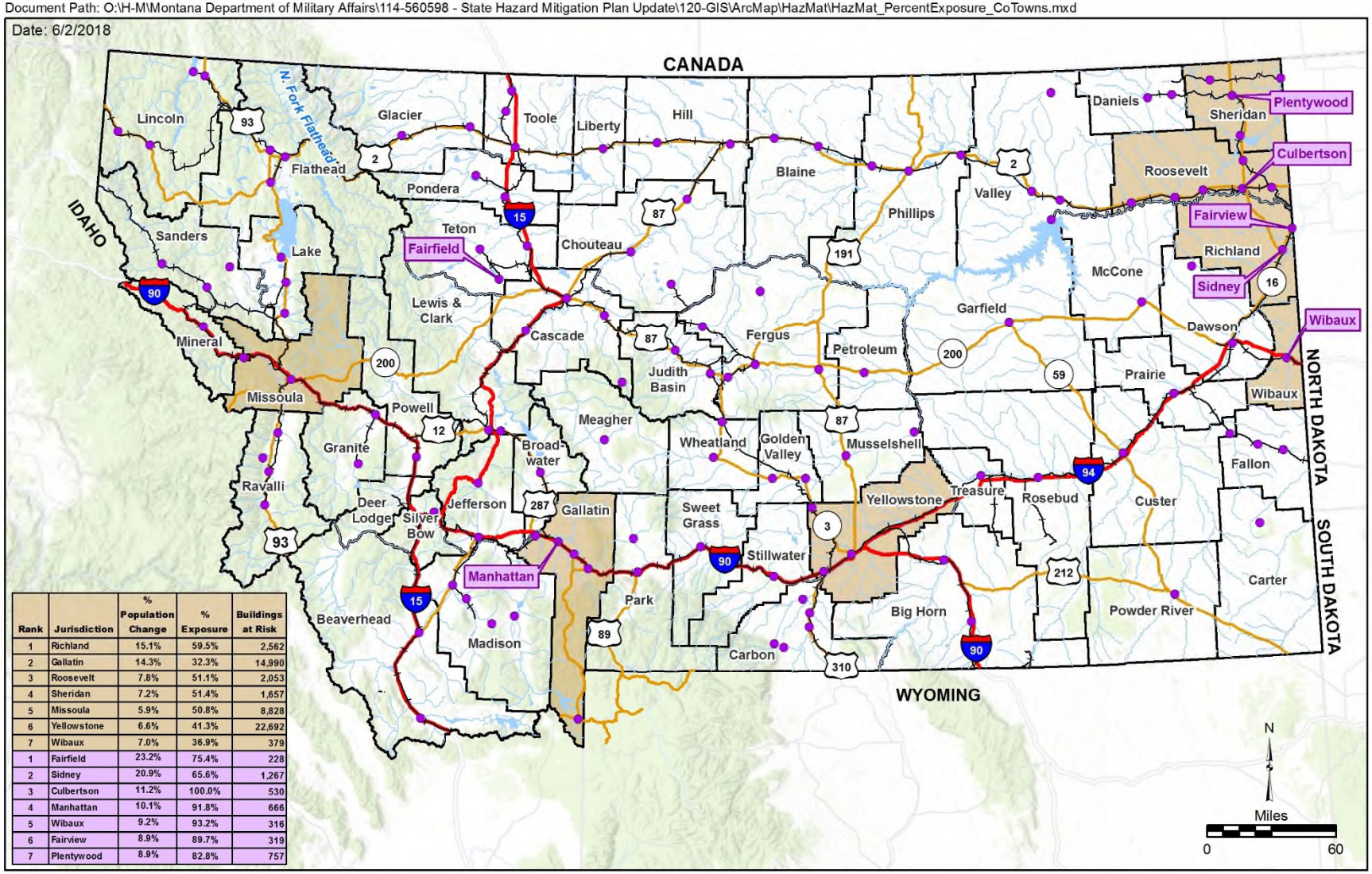
Date: 6/2/2018

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- County

Figure 4.7-2
Hazardous Materials Incident
Percent Exposure for Top Counties and Cities/Towns
State of Montana MHMP 2018 Update

Document Path: O:\H-M\Montana Department of Military Affairs\114-560598 - State Hazard Mitigation Plan Update\120-GIS\ArcMap\HazMat\HazMat_PercentExposure_CoTowns.mxd



Rank	Jurisdiction	% Population Change	% Exposure	Buildings at Risk
1	Richland	15.1%	59.5%	2,562
2	Gallatin	14.3%	32.3%	14,990
3	Roosevelt	7.8%	51.1%	2,053
4	Sheridan	7.2%	51.4%	1,657
5	Missoula	5.9%	50.8%	8,828
6	Yellowstone	6.6%	41.3%	22,692
7	Wibaux	7.0%	36.9%	379
1	Fairfield	23.2%	75.4%	228
2	Sidney	20.9%	65.6%	1,267
3	Culbertson	11.2%	100.0%	530
4	Manhattan	10.1%	91.8%	666
5	Wibaux	9.2%	93.2%	316
6	Fairview	8.9%	89.7%	319
7	Plentywood	8.9%	82.8%	757

Buildings at Risk = Residences, Commercial, Agricultural, and Industrial structures in hazard area.

Figure 4.7-3
Hazardous Materials Incident
Percent Exposure x Percent Population Change
for Top Counties and Cities/Towns
State of Montana MHMP 2018 Update

Climate Change

Hazardous material incidents and transportation accidents are not expected to increase as a result of climate change. No increase in exposure or vulnerability to the population, property, or critical facilities are expected to occur. Climate change is not anticipated to directly impact the transportation accident hazard. However, secondary impacts to public health may result due to increased smoke from wildfire activity which may increase highway accidents.

Data Limitations

Pipeline data for the hazardous material risk assessment was not available for this Plan. It was determined to be confidential and was therefore, withheld from the analysis. Pipelines that transport petroleum products, especially at locations where they cross streams and rivers, would increase the vulnerability of various counties, cities and towns to the hazardous material hazard.

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CPRI SCORES
PUBLIC HEALTH = 2.40
WILDLIFE = 2.41
AGRICULTURE = 2.57

4.8 Disease

Description and History

Infectious diseases are illnesses caused by organisms such as bacteria, viruses, fungi and parasites. Sometimes the illness is not due to the organism itself, but rather a toxin that the organism produces after it has been introduced into a host. Disease may be transmitted (spread) either by: one infected person to another, from an animal to a human, from an animal to an animal, or from some inanimate object (doorknobs, table tops, etc.) to an individual. This hazard profile has been expanded for the 2018 MHMP to include impacts from wildlife disease.

Human Disease

One of the most common infectious diseases affecting humans is influenza. Influenza is a contagious, upper-respiratory disease caused by many different strains of influenza viruses. It can cause mild to severe illness. Serious outcomes of flu infection can result in hospitalization or death. Some people, such as older people, young children, and people with certain health conditions, are at high risk of serious flu complications.

There have been four major global flu pandemics since 1900. The Spanish flu pandemic (1918-1919) killed between 50-100 million people worldwide. The Asian flu pandemic (1957-1958) originated in China and is estimated to have killed between one and four million people. The Hong Kong flu (1968-1969) which killed approximately one million people. And, the 2009 swine flu pandemic which killed over 18,000 people. The 2017-2018 flu outbreak in Montana claimed 67 lives. The best way to prevent flu is by getting vaccinated each year.

The single deadliest flu pandemic in history was the Spanish flu pandemic during 1918-1919. Occurring in the three waves of increasing lethality, the Spanish flu killed more people in 24 weeks than AIDS did in 24 years. It also killed more people in one year than smallpox or the Black Plague did in 50 years (Iezzoni, 1999). The Spanish influenza outbreak caused 9.9 deaths per 1,000 people in the State of Montana (Brainerd and Siegler, 2002). Historical records from newspapers show that the influenza outbreak was so bad in 1918 that Montana residents were quarantined from November 30 to December 17 after 18 people died and 53 new cases were discovered. Native Americans died at a rate four times the national average from the Spanish flu (Iezzoni, 1999).

Air travel has significantly increased the speed with which diseases can spread. Most of the world's great cities are now within a few hours of each other. A virus that is in Hong Kong one day can be carried to any point in Southeast Asia within three or four hours, to Europe in 12 hours, and to North America in 18 hours. Nearly 1.5 billion passengers travel by air every year (WHO, 2009). A pandemic is a global disease outbreak.

Diseases that have been eliminated from the U.S. population, such as smallpox, could be used in bioterrorism. The following list gives examples of biological agents or diseases that could occur naturally or be used by terrorists as identified by the Centers for Disease Control and Prevention (2017). These diseases/bioterrorism agents can infect populations rapidly, particularly through groups of people in close proximity such as schools, assisted living facilities, and workplaces.

Category A

Definition - The U.S. public health system and primary healthcare providers must be prepared to address various biological agents, including pathogens that are rarely seen in the U.S. High-priority agents include organisms that pose a risk to national security because they:

- Can be easily disseminated or transmitted from person to person;
- Result in high mortality rates and have the potential for major public health impact;
- Might cause public panic and social disruption; and
- Require special action for public health preparedness.

Agents/Diseases

- Anthrax (*Bacillus anthracis*)
- Botulism (*Clostridium botulinum* toxin)
- Plague (*Yersinia pestis*)
- Smallpox (variola major)
- Tularemia (*Francisella tularensis*)
- Viral hemorrhagic fevers (filoviruses [e.g., Ebola, Marburg] and arenaviruses

Category B

Definition - Second highest priority agents include those that:

- Are moderately easy to disseminate;
- Result in moderate morbidity rates and low mortality rates; and
- Require specific enhancements of Center of Disease Control's (CDC) diagnostic capacity and enhanced surveillance.

Agents/Diseases

- Brucellosis (*Brucella* species)
- Epsilon toxin of *Clostridium perfringens*
- Food safety threats (e.g., *Salmonella* species, *Escherichia coli* O157:H7, *Shigella*)
- Glanders (*Burkholderia mallei*)
- Melioidosis (*Burkholderia pseudomallei*)
- Psittacosis (*Chlamydia psittaci*)
- Q fever (*Coxiella burnetii*)
- Ricin toxin from *Ricinus communis* (castor beans)
- Staphylococcal enterotoxin B
- Typhus fever (*Rickettsia prowazekii*)
- Viral encephalitis (alphaviruses [e.g., Venezuelan equine encephalitis, eastern equine encephalitis, western equine encephalitis])
- Water safety threats (e.g., *Vibrio cholerae*, *Cryptosporidium parvum*)

Category C

Definition - Third highest priority agents include emerging pathogens that could be engineered for mass dissemination in the future because of:

- Availability;
- Ease of production and dissemination; and
- Potential for high morbidity and mortality rates and major health impact.

Agents

- Emerging infectious diseases such as Nipah virus and hantavirus

While the U.S. saw outbreaks Ebola virus in 2014 and Zika virus in 2016/2017, the Montana Dept. of Public Health and Human Services (DPHHS) has said the likelihood of these viruses showing up in Montana is small. The impact of Zika in Montana is expected to be confined to individuals returning from or planning travel to Zika-affected areas and Montana's mosquitoes are not expected to be able to transmit the virus.

DPHHS manages a database of reportable communicable disease occurrences. The communicable disease summary between 2002 and 2016 is presented in **Table 4.8-1**. Public health emergencies that have affected Montana include vector-borne disease, such as West Nile Virus, food-borne illness like *E.coli*, and vaccine-resistant illness such as virulent strains of influenza.

Agricultural (Crop and Livestock) Disease

Agriculture dominates Montana's economy contributing $3.6 billion per year with $2.0 billion coming from crops and $1.6 billion coming from livestock (USDA National Agriculture Statistics Service, 2017). Wheat is Montana's most important crop followed by hay, barley, and sugar beets. Montana's most important livestock commodities are cattle and calves, followed by hogs and pigs, and sheep and lambs. The security of the state's crop and livestock industry is of paramount importance to Montana's economy. Some of the livestock diseases with the potential to threaten the state's agricultural industry include: anthrax, brucellosis, foot and mouth disease and mad cow disease. Biosecurity, the practice of protecting ranch and farm animals from disease, has become a major concern world-wide. Effective biosecurity requires several components including isolation, traffic control, and sanitation that aim to reduce exposure to bacteria, viruses and other organisms that may infect animals with disease.

Many plant pests are sporadic in their occurrence cycling with environmental conditions such as dry or wet cycles. However, major insect pests such as alfalfa weevil, wheat stem sawfly, wireworms, cutworm species, grasshoppers and cereal leaf beetle are likely to attain pest status in the state each year.

There have been few cases of livestock or plant disease in Montana that have caused significant economic impact. An anthrax outbreak occurred in 2003 causing the death of 37 cows in Roosevelt County. One case of a foot-and-mouth type disease was detected in Yellowstone County in 2005 before is spread further.

Table 4.8-1. Communicable Disease Summary; 2002 – 2016

Conditions with at Least 20 Cases	# of Cases	Counties with Highest Number of Cases				
Hepatitis C Virus Infection, Chronic	11,729	Yellowstone (2,261)	Missoula (1,152)	Cascade (1,020)	Roosevelt (762)	Gallatin (596)
Pertussis	3,200	Flathead (635)	Lewis and Clark (464)	Yellowstone (371)	Gallatin (264)	Missoula (141)
Campylobacteriosis	2,767	Yellowstone (596)	Gallatin (407)	Missoula (294)	Flathead (244)	Lewis and Clark (185)
Salmonellosis	1,895	Yellowstone (254)	Missoula (248)	Gallatin (181)	Lewis and Clark (175)	Flathead (152)
Varicella (Chickenpox)	1,801	Flathead (416)	Gallatin (187)	Lewis and Clark (158)	Custer (107)	Lincoln (94)
Giardiasis	1,383	Gallatin (234)	Missoula (229)	Flathead (187)	Cascade (123)	Yellowstone (106)
Cryptosporidiosis	894	Missoula (163)	Flathead (163)	Gallatin (111)	Yellowstone (94)	Cascade (76)
Shiga Toxin-Producing Escherichia Coli (STEC)	640	Gallatin (106)	Yellowstone (78)	Missoula (76)	Lewis and Clark (67)	Cascade (57)
West Nile	523	Yellowstone (76)	Custer (50)	Roosevelt (38)	Valley (38)	Cascade (28)
Shigellosis	406	Roosevelt (49)	Granite (47)	Glacier (46)	Cascade (34)	Gallatin (29)
Meningitis, Viral	382	Yellowstone (116)	Gallatin (49)	Flathead (51)	Cascade (22)	Missoula (19)
Streptococcus Pneumoniae, Invasive	376	Lewis and Clark (61)	Yellowstone (32),	Flathead (32)	Lake (26)	Cascade (22)
Rabies, Animal	281	Flathead (30)	Yellowstone (28)	Missoula (17)	Cascade (15)	Dawson (12)
Hepatitis B Virus Infection, Chronic	166	Missoula (34)	Yellowstone (30)	Gallatin (17)	Flathead (13)	Silver Bow (12)
Tuberculosis	116	Glacier (11)	Roosevelt (9)	Flathead (9)	Lewis and Clark (8)	Lake (8)
Lyme Disease	97	Gallatin (18)	Flathead (13)	Missoula (10)	Yellowstone (9)	Cascade (6)
Hepatitis C, Acute	85	Yellowstone (30)	Lincoln (14)	Hill (6)	Custer (6)	Cascade (5)
Hepatitis A, Acute	84	Missoula (14)	Gallatin (11)	Lewis and Clark (10)	Flathead (8)	Yellowstone (7)
Legionellosis	78	Cascade (14)	Missoula (9)	Lewis and Clark (8)	Yellowstone (8)	Flathead (6)
Haemophilus Influenzae, Invasive	75	Yellowstone (13)	Lewis and Clark (10)	Flathead (7)	Gallatin (5)	Silver Bow (4)
Hepatitis B, Acute	58	Yellowstone (9)	Gallatin (8)	Lewis and Clark (7)	Cascade (7)	Flathead (6)
Meningitis, Bacterial	53	Yellowstone (7)	Silver Bow (6)	Missoula (5)	Lincoln (4)	Cascade (3), Lake (3)
Neisseria Meningitidis, Invasive	48	Missoula (9)	Yellowstone (8)	Cascade (5)	Gallatin (5)	Silver Bow (4)
Q Fever	33	Lewis and Clark (7)	Cascade (5)	Teton (4)	Yellowstone (2)	Deer Lodge (2)
Spotted Fever Rickettsiosis	30	Cascade (6)	Gallatin (6)	Missoula (6)	Yellowstone (4)	Ravalli (3)
Coccidioidomycosis	28	Yellowstone (9)	Cascade (7)	Gallatin (6)	Lewis and Clark (5)	Flathead (5)
Amebiasis	26	Yellowstone (7)	Missoula (5)	Gallatin (4)	Cascade (3)	Ravalli, Flathead (2)
Yersiniosis	22	Flathead (13)	Missoula (3)	Lincoln (2)	Gallatin (2)	Lewis and Clark (2)

Source: DPHHS, 2002-2016

Brucellosis is a zoonotic disease, and in many places around the world, still causes severe infections in humans. Brucellosis causes decreased milk production, weight loss, abortion, and infertility in cattle. It is thought that brucellosis arrived in North America with infected European cattle sometime between the 16th and 18th centuries. Beginning in the mid-1950s, great efforts were made to eliminate the disease from all livestock within the United States. Brucellosis arrived within the Greater Yellowstone Ecosystem sometime prior to 1917 when it was first detected in Yellowstone National Park, and subsequently spread to bison and elk throughout the region, including portions of Idaho, Montana, and Wyoming.

Brucellosis can result in serious financial burdens to cattle producers, potentially resulting in quarantine of a herd, increased testing and vaccination costs, and possible difficulty in trade with other states and countries. Brucellosis was detected in Montana cattle in 2007 (Carbon County) and 2011 (Park County) threatening the state's brucellosis-free status. Recent research and surveillance efforts have indicated that the prevalence and geographical distribution of the disease in elk is likely increasing. Brucellosis now exists in elk populations outside of the Greater Yellowstone Area. http://fwp.mt.gov/fishAndWildlife/diseasesAndResearch/healthPrograms/brucellosis/default.html

Wildlife Disease

Several wildlife diseases have emerged in Montana in recent years; one of which may be related to the changing climate. All of these diseases have the potential to impact the State's economy.

Chronic Wasting Disease (CWD) is a progressive, fatal, neurological disease found in a small percentage of cervids (deer and elk). CWD belongs to the family of diseases known as transmissible spongiform encephalopathies. CWD was first described clinically as a wasting syndrome in captive deer held in a Colorado wildlife research facility in 1967. CWD was detected in free-ranging deer and elk in northern Colorado and adjacent sections of southeast Wyoming in the mid-1980s. Since then, CWD has also been found in captive herds in South Dakota, Nebraska, Oklahoma, Kansas, Colorado, Montana and Canada. CWD has also been found in free-ranging deer in South Dakota, New Mexico, Nebraska, Wisconsin, and Canada. http://liv.mt.gov/Animal-Health/biosecurity.

In November 2017, Montana FWP reported that a mule deer buck shot north of Chester on the Hi-Line near the Canadian border tested positive for CWD. The test results marked the fifth incident of CWD discovered in Montana wild deer, but the first in northern Montana. The other four deer came from south of Billings. Until 2017, CWD had not been found in Montana (Great Falls Tribune, *CWD Found in Northern Montana Deer*, December 5, 2017). Special hunts were organized and animal testing completed.

Proliferative Kidney Disease (PKD) is a fish disease caused by a microscopic parasite known to occur in Canada, the U.S. and Europe that can cause large fish kills. Other factors including high water temperatures, low stream flows and recreational stressors – in concert with this infection increase mortality. This disease can have devastating effects on Whitefish and trout. The parasite associated with PKD has not been shown to cause health problems in humans, birds, dogs and other mammals. However, bacteria and other harmful materials associated with decomposing fish could sicken pets. The disease has been documented previously in two isolated locations in central

Montana during the past 20 years. Recent outbreaks have occurred in Washington, Oregon and Idaho. (http://fwp.mt.gov/news/newsReleases/closures/waterbodies/nr_0105.html).

During August 2016, FWP confirmed a fish kill on nearly 100 river miles of the Yellowstone River as far upstream as near the border of Yellowstone National Park to Grey Bear Fishing Access (west of Big Timber). More than 4,000 dead Whitefish and a small number of other species including Rainbow Trout, Yellowstone Cutthroat, Longnose Suckers, Sculpin, and Longnose Dace were counted by FWP fish health specialists. Environmental conditions overall on the Yellowstone River had been poor in terms of flows and temperature. For more than a month starting in mid-July, daytime high Yellowstone River water temperatures (at Livingston) hovered around 70 °F. Ideal temperatures for Whitefish and trout are mid-50s.

The magnitude of the kill was unlike anything seen. FWP was concerned that any additional stress on the fish could cause similar levels of mortality in trout populations and therefore, closed the Yellowstone River to recreational use for several weeks. FWP was also concerned that the parasite could be spread from the Yellowstone River Basin to other Montana waters. The loss of income to fishing guides and floating companies, and secondary impact to Montana communities from canceled trips, caused a significant loss to Montana's economy.

Aquatic Invasive Species (AIS) are those that impact water bodies and wetlands. Whether they arrive via trailers or hulls of recreational boats, or from the water of an angler's bait bucket, several non-native invasive species such as Eurasian watermilfoil and New Zealand mud snails have found their way into Montana's water bodies. Their presence can cause severe damage to local ecosystems, industry and tourism (http://fwp.mt.gov/fishAndWildlife/species/ais/).

Quagga and zebra mussels are AIS not known to be established in Montana. In other parts of the country, such as the Midwest, Southwest and the Great Lakes areas, mussels have impaired hydroelectric, municipal and agricultural water infrastructure. Mussels may also impact fisheries and other aquatic resources and damage recreation facilities. Montana FWP runs aquatic invasive inspection stations during the warmers months as well as the "Clean. Drain. Dry." campaign to discourage unintentionally transporting AIS on watercraft. (Helena Independent Record, *Invasive Aquatic Mussels Larvae Detected in Montana*, November 6, 2016).

In 2016, water samples from Tiber Reservoir east of Shelby tested positive for the larvae of aquatic invasive mussels, with similar tests from Canyon Ferry Reservoir near Helena showing "suspect" or inconclusive results. Officials are unsure of when the introduction may have occurred, although it is suspected that the larvae were transported via recreational boat. FWP's rapid response plan includes assessing the risks, coordinating state and federal agencies and other water users, contacting legislators and looking at possible control measures.

Declared Disasters

No state of federal disaster declaration has been issued as the result of a disease outbreak. Public health emergencies are issued when an infectious disease outbreak has occurred or is anticipated. State and federal partners coordinate rapid response teams for agricultural and wildlife disease emergencies.

Magnitude and Probability

Diseases when on an epidemic scale can lead to high infection rates in the population causing isolation, quarantines and potential mass fatalities. Probability in this MHMP is based on the frequency of the hazard over a 10-year period. A significant disease outbreak in Montana that impacts the economy of the state was rated as "Possible" with less than one significant incident occurring every 10 years, but greater than one incident every 100 years. It received this rating because of the historic record. Climate change will likely increase the frequency of disease impacts in the human population, agriculture, and wildlife sectors that cause impacts to Montana's economy and thereby, increase the probability of future events.

Human Disease

Influenza - Annual flu viruses (not including flu pandemics) infect up to 20 percent of Americans, put 200,000 in the hospital with flu-related complications, and kill about 36,000 people (Friedlander, 2009). As many as 200,000 Americans are hospitalized because of it each year, and as many as 36,000 die of the disease or complications associated with it. Children under age 1, people 65 or older and people suffering from underlying medical conditions are at a higher risk of serious complications. The cost of treating annual flu epidemics, including lost wages and productivity of workers, is billions of dollars each year in just the United States alone (Goldsmith, 2007).

Influenza cases, including hospitalizations and deaths, are reportable to local public health in Montana. In 2017, flu activity increased in mid-December and remained elevated for a total of 20 weeks. Season totals include 10,175 cases, 972 hospitalizations and 67 deaths attributed to influenza. Thirty-three (33) outbreaks of influenza were reported during the season. Influenza activity was reported from all counties. **Figure 4.8-1** displays 201–2018 seasonal influenza activity as case counts by county. In addition, each county is shaded by the incidence rate of disease (per 10,000 population).

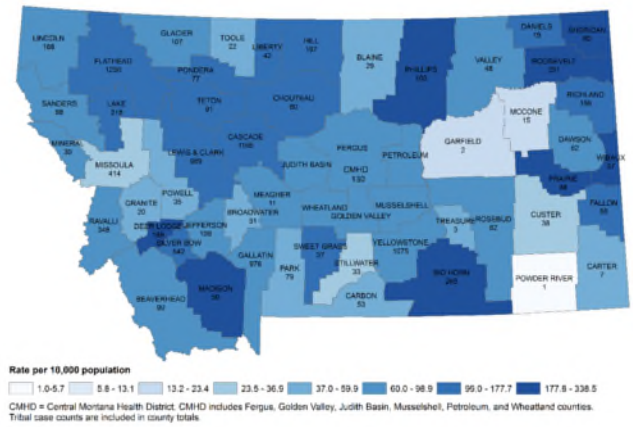

Figure 4.8-1

Number and Incidence Rate of Reported Influenza Cases by County; 2017-2018 Season
Source: Montana DPHHS, 2018

Livestock and Wildlife Disease

Brucellosis - The USDA describes brucellosis classifications as Class Free, Class A, Class B and Class C. Restrictions on the interstate movement of livestock become less stringent as a state approaches or achieves Class Free status. Montana is currently recognized as a brucellosis Class Free state.

State animal health officials monitor brucellosis in order to maintain the marketability of livestock. A State Class status downgrade would cost Montana producers $5.9 to $11.9 million dollars each year (Montana Dept. of Livestock, 2011).

Proliferative Kidney Disease - Sections of the Yellowstone River were closed during August 2016 by Montana FWP because of a parasite outbreak that killed thousands of Whitefish. Closure of segments of the drainage to all water-based activities directly impacted spending behavior by visitors to counties affected by the closure, thus reducing revenue to river-dependent business such as outfitters and guides, fly shops, rafting companies, river shuttle companies and myriad spin-off businesses in lodging, food and beverage services, and area attractions. The river closure resulted in an economic loss to businesses in Park County of $360,000 to nearly $524,000. The estimated economic losses are the equivalent of five to eight full-time jobs (UM, 2016).

Aquatic Invasive Species – In 2016, aquatic invasive mussel larvae were discovered in water samples from the Tiber Reservoir north of Great Falls. Additional samples found potential larvae in Canyon Ferry Reservoir. For precautionary measures, Glacier National Park and the Blackfeet nation closed all waters to watercraft. Invasive mussels pose a threat to the ecology of Montana, including the world-renowned trout fishing, as well as irrigation and municipal water systems (UM, 2017).

Vulnerability

Infectious disease or biological agents could be devastating to the population or economy of Montana. It is presumed that disease affects the State's population equally, such that a specific area of impact cannot be mapped. As such, the MHMP does not include a risk assessment for the disease hazard. Structures are not impacted.

Statewide Vulnerability

The entire population of the State is at risk for contracting disease. Urban population centers are more vulnerable to rapidly spreading highly contagious diseases than more rural parts of the state. The ability to control the spread of disease would be dependent on the contagiousness of the disease, movement of the population, and the warning time involved. The number of fatalities would depend on the mortality rate and the percentage of the population affected.

Effective disease control efforts rely on an effective surveillance and response system that promotes collaboration, coordination and communication among public health and clinical professionals, and/or agriculture and wildlife health specialists. A number of federal and state agencies are involved in disease surveillance and have developed response protocol.

The Dept. of Public Health and Human Services, as well as local counties and tribes, have been involved in pandemic influenza preparedness efforts and have a *State and Local Human Disease and Public Health (Pandemic Influenza) Emergency Plan*. States and local communities are responsible under their own authorities for responding to an outbreak within their jurisdictions and having comprehensive pandemic preparedness plans and measures in place to protect their citizens. The focus of these planning efforts is on practical, community-based procedures that could prevent or delay the spread of pandemic influenza, and help to reduce the burden of illness communities would contend with during an outbreak.

Securing agriculture and wildlife health requires rapid detection of outbreaks, accurate diagnoses of problems, and early response to minimize impact. The USDA Animal and Plant Health Inspection Service (APHIS) Plant Protection and Quarantine Program coordinates pest detection activities nationwide. Plant pest detection coordination is handled locally by the Montana Dept. of Agriculture and Montana State University Extension Service. Animal and wildlife issues are managed by the Montana Dept. of Livestock and FWP.

Montana Dept. of Livestock, Agriculture, FWP, and DPHHS are charged with protecting public health, the safety of the food supply, the integrity of animal and plant agriculture industries and wildlife security in Montana. These agencies have developed guidelines for local and tribal governments to heighten biosecurity awareness and give direction to address public health, agricultural, and wildlife security issues.

The Montana Dept. of Livestock encourages producers to maintain a high sense of awareness for unusual occurrences of animal diseases in their communities. Producers need to initiate an appropriate level of biosecurity on their ranches and farms. A good biosecurity program helps to lower the risk of pathogens being transferred from ranch to ranch. Informed veterinarians and livestock producers are the first line of defense against foreign and other animal diseases. http://liv.mt.gov/Animal-Health/biosecurity. The agency maintains the Foreign Animal Disease Response Plan.

The Montana Dept. of Agriculture has developed an *Agro-Emergency Response Plan* to address policies and procedures that will minimize the impact of a deliberate or unintentional incident related to the State's crop production. The purpose of the plan is to provide for rapid response to significant threats to plants that may impact food safety and public health. The plan provides guidance to mitigate against exotic plant pests and other agricultural emergencies.

FWP has rapid response plans for fish and wildlife emergencies.

Review of Potential Losses in Local Hazard Mitigation Plans

Approximately half of local hazard mitigation plans evaluated the disease hazard in their risk assessment. Five counties (Cascade, Daniels, Deer Lodge, Glacier, and Roosevelt) ranked it as their #4 hazard while seven local jurisdictions (Beaverhead, Flathead, Gallatin, Ravalli, Stillwater, and Sweetgrass Counties and the Fort Belknap Reservation) ranked it as #5. Chouteau and Judith Basin counties ranked Agro-Security as their #3 and #6 hazards, respectively. All jurisdictions ranked the public health aspect of the disease hazard as having a high societal exposure. Most local plans recognized the potential for economic impacts from the disease hazard. **Appendix B-9** presents an exposure summary from the local Hazard Mitigation Plans.

Vulnerability of State Facilities

In general, critical facilities are not structurally threatened by disease; however, their accessibility and function can be lost. Contamination of a critical facility could render the facility non-functional until decontamination or the threat has passed. For this reason, all critical facilities are assumed to be at risk from infectious disease. As with any human biological event, the hospitals and health service providers would most likely discover a threat and possibly become the first contaminated. Public water systems are also potentially at risk to communicable diseases.

Future Development

Future development would not be directly impacted by disease, but any additional residents would be at risk for disease. Future development would not impact the disease hazard within the agricultural or wildlife sectors.

Climate Change

The effects of climate change on the disease hazard is mainly to the population. Outbreaks of insect- and water-borne infection associated with higher temperatures could increase population exposure; especially vulnerable would be the young and elderly. Property and critical facilities are not expected to have an increase in disease exposure or vulnerability due to the effects of climate change.

Although some evidence indicates that warming may be causing infectious disease to spread, predicting how climate change will ultimately influence the incidence of diseases transmitted by insects remains challenging. More predictable as climate change unfolds is the spread of waterborne infections. These infections most often cause diarrheal illness and flourish in the wake of heavy rainfalls as runoff from land enters into and may contaminate water supplies. Many pathogens that cause diarrheal disease reproduce more quickly in warmer conditions as well (Harvard School of Public Health, 2016).

Awareness has been growing in recent years about zoonotic diseases— that is, diseases that are transmissible between animals and humans, such as Lyme disease and West Nile virus. The rise of such diseases results from closer relationships among wildlife, domestic animals, and people, allowing more contact with diseased animals, organisms that carry and transmit a disease from one animal to another (vectors), and people. Disease vectors include insects, such as mosquitoes, and arachnids, such as ticks. Thus, it is impossible to separate the effects of global warming on wildlife from its effects on the health of domestic animals or people (USGS, 2012).

Warmer water temperatures are likely to cause the habitat ranges of many fish species to shift, which could disrupt ecosystems. Fisheries will be affected by changes in water temperature that make waters more hospitable to invasive species and shift the ranges or lifecycle timing of certain fish species (EPA, 2017).

Data Limitations

Disease is a difficult hazard for which to provide specific vulnerabilities. For a disease to have a major impact, it first has to enter the population and then spread. That starting point, how the disease progresses, and preventive actions taken will determine the eventual outcome. The data and analysis are limited by these outside factors.

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4.9 Landslide and Avalanche

CPRI SCORES
AVALANCHE = 2.39
LANDSLIDE = 2.23

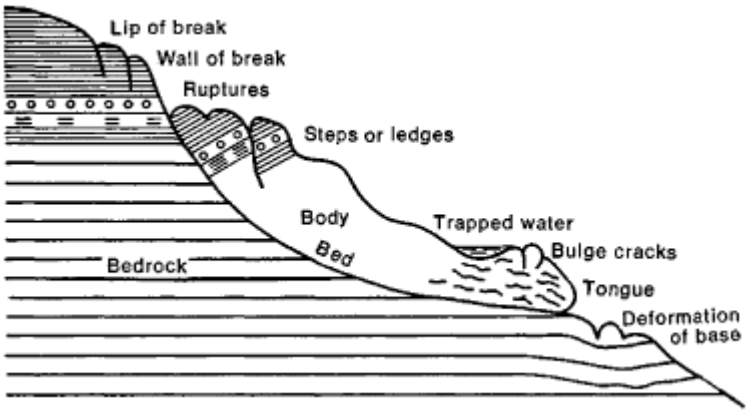
The landslide and avalanche hazards are profiled together because they are cause by similar geologic forces.

Description and History

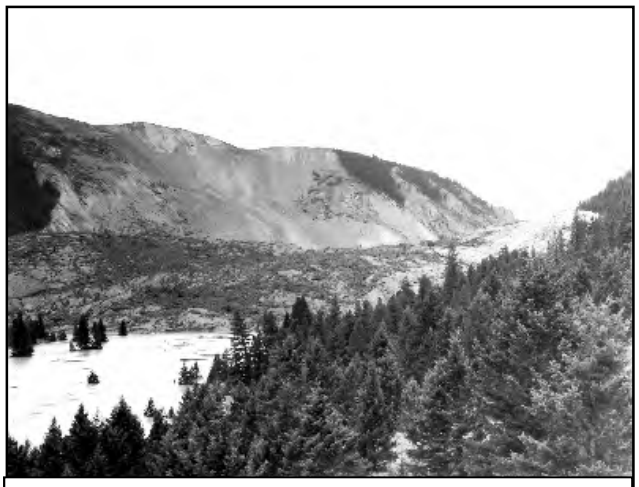
Landslides

The term landslide includes all types of gravity-caused mass movements of earth material, ranging from rock falls, slumps, rock slides, mud slides, and debris flows. Landslides occur in all 50 states.

The surface of the earth is a collection of slopes that are inherently unstable. When material is exposed to weathering and erosion processes it immediately begins to break it apart and move. Earth movement may occur suddenly as catastrophic landslides or rockfalls, but more commonly, occurs as the slow creep of soil down gentle slopes. Precipitation, topography, geology, and human activities can all trigger landslides. In landslide-prone areas, anything affecting slope condition, such as construction, seismic activity, or increased soil moisture, may cause movement or may reactivate prior movement. Recent landslide movements often are the reactivation of smaller sections of older, unstable landslide masses.



Landslides are among the most common geologic hazards in Montana, causing damage in rural and urban areas of the state. Sudden movements are often spectacular and receive much publicity. The Hebgen Lake earthquake of August 18, 1959 triggered the largest landslide in Montana history, where nearly 1.25 miles of the Madison River and Montana Highway 287 were buried to depths as great as 394 feet (see the Earthquake hazard profile in *Section 4.4*).



Landslide from Hebgen Lake earthquake, August 1959.

Slower movement can also cause severe problems in developing areas. The effects of the very slow movements can be seen along many roadways in the form of leaning trees, misaligned fences and walls, and damaged road surfaces and foundations (MBMG, 2002). Whether caused solely by natural processes or aggravated by human activity, when landslides occur in proximity to human-made structures, repairs and remediation can be costly. For example, a small lobe of a much larger ancient slide south of Dillon

Goat Lick slide, US Highway 2 near Glacier Park.

was reactivated by removing the toe of the slope. The slide is proving very costly to the railroad and could impact Interstate 15 if a larger segment of the slide area should move (MBMG, 2002).

State Highway 2 was built on another slide near Glacier Park and the roadway has had constant subsidence problems. The Goat Lick slide forced the Montana Dept. of Transportation to re-construct the roadway with a cantilevered outside driving lane to prevent further subsidence.

Beartooth Highway landslide. March 2005.

March 2005. A rain-on-snow event caused a mudslide that severely damaged more than 12 miles of U.S. Highway 212 outside of Red Lodge. The road is a crucial link to the western route to Yellowstone Park and is only open to traffic from late-May until mid-October. An Executive Order was issued declaring an emergency in Carbon County and requested assistance from the Federal Highway Administration for the repairs. The $15.2 million repair involved excavating rock and slide debris, reconstructing the drainage, roadway and new alignment, and constructing tie-back walls. Rock fall fences were also constructed at several locations and overall drainage capacity was increased by creating water diversions along stable locations on the mountain and constructing special inlets to allow rock over 3-inch diameter to pass.

June 2010 - The majority of the damage associated with the June 2010 flood on the Rocky Boy's Indian Reservation was due to mass movement. Slippage of land under the newly constructed Chippewa Cree Health Center caused significant structural damage and the building was no longer fit for occupancy. Several roads also failed due to the over-saturation from the heavy rainfall that resulted in mass movement. Reports of sinkholes were also associated with this flood event.

June 2015 - A rock slide occurred on the Stillwater River Road in Nye, closing the road for two years due to safety concerns. One home was evacuated and officials recommended the evacuation of two others. Engineers evaluated the slide and concluded that moisture from heavy rainstorms seeped behind wedges that were holding large sections of rock together, causing the slide. The rock slide came down with enough force to push water and debris from the Stillwater River into the yard of a home on the opposite bank. (Stillwater County News, *Unstable Rock Slide to Keep Stillwater River Road Closed*, June 11, 2015). The County received a FEMA grant to stabilize the area.

Stillwater River Road is blocked by landslide. June 2015.

Avalanche

Avalanches are often the result of severe winter weather in Montana. An avalanche is a mass of loosened snow, ice, and/or earth suddenly and swiftly sliding down a mountain. Avalanches occur throughout the mountains of Montana and, to a limited extent, elsewhere in the state. Avalanche hazards most-directly threaten winter recreationists and communication and transportation networks in mountainous regions. Two of Montana's ski areas, Bridger Bowl and Big Sky, are respectively the second and fourth most avalanche-prone ski resorts in the United States. Where developments have encroached into steep mountainous terrain, the vulnerability for avalanches increases. The complex interaction of weather and terrain factors contributes to the location, size, and timing of avalanches. In the absence of detailed scientific observation, any accumulation of snow on a slope steeper than 20 degrees should be considered a potential avalanche hazard.

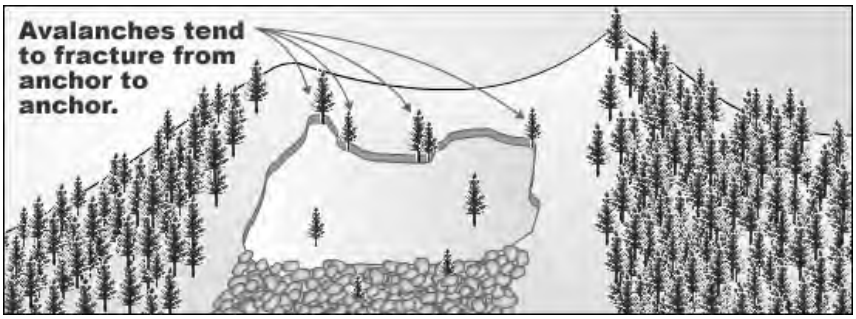
Avalanches come in many shapes and sizes and even small ones can be dangerous. According to the U.S. Forest Service National Avalanche Center (http://www.fsavalanche.org/), there are three types of avalanches:

1. Slab avalanches: Most people that die in avalanches, die in slab avalanches. Slab avalanches occur when a more cohesive or harder layer of snow sits on top of a less cohesive or softer and weaker layer of snow. Sometimes the weak layer can barely support the layers above it and when additional weight like a skier or snow boarder is added to the upper layers, the weak layer collapses and the snowpack fractures and a slab avalanche occurs. Slab avalanches often involve large volumes of fast moving snow. Victims, like the skiers, typically trigger slabs at mid-slope below the fracture line which often makes escape very difficult.
2. Sluffs or loose snow avalanches: Sluffs are cold snow powdery surface slides that typically are the least dangerous type of slide; however, sluffs can and often do injure skiers and boarders by pushing them over cliffs and rock bands in steep terrain.
3. Wet avalanches: Wet slides occur when warm temperatures melt the surface snow layers and saturate them with water. The water weakens the bonds between layers and avalanches often occur. Wet avalanches move more slowly than dry avalanches but they can still be very dangerous.

The West Central Montana Avalanche Center provides pre-season avalanche information updates beginning in November, then scheduled avalanche advisories three times a week from December through March. They also provide extra avalanche updates/bulletins/special advisories during this period, as needed.

Ninety percent of all avalanches occur on moderate slopes with an angle of 30 to 45 degrees (snow tends not to accumulate on steeper slopes). Avalanches occur when the gravity pushing the collection of snow at the top of the slope is greater than the strength of the snow itself. A change in temperature, a loud noise, or vibrations are all that are necessary to trigger one of these snowfalls that begin at a "starting zone." Artificial triggers of avalanches include skiers, snowmobiles, and controlled explosive work. The avalanche continues downslope along the "track" and ultimately the avalanche fans out and settles in the "runout zone."

Avalanche initiation can start at a point with only a small amount of snow moving initially; this is typical of wet snow avalanches or avalanches in dry unconsolidated snow. However, if the snow has sintered into a stiff slab overlying a weak layer then fractures can propagate very rapidly, so that a large volume of snow, that may be thousands of cubic meters, can start moving almost simultaneously. Avalanche fracture lines tend to run from anchor to anchor because they are stress concentration points (http://www.fsavalanche.org/encyclopedia/)



January 2004 - Two separate avalanches hit an eastbound train near Essex (near Glacier National Park), throwing 15 cars off the rails and closing tracks used by Amtrak's Empire Builder. The slides occurred due to extremely heavy snowfall. The slide hit near the middle of the train, knocking seven cars off the tracks. While the train was stopped another slide hit near the rear of the train about 15 minutes later, knocking eight more cars off the track. (Independent Record, *Avalanches Derail Freight Train*, January 29, 2004).

Avalanches are also responsible for fatalities to recreationists such as skiers, snowboarders, snowmobilers and climbers. From 2006 to 2017, there were 38 avalanche fatalities in Montana, representing about 13 percent of the nationwide avalanche-related deaths (Colorado Avalanche Information Center, 2018). **Table 4.9-1** summarizes the avalanche-related fatalities in Montana since 2006.

Table 4.9-1. Summary of Avalanches in Montana: 2006-2017

Date	Location	Activity	Fatalities
12/16/2006	Scotch Bonnet Mountain near Cooke City	Snowmobiling	1
12/28/2006	Lionhead area near West Yellowstone	Snowmobiling	1
1/1/2007	Mt. Jefferson, Centennial Range	Snowmobiling	1
2/17/2007	Big Belt Mountains, northeast of Townsend	Snowmobiling	2
3/3/2007	Yellow Mountain near Big Sky	Skiing	1
1/13/2008	Canyon Creek, near Whitefish Mountain	Skiing	2
1/20/2008	Beehive Basin, near Big Sky	Skiing	1
1/17/2009	Gravelly Range	Snowmobiling	1
1/17/2009	Crown Butte	Snowmobiling	1
1/17/2009	Mount Jefferson	Snowmobiling	1
12/10/2009	Hyalite Drainage, northern Gallatin's, Bozeman	Climbing	1
1/3/2010	Scotch Bonnet Mountain, near Lulu Pass	Snowmobiling	1
3/27/2010	Near Missoula Lake	Snowmobiling	1
3/31/2010	Peak 6966 near Marias Pass, Glacier National Park	Snowboarding	1
4/14/2010	McAtee Basin, Southern Madison Range	Snowmobiling	1
6/14/2010	Lolo Peak	Skiing	1
2/14/2011	Truman Gulch, Bridger Ranger	Snowboarding	1
1/1/2012	Phillipsburg, Flint Range, Red Lion	Snowmobiling	1
2/1/2012	Twin Lakes, Swan Range	Skiing	1
2/20/2012	Lost Johnny drainage, east of Kalispell	Snowmobiling	1
2/22/2012	Daisy Pass Road, north of Cooke City	Snowmobiling	1
2/25/2012	Skyline Creek, near Marias Pass	Snowbiking	1
1/1/2013	Onion Basin, Northern Gallatin Range	Snowmobiling	1

Table 4.9-1. Summary of Avalanches in Montana: 2006-2017

Date	Location	Activity	Fatalities
2/22/2013	Troy, West Cabinet Mountain Range	Snowmobiling	1
2/28/2013	Mount Jumbo, Missoula	Snowboarding	1
3/7/2014	Altoona, 10 miles NE of Phillipsburg	Ski Touring	1
3/11/2014	Cooke City	Snowmobiling	1
5/3/2014	Olson Gulch, west of Anaconda	Ski Touring	1
11/26/2014	Near Henderson Peak, Cooke City	Snowmobiling	1
4/11/2015	Beehive Peak, northern Madison Range	Ski Touring	1
12/19/2015	Sheep Mountain, north of Cooke City	Snowmobiling	1
1/19/2016	Cedar Basin, west of Big Sky	Ski Touring	1
1/23/2016	Swede Creek area, Whitefish Range	Snowmobiling	1
1/5/2017	Mt. Stanton, north of West Glacier	Ski Touring	1
10/7/2017	Imp Peak, southern Madison Range	Ski Touring	1
1/2/2018	Cabin Creek, southern Madison Range	Snowmobiling	1

Source: CAIC, 2018

In 2014, a devastating avalanche, triggered by winter recreationists, impacted a Missoula neighborhood, causing one fatality, destroying one home, and damaging three others. This incident is described below.

February 28, 2014 - At approximately 4:15 pm, a snowboarder triggered a hard slab avalanche on a west facing, 35 degree slope of Mount Jumbo, located within the Missoula City limits on Missoula Conservation District land. The snowboarder was caught by the avalanche but was able to self-arrest by digging in with the edge of his board and using his arms and fingers to grab the bed surface as the snow passed by. The avalanche entrained most of the available snow in the fetch zone and accelerated as it advanced over a terrain convexity halfway down the track.

At the base of the ravine, the avalanche caught two children, ages 8 and 10, who were playing in their backyard as it slammed into and destroyed a two story wood frame home. The two residents of the home were inside the house when the avalanche hit.

The two children saw and heard the avalanche coming down the ravine and ran downslope toward their home. Both were caught and carried several feet before coming to rest next to their home. One was partially buried and was able to dig herself out quickly. The other was completely buried next to the house about 3 feet deep and was later rescued. The house residents were together in their home and were also completely buried under several feet of snow and debris from their destroyed home, resulting in one fatality

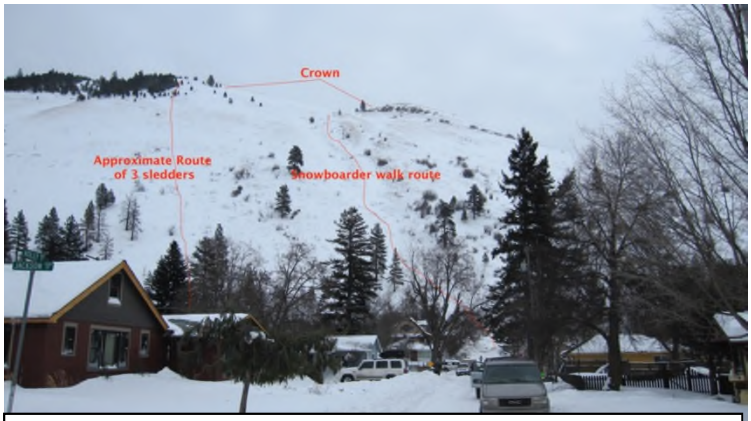
At 4:18 pm, Missoula City Fire, Police, Missoula County Sheriff, MT Highway Patrol units and local EMS teams were dispatched. A large contingent of well-equipped neighbors with avalanche rescue gear soon began arriving on scene. Rescue coordination was complicated by live power lines, broken natural gas lines and the very real possibility of another avalanche.

Looking downslope from the foundation of the destroyed home. Source: missoulaavalanche.org

Spot probing began and a probe line formed near the home just below the buried child's last seen point. He was located 3-4 feet deep by a probe strike after approximately 55 minutes. When extricated from the snow, he was unresponsive. Rescue breaths were given and he was immediately transported by ground ambulance to St. Patrick Hospital's Emergency Department

Rescue efforts then concentrated on spot probing and digging in areas directly below the last known location of the house residents. A neighbor showed rescue teams the probable location on the remaining foundation of where the couple may have been. Probe teams were directed to concentrate on possible catchment features on the fall line below this area of the house. A probe strike was confirmed and the male was located in a cavity under a brick chimney and a wall or roof partition approximately 4 feet deep. He was responsive and able to inform rescuers that his wife was 3 feet from him when the house was hit. He was extricated and transported by ground ambulance to St. Patrick Hospital's Emergency Department.

An hour later, the woman was located by a responding neighbor with a probe. She was approximately 25 feet below her husband's location 2-3 feet deep. She was breathing but unresponsive and was transported to St. Patrick Hospital's Emergency Department in critical condition. She died on March 3 from traumatic injuries. Three other homes, several vehicles and an apartment building were also damaged by the avalanche.



View from Jackson and Holly Street Intersection.
Source: missoulaavalanche.org

Events Leading Up To The Avalanche - Four friends, ages 13-27, wanting to take advantage of a rare day when schools were closed, decided to snowboard or ski the untracked west face of Mount Jumbo. Earlier storms had deposited enough snow on the low elevation terrain in the mountains surrounding Missoula to allow for unique skiing and riding opportunities within walking distance of many residents. Mount Sentinel, above the University of Montana and south of Mount Jumbo, had been skied and ridden earlier in the week and was heavily tracked.

The snowboarder reached a point above the slide path and opted not to push toward the summit as the wind was making travel difficult at best. He strapped on his board, entered the slide path at the highest point where there was adequate snow, and immediately fell. He got back up and noticed movement in his peripheral vision and realized he was being carried downslope by an avalanche. He was at the top of the slab and able to self-arrest by digging in with the edge of his board and using his arms and fingers to grab the bed surface as the snow passed by. The sledders were near the base of the mountain to the north of the slide path. At least one of them saw a powder cloud and heard the avalanche slam into the home. They immediately went to the site and began digging for the buried child. Shortly after this the snowboarder walked down the slide path and also assisted with the initial rescue effort. (missoulaavalanche.org).

Declared Disasters

A federal disaster declaration was received for the Beartooth Highway landslide. Executive Order No. 08-05, proclaiming an emergency to exist in Carbon County was signed by the governor on May 27, 2005. The Federal Highway Administration reimbursed Montana $15 million for expenses associated with the highway repair as part of an emergency supplemental appropriations package passed by Congress and signed by President Bush. The SBA made a declaration to provide assistance to small, non-farm businesses in Big Horn, Carbon, Gallatin, Golden Valley, Meagher, Park, Stillwater, Sweet Grass, and Yellowstone Counties that suffered financial losses as a result of the highway closure due to the landslide disaster (SBA Declaration #10130) (SBA, 2007).

There have been no declared disasters due to the avalanche hazard.

Magnitude and Probability

Landslides can damage and destroy homes, roads, railroads, pipelines, electrical and telephone lines, mines, commercial buildings, sewers, bridges, dams, and airports. According to the USGS, landslides cause several billion dollars in damages annually and kill between 25 to 50 people each year. The Beartooth Highway landslide cost $15.2 million to repair.

Every year at least one winter recreationist dies from an avalanche in Montana's backcountry. Damage to infrastructure (railroad) has occurred near Glacier National Park in Flathead County. Costs associated with the 2014 Mount Jumbo avalanche in Missoula are not available; but, one home was damaged. Three other homes, several vehicles and an apartment building were also damaged by the avalanche. Costs incurred by local law enforcement and search and rescue outweigh the structural damage.

Probability for this MHMP is based on the frequency of the hazard over a 10-year period. Since damaging landslides do not occur more than once per decade, the probability rating is "Possible" for this hazard. The MHMP Planning Team rated the probability of the avalanche hazard as "Likely" due to the annual loss of life. Climate change may increase snowfall in mountainous regions of the state and therefore, the frequency of avalanche-caused fatalities may increase.

Table 4.9-2 presents Montana's landslide historic losses associated with the landslide hazard from the SHELDUS database. Three DES districts have reported landslide losses. The District 1 losses involved fatalities but no reported property or crop damage. The District 5 loss in Carbon County occurred on the Beartooth Highway, as discussed previously, and resulted in a declared disaster.

Table 4.9-2. Landslide Losses (Adjusted to 2016 Dollars); 1993-2017

DES District	Date	County	Injuries	Fatalities	Property Damage (Adjusted to 2016 $)
1	1/1995	Flathead	0	0	$100
1	1/1995	Lake	0	0	$100
1	1/1995	Lincoln	0	0	$100
1	1/1995	Sanders	0	0	$100
1	9/2004	Flathead	2	0	$0
3	7/2004	Gallatin	0	0	$0
3	7/2004	Park	0	0	$0
5	5/2005	Carbon	0	0	$16,954,722
1	6/2001	Lake	0	0	$108
3	7/2012	Lewis and Clark	0	0	$10,644

Table 4.9-2. Landslide Losses (Adjusted to 2016 Dollars); 1993-2017

DES District	Date	County	Injuries	Fatalities	Property Damage (Adjusted to 2016 $)
1	8/2013	Flathead	0	0	$104
3	9/2013	Madison	0	0	$104
1	8/2014	Missoula	0	0	$4,182
TOTAL			**2**	**0**	**$16,970,264**

Source: SHELDUS, 2017

Between 1993 and 2017, SHELDUS reported 9 injuries and 17 fatalities due to the avalanche hazard but no structural damage. Reported avalanche losses occurred in Beaverhead, Deer Lodge, Carbon, Flathead, Gallatin, Granite, Lincoln, Missoula, Park, Powell, Ravalli, Silver Bow, Sanders, Stillwater, Sweetgrass counties.

Vulnerability and Area of Impact

Landslides appear to have a stronger association with faulting than with any specific geologic unit (MBMG, 2002); however, some geologic formations or lithologies can be identified as being particularly prone to movement:

- Volcanic rocks, or sediments derived from them, are often the originating lithology for landslides. These sediments often contain ash and clay materials that facilitate movement.
- Poorly-consolidated sediments, particularly those of Cretaceous, Tertiary and Quaternary age, appear to have a tendency toward landslide.
- In the Butte and Dillon 1:250,000-scale areas, Proterozoic-age (Precambrian Belt Supergroup) rocks appear to be prone to landslide.

The types of material identified for each slide or flow appears to generally correspond to well-defined topographic settings:

- Earth slides and flows occur most often on more gentle slopes with less vegetation—the foothills and river courses.
- Debris slides and flows generally occur in the steeper, mountainous areas and in areas covered with vegetation.
- Rock slides and flows occur in previously-glaciated high valleys with steep slopes that generally lack vegetative cover, and along other very steep slopes (generally > 50 degrees).

Debris flows associated with flash flooding which can occur after wildfire are described in the *Flooding* profile in *Section 4.3*.

Activation of landslides depends upon environmental factors, such as amount of rainfall and snowmelt, and human activities, such as road and housing construction. Many landslides cannot be predicted and can be activated by multiple factors including earthquakes, high precipitation, overgrazing, and deforestation. Many, if not most, areas at high-risk from landslides can be identified on the basis of past activity. Many recent landslides are small, relatively minor events within the boundaries of older, much larger ones. The Montana Dept. of Transportation indicated that traffic is often diverted along Interstate-90 in the Lookout Pass area of Mineral County due to landslides. Slope stabilization occurred in the Prickly Pear Creek Canyon along Interstate-15 (between Helena and Great Falls) to mitigate the rockfall hazard. The shale formations in many parts of Big Sky (Gallatin

Co.) are susceptible to landslides, and many houses have been built in areas that could start moving if there's a period of exceptionally wet weather.

Avalanches are dangerous natural phenomena to the winter sport industry that threaten the safety of recreationists, primarily in back country locations. But, as was seen in Missoula's Rattlesnake Canyon neighborhood in 2014, avalanches also have the potential to impact residences and critical facilities located beneath steep slopes, and the occupants of these structures. Both Mount Jumbo and Mount Sentinel are steep slopes above highly populated areas of Missoula.

Of the major avalanche hazards, the interruption of communications lines probably occurs most frequently. Places of highest hazard include ski areas, mountain passes, and other areas where transmission lines cross avalanche paths. In regions where important highways or railroads cross areas subject to frequent snow slides, losses resulting from blocked roads, buried railroad tracks, and destroyed bridges can result in the millions of dollars of losses.

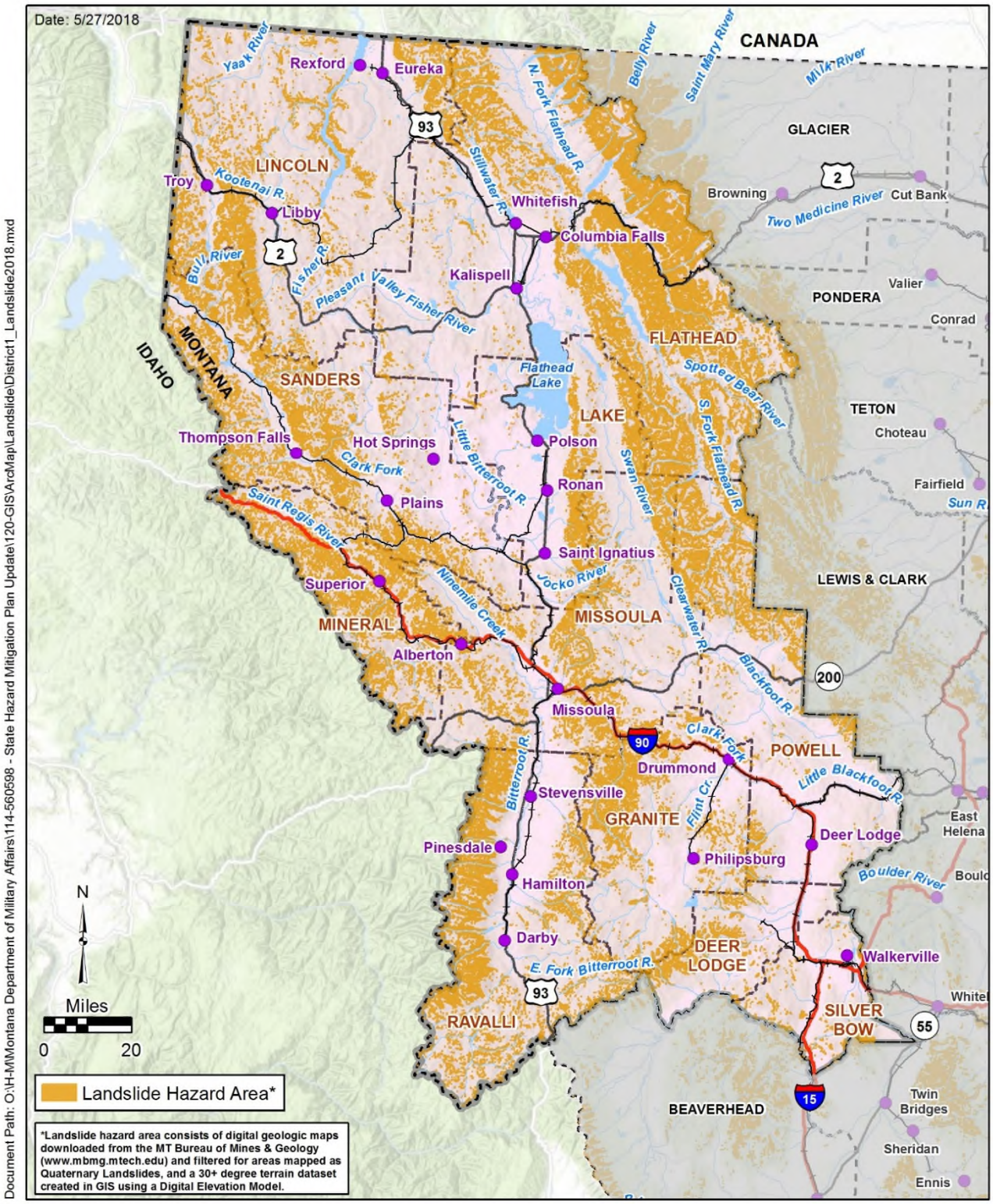
Statewide Vulnerability to Landslides

As part of the 2018 MHMP, a GIS layer was developed to evaluate landslide risk (**Figure 4.9-1A-F**). The landslide hazard area consisted of slopes greater than 30 percent and data from the MBMG digital geologic map of historic landslide units, as described in **Table 4.1-5** in *Section 4.1.3*.

To complete the vulnerability analysis for landslide, the hazard layer was intersected with the general building stock, critical facility, cultural resource datasets. Estimates of vulnerable population were calculated using U.S. Census county estimates. Exposure values are presented in **Table 4.9-3**. **Appendix B-10** presents supporting documentation including a list of critical facilities in landslide hazard areas.

Table 4.9-3. Landslide Exposure Summary by DES District

Item	District 1	District 2	District 3	District 4	District 5	District 6
Landslide Area (Square Miles)	1,332	346	928	193	220	359
Percent Hazard Area	5.3%	1.4%	3.7%	0.7%	1.0%	1.5%
Residential Building Exposure ($)	$18,176,071	$5,688,517	$184,810,528	$15,687,680	$136,653,708	$33,780,699
Residential Building Exposure (# structures)	76	25	394	191	611	213
Commercial, Ag, Industrial Building Exposure ($)	$9,265,599	$2,931,055	$56,512,333	$534,354	$8,248,198	$5,244,633
Commercial, Ag, Industrial Building Exposure (# structures)	26	15	46	7	11	36
Critical Facility Exposure ($)	$478,963	$0	$30,000	$0	$0	$0
Critical Facility Exposure (# structures)	3	0	1	0	0	0
Cultural Resource Exposure (# features)	1	4	1	0	1	1
Population Living in Hazard Area	105	35	622	250	930	265
Population Under 18 Living in Hazard Area	34	13	187	99	362	107
Population Over 65 Living in Hazard Area	39	11	127	104	332	109



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 1 County
- County

Figure 4.9-1A
Landslide Hazard Area
DES District 1
State of Montana MHMP 2018 Update

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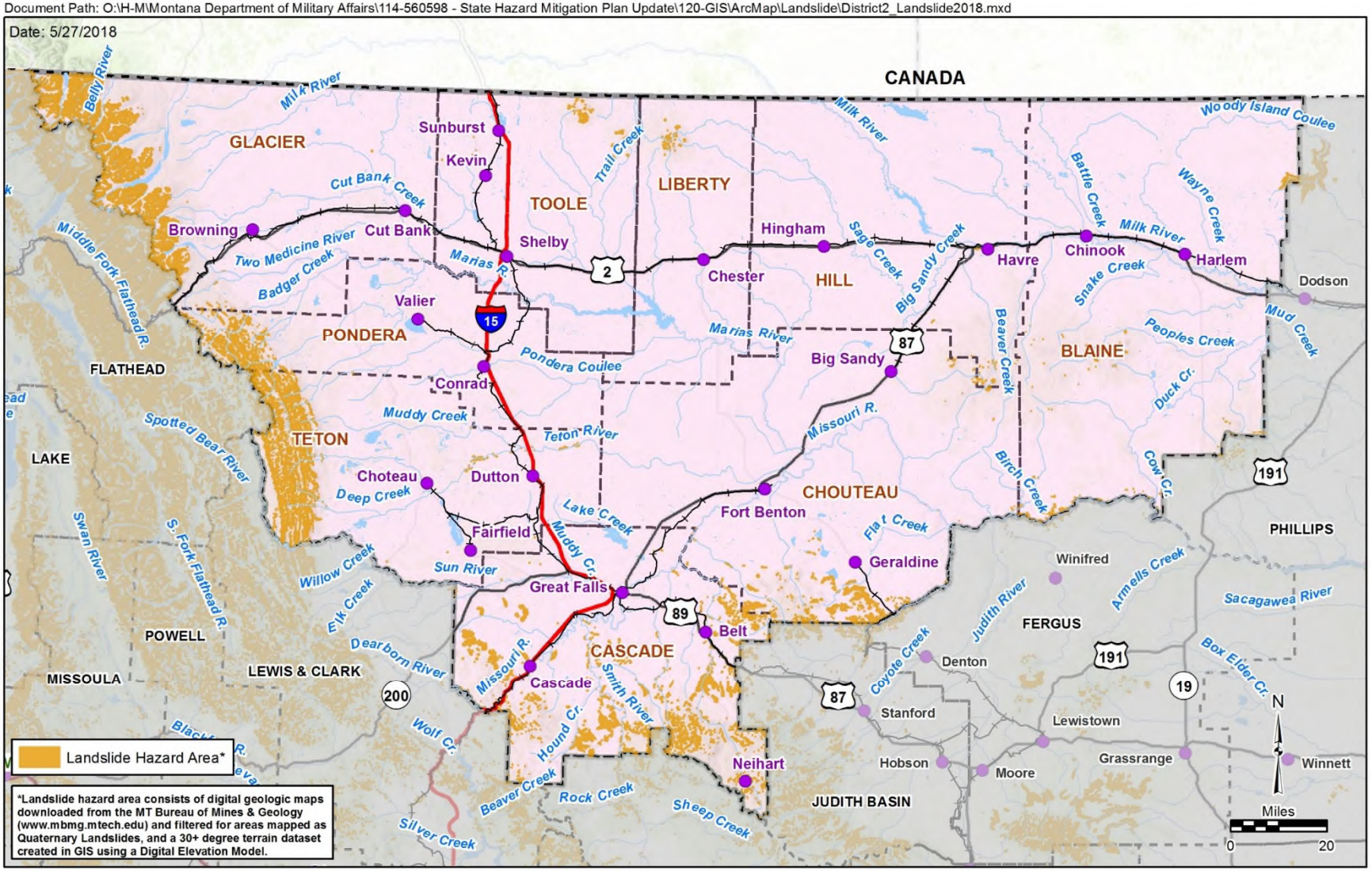
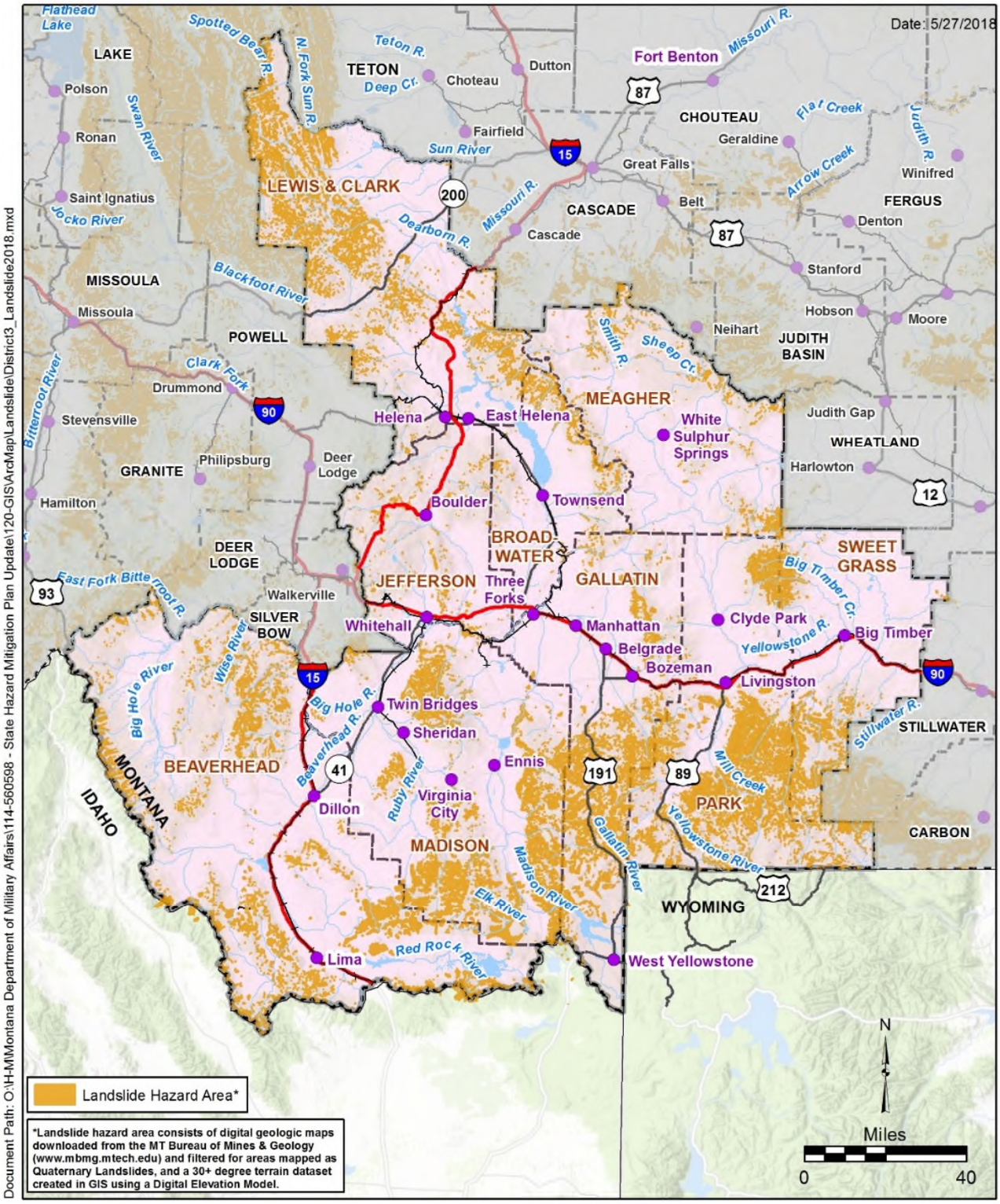


Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 2 County
- County

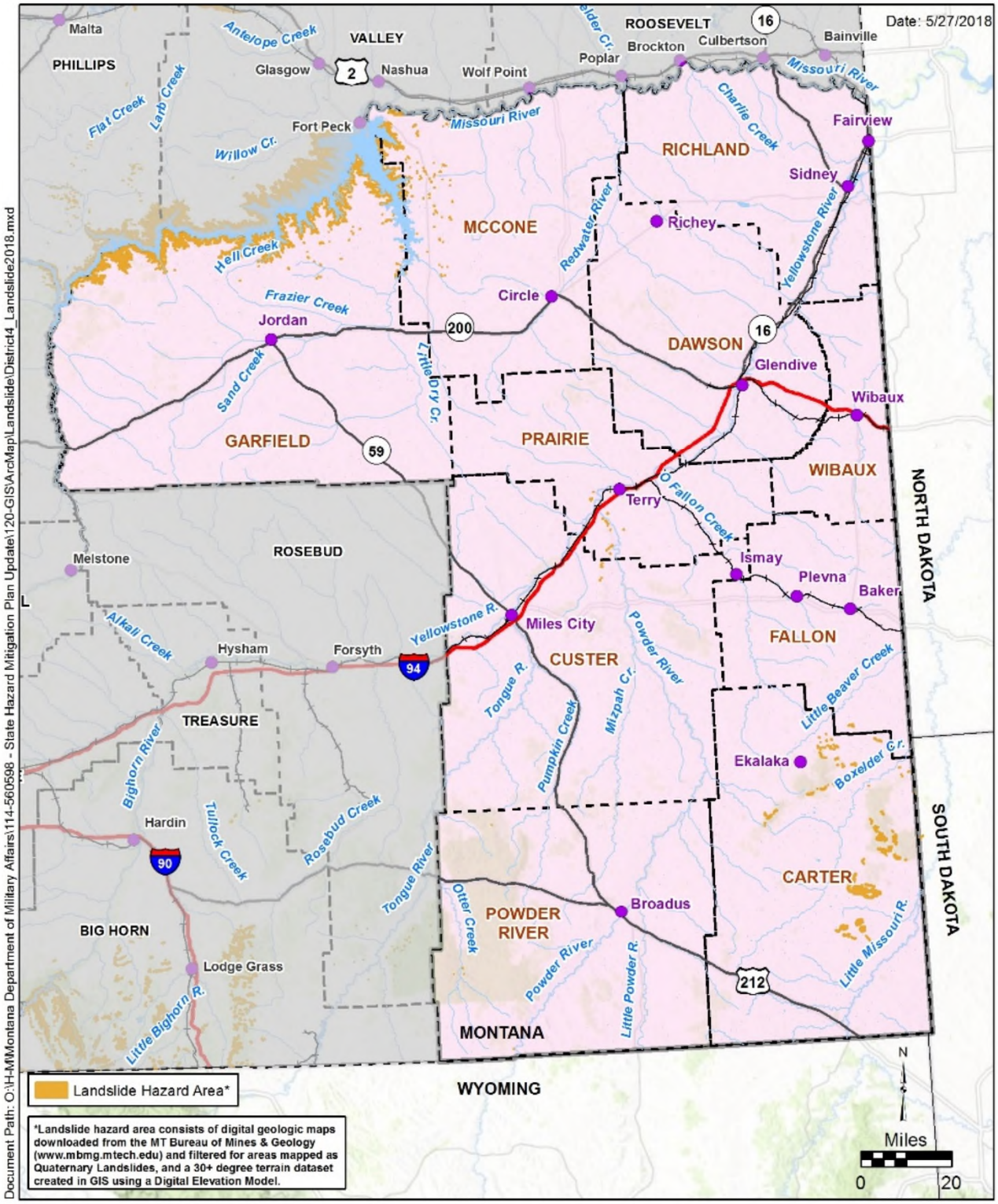
Figure 4.9-1B
Landslide Hazard Area
DES District 2
State of Montana MHMP 2018 Update



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 3 County
- County

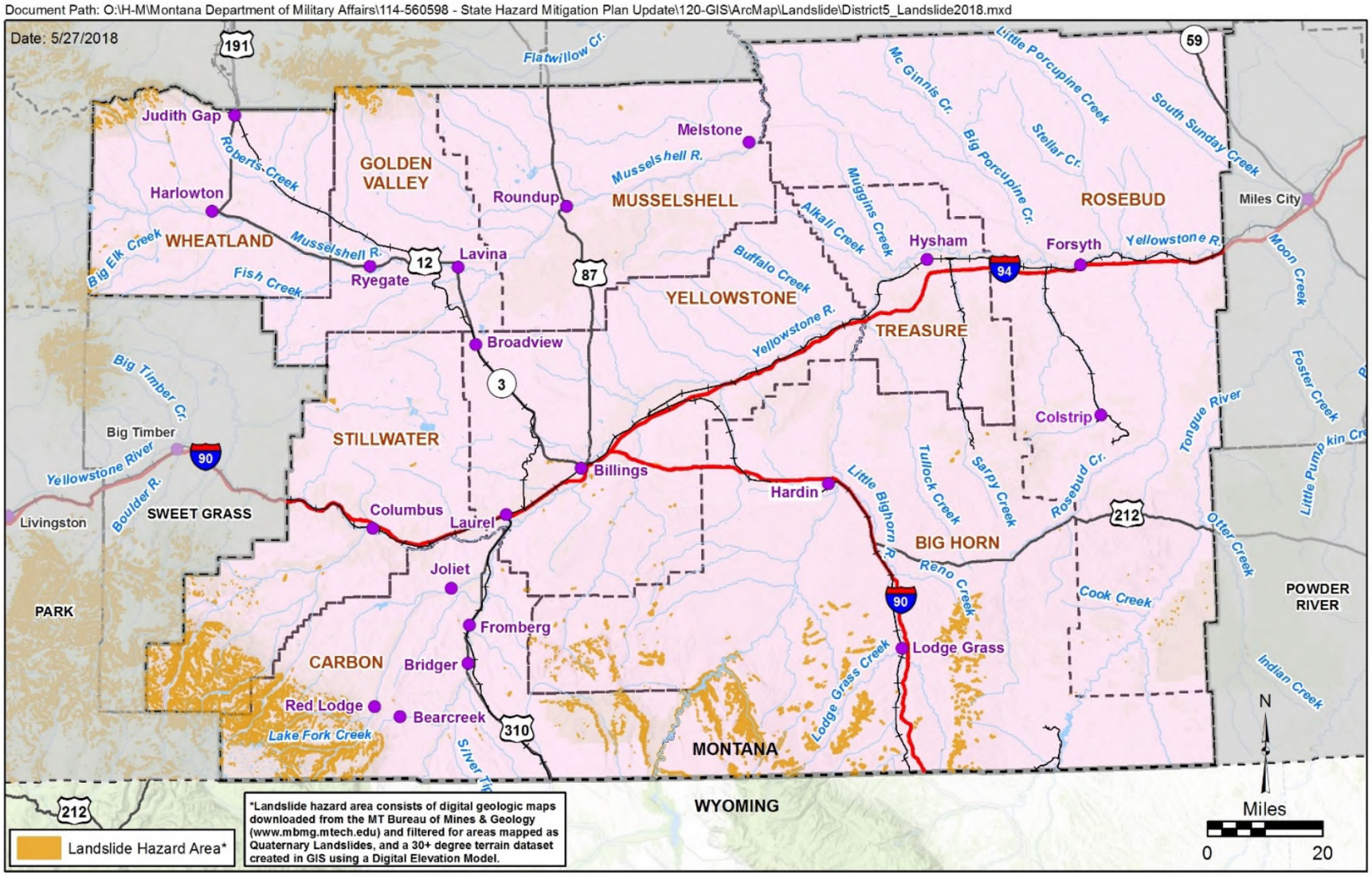
Figure 4.9-1C
Landslide Hazard Area
DES District 3
State of Montana MHMP 2018 Update



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- County
- DES District 4 County

Figure 4.9-1D
Landslide Hazard Area
DES District 4
State of Montana MHMP 2018 Update



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 5 County
- County

Figure 4.9-1E
Landslide Hazard Area
DES District 5
State of Montana MHMP 2018 Update

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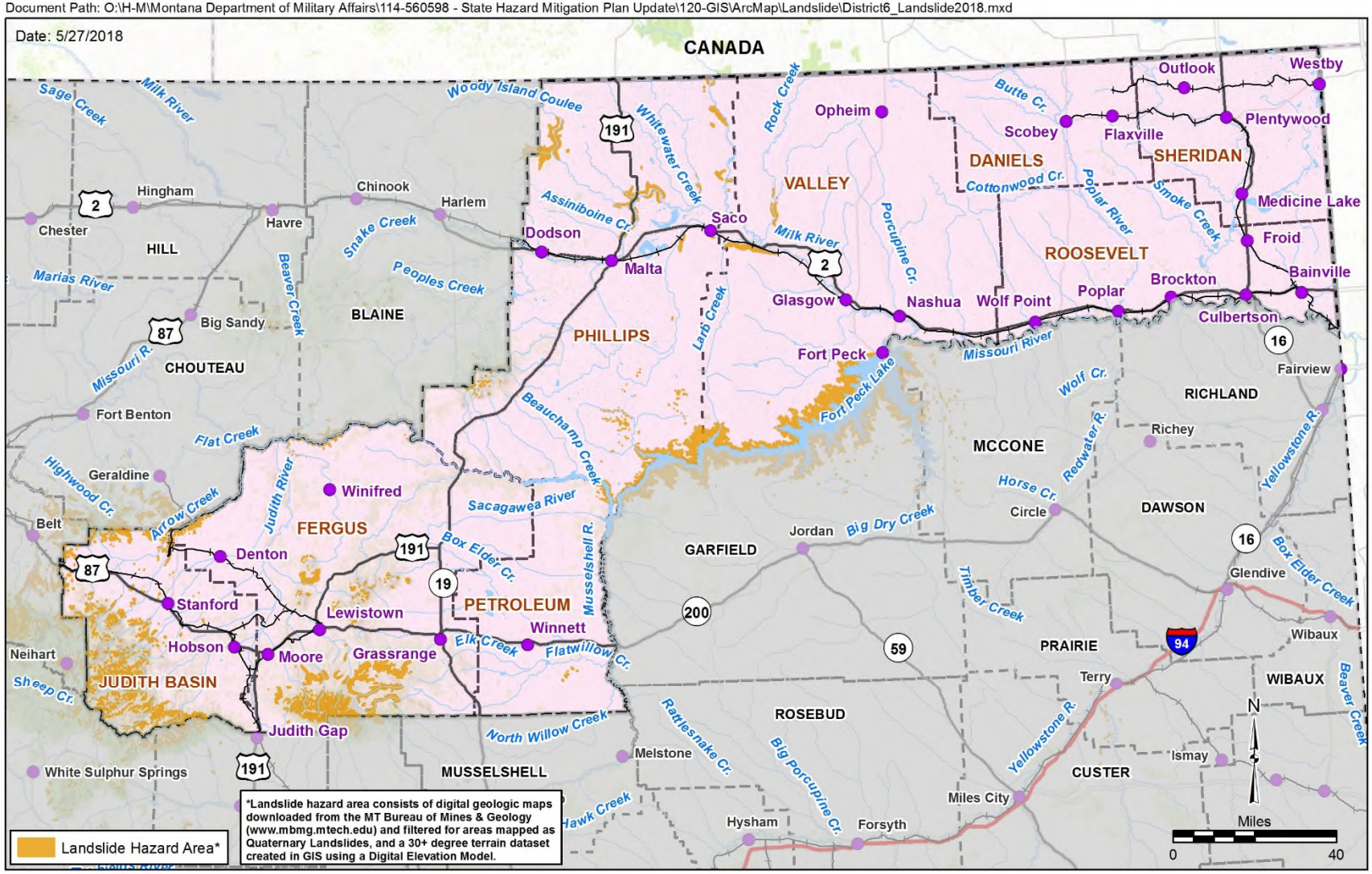

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 6 County
- County

Figure 4.9-1F
Landslide Hazard Area
DES District 6
State of Montana MHMP 2018 Update

The vulnerability analysis shows that DES District 3 has the highest residential and commercial/ agricultural/industrial exposure to the landslide hazard in terms of value; however, District 5 has the most residences at risk. District 1 has the highest critical facility exposure. District 2 has the most vulnerable cultural features. And, District 5 has the most population living in the landslide hazard area followed by District 3.

Table 4.9-4 presents a vulnerability summary of the landslide hazard as it relates to percent exposure and growth rates in Montana's counties, cities and towns. Percent exposure was derived by dividing the value of residential and commercial/agricultural/industrial building stock exposed to the hazard into the total value of the building stock. Percent exposure is a more accurate way of displaying vulnerability than presenting jurisdictions with the highest exposure because it reflects areas with the greatest risk opposed to those with high value real estate. Percent exposure by County is presented in **Appendix B-10**.

Counties with the highest landslide exposure include: Garfield, Valley, McCone, Madison, Gallatin, Yellowstone, and Mineral; while the top city (with population over 500) is Billings (Yellowstone Co.). No other Montana city or town is located within the landslide hazard area. **Figure 4.9-2** presents loss estimates for the top counties and cities/towns showing regional vulnerability.

Percent exposure was multiplied by the population change between the 2010 U.S. Census and 2016 census estimates to present the jurisdictions with the highest risk that are experiencing the fastest growth. A complete ranking is presented **Appendix B-10**.

Counties with the highest landslide exposure experiencing the fastest population growth include: Garfield, Gallatin, Valley, Yellowstone, Madison, Granite, and Missoula counties, while the top city (with population over 500) is Billings (Yellowstone Co.). As stated previously, no other cities or towns are located in the landslide hazard area. **Figure 4.9-3** presents percent exposure and population change for the top counties and cities/towns showing the most vulnerable areas experiencing the fastest population growth.

No risk assessment was completed for the avalanche hazard since avalanche vulnerability mapping does not exist for Montana. Much of the avalanche activity is human-caused and occurs in mountainous areas not developed with structures. In general, the avalanche hazard does not affect the general building stock, critical facilities, cultural resources, or population other than winter recreationists.

Review of Potential Losses in Local Hazard Mitigation Plans

Approximately 40 percent of the local hazard mitigation plans evaluated the landslide hazard in their risk assessment. The following local jurisdictions ranked landslide among their top five hazards: Flathead (#3), Garfield (#3), Lake (#3), Sanders (#5), Teton (#5) counties, and the Flathead Reservation (#3). Avalanche losses were not quantified in the local plans. **Appendix B-10** presents a summary of potential loss estimates due to landslides as calculated in the local Hazard Mitigation Plans.

Table 4.9-4. Landslide Exposure Summary for Top Counties, Cities and Towns

County	% Landslide Exposure	% Growth (2010 to 2016)	# of Building Permits (2010 to 2016)	$ Residential Exposure	# Residences at Risk	$ Commercial/ Ag/Industrial Exposure	# Commercial/ Ag/Industrial Buildings at Risk	$ Critical Facilities Exposure	# Critical Facilities at Risk
Counties with Highest Percent Exposure ($ Residential + $ Commercial- Ag- Industrial Exposure In Hazard Area / Total Exposure)									
Garfield	9.0%	7.94%	0	$12,419,280	157	$126,760	2	$2,417	1
Valley	5.6%	2.25%	4	$30,995,659	182	$891,657	6	$2,929,497	7
McCone	2.6%	-2.00%	0	$3,268,400	34	$0	0	$141,360	3
Madison	1.5%	2.94%	7	$15,031,627	28	$2,853,634	6	$270,203	3
Gallatin	1.4%	14.34%	1,550	$166,110,340	343	$45,047,969	18	$963,139,971	207
Yellowstone	0.9%	6.61%	1,198	$136,653,708	611	$7,694,435	7	$148,531,721	19
Mineral	0.8%	-0.93%	1	$152,870	2	$2,234,220	1	$0	0
Cities/Towns with Highest Percent Exposure (Towns with Pop. > 500) ($ Residential + $ Commercial-Ag- Industrial Exposure in Hazard Area / Total Exposure)									
Billings	50.5%	5.58%	NA	$135,568,568	609	$7,694,435	7	$0	0
Counties with Greatest Percent Exposure with Fastest Growth Rates (% Exposure X % Population Change 2010 to 2016)									
Garfield	9.0%	7.94%	0	$12,419,280	157	$126,760	2	$2,417	1
Gallatin	1.4%	14.34%	1,550	$166,110,340	343	$45,047,969	18	$963,139,971	207
Valley	5.6%	2.25%	4	$30,995,659	182	$891,657	6	$2,929,497	7
Yellowstone	0.9%	6.61%	1,198	$136,653,708	611	$7,694,435	7	$148,531,721	19
Madison	1.5%	2.94%	7	$15,031,627	28	$2,853,634	6	$270,203	3
Granite	0.2%	8.58%	0	$107,984	1	$628,910	1	$0	0
Missoula	0.3%	5.88%	930	$10,431,716	25	$0	0	$1,032,240,117	203
Cities/Towns with Highest Percent Exposure Which Have Fastest Growth Rates (Towns with Pop. > 500) (% Exposure X % Population Change 2010 to 2016)									
Billings	50.5%	5.58%	NA	$135,568,568	609	$7,694,435	7	$0	0

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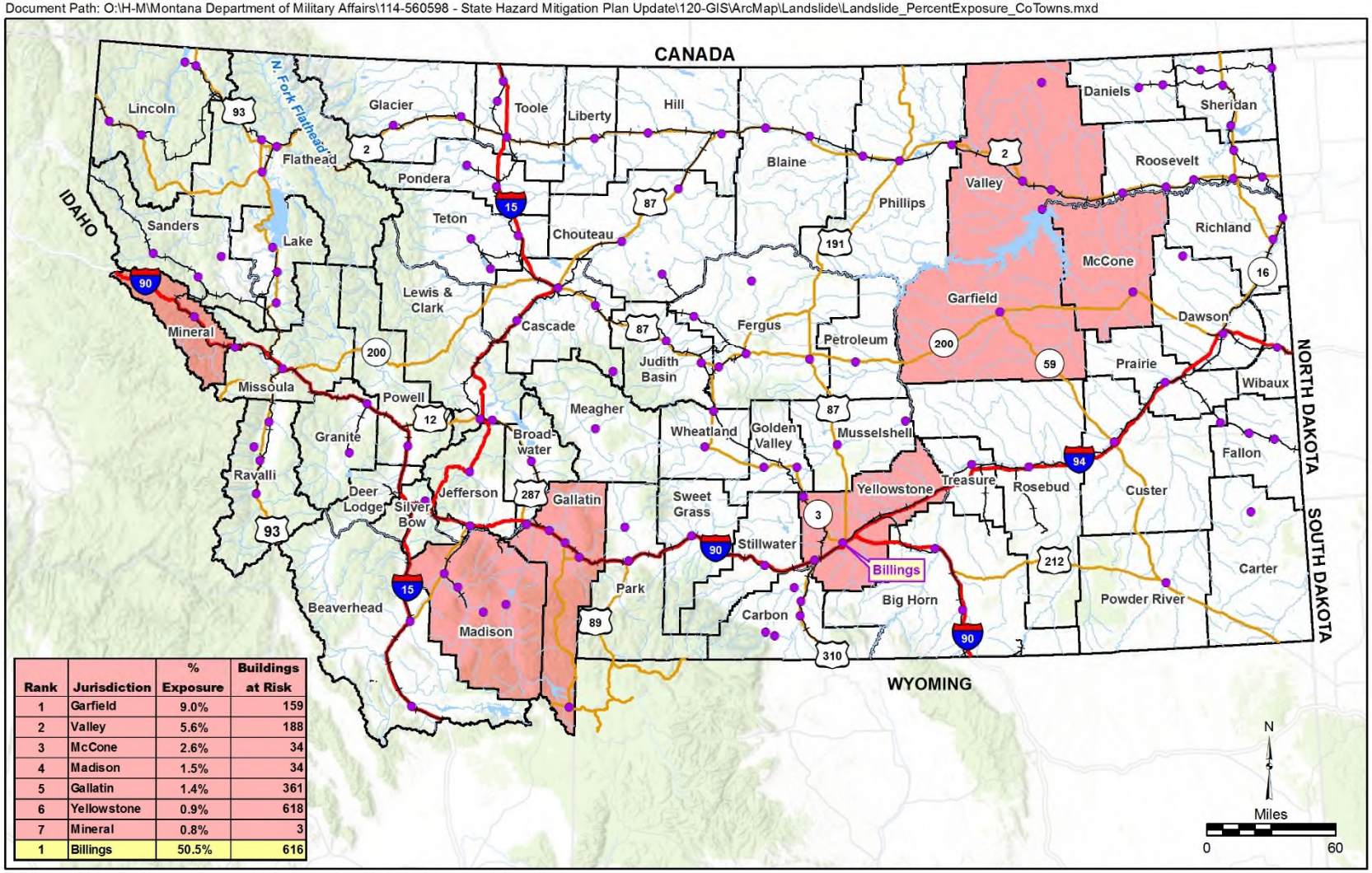

Rank	Jurisdiction	% Exposure	Buildings at Risk
1	Garfield	9.0%	159
2	Valley	5.6%	188
3	McCone	2.6%	34
4	Madison	1.5%	34
5	Gallatin	1.4%	361
6	Yellowstone	0.9%	618
7	Mineral	0.8%	3
1	Billings	50.5%	616

Date: 6/2/2018

Figure 4.9-2
Landslide - Percent Exposure for Top Counties and Cities/Towns
State of Montana MHMP 2018 Update

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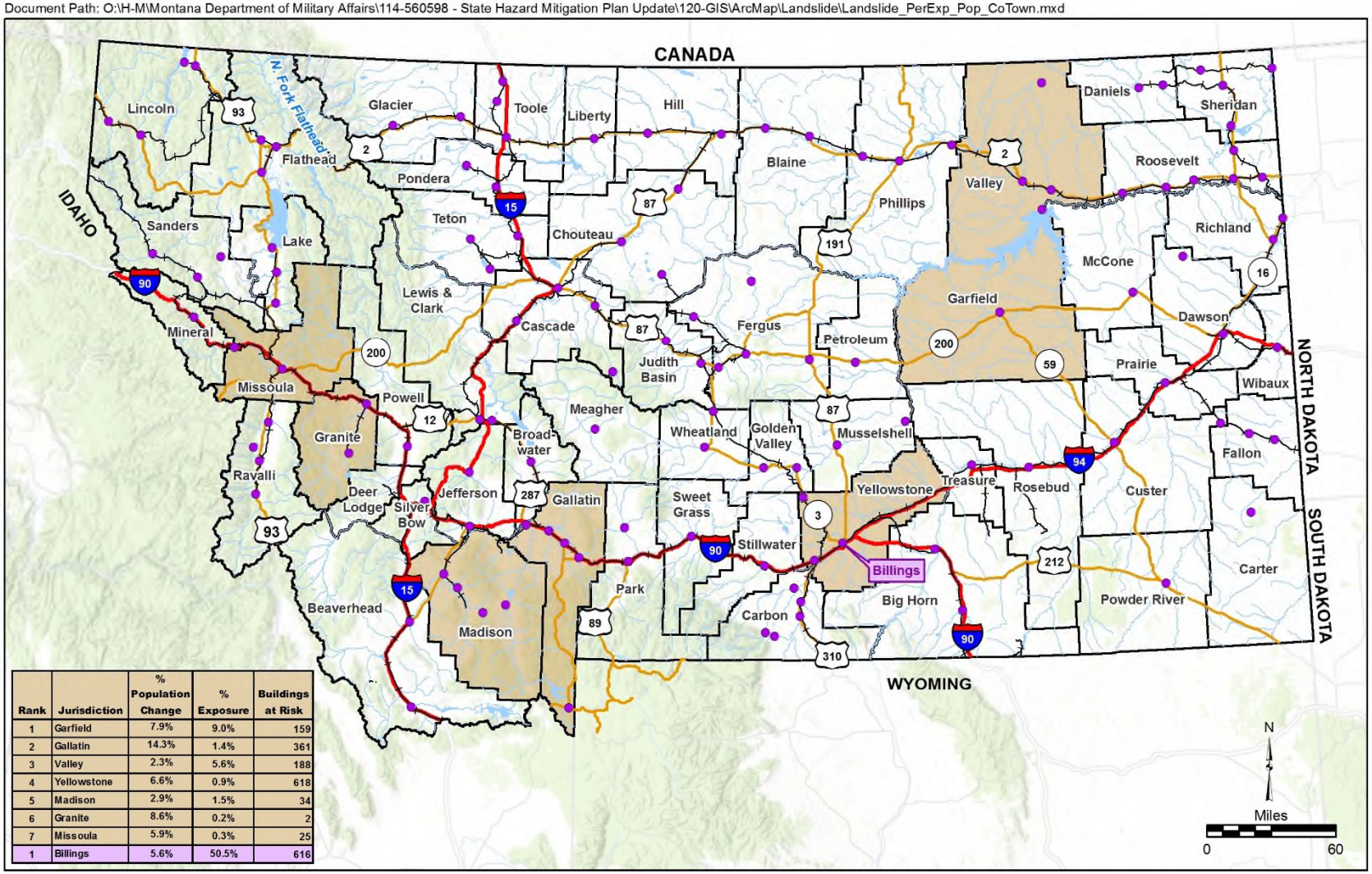

Rank	Jurisdiction	% Population Change	% Exposure	Buildings at Risk
1	Garfield	7.9%	9.0%	159
2	Gallatin	14.3%	1.4%	361
3	Valley	2.3%	5.6%	188
4	Yellowstone	6.6%	0.9%	618
5	Madison	2.9%	1.5%	34
6	Granite	8.6%	0.2%	2
7	Missoula	5.9%	0.3%	25
1	Billings	5.6%	50.5%	616

Buildings at Risk = Residences, Commercial, Agricultural, and Industrial structures in hazard area.

Date: 6/2/2018

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- County

Figure 4.9-3

Landslide - Percent Exposure x Percent Population Change for Top Counties and Cities/Towns State of Montana MHMP 2018 Update

Seven (7) local plans profiled the avalanche hazard including: Missoula and Stillwater counties which ranked avalanche as their #7 hazard, Madison (#13), Deer Lodge (#14), Granite (#15), Park (#18), and Carbon (no rank). Loss estimates were not provided in local plans for the avalanche hazard.

Vulnerability of State Property

Since past damages are a reflection on future vulnerability, Montana's state facilities do not appear to be highly vulnerable to the landslide hazard. There have been no insurance claims related to landslide damage for state-owned buildings in the past 10 years. Critical facilities located in the landslide hazard area are listed **Appendix B-10**.

The greatest exposure to state infrastructure is to roadways. Two of the major slides, the Beartooth Highway slide on U.S. Highway 212 and the Goat Lick slide on Highway 2, were discussed previously. Slides that bury and undermine roadways represent significant costs to the state. Although damages to public roads from landslides have occurred, the Montana Dept. of Transportation does not maintain a compilation of losses and repairs to roadways as a result of landslides.

State-owned property is generally not vulnerable to avalanche with the possibility of buildings adjacent to Mount Sentinel on the University of Montana campus. There is not historical record of damages from avalanches; however, the potential does exist.

Future Development

As urbanization and development increase in Montana, particularly in the mountainous regions, the potential for large losses from landslides also increases. Many local jurisdictions have subdivision regulations in place whereby, development is not allowed on steep slopes. Landslide risk should be evaluated on a case-by-case basis to reduce or eliminate exposure of public infrastructure and private development.

In many cases buyers are aware of the landslide problem and invest in engineering solutions, but in other cases they're in the dark. Geological surveys and soil-sampling are generally required as part of the subdivision approval process, but those reports are not always shared with buyers.

County subdivision regulations do not currently prevent new construction in avalanche prone areas as these areas have not been mapped. There is currently no disclosure requirement for properties located in areas subject to avalanche.

Climate Change

Landslides represent a major threat to human life, constructed facilities and infrastructure in most mountainous regions of the world. Considering future climate scenarios and modified precipitation patterns, the landslide activity will most probably change too. More precipitation now falls as rain rather than snow in northern regions and, as a consequence, more landslides are expected to occur. It is expected that shallow slips and debris flows will take place more frequently as a consequence of more extreme weather events. (https://globalwarmingisreal.com/2014/04/03/landslides-and-climate-change-north-america/)

While it is hard to tell the exact results that climate change will have on avalanches, one possibility includes an increase in the number of avalanches from current levels and the duration of high avalanche danger, followed by an eventual drop-off if snow-pack continues to decline over time.

Average winter temperatures in Montana have increased by more than 3 degrees over the past century, which has led to more rain-on-snow events and long-term declines in snowpack. These warming trends have the potential for creating the "right" conditions for avalanches. A warming climate in Montana has already meant more winter days above the freezing point, which can lead to a significantly wetter snowpack - possibly resulting in wet, as opposed to dry, avalanches. http://www.climatechangemt.org/learn/climate-impacts-in-montana/avalanches

Data Limitations

Risk assessment results are only a general representation of potential vulnerabilities. The landslide impact area could be improved for future MHMP updates with additional mapping of geologic units prone to slippage or mass movement. Mapping of avalanche prone areas in the State of Montana has not been completed and as such, a vulnerability analysis could not be performed for this Plan.

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4.10 Dam Failure

CPRI SCORE = 2.56

Description and History

Dam failures are usually associated with intense rainfall or prolonged flood conditions, but can occur during clear weather. Dam failure may be caused by faulty design, construction and operational inadequacies, uncontrolled seepage through the dam, or a flood event larger than the design flood. The greatest threat from dam failure is to people and property in areas immediately below the dam since flood discharges decrease as the flood wave moves downstream. Levees and dikes are discussed in under *Flooding* in *Section 4.3*.

According to FEMA, dams are classified into one of three categories, as outlined below:

Low Hazard Potential - Dams where failure or misoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.

Significant Hazard Potential - Dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

High Hazard Potential - Dams where failure/misoperation will probably cause loss of human life.

Montana has approximately 3,667 dams with normal capacity of 50-acre feet (DNRC, 2018). Of these dams, 197 are considered "high-hazard dams", indicating there is potential for loss of life downstream. **Table 4.10-1** summarizes the hazard categories of dams by ownership.

Table 4.10-1. Number of Dams within the State of Montana

Hazard Categories	Federal Dams	State Dams	Local Government Dams	Public Utility Dams	Private Dams	Total
High	44	32	39	19	63	**197**
Significant	24	10	5	4	158	**201**
Low	565	128	44	13	2,519	**3,269**
TOTAL	**633**	**170**	**88**	**36**	**2,740**	**3,667**

Source: DNRC, 2018

Table 4.10-2 presents the high hazard dams in Montana that are over 100 feet high or impound 100,000 acre-feet of storage.

Table 4.10-2. Montana High Hazard Dams >100 Feet High or with >100,000 Acre-Feet of Storage

Dam Name	River	Nearest City	Height (ft)	Storage (acre-ft)	Drainage Area (sq mi)	County(s)	Owner Name
Yankee Doodle Tailings Dam	N/A	Butte	700	Not known	NA	Butte-Silver Bow	Montana Resource
Hungry Horse	South Fork Flathead River	Hungry Horse	524	3,588,000	1,640	Flathead	USBR

Table 4.10-2. Montana High Hazard Dams >100 Feet High or with >100,000 Acre-Feet of Storage

Dam Name	River	Nearest City	Height (ft)	Storage (acre-ft)	Drainage Area (sq mi)	County(s)	Owner Name
Yellowtail (Bighorn Lake)	Bighorn River	Saint Xavier	525	1,381,189	19,650	Big Horn	USBR
Libby (Lake Koocanusa)	Kootenai River	Libby	422	6,027,000	8,985	Lincoln	USACE
Fort Peck Dam	Missouri River	Nashua	250	18,463,000	57,500	McCone, Garfield, Valley	USACE
Canyon Ferry	Missouri River	Canyon Ferry	225	2,051,000	15,860	Lewis & Clark	USBR
Tiber	Marias River	Loma	211	1,515,522	4,923	Liberty	USBR
Kerr	Flathead River	Agency	186	1,960,000	7,096	Lake	CSKT
Noxon Rapids	Clark Fork, Pend Oreille River	Noxon	179	4,000,000	21,800	Sanders	Avista Corp.
Gibson	Sun River	Sims	199	99,100	575	Teton/Lewis & Clark	USBR
Clark Canyon	Beaverhead River	Dillon	148	257,152	1,550	Beaverhead	USBR
Hauser Dam	Missouri River	Craig	111	64,253	16,876	Lewis & Clark	NWE
Holter Dam	Missouri River	Craig	124	240,000	17,150	Lewis & Clark	NWE
Fresno	Milk River	Havre	111	129,062	2,828	Hill	USBR
Lake Sherburne	Swiftcurrent Creek	Babb	117	64,793	--	Glacier	USBR

Source: http://www.usbr.gov/projects/; NID, 2012.

Notes: CSKT = Confederated Salish & Kootenai Tribes; USBR = U.S. Bureau of Reclamation; NWE = NorthWestern Energy; USACE = U.S. Army Corps of Engineers.

Dam failure floods in Montana have primarily been associated with riverine and flash flooding. Nevertheless, the potential for a major flood occurring solely as a result of dam failure is a real possibility. A partial list of dam-failure related flooding in Montana is presented in **Table 4.10-3.** Considering only the events shown in the table, there have been 34 deaths and extensive property damage from dam-failure flooding in Montana.

Table 4.10-3. Montana Dam Failures and Incidents

Date	Description of Event
April 14, 1908	**Hauser** Dam north of Helena in Lewis and Clark County failed after water pressure undermined masonry footing of dam causing 300-foot breach.
June 4, 1908	**White's Reservoir Dam near Butte** failed leaving the city without phones, telegraphs, electricity, street cars, or railroad service.
July 11, 1916	**Superior Dam**, north of Meaderville, broke and flooded **northeast Butte** with mine tailings. $8,000 in damages.
1927	**Pattengail Creek Dam in Beaverhead County** failed causing 4 known deaths and near complete destruction of the towns of Dewey and Wise River.
March 1937	**Midway Dam**, 40 miles northwest of Nashua in **Valley County**, breached during the Porcupine Creek flood when the spillway was undermined by huge floating ice cakes. When the dam failed, a four-foot liquid wall swept down the valley causing extensive damage.

Table 4.10-3. Montana Dam Failures and Incidents

Date	Description of Event
July 1946	**Carrol Dam**, located eight miles northwest of **Plentywood** (Sheridan Co.), failed following several inches of rain in a short timeframe. There were no fatalities but destruction was evident throughout the 15-mile valley which took the brunt of the flood including the destruction of homes and farm building.
April 1952	**Frenchman Dam** on Frenchman Creek failed upstream of the Milk River, in Phillips County, 20 miles north of **Saco.** The dam failure caused the highest peak ever recorded on the Milk River below its confluence with Frenchman Creek. Damage was estimated at $150,000.
August 30, 1959	**Hebgen Dam** in **Gallatin County** was damaged due to earthquake which killed 28 people. Four hydraulic gates failed which allowed 3,400 cfs of water to be released into Madison River.
June 8, 1964	Failure of **Swift Reservoir** on Birch Creek in **Pondera County** and **Two Medicine Dam** on Two Medicine Creek in **Glacier County** resulted in the loss of 30 lives on the Blackfeet Reservation, 265 homes and 20,000 acres of hay land.
6/20/1984	**Browns Lake Dam**, located in **Beaverhead County**, was overtopped resulting in washed out roads and bridges downstream. Property damage was estimated at $100,000.
2/11/1996	Incident Response in **Granite Co.** (EO 16-96) for sinkhole on downstream face of **East Fork of Rock Creek Dam.** Some evacuation downstream and reservoir was drawn down.
6/1/1998	Incident Response for **Tin Cup Dam** (EO 9-98). State response to a leak in Tin Cup Dam, located in the Selway-Bitterroot Wilderness Area of the Bitterroot National Forest, **Ravalli County**.
Spring 1998	**Anita Dam** outlet failure north of Chinook in **Blaine County**. Evacuation necessary.
June 23, 2002	Failure of **Ross Dam** in **Garfield County**; evacuation necessary but limited damage downstream. One house flooded. Downstream stock dams broke, gravel roads washed out.
July 6, 2017	Privately-owned irrigation dam in **Madison County** failed due to deteriorated outlet pipe. Contractor was able to drain portion of reservoir before failure; minimal downstream damage.
May 11, 2018	**Badger Creek** irrigation reservoir dam (small low hazard dam) in **Meagher County** failed from dam overtopping during flood event.

Source: DES, 2013; DNRC, 2018.

Aging infrastructure is to blame for a number of failed dams in Montana. There have been numerous small failures primarily related to deterioration of corrugated metal pipe outlet works, which causes slow release of reservoir contents along the outside of the outlet pipe, with minimal downstream property damage but serious damage to the structure (DNRC, 2018).

Dams with potential for loss of life downstream are subject to stringent permitting, inspection, operation and maintenance requirements. Deficiencies and problems are identified in advance and actions taken to mitigate the chance that the deficiency leads to failure. If a deficiency cannot be immediately addressed due to lack of data or lack of dam owner resources, risk reduction measures are put in place.

When several low hazard private dams are in sequence on the same drainage they could be considered high hazard when combined. The risk of a domino effect dam failure is a possibility with increased flooding.

Declared Disasters

Two State emergency orders have been issued due to pending dam failures in Montana; EO-16-96 for the East Fork of Rock Creek Dam in Granite County in 1996, and EO-9-98 for the Tin Cup Dam in Ravalli County near Hamilton in 1998. Neither of these dams failed. No federal disaster declarations have been issued due to dam failure in Montana.

Probability and Magnitude

The degree and extent of damage from dam failure depend on the size of the dam and the circumstances of failure. A small dam retaining water in a stock pond may break resulting in little more damage than the loss of the structure itself. In contrast, a similar dam break could result in the loss of irrigation water for a season, causing extreme financial hardship to many farmers. An even larger dam failure might bring about considerable loss of property, destruction of cropland, roads and utilities and even loss of life. Consequences of dam failure that are more far-reaching can include loss of income, disruption of services and environmental devastation.

Probability for the MHMP was assessed based on hazard frequency over a 10-year period. Since dam failure occurs less than once every 10 years it was given a "Possible" probability rating. Increased precipitation due to climate change may increase future probability of dam failure.

Vulnerability and Area of Impact

Numerous factors contribute to determining dam vulnerability including: failure to meet design standards; poor construction practices, inattention to operation procedures, and lack of maintenance. The vulnerability of property and population in inundation areas downstream from dams is related to velocity and depth of potential dam failure flows as well as distance downstream.

The Dam Safety Act required that owners of all high and significant hazard dams prepare Emergency Action Plans (EAPs). The objectives of the EAP is to pre-plan the coordination of necessary actions by the dam owner and the responsible local and state emergency management officials; identify conditions which could lead to dam failure in order to initiate emergency measures that could prevent or minimize the loss of life or property; and, provide timely notification of a warning of a dam emergency and evacuation in the event of potential failure of the dam. According to DNRC, inundation maps for many of the private dams are of poor quality.

Buildings downstream of dams in the spillway shadow are at risk of flooding due to operational flows associated with dams. Inundation maps only consider dam failure and mapping of operations flow maps are typically not available. However, this is changing in the dam safety industry, following the Oroville, California dam incident, where the lack of a spillway failure inundation map was a major problem.

Statewide Vulnerability

Vulnerability to dam failure is compounded by differences in the dam inundation areas versus the 100-year floodplain. Floodplain development, in most cases, is regulated, whereas dam inundation areas are not. Extreme rain and snow melt events can exceed the flood storage capacity of even large reservoirs. At such times, excess water that passes over the spillway (the primary purpose of which is to protect the dam) may cause damages downstream that approach those damages that would have occurred had the dam not been built. In addition, failure of a dam can produce extreme, rapid flood damages outside the 100-year or even 500-year floodplains (DES, 1996).

As part of this project, a GIS layer was updated of the inundation areas of the high hazard dams in the Montana (federal, state and private). Inundation maps for the federal and private high hazard dams, available from EAPs were digitized and consolidated into a GIS layer together with DNRC's

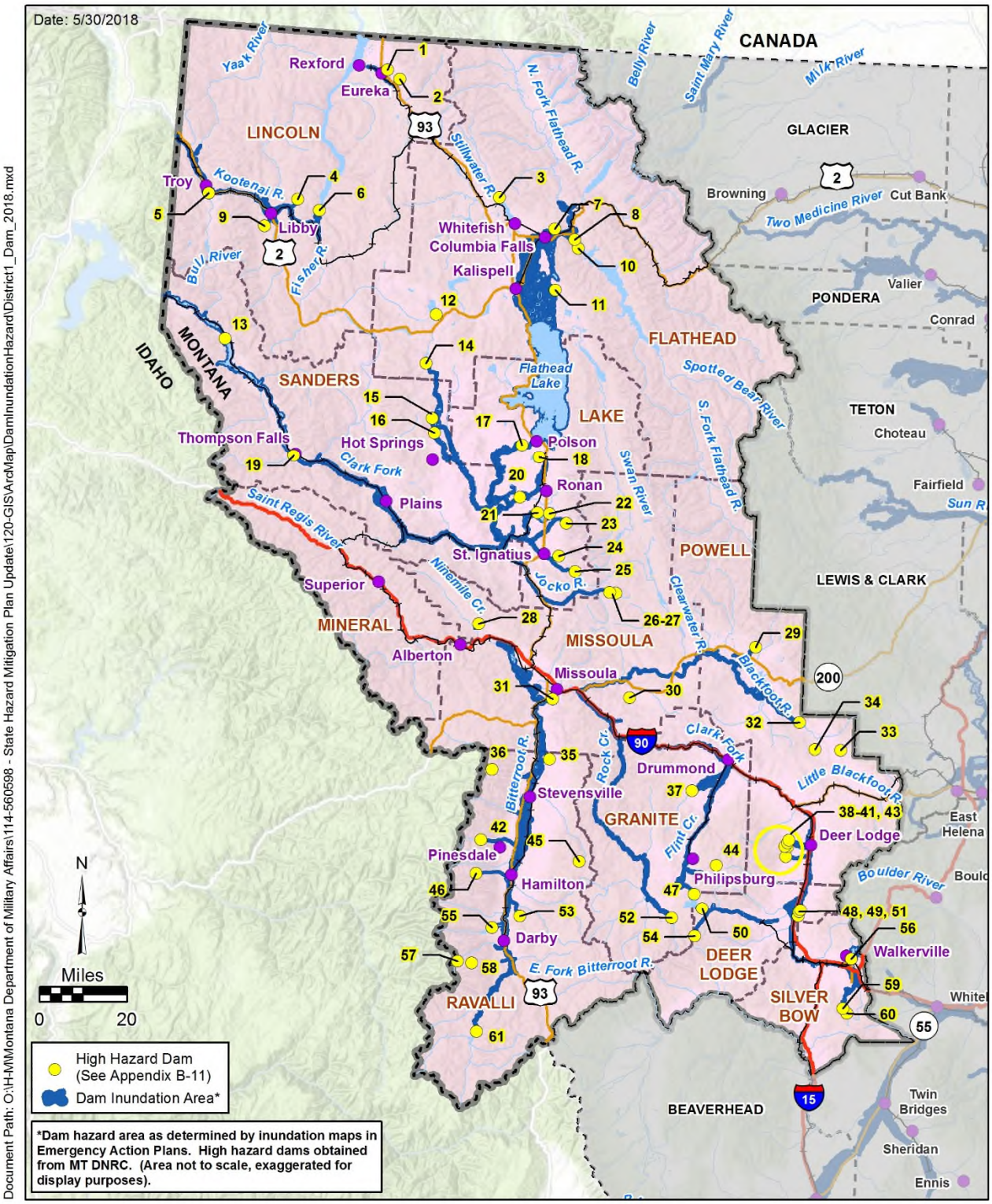
inundation areas for the state-owned dams. The U.S. Bureau of Reclamation and U.S. Army Corps of Engineers did not provide inundation maps for their dams and therefore, data for several federally-regulated dams were not available for the MHMP analysis. The dam failure hazard area is presented on six maps by DES District (**Figures 4.10-1A through F**).

To complete the vulnerability analysis for the dam failure hazard, the dam inundation impact area was intersected with the general building stock, critical facility, and cultural resource datasets. Vulnerable population in was calculated based on U.S. Census county estimates. Exposure values are presented in **Table 4.10-4**. **Appendix B-11** presents supporting documentation from the risk assessment including a list of critical facilities in the dam inundation areas.

Table 4.10-4. Dam Failure Exposure Summary by DES District

Item	District 1	District 2	District 3	District 4	District 5	District 6
Inundation Area (Square Miles)	751.4	520.2	580.1	299.1	573.4	265.0
Percent Hazard Area	3.0%	2.1%	2.3%	1.1%	2.6%	1.1%
Residential Building Exposure ($)	$4,302,531,713	$1,374,676,305	$1,746,101,405	$623,687,813	$884,711,429	$404,129,008
Residential Building Exposure (# structures)	29,252	10,752	11,264	5,660	7,866	4,352
Commercial, Ag, Industrial Building Exposure ($)	$1,800,581,631	$886,003,333	$767,433,457	$269,108,053	$738,456,221	$209,899,675
Commercial, Ag, Industrial Building Exposure (# structures)	4,628	2,307	2,513	1,381	2,234	1,205
Critical Facility Exposure ($)	$110,140,358	$0	$160,127,644	$63,083,238	$27,088,382	$5,052,175
Critical Facility Exposure (# structures)	46	0	33	13	3	5
Cultural Resources (# of features)	8	13	8	4	7	1
Population Living in Hazard Area	59,935	19,378	18,427	7,893	12,675	9,599
Population Under 18 Living in Hazard Area	21,501	7,825	5,719	2,930	5,941	4,407
Population Over 65 Living in Hazard Area	22,841	6,374	6,277	3,785	4,692	3,669

DES District 1 has the highest residential and commercial/agricultural/industrial building exposure from the dam failure hazard, followed by District 3 then District 2. The highest number of critical facilities at risk is in District 1; although, those in District 3 are worth more. District 2 has the most cultural resource exposure while District 1 has the most population at risk; more than three times that of District 2 which has the second most population in the dam failure impact area.

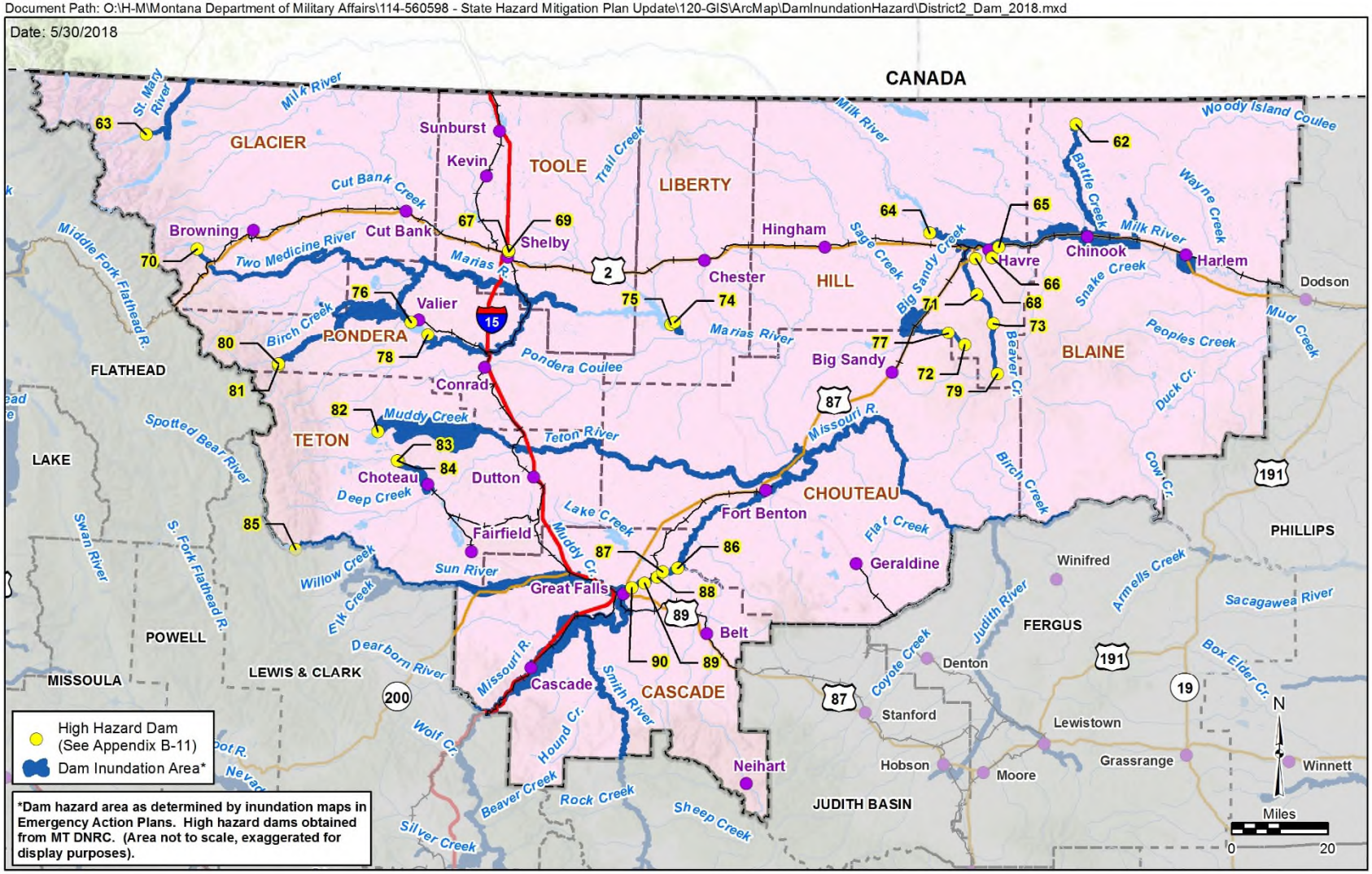


Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 1 County
- County

Figure 4.10-1A
Dam Failure Hazard Area
DES District 1
State of Montana MHMP 2018 Update

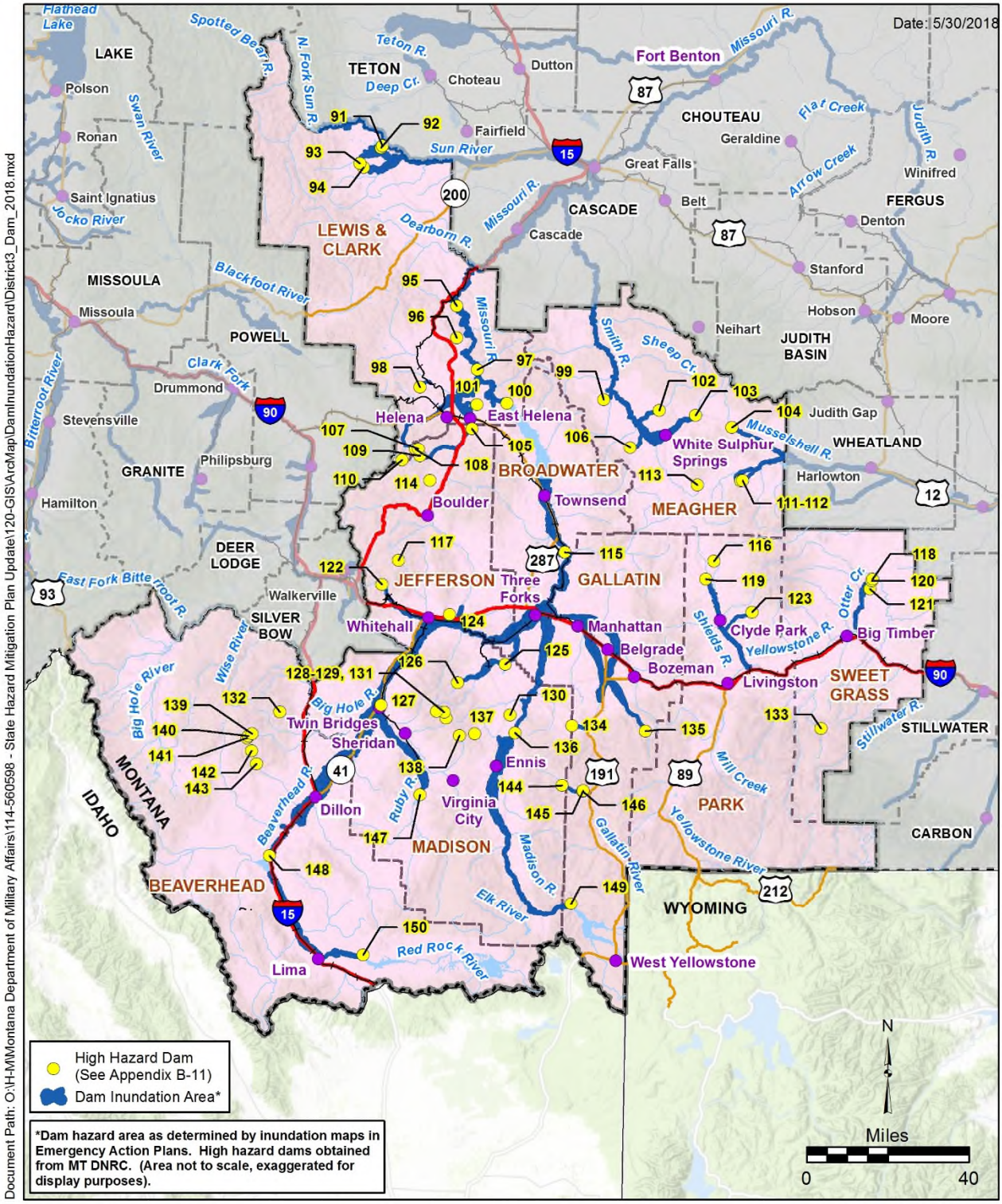
Document Path: O:\H-M\Montana Department of Military Affairs\114-560598 - State Hazard Mitigation Plan Update\120-GIS\ArcMap\DamInundationHazard\District2_Dam_2018.mxd



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 2 County
- County

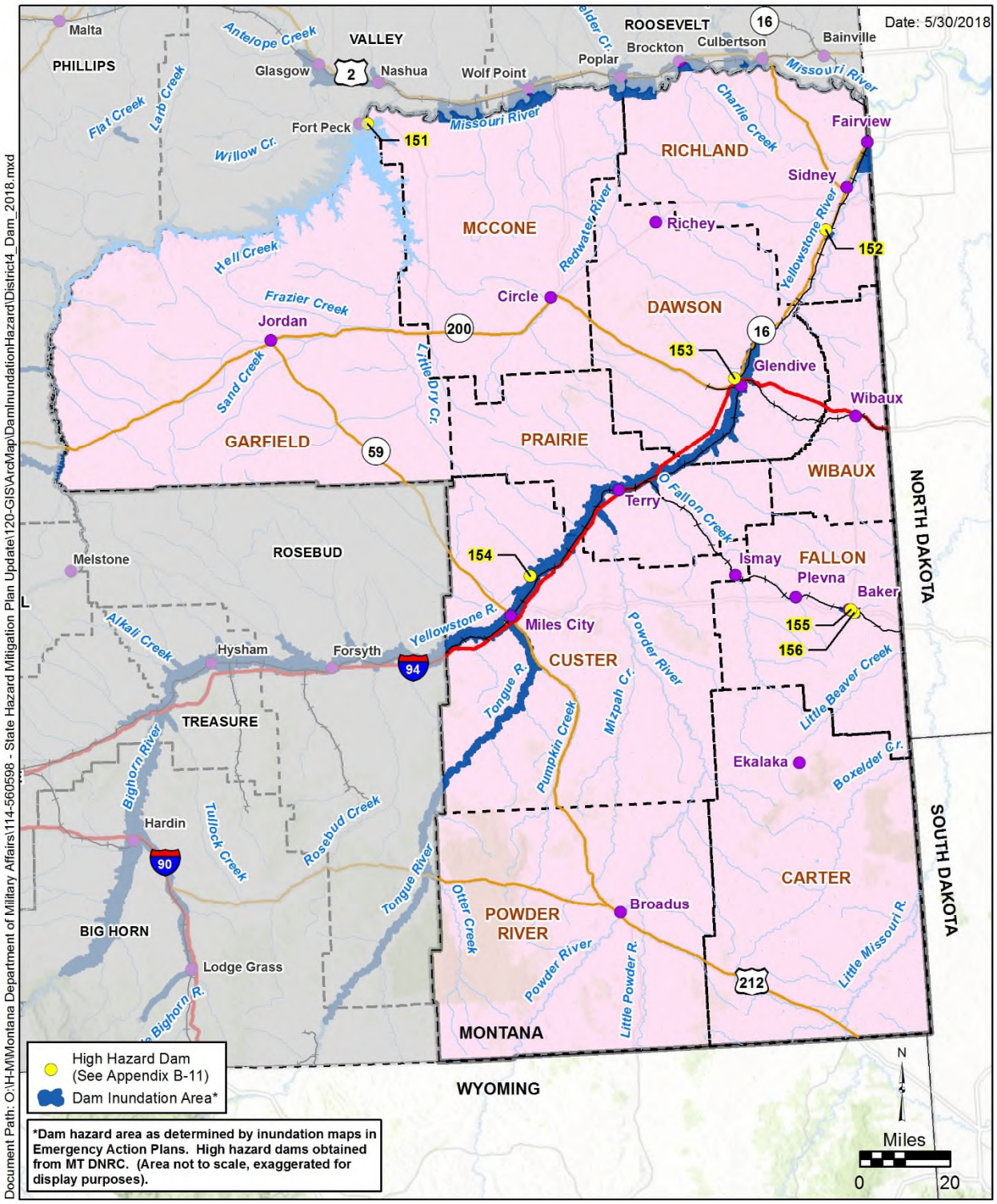
Figure 4.10-1B
Dam Failure Hazard Area
DES District 2
State of Montana MHMP 2018 Update



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 3 County
- County

Figure 4.10-1C
Dam Failure Hazard Area
DES District 3
State of Montana MHMP 2018 Update



Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- County
- DES District 4 County

Figure 4.10-1D
Dam Failure Hazard Area
DES District 4
State of Montana MHMP 2018 Update

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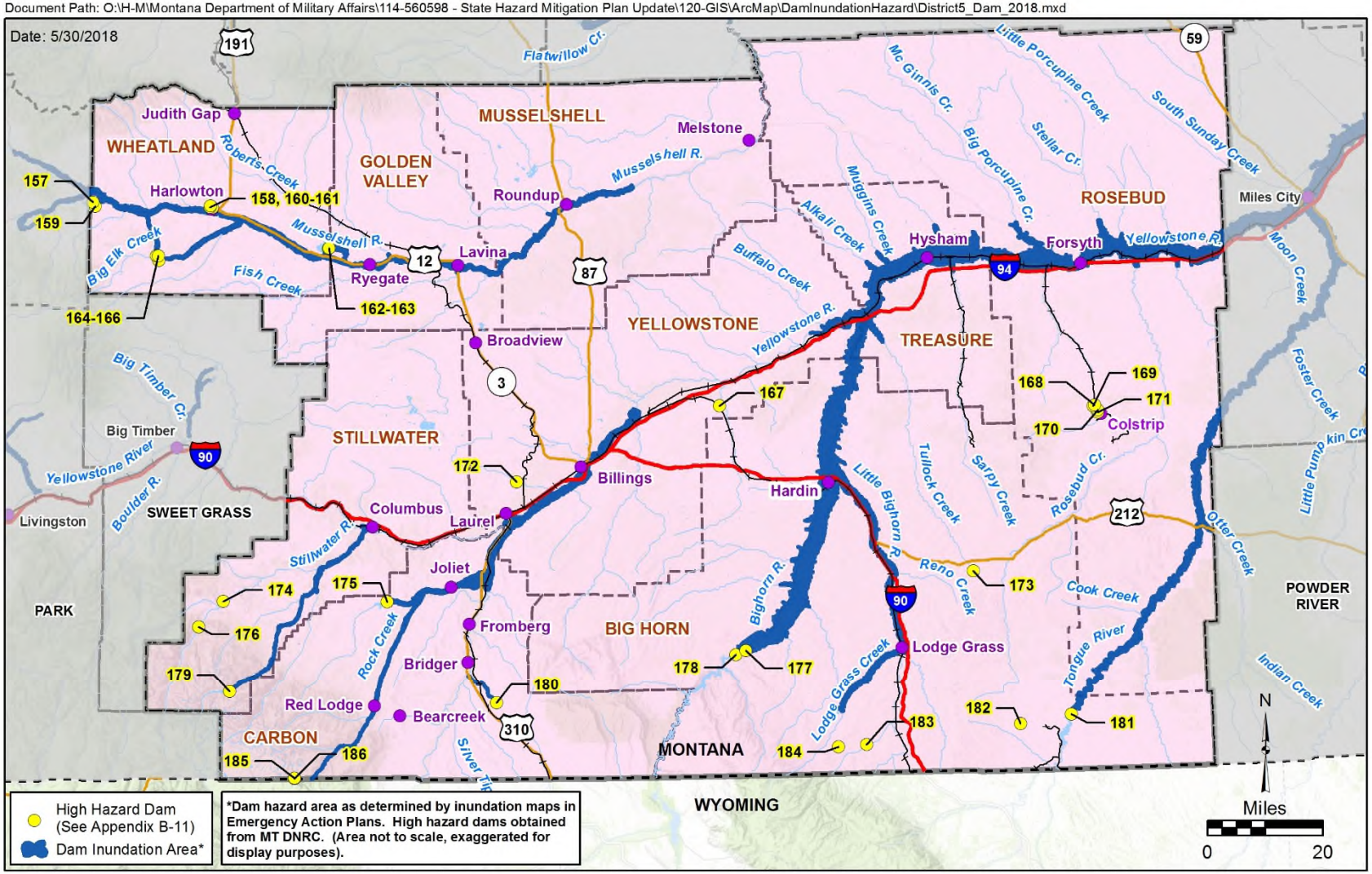

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 5 County
- County

Figure 4.10-1E
Dam Failure Hazard Area
DES District 5
State of Montana MHMP 2018 Update

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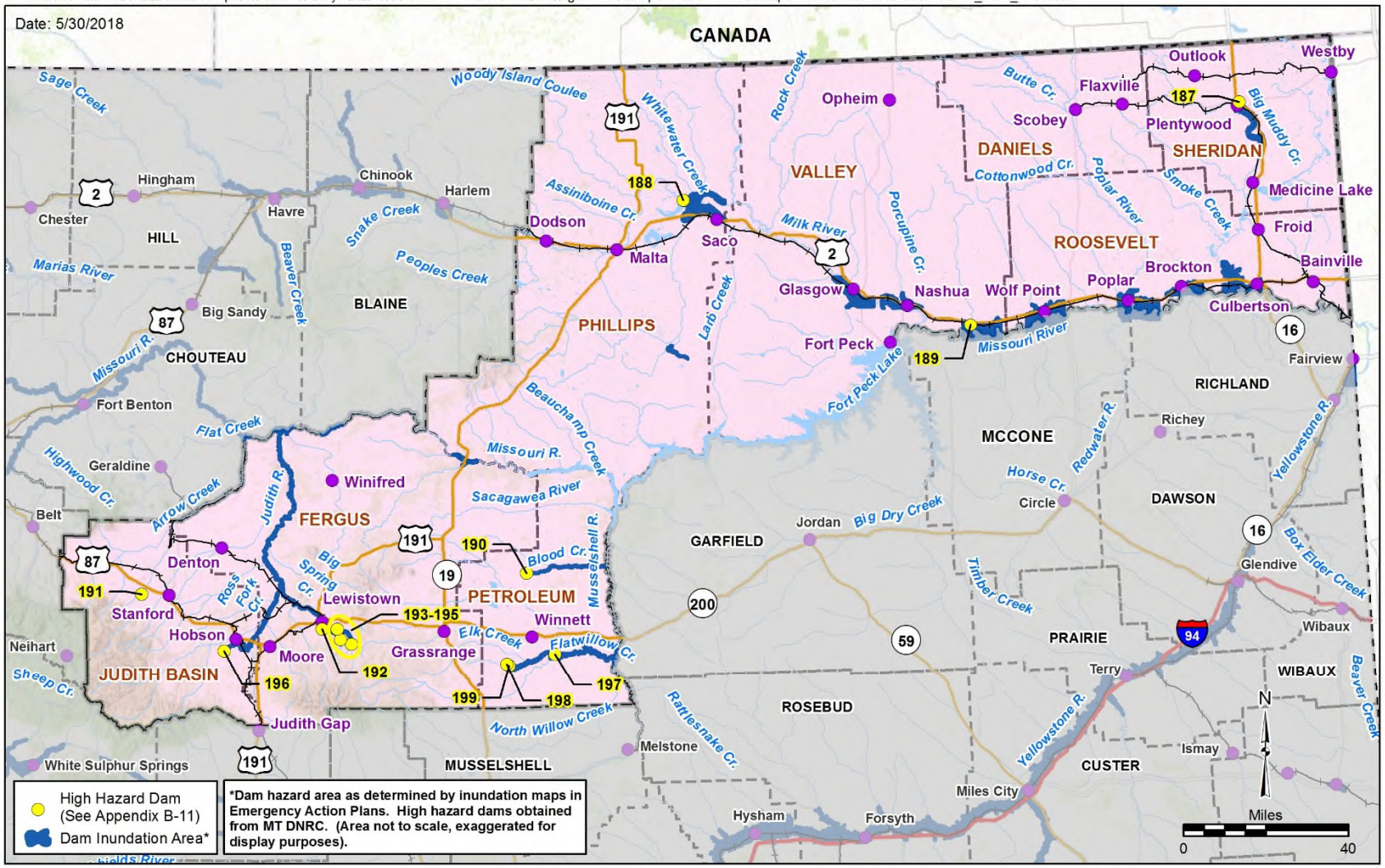

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- DES District 6 County
- County

Figure 4.10-1F
Dam Failure Hazard Area
DES District 6
State of Montana MHMP 2018 Update

Table 4.10-5 presents a vulnerability summary of the dam failure hazard as it relates to percent exposure and growth rates in Montana's counties, cities and towns. Percent exposure was derived by dividing the value of residential and commercial/agricultural/industrial building stock exposed to the hazard into the total value of the building stock. Percent exposure is a more accurate way of displaying vulnerability than presenting jurisdictions with the highest exposure because it reflects areas with the greatest risk opposed to those with high valued real estate. A complete ranking of percent exposure is presented in **Appendix B-11**.

Counties with the highest dam inundation exposure include: Custer, Treasure, Big Horn, Beaverhead, Roosevelt, Rosebud and Dawson counties; while the top cities/towns include: Columbia Falls (Flathead Co.), Forsyth (Rosebud Co.), Hardin (Big Horn Co.), Plains (Sanders Co.), Poplar (Roosevelt Co.), Three Forks (Gallatin Co.), and Troy (Lincoln Co.). **Figure 4.10-2** presents loss estimates for the top counties and cities/towns showing regional vulnerability.

Percent exposure was multiplied by the population change between the 2010 U.S. Census and 2016 census estimates to present the jurisdictions with the highest risk that are experiencing the fastest growth. A complete ranking is presented **Appendix B-11**.

Counties with the highest exposure in dam inundation areas that are experiencing the fastest growth include: Roosevelt, Sheridan, Granite, Big Horn, Flathead, Custer, and Dawson counties; while the top cities/towns (with population over 500) are: Culbertson (Roosevelt Co.), Columbia Falls (Flathead Co.), Plentywood (Sheridan Co.), Hardin (Big Horn Co.), Joliet (Carbon Co.), and Hamilton and Darby (Ravalli Co.). **Figure 4.10-3** presents percent exposure and population change for the top counties and cities/towns showing the most vulnerable areas experiencing the fastest population growth.

Vulnerability of State Facilities

Montana dam that have rehabilitation planned to address deficiencies or are undergoing further analyses are identified in **Table 4.10-6.** Where applicable risk reduction measures in place are also listed.

During, the summer of 2017, a previously unmapped fault scarp was discovered in the Bitterroot Valley in Ravalli County. The Bitterroot fault had long been classified by the U.S. Geological Survey as a young fault located in an area shown as having low seismicity. The scarp appears to travel along the lower east face of the Bitterroots, quite possibly through the Lake Como Dam. It is difficult to know if the fault goes through the dam due to glacial deposits that cover part of the scarp. Montana DNRC has an initiative to develop on a comprehensive plan to improve their earthquake response with regard to dam safety.

Vigilant Guard is a National Guard Bureau exercise that is conducted in four states each year, and it was held in and around Great Falls in February 2018. The exercise gives the local agencies opportunities to practice activating emergency operations plans. The exercise included a mock earthquake near Hebgen Dam, which causes dam failures leading to Great Falls.

Critical facilities in the dam failure impact area are listed in **Appendix B-11**.

Table 4.10-5. Dam Failure Exposure Summary for Top Counties, Cities and Towns

County	% Dam Exposure	% Growth (2010 to 2016)	# of Building Permits (2010 to 2016)	$ Residential Exposure	# Residences at Risk	$ Commercial/ Ag/Industrial Exposure	# Commercial/ Ag/Industrial Buildings at Risk	$ Critical Facilities Exposure	# Critical Facilities at Risk
Counties with Highest Percent Exposure ($ Residential + $ Commercial- Ag- Industrial Exposure in Hazard Area / Total Exposure)									
Custer	74.6%	1.89%	0	$448,172,165	4,042	$169,851,704	856	$59,880,740	11
Treasure	61.9%	-3.76%	0	$11,393,948	183	$25,230,261	192	$0	0
Big Horn	51.7%	3.58%	2	$198,769,080	1,784	$85,469,294	447	$64,294	1
Beaverhead	45.2%	1.65%	3	$219,065,789	1,787	$176,635,033	663	$120,013,493	20
Roosevelt	37.9%	7.78%	1	$107,213,485	1,364	$59,566,339	423	$3,662,363	3
Rosebud	37.0%	0.58%	1	$91,254,984	1,190	$76,118,635	648	$0	0
Dawson	35.5%	3.87%	1	$145,226,576	1,215	$57,341,563	277	$3,202,499	2
Cities/Towns with Highest Percent Exposure (Towns with Pop. > 500) ($ Residential + $ Commercial- Ag- Industrial Exposure in Hazard Area / Total Exposure)									
Columbia Falls	100.0%	10.55%	NA	$255,171,515	1,739	$117,184,528	327	$16,951,424	2
Forsyth	100.0%	4.92%	NA	$75,056,501	896	$26,550,423	141	$0	0
Hardin	100.0%	8.46%	NA	$97,296,363	905	$32,479,192	134	$64,294	1
Plains	100.0%	2.15%	NA	$44,751,633	547	$17,655,569	88	$0	0
Poplar	100.0%	5.15%	NA	$11,492,367	239	$3,179,375	40	$0	0
Three Forks	100.0%	3.86%	NA	$99,273,886	787	$26,353,553	104	$251,183	1
Troy	100.0%	-5.39%	NA	$42,346,210	543	$14,488,626	99	$0	0
Counties with Greatest Percent Exposure Which Have Fastest Growth Rates (% Exposure X % Population Change 2010 to 2016)									
Roosevelt	37.9%	7.78%	1	$107,213,485	1,364	$59,566,339	423	$3,662,363	3
Sheridan	34.0%	7.24%	2	$86,912,897	783	$21,119,864	167	$0	0
Granite	25.0%	8.58%	NA	$35,901,589	292	$56,186,385	145	$0	0
Big Horn	51.7%	3.58%	2	$198,769,080	1,784	$85,469,294	447	$64,294	1
Flathead	20.4%	7.29%	316	$1,796,830,916	10,859	$736,587,020	1,871	$19,717,993	4
Custer	74.6%	1.89%	0	$448,172,165	4,042	$169,851,704	856	$59,880,740	11
Dawson	35.5%	3.87%	1	$145,226,576	1,215	$57,341,563	277	$3,202,499	2
Cities/Towns with Highest Percent Exposure Which Have Fastest Growth Rates (Towns with Pop. > 500) (% Exposure X % Population Change 2010 to 2016)									
Culbertson	99.5%	11.19%	NA	$46,606,757	452	$11,568,519	77	$0	0
Columbia Falls	100.0%	10.55%	NA	$255,171,515	1,739	$117,184,528	327	$16,951,424	2
Plentywood	94.8%	8.93%	NA	$84,092,862	748	$17,168,515	133	$0	0
Hardin	100.0%	8.46%	NA	$97,296,363	905	$32,479,192	134	$64,294	1
Joliet	95.6%	7.03%	NA	$26,106,035	232	$2,267,652	20	$0	0
Hamilton	88.4%	6.97%	NA	$342,224,990	2,088	$135,800,340	203	$1,014,737	1
Darby	91.6%	5.64%	NA	$259,560,994	405	$5,525,704	20	$0	0

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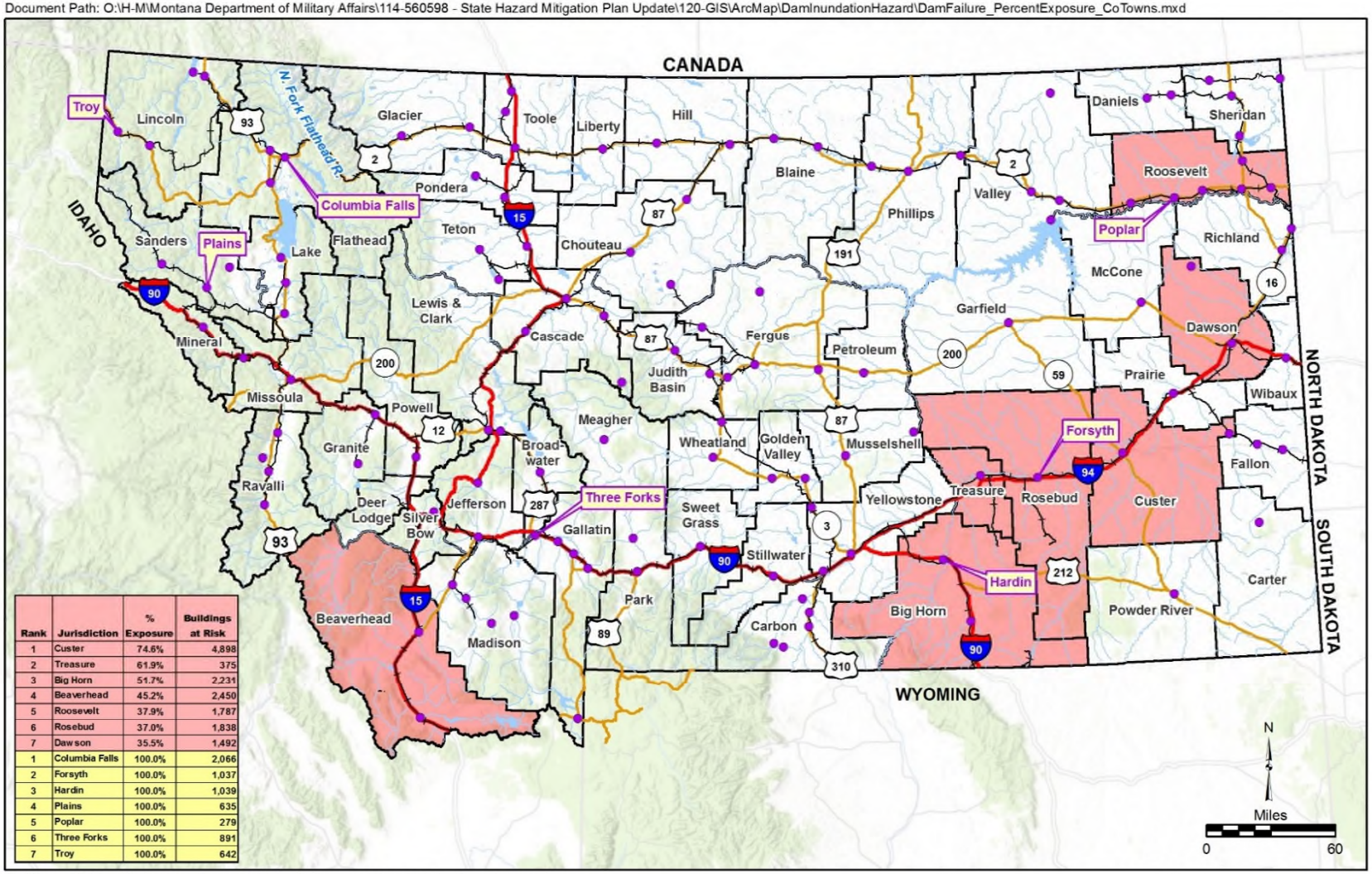

Rank	Jurisdiction	% Exposure	Buildings at Risk
1	Custer	74.6%	4,898
2	Treasure	61.9%	375
3	Big Horn	51.7%	2,231
4	Beaverhead	45.2%	2,450
5	Roosevelt	37.9%	1,787
6	Rosebud	37.0%	1,838
7	Dawson	35.5%	1,492
1	Columbia Falls	100.0%	2,066
2	Forsyth	100.0%	1,037
3	Hardin	100.0%	1,039
4	Plains	100.0%	635
5	Poplar	100.0%	279
6	Three Forks	100.0%	891
7	Troy	100.0%	642

Buildings at Risk = Residences, Commercial, Agricultural, and Industrial structures in hazard area.

Date: 6/2/2018

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- County

Figure 4.10-2
Dam Failure - Percent Exposure for Top Counties and Cities/Towns
State of Montana MHMP 2018 Update

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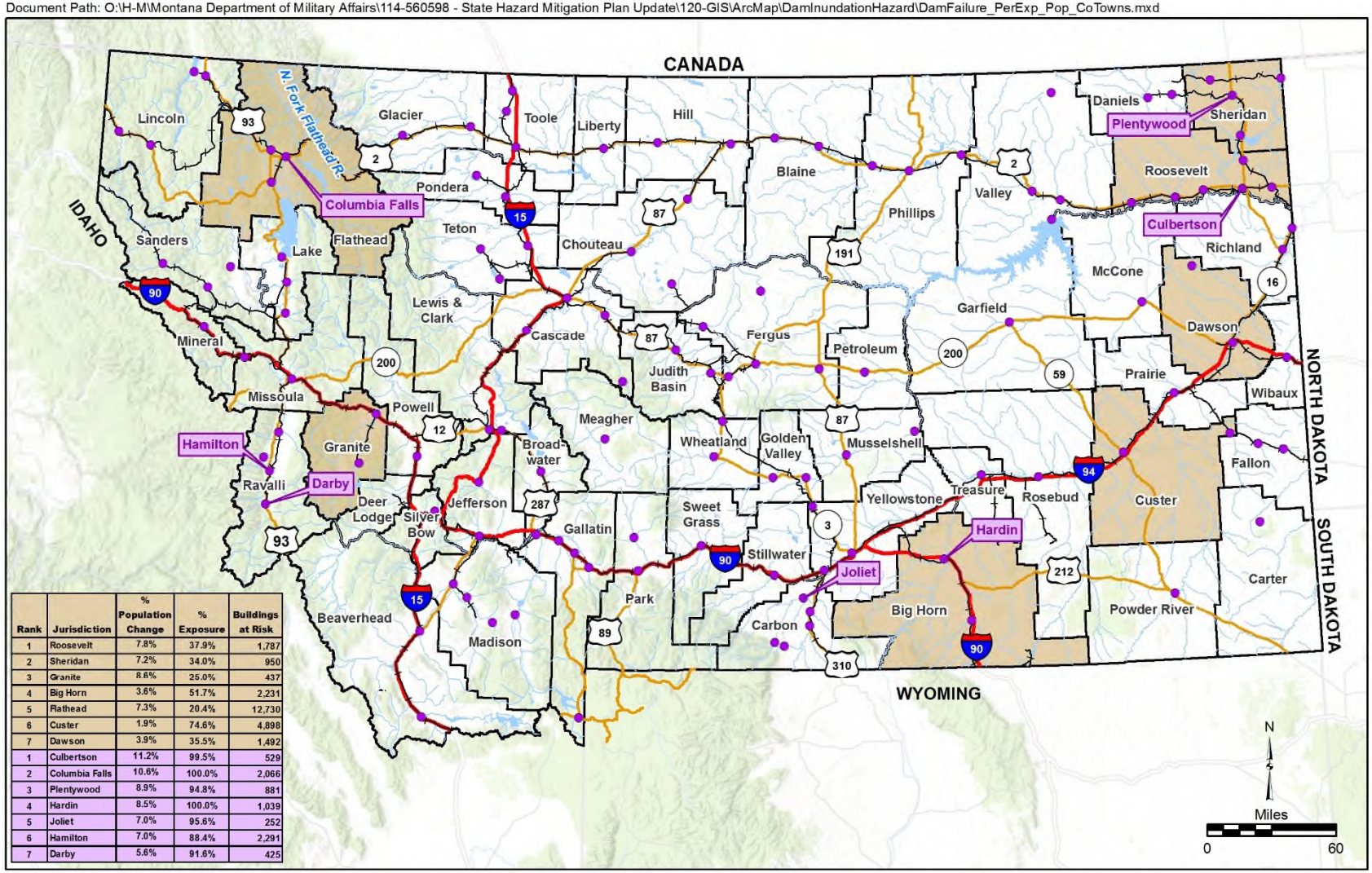

Rank	Jurisdiction	% Population Change	% Exposure	Buildings at Risk
1	Roosevelt	7.8%	37.9%	1,787
2	Sheridan	7.2%	34.0%	950
3	Granite	8.6%	25.0%	437
4	Big Horn	3.6%	51.7%	2,231
5	Flathead	7.3%	20.4%	12,730
6	Custer	1.9%	74.6%	4,898
7	Dawson	3.9%	35.5%	1,492
1	Culbertson	11.2%	99.5%	529
2	Columbia Falls	10.6%	100.0%	2,066
3	Plentywood	8.9%	94.8%	881
4	Hardin	8.5%	100.0%	1,039
5	Joliet	7.0%	95.6%	252
6	Hamilton	7.0%	88.4%	2,291
7	Darby	5.6%	91.6%	425

Buildings at Risk = Residences, Commercial, Agricultural, and Industrial structures in hazard area.

Date: 6/2/2018

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- County

Figure 4.10-3

Dam Failure - Percent Exposure x Percent Population Change for Top Counties and Cities/Towns

State of Montana MHMP 2018 Update

Table 4.10-6. Non-Federal Dams in Montana Requiring Further Analysis or Rehabilitation

Name	County	Rehabilitation or Data Needed	Nearest Community	Comments
Willow Creek Dam	Madison	Principal concrete spillway - investigation into voids in foundation and maintenance of joints.	Harrison	Restriction on spillway flows.
Painted Rocks Dam	Ravalli	Feasibility study underway to evaluate spillway capacity and condition.	Darby	None
East Fork Rock Creek Dam	Granite	Feasibility study underway to evaluate spillway capacity, condition and foundation seepage.	Philipsburg	Daily monitoring of instrumentation.
Eureka Dam	Teton	Foundation seepage; construction of stability berm.	Choteau	Weekly monitoring of foundation pressures.
Powell Dam	Powell	Foundation seepage, upstream slope erosion.	Deerlodge	None
Fred Burr Dam	Ravalli	On-going foundation seepage measurement and evaluation.	Hamilton	Reservoir level restriction.
Kootenai Development Impoundment Dam	Lincoln	Decommission or repair to handle extreme storms without damage and address deterioration of underdrain system.	Libby	Real time monitoring of instrumentation, monthly inspections, emergency intervention plan, early storm warning.
Lower Willow Creek Dam	Granite	Corrugated metal pipe drain is aging and requires investigation and possible rehabilitation.	Hall	None
Jackson Dam	Madison	Outlet pipe is aging and requires rehabilitation: planned for Fall 2018.	Norris	None
Beaver Dam	Madison	Failed in 2017. Reconstruction in spring 2018.	Ennis	None
Jordan Dam	Park	Upstream face needs repair, outlet pipe is aging and requires rehabilitation: planned for Fall 2018.	Livingston	None
Lakeside Dam	Yellowstone	Outlet pipe is aging and requires rehabilitation in next five years.	Billings	None
Wilson Dam	Judith Basin	Outlet pipe is aging and requires rehabilitation: planned for Fall 2018.	Sanford	None
Blixit Creek Dam	Missoula	Outlet pipe is aging and requires rehabilitation: planned for Fall 2018.	Bonner	None
Bullhook Dam	Hill	Replacement of valve.	Havre	None

Source: DNRC, 2018

Review of Potential Losses in Local Hazard Mitigation Plans

Approximately 55 percent of the local plans evaluated the dam failure hazard in their risk assessment. Roosevelt County identified dam failure as their #1 hazard. The following counties identified dam failure as their #4 hazard: Hill, Lincoln, and Sheridan. Blaine and Wheatland counties, and the Blackfeet, Crow and Rock Boys Reservations identified dam failure as their #5 hazard. **Appendix B-11** presents a summary of potential dam failure losses from the local Hazard Mitigation Plans.

Future Development

Several areas experiencing growth and development in Montana are within dam inundation areas. Future development below dams can have significant financial impact on dam owners. When new development occurs in the inundation area below an existing dam that previously lacked

downstream hazards, the dam could be reclassified as "high hazard". High hazard dams are required to meet stringent requirements for design, construction, inspection and maintenance. Bringing a dam up to high hazard design standards can be costly for a dam owner. Even for dams already classified as high hazard, additional downstream development can still have a financial impact. Spillway design standards are based on potential for loss of life downstream. As the population at risk increases, the spillway design standard increases. A dam that is currently in compliance with state design standards can suddenly be out of compliance after a subdivision is built downstream.

Rebuilding a spillway to provide additional capacity can also be costly for the dam owners, often exceeding a million dollars. To go along with the spillway improvements, inundation areas have to be evaluated for risk and hazard assessment. Development can lead to increased liability of the dam owner and increased insurance rates. Aging infrastructure and design life of dams is a critical issue to consider when reviewing subdivision applications.

Without consideration of dam failure during the subdivision permitting process, future development could place residences and businesses in high hazard areas. Knowledge they're living in a dam inundation area may not be known by home owners. Reclassification of some of the State's dams should be considered in areas where development is planned.

Climate Change

Small changes in rainfall, runoff, and snowpack conditions may have significant impacts for water resource systems, including dams. Dams are designed partly based on assumptions about a river's flow behavior, expressed as hydrographs. Changes in weather patterns can have significant effects on the hydrograph used for the design of a dam. If the hygrograph changes, it is conceivable that the dam can lose some or all of its designed margin of safety, also known as freeboard. If freeboard is reduced, dam operators may be forced to release increased volumes earlier in a storm cycle in order to maintain the required margins of safety. Such early releases of increased volumes can increase flood potential downstream.

Dams are constructed with safety features known as "spillways." Spillways are put in place on dams as a safety measure in the event of the reservoir filling too quickly. Spillway overflow events, often referred to as "design failures," result in increased discharges downstream and increased flooding potential. Although climate change will not increase the probability of catastrophic dam failure, it may increase the probability of design failures.

Population and property exposure to the dam failure hazard are not likely to change significantly as a result of climate change. The potential increase in probability of dam failure would not likely impact additional areas not already identified on inundation maps with the exception of spillway shadows which are not always captured on inundation maps. Dam owners and operators may need to alter maintenance and operations to account for changes in the hydrograph and increased sedimentation.

Data Limitations

Some inundations areas digitized for the dam failure impact area were not continuous; instead showing mapped areas around centers of population and not rural areas where agricultural

developments may be present. This could lead to an under reporting of building exposure in the MHMP vulnerability analysis. Inundation maps utilized for the analysis were for clear weather breaches and did not consider the depth of inundation or warning time. Cumulative effects of multiple dam failures on the same drainage were also not considered.

Inundation maps from the USBR and USACE were not available for the analysis, as these agencies required the State to sign a non-disclosure agreement which was not feasible for a public document like the State MHMP. The dam failure analysis could be enhanced with this information. It should also be noted that inundation maps in some private dam EAPs are of poor quality.

Operational flows associated with spillway shadows are not included in the dam failure hazard area as these are not generally available in EAPs.

References

Federal Emergency Management Agency (FEMA). 2004. Federal Guidelines for Dam Safety, Hazard Potential Classification System for Dams. April 2004.

Montana Department of Natural Resources and Conservation (DNRC). 2018. Information on federal, state, local, private, and utility dams and dams with deficiencies. Provided by Michele LeMieux, DNRC Dam Safety Program.

Montana Department of Natural Resources and Conservation (DNRC). 2018. Information on State-regulated dams and inundation area GIS data. Provided by Chadrick Hill, DNRC Dam Safety Program.

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4.11 Terrorism, Violence, Civil Unrest, and Cyber Security

CPRI = 2.41

Description and History

Terrorism is defined in the Code of Federal Regulations as "the unlawful use of force and violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives". Terrorists look for visible targets where they can avoid detection before or after an attack such as international airports, large cities, major international events, resorts, and high-profile landmarks. Bombings involving detonated and undetonated explosive devices, tear gas, and pipe and fire bombs have been the most frequently-used terrorist method in the United States. Driving vehicles into large crowds to cause injuries and fatalities has also emerged as a terrorist technique. Other possible methods include attacks on transportation routes, utilities, public services, or incidents involving chemical or biological agents.

Lone gunman shootings (active shooters) are another form of terrorism. In the U.S., lone gunman shootings have occurred at schools, movie theaters, concert venues and other locations. Most lone gunman shootings occur where a specific place was deliberately selected as the location for the attack and was not simply a random site of opportunity. These shootings have sparked a political debate over gun violence, whether firearms should be allowed in the classroom and whether there should be stricter gun control. There have been no active shooter incidents in Montana.

Terrorists typically try to cross into and out of the United States through remote locations. Montana's sparsely populated international border is a potential access point for terrorists moving between countries. Montana has 545 miles of international border with Canada. Local, state, and federal law enforcement officials monitor suspected terrorist groups and try to prevent or protect against a suspected attack. Additionally, the U.S. government works with other countries to limit the sources of support for terrorism.

Violent protests and riots resulting from police brutality against African-Americans gained widespread notoriety in the 2010s, and the tensions ignited after incidents such as the killings of Trayvon Martin (2012), Michael Brown, Jr (2014) and Freddie Gray (2015). The Black Lives Matter Movement, originating in the African-American community in 2013, campaigns against violence and systemic racism toward black people. The movement regularly protests police killings of black people and broader issues of racial profiling, police brutality, and racial inequality in the U.S. criminal justice system. Due to the demographics of Montana, racial violence is not a significant risk.

According to the Southern Poverty Law Center (SPLC, 2018), an organization devoted to tracking hate groups in the U.S., the number of anti-government groups in Montana held steady in 2017 while anti-Muslim activity surged. Of the 917 hate organizations identified in the latest report, seven are in Montana, including two white nationalist groups and several anti-Muslim groups. In Montana, hate groups include the American Freedom Party, Pioneer Little Europe, and ACT for America.

Eco-terrorism is the use or threatened use of violence of a criminal nature against innocent victims or property by an environmentally-oriented, subnational group for environmental-political reasons, or aimed at an audience beyond the target, often of a symbolic nature.

Large gatherings in Montana bring increased risk of violence. Many communities host annual events which draw thousands of participants, many from out-of-state, including Evil Knievel Days, St.

Patrick's Day, and the Montana Folk Festival in Butte, concerts in Billings and Missoula, and many others. Rainbow Family Gatherings, described below, have been held in Montana several times in the past 20 years are another example of large gatherings which pose a risk of violence.

Rainbow Family Gatherings started in the late 1960s as an outgrowth of the anti-war and hippy movements and have occurred every July since 1972 in a different National Forest, bringing together upwards of 10,000 "Rainbows". Environmental impact and crime are difficulties associated with Rainbow Gatherings, which have resulted in strained relations between Rainbow Gathering participants and local communities. Media coverage is often unfavorable, focusing on drug use, nudity, assaults, fugitives, serious traffic charges such as drunken driving and the countercultural aspects of the assemblage. In 2013, the Rainbow Gathering was held in the Beaverhead-Deerlodge National Forest in Montana. Despite making only two arrests, the Forest Service spent nearly $400,000 on law enforcement and more than $570,000 overall. The gathering near Saginaw Creek about 10 miles southwest of Jackson drew about 10,000 people. It officially ran from June 21-July 7, but Rainbow members were in the area for about a month. About 20,000 Rainbow people had gathered at the same site in 2000. (Montana Standard, *Rainbow Gathering Costs U.S. Forest Service $573,00*, September 23, 2013).

Civil unrest typically occurs when large groups, organizations, or distraught individuals take action with potentially disastrous or disruptive results. Civil unrest can be the product of another event that creates panic in the community. In many Montana counties, the potential exists for civil unrest to exceed the capabilities of the local government to handle.

Energy development in eastern Montana has made terrorism, violence, and civil unrest an emerging hazard in Montana. The route of the Keystone XL Pipeline will travel through several Montana counties and local emergency managers are aware that increased violence could impact the area. Below are descriptions of several regional issues associated with energy development, including a peaceful pipeline protest in North Dakota, pipeline construction worker man camps, and increased violence associated with the Bakken Shale oil field.

Pipeline Protests – The Dakota Access Pipeline protests were grassroots movements that began in early 2016 in reaction to the approved construction of Energy Transfer Partners' Dakota Access Pipeline. The pipeline was projected to run from the Bakken oil fields in western North Dakota to southern Illinois, crossing beneath the Missouri and Mississippi Rivers, as well as under part of Lake Oahe near the Standing Rock Indian Reservation. Many in the Standing Rock tribe consider the pipeline and its intended crossing of the Missouri River to constitute a threat to the region's clean water and to ancient burial grounds. In April 2016, a camp was established as a center for cultural preservation and spiritual resistance to the pipeline. Over the summer the camp grew to thousands of people which caused food shortages in surrounding towns and a strain on critical infrastructure. (https://en.wikipedia.org/wiki/Dakota_Access_Pipeline).

Oil Field Violence - The Bakken Formation – tens of thousands of square miles of oil-bearing shale under the prairies of western North Dakota, eastern Montana and part of Canada – was touted as a modern-day gold rush. In just five years, the region went from producing about 200,00 barrels to 1.1 million barrels of oil a day, making North Dakota the No. 2 oil-producing state and luring thousands of workers from around the country. The arrival of highly paid oil workers living in sprawling "man camps" with limited spending opportunities led to a crime wave – including murders, aggravated

assaults, rapes, human trafficking and robbers – fueled by a huge market for illegal drugs, primarily heroin and methamphetamine. (The Washington Post, *Dark Side of the Boom*, September 28, 2014).

Pipeline Man Camps - The Keystone XL pipeline will cross 282 miles in sparsely populated eastern Montana. When construction gets underway, there will be as many as 800 workers on a stretch of pipeline. Most of them will be staying at "man camps" set up by contractors working for the pipeline company. Three man camps are intended for Montana; one north of Fort Peck (Valley Co.), another near Circle (McCone Co.), and one near the western edge of Baker (Fallon Co.). Keystone plans to construct the pipeline in South Dakota and Montana over two years, broken into seven pipeline spreads. Depending on the ultimate sequence of construction, the camps will either be in place for one or both years. Although they really don't know what to expect from the presence of so many workers, the influx would temporarily double or triple the number of people in the area and could stress existing resources. (Billings Gazette, *Construction Workers Would Need to Live in Man Camps*, February 5, 2012).

Cyberterrorism is the use of information technology by terrorist groups and individuals to further their agenda. This can include use of information technology to organize and execute attacks against networks, computer systems and telecommunications infrastructures, or for exchanging information or making threats electronically. Examples are hacking into computer systems, introducing viruses to vulnerable networks, web site defacing, or terroristic threats made via electronic communication.

Public interest in cyberterrorism began in the late 1980s with the widespread use of the internet. As 2000 approached, the fear and uncertainty about the millennium bug heightened, as did the potential for attacks by cyber terrorists. The terrorist attacks on September 11, 2001 and the ensuing "War on Terror" led to further media coverage of the potential threats of cyberterrorism in the years following. The possibility of a large attack making use of computer networks to sabotage critical infrastructure with the aim of putting human lives in jeopardy or causing disruption on a national scale, either directly or by disruption of the national economy, has been a concern for the past decade.

Internet fraud is the use of internet services or software with internet access to defraud victims or to otherwise take advantage of them; for example, stealing personal information that leads to identity theft. A very common form of internet fraud is the distribution of rogue security software. The most widespread internet and email scam today is called phishing, where digital thieves lure you into divulging your password info through convincing emails and web pages. These phishing emails and web pages resemble legitimate credit authorities. They frighten or entice you into visiting a phony web page and entering your ID and password. The email message will require you to click on a link. But instead of leading you to the real login site, the link will redirect you to a fake website where you may innocently enter your ID and password. This information is intercepted by the scammers, who later access your account and extort money. Ransomware is a type of malware that restricts access to the infected computer system in some way, and demands that the user pay a ransom to the malware operators to remove the restriction.

Senior citizens are also vulnerable to health care scams. Scammers will call as healthcare or Medicare representatives to gain access to their personal or contact information. They will use their contact information to call seniors back at a later date and say they spoke with their daughter, son or other relative and that it's OK to give them social security numbers, driver's license numbers or other personal information.

Con artists are also creating devious schemes to prey on retired persons and their accumulated wealth. Senior citizens are receiving phone calls from scammers who purport to be Internal Revenue Service agents. They claim to be calling about unpaid back taxes and proceed to threaten the senior citizen with arrest, lawsuits, suspension of their driver's license and more. Tax-refund fraud hit $21 billion in 2016. All it takes to file a false return is a name, date of birth, and social security number; the type of information that is commonly taken when health care insurers are hacked.

History of Terrorism, Violence, and Civil Unrest in Montana

Civil unrest, violence and terrorism are not common hazards affecting Montana, but over the short history of Montana, labor strikes have caused economic disruption, threats of terrorism have disrupted community security, and large scale violence has claimed several lives. Montana's sparse population with smaller cities may limit the state as a terrorist target, but the state's rural nature has attracted terrorist and extremist groups as a safe haven. Violent racial, anti-government, and environmental extremist organizations have and continue to exist in Montana. Federal, state, and local law enforcement, however, have thwarted several violent uprisings and plots based in Montana. Some of the incidents involving civil unrest, violence and terrorism in Montana are listed below:

1920 Anaconda Road Massacre - On April 21, 1920, the Anaconda Road Massacre occurred in Butte. Fifteen people were shot during this incident that occurred during an International Workers of the World strike. The US Military was used the following day to curb additional violence.

White Supremacists of the 1990s - The Creativity Movement, formerly known as the World Church of the Creator, a white supremacist group promoting and carrying out violence, held annual meetings in Superior (Mineral Co.) during the 1990s.

1996 Freemen Crisis - Garfield County made national news during the Montana Freemen Crisis. In the spring of 1996, hundreds of FBI agents surrounded the Ralph Clark ranch complex near Jordan for a total siege of 81 days. The government alleged that the nearly 30 people inside were of a radical anti-government and racist religious sect who had written bad checks and threatened judges, among other things.

1996 Bomb Threat - Amtrak offices in Philadelphia received notification by phone from a person claiming to have knowledge of a bomb placed on a train headed for western Montana. At that time, the train was 10 minutes out of Wolf Point (Roosevelt Co.). The decision was made to evacuate passengers from the train and to allow a search to take place. Once the train was evacuated, it was moved to the east end of town, where it was anticipated that an explosion would cause less property damage. Teams were sent from Great Falls, including a canine search team from Malmstrom and the Explosives Ordinance Disposal team from the Montana Air National Guard. No sign of explosives were found and the train was cleared to continue its journey.

Unabomber Attacks - From 1978 to 1995, Ted Kaczynski, commonly known as the Unabomber, killed three people and injured 22 others across the county with mail bombs while he resided in a cabin near Lincoln (Lewis and Clark Co.).

Project Seven 2002-2004 - A group called Project Seven in the Flathead Valley was broken up by Montana officials in February 2002 and additional arrests occurred in 2004. This militia organization

is alleged to have stockpiled weapons and plotted to kill judges, prosecutors, and police officers in an effort to activate the Montana National Guard and start a war.

Oath Keepers - In August 2015, members of the Oath Keepers, self-described constitutional advocates, came to Lincoln (Lewis and Clark Co.) to intercede in a dispute between miners and the U.S. Forest Service. The noncompliance issues included construction of a garage without authorization, locking and posting gates into the claim, failure to remove explosives and needed reclamation of a road. The miners said that regulations do not apply because the mine claims predate 1955 regulations granting surface rights to the Forest Service. The Oath Keepers and other constitutionalist groups thereafter provided an armed security detail at the mine site. (*Judge Urges Settlement in Lincoln-area Mining Dispute*, Independent Record, September 4, 2015).

Declared Disasters

Montana has had several emergency declarations for terrorism, civil unrest, and hostage situations which have allowed for incident response and/or deployment of the National Guard troops to assist the local communities. These incidents are listed in **Table 4.11-1**, below.

Table 4.11-1. Montana Emergency Declarations from Terrorism, Civil Unrest and Hostage Situations (1974 – 2017)

Date	Event
1 & 2/1979	**Montana State Institution Strike**. National Guard Activation. State assistance: $1,393,714
4/1991	**Montana State Institution Strike** (EO 03-91). National Guard Activation and assistance statewide.
8/1995	**Tactical Incident** (EO 10-95). Prairie County and Town of Terry, activation of National Guard. State assistance: $11,042
4/23/1996	**Incident Response (EO 10-96).** Anniversary of Waco and Oklahoma City, affecting whole state. State assistance: $4,368
4/19/2000	**Incident Response,** Lincoln County (EO 9-00). State response to Civil Disobedience Rallies in Lincoln County.
6/10/2000	**North American Rainbow Gathering**, Beaverhead County (EO 15-00). Emergency declaration providing state assistance to Beaverhead County to meet the life threatening situations and imminent threat to the public health and safety. State assistance: 77,606. Local assistance: 23,911.
9/11/2001	**Terrorism Threats** (EO 23-01). Emergency declaration following terrorist attacks to the World Trade Center and Pentagon.
9/11/2001	**Terrorism Threats** (EO 28-01). Executive Order establishing the Montana Homeland Security Task Force and designating the Disaster and Emergency Services Division as lead agency.
9/28/2001	**Terrorism Threats** (EO 26-01). Executive Order proclaiming support to the President's request for security assistance at Montana Airports. MT National Guard provide personnel for up to 6 months.
9/2/2004	**Incident Response,** (EO 13-04). Executive Order authorizing Incident Response authority in the State of Montana due to an escape of Department of Corrections convict in the City of Helena
1/11/2006	**Incident Response,** (EO 26-2006) Executive Order authorizing Incident Response authority in the State of Montana due to a Department of Corrections prisoner escape from a prison transport vehicle within the City of Helena and Lewis & Clark County.

Source: DES, 2017

Magnitude and Probability

The probability of terrorism, violence, civil unrest, or a cyber breach affecting Montana directly is difficult to determine. The state is not considered a specific terrorist target nor is it an area of high risk for civil unrest. As with any area, a shooting by a disgruntled person, employee, or student is always possible. A large-scale attack cannot be ruled out, and therefore, a small probability exists. Of greater probability is a national terrorist incident or cyberattack that has an indirect effect on the state through its economy.

The effects of terrorism can vary significantly from loss of life and injuries to property damage and disruptions in services such as electricity, water supply, public transportation, and communications. Cyber terrorism could involve destroying or remotely disrupting government computer networks, critical civilian systems such as financial networks or mass media, or using computer networks to take over machines that control traffic lights, power plants or dams. If cyber-terrorists managed to disrupt financial markets or media broadcasts, an attack could undermine confidence and cause panic. Attacks could also involve remotely hijacking control systems, with potentially dire consequences, such as breaching dams, colliding airplanes, or shutting down the power grid.

Terrorism and cyberattacks are considered emerging hazards with little to no history in the region but incidents occurring with more frequency across the globe. As such, the probability of terrorism, violence, civil unrest and cyberattacks in Montana is ranked as "Possible"; with less than one incident occurring every 10 years but greater than one incident every 100 years.

Vulnerability and Area of Impact

The origins and targets for terrorism and civil unrest are difficult to predict. Individuals or groups that feel oppressed on any issue can resort to violent acts to inflict harm and damage in an attempt to gain publicity or affect policy. Montana has traditionally attracted activist/extremist individuals and groups because of its low population and large geographic area. Groups active in Montana vary from white supremacists to single issue groups, such as environmental extremists. According to the Southern Poverty Law Center, an organization that tracks hate groups in the U.S., several white nationalist and anti-Muslim groups are active in Montana.

The locations of these attacks can occur anywhere but often occur at symbols that represent a threat to their cause. From a historic perspective, these targets have often been government buildings, government officials, and university facilities. Other common targets include medical clinics, businesses, population concentrations, computer mainframes, or critical infrastructure with the ability to cause significant disruption and damage. Civil unrest and riots are typically associated with large public gatherings, initially peaceful protests, controversial political decisions, large strikes, and law enforcement standoffs.

Statewide Vulnerability

The effects of civil unrest and violence are typically felt by the population. The greatest risk is to human lives during times of unrest. Looting is commonly found in association with these types of incidents. Therefore, this hazard places both the population and property at risk. Urban areas and places of public gathering are generally areas of greatest risk. Eastern Montana counties have been planning to avoid violence that may result from construction of the Keystone XL Pipeline. Most of the potential violence and civil unrest in Montana is organization-driven versus social unrest from local events.

The vulnerability of local communities to a breach in cyber security is real and presents a serious business risk to government operations. Attacks have the potential to cripple vital government services and damage public infrastructure. All government agencies hold valuable or sensitive material, including citizen records, financial information and procurement data. Therefore, everyone is a target. And in today's highly interconnected world, each agency—no matter how small—is a

stepping stone to another. So even a seemingly minor breach can have wide-ranging implications. (Governing Institute, 2017).

Agencies also are under nearly constant assault. Hackers know that state and local governments often lag behind commercial entities in cybersecurity readiness. Consequently, the number of attackers probing municipal systems for vulnerabilities is exploding—everyone from small-time crooks equipped with black-market ransomware kits, to nation states and organized crime syndicates armed with sophisticated cyber weapons. (Governing Institute, 2017).

The threats are wide-spread. Small towns and school districts are hit with ransomware that shuts down computer systems until they make a payment. Thieves steal citizen identities and financial information from state agency databases. Water authorities endure surgical strikes that use specialized computer code to destroy water pumps. (Governing Institute, 2017).

Healthcare also faces varied cybersecurity threats that continue to evolve and become more intricate. This includes, but is not limited to, insider threats, poorly secured web portals, improper data handling, and under-regulated medical data mining. Medical data is more valuable to attackers than financial data, and it can easily be stolen from vulnerable web portals.

It should be noted, that Montana's rural counties may feel secondary economic impacts from terrorism, violence, civil unrest, or breaches in cyber security that affect Montana's regional centers, particularly Billings or Helena. All counties rely on these regional centers for services that ensure continuity of operations locally.

The Montana Threat and Hazard Identification and Risk Assessment and State Preparedness Report (THIRA-SPR) was updated in 2018. The THIRA-SPR provides information regarding the threats and hazards faced by the state, including the projected consequences or impacts, the State's goals, and quantified targets on which to focus time and resources. **Appendix B-12** presents a copy of the *Executive Summary* from Montana's THIRA-SPR.

Review of Potential Losses in Local Hazard Mitigation Plans

Approximately 40 percent of the local mitigation plans evaluated the terrorism, violence, civil unrest, or cyber security hazard in their risk assessment. No local plan listed terrorism within their top five hazards; however, Custer County and the Fort Peck Reservation ranked it as their #6 hazard; Powell, Cascade, Jefferson, and Butte-Silver Bow counties ranked it as #7, and Broadwater, Dawson, Lewis and Clark, Powder River, Stillwater, and Sweetgrass Counties ranked it as #8. Most of these counties also perceived there would be an economic loss from a terrorist incident. **Appendix B-12** presents a summary of potential terrorism losses from the local Hazard Mitigation Plans.

Vulnerability of State Facilities

The state building complexes, including the Capitol Complex and university facilities, could be targets for violence related to civil unrest or terrorist acts because they represent symbols of state government. State government strikes, although historically peaceful, can erupt into violence and vandalism, as witnessed in civil disturbances during the Vietnam War and civil rights protests in the 1960s. Based on the civil unrest that has occurred in the past, it is unlikely there would be widespread damage to state buildings.

Cyberspace and its underlying infrastructure are vulnerable to a wide range of risk stemming from both physical and cyber threats and hazards. Of growing concern is the cyber threat to critical infrastructure, which is increasingly subject to sophisticated cyber intrusions that pose new risks. As information technology becomes increasingly integrated with physical infrastructure operations, there is increased risk for wide-scale or high-consequence events that could cause harm or disrupt services upon which the economy and our daily lives depend. https://www.dhs.gov/cybersecurity-overview#

The U.S. Department of Homeland Security coordinates with State agencies to share information on and analysis of cyber threats and vulnerabilities and to understand more fully the interdependency of infrastructure systems nationwide. This collective approach is consistent with the growing recognition that cyber and physical security are interdependent and must be core aspects of risk management strategies.

Future Development

Future development should have little to no impact on the terrorism or violence threat. Given the goals of eco-terrorists; however, future develop could serve as the basis for an incident over controversial development.

Climate Change

Many academics and national security experts agree that climate change contributes to an uncertain world where terrorism can thrive. Climate change not only threatens the environment, it can lead to greater instability and fuel global conflict and terrorism. Some of the least stable states in the world will face changing weather patterns that reduce arable land and fresh-water supplies, in turn driving mass-migration, provoking resource conflicts, and fostering global health threats.

Both cyber threats and climate change are security risks that can affect the safety and security of our most basic resources, such as water, energy and infrastructure, mostly due to a common factor: interconnectedness. As human beings and as nations, we are and always will be directly connected to our environment, as it provides us with the resources necessary for both survival and prosperity. We have also become intimately connected and dependent on our computer-based technologies, with cyberspace and the Internet being a primary conduit. And just as climate change can affect our access to (and supply of) water and energy, a cyber-attack on computers and industrial equipment that run water treatment facilities and power plants can have significant negative consequences (Allen, 2014).

Data Limitations

Terrorists, both domestic and international, will commonly act in unpredictable ways, and therefore all methods of attack cannot be specified. Because of this unpredictability, specific vulnerabilities cannot be determined without disclosing sensitive information. The *Capability Assessment* (Section 6) of this plan discusses Montana's preparedness efforts for resiliency in the event of a terrorist or cyber-attack.

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4.12 Volcanic Ash

CPRI SCORE =2.33

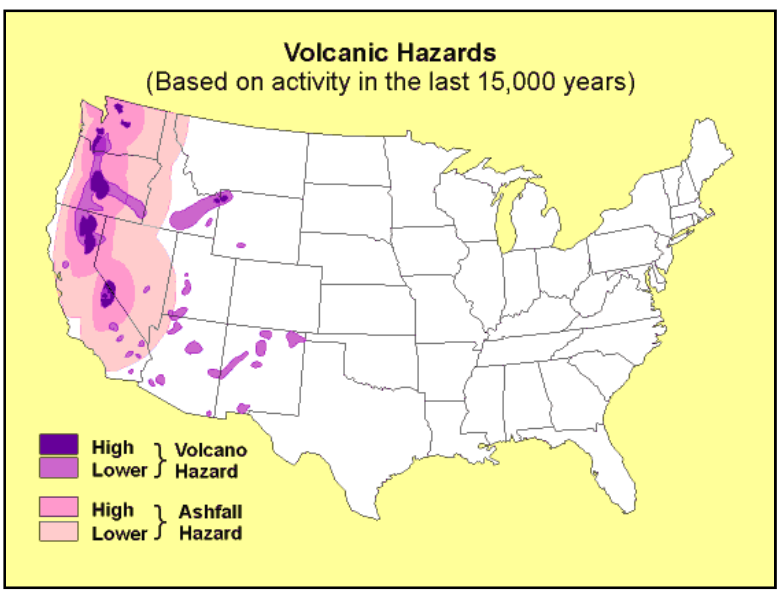
Description and History

Volcanic eruptions are generally not a major concern in Montana due to the relatively low probability (compared with other hazards) of events in any given year. However, Montana is within a region with a significant component of volcanic activity and has experienced the effects of volcanic activity as recently as 1980 when Mount St. Helens erupted in the state of Washington.

There are 20 active or potentially-active volcanoes in the United States (**Figure 4.12-1**). The two volcanic centers affecting Montana in recent geologic time are: 1) the Cascade Range of Washington, Oregon and California; and 2) the Yellowstone Caldera in Wyoming and eastern Idaho. Volcanic eruptions in the Cascade Mountains are more likely to impact Montana than Yellowstone eruptions, based on the historic trends of past eruptions. The primary effect of the Cascade volcanic eruptions on Montana would be ash fall.

The distribution of ash from a violent eruption is a function of the weather, particularly wind direction and speed and atmospheric stability, and the duration of the eruption. As the prevailing wind in the mid-latitudes of the northern hemisphere is generally from the west, ash is usually spread eastward from the volcano. Exceptions to this rule do, however, occur. Ash fall, because of its potential widespread distribution, offers some significant volcanic hazards.

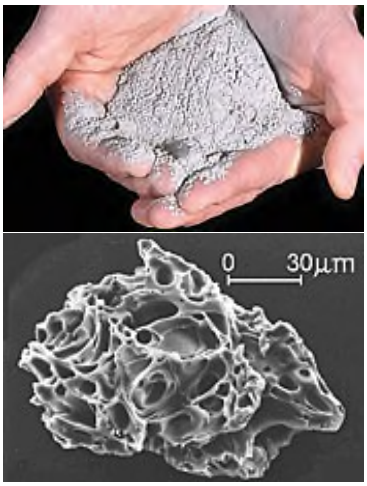
Figure 4.12-1. Volcanic Hazards (based on activity in the last 15,000 years).



Areas in purple show regions at greater or lesser risk of volcanic activity, including lava flows, ashfall, lahar (volcanic mudflows) and debris avalanches, based on the record of the last 15,000 years, as compiled by Mullineaux (1976). Areas in pink show regions at risk of receiving 5 cm or more of ashfall from large or very large explosive eruptions originating at the volcanic centers shown in purple. These projected ashfall extents are based on observed ashfall distribution from a large eruption of Mt. St. Helens that took place 3,400 years ago, and the eruption of Mount Mazama that formed Crater Lake, Oregon, 6,800 years ago.

Volcanic ash can cause failure of electronic components, interrupt telephone and radio communications, and cause internal combustion engines to stall. Airborne particles of volcanic ash can pose a health risk to people with respiratory conditions. **Figure 4.12-2** describes the effects of volcanic ash.

Figure 4.12-2. Effects of Volcanic Ash



Volcanic ash, like this 1980 ash from Mount St. Helens, is made up of tiny jagged particles of rock and glass (photo on bottom; magnified 200 times).

- Short-circuits and failure of electronic components, especially high-voltage circuits and transformers (wet ash conducts electricity).
- Eruption clouds and ashfall commonly interrupt or prevent telephone and radio communications.
- Volcanic ash can cause internal-combustion engines to stall by clogging air filters and also damage the moving parts. Engines of jet aircraft have suddenly failed after flying through clouds of even thinly dispersed ash.
- Roads, highways, and airport runways can be made treacherous or impassable because ash is slippery and may reduce visibility to near zero.
- Cars driving faster than 5 miles per hour on ash-covered roads stir up thick clouds of ash, reducing visibility and causing accidents.
- Ash also clogs filters used in air ventilation systems to the point that airflow often stops completely, causing equipment to overheat.
- Crop damage can range from negligible to severe, depending on the thickness of ash, type and maturity of plants, and timing of subsequent rainfall.
- Like airborne particles from dust storms, forest fires, and air pollution, volcanic ash poses a health risk, especially to children, the elderly, and people with cardiac or respiratory conditions, such as asthma, chronic bronchitis, and emphysema.

Source: USGS, 2003

Table 4.12-1 shows the thicknesses of recorded ash deposits in Montana. The most recent ash was deposited in May 1980 after the Mount St. Helens eruption in the state of Washington.

Table 4.12-1. Recent Volcanic Ash Events Affecting Montana

Volcano	Most Recent Eruption (Yrs before Present)	Location Affected	Thickness of Ash in Montana
Yellowstone Caldera	665,000	Eastern Montana	-
Glacier Peak	14,500	Western Montana	1.2 inches (compacted)
Crater Lake (Mt. Mazama)	7,600	Western Montana	Up to 6 inches (compacted)
Mount St. Helens	38	Entire State	Up to 0.2 inches (uncompacted)

Source: DES, 1996; Sarna-Wojcicki and others, 1981; USGS, 2003a; Nimlos, 1981.

Figure 4.12-3 shows the distribution of ash fall from some historic volcanic eruptions.

Figure 4.12-3

Areas of the U.S. Once Covered by Volcanic Ash

Source: USGS, 2005

Cascade Eruptions

The Cascade Range includes 27 volcanoes, many of which have been active in the last 4,000 years (**Figure 4.12-4**). The major threat these volcanoes pose to Montana is ashfall. The likely extent of such ashfall can be estimated on the basis of past eruptions.

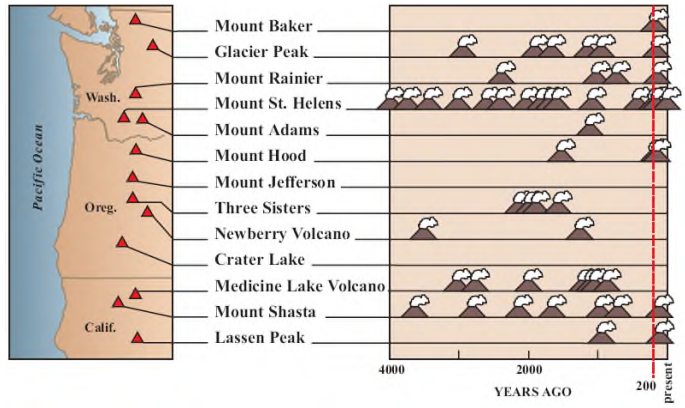


Figure 4.12-4
Cascade Eruptions during the Past 4,000 Years
Source: USGS, 2008

After the eruption of Mount St. Helens in May 1980, a coating of up to 0.2 inches of ash fell on Western Montana (Sarna-Wojcicki and others, 1981). Ash deposits were thickest in the western portions of the state, tapering to near zero on the eastern part of the state (**Figure 4.12-2**). It is estimated that the ashfall cost Missoula County nearly $6 million in cleanup and lost work time. Statewide cost from this event has been estimated at between $15 and $20 million (DES, 2004).

Travel was restricted in Western Montana for over a week because of concerns for public health; the ash was determined to be a physical respiratory irritant but not a toxic substance. The main hazards in western Montana included reduced visibility (and resulting closed roads and airports), clogging of air filters, and a health risk to children, the elderly, and people with cardiac or respiratory conditions, such as asthma, chronic bronchitis, and emphysema. Claims for State facilities totaled approximately $55,000 (DES, 2004).

The 1980 Mount St. Helens eruption was not a large eruption by world historical standards or even among prior Cascade eruptions. The amount of volcanic material ejected into the air from Mount St. Helens in 1980 (less than one-tenth cubic mile) was only about 1/80th of the volume ejected during the 1815 eruption of the Tambora volcano in Indonesia and less than 1/100th of the estimated ejecta from Mount Mazama during the eruption that formed Crater Lake. Therefore, future eruptions of large Cascade volcanoes, including Mount St. Helens, might be much larger than the May 18, 1980 eruption (Foxworthy and Hill, 1982).

Yellowstone Eruptions

Another area of volcanic activity that has affected Montana in the past and could pose a serious threat in the future is the Yellowstone Caldera in northwestern Wyoming, just south of the Montana border. A caldera is a term for a large volcanic crater. The Yellowstone Caldera is 45 miles across at its greatest diameter. The spectacular geysers, boiling hot springs, and mud pots that have made Yellowstone famous are surface manifestations of a magma chamber at depth.

Cataclysmic eruptions 2.0, 1.3, and 0.6 million years ago ejected huge volumes of rhyolite magma; each eruption formed a caldera and extensive layers of thick pyroclastic-flow deposits. The caldera is buried by several extensive rhyolite lava flows that erupted between 75,000 and 150,000 years ago. Fortunately for mankind, an eruption comparable in magnitude with those of Yellowstone has

not occurred during recorded history. Initial lava flows were confined to the immediate area of the vent, but later flows inundated the headwaters of the Yellowstone River, near Gardiner. Pyroclastic flows (the Huckleberry Ridge Tuff) extended up to 55 miles from the vents. **Figure 4.12-5** shows distribution of ashfall from Yellowstone's giant eruptions 2 million and 630,000 years ago, compared with ashfall from the 760,000-year-old Long Valley caldera eruptions at Mammoth Lakes, California, and the 1980 eruption of Mount St. Helens, Washington (Adapted from Sarna-Wojcicki, 1991).

Declared Disasters

The 1980 Mount St. Helens eruption covered most of the state with variable amounts of ash. Based on DES records, Lake County was the only county to apply for state assistance which also included losses associated with flooding (**Table 4.12-2**).

Table 4.12-2. State Declarations for Volcanic Hazards

Date	PA. No.	Applicant	State	Local	Comments
1980	ST-80-1	Lake County	$ 8,320	$47,102	Volcanic Ash Fallout (Mt. St. Helens) & Flooding

Source: DES, 2018

Magnitude and Probability

The most likely event affecting Montana would be a Cascade volcano eruption causing ash fall in the western portion of the state. An ash fall event could cause equipment failure to the state's motor-pool and other motorized equipment. Clearing ash fall from the state's highways would cause extra resources devoted to the cleanup. The overall impact to state-owned facilities would be minor and primarily a response and recovery operation. After the eruption of Mount St. Helens in May 1980, a coating of up to 0.2 inches cost the state between $15 and $20 million in cleanup and lost work time (DES, 2004). The trajectory of ash fall events is heavily dependent upon the size of the eruption and the prevailing weather and ambient winds.

A Yellowstone eruption could be devastating. While the immediate area would have the greatest exposure to ash flows, tephra fallout, and mudflows, heavy ash fall could have severe impacts on areas within 100 miles of the eruption.

Volcanic eruptions, especially ones the size of Yellowstone's last explosion, would far exceed anything modern humans have experienced. The worst, most recent volcanic eruption took place in 1815 in Tambora, Indonesia, leading to the deaths of 92,000 people. That eruption was given a Volcanic Explosivity Index (VEI) of 7, with 1 being the least explosive. Mount St. Helens in Washington state was rated VEI 5 and killed 57 people. The latest Yellowstone volcanic eruption was a VEI 8 and occurred about 640,000 years ago. Another VEI 8 occurred about 74,000 years ago in Toba, Indonesia and killed an estimated 60 percent of the population. If such an eruption were to occur now with a much more populated Earth, it could return humanity to a pre-civilization state (European Science Foundation, 2015).

Although the probability is minimal, there is the potential for a catastrophic volcanic eruption in the vicinity of Yellowstone National Park that would have very serious consequences for Montana and neighboring states. The probability of the volcanic eruption hazard is ranked as "Unlikely"; with less than one event per 100 years. According to USGS scientists, of Yellowstone's volcano erupting in any

year is extremely low, less than 0.00014 percent. Since the last large eruptions, there have been 50 to 70 smaller eruptions contained primarily in the Yellowstone caldera and more than a dozen small hydrothermal eruptions occur every year (Independent Record, *Report: Governments Need to be Prepared for Catastrophes*, January 19, 2016).

Vulnerability and Area of Impact

The USGS has determined that two areas in Montana may have exposure to volcanic hazards:

- The extreme western edge of Montana (Lincoln, Sanders, and Mineral Counties) could be subject to ash fall of 0.2 inches or greater from eruptions of the Cascade Volcanoes.
- The southwestern corner of the state (portions of Madison and Gallatin Counties) could be subject to ash flows, lava flows, and lahars (ash/mudflows) from a Yellowstone eruption.

The primary hazard to which the State may be vulnerable at some future time, is ash fall from a Cascade volcano. Eruptions in the Cascades have occurred at an average rate of 1-2 per century during the last 4,000 years, and future eruptions are certain. Seven volcanoes in the Cascades have erupted in the last 200 years. The next eruption in the Cascades could affect hundreds of thousands of people. The effect in Montana would depend on the interaction of such variables as source location, frequency, magnitude and duration of eruptions, the nature of the ejected material and the weather conditions. Therefore, the entire state may be considered vulnerable to ashfall to some degree in the event of a volcanic eruption.

There is evidence that ash fall from a Yellowstone eruption could impact a far greater area and have significant impact on the southern half of Montana. Three major periods of activity in the Yellowstone system have occurred at intervals of approximately 600,000 years, and the most recent was about 600,000 years ago. The evidence available is not sufficient to confirm that calderas such as the one in Yellowstone erupt at regular intervals, so the amount of time elapsed is not necessarily a valid indicator of imminent activity. There is no doubt, however, that a large body of molten magma exists, probably less than a mile beneath the surface of Yellowstone National Park. The presence of this body has been detected by scientists who discovered that earthquake waves passing beneath the Park behave as if passing through a liquid. The only liquid at that location that could absorb those waves is molten rock. The extremely high temperatures of some of the hot springs in the park further suggest the existence of molten rock at shallow depth. A small upward movement in the magma could easily cause this magma to erupt at the surface. If a major eruption occurred, the explosion would be "comparable to what we might expect if a major nuclear arsenal were to explode all at once, in one place" (Alt and Hyndman, 1986). **Figure 4.12-5** presents volcanic history and recent seismic activity in the Yellowstone region.

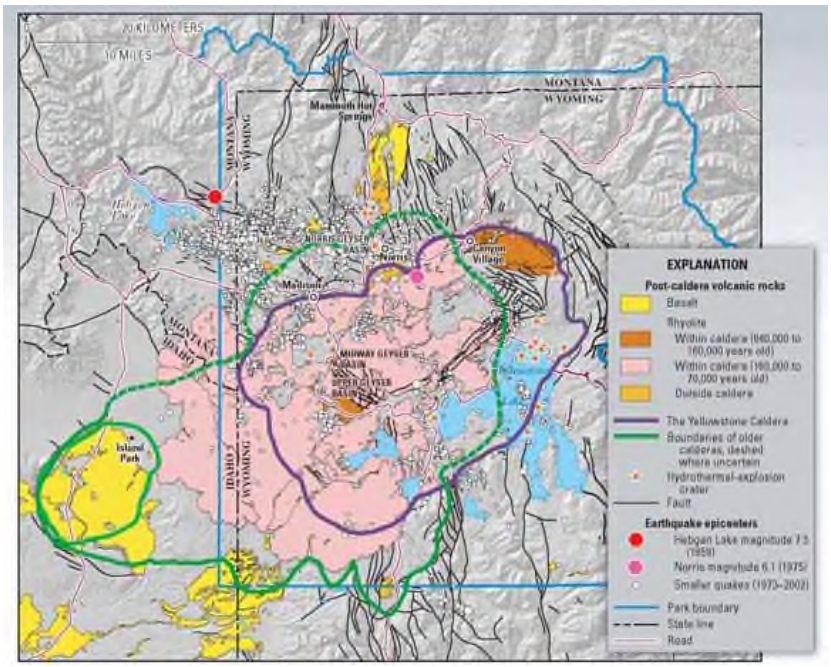


Figure 4.12-5

Volcanic History and Recent Seismic Activity in the Yellowstone Region

Source: USGS, 2005

According to the paper entitled "*Extreme Geohazards: Reducing the Disaster Risk and Increasing Resilience*", more attention should be focused on forecasting and preparing for such a cataclysmic event. Most of the big volcanoes around the world are not monitored. Yellowstone's volcano is an exception and has 35 seismographs, 45 GPS stations to detect horizontal and vertical displacement and even five seismographs installed in the ground. The monitoring has been largely funded by the National Science Foundation and USGS (Independent Record, *Report: Governments Need to be Prepared for Catastrophes*, January 19, 2016).

The importance of monitoring volcanoes can be measured in lives. A VEI 8 eruption could easily kill (through the many indirect effects, in particular, food scarcity) a higher percentage of the global population than the Spanish Flu if it occurred without any global preparation effort (European Science Foundation, 2015).

Vulnerability of State Property

Exposure to state-owned facilities can be classified into two types of events: a Yellowstone eruption causing ash flows and tephra fallout impacting the immediate area, and ash falls from either a Yellowstone eruption or a Cascade Volcano eruption blanketing portions of the state. Counties with greatest vulnerability are those that are located within 100 miles of Yellowstone Park. Those counties and the value of state-owned facilities are shown in **Table 4.12-3**.

Table 4.12-3. State Building Values in Counties Most Vulnerable to Yellowstone Eruption

County	Building Value	Contents Value	Total Value	State Employee Count
Gallatin	$963,969,286	$259,629,470	$142,380,350	9,013
Jefferson	$25,565,364	$5,044,592	$762,141	237
Madison	$31,888,918	$1,379,931	$1,189,518	25
Broadwater	$15,531,155	$11,584,991	$3,178,234	7

Table 4.12-3. State Building Values in Counties Most Vulnerable to Yellowstone Eruption

County	Building Value	Contents Value	Total Value	State Employee Count
Park	$4,236,197	$985,974	$543,503	46
Carbon	$6,541,406	$346,750	$989,748	22
Stillwater	$1,190,782	$268,452	$211,744	13
TOTALS	**$1,048,923,108**	**$279,240,160**	**$149,255,238**	**9,363**

Source: DOA-RMTD, 2017

Review of Potential Losses in Local Hazard Mitigation Plans

Approximately, one-third of local plans evaluated the volcanic eruption hazard in their risk assessments and two-thirds did not. The majority of the local jurisdictions that evaluated the volcanic eruption hazard did so in a qualitative fashion ranking the hazard as low to moderate for building, societal and economic loss instead of giving loss estimates. **Appendix B-13** presents a summary of potential losses from the local Hazard Mitigation Plans.

Future Development

As population increases in west and southwest Montana, and recreational usage continues to expand, more and more people and property are at risk from ashfall associated with volcanic activity.

Climate Change

The effects of climate change will not increase volcanic activity; however, volcanic eruptions do have an effect on the climate.

Volcanic ash or dust released into the atmosphere during a volcanic eruption shade sunlight and cause temporary cooling. Larger particles of ash have little effect because they fall out of the air quickly. Small ash particles form a dark cloud in the troposphere can shade and cool the area directly below. Most of these particles fall out of the atmosphere with rain a few hours or days after an eruption. But the smallest particles of dust get into the stratosphere and are able to travel vast distances, often worldwide. These tiny particles are so light that they can stay in the stratosphere for months, blocking sunlight and causing cooling over large areas of the Earth.

Often, erupting volcanoes emit sulfur dioxide into the atmosphere. Sulfur dioxide is much more effective than ash particles at cooling the climate. The sulfur dioxide moves into the stratosphere and combines with water to form sulfuric acid aerosols. The sulfuric acid makes a haze of tiny droplets in the stratosphere that reflects incoming solar radiation, causing cooling of the Earth's surface. The aerosols can stay in the stratosphere for up to three years, moved around by winds and causing significant cooling worldwide. Eventually, the droplets grow large enough to fall to Earth.

Volcanoes also release large amounts of greenhouse gases such as water vapor and carbon dioxide. The amounts put into the atmosphere from a large eruption doesn't change the global amounts of these gases very much. However, there have been times during Earth history when intense volcanism has significantly increased the amount of carbon dioxide in the atmosphere and caused global warming (UCAR, 2018).

Data Limitations

Volcanic eruptions are somewhat unpredictable events and the ash fall is highly dependent on weather parameters. Generally, western and southwestern Montana are considered more vulnerable than other parts of state given their proximity to volcanic areas; however, the science of volcanoes and related effects do not allow for more specific analysis.

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4.13 Risk Assessment Summary

This section provides a summary of the risk assessment and vulnerability analysis. The discussion includes: projected changes to hazards due to climate change summary; a hazard exposure summary; and, an assessment of future development.

Climate Change Summary

In 2017, FEMA Region VIII prepared a report entitled Montana – Assessing Future Conditions. The following table from this document summarizes what changes to hazards are expected due to climate change.

Table 4.13-1. Summary of Projected Changes to Hazards due to Climate Change in Montana

Hazard	Location	Extent/Intensity	Frequency/Duration
Avalanche	Avalanches are only a hazard in mountainous regions of the state. The area affected by avalanches is projected to shrink as warmer temperatures cause more precipitation to fall as rain.	It is unknown if or how the intensity of avalanches will change.	Additional research is needed to determine the effects of climate changes on avalanche frequency and duration.
Dam Failure	The area of the state at risk to dam failure is not projected to change.	There is no projected change in the extent or intensity of dam failure.	Flooding is projected to occur more frequently, increasing the risk for dam failure.
Disease	Projected increases in temperature may expand the reach of disease vectors and allow them to remain active for a longer period of the year.	There is no projected change in the extent or intensity of disease.	Frequency of some diseases is projected to increase due to more active disease vectors.
Drought	The area of the state at risk to drought is not projected to change.	Droughts are projected to increase in intensity.	Droughts are projected to increase in frequency and have a longer duration due to shifts in seasonal precipitation patterns, including dryer summers and less precipitation falling as snow in early spring/late fall.
Flood	Flood hazard zones are projected to increase in size across the state.	Flood extent and intensity are not projected to change, but additional research may be needed.	Intense storms are projected to occur more frequently, increasing the frequency of flood events.
Hail	The area of the state at risk to hail is not projected to change.	It is unknown if or how the intensity of hail events will change. Extent is not projected to change.	Intense summer storms are projected to occur more frequently, increasing the frequency of hail events.
Landslide	The area at risk to landslides is not projected to change.	There is no projected change in landslide extent or intensity.	Flood events are projected to occur more frequently, increasing the frequency, increasing the frequency of landslides.
Pest Infestation	Pests are projected to expand into a broader range of the state due to increased temperatures.	Pest infestations are projected to increase in intensity as average temperatures increase.	Pest infestations are projected to increase in frequency due to increased temperatures.
Severe Wind	The area of risk to severe wind events is not projected to change.	It is unknown if or how the intensity of severe wind events will change. Extent is not projected to change.	Intense winter and spring storms are projected to occur more frequently, increasing the frequency of severe wind events.

Table 4.13-1. Summary of Projected Changes to Hazards due to Climate Change in Montana

Hazard	Location	Extent/Intensity	Frequency/Duration
Tornado	The area of the state at risk to tornadoes is not projected to change.	There is no projected change in tornado extent or intensity.	Intense winter and spring storms are projected to occur more frequently, increasing the frequency of tornadoes.
Wildfire	The area at risk to wildfires is not projected to change.	Wildfire intensity is projected to increase due to additional dry vegetation that can fuel wildfires.	Droughts are projected to occur more frequently, increasing the frequency of wildfires.

Source: FEMA Region VIII, Montana - Assessing Future Conditions, 2017

Changes in hazard probability due to climate change are summarized in **Table 4.13-2.** Probability is evaluated in accordance with the methods outlined in *Section 4.1.3*.

Table 4.13-2. Hazard Summary

Hazard	# Incidents	Period of Record	Magnitude	Probability of Future Events	Probability Due to Climate Change
Wildfire	27,282	15 years	$668 M in suppression costs 6,338,545 acres burned 737 structures lost	Highly Likely	Highly Likely
Flooding	623	57 years	$87.1 M in property damage $19.7 M in crop damage 8 injuries; 11 fatalities	Likely	Likely
Earthquake	9	60 years	29 fatalities $11 M+ in property damage	Possible	Possible
Drought	13	15 years	$433.2 M in insurance claims	Likely	Highly Likely
Severe Weather	1,140 Hail	57 years	$150.7 M in crop damage; $158.8 M in property damage; 25 injuries and 1 fatality	Highly Likely	Highly Likely
	241 Lightning	57 years	$15.9 M in crop damage; $8.3 M in property damage; 69 injuries and 25 fatalities	Highly Likely	Highly Likely
	1,118 Severe Thunderstorm	57 years	$72 M in crop damage; $64.8 M in property damage; 25 injuries and 44 fatalities	Highly Likely	Highly Likely
	141 Tornadoes	57 years	$5.3 M in crop damage; $87.2 M in property damage; 21 injuries and 3 fatalities	Highly Likely	Highly Likely
	2,883 High Wind	57 years	$54.4 M in crop damage; $84.2 M in property damage; 132 injuries and 34 fatalities	Highly Likely	Highly Likely
	1,911 Winter Weather	57 years	$11.9 M in crop damage; $79.3 M in property damage; 543 injuries and 62 fatalities	Highly Likely	Highly Likely
Haz-Mat Incidents	501	10 years	$6.2 M in property damage	Highly Likely	Highly Likely
Disease	27,276	10 years	121 fatalities from influenza 2016-2018	Highly Likely	Highly Likely
Landslide & Avalanche	30 Avalanches	12 years	38 fatalities; $330 K in PD	Likely	Likely
	14 Landslides	23 years	$19.4 M in property damage	Possible	Possible
Dam Failure	21	66 years	58 fatalities >$250 K in property damage plus 265 homes & 20 K acres of hay	Possible	Possible

Table 4.13-2. Hazard Summary

Hazard	# Incidents	Period of Record	Magnitude	Probability of Future Events	Probability Due to Climate Change
Terrorism, Violence, Civil Unrest, Cyber Security	5	39 years	NA	Possible	Possible
Volcanic Ash	1	100 years	$55 K in property damage	Unlikely	Unlikely

Notes: Probability based on Methodology in *Section 4.1*
NA = Not Available; M = million; K = Thousand; PD = Property Damage
Wildfire data from NIFC, 2018 (number and acreage) and USFS, 2013 and 2018 (suppression cost, structures lost).
Flooding data from SHELDUS (2017) adjusted for inflation.
Earthquakes with magnitude > 5.5 (Stickney et.al., 2000) and newspaper accounts.
Drought incidents from MT State Library (2018) with magnitude from National Drought Mitigation Center (2018).
Severe weather data from SHELDUS (2017) adjusted for inflation.
Haz-Mat data from U.S. Dept. Transportation, Office of Hazardous Materials Safety (2018)
Disease data from Montana Dept. Public Health and Human Services (2018)
Landslide and Avalanche data is anecdotal from historic accounts, CAIC (2018), and PDM grant data.
Dam Failure data from DES (2013), DNRC (2014) and DNRC (2018).
Volcanic Ash data from DES (2018).

The probability of the drought hazard is expected to increase from "Likely", occurring more than once a decade but not every year, to "Highly Likely", occurring every year, due to climate change. The flooding and severe weather hazards are expected to increase but will remain in their assigned probability categories.

Hazard Exposure Summary

Table 4.13-3 presents an exposure summary for the general building stock, critical facilities, cultural resources, and population for each hazard with annual loss estimates, for severe weather and flooding. For those hazards with unique areas of impact, severe weather exposes the most building stock and cultural features to damage, followed by wildfire. Critical facilities and population are most at risk from severe weather, followed by earthquake.

Future Development

New buildings and additions to state buildings planned for the next 5 to 10 years are listed below. **Figure 4.13-1** presents a composite of the hazard prone areas showing these future development projects. **Table 4.13-4** presents a matrix of each identified future development project, showing which hazards they will be exposed to. Data on proposed construction method and estimated cost were not available at this time.

- Equipment Storage Building, Augusta
- Equipment Storage Building, Big Timber
- MSU-B Science Building Addition, Billings
- MSU Dining Hall, Bozeman
- MSU Dorm, Bozeman
- Norm Asbjornson Innovation Center, Bozeman
- American Indian Student Center, Bozeman
- SW Montana Veteran's Home, Butte

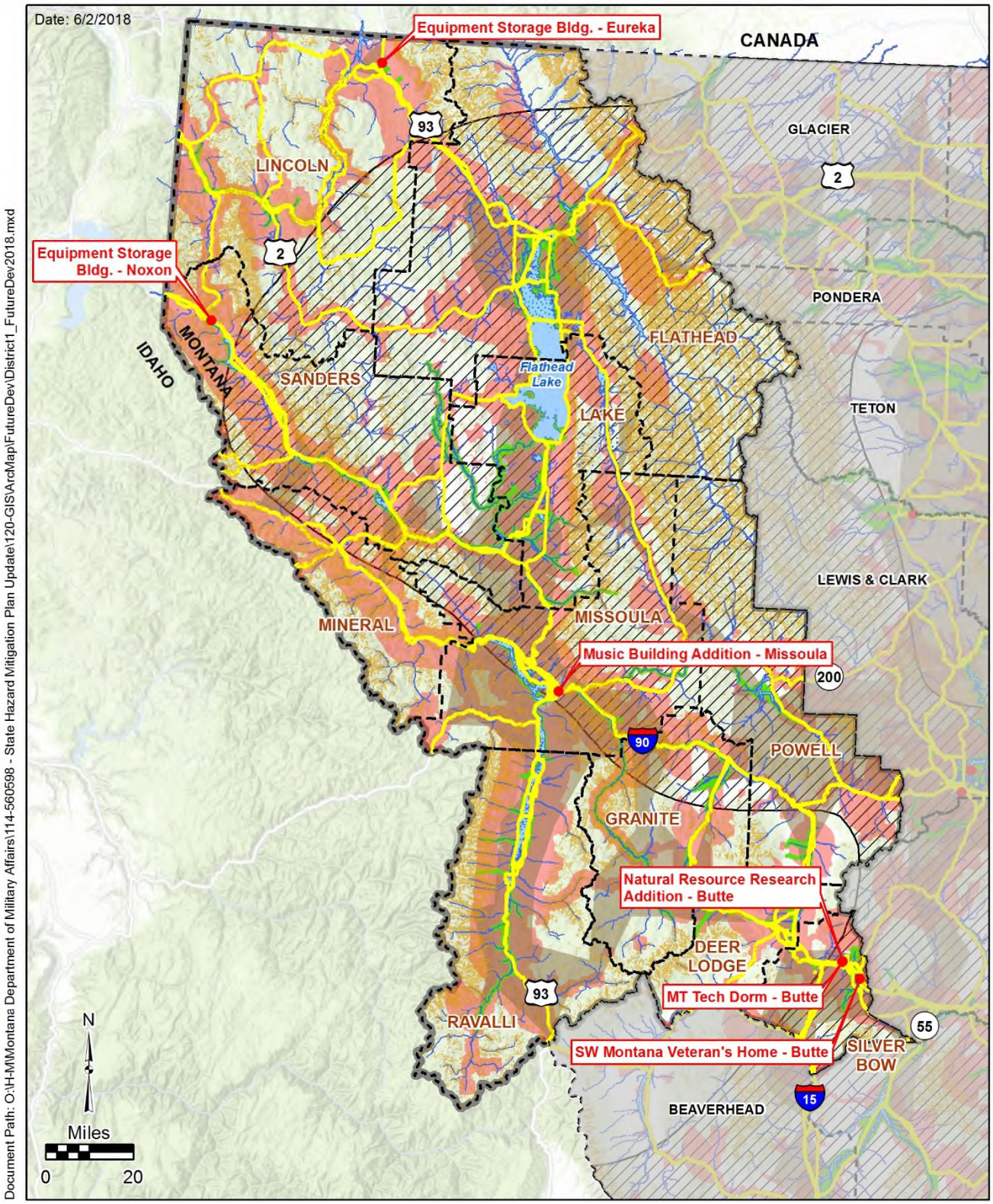
- MT Tech Dorm, Butte
- Natural Resource Research Addition, Butte
- Equipment Storage Building, Eureka
- Diesel Technology Center, Havre
- Montana Heritage Center, Helena
- Montana Law Enforcement Academy Dining Addition, Helena
- MLEA Ohs Building Addition, Helena
- Malta Readiness Center, Malta
- Music Building Addition, Missoula
- Equipment Storage Building, Noxon
- Equipment Storage Building, Roy
- Equipment Storage Building, Sidney
- Equipment Storage Building, Wolf Point
- Maintenance Shop, Wolf Point

Although future State-owned facilities will be exposed to various hazards, construction methods will be used to enhance their structural resiliency to minimize damage and protect building occupants.

Table 4.13-3. Vulnerability Analysis Summary

Hazard	Building Value (Residential + Commercial/ Agricultural/ Industrial) Exposure n Hazard Area)	# Buildings (Residential + Commercial/ Agricultural/ Industrial) Exposure in Hazard Area	Annual Loss - Building Stock	Critical Facility $ (Exposure in Hazard Area)	# Critical Facilities (Exposure in Hazard Area)	# Cultural Features in Hazard Area	Population in Hazard Area	Under 18 in Hazard Area	Over 65 in Hazard Area
Wildfire	$48,996,877,127	236,118	NA	$572,826,009	248	96	316,427	113,581	109,151
Flooding	$7,066,748,349	38,952	$1,873,822	$2,620,257,377	39	56	60,187	22,037	20,458
Earthquakes	$50,325,694,685	216,095	NA	$2,989,264,905	602	58	508,711	171,667	149,241
Drought	ND	ND	NA	ND	ND	ND	ND	ND	ND
Severe Weather	$81,205,293,546	391,571	$14,199,752	$3,467,345,113	752	108	716,139	255,322	229,957
Hazardous Material & Transportation Accidents	$14,007,320,043	83,414	NA	$365,491,797	100	41	127,907	48,324	47,638
Disease	ND	ND	NA	ND	ND	ND	ND	ND	ND
Landslide	$477,533,375	1,651	NA	$508,963	4	8	2,208	803	721
Dam Failure	$14,007,320,043	83,414	NA	$365,491,797	100	41	127,907	48,324	47,638
Terrorism, Violence, Civil Unrest, Cyber Security	ND	ND	NA	ND	ND	ND	ND	ND	ND
Volcanic Ash	ND	ND	NA	ND	ND	ND	ND	ND	ND

NA = Not Available. Magnitude cannot be calculated if historic property damage figures are not available.
ND = Not Determined.



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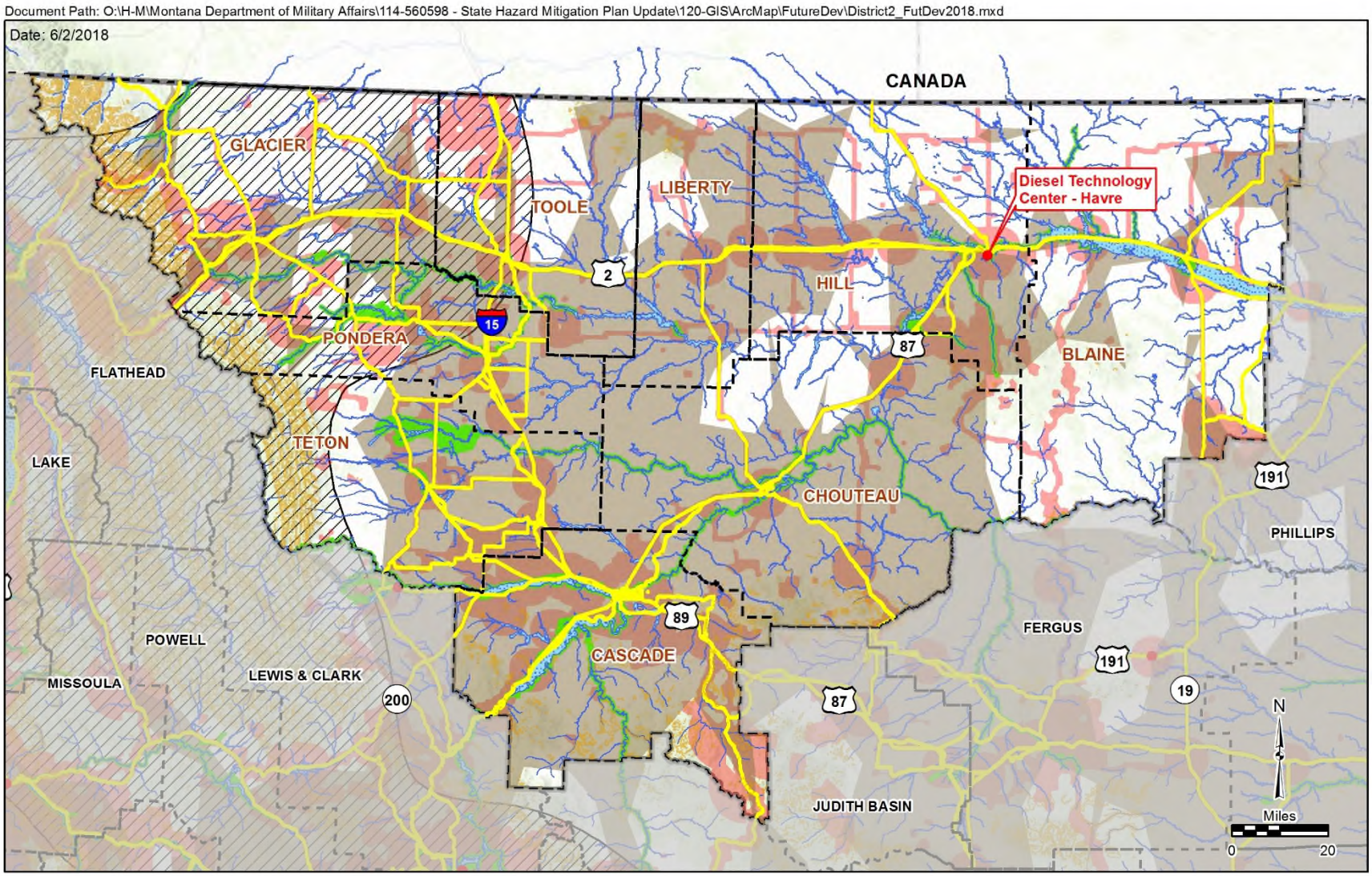
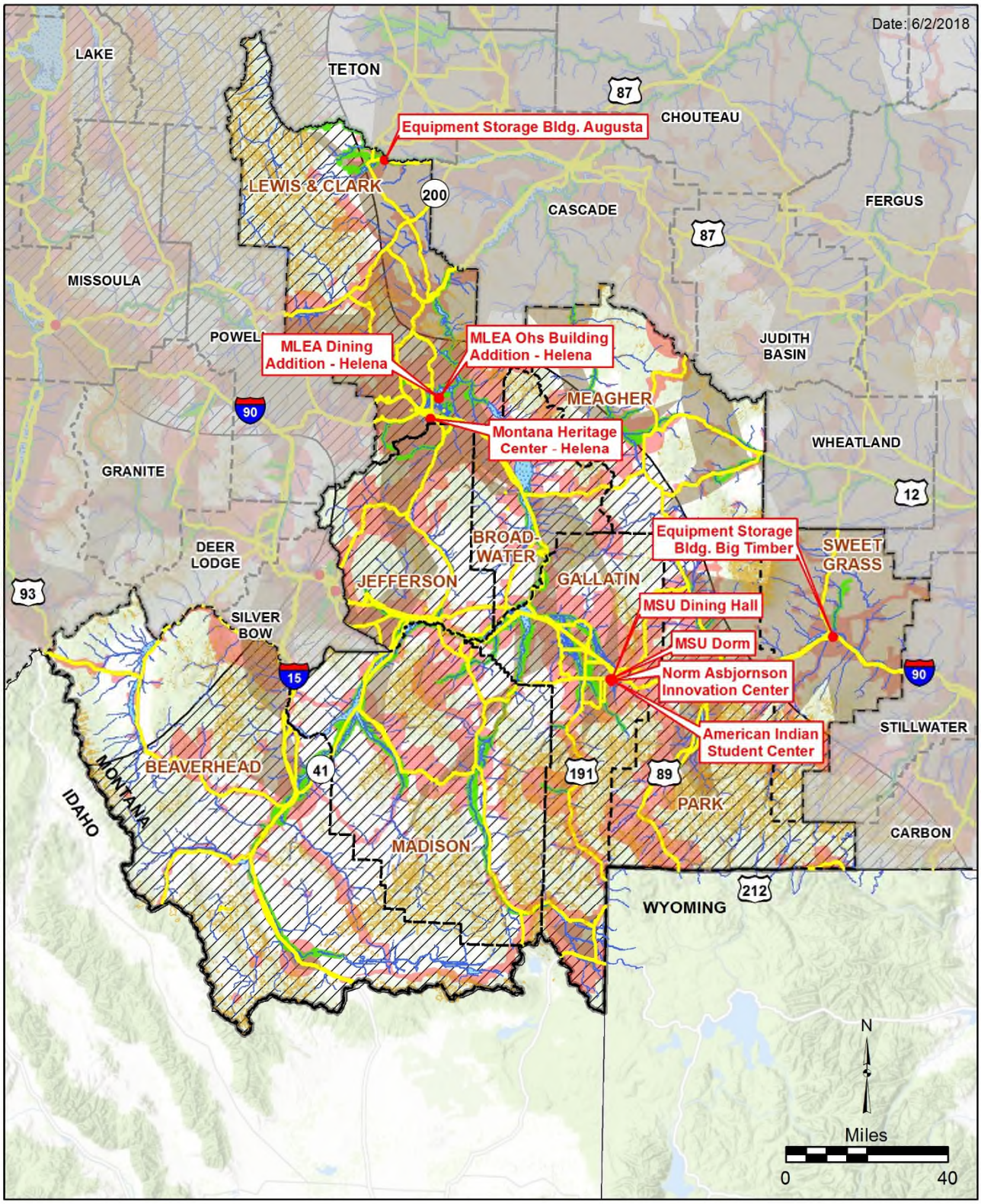
- Future Development
- Dam Failure
- Earthquake
- Flood
- Hazardous Materials
- Landslide
- Severe Weather
- Wildfire

Figure 4.13-1A
Hazard Composite/Future Development
DES District 1
State of Montana MHMP 2018 Update



- Future Development
- Dam Failure
- Earthquake
- Flood
- Hazardous Materials
- Landslide
- Severe Weather
- Wildfire

Figure 4.13-1B
Hazard Composite/Future Development
DES District 2
State of Montana MHMP 2018 Update



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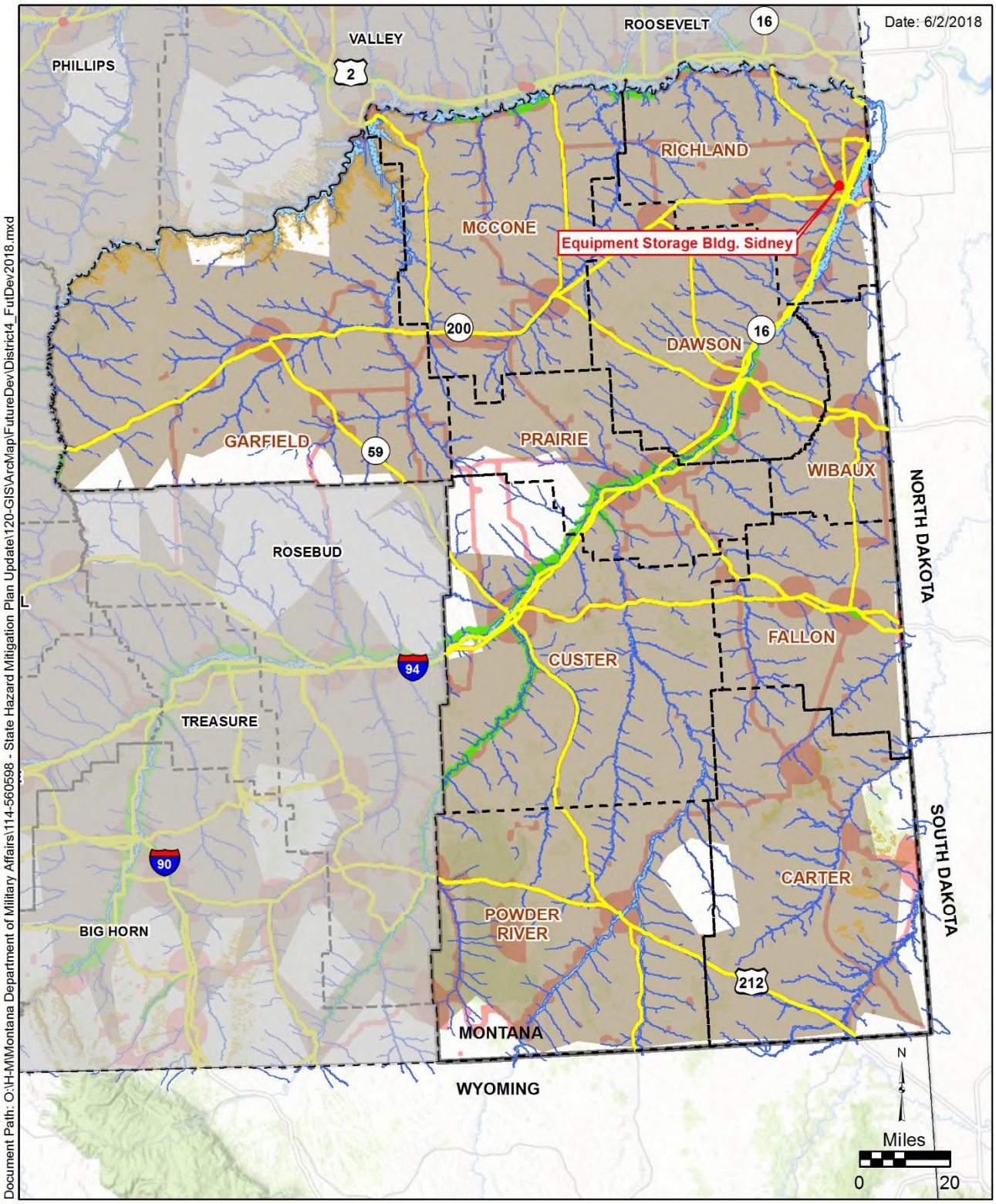
- Future Development
- Dam Failure
- Earthquake
- Flood
- Hazardous Materials
- Landslide
- Severe Weather
- Wildfire

Figure 4.13-1C
Hazard Composite/Future Development
DES District 3
State of Montana MHMP 2018 Update



Future Development
Dam Failure
Earthquake
Flood
Hazardous Materials
Landslide
Severe Weather
Wildfire

Figure 4.13-1D
Hazard Composite/Future Development
DES District 4
State of Montana MHMP 2018 Update

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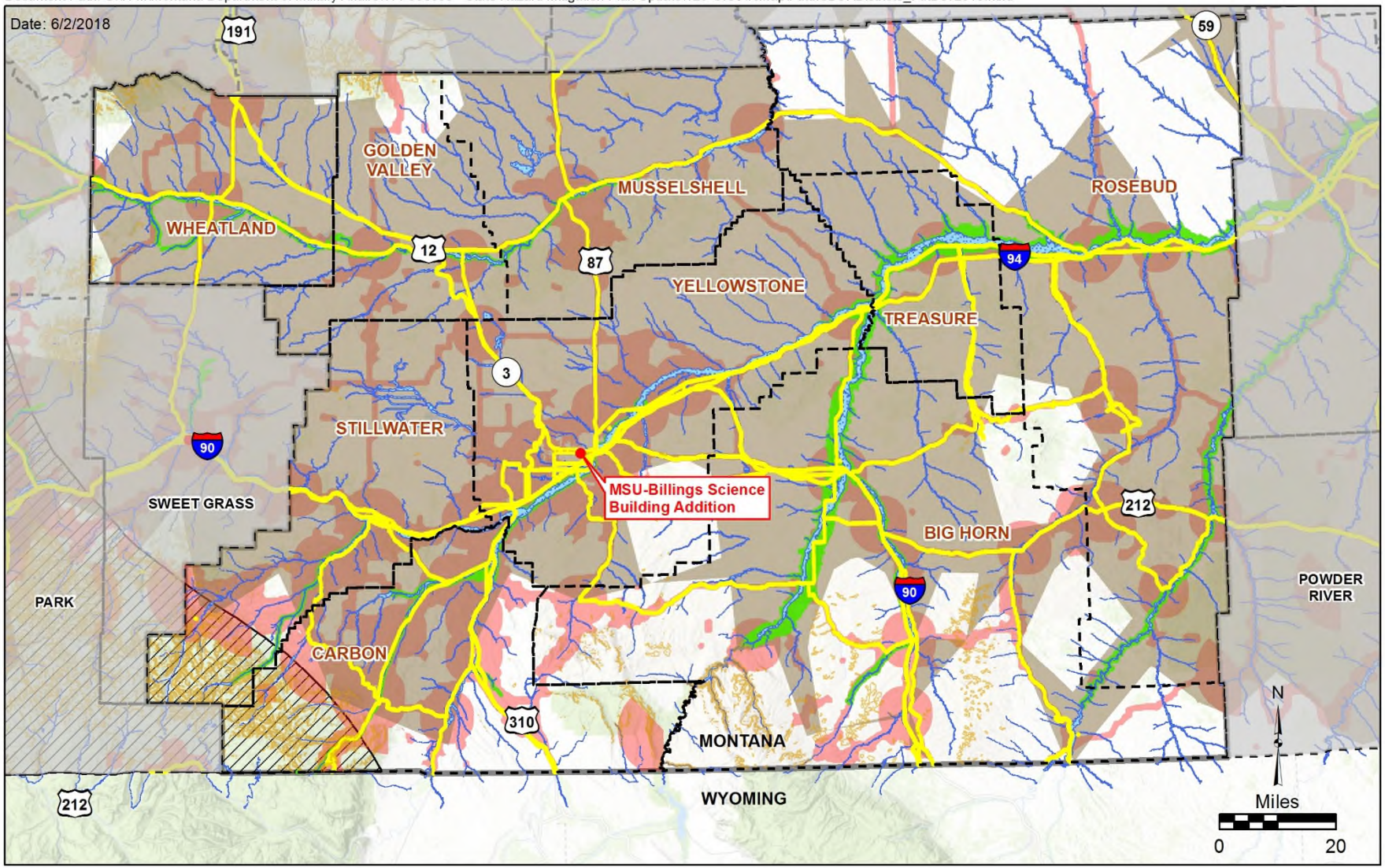

- Future Development
- Dam Failure
- Earthquake
- Flood
- Hazardous Materials
- Landslide
- Severe Weather
- Wildfire

Figure 4.13-1E
Hazard Composite/Future Development
DES District 5
State of Montana MHMP 2018 Update

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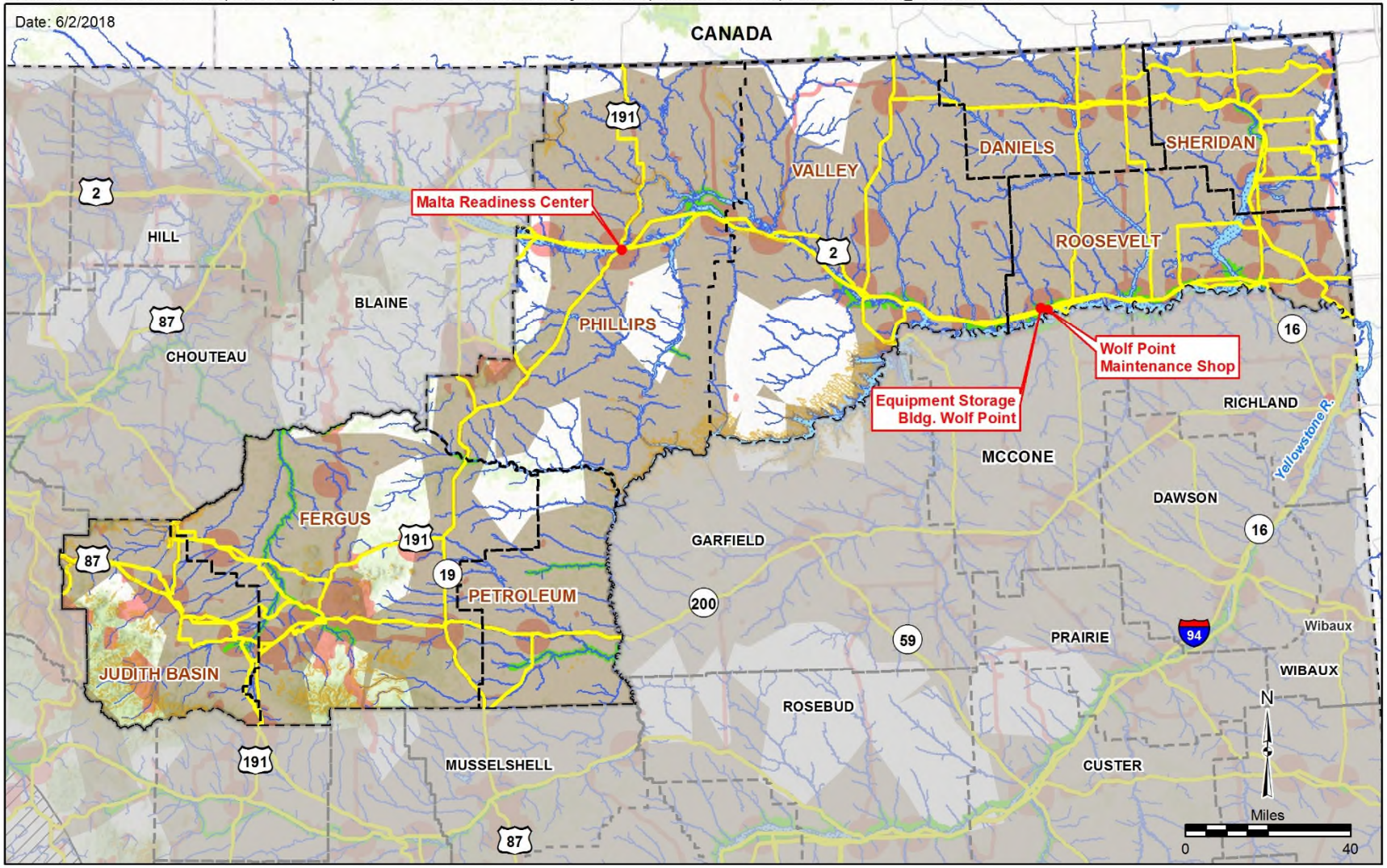

- Future Development
- Dam Failure
- Earthquake
- Flood
- Hazardous Materials
- Landslide
- Severe Weather
- Wildfire

Figure 4.13-1F
Hazard Composite/Future Development
DES District 6
State of Montana MHMP 2018 Update

Table 4.13-4. Future Development Summary

Proposed Project	Hazards										
	Wildfire	Flooding	Earthquake	Drought	Severe Weather	Disease	Haz-Mat & Transportation Accidents	Landslide	Dam Failure	Terrorism, Violence, Civil Unrest, Cyber	Volcanic Ash
Equipment Storage Building, Augusta	Yes	No	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Equipment Storage Building, Big Timber	Yes	No	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes
MSU-B Science Building Addition, Billings	No	No	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes
MSU Dining Hall, Bozeman	No	No	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes
MSU Dorm, Bozeman	No	No	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes
Norm Asbjornson Innovation Center, Bozeman	No	No	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes
American Indian Student Center, Bozeman	No	No	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes
SW Montana Veteran's Home, Butte	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes
MT Tech Dorm, Butte	Yes	No	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes
Natural Resource Research Addition, Butte	No	No	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes
Equipment Storage Building, Eureka	Yes	No	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Diesel Technology Center, Havre	No	No	No	Yes	Yes	Yes	No	No	No	Yes	Yes
Montana Heritage Center, Helena	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes
MLEA Dining Addition, Helena	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes
MLEA Ohs Building Addition, Helena	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes
Readiness Center, Malta	Yes	No	No	Yes	Yes	Yes	No	No	No	Yes	Yes
Music Building Addition, Missoula	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Equipment Storage Building. Noxon	Yes	No	No	Yes	No	Yes	Yes	No	No	Yes	Yes
Equipment Storage Building. Roy	Yes	No	No	Yes	No	Yes	Yes	No	No	Yes	Yes
Equipment Storage Building. Sidney	Yes	No	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Equipment Storage Building. Wolf Point	Yes	No	No	Yes	Yes	Yes	No	No	No	Yes	Yes
Maintenance Shop, Wolf Point	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes

SECTION 5. MITIGATION STRATEGY

Mitigation goals and objectives serve as the framework for future mitigation funding and project decisions. They shape the long-term vision in the State of Montana for hazard mitigation. Development of the mitigation strategy included review of the State's Preparedness Report (SPR) to identify any potential gaps. The SPR is a standardized statewide self-assessment of Core Capabilities from the point of view of each of the five solution areas: planning, organization, equipment, training, and exercise. The mitigation strategy represents the prioritization of project requests and statewide initiatives.

5.1 Mitigation Goals and Objectives

Federal, state, tribal, and local governments, business, organizations, and individuals have spent trillions of dollars recovering from disasters. Mitigation works to reduce those losses, both fiscal and those that cannot be given a price, such as a life or sentimental items, by preventing the losses and even sometimes the disaster. With a comprehensive overview of the hazards that threaten Montana, goals and objectives have been developed to mitigate potential losses from those hazards. These goals represent a global vision on what the State seeks to accomplish through implementation of the MHMP. The objectives are more specific and generally categorize the actions that can be taken to meet the goals.

Mitigation goals and objectives for the 2018 State MHMP are consistent with the hazards and vulnerabilities identified in the risk assessment (*Section 4*) and are generally in accordance to those identified in the 2013 State MHMP, with the following changes:

- Hazard-specific goals were re-ordered to reflect the updated hazard ranking.
- Two "All Hazard" goals were combined into Goal 1.
- Individual goals for severe winter and summer weather were combined into one severe weather goal.
- Hazardous material incidents and transportation accidents were combined into one goal since they often occur together.
- The communicable disease goal was expanded to include agriculture (crops and livestock) and wildlife disease as well as public health issues.
- Landslides and avalanche were combined under one goal since they are caused by the same process.
- The terrorism goal was expanded to include civil unrest, violence and cyber security.

Objectives in the 2018 State MHMP were updated to include activities and initiatives covering the range of mitigation action types described in FEMA planning guidance, specifically:

- Prevention – These actions include governmental regulatory authorities, including policies or codes that influence the way land and buildings are being developed and built.

- Property Protection – Actions that involve the modification of existing buildings or structures to protect them from a hazard, or removal from the hazard area. Examples include acquisition, elevation, relocations, structural retrofits, storm shutters, and shatter-resistant glass. Wildland fuel reduction projects are also included in this category.
- Structural – These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- Natural Resource Protection – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.
- Public Education and Awareness – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as the National Flood Insurance Program and Community Rating System, StormReady (NOAA) and FireWise (NFPA) Communities.
- Emergency Service – These are actions to enhance community preparedness through training and acquisition of equipment.
- Mapping/Analysis/Planning – These actions include development of mapping and planning documents to assist with development and implementation of mitigation strategies.

The 2018 State of Montana mitigation goals and objectives are presented in **Table 5.1-1**.

Table 5.1-1. 2018 Mitigation Goals and Objectives

Goal	Objectives
Goal 1 - Reduce Impacts from All Hazards	
	Objective 1.1 - Implement Property Protection Projects to Reduce Impacts from All Hazards
	Objective 1.2 - Implement Public Education and Awareness Projects to Reduce Impacts from All Hazards
	Objective 1.3 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from All Hazards
	Objective 1.4 - Enhance Emergency Service Capabilities to Reduce Impacts from All Hazards
	Objective 1.5 - Implement Regulatory Projects to Reduce Impacts from All Hazards
	Objective 1.6 - Suggest Legislative Changes to Reduce Impacts from All Hazards
Goal 2 - Reduce Impacts of Wildland and Rangeland Fires	
	Objective 2.1 - Implement Property Protection Projects to Reduce Impacts from Wildfire
	Objective 2.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Wildfire
	Objective 2.3 - Implement Public Education and Awareness Projects to Reduce Impacts from Wildfire
	Objective 2.4 - Implement Natural Resource Protection Projects to Reduce Impacts from Wildfire
	Objective 2.5 - Implement Regulatory Projects to Reduce Impacts from Wildfire
	Objective 2.6 - Enhance Emergency Service Capabilities to Reduce Impacts from Wildfire
Goal 3: Mitigate the Potential Loss of Life and Property from Flooding	
	Objective 3.1 - Implement Property Protection Projects to Reduce Impacts from Flooding
	Objective 3.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Flooding
	Objective 3.3 - Implement Natural Resource Protection Projects to Reduce Impacts from Flooding
	Objective 3.4 - Implement Structural Projects to Reduce Impacts from Flooding
	Objective 3.5 - Implement Public Education and Awareness Projects to Reduce Impacts from Flooding
	Objective 3.6 - Enhance Emergency Service Capabilities to Reduce Impacts from Flooding

Table 5.1-1. 2018 Mitigation Goals and Objectives

Goal	Objectives
Goal 4: Reduce Impacts from Earthquakes	
	Objective 4.1 - Implement Prevention Projects to Reduce Impacts from Earthquakes
	Objective 4.2 - Implement Structural Projects to Reduce Impacts from Earthquakes
	Objective 4.3 - Implement Public Education and Awareness Projects to Reduce Impacts from Earthquakes
	Objective 4.4 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Earthquakes
	Objective 4.5 - Implement Property Protection Projects to Reduce Impacts from Earthquakes
	Objective 4.6 - Enhance Emergency Service Capabilities to Reduce Impacts from Earthquakes
Goal 5: Reduce the Impacts from Drought	
	Objective 5.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Drought
	Objective 5.2 - Support Planning and Monitoring Projects to Reduce Impacts from Drought
	Objective 5.3 - Support Natural Resource Protection Efforts to Reduce Impacts from Drought
	Objective 5.4 - Implement Structural Projects to Reduce Impacts from Drought
	Objective 5.5 - Suggest Legislative Changes to Reduce Impacts from Drought
Goal 6: Reduce Impacts from Severe Weather	
	Objective 6.1 - Implement Property Protection Projects to Reduce Impacts from Severe Weather
	Objective 6.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Severe Weather
	Objective 6.3 - Implement Prevention Projects to Reduce Impacts from Severe Weather
	Objective 6.4 - Implement Structural Projects to Reduce Impacts from Severe Weather
Goal 7: Reduce Losses from Hazardous Material Incidents and Transportation Accidents	
	Objective 7.1 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Hazardous Material Incidents and Transportation Accidents
	Objective 7.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Hazardous Material Incidents and Transportation Accidents
	Objective 7.3 - Enhance Emergency Service Capabilities to Reduce Impacts from Haz-Mat & Transp. Accidents
	Objective 7.4 - Implement Prevention Projects to Reduce Impacts from Haz-Mat and Transportation Accidents
Goal 8: Minimize Impacts from Disease Outbreaks	
	Objective 8.1 - Implement Prevention Projects to Reduce Impacts from Disease
	Objective 8.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Disease
	Objective 8.3 - Implement Natural Resource Protection Projects to Reduce Impacts from Disease
	Objective 8.4 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Disease
	Objective 8.5 - Enhance Emergency Service Capabilities to Reduce Impacts from Disease
Goal 9: Reduce Impacts from Landslides and Avalanche	
	Objective 9.1 - Implement Structural Projects to Reduce Impacts from Landslides and Avalanche
	Objective 9.2 - Implement Education and Awareness Projects to Reduce Impacts from Landslides and Avalanche
	Objective 9.3 - Support Planning & Mapping Projects to Reduce Impacts from Landslides and Avalanche
Goal 10: Reduce Impacts from Dam Failure Hazard	
	Objective 10.1 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Dam Failure
	Objective 10.2 - Implement Structural Projects to Reduce Impacts from Dam Failure
	Objective 10.3 - Enhance Emergency Service Capabilities to Reduce Impacts from Dam Failure
	Objective 10.4 - Implement Public Education and Awareness Projects to Reduce Impacts from Operational Flows
Goal 11 - Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security	
	Objective 11.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security
	Objective 11.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security
	Objective 11.3 - Implement Structural Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security
	Objective 11.4 - Enhance Emergency Service Capabilities to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security
Goal 12: Reduce Impacts from Volcanic Ash	
	Objective 12.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Volcanic Ash

5.2 Mitigation Projects

Montana mitigation projects are intended to reduce the vulnerability of jurisdictions within the state as well as the vulnerability of state-owned or operated buildings, infrastructure and critical facilities. Most mitigation projects from construction projects to community outreach are done at the local level. County and city government typically make the decisions governing projects from project design to implementation for their jurisdictions. With a state the size of Montana, local officials know the problems and issues within their community's best. The variations in climate, terrain, and population make each jurisdiction unique. What may work in one community, may not work in another. Rather than dictating the projects that should be done at the local level, the State typically acts as a guide and resource.

In consideration of federal and state mitigation guidance, the MHM Planning Team recognized that all communities would benefit from the inclusion of certain mitigation actions. These include initiatives to address vulnerable public and private properties, including repetitive loss properties; initiatives to support continued and enhanced participation in the NFIP; improved public education and awareness programs; and initiatives to support local and regional efforts to build greater local mitigation capabilities.

Mitigation projects are of two types: Planning Projects which included education, outreach, regulatory, and mapping projects; and, Non-Planning Projects which are essentially construction or acquisition projects, monitoring or surveillance projects, or any project which is an on-the-ground field effort.

5.2.1 Mitigation Project Review

The State MHMP Planning Team participated in seven workshops between September and December 2017 to review and update Montana's mitigation strategy (see *Section 2*). Members of the team represented state agencies, federal agencies, state associations, and non-government organizations responsible for mitigation in the state. Planning Team members evaluated the various components of each project including implementation details. Several projects were determined to be complete and several others were dropped due to redundancy or other reasons. New mitigation projects for the 2018 strategy were identified during the mitigation workshops. **Appendix C-2** presents a reconciliation between the 2013 and 2018 mitigation strategy.

Table 5.2-2 presents the 2018 Montana Mitigation Strategy. **Table 5.2-3** presents details on project implementation including the department/organization responsible for implementation, progress made over the past five years, activities planned for the next five years, schedule, and potential funding sources.

5.2.2 Prioritization Scheme

Each of the proposed mitigation actions has value; however, time and financial constraints do not permit all projects to be implemented immediately. By prioritizing the actions, the most critical, cost effective projects can be achieved in the short term. Mitigation actions retained and developed

for this updated MHMP were re-prioritized to reflect current conditions and anticipated needs over the next five years.

Section 201.6.c.3iii of 44CFR requires the prioritization of the action plan to emphasize the extent to which benefits are maximized according to a cost/benefit review of the proposed projects and their associated costs. Stated otherwise, cost-effectiveness is one of the criteria that must be applied during the evaluation and prioritization of all actions comprising the overall mitigation strategy.

To prioritize projects, a general scoring system was utilized. This prioritization scheme was developed based on stakeholder input regarding what criteria should be considered when prioritizing and selecting projects. The benefit/cost review used for the evaluation and prioritization of projects was qualitative; i.e. it does not include the level of detail required by FEMA for project grant eligibility under the HMGP and PDM grant programs. Project scoring for non-planning and planning projects are described below.

Non-Planning Projects Ranking Criteria

Estimated Cost

- High = >$1,000,000 (1 point)
- Medium = $100,000 to $1,000,000 (2 points)
- Low = <$100,000 (3 points)

Population Benefit

- High = 70% to 100% of State residents would benefit (3 points)
- Medium = 30% to 70% of State residents would benefit (2 points)
- Low = <30% of State residents would benefit (1 point)

Property Benefit

- High = >$1,000,000 (3 points)
- Medium = $10,000 to $1,000,000 (2 points)
- Low = <$100,000 (1 point)

Economic

- High = Potentially averts >$1,000,000 annually in economic loss (3 points)
- Medium = Potentially averts <$1,000,000 annually in economic loss (2 points)
- Low = Little or no impact to the economy (1 point)

Technically Feasible

- High = Technology available/legislative support or implementation likely (3 points)
- Medium = Technology available/legislative support difficult/implementation possible (2 points)
- Low = No technology available/legislative support or implementation unlikely (1 point)

Environmentally Sound

- High = Project protective of the environmental (3 points)
- Medium = Project is protective but moderately sustainable (2 points)
- Low = Project is protective but not sustainable (1 point)

Hazard Frequency

- High = Project mitigates a common hazard; occurs more than once a year (3 points)
- Medium = Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)
- Low = Project mitigates an infrequent hazard; occurs less than once per decade (1 point)

Hazard Magnitude

- High = Hazard causes high damage and loss of life (3 points)
- Medium = Hazard causes moderate damage and occasional loss of life (2 points)
- Low = Hazard causes minor damage ad rarely loss of life (1 point)

Planning Project Ranking Criteria

- Estimated Cost (1 to 3 points, see above)
- Population Benefit (1 to 3 points, see above)
- Property Benefit (1 to 3 points, see above)
- Economic Benefit (1 to 3 points, see above)
- Feasibility (1 to 3 points, see above)
- Effectiveness/Sustainability (1 to 3 points, see above)

Base-Plus-Risk Weighting Factor

Non-Planning project scores were enhanced depending on their ability of mitigate hazards in high population density areas. This Base-Plus-Risk weighting factor was determined as follows:

- Projects located in high population density areas (multiply score by 1.5)
- Projects located in moderate population density areas (multiply score by 1.25)
- Projects located in rural locations (multiple score by 1)

Final Ranking

Upon ranking a project in each of these categories, a total score was derived by adding together each of the scores. The project was then ranked high, medium, or low based on the numeric thresholds listed in **Table 5.2-1**. A Mitigation Action Plan for each project containing their scoring and rank is presented in **Appendix C-1**. Final ranking is shown in **Table 5.2-2**.

Table 5.2-1. Numeric Thresholds for Project Ranking

Non-Planning Projects		Planning Projects	
Priority	Score	Priority	Score
High	23-36	High	15-18
Medium	15-22	Medium	10-14
Low	8-14	Low	6-9

For the 2018 State Plan Update, the following changes were made to the project scoring system:

- Economic impact was added as a scoring criterion; i.e. will implementation of the project avert economic loss.
- The "effectiveness/sustainability" category was changed to "environmental soundness" which rates the projects sustainability as well as whether it is protective of the environment.
- The estimated cost, population benefit, and property benefit criterion were simplified from five to three ranking levels.
- The Base-Plus-Risk multiplication factor for non-planning projects adjusting for population density was changed (from 3x score for high population density and 2x score for moderate density) so that even a high scoring project in a rural area could receive an overall high final ranking.

State Prioritization

Prioritization was assigned to each project at the discretion of the State MHM Planning Team. A rank of high, medium, or low was determined based on the perceived need of the project to mitigate hazards and maintain continuity of government. **Table 5.2-2** and the Mitigation Action Plans in **Appendix C-2** present the state prioritization for each project.

5.2.3 Mitigation Project Implementation

The mitigation strategy for the State of Montana identifies an implementation schedule and the agency/organization responsible of implementation of each project, as detailed below.

Implementation Schedule

Mitigation projects were assigned one of four categories as a tentative schedule for implementation; short-term, mid-term, long-term, and ongoing. Implementation of short-term projects will begin within the next three years. Mid-term projects will require some planning and likely require funding beyond what is currently allocated to the various agencies in the State's general fund. Projects in the mid-term category will generally begin implementation within the next 2-5 years. Long-term projects will require more than 5 years to implement. Many projects are currently being implemented by the various agencies and these are indicated as ongoing. The implementation schedule for Montana's mitigation projects are summarized in **Table 5.2-3** and outlined in the Mitigation Action Plans contained in **Appendix C-1**.

Agency Responsible for Implementation

The concept of hazard mitigation must be embraced by all Montana's state agencies, federal land management agencies, non-governmental organizations, and businesses. In order for progress to be made towards achieving Montana's mitigation strategy, agencies and organizations were assigned specific projects to incorporate into their mission of serving the public and/or protecting Montana's resources. Entities responsible for implementing Montana's mitigation strategy are summarized in **Table 5.2-3** and outlined in the Mitigation Action Plans contained in **Appendix C-1**. These entities will be responsible for reporting on the progress of project implementation when the MHM Planning Team meets annually to monitor and evaluate the MHMP.

5.2.4 Mitigation Funding Sources

Funding for mitigation projects can come from a multitude of sources. Some sources may be specifically designed for disaster mitigation activities, while others may have another overarching purpose that certain mitigation activities may qualify for. The majority of the funding sources are recurring through legislation or continued funding. Some, however, may be from an isolated instance of financial support. Whenever possible, creative financing is encouraged. Often, additional funding sources are found through working with other agencies or businesses to identify common or complementary goals and objectives.

Presently, mitigation in Montana is funded through a number of sources, primarily federal. These sources, though, are often met with a match of in-kind services. *Section 6.1.6* in the *Capability Assessment* presents a discussion of mitigation funding sources available to Montana. Funding sources for individual projects in the 2018 Montana mitigation strategy are listed in **Table 5.2-3** and outlined in the Mitigation Action Plans contained in **Appendix C-1**.

Table 5.2-2. Montana State Plan Update – 2018 Mitigation Strategy

Goal	Objective	Project	Hazard Mitigated	Project Type	Benefit-Cost Ranking/Score	State Priority
Goal 1 - Reduce Impacts from All Hazards	*Objective 1.1 - Implement Property Protection Projects to Reduce Impacts from All Hazards*	Project 1.1.1 - Identify and protect essential government records in appropriate facilities.	All Hazards	Non-Planning	High / 27	High
		Project 1.1.2 - Plan for the protection of historic and cultural properties in hazard prone areas	All Hazards	Planning	Medium / 14	Medium
	Objective 1.2 - Implement Public Education and Awareness Projects to Reduce Impacts from All Hazards	Project 1.2.1 - Promote mitigation awareness and successes.	All Hazards	Planning	High / 18	High
		Project 1.2.2 - Continue outreach of mitigation project funding opportunities to agencies, counties and tribes.	All Hazards	Planning	High / 15	High
		Project 1.2.3 - Support National Weather Service's efforts to communicate probabilistic hazard information.	All Hazards	Planning	High / 16	High
		Project 1.2.4 - Promote hazard mitigation education in schools.	All Hazards	Planning	High / 15	Medium
		Project 1.2.5 - Promote public emergency notification sign-ups and All-Hazards NOAA Weather Radios through counties.	All Hazards	Planning	High / 16	High
		Project 1.2.6 - Coordinate public emergency notification for all hazards with local, state and federal jurisdictions through the Emergency Alert System.	All Hazards	Planning	High / 16	High
		Project 1.2.7 - Support the Montana Ready Communities Initiative.	All Hazards	Planning	High / 18	High
		Project 1.2.8 - Promote importance of developing personal preparedness kits.	All Hazards	Planning	High / 16	High
	Objective 1.3 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from All Hazards	Project 1.3.1 - Establish permanent Montana Mitigation Team.	All Hazards	Planning	High / 18	High
		Project 1.3.2- Bring agency hazard experts, emergency preparedness coordinators, and partners together on a regular basis to share information, coordinate efforts, and identify funding opportunities in order to focus mitigation efforts and avoid overlaps.	All Hazards	Planning	High / 18	High
		Project 1.3.3 - Build relationships with local, state and federal agencies and stakeholders who promote public safety in an effort to further the National Weather Service's mission of protecting lives and property and enhancing the economy from all hazards.	All Hazards	Planning	High / 18	High
		Project 1.3.4 - Identify, maintain and support Montana recovery and resiliency efforts.	All Hazards	Planning	High / 18	High

Table 5.2-2. Montana State Plan Update – 2018 Mitigation Strategy

Goal	Objective	Project	Hazard Mitigated	Project Type	Benefit-Cost Ranking/Score	State Priority
Goal 1 - Reduce Impacts from All Hazards	*Objective 1.3 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from All Hazards*	Project 1.3.5 - Provide mitigation benefit-cost analysis (BCA) training courses.	All Hazards	Planning	Medium / 14	High
		Project 1.3.6 - Coordinate Local and Tribal Multi-Hazard Mitigation Plan Updates.	All Hazards	Planning	High / 15	High
		Project 1.3.7 - Assist local jurisdictions and Tribes fill out FEMA mitigation grant applications.	All Hazards	Planning	High / 15	High
		Project 1.3.8 - Promote participation in the State Emergency Response Committee (SERC).	All Hazards	Planning	High / 17	
	Objective 1.4 - Enhance Emergency Service Capabilities to Reduce Impacts from All Hazards	Project 1.4.1 - Provide and promote on-site and remote weather support for all hazards to local, state and federal partners.	All Hazards	Planning	High / 15	High
		Project 1.4.2 - Project 1.4.2 - Recommend voluntary placement of NOAA Weather Radios in government offices, public facilities, homes, and when recreating (battery operated).	All Hazards	Planning	Medium / 13	High
		Project 1.4.3 - Provide Incident Command System training and other NIMS requirements to all appropriate State employees.	All Hazards	Planning	Medium / 12	High
		Project 1.4.4 - Identify exercises that can be brought to locals.	All Hazards	Planning	Medium / 14	Medium
	Objective 1.5 - Implement Regulatory Projects to Reduce Impacts from All Hazards	Project 1.5.1 - Continually update planning and zoning guidelines and model regulations (including growth policies, subdivision regulations, floodplain regulations, design standards for open space, setbacks and vegetative buffers) which recognize the risk from natural and manmade hazards and offer recommendations on best practices and smart growth solutions.	All Hazards	Planning	High / 16	High
	Objective 1.6 - Suggest Legislative Changes to Reduce Impacts from All Hazards	Project 1.6.1 - Explore economic incentives for mitigation (i.e. insurance premium discounts, state tax credits, etc.).	All Hazards	Planning	Medium / 12	Medium
Goal 2 - Reduce Impacts of Wildland and Rangeland Fires	*Objective 2.1 - Implement Property Protection Projects to Reduce Impacts from Wildfire*	Project 2.1.1 - Conduct wildland fuel reduction on state property including parks, state structures, day-use facilities and highway rights-of-way.	Wildfire – FAC, RL	Non-Planning	Medium / 22.5	High
		Project 2.1.2 - Encourage fuel reduction in the WUI and evacuation routes on county, tribal, and privately-owned lands.	Wildfire – FAC, RL, EFR	Planning	High / 16	High
		Project 2.1.3 - Encourage utilities and private landowners to conduct fuel reduction in rights-of-way.	Wildfire – FAC, RL	Planning	High / 16	High

Table 5.2-2. Montana State Plan Update – 2018 Mitigation Strategy

Goal	Objective	Project	Hazard Mitigated	Project Type	Benefit-Cost Ranking/Score	State Priority
Goal 2 - Reduce Impacts of Wildland and Rangeland Fires	*Objective 2.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Wildfire*	Project 2.1.4 - Reduce wildfire risk associated with cultural resources.	Wildfire – FAC, RL	Non-Planning	Medium / 21.25	High
		Project 2.1.5 - Support and coordinate hazardous fuels reduction projects and emphasize the importance of projects that support wood products industry and biomass facilities.	Wildfire – FAC, RL	Planning	High / 16	High
		Project 2.2.1 - Develop and update state wildfire risk map and GIS layer.	Wildfire –FAC	Planning	Medium / 11	Medium
		Project 2.2.2 - Identify other values at risk from wildfire and create GIS layer.	Wildfire – FAC, RL	Planning	Medium / 14	Medium
		Project 2.2.3 - Develop working group to encourage insurance underwriters to establish rate for fuel mitigated properties.	Wildfire –FAC	Planning	Medium / 14	Medium
		Project 2.2.4 - Compile database of structure damage from wildfire for use in future risk and damage assessments.	Wildfire – FAC	Planning	Medium / 12	Medium
		Project 2.2.5 - Establish collaborative group to evaluate hazardous fuels reduction and forestry project s and create priorities and encourage groups at local level.	Wildfire – RL	Planning	High / 16	High
		Project 2.2.6 - Participate in the coordination of mitigation projects on federal lands adjacent to state/private holdings.	Wildfire – FAC, RL	Planning	High / 16	High
		Project 2.2.7 - Support and provide financial assistance when available to counties and public non-profit organizations that work to reduce residents and community's wildfire risk.	Wildfire –FAC	Planning	High / 16	High
		Project 2.2.8 - Promote the development of projects that strive to better understand community and homeowner's perceptions (example perception is wildfire risk) in order to develop more effecting programs that move people into action.	Wildfire –FAC	Planning	High / 16	Medium
		Project 2.2.9 - Promote and utilize parcel level risk assessment tool available through Situation Analyst Montana.	Wildfire –FAC, RL	Planning	Medium / 13	High
		Project 2.2.10 - Promote partnerships that will facilitate immediate assistance to communities, producers and businesses after a wildfire.	Wildfire –FAC, RL	Planning	Medium / 11	High

Table 5.2-2. Montana State Plan Update – 2018 Mitigation Strategy

Goal	Objective	Project	Hazard Mitigated	Project Type	Benefit-Cost Ranking/Score	State Priority
Goal 2 - Reduce Impacts of Wildland and Rangeland Fires	*Objective 2.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Wildfire*	Project 2.2.11 - Create a standard statewide criteria for mapping Montana's WUI and support Counties who are willing to use this standard and update their WUI.	Wildfire –FAC, RL	Planning	Medium / 12	Medium
		Project 2.2.12- Assist local/tribal partners with updating CWPPs.	Wildfire –FAC	Planning	High / 15	High
	Objective 2.3 - Implement Public Education and Awareness Projects to Reduce Impacts from Wildfire	Project 2.3.1 - Promote public responsibility through education and marketing that moves people into action to prepare their property and communities for wildfire, especially residents who live in the wildland urban area and/or high wildfire areas.	Wildfire –FAC, RL	Planning	High / 16	High
		Project 2.3.2 - Coordinate, disseminate, and educate the public, realtors, contractors and insurers on wildfire preparedness.	Wildfire –FAC	Planning	High / 16	High
		Project 2.3.3 - Update templates for smoke messaging.	Wildfire –FAC	Planning	Medium / 14	High
	Objective 2.4 - Implement Natural Resource Protection Projects to Reduce Impacts from Wildfire	Project 2.4.1 - Identify and further develop resilient landscapes and post-fire events such as monitoring, grass planting, and erosion control.	Wildfire –RL	Non-Planning	Medium / 21.25	High
	Objective 2.5 - Implement Regulatory Projects to Reduce Impacts from Wildfire	Project 2.5.1 - Promote and educate local jurisdictions on the benefits of plans, land use regulations, revenue-generating strategies, and voluntary measures (i.e. WUI Code, subdivision regulations, zoning, building codes).	Wildfire –FAC	Planning	High / 15	High
		Project 2.5.2 - Consolidate permitting process between DEQ and counties regarding burn permits.	Wildfire –FAC, RL	Planning	Medium / 12	High
	Objective 2.6 - Enhance Emergency Service Capabilities to Reduce Impacts from Wildfire	Project 2.6.1 - Ensure that continuity of operations can be maintained during wildfire events.	Wildfire – EFR	Planning	High / 16	High
		Project 2.6.2 - Improve ingress and egress, i.e. evacuation routes on county, tribal and private lands.	Wildfire –FAC	Planning	High / 16	High
Goal 3: Mitigate the Potential Loss of Life and Property from Flooding	*Objective 3.1 - Implement Property Protection Projects to Reduce Impacts from Flooding*	Project 3.1.1 - Encourage jurisdictions to pursue mitigation projects for repetitive loss structures or any severe repetitive loss properties identified in the future.	Flooding	Planning	Medium / 13	High
	Objective 3.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Flooding	Project 3.2.1 - Improve flood risk hazard mapping.	Flooding	Non-Planning	Medium / 21.25	High

Table 5.2-2. Montana State Plan Update – 2018 Mitigation Strategy

Goal	Objective	Project	Hazard Mitigated	Project Type	Benefit-Cost Ranking/Score	State Priority
Goal 3: Mitigate the Potential Loss of Life and Property from Flooding	*Objective 3.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Flooding*	Project 3.2.2 - Coordinate with partners on flood mitigation (e.g. Joint Stream Restoration Committee, Conservation Districts, Drought and Water Supply Committee, Silver Jackets).	Flooding	Planning	Medium / 14	High
		Project 3.2.3 - Develop digital mapping for all levees within the State.	Flooding	Planning	Medium / 14	Medium
		Project 3.2.4 - Identify and catalog all repetitive and severe repetitive loss properties in the State.	Flooding	Planning	Medium / 12	Medium
	Objective 3.3 - Implement Natural Resource Protection Projects to Reduce Impacts from Flooding	Project 3.3.1 - Encourage appropriate entities to obtain conservation easements for land in the floodplain.	Flooding	Planning	Medium / 12	Medium
	Objective 3.4 - Implement Structural Projects to Reduce Impacts from Flooding	Project 3.4.1 - Increase flood water conveyance at transportation crossings including upgrades to undersized bridges or those with scour damage.	Flooding	Non-Planning	Medium / 22.5	High
		Project 3.4.2 - Implement appropriate mitigation for highways that flood.	Flooding	Non-Planning	Medium / 22.5	High
		Project 3.4.3 - Support local communities to elevate community water systems where vulnerable to flooding.	Flooding	Planning	High / 16	High
		Project 3.4.4 - Support local communities to install and/or enhance storm water systems to reduce flood damage.	Flooding	Planning	Medium / 14	High
		Project 3.4.5 - Encourage Natural Channel Design (NCD) techniques for stream restoration and bank restoration/stabilization projects to increase flood resiliency.	Flooding	Planning	High / 16	Medium
		Project 3.4.6 - Encourage projects that will increase stream length to regain natural function and reduce impact of flooding.	Flooding	Planning	High / 16	High
	Objective 3.5 - Implement Public Education and Awareness Projects to Reduce Impacts from Flooding	Project 3.5.1- Promote flood hazard risk communications.	Flooding	Planning	High / 17	High
		Project 3.5.2 - Continue to provide education on benefits of National Flood Insurance Program (NFIP).	Flooding	Planning	High / 17	High
		Project 3.5.3 - Provide outreach and technical assistance in joining the NFIP Community Rating System for reducing flood insurance premiums.	Flooding	Planning	Medium / 12	High
		Project 3.5.4 - Educate home and business owners on anchoring fuel storage tanks, backflow valves in toilets and floating propane tanks.	Flooding	Planning	High / 15	Medium

Table 5.2-2. Montana State Plan Update – 2018 Mitigation Strategy

Goal	Objective	Project	Hazard Mitigated	Project Type	Benefit-Cost Ranking/Score	State Priority
Goal 3: Mitigate the Potential Loss of Life and Property from Flooding	*Objective 3.5 - Implement Public Education and Awareness Projects to Reduce Impacts from Flooding*	Project 3.5.5 - Identify and manage risks associated with levees by promoting insurance and financial assistance programs.	Flooding	Planning	High / 15	Medium
		Project 3.5.6 - Support community-based education and outreach to landowners about the risks of developing outside of designated areas, but in known flood prone and Channel Migration Zones.	Flooding	Planning	Medium / 14	Medium
		Project 3.5.7 - Educate public on need to limit future development in the floodplain.	Flooding	Planning	Medium / 14	High
	Objective 3.6 - Enhance Emergency Service Capabilities to Reduce Impacts from Flooding	Project 3.6.1 - Improve identification of ice jams and promote development of emergency action plans.	Flooding	Planning	High / 15	High
Goal 4: Reduce Impacts from Earthquakes	*Objective 4.1 - Implement Prevention Projects to Reduce Impacts from Earthquakes*	Project 4.1.1 - Adopt seismic requirements of updated International Code Council.	Earthquake	Planning	High / 16	Medium
	Objective 4.2 - Implement Structural Projects to Reduce Impacts from Earthquakes	Project 4.2.1 - Integrate seismic resilience into significant building retrofits.	Earthquake	Non-Planning	High / 27	High
		Project 4.2.2 - At Montana University System campuses in the intermountain seismic belt, seismically retrofit most vulnerable and highest occupancy buildings.	Earthquake	Non-Planning	High / 25.5	High
		Project 4.2.3 - At the Department of Corrections facilities in Deer Lodge, improve support systems and implement seismic upgrades to ensure security and maintain operation.	Earthquake	Non-Planning	Medium / 18.75	Low
		Project 4.2.4 - At the Montana State Hospital in Warm Springs, seismically harden buildings and expand support systems to assure continued operation and meet medical needs.	Earthquake	Non-Planning	Medium / 15	Low
		Project 4.2.5 - At the Capitol Complex in Helena, seismically retrofit buildings with most vulnerability and highest occupancy to mitigate loss.	Earthquake	Non-Planning	High / 27	High
		Project 4.2.6 - Retrofit bridges in Intermountain Seismic Belt, as needed.	Earthquake	Non-Planning	High / 27	High
		Project 4.2.7 - Complete seismic retrofits on historic and culturally significant buildings including Bannack, and Virginia City.	Earthquake	Non-Planning	Medium / 17	Medium

Table 5.2-2. Montana State Plan Update – 2018 Mitigation Strategy

Goal	Objective	Project	Hazard Mitigated	Project Type	Benefit-Cost Ranking/Score	State Priority
Goal 4: Reduce Impacts from Earthquakes	*Objective 4.3 - Implement Public Education and Awareness Projects to Reduce Impacts from Earthquakes*	Project 4.3.1 - Continue "Earthquake Preparedness Month" outreach activities during the month of October.	Earthquake	Planning	High / 16	High
		Project 4.3.2 - Continue presentations and distribution of earthquake preparedness materials including encouraging steps such as anchoring hot water heaters.	Earthquake	Planning	High / 17	High
		Project 4.3.3 - Encourage and educate home owners and businesses in the intermountain seismic belt to implement seismic retrofit projects.	Earthquake	Planning	High / 17	Medium
	Objective 4.4 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Earthquakes	Project 4.4.1 - Expand and upgrade the earthquake monitoring network and information reporting capabilities in high hazard areas.	Earthquake	Non-Planning	Medium / 22.5	Medium
		Project 4.4.2 - Quantify seismic hazards posed by faults.	Earthquake	Non-Planning	Medium / 22.5	Medium
		Project 4.4.3 - Encourage local jurisdictions and tribal nations in the intermountain seismic belt to conduct seismic evaluations of their critical facilities.	Earthquake	Planning	High / 15	High
		Project 4.4.4 - Complete liquifaction mapping of potentially vulnerable areas in high population areas within Intermountain Seismic Belt.	Earthquake	Planning	Medium / 14	Medium
		Project 4.4.5 - Work with insurance companies and Montana legislature to develop program that offers discounts on earthquake insurance for residents that complete training and implement non-structural projects around their homes.	Earthquake	Planning	High / 15	Medium
	Objective 4.5 - Implement Property Protection Projects to Reduce Impacts from Earthquakes	Project 4.5.1 - Survey and install utility shut-off valves at all state buildings in the intermountain seismic belt.	Earthquake	Non-Planning	High/ 25.5	High
		Project 4.5.2 - Implement non-structural projects at state buildings in the intermountain seismic belt such as anchoring utilities.	Earthquake	Non-Planning	High/ 27	High
		Project 4.5.3 - Utilize 3-mil film on windows of public buildings in intermountain seismic belt to avoid shattering during seismic event.	Earthquake	Non-Planning	Medium / 22.5	Medium
	Objective 4.6 - Enhance Emergency Service Capabilities to Reduce Impacts from Earthquakes	Project 4.6.1 - Provide training to Rapid Building Assessment Teams to evaluate buildings after an earthquake.	Earthquake	Planning	High / 15	Medium

Table 5.2-2. Montana State Plan Update – 2018 Mitigation Strategy

Goal	Objective	Project	Hazard Mitigated	Project Type	Benefit-Cost Ranking/Score	State Priority
Goal 5: Reduce the Impacts from Drought	*Objective 5.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Drought*	Project 5.1.1 - Provide outreach on management practices for minimizing the impacts from drought.	Drought	Planning	High / 15	High
		Project 5.1.2 - Educate ranchers to work with local weed districts to reduce spread of invasive species.	Drought	Planning	Medium / 14	High
		Project 5.1.3 - Encourage voluntary water conservation by domestic, municipal, and industrial users.	Drought	Planning	Medium / 13	Medium
		Project 5.1.4 - Provide outreach on algal blooms and what to do when they happen.	Drought	Planning	Medium / 13	Medium
		Project 5.1.5- Develop a toolbox to assist local/ tribal partners with drought management planning	Drought	Planning	Medium / 14	High
	Objective 5.2 - Support Planning and Monitoring Projects to Reduce Impacts from Drought	Project 5.2.1 - Inventory operating plans of reservoirs to ensure drought contingency plans.	Drought	Planning	Medium / 12	Medium
		Project 5.2.2 - Encourage system of soil moisture gauges to monitor drought.	Drought	Planning	Medium / 13	Medium
		Project 5.2.3 Develop drought plans as an addendum to the local/tribal mitigation plan.	Drought	Planning	Medium / 14	High
	Objective 5.3 - Support Natural Resource Protection Efforts to Reduce Impacts from Drought	Project 5.3.1 - Continue to implement angling restrictions and closures to reduce drought impacts on Montana fisheries.	Drought	Planning	Medium / 13	High
		Project 5.3.2 - Continue to administer Fish, Wildlife, and Parks' Water Rights and Water Reservations to protect instream flows during drought for the benefit of fish and wildlife	Drought	Planning	Medium / 13	High
	Objective 5.4 - Implement Structural Projects to Reduce Impacts from Drought	Project 5.4.1 - Consider feasibility of creating infiltration basins to capture early spring runoff.	Drought	Planning	Medium / 11	Medium
		Project 5.4.2 - Encourage passive water storage where it will enhance natural function and increase water supply security.	Drought	Planning	Medium / 12	High
		Project 5.4.3 - Encourage water conveyance efficiencies in agricultural, municipal, and industrial uses.	Drought	Planning	Medium / 13	Medium
		Project 5.4.4 - Encourage removal of abandoned structures to improve stream connectivity.	Drought	Planning	Medium / 11	Medium
	Objective 5.5 - Suggest Legislative Changes to Reduce Impacts from Drought	Project 5.5.1 - Develop a model water conservation ordinance for use by municipalities and rural domestic water suppliers.	Drought	Planning	Medium / 14	Medium
		Project 5.5.2 - Clarify state law to allow voluntary, temporary changes of water rights and contract water exchanges.	Drought	Planning	Medium / 11	Medium

Table 5.2-2. Montana State Plan Update – 2018 Mitigation Strategy

Goal	Objective	Project	Hazard Mitigated	Project Type	Benefit-Cost Ranking/Score	State Priority
Goal 5: Reduce the Impacts from Drought	*Objective 5.5 - Suggest Legislative Changes to Reduce Impacts from Drought*	Project 5.5.3 - Find ways to expedite the resolution of water use conflicts and water rights enforcement during drought.	Drought	Planning	Medium / 11	Medium
		Project 5.5.4 - Adopt rules for the installation of water metering devices to resolve conflict on water short drainages.	Drought	Planning	Low / 9	Medium
		Project 5.5.5 - Establish stronger economic and other incentives for private investments in water conservation.	Drought	Planning	Medium / 12	Medium
Goal 6: Reduce Impacts from Severe Weather	*Objective 6.1 - Implement Property Protection Projects to Reduce Impacts from Severe Weather*	Project 6.1.1 - Modify vulnerable buildings to resist water penetration and wind damage.	Severe Weather	Non-Planning	High/ 28.5	High
	Objective 6.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Severe Weather	Project 6.2.1- Maintain partnership with National Weather Service, DES and media to educate public on advisories, watches, and warnings when weather hazards are forecast to impact Montana.	Severe Weather	Planning	High / 17	High
		Project 6.2.2 - Promote distribution of NOAA weather radios.	Severe Weather	Planning	High / 15	Medium
		Project 6.2.3 - Partner with National Weather Service on the Weather Ready Nation Ambassador Program and increase program participation.	Severe Weather	Planning	High / 15	High
		Project 6.2.4 - Encourage participation in National Weather Service Storm Ready Community program.	Severe Weather	Planning	High / 15	High
		Project 6.2.5 - Evaluate locations for Remote Weather Information System video cameras.	Severe Weather	Planning	Medium / 12	High
		Project 6.2.6 - Continue to distribute winter weather survival booklet.	Severe Weather	Non-Planning	High/ 28.5	High
		Project 6.2.7 - Provide education on weather events and public health at locations with temporary occupancy (man camps, rainbow gathering, etc.).	Severe Weather	Planning	Medium / 12	Medium
	Objective 6.3 - Implement Prevention Projects to Reduce Impacts from Severe Weather	Project 6.3.1 - Encourage utilities to bury electric lines to improve reliability.	Severe Weather	Planning	Medium / 13	High
		Project 6.3.2 - Encourage utilities to apply for mitigation grants to install air flow spoilers on above ground utility lines.	Severe Weather	Planning	Medium / 13	High
	Objective 6.4 - Implement Structural Projects to Reduce Impacts from Severe Weather	Project 6.4.1 - Encourage cities and towns in tornado alley to establish community safe rooms.	Severe Weather	Planning	Medium / 11	Medium

Table 5.2-2. Montana State Plan Update – 2018 Mitigation Strategy

Goal	Objective	Project	Hazard Mitigated	Project Type	Benefit-Cost Ranking/Score	State Priority
Goal 7: Reduce Losses from Hazardous Material Incidents and Transportation Accidents	*Objective 7.1 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Hazardous Material Incidents and Transportation Accidents*	Project 7.1.1 - Encourage State Emergency Response Committee (SERC) to consider validity of commodity hazardous material flow studies.	Severe Weather	Planning	Low / 9	Medium
		Project 7.1.2 - Conduct road safety audits on corridors with safety issues.	Severe Weather	Non-Planning	High/ 27	High
	Objective 7.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Hazardous Material Incidents and Transportation Accidents	Project 7.2.1 - Promote Hazardous Material Emergency Preparedness (HMEP) grants to local partners.	Haz-Mat Incidents	Planning	Medium / 14	High
		Project 7.2.2 - Promote outreach on impaired driving through prevention education.	Transportation Accidents	Planning	Medium / 14	High
		Project 7.2.3 - Reduce roadway departure and intersection crashes through education.	Transportation Accidents	Planning	Medium / 14	High
		Project 7.2.4 - Support policies, education, training, programs and activities that promote and increase seat belt and child safety seat use.	Transportation Accidents	Planning	Medium / 14	High
	Objective 7.3 - Enhance Emergency Service Capabilities to Reduce Impacts from Hazardous Material Incidents and Transportation Accidents	Project 7.3.1 - Identify and encourage participation in trainings and education offered by stakeholders (those who handle hazardous materials).	Haz-Mat Incidents	Planning	Medium / 13	High
		Project 7.3.2 - Encourage participation from all emergency responders in Traffic Incident Management System (TIMS) training.	Transportation Accidents	Planning	Medium / 12	High
	Objective 7.4 - Implement Prevention Projects to Reduce Impacts from Hazardous Material Incidents and Transportation Accidents	Project 7.4.1 - Implement highway safety projects.	Transportation Accidents	Non-Planning	High/ 25.5	High
		Project 7.4.2 - Identify opportunities to incorporate wildlife mitigation on already planned projects to reduce wildlife/vehicle collisions.	Transportation Accidents	Planning	Medium / 13	High
Goal 8: Minimize Impacts from Disease Outbreaks	*Objective 8.1 - Implement Prevention Projects to Reduce Impacts from Disease*	Project 8.1.1 Continue public health surveillance, disease investigations, and provide mitigation strategies.	Disease (Public Health)	Planning	Medium / 14	High
		Project 8.1.2 - Conduct surveillance and disease investigations for reportable animal diseases and maintain the Designated Surveillance Area (DSA) for Brucellosis.	Disease (Agro-Security)	Non-Planning	Medium / 16	High
		Project 8.1.3 - Conduct surveillance and disease investigations for reportable diseases in fish and wildlife.	Disease (Fish-Wildlife)	Non-Planning	Medium / 16	High
		Project 8.1.4 - Maintain policies and regulations that prevent and minimize the spread of animal diseases.	Disease (Agro-Security)	Planning	Medium / 14	High
		Project 8.1.5 - Maintain policies and regulations that prevent and minimize the spread of fish and wildlife disease.	Disease (Fish-Wildlife)	Planning	Medium / 14	High

Table 5.2-2. Montana State Plan Update – 2018 Mitigation Strategy

Goal	Objective	Project	Hazard Mitigated	Project Type	Benefit-Cost Ranking/Score	State Priority
Goal 8: Minimize Impacts from Disease Outbreaks	*Objective 8.1 - Implement Prevention Projects to Reduce Impacts from Disease*	Project 8.1.6 - Maintain watercraft inspection and decontamination stations for Aquatic Invasive Species during the boating season.	Disease (Fish-Wildlife)	Non-Planning	Medium / 16	High
	Objective 8.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Disease	Project 8.2.1 - Continue to provide outreach to both local health jurisdictions and the public on public health topics.	Disease (Public Health)	Planning	Medium / 14	High
		Project 8.2.2 - Promote the "clean, drain, dry" campaign to prevent the spread of Aquatic Invasive Species, including diseases, for boats and equipment to waters and native aquatic species.	Disease (Fish-Wildlife)	Planning	Medium / 13	High
		Project 8.2.3 - Provide education and outreach to Montana hunters, landowners, and general public about signs/symptoms of wildlife disease, safe field dressing precautions, and the status of wildlife diseases in the state.	Disease (Fish-Wildlife)	Planning	Medium / 14	High
	Objective 8.3 - Implement Natural Resource Protection Projects to Reduce Impacts from Disease	Project 8.3.1 - Encourage water saving measures and institute fishing restrictions during drought to reduce stress on fish, which can make them more susceptible to disease.	Disease (Fish-Wildlife)	Planning	Medium / 14	High
	Objective 8.4 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Disease	Project 8.4.1- Ensure DPHHS Emergency Operations Plans (EOPs) and all associated annexes and procedures are current and complete for public health.	Disease (Public Health)	Planning	Medium / 14	High
		Project 8.4.2 - Encourage local jurisdictions to update and maintain EOPs for public health.	Disease (Public Health)	Planning	Medium / 14	High
		Project 8.4.3 - Update the Foreign Animal Disease (FAD) Response Plan.	Disease (Fish-Wildlife)	Planning	Medium / 14	High
		Project 8.4.4 - Develop guidelines for individual producer biosecurity plans to include outlining criteria for movement permits from a disease control zone.	Disease (Agro-Security)	Planning	Medium / 14	Medium
		Project 8.4.5 - Develop and maintain rapid response plans to minimize the spread of fish and wildlife disease.	Disease (Fish-Wildlife)	Planning	Medium / 14	High
		Project 8.4.6 - Map the presence and spread of fish and wildlife disease to prioritize prevention efforts, surveillance, and public education.	Disease (Fish-Wildlife)	Planning	Medium / 13	High
	Objective 8.5 - Enhance Emergency Service Capabilities to Reduce Impacts from Disease	Project 8.5.1 - Test and evaluate public health response plans.	Disease (Public Health)	Planning	Medium / 14	High
		Project 8.5.2 - Provide Rapid Response and Incident Command System training for agencies responding to emergencies relating to fish and wildfire disease.	Disease (Fish-Wildlife)	Planning	Medium / 14	High

Table 5.2-2. Montana State Plan Update – 2018 Mitigation Strategy

Goal	Objective	Project	Hazard Mitigated	Project Type	Benefit-Cost Ranking/Score	State Priority
Goal 9: Reduce Impacts from Landslides and Avalanche	*Objective 9.1 - Implement Structural Projects to Reduce Impacts from Landslides and Avalanche*	Project 9.1.1 - Conduct proactive scaling and reducing of back slopes along highways.	Landslide	Non-Planning	Medium / 15	Medium
	Objective 9.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Landslides and Avalanche	Project 9.2.1 - Educate homeowners of benefits of avalanche protection devices.	Avalanche	Planning	Medium / 13	High
		Project 9.2.2 - Promote avalanche forecasting and public awareness.	Avalanche	Planning	Medium / 13	High
	Objective 9.3 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Landslides and Avalanche	Project 9.3.1 - Identify high population areas vulnerable to avalanches.	Avalanche	Planning	Medium / 13	High
		Project 9.3.2 - Conduct landslide studies and monitoring in high population areas.	Landslide	Non-Planning	High / 27	Medium
		Project 9.3.3 - Create a state-wide landslide map.	Landslide	Planning	Medium / 14	Medium
Goal 10: Reduce Impacts from Dam Failure Hazard	*Objective 10.1 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Dam Failure*	Project 10.1.1 - Develop updated evacuation maps for non-federal high hazard dams for risk assessment.	Dam Failure	Planning	Medium / 14	High
		Project 10.1.2 - Evaluate existing dams for hazard classification.	Dam Failure	Planning	Medium / 12	High
		Project 10.1.3 - Keep Emergency Action Plans current.	Dam Failure	Planning	High / 15	High
	Objective 10.2 - Implement Structural Projects to Reduce Impacts from Dam Failure	Project 10.2.1 - Repair high hazard dams with deficiencies.	Dam Failure	Non-Planning	Medium / 20.25	High
	Objective 10.3 - Enhance Emergency Service Capabilities to Reduce Impacts from Dam Failure	Project 10.3.1 - Exercise Emergency Action Plans.	Dam Failure	Non - Planning	Medium / 21.25	High
		Project 10.3.2 - Encourage continued participation of local and tribal DES in DNRC dam safety table top exercises.	Dam Failure	Planning	High / 16	High
		Project 10.3.3 - Streamline and improve DNRC earthquake response protocol.	Dam Failure, Earthquake	Planning	Medium / 14	High
	Objective 10.4 - Implement Public Education and Awareness Projects to Reduce Impacts from Operational Flows	Project 10.4.1 - Provide awareness to community of possible flooding from operational flows.	Dam Failure, Flooding	Planning	Medium / 14	Medium
Goal 11: Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security	*Objective 11.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security*	Project 11.1.1 - Raise level of awareness of citizens of Montana on topics associated with terrorism and cyber security.	Terrorism, Cyber Security	Planning	High / 16	High
		Project 11.1.2 - Promote information sharing on prevention of acts of terrorism by local and state agencies and partners.	Terrorism	Planning	High / 15	High

Table 5.2-2. Montana State Plan Update – 2018 Mitigation Strategy

Goal	Objective	Project	Hazard Mitigated	Project Type	Benefit-Cost Ranking/Score	State Priority
Goal 11: Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security	*Objective 11.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security*	Project 11.1.3 - Update emergency action flip chart that can be provided to schools.	Terrorism	Planning	Medium / 13	High
		Project 11.1.4 - Promote availability of armed intruder/active shooting training.	Terrorism	Planning	Medium / 14	High
		Project 11.1.5 - Promote and encourage cyber assessments for water and wastewater systems.	Cyber Security	Planning	High / 16	High
		Project 11.1.6 - Promote and educate on the Federal Homeland Security Infrastructure Protection Program and how they can help locals and tribes.	Terrorism	Planning	High / 18	High
	Objective 11.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security	Project 11.2.1 - Perform vulnerability assessments on security of State buildings.	Terrorism	Non-Planning	High / 31.5	High
		Project 11.2.2 - Perform cyber assessments for State-owned water and wastewater systems.	Cyber Security	Non-Planning	Medium / 22.5	High
		Project 11.2.3 - Support mitigation-related goals, objectives, and actions of the State Core Capabilities.	Terrorism, Violence, Civil Unrest	Planning	High / 18	High
		Project 11.2.4 - Develop framework to prioritize special events at the State level.	Violence, Civil Unrest	Planning	Medium / 13	High
		Project 11.2.5 - Continue vulnerability assessments for large events.	Violence, Civil Unrest	Planning	Medium / 13	High
		Project 11.2.6 - Establish working group to develop resource guide of tools for local jurisdictions and tribes.	Terrorism, Violence, Civil Unrest, Cyber	Planning	High / 16	High
	Objective 11.3 - Implement Structural Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security	Project 11.3.1 - Consider physical hardening of critical facilities including bollards and generators.	Terrorism, Violence, Civil Unrest	Non-Planning	High / 30	High
	Objective 11.4 - Enhance Emergency Service Capabilities to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security	Project 11.4.1 - Continue efforts to coordinate law enforcement for potential civil unrest/violence associated with resource development and large events in Montana.	Violence, Civil Unrest	Planning	Medium / 13	High
Goal 12: Reduce Impacts from Volcanic Ash	*Objective 12.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Volcanic Ash*	Project 12.1.1 Educate the public on how to respond to volcanic ash fall-out when monitoring determines eruption is imminent.	Volcanic Ash	Planning	Medium / 14	Low

Table 5.2-2. Montana State Plan Update – 2018 Mitigation Strategy

Goal	Objective	Project	Hazard Mitigated	Project Type	Benefit-Cost Ranking/Score	State Priority
Notes: BCA = Benefit-Cost Analysis; CWPP = Community Wildfire Protection Plan; DES = Disaster and Emergency Services; DNRC = Department of Natural Resources and Conservation; DPHHS = Department of Public Health and Human Services; DSA = Disease Surveillance Area; EFR = Effective Fire Response; FAC = Fire Adapted Communities; FAD = Foreign Animal Disease; GIS = Geographic Information System; HMEP = Hazardous Material Emergency Preparedness; NCD = Natural Channel Design; NFIP = National Flood Insurance Program; NOAA = National Oceanic and Atmospheric Administration; RL = Resilient Landscapes; SERC = State Emergency Response Commission; TIMS = Traffic Incident Management System; WUI = Wildland Urban Interface						

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 1.1.1 - Identify and protect essential government records in appropriate facilities.	Admin - State Continuity and Emergency Management Office, Secretary of State	Just finished major upgrade to system which includes planning software that collects information on whether records are paper or electronic, where they are stored, and whether they are critical to business continuity. Pushing out to agencies. It is an ongoing process.	Agencies will continue to inventory government records and identify those that are critical in the planning software. Data will be used to update business continuity plans for recovery.	Ongoing	State Resources
Project 1.1.2 - Plan for the protection of historic and cultural properties in hazard prone areas	Commerce, Historical Society, FWP, Administration, University System	Bannack State Park completed a flood mitigation project in 2016.	A fire alarm system upgrade is planned at Bannack State Park. Identify other projects.	Ongoing	State Resources, FEMA
Project 1.2.1 - Promote mitigation awareness and successes.	All State Agencies, DES	The Let's Mitigate Montana is no longer a valid webpage. MT DES has a new website where mitigation is included and update. http://readyand safe.gov/emergency. In 2015, an Emergency management expo was held at the farmers market in Helena.	Continue to provide education and outreach via social media and the ready and safe website. Stress mitigation each November as part of infrastructure protection month.	Ongoing	Dept. Homeland Security, FEMA
Project 1.2.2 - Continue outreach of mitigation project funding opportunities to agencies, counties and tribes.	DES	SHMO contacted local jurisdictions and tribes when HMGP funding associated with FEMA disaster declarations was available.	When a new disaster impacts Montana the SHMO will go out and conduct applicant briefs in conjunction with PA applicant briefs. The SHMO will send out notifications on open PDM/FMA grant opportunities. As well as brief DES coordinators during the monthly coordinator calls hosted by MT DES.	Ongoing	Dept. Homeland Security, FEMA
Project 1.2.3 - Support National Weather Service's efforts to communicate probabilistic hazard information.	DES, DNRC, Others	New Project for 2018 Plan.	Utilize verbal, print, and online resources to promote NWS efforts.	Ongoing	State Resources
Project 1.2.4 - Promote hazard mitigation education in schools.	DES, OPI	No progress to report.	DES plans to re-promote mitigation curriculum developed in 2013 with OPI. Post curriculum on project website and promote availability to all school districts in Montana.	Mid-Term	State Resources
Project 1.2.5 - Promote public emergency notification sign-ups and All-Hazards NOAA Weather Radios through counties.	National Weather Service	New Project for 2018 Plan.	Use social media to share information on how people can sign up for emergency notifications in their county.	Ongoing	National Weather Service
Project 1.2.6 - Coordinate public emergency notification for all hazards with local, state and federal jurisdictions through the Emergency Alert System.	National Weather Service	New Project for 2018 Plan.	NWS will share information of all hazards affecting residents and visitors across Montana through the web, social media, press releases, NOAA Weather Radio.	Ongoing	National Weather Service

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 1.2.7 - Support the Montana Ready Communities Initiative.	Commerce, Administration, DES, Others	New Project for 2018 Plan.	Utilize verbal, print and online resources to promote HUD-funded program that deals with resiliency and aging infrastructure. Communicate to local/tribal emergency managers.	Ongoing	State Resources
Project 1.2.8 - Promote importance of developing personal preparedness kits.	DES	Governor's Office of Community Service made preparedness "bags" available at no charge to eastern Montana residents. Participated in drills with local communities.	DES now in charge of this program and pushing out information on personal preparedness kits.	Ongoing	State Resources
Project 1.3.1 - Establish permanent Montana Mitigation Team.	All State Agencies and partners involved in mitigation	2018 State Plan Update included 7 mitigation workshops and permanent Mitigation Planning Team established.	Develop framework whereby each agency has a designated representative who tracks and disseminates information. Hold monthly conference calls of this Permanent Mitigation Team. Update job descriptions to emphasize importance of coordination & collaboration.	Ongoing	State resources
Project 1.3.2- Bring agency hazard experts, emergency preparedness coordinators, and partners together on a regular basis to share information, coordinate efforts, and identify funding opportunities in order to focus mitigation efforts and avoid overlaps.	DES, DNRC, FWP, DPHHS, MDT, DEQ, Admin, Commerce, BLM, USFS, NWS, FireSafe MT, Conservation Dists	DES desires to brief cabinet members of new Montana administration. Hold mitigation workshops with state agencies. DPHHS gives $2.6 million to locals annually for preparedness activities.	Schedule hazard-specific meetings to review and evaluate mitigation strategy, accomplishments, and challenges. Post meetings notes on State website and archive for 2023 State Plan Update. Agencies need to meet regularly on funding opportunities. Can provide grant match for each other.	Ongoing	State and Federal resources
Project 1.3.3 - Build relationships with local, state and federal agencies and stakeholders who promote public safety in an effort to further the National Weather Service's mission of protecting lives and property and enhancing the economy from all hazards.	National Weather Service	New Project for 2018 Plan.	NWS will develop a Resource Guide for products and services offered and distribute.	Ongoing	National Weather Service
Project 1.3.4 - Identify, maintain and support Montana recovery and resiliency efforts.	Commerce	New project for 2018 Plan.	Provide research, technical assistance, legal guidance, education, and training to local governments, planning depts, private developers, non-profit orgs, and the public to encourage planning, sustainable development, and resiliency in Montana communities and support disaster recovery. Montana DES is the lead state emergency management agency in charge of comprehensive emergency management. The main core capability under the mitigation mission area is community resiliency. The recovery and mitigation mission areas are housed within MT DES.	Ongoing	State resources

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 1.3.5 - Provide mitigation benefit-cost analysis (BCA) training courses.	DES	SHMO hosted and facilitated BCA trainings in 2012, 2013, 2014, 2015, 2016.	FEMA has limited the amount of BCA trainings for the region. The SHMO will try and host a BCA training every other year.	Ongoing	State resources, FEMA
Project 1.3.6 - Coordinate Local and Tribal Multi-Hazard Mitigation Plan Updates.	DES	Since 2013, HMGP has funded 13 County, Tribal, or University Plan updates. PDM has funded 25 County Plan updates. One County successfully updated their plan in house. MT DES hosted the Local Mitigation Planning G318 Workshop in 2014 & 2015.	MT DES plans to host at least every other year a G318 Local Mitigation Planning Workshop. MT DES will promote mitigation planning at all conferences or events that the SHMO participates in including AMFM, FireSafe, MACD, and MAP.	Ongoing	State resources, FEMA
Project 1.3.7 - Assist local jurisdictions and Tribes fill out FEMA mitigation grant applications.	DES	SHMO has assisted with the development of over 70 applications between HMGP, PDM, and FMA grants resulting in over $13 million dollars in funds coming into the state.	SHMO will continue to assist with application development for HMGP, PDM, and FMA grants. SHMO will continue to emphasize the importance of hiring additional mitigation staff to support the mitigation program.	Ongoing	State resources, FEMA
Project 1.3.8 - Promote participation in the State Emergency Response Committee (SERC).	All State Agencies	New project for 2018 Plan.	Ensure SERC committee members are fully engaged. Keep website current with meeting notes and committee assignments. Strengthen SERC's public outreach through social media postings.	Ongoing	State resources
Project 1.4.1 - Provide and promote on-site and remote weather support for all hazards to local, state and federal partners.	National Weather Service	New project for 2018 Plan.	This is the mission of the NWS. Services are promoted to local emergency managers and public through website and outreach.	Ongoing	National Weather Service
Project 1.4.2 - Project 1.4.2 - Recommend voluntary placement of NOAA Weather Radios in government offices, public facilities, homes, and when recreating (battery operated).	National Weather Service	NWS received 80 NOAA Weather Radios in 2017 to distribute. Priority placed on tribal nations.	Continue same.	Ongoing	National Weather Service
Project 1.4.3 - Provide Incident Command System training and other NIMS requirements to all appropriate State employees.	All State agencies	New project for 2018 Plan.	Identify appropriate training modules. Continually offer training sessions so all appropriate staff.	Ongoing	State resources
Project 1.4.4 - Identify exercises that can be brought to locals.	DES	New project for 2018 Plan.	Work with local and tribal partners to identify concerns that may impact their jurisdiction. Utilize best practices from past exercises to create and implement a unique exercise geared towards their area.	Ongoing	State resources
Project 1.5.1 - Continually update planning & zoning guidelines & model regulations (including growth policies, subdivision & floodplain regulations, design standards for open space, setbacks & vegetative buffers) which recognize the risk from natural and manmade hazards and offer recommendations on best practices and smart growth solutions.	Commerce	Ongoing progress to update model growth policy guidelines.	Model subdivision regulations are currently being updated. Once published, will be available so communities can apply these consistently. Continue to update and improve, as appropriate.	Ongoing	State Resources

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 1.6.1 - Explore economic incentives for mitigation (i.e. insurance premium discounts, state tax credits, etc.).	DES, DNRC-Fire, FireSafe MT	New Project for 2018 Plan.	Continue to encourage local champions to reach out to elected officials on incentives for mitigation actions across all hazards.	Mid-Term	State resources
Project 2.1.1 - Conduct wildland fuel reduction on state property including parks, state structures, day-use facilities and highway rights-of-way.	DNRC - Forest & Trust Lands, FWP, MDT	MDT has completed fuel treatments on the following highway right-of-ways: Highway 200 near Greenough, Dry Creek Road near Ovando, and highway east of Miles City containing a major power line. FWP has completed forestry projects to reduce hazardous fuels within the WUI at: Lone Pine State Park (SP), Milltown SP, Mt. Haggin Wildlife Management Area (WMA), West Kootenai WMA, Threemile WMA, Blackfoot Clearwater WMA, Mt. Silcox WMA, and West Kootenai WMA. DNRC continued to reduce wildfire risk associated with state property.	FWP is planning forestry projects to reduce hazardous fuels within the WUI at: Blackfoot Clearwater WMA, Nevada Lake WMA, Mt. Haggin WMA, River Junction Fishing Access Site (FAS), Blackfoot Clearwater WMA, Marshall WMA, Threemile WMA, Ray Kuhns WMA, and Calf Creek WMA. Working group to develop list of prioritized projects to help allocate funding. MDT will participate and support in reducing wildfire risk along state highway ROWs, as needed. DNRC will work in high priority landscape areas to reduce the wildfire risk associated with state property.	Ongoing	State resources, Federal grants (FEMA, Landscape Scale Restoration, Pine Beetle PSR, WUI), and Private organizations (Rocky Mountain Elk Foundation (RMEF), MDF)
Project 2.1.2 - Encourage fuel reduction in the WUI and evacuation routes on county, tribal, and privately-owned lands.	DNRC - Fire, DES, FireSafe MT, RC&Ds	Northern Rockies Coordinating Group (DNRC Fire Management offices and all Federal agencies) established the Fire Prevention and Fuels Committees to do this. Progress has been made by many agencies and orgs including: Ready Set Go, One Less Spark One Less Wildfire, Living with Fire, FireWise USA, FireSafe Councils, Evacuation Safety, Ignition Resistant Construction, among others. FireSafe Montana has conducted extensive outreach to raise awareness and holds public workshops.	Continue wildfire risk reduction projects and programs with the emphasis on protection of life, property and natural resources. Future programs include but are not limited to, ember aware, home ignition zone, ignition-resistant landscaping; fire-resistant construction techniques; parcel level risk assessments; implementing hazardous fuels reduction treatments.	Ongoing	State resources, Federal grants (FEMA, BLM).
Project 2.1.3 - Encourage utilities and private landowners to conduct fuel reduction in rights-of-way.	Utilities, FireSafe MT, DNRC - Fire, DES, State Fire Marshall	Fuel mitigation projects were completed by NorthWestern Energy and several Rural Electric Cooperatives (RECs). SHMO presented at annual convention of RECs and discussed fuel mitigation.	Continue same.	Ongoing	State & Private resources
Project 2.1.4 - Reduce wildfire risk associated with cultural resources.	DNRC, FWP, Commerce, Historical Society	New project for 2018 Plan.	Working group to identify high priority projects (Virginia City, Bannack, others). Seek funding from private foundations.	Long-term	State resources, federal grants, private resources
Project 2.1.5 - Support and coordinate hazardous fuels reduction projects and emphasize the importance of projects that support wood products industry and biomass facilities.	DNRC, Forest Service and public non-profit organizations	As part of the Fuels for Schools Program, biomass boilers were installed in Darby, Victor, Thompson Falls, Philipsburg, Troy, Kalispell, Townsend and Eureka, UM-Western in Dillon and Deer Lodge Elementary.	Promote creative ways to utilize wood waste from fuel mitigation projects. Make presentation at wood products industry conference. Look into funding to off-set transportation costs.	Ongoing	State resources

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 2.2.1 - Develop and update state wildfire risk map and GIS layer.	DNRC-Fire	New project for 2018 Plan.	Contract work out to a private company to update our statewide wildfire risk data. Work with fire partners to ensure data is accurate. Make wildfire risk GIS layer available for various online portals to be used by all agencies and organizations.	Mid-term	State resources, Federal grants
Project 2.2.2 - Identify other values at risk from wildfire and create GIS layer.	Dept. Ag, Cultural Resource Orgs.	New project for 2018 Plan.	Identify and map other values at risk including agricultural and cultural resources. Compile into a state--wide GIS layer.	Mid-term	State resources, Federal grants
Project 2.2.3 - Develop working group to encourage insurance underwriters to establish rate for fuel mitigated properties.	DES, DNRC-Fire, public non-profit orgs.	New project for 2018 Plan.	Consider NFIP CRS program as a model. See what other states have done on this.	Mid-term	State resources
Project 2.2.4 - Compile database of structure damage from wildfire for use in future risk and damage assessments.	DNRC - Fire, Dept. Justice-State Fire Marshall	Data on structures lost to wildfire is compiled by DNRC.	Identify number of structures saved as a result of firefighting efforts and add to database.	Short-Term	State resources, Federal grants
Project 2.2.5 - Establish collaborative group to evaluate hazardous fuels reduction and forestry project s and create priorities and encourage groups at local level.	DNRC, FWP, MDT, BLM, USFS, Counties, Tribes	New project for 2018 Plan.	Identify cross-boundary areas that are priorities. Establish costs and report to legislature.	Ongoing	State and Federal resources
Project 2.2.6 - Participate in the coordination of mitigation projects on federal lands adjacent to state/private holdings.	DNRC-Fire, BLM, USFS	This is an on-going effort with too many projects to mention.	State has identified priority landscapes instead of specific projects.	Ongoing	State and Federal resources, Federal grants
Project 2.2.7 - Support and provide financial assistance when available to counties and public non-profit organizations that work to reduce residents and community's wildfire risk.	DES, DNRC, USFS, BLM	DES has assisted various counties and cities with FEMA HMGP and PDM grant applications to mitigate wildfire. DNRC and FireSafe Montana assist with project development.	Continue same.	Ongoing	State resources, Federal grants
Project 2.2.8 - Promote the development of projects that strive to better understand community and homeowner perceptions (example perception is wildfire risk) in order to develop more effecting programs that move people into action.	BLM, DNRC, public non-profit orgs.	New project for 2018 Plan.	Work with organizations and programs that offer expertise in better understanding communities and homeowners.	Mid-term	State and Federal resources
Project 2.2.9 - Promote and utilize parcel level risk assessment tool available through Situation Analyst Montana.	BLM, DNRC, public non-profit orgs.	New project for 2018 Plan.	This parcel level risk assessment tool provides standardized methodology that is consistent with current home ignition research. This tool will assist with wildfire risk reduction planning, evaluating high risk areas and where forest management action is need and can be implemented.	Ongoing	State and Federal resources

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 2.2.10 - Promote partnerships that will facilitate immediate assistance to communities, producers and businesses after a wildfire.	Commerce, ARC, Conservation Districts, public non-profit orgs., resource protection NGOs, NRCS, FSA, federal, state, local agencies	New project for 2018 Plan.	Identify and meet with businesses and partners who can help communities and producers after wildfire. Identify resources that can be shared and sources of emergency funding for recovery efforts.	Ongoing	State and Federal resources, Federal grants, Private organizations
Project 2.2.11 - Create a standard statewide criterion for mapping Montana's WUI and support Counties who are willing to use this standard and update their WUI.	Counties, DES, DNRC, State Legislature	New project for 2018 Plan.	Work with counties and tribes to update WUI mapping with new statewide standard. Compile local maps into a state-wide GIS layer to use for planning.	Mid-term	State, County & Tribal resources, Federal grants
Project 2.2.12- Assist local/tribal partners with updating CWPPs.	DES, DNRC, FEMA	New project for 2018 Plan.	MT DES will apply for a large planning grant with PDM to assist emergency managers to develop or update the CWPP. To act as an addendum to the local/tribal hazard mitigation plan. MT DES will work closely with the DNRC to identify eligible applicants, and disperse funds.	Mid-term	State resources, federal grants
Project 2.3.1 - Promote public responsibility through education and marketing that moves people into action to prepare their property and communities for wildfire, especially residents who live in the wildland urban area and/or high wildfire areas.	DNRC - Fire, FireSafe MT, DNRC-Fire, FWP, State Fire Marshall	FireSafe Montana has informative website and brochures. They hold a conference every other year around the state and active broadcast media campaign. Northern Rocky Coordinating Group also holds conferences. Fire Teams consistently promote this during fire season. Numerous on-going activities. This work will continue.	Continue wildfire risk reduction projects and programs with the emphasis on protection of life, property and natural resources. Future programs include but are not limited to, ember aware, home ignition zone, ignition-resistant landscaping; fire-resistant construction techniques; parcel level risk assessments; implementing hazardous fuels reduction treatments.	Ongoing	State and Federal resources, Federal grants
Project 2.3.2 - Coordinate, disseminate, and educate the public, realtors, contractors and insurers on wildfire preparedness.	Federal, State and Local agencies: DNRC, BLM, USFS. public non-profit orgs. such as FireSafe MT	New project for 2018 Plan.	Develop learning exchange, resource training, and education forum to share with people on mitigating wildfire risk. Provide education program for insurance agents and realtors. Provide outreach to MT Logging Assoc. and contractors on performing fuel treatments. Promote message to public that accepting smoke from prescribed burns is better than future wildfires.	Ongoing	State and Federal resources, Federal grants
Project 2.3.3 - Update templates for smoke messaging.	DPHHS	New project for 2018 Plan.	Develop templates and roll out to emergency managers.	Short-term	State Resources

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 2.4.1 - Identify and further develop resilient landscapes and post-fire events such as monitoring, grass planting, and erosion control.	Conservation districts, NRCS, DNRC, BLM, USFS, USFWS, FWP, DES	New project for 2018 Plan.	Develop and implement rapid assessment processes for quickly determining vulnerabilities of systems to secondary effects (e.g., flooding, debris-flows, sedimentation, ash build-up), recovery needs, and roles and responsibilities. Build natural resilience through passive restoration using native species (e.g., seed bank regeneration).	Ongoing	State and Federal resources, Federal grants
Project 2.5.1 - Promote and educate local jurisdictions on the benefits of plans, land use regulations, revenue-generating strategies, and voluntary measures (i.e. WUI Code, subdivision regulations, zoning, building codes).	Commerce, DLI, DES, DNRC, State Legislatures, public non-profit orgs, advocate groups	New project for 2018 Plan.	Provide jurisdictions with example language for WUI code and zoning regulation with required mitigation and guidance similar to subdivision regulations. Discuss internal capacity requirements for code enforcement.	Long-term	State resources
Project 2.5.2 - Consolidate permitting process between DEQ and counties regarding burn permits.	DEQ and Counties	New project for 2018 Plan.	Identify funding source and develop platform for online application.	Mid-term	State resources
Project 2.6.1 - Ensure that continuity of operations can be maintained during wildfire events.	DES, DNRC	New project for 2018 Plan.	Establish and/or periodically review agency COOPs to address wildfire. Conduct table top exercises for staff	Ongoing	State resources
Project 2.6.2 - Improve ingress and egress, i.e. evacuation routes on county, tribal and private lands.	DES, DNRC, Counties, federal fire protection agencies, public non-profit orgs.	Roadside and right-of-way thinning and clearing has been conducted to improve evacuation routes. Work will continue to increase emergency responders and public safety.	Support Counties to identify areas that have inadequate ingress and egress and provide resources to counties for them to improve these areas.	Ongoing	State, County, Tribal resources
Project 3.1.1 - Encourage jurisdictions to pursue mitigation projects for repetitive loss structures or any severe repetitive loss properties identified in the future.	DES, DNRC-Water	Musselshell County received a large grant and is moving forward with buying out numerous flooded properties in the greater Roundup area. CAP community visits include discussing community repetitive loss structures and available mitigation options. CRS also focuses on these properties and provides credit for annual outreach activities to each property owner.	Missoula County and other CRS communities are working on mitigating RL properties. DES and DNRC will continue to coordinate and educate communities and property owners about potential funding.	Ongoing	FEMA
Project 3.2.1 - Improve flood risk hazard mapping.	DNRC - Water	The completed mapping projects in the last 5 years include: Lake Co., Broadwater Co., Missoula Co., Ravalli Co., Stillwater Co., Sweet Grass Co., Flathead Co., Granite Co., and Carbon Co. PMR. There were also two other mapping projects completed one was the Big Hole Study and the other was Melrose LOMR.	The planned mapping projects include: Mineral County, Jefferson River, Watershed, Madison River, Gallatin County, Musselshell Tributaries, Jefferson County, Milk River, and Clark Fork, Bitterroot and Blackfoot river project. This list also includes Silver Bow Creek PMR and Clearwater River Study.	Ongoing	FEMA, State Resources, Local Jurisdictions

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 3.2.2 - Coordinate with partners on flood mitigation (e.g. Joint Stream Restoration Committee, Conservation Districts, Drought and Water Supply Committee, Silver Jackets).	DES, DNRC-Water, Conservation Districts, FEMA, USACE, FWP	Projects completed using FEMA funds DNRC stream guides, DNRC drought public education and outreach. Presentations and collaboration at the Assoc. of State Floodplain Managers Conference, Montana Assoc. of Conservation Districts, Joint Stream Restoration Committee, Silver Jackets meetings. Trainings held in conjunction with DNRC resource seminar to facilitate collaboration at the local level with DES coordinators and floodplain managers.	Continue same collaboration with local partners finding opportunities to hold joint workshops or trainings. Find opportunities to promote 5% project opportunities with state partners.	Ongoing	State Resources
Project 3.2.3 - Develop digital mapping for all levees within the State.	DNRC-Water, NRIS	DNRC and Montana Silver Jackets are working with the City of Glendive on looking at alternatives and mapping behind the levee. On-going mapping project in the City of Roundup behind levee like structure (railroad embankment). DNRC is working with USACE on their accredited and unaccredited levee lists.	Continue working with USACE on the accredited and non-accredited levee lists. Will utilize mapping provided in local hazard mitigation plans of levees to pull together GIS layer for State. Will reach out to counties/tribes if data is missing.	Mid-Term	State Resources, USACE
Project 3.2.4 - Identify and catalog all repetitive and severe repetitive loss properties in the State.	DNRC-Water	New project for 2018 Plan.	Identify agencies where data exists. Pull together into one database and verify accuracy. Keep updated.	Mid-Term	State Resources, FEMA
Project 3.3.1 - Encourage appropriate entities to obtain conservation easements for land in the floodplain.	MDT, FWP, DNRC-Water, DES, Conservation Districts	DNRC, DES, and Montana Silver Jackets are working with the City of Glendive and the City of Roundup on looking at alternatives behind their levees which could include conservation easements for some of the lands in the floodplain.	FWP prioritizes riparian areas and wetlands for conservation easements. DNRC will continue to work with Park County and the Livingston Island Trailer Park, the area behind the levees in the City of Glendive, and the City of Roundup.	Mid-Term	MDT, FWP, DES, DNRC-Water, Conservation Districts, NGOs, Communities with open lands programs
Project 3.4.1 - Increase flood water conveyance at transportation crossings including upgrades to undersized bridges or those with scour damage.	DES, MDT, DNRC-Water	Various culvert/bridge projects completed under DR-4074. MDT is completing bank stabilization in Roundup and changing bridge height/realigning Granite Creek in Virginia City. MDT has completed numerous culvert projects in past 5 years.	MDT to continue same, as needed. DES to assist local jurisdictions apply for FEMA grants when funding available.	Ongoing	FEMA, State Resources, Federal Highway Administration (FHWA) funding
Project 3.4.2 - Implement appropriate mitigation for highways that flood.	MDT	New project for 2018 Plan.	MDT will continue to do this, as needed.	Ongoing	State Resources, FHWA funding
Project 3.4.3 - Support local communities to elevate community water systems where vulnerable to flooding.	DES, DNRC-Water	New project for 2018 Plan. Town of Valier completed project.	State to provide guidance so local jurisdictions can create more resilient infrastructure. Fromberg water system needs upgrade.	Ongoing	FEMA, State Resources

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 3.4.4 - Support local communities to install and/or enhance storm water systems to reduce flood damage.	DES, DNRC-Water	DNRC, Montana Silver Jackets, and USACE are working with the Town of Ekalaka, the City of Three Forks, and the City of Glasgow to enhance storm water systems to reduce flood damage.	Ekalaka is securing USACE funding and other grants to identify localized flooding issues including storm water. DNRC will provide guidance to communities who could alleviate flood damage through upgrading storm water systems. DNRC will assist with grants.	Ongoing	FEMA, CDBG
Project 3.4.5 - Encourage Natural Channel Design (NCD) techniques for stream restoration and bank restoration/stabilization projects to increase flood resiliency.	DNRC, DEQ, FWP	New project for 2018 Plan.	Incorporate NCD in state floodplain trainings, workshops, and educational materials	Ongoing	State Resources
Project 3.4.6 - Encourage projects that will increase stream length to regain natural function and reduce impact of flooding.	DES, private, conservation districts	New project for 2018 Plan.	Identify projects that are resilient to drought and reconnect stream to water table (e.g. Ninemile stream restoration project).	Ongoing	
Project 3.5.1- Promote flood hazard risk communications.	DES, DNRC-Water	New project for 2018 Plan.	State agencies to rely on federal partners to perform flood outreach due to budget cuts.	Ongoing	FEMA, State Resources, NWS
Project 3.5.2 - Continue to provide education on benefits of National Flood Insurance Program (NFIP).	DNRC - Water, NWS	DNRC and NWS promote NFIP via websites/ social media feeds, in education venues, in meetings with local communities, and in workshops, conferences, & outreach projects.	Continue same.	Ongoing	FEMA, State Resources
Project 3.5.3 - Provide outreach and technical assistance in joining the NFIP Community Rating System for reducing flood insurance premiums.	DNRC - Water	Gallatin County joined the CRS program and two more communities are putting together their CRS applications.	DNRC is working with local communities on the application requirements to join the CRS program. Education and Technical assistance will continue to be provided in educational venues and with outreach projects.	Ongoing	FEMA
Project 3.5.4 - Educate home and business owners on anchoring fuel storage tanks, backflow valves in toilets and floating propane tanks.	DNRC - Water, DES	Part of NFIP outreach.	Information will continue to be provided by DNRC in annual education venues and outreach events.	Mid-Term	FEMA
Project 3.5.5 - Identify and manage risks associated with levees by promoting insurance and financial assistance programs.	DNRC-Water, DES	DNRC, Montana Silver Jackets, and USACE have been promoting this information with annual conferences and local community meetings.	Will utilize website and social media to promote insurance and mitigation through financial mechanisms. Levee outreach programs are being rolled out by USACE. All three programs are also promoting insurance and financial assistance programs with numerous communities including Miles City, Forsyth, Glendive, Glasgow, Havre, Hill County, Dawson County, and Cascade County.	Ongoing	State Resources, USACE
Project 3.5.6 - Support community-based education and outreach to landowners about the risks of developing outside of designated areas, but in known flood prone and Channel Migration Zones.	Silver Jackets	New project for 2018 Plan.	Develop tools and guidance to support efforts by local governments and community organizations	Mid-Term	State Resources, USACE

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 3.5.7 - Educate public on need to limit future development in the floodplain.	DNRC-Water	DNRC provides outreach and training on existing regulations that limit development in the most vulnerable areas such as floodplains.	Continue same.	Ongoing	State Resources
Project 3.6.1 - Improve identification of ice jams and promote development of emergency action plans.	DES, DNRC-Water, USACE	DNRC, Montana Silver Jackets, USGS, NWS, and USACE are continuing to improve the identification of ice jams for the state through Silver Jackets projects. Miles City has produced and EAP for Levee breaches including ice jam events and Glendive is being approached about a similar project.	Various agencies (USGS, NWS, Montana Silver Jackets, and USACE) will continue to coordinate to identify locations prone to ice jams. Will provide outreach to local/tribal emergency managers on identification of ice jams. Will promote development of EAPs at training, on websites and in social media. Continue development of ice jam database and placement of information on the Montana All Rivers Hazard Map.	Ongoing	FEMA, USACE, State Resources
Project 4.1.1 - Adopt seismic requirements of updated International Code Council.	Dept. Labor & Industry-Building Codes	2012 IBC was adopted.	Every 3 years new codes released. Update as appropriate.	Ongoing	State Resources
Project 4.2.1 - Integrate seismic resilience into significant building retrofits.	Dept. Admin.	High performance building standards were developed. Seismic retrofits were completed at Main and Mathews Halls at UM-Western projects are complete and at the Creative Arts Center at MSU-Bozeman.	Elevator and restroom updates at Main Hall at MSU-Bozeman to include with seismic upgrades.	Ongoing	FEMA, State Resources
Project 4.2.2 - At Montana University System campuses in the intermountain seismic belt, seismically retrofit most vulnerable and highest occupancy buildings.	Dept. Admin., University System	Completed seismically retrofit Main and Mathews Halls at UM-Western, Creative Arts Center at MSU-Bozeman.	Review Tier 1 assessments completed and determine which buildings should be targeted for future retrofits.	Ongoing	FEMA, State Resources
Project 4.2.3 - At the Department of Corrections facilities in Deer Lodge, improve support systems and implement seismic upgrades to ensure security and maintain operation.	Dept. Admin, Corrections	Seismic resilience will be integrated into future building retrofits. Upgraded electrical feed.	Water system will be evaluated.	Mid-Term	FEMA, State Resources
Project 4.2.4 - At the Montana State Hospital in Warm Springs, seismically harden buildings and expand support systems to assure continued operation and meet medical needs.	Dept. Admin	Seismic resilience will be integrated into future building retrofits. Analysis of electrical system completed.	Major electrical upgrade planned.	Mid-Term	FEMA, State Resources
Project 4.2.5 - At the Capitol Complex in Helena, seismically retrofit buildings with most vulnerability and highest occupancy to mitigate loss.	Dept. Admin	Seismic resilience will be integrated into future building retrofits. Highest vulnerability determined to be DNRC Aircraft Hangar in Helena.	Consider grant for retrofit of DNRC aircraft hangar.	Ongoing	FEMA, State Resources
Project 4.2.6 - Retrofit bridges in Intermountain Seismic Belt, as needed.	MDT	New project for 2018 Plan.	All new bridges designed to seismic code.	Ongoing	State Resources

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 4.2.7 - Complete seismic retrofits on historic and culturally significant buildings including Bannack, and Virginia City.	DES, Dept. Commerce, MFWP	New project for 2018 Plan.	Complete BCA and FEMA grant application for funding. Implement project	Long-term	FEMA, State Resources
Project 4.3.1 - Continue "Earthquake Preparedness Month" outreach activities during the month of October.	DES, Dept. Commerce	DES used social media for earthquake preparedness outreach during October. Increased participation in "Great Montana Shake Out".	Coordinate with Dept. of Commerce to continue social media campaign for October participation in Great Montana Shake Out. Expand Shake Out exercise to include COOP. Expand outreach to include September for National Preparedness Month. Complete 2018 Vigilant Guard exercise.	Ongoing	State Resources
Project 4.3.2 - Continue presentations and distribution of earthquake preparedness materials including encouraging steps such as anchoring hot water heaters.	DES, MT DES Association	DES conducts social media campaign on non-structural mitigation. MT DES Association h has promoted MAP Your Neighborhood and CERT training.	Continue same.	Ongoing	State Resources
Project 4.3.3 - Encourage and educate home owners and businesses in the intermountain seismic belt to implement seismic retrofit projects.	DES, Commerce-Housing & Tourist Divisions	DES using social media to provide outreach. Have found that when there is an earthquake that they get a lot of local interest.	Continue social media campaign. Promote through emergency managers.	Ongoing	Dept. Homeland Security, FEMA, State Resources
Project 4.4.1 - Expand and upgrade the earthquake monitoring network and information reporting capabilities in high hazard areas.	MBMG	MBMG upgraded to latest analysis reporting equipment. University of Utah seismic program has assisted with software. New seismic station at Libby dam reporting to the network. In cooperation with the USGS, MBMG added sensors at 4 strong motion areas including West Yellowstone, Helena, Butte, and Bozeman to collect continuous data. The USGS Advanced National Seismic System (ANSS) did not renew funding to the Montana Regional Seismic Network which resulted in elimination of a staff computer position.	Reapply in 2020 for USGS ANSS grant to get five years of funding for a MBMG staff person. Continue program as funding allows.	Mid-Term	FEMA, State Resources
Project 4.4.2 - Quantify seismic hazards posed by faults.	MBMG	MBMG was successful in getting one year of funding from FEMA to study the Bitterroot Valley Fault.	Complete Bitterroot Valley Fault Study. Follow up with a proposal to trench fault and study subsurface in order to work out movement history.	Ongoing	FEMA, State Resources
Project 4.4.3 - Encourage local jurisdictions and tribal nations in the intermountain seismic belt to conduct seismic evaluations of their critical facilities.		Local MHMP updates have identified this as a mitigation project. SHMO works with jurisdiction to identify projects.	Butte-Silver Bow is working to do this for their Courthouse. SHMO to emphasize program to evaluate schools.	Ongoing	Dept. Homeland Security, FEMA, Local Jurisdictions
Project 4.4.4 - Complete liquifaction mapping of potentially vulnerable areas in high population areas within Intermountain Seismic Belt.		New project for 2018 Plan.	Identify vulnerable areas. Apply for funding to complete study.	Long-term	FEMA, State Resources

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 4.4.5 - Work with insurance companies and Montana legislature to develop program that offers discounts on earthquake insurance for residents that complete training and implement non-structural projects around their homes.		New project for 2018 Plan.	Develop proposal. Meet with insurance industry representatives. Get approval from Montana legislature. Use social media to advertise program.	Long-term	State Resources
Project 4.5.1 - Survey and install utility shut-off valves at all state buildings in the intermountain seismic belt.	Dept. Admin-A&E	City of Helena Seismic Shut-off valves for reservoirs. Mathews Hall retrofit at UM-Western. Seismic resilience will be integrated into future building retrofits.	Field assessment of where we're at. Probably in good shape. In process of doing facility assessment. Can integrate into these.		FEMA, State Resources
Project 4.5.2 - Implement non-structural projects at state buildings in the intermountain seismic belt such as anchoring utilities.	All State Agencies, University System	General Services Administration continues to implement non-structural projects as part of building maintenance. Funding received for Law Enforcement Academy. Project is currently underway.	Complete non-structural project at Creative Arts Center at MSU-Bozeman to secure tall tower. Identify other potential projects and complete application for funding.	Mid-Term	FEMA, State Resources
Project 4.5.3 - Utilize 3-mil film on windows of public buildings in intermountain seismic belt to avoid shattering during seismic event.	Dept. Admin-GSA	New project for 2018 Plan.	Develop scope of work and budget for FEMA grant. Obtain funding. Implement project.	Mid-Term	FEMA, State Resources
Project 4.6.1 - Provide training to Rapid Building Assessment Teams to evaluate buildings after an earthquake.	DES	New project for 2018 Plan.	Collaborate w flood people and develop checklist. Determine team members who have gone through training. Train others.	Long-term	State Resources
Project 5.1.1 - Provide outreach on management practices for minimizing the impacts from drought.	DNRC, Dept. Ag, FWP, NRCS, FSA, Conservation Districts	Governor's Committee on Drought and Water Supply provide outreach and hold forums around the state. Conservation districts have had over 200 workshops on soil health. DNRC drought resiliency program conducts local drought planning. Renewable Resource Grant and Loan program has funded research on soil health practices such as cover crops and crop rotations. Dept. of Agriculture works with MSU and federal partners who examine genetic material on drought resistant species. Research is transmitted to growers.	Continue same. Emphasize soil health and water management. Continue to look at ways that irrigators can improve water management by changing their pivot orientation. Provide technical assistance.	Ongoing	State Resources
Project 5.1.2 - Educate ranchers to work with local weed districts to reduce spread of invasive species.	Dept. Agriculture	New project for 2018 Plan	Dept. of Agriculture starting program to get ahead of weed problem associated with imported forage use and weed spread in drought-impacted crop lands.	Ongoing	State Resources
Project 5.1.3 - Encourage voluntary water conservation by domestic, municipal, and industrial users.	DEQ	Some municipalities have adopted watering restrictions.	Utilize television and social media to educate public.	Ongoing	State Resources

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 5.1.4 - Provide outreach on algal blooms and what to do when they happen.	DPHHS, DEQ	New project for 2018 Plan	Utilize television and social media to educate public.	Ongoing	State Resources
Project 5.1.5- Develop a toolbox to assist local/ tribal partners with drought management planning.	DES, DNRC	New project for 2018 Plan	Develop a toolbox that is housed on the DRNC website that local/tribal partners can use to develop comprehensive drought management plans. This toolbox will utilize best planning practices and mimic that of mitigation planning documents.	Ongoing	State Resources, FEMA
Project 5.2.1 - Inventory operating plans of reservoirs to ensure drought contingency plans.	DNRC, BOR, USACE	DNRC-Dam Safety reviews plans for state dams on ongoing basis. Working with BOR & USACE to do same.	Bring to Silver Jackets group. Continue working with federal partners.	Ongoing	State Resources, USACE, BOR
Project 5.2.2 - Encourage system of soil moisture gauges to monitor drought.	MT Climate Office, USGS, NRCS, Dept. Agriculture	Variety of agencies are improving monitoring capabilities including USGS, Dept. Agriculture, and NRCS.	Montana Climate Office MESONET project taking lead on this.	Mid-Term	State Resources
Project 5.2.3 Develop drought plans as an addendum to the local/tribal mitigation plan.	DES, DNRC	New project for 2018 plan	MT DES will apply for a large planning grant with PDM to assist local conservation districts or emergency managers to develop a comprehensive drought management plan to mimic the county mitigation plan to assist with implementing drought projects. MT DES will work closely with the DNRC conservation bureau to identify eligible applicants, and disperse funds.	Mid-Term	State Resources, FEMA, BOR
Project 5.3.1 - Continue to implement angling restrictions and closures to reduce drought impacts on Montana fisheries.	FWP	New project for 2018 Plan.	Continue to monitor conditions and implement recreational restrictions to reduce stress on fish.	Ongoing	State Resources
Project 5.3.2 - Continue to administer Fish, Wildlife, and Parks' Water Rights and Water Reservations to protect instream flows during drought for the benefit of fish and wildlife.	FWP	New project for 2018 Plan.	Continue to monitor stream flows and if stream flows fall below specific instream flow criteria, request that junior in priority water users limit or cease diversions until stream flow conditions improve	Ongoing	State Resources
Project 5.4.1 - Consider feasibility of creating infiltration basins to capture early spring runoff.	DNRC-Water	New project for 2018 Plan	Work with conservation districts to identify potential areas where this may be feasible.	Ongoing	State Resources, FEMA
Project 5.4.2 - Encourage passive water storage where it will enhance natural function and increase water supply security.	DNRC-Water, Conservation Districts	DNRC, FWP, Conservation districts promote this across the state.	Identify wetland and stream restoration projects that are good candidates for funding.	Ongoing	DNRC grants, FEMA,
Project 5.4.3 - Encourage water conveyance efficiencies in agricultural, municipal, and industrial uses.	DNRC, Local partners	CSKT water compact set aside money for improved conveyance. Hundreds of projects have been completed.	Continue same.	Ongoing	State Resources
Project 5.4.4 - Encourage removal of abandoned structures to improve stream connectivity.	Conservation Districts	New project for 2018 Plan	Identify structures which should be removed. Work with landowners.	Ongoing	Local resources

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 5.5.1 - Develop a model water conservation ordinance for use by municipalities and rural domestic water suppliers.	DNRC, MACO, Dept. Commerce	Bozeman and Missoula have done this.	Talk to MACO and hold sessions. Refer to example ordinances available nationwide.	Long-Term	State Resources
Project 5.5.2 - Clarify state law to allow voluntary, temporary changes of water rights and contract water exchanges.	DNRC, Conservation Districts	Temporary leasing bill exists which allows transfer from another water right holder.	Work with subdivisions to pass water rights onto water conservation organizations. Exempt wells.	Long-Term	State Resources
Project 5.5.3 - Find ways to expedite the resolution of water use conflicts and water rights enforcement during drought.	DNRC	No progress to report. Controversial.	Increase support for drought planning.	Long-Term	State Resources
Project 5.5.4 - Adopt rules for the installation of water metering devices to resolve conflict on water short drainages.	DNRC	No progress to report.	Encourage grant programs for water conservation to require measurement.	Long-Term	State Resources
Project 5.5.5 - Establish stronger economic and other incentives for private investments in water conservation.	DNRC, DES	No progress to report. State/Legislature must determine it's important. Montana insurance companies can offer price breaks; however, legislature must pass law to allow this.	Draft bill for legislature. Encourage private investment in water conservation through loans and grants available through DNRC.	Long-Term	State Resources
Project 6.1.1 - Modify vulnerable buildings to resist water penetration and wind damage.	Dept. Admin., University System	High performance building standards were developed for State property.	Continue to implement with new construction and remodels.	Ongoing	FEMA, State Resources
Project 6.2.1- Maintain partnership with National Weather Service, DES and media to educate public on advisories, watches, and warnings when weather hazards are forecast to impact Montana.	National Weather Service, DES	NWS conducts media outreach (website, social media) on an annual basis. They do local presentations, post YouTube videos, offer weather spotter training, and provide INWS text messages to cell phones.	Continue to communicate and identify training opportunities to educate partners on weather related hazards and impacts.	Ongoing	National Weather Service
Project 6.2.2 - Promote distribution of NOAA weather radios.	NWS, DES	NWS Great Falls got grant for 80 NOAA radios. Distributing to Tribal nations. FEMA grant funded radios for Town of Baker after tornado disaster.	Continue same.	Ongoing	National Weather Service, FEMA
Project 6.2.3 - Partner with National Weather Service on the Weather Ready Nation Ambassador Program and increase program participation.	NWS, DES	New project for 2018 Plan	Promote participation by state agencies and schools.	Ongoing	National Weather Service, State Resources
Project 6.2.4 - Encourage participation in National Weather Service Storm Ready Community program.	NWS, DES	New project for 2018 Plan	Encourage communities with NFIP policies to participate so they can get flood insurance discount.	Ongoing	National Weather Service, State Resources
Project 6.2.5 - Evaluate locations for Remote Weather Information System video cameras.	MDT, NWS	New project for 2018 Plan	Look into locations for RWIS cameras on Marias Pass, Kings Hill Pass, and others.	Ongoing	State Resources
Project 6.2.6 - Continue to distribute winter weather survival booklet.		New project for 2018 Plan	Expand distribution and make booklets available to new residents at city halls and county courthouses.		

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 6.2.7 - Provide education on weather events and public health at locations with temporary occupancy (man camps, rainbow gathering, etc.).	DPHHS, National Weather Service	New project for 2018 Plan	Prepare flyers to distribute if locations spring up that could be vulnerable.	Ongoing	Federal resources
Project 6.3.1 - Encourage utilities to bury electric lines to improve reliability.	DES, RECs	SHMO made presentation at annual meeting of RECs to encourage them to bury transmission lines.	Provide outreach to RECs on funding opportunities through FEMA grants programs.	Ongoing	FEMA
Project 6.3.2 - Encourage utilities to apply for mitigation grants to install air flow spoilers on above ground utility lines.	DES, Utilities	No progress to report.	Provide outreach to RECs on funding opportunities through FEMA grants programs.	Ongoing	FEMA
Project 6.4.1 - Encourage cities and towns in tornado alley to establish community safe rooms.	DES	New project for 2018 Plan	South Dakota SHMO will make presentations on helping tornado alley towns develop community safe rooms.	Short-Term	State Resources, FEMA
Project 7.1.1 - Encourage State Emergency Response Committee (SERC) to consider validity of commodity hazardous materials flow studies.	SERC	New project for 2018 Plan.	Add to agenda for twice/year SERC meetings. Identify and apply for funding.	Mid-term	State resources
Project 7.1.2 - Conduct road safety audits on corridors with safety issues.	MDT	New project for 2018 Plan.	Determine corridors where audits are needed. Conduct audits. Consider results in future projects.	Ongoing	State & federal resources
Project 7.2.1 - Promote Hazardous Material Emergency Preparedness (HMEP) grants to local partners.	DES, SERC	New project for 2018 Plan.	Communicate to local emergency managers.	Ongoing	State resources
Project 7.2.2 - Promote outreach on impaired driving through prevention education.	MDT	New project for 2018 Plan.	Develop public education campaign on a range of impaired driving topics using print, broadcast and social media.	Ongoing	State & federal resources
Project 7.2.3 - Reduce roadway departure and intersection crashes through education.	MDT	New project for 2018 Plan.	Encourage awareness of and participation in defensive driving classes and continue media campaign via print, broadcast, and social media.	Ongoing	State & federal resources
Project 7.2.4 - Support policies, education, training, programs and activities that promote and increase seat belt and child safety seat use.	MDT	New project for 2018 Plan.	Continue education programs and media campaign via print, broadcast, and social media.	Ongoing	State & federal resources
Project 7.3.1 - Identify and encourage participation in trainings and education offered by stakeholders (those who handle hazardous materials).	DES, SERC, LEPCs	New project for 2018 Plan.	Communicate to local emergency managers. Identify training opportunities. Add to state training calendar. Push out announcements.	Ongoing	State & federal resources
Project 7.3.2 - Encourage participation from all emergency responders in Traffic Incident Management System (TIMS) training.	MDT, FHWA, Fire Depts., Highway Patrol, EMS, towing association	New project for 2018 Plan.	Communicate with partners on training opportunities. Promote that it's a collaborative effort.	Ongoing	State & federal resources

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 7.4.1 - Implement highway safety projects.	MDT	New project for 2018 Plan.	Continue infrastructure improvements to mitigate road departure crashes and intersection crashes including installation of signage, centerline and shoulder rumble strips, guard rail improvements, wider shoulders and intersection improvements (turn lanes, roundabouts, and signal improvements).	Ongoing	State & federal resources
Project 7.4.2 - Identify opportunities to incorporate wildlife mitigation on already planned projects to reduce wildfire/vehicle collisions.	MDT, FWP	New project for 2018 Plan.	When highway improvement projects are identified, coordinate with FWP on types and location of treatments.	Ongoing	State & federal resources
Project 8.1.1 Continue public health surveillance, disease investigations, and provide mitigation strategies.	DPHHS	Increased percentage of communicable diseases reported from local health depts. within 24 hours. Inspected and provided educational materials on food safety to licensed food establishments. Increased age-appropriate immunizations rates for vaccine preventable communicable diseases.	Continue same. Increase percentage of communicable diseases getting back from local health departments to within 24 hours.	Ongoing	State resources
Project 8.1.2 - Conduct surveillance and disease investigations for reportable animal diseases and maintain the Designated Surveillance Area (DSA) for Brucellosis.	Dept. Livestock	New project for 2018 Plan.	Continue to operate the Montana Veterinary Diagnostic Laboratory. Monitor compliance with DSA regulations. Conduct slaughter and disease trace investigations. Conduct regulatory testing.	Ongoing	State resources
Project 8.1.3 - Conduct surveillance and disease investigations for reportable diseases in fish and wildlife,	FWP	New project for 2018 Plan.	Morbidity/mortality investigations to detect reportable diseases in fish and wildlife. Examples include monitoring fish for Proliferative Kidney Disease and surveying harvested, symptomatic, or road-killed deer for Chronic Wasting Disease.	Ongoing	State resources
Project 8.1.4 - Maintain policies and regulations that prevent and minimize the spread of animal diseases.	Dept. Livestock	New project for 2018 Plan.	Maintain import requirements for animals entering Montana. Maintain and update list of reportable animal diseases in Montana. Require training for veterinarians to become accredited in Montana.	Ongoing	State resources
Project 8.1.5 - Maintain policies and regulations that prevent and minimize the spread of fish and wildlife disease.	FWP	New project for 2018 Plan.	Maintain cervid transport regulations to prevent spread of CWD, maintain feeding ban to prevent spread of disease through wildlife populations. Train FWP field staff on wildlife disease recognition/necropsy techniques.	Ongoing	State resources

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 8.1.6 - Maintain watercraft inspection and decontamination stations for Aquatic Invasive Species during the boating season.	FWP	New project for 2018 Plan.	Continue and expand existing program.	Ongoing	State resources
Project 8.2.1 - Continue to provide outreach to both local health jurisdictions and the public on public health topics.	DPHHS	New project for 2018 Plan.	Utilize print, broadcast and social media to inform and educate.	Ongoing	State resources
Project 8.2.2 - Promote the "clean, drain, dry" campaign to prevent the spread of Aquatic Invasive Species, including diseases, for boats and equipment to waters and native aquatic species.	FWP	New project for 2018 Plan.	Continue program to inform and educate the public through print, broadcast and social media.	Ongoing	State resources
Project 8.2.3 - Provide education and outreach to Montana hunters, landowners, and general public about signs/symptoms of wildlife disease, safe field dressing precautions, and the status of wildlife diseases in the state.	FWP	New project for 2018 Plan.	Continue program to inform and educate the public and provide training sessions, wildlife health section on website, wildlife disease manual and other printed materials	Ongoing	State resources
Project 8.3.1 - Encourage water saving measures and institute fishing restrictions during drought to reduce stress on fish, which can make them more susceptible to disease.	FWP	New project for 2018 Plan.	Continue program to inform and educate the public through print, broadcast and social media.	Ongoing	State resources
Project 8.4.1- Ensure DPHHS Emergency Operations Plans (EOPs) and all associated annexes and procedures are current and complete for public health.	DPHHS	Annually updated EOP including Medical Surge Annex. Incorporated Communicable Disease Epidemiological Annex including Outbreak Response Protocol.	Complete provider Crisis Standards of Care including hospital bed availability reporting and procedures for sharing clinical hospital staff. Continue to update EOP documents annually.	Ongoing	State resources
Project 8.4.2 - Encourage local jurisdictions to update and maintain EOPs for public health.	DPHHS	New project for 2018 Plan.	Provide outreach and expertise to assist locals with their public health EOPs. Provide template that they can follow.	Ongoing	Local resources
Project 8.4.3 - Update the Foreign Animal Disease (FAD) Response Plan.	Dept. Livestock	New project for 2018 Plan.	Implementation depends on appropriate staffing. In May 2018, Dept. Livestock will participate in large-scale, national exercise to test plan. Other activities to include holding National Veterinary Stockpile table top exercise with USDA, and getting staff trained in ICS.	Mid-range	State resources
Project 8.4.4 - Develop guidelines for individual producer biosecurity plans to include outlining criteria for movement permits from a disease control zone.	Dept. Livestock	New project for 2018 Plan.	Implementation depends on appropriate staffing. Goal is to protect MT livestock businesses and ensure continuity of operations in the case of a foreign animal disease outbreak.	Long-term	State resources

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 8.4.5 - Develop and maintain rapid response plans to minimize the spread of fish and wildlife disease.	FWP	New project for 2018 Plan.	Reach out to specialists to acquire best available methods. Prepare plans. Review and revise. Continually update.	Ongoing	State resources
Project 8.4.6 - Map the presence and spread of fish and wildlife disease to prioritize prevention efforts, surveillance, and public education.	FWP	New project for 2018 Plan.	Ensure field staff have proper mapping equipment and training. Compile data in central database. Review annual data collected and develop strategy to implement project.	Ongoing	State resources
Project 8.5.1 - Test and evaluate public health response plans.	DPHHS	Established training and exercise calendar. Completed After Action Reports and Corrective Action Plans for exercises. Utilized Health Alert Network notification system to verify ability to contact all health jurisdictions within 24 hours of releasing significant message.	Ongoing each year. Full scale exercise planned for 2019 to test this.	Ongoing	State resources
Project 8.5.2 - Provide Rapid Response and Incident Command System training for agencies responding to emergencies relating to fish and wildfire disease.	FWP	New project for 2018 Plan.	Identify appropriate training modules. Continually offer training sessions so all appropriate staff have opportunity to train.	Ongoing	State resources
Project 9.1.1 - Conduct proactive scaling and reducing of back slopes along highways.	MDT	Stillwater County received PDM grant for road reconstruction due to landslide damage. Rock scaling project has been completed in Wolf Creek area along Interstate-15.	MDT continues this as needed. Projects planned in Lame Deer, Missoula, and Billings.	Ongoing	State Resources
Project 9.2.1 - Educate homeowners of benefits of avalanche protection devices.	DES	New project for 2018 Plan.	Look for innovative projects to protect avalanche prone structures. Coordinate with Missoula County.	Ongoing	State Resources
Project 9.2.2 - Promote avalanche forecasting and public awareness.	DES	New project for 2018 Plan.	Use social media to promote organizations that do avalanche forecasting and provide awareness training.	Ongoing	State Resources
Project 9.3.1 - Identify high population areas vulnerable to avalanches.	DES	New project for 2018 Plan.	Using GIS, do modeling exercise using snow probability, slope, and population to develop avalanche hazard map.	Short-term	State Resources
Project 9.3.2 - Conduct landslide studies and monitoring in high population areas.	MBMG, MDT	New project for 2018 Plan.	MBMG Billings Office plans to use LiDar data to repeat their study of movement of Billings's rimrocks. Identify other vulnerable areas.	Ongoing	State Resources
Project 9.3.3 - Create a state-wide landslide map.	MBMG	New project for 2018 Plan.	Develop grant proposal with scope of work and budget. Obtain project funding. Utilize digital geologic map and field verification to create map.	Short-term	FEMA, State Resources

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 10.1.1 - Develop updated evacuation maps for non-federal high hazard dams for risk assessment.	DNRC-Dam Safety	Federal agencies reluctant to release inundation maps. New maps developed for Flower Creek, Painted Rocks, Middle Creek, Glacier Lake and East Fork dams. An assessment of existing evacuation maps was completed in 2013. This assessment identified priorities for redoing maps and tabulated deficiencies. Limited new mapping activity for other dams, due to lack of success in obtaining funding. Cost of developing detailed evacuation maps is high due to the advanced level of engineering required. Typical cost per map = $25,000.	NRCS is initiating program to develop more accurate and improved evacuation maps for their 11 dams. State Dam Safety Program initiated program to develop more accurate and improve evacuation maps for other dams identified as a priority in the 2013 assessment or missing evacuation maps.	Short-Term	FEMA National Dam Safety Program Assistance to States Grant, State Resources; NRCS funds
Project 10.1.2 - Evaluate existing dams for hazard classification.	DNRC-Dam Safety	No mechanism in place to force dam owners to submit application, unless repair work is planned. Done as needed on an application basis. USFS completed comprehensive dam reclassification on Beaverhead-Deerlodge National Forest.	DNRC Dam Safety will continue owner education efforts with a focus on the liability of dam ownership to encourage owners to voluntarily submit hazard classifications.	Ongoing	State Resources
Project 10.1.3 - Keep Emergency Action Plans current.	Dam owners (private, city, county and State); DNRC Dam Safety	EAPs for State-owned dams are continually updated; many issues with keeping EAP's for non-State-owned dams updated. In addition, existing EAP's are in poor condition, varied formats, difficult to use by emergency managers.	DNRC Dam Safety lost the EAP coordinator position and must now rely on dam owners to keep EAPs current. New owner education and table top exercise program using contractor will help encourage dam owners to have up to date EAPs; New system of online approval and distribution close to being implemented (beta testing); Adopting new format for EAPs (NRCS Model) which will facilitate uniformity making EAP's easier to use by emergency managers.	Ongoing	FEMA National Dam Safety Program Assistance to States Grant, State Resources
Project 10.2.1 - Repair high hazard dams with deficiencies.	Dam owners	Flower Creek dam in Libby was repaired.	Dam Owners will continue this activity as funding allows. Lack of funding is an obstacle for many dam owners. In cases, restrictions on storage until repairs are completed are implemented to protect the downstream public.	Ongoing	State Grants and Loans (RRGL), Private loans, National Dam Rehab Act, Water Storage Account, Revenue from Broadwater Hydro Power Project; State WUA contributions

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 10.3.1 - Exercise Emergency Action Plans.	DNRC-Dam Safety, and DNRC Contractor, Dam Owners	DNRC Dam Safety facilitated EAP tests involving several dams in a specific area and focused on training emergency managers to deal with a dam failure. DES exercised EAPs with the following counties: 2013- Cascade, Choteau, and Yellowstone; 2014-Lincoln, Blaine, Broadwater, Jefferson, Lewis and Clark, Stillwater, Yellowstone, Carbon, and Daniels; 2015-Cascade, McCone, Richland, Phillips, Valley, Daniels, Roosevelt, Sheridan, Fort Peck, and Granite; 2016- Ravalli, Sanders, Lincoln, Teton, Hill, Beaverhead, Madison, Gallatin, Sweet Grass, Broadwater, Carbon, Phillips, Roosevelt, and Sheridan; and, 2017- Ravalli, Powell, Blaine, Fort Peck, Phillips, Daniels, and Roosevelt.	DNRC Dam Safety has implemented a new owner education and table top exercise program using a private engineering contractor. Dams chosen will have deficiencies or have a need for additional public awareness. The primary focus will be more on training dam owners on how to prevent an emergency in the first place. A secondary focus will be on hazards in the evacuation area. A variety of factors will be used to determine dams, including staff workload, seriousness of deficiency, willingness of dam owner to participate and location.	Ongoing	FEMA National Dam Safety Program Assistance to States Grant, State Resources
Project 10.3.2 - Encourage continued participation of local and tribal DES in DNRC dam safety table top exercises.	DES	As mentioned in Project 10.3.1, the focus of these tests was on the emergency managers and local law enforcement.	Emergency Managers will be encouraged to attend all EAP tests.	Ongoing	State Resources
Project 10.3.3 - Streamline and improve DNRC earthquake response protocol.	DNRC (Dept. initiative)	New project for 2018 Plan.	DNRC is working on a comprehensive plan to improve their earthquake response. The plan should be complete and in place by the Vigilant Guard exercise in 2018 which will simulate an earthquake near Hebgen Lake dam. DNRC will test their improved response plan at this time.	Short-Term	State Resources
Project 10.4.1 - Provide awareness to community of possible flooding from operational flows.	DNRC-Dam Safety	New Project for 2018 Plan.	Identify dam locations where this may be problematic. Include operational flow impacts as an additional map in emergency action plans.	Ongoing	FEMA National Dam Safety Program Assistance to States Grant, State Resources; NRCS funds
Project 11.1.1 - Raise level of awareness of citizens of Montana on topics associated with terrorism and cyber security.	All State agencies, DHS	New project for 2018 Plan	MT Info Security Advisory Council was established in 2015 and brings together state, law enforcement and private industry to disseminate information on cyber security. Monthly meetings and website. Empower state partners to disseminate information to local partners. Training and education will be offered through PSC.	Ongoing	State and federal resources
Project 11.1.2 - Promote information sharing on prevention of acts of terrorism by local and state agencies and partners.	DES, DMA, DHS	New project for 2018 Plan	Work with MT AG's office to develop an acceptable program. Disseminate info to local and tribal partners.	Mid-term	State and federal resources

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 11.1.3 - Update emergency action flip chart that can be provided to schools.	DES, OPI	New project for 2018 Plan	Reach out to schools to see if they're interested in flip charts. Explain about annex and EAPs. Provide outreach on armed intruders.	Mid-term	Dept. Education grants
Project 11.1.4 - Promote availability of armed intruder/active shooting training.	DES, DHS	New project for 2018 Plan	Provide outreach to local jurisdictions and tribes on availability of training.	Ongoing	State and federal resources
Project 11.1.5 - Promote and encourage cyber assessments for water and wastewater systems.	DES, DPHHS, DHS	New project for 2018 Plan	Provide outreach to local jurisdictions and tribes that tools are available from DHS that will enable them to conduct their own assessments.	Ongoing	State and federal resources
Project 11.1.6 - Promote and educate on the Federal Homeland Security Infrastructure Protection Program and how they can help locals and tribes.	DES, DHS	New project for 2018 Plan	Have Office of Infrastructure Protection present at DES Conference. Encourage meetings with local LEPCs.	Ongoing	State and federal resources
Project 11.2.1 - Perform vulnerability assessments on security of State buildings.	Admin - State Continuity and Emergency Management Office	New project for 2018 Plan	System is in place to collect building info for Emergency Action Plans (EAPs) which are the building evacuation and employee accountability plans. Staff has received infrastructure protection training and is available to conduct assessments; however, grants are needed to fund travel and tools. Physical Security Plans will include physical current and needed state of security. Will utilize with incident and capability modules.	Short-term	State and federal resources
Project 11.2.2 - Perform cyber assessments for State-owned water and wastewater systems.	Admin, DHS	New project for 2018 Plan	Do assessments at state-owned water and wastewater treatment plants.	Mid-term	State and federal resources
Project 11.2.3 - Support mitigation-related goals, objectives, and actions of the State Core Capabilities.	DES	Ongoing planning effort at DES.	Continue same.	Ongoing	State and federal resources
Project 11.2.4 - Develop framework to prioritize special events at the State level.	DES, National Guard, DOJ, DHS	New project for 2018 Plan	Develop clearinghouse of events reporting. Reach out to MT Assoc. of Counties.	Short-term	State and federal resources
Project 11.2.5 - Continue vulnerability assessments for large events.	DES, National Guard, DOJ, DHS	New project for 2018 Plan	National Guard conducts vulnerability assessments for events over 300 people.	Ongoing	State and federal resources
Project 11.2.6 - Establish working group to develop resource guide of tools for local jurisdictions and tribes.	DES, National Guard, DOJ, DHS	New project for 2018 Plan	Develop a one-pages online resource guide with internet links and contacts on active shooter training, vulnerability assessments, emergency protection, and funding opportunities. PSA in Colorado has a good tool that could serve as basis.	Short-term	State and federal resources

Table 5.2-3. Progress Made and Implementation Details – 2018 Montana Mitigation Strategy

Project	Responsible Entity	Progress Made	Planned Activities	Schedule	Potential Funding Sources
Project 11.3.1 - Consider physical hardening of critical facilities including bollards and generators.	Admin, University System	New project for 2018 Plan	Conduct building assessments to determine needs. Apply for funding. Implement physical hardening for high priority buildings, in new construction, and with remodel projects.	Ongoing	State resources
Project 11.4.1 - Continue efforts to coordinate law enforcement for potential civil unrest/violence associated with resource development and large events in Montana.	DES, National Guard, FWP, local and tribal jurisdictions	New project for 2018 Plan.	Establish framework whereby law enforcement entities are informed on potential threats. Ensure that FWP game wardens are involved in briefings.	Ongoing	State resources
Project 12.1.1 Educate the public on how to respond to volcanic ash fall-out when monitoring determines eruption is imminent.	DES	DES uses social media to provide outreach on all hazards including volcanic ash.	Continue social media campaign. Increase efforts is eruption concern is apparent.	Ongoing	State resources

Notes: A&E = Architecture and Engineering; AG = Attorney General; AM/FM = Association of Montana Floodplain Managers; ANSS = Advanced National Seismic System; ARC = American Red Cross; BCA = Benefit-Cost Analysis BLM = Bureau of Land Management; BOR = Bureau of Reclamation; CAP = Community Action Partnership; CDBG = Community Development Block Grants; COOP = Continuity of Operations Plan; CRS = Community Rating System; CSKT = Confederated Salish and Kootenai Tribes; CWD = Chronic Wasting Disease; DES = Disaster and Emergency Services; DHS = Dept. of Homeland Security; DMA = Dept. of Military Affairs; DNRC = Dept. of Natural Resources and Conservation; DOJ = Dept. of Justice; DPHHS = Dept. of Public Health and Human Services; DSA = Designated Surveillance Area; EAP = Emergency Action Plan; EMS = Emergency Medical Service; EOP = Emergency Operations Plan; EPA = Environmental Protection Agency; FAD = Foreign Animal Disease; FEMA = Federal Emergency Management Agency; FHWA = Federal Highway Administration; FMA = Flood Mitigation Assistance; FSA = Farm Service Agency; FWP = Fish, Wildlife and Parks; GIS = Geographic Information System; GSA = General Services Administration; HMEP = Hazardous Material Emergency Preparedness; HMGP = Hazard Mitigation Grants Program; ICS = Incident Command Systems; LEPC = Local Emergency Preparedness Committee; LOMAR = Letter of Map Revision; MACD = Montana Association of Conservation Districts; MACO = Montana Association of Counties; MAP = Montana Association of Planners; MBMG = Montana Bureau of Mines and Geology; MDF = Mule Deer Foundation; MDT = Montana Dept. of Transportation; MSU = Montana State University; NCD = Natural Channel Design; NFIP = National Flood Insurance Program; NGO = Non-Government Organization; NOAA = National Oceanic and Atmospheric Administration; NRCS = Natural Resources Conservation Service; NRIS = Natural Resources Information System; NWS = National Weather Service; OPI = Office of Public Instruction; PA = Public Assistance; PDM = Pre-Disaster Mitigation; PMR = Preliminary Map Revision; PSC = Public Service Commission; PSR = Prevention, Suppression, & Restoration ; REC = Rural Electric Cooperatives; RL = Repetitive Loss; RMEF = Rocky Mountain Elk Foundation; ROW = Right of Way; RRGL = Renewable Resource Grant and Loan Program; RWIS = Road Weather Information System; SERC = State Emergency Response Commission; SHMO = State Hazard Mitigation Officer; SP = State Park; SRL = Severe Repetitive Loss; TIMS = Traffic Incident Management System; USACE = U.S. Army Corps of Engineers; USDA = U.S. Dept. of Agriculture; USFS = U.S. Forest Service; USFWS = U.S. Fish and Wildlife Service; USGS = U.S. Geological Survey; WMA = Wildlife Management Area; WUA = Water User Association; WUI = Wildland Urban Interface

5.2.5 Status of Montana Mitigation Strategy

Most of the mitigation funding in Montana has come from either FEMA in the form of HMGP, PDM, PA C-G, or National Earthquake Hazards Reduction Program grants, USACE (levee studies), U.S. Forest Service, BLM, NRCS (fuel mitigation projects), or from the State of Montana. These resources have allowed the State to move forward and complete a number of projects outlined in their mitigation strategy. Montana DES does not track mitigation offered through PA C-G and therefore, this information is not available to include in this Plan.

During review of the previous (2013) Montana mitigation strategy, three projects were identified as "complete", as outlined below.

- Encourage local and tribal jurisdictions to geo-locate their critical facilities for use in risk assessment. This project has been completed with the local and tribal mitigation plan updates.
- Negotiate with FEMA to unify and simplify the HMA grant process. This project has been completed. With each new disaster declaration, the State desired to do 406 mitigation on the largest number of projects possible.
- Improve the timeliness and completeness of disease report. Montana DPHHS indicated that all local public health department are not on the Montana Infectious Disease Information System as of 7/14/2017.

Completed projects have been removed from the State mitigation strategy. The remainder of the projects are either ongoing efforts or new projects for implementation during the next five years.

Mitigation construction projects have been ongoing across the State as funding is available. **Figures 5.2-1, 5.2-2, and 5.2-3** present maps pinpointing the location of prior and ongoing mitigation construction projects compared to wildfire, flooding, and earthquake vulnerability maps, respectively. Many of the mitigation projects identified on these figures are local in nature, while others were or are being implemented by the state. **Table 5.2-4** outlines the completed and ongoing construction projects with details on ancillary (matching) funding sources.

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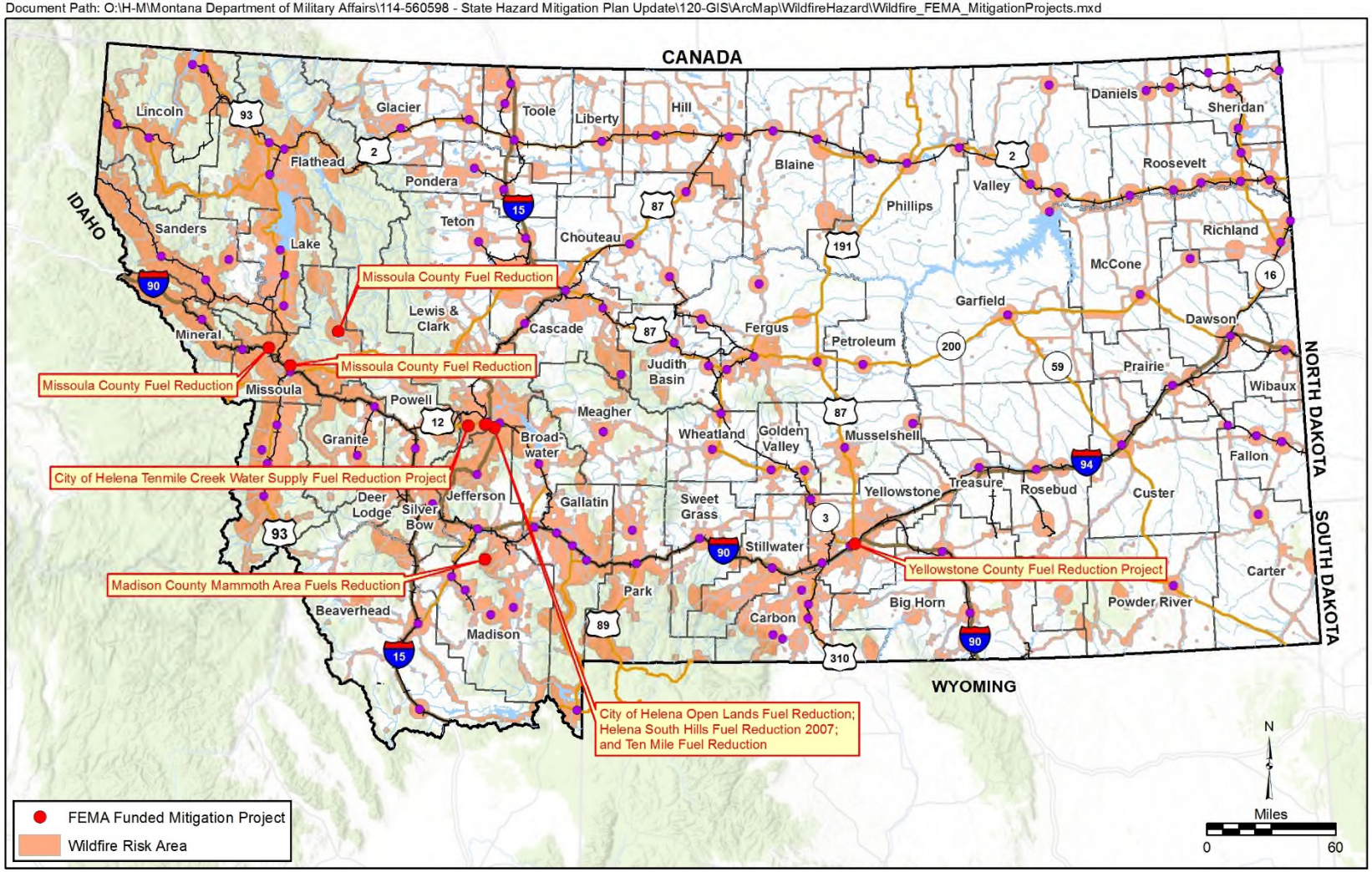

Date: 6/5/2018

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- County

Figure 5.2-1
FEMA Funded Wildfire Mitigation Projects
State of Montana MHMP 2018 Update

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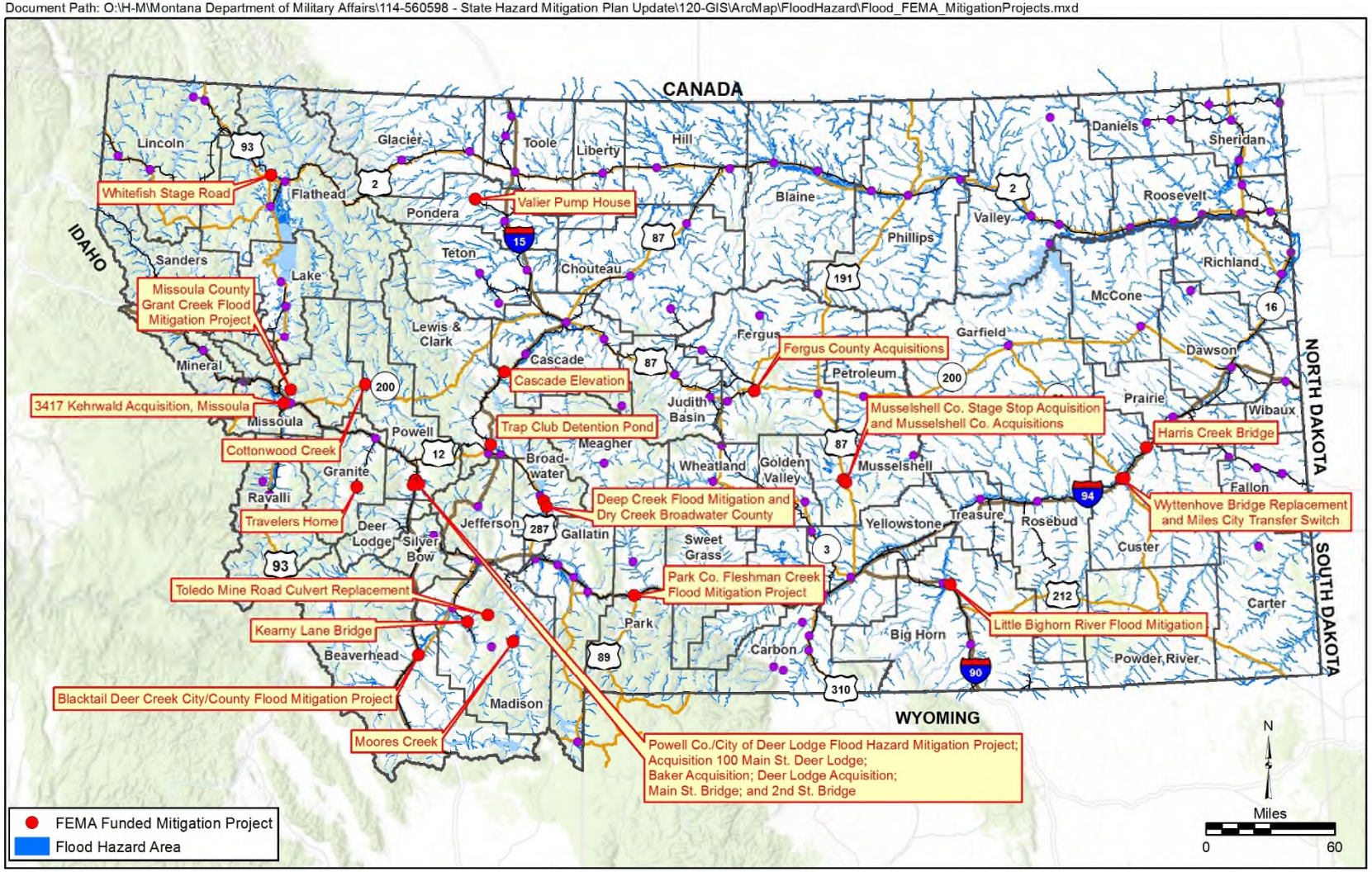


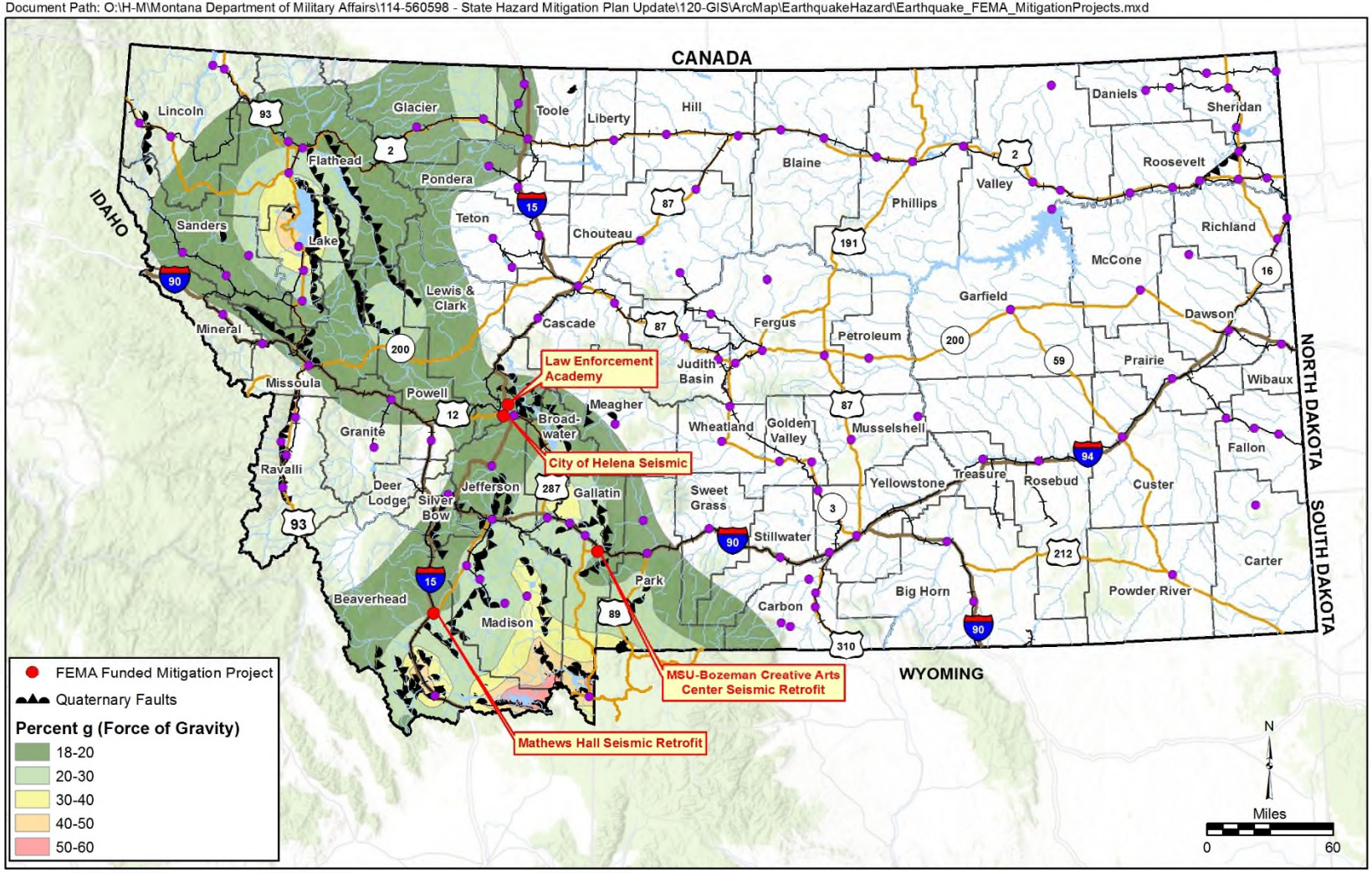
Date: 6/6/2018

Legend

- County
- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir

Figure 5.2-2
FEMA Funded Flood Mitigation Projects
State of Montana MHMP 2018 Update

Document Path: O:\H-M\Montana Department of Military Affairs\114-560598 - State Hazard Mitigation Plan Update\120-GIS\ArcMap\EarthquakeHazard\Earthquake_FEMA_MitigationProjects.mxd



Date: 6/5/2018

Legend

- Incorporated Place
- Railroad
- Interstate
- Major Highway
- River/Stream
- Lake/Reservoir
- County

Figure 5.2-3
FEMA Funded Earthquake Mitigation Projects
State of Montana MHMP 2018 Update

Table 5.2-4. Completed/Planned Mitigation Construction Projects with Matching Funds

Hazard	Mitigation Project	Federal Share	Matching Funds
Flooding	Grant Creek Flood Mitigation Project	$3,000,000	$1,145,000 / Missoula County
	Powell County/City of Deer Lodge Flood Hazard Mitigation Project	$2,002,228	$667,409 / City of Deer Lodge & Powell County
	Blacktail Deer Creek City/County Flood Mitigation Project	$435,000	$160,260 / City of Dillon & Beaverhead County
	Harris Creek Bridge	$139,870	$62,330 / Custer County
	Fleshman Creek Flood Mitigation Project	$2,280,000	$760,000 / Park County
	Main Street Bridge, Deer Lodge	$1,191,304	$692,831 / MT Dept. of Transportation
	Trap Club Detention Pond	$518,669	$172,890 / Lewis & Clark County
	Deep Creek Flood Mitigation	$1,331,250	$443,750 / Broadwater County
	Moores Creek	$748,224	$249,408 / Madison County
	Valier Pump House	$141,191	$47,064 / Town of Valier
	Kearny Lane Bridge	$57,000	$19,000 / Madison County
	Travelers Home	$121,320	$40,440 / Granite County
	Cottonwood Creek	$523,910	$174,637 / Powell County
	Whitefish Stage Road	$298,000	$99,333 / City of Whitefish
	Acquisition 100 Main St, Deer Lodge	$56,270	$18,757 / City of Deer Lodge
	3417 Kehrwald Acquisition, Missoula	$119,190	$39,730 / City of Missoula
	Toledo Mine Road Culvert Replacement	$37,500	$12,500 / Madison County
	Little Bighorn River Flood Mitigation	$607,831	$202,610 / Crow Tribe
	Wyttenhove Custer County	$227,947	$75,982 / Custer County
	Musselshell Acquisitions	$2,522,236	$966,156 / Musselshell County
	Deer Lodge Acquisition	$99,377	$24,844 / City of Deer Lodge
	Musselshell County Acquisitions	$110,346	$92,016/ Musselshell County
	Baker Acquisition	$66,994	$22,331 / City of Deer Lodge
	Musselshell Co. Stage Stop Acquisition	$160,000	$53,333 / Musselshell County
	2nd Street Bridge	$142,411	$166,945 / City of Deer Lodge-Powell Co.
	Fergus County Acquisitions	$120,821	$30,418 / Fergus County
	Cascade Elevation	$52,829	$17,610 / Cascade County
	Dry Creek Broadwater County	$65,475	$21,825 / Broadwater County
	Miles City Transfer Switch	$3,695	$1,232 / City of Miles City
Wildfire	Helena South Hills Fuel Reduction	$102,956	$34,319 / City of Helena
	City of Helena Tenmile Creek Water Supply Fuel Reduction Project	$312,831	$104,277 / City of Helena
	City of Helena Open Lands Fuel Reduction	$308,998	$103,002 / City of Helena
	Ten Mile Fuel Reduction	$387,750	$129,250 / Lewis & Clark County
	Madison County Mammoth Area Fuels Reduction	$120,257	$40,086 / Madison County
	Missoula County Fuel Reduction	$112,500	$37,500 / Missoula County
	Fuel Reduction Project	$101,720	$38,830 / Yellowstone County
	South Hills Fuel Reduction	$235,477	$78,519 / City of Helena
Earthquake	Creative Arts Center Seismic Retrofit	$746,921	$2,240,759 / MSU-Bozeman
	City of Helena Seismic	$334,800	$111,600 / City of Helena
	Mathews Hall Seismic Retrofit	$857,904	$285,968 / UM-Western
	Law Enforcement Academy	$94,209	$31,403 / State of Montana
Landslide	Stillwater County Landslide	$1,860,000	$620,000 / Stillwater County
Severe Weather	Toole Co. Marias Medical Center Generator	$105,912	$35,304 / Toole County

5.3 Local Plan Integration

A critical component of updating the State's mitigation strategy was the consideration of and inclusion of the local and tribal mitigation plan strategies. Mitigation actions identified by communities were reviewed and incorporated into the State plan in an effort to better understand how the State can support investments in local and tribal mitigation efforts. This integration enables the State to provide the appropriate resources to support mitigation when funding is available. Integrating the local and tribal mitigation plans into the 2018 State MHMP involved:

1. Identifying local and tribal hazard priorities (**Appendix B-2**);
2. Identifying the consistency between the local mitigation actions and the State's mitigation strategy (**Appendix C-3**);
3. Compiling potential loss estimates from the local plans for buildings, society and the economy for each hazard profiled in the State MHMP (**Appendices B-3 through B-13**); and,
4. Linking the local and tribal plans electronically to the State MHMP (**Appendix D**).

An extensive review of the adopted local and tribal hazard mitigation plans was completed for integration into the 2018 State MHMP over a four-month period, from January through April 2018. Review of the local and tribal hazard rankings identified a prioritized hazard list for each county revealing regional differences across this State. This is further discussed in *Section 4.1.2*. An extensive review of the local and tribal mitigation projects was compiled and correlated by number to the State's mitigation actions. Upon completion of the review, the State's mitigation strategy was updated to include relevant actions determined to be local and tribal priorities. Some of the actions identified in the local and tribal plans are not consistent with the State mitigation strategy as they are preparedness or response projects rather than mitigation or involve implementation of concepts beyond the State's authorities.

Appendix D presents a list of the local and tribal mitigation plans organized alphabetically by DES District which contains a live link to the *table of contents* in each Plan. Each *table of contents* then contains a live link to the respective section in the county or tribal mitigation plan.

SECTION 6. CAPABILITY ASSESSMENT

Montana is a large, diverse state. From the mountainous areas of the west to the open plains in the east, the state varies in climate, terrain, and hazards from one area to the next. This diversity is both an asset and a challenge when it comes to mitigation. What may work in one community may not work in another and priorities may vary significantly from county to county. This variety of priorities and projects, however, requires local governments to ultimately decide which mitigation measures and/or actions their community really needs. This process encourages creativity, effectiveness, and high levels of local involvement when it comes to mitigation projects. With this perspective in mind, mitigation is driven by the local governments and individuals in Montana. They typically initiate, develop, and implement mitigation projects.

6.1 State Capability Assessment

The State plays an important role in creating opportunities, coordinating, and supporting mitigation actions. At the state level, mitigation is achieved through several departments in a variety of ways. The DES Division of the Dept. of Military Affairs is the state's central hazard mitigation office. Floodplain management and fire adaptive concepts are handled by different divisions within the DNRC. The FEMA mitigation grant funding is managed by MT DES. Involving multiple agencies in mitigation allows for the integration of mitigation into other programs and the opportunity for active participation across state government.

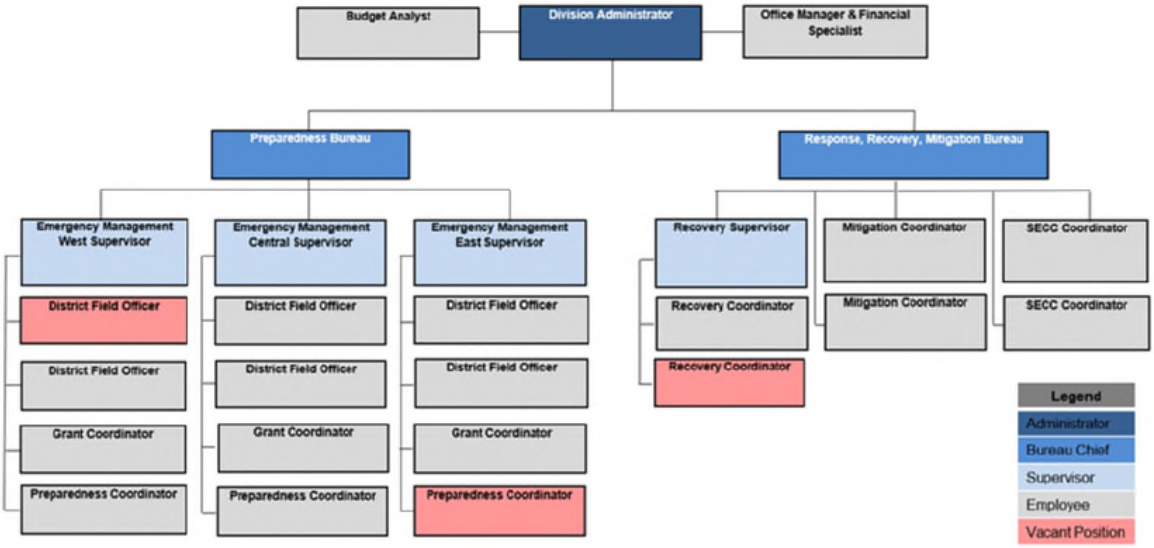
6.1.1 State Mitigation Structure

Mitigation-related responsibilities of state agencies and other non-state entities were reviewed and updated for the 2018 Montana MHMP. These responsibilities fall within the mission of each organization or department as it relates to mitigation. Although the mitigation responsibilities may be a small or large part of the organization's mission and workload, they are nonetheless important.

MT Disaster and Emergency Services (DES) Division

MT DES Division is the lead agency responsible for implementing the mitigation program for the state of Montana. Within the Division, there are two Bureau's. The Preparedness Bureau is organized into three districts that support county and tribal governments approach to emergency preparedness and response. The Preparedness Bureau has staff located in Helena, as well as decentralized staff who work and live in and outside of Helena. The Response, Recovery, and Mitigation Bureau is responsible for the Public Assistance, Individual Assistance, as well as the Mitigation Program. MT DES is the division responsible for the functions of the State Emergency Coordination Center. **Figure 6.1-1** presents an organizational chart for MT DES.

FIGURE 6.1-1 MT Disaster and Emergency Services



MT DES Response, Recovery and Mitigation Bureau

The MT DES Response, Recovery and Mitigation Bureau Branch Manager is designated as the State Hazard Mitigation Officer (SHMO). The Bureau is responsible for managing:

- Pre-Disaster Mitigation (PDM) Grant Program: funding to assist implementing a sustained pre-disaster natural hazard mitigation program.
- Flood Mitigation Assistance (FMA) Grants: funding to reduce or eliminate long-term risk or flood damage to structures insured under the National Flood Insurance Program.
- Hazard Mitigation Grant Program (HMGP): funding to help communities implement hazard mitigation measures following a Presidential Major Disaster Declaration to reduce the risk of loss of life and property from future disasters.
- Montana Earthquake Program: funding primarily for outreach and education related to earthquake mitigation.

The MT DES Mitigation Program consists of two full-time emergency managers, who are assigned as mitigation coordinators, and a supervisor (the SHMO). The State's mitigation activities are housed in the same bureau as Recovery to ensure close coordination between the programs. The program enhances the State's capabilities to coordinate and support mitigation actions. MT DES facilitates the mitigation efforts with all applicable state agencies. Most State agencies have a dedicated staff with emergency management responsibilities who are accountable for implementing their portion of the State's mitigation strategy. They coordinate with the MT DES Mitigation Program on mitigation actions and participate on the State MHM Planning Team.

The MT DES Mitigation Program continues to be successful in empowering our local and tribal partners to update their local MHMP at or before the five-year point as well as to promote and select the best, most cost-effective mitigation non-planning projects that prevent the most loss of life and property damage.

As a state, attempting to mitigate such a large and diverse space is not without obstacles and challenges. MT DES mitigation training opportunities with local emergency management coordinators have been limited. Training is limited to mitigation-specific activities and has not been as holistic as it could be. Priorities at the state level have been by necessity more concentrated on maintenance of the program than expansion of the program. Along with that, local funding capacity has always been a concern. Currently there is not a funding mechanism from the state set aside to provide a portion of the match for local mitigation projects. Consequently, counties and tribes do not always have the funding available to match grants. Compounding the issue, the position of local emergency management coordinator is often not full time, with many coordinators spending well over half of their time performing the duties of a different position. This has limited the ability of local government to fully utilize the mitigation opportunities provided by the state. Another inherent challenge of having part time emergency management coordinators is that the technical assistance from the state must often go greater lengths to ensure that the local grant application and project management is done correctly.

Those challenges and obstacles have pushed MT DES towards constant improvement. Collaboration with other state agencies has greatly increased the reach and effectiveness of the mitigation program. Furthermore, similar mitigation efforts from other agencies are now being bolstered and supported by the mitigation program.

In the future, MT DES will continue to look towards improvement. To better show the benefits of mitigation planning and projects, MT DES believes that showcasing success stories would greatly benefit our stakeholders and local partners. However, sharing and working with that data and information may become labor intensive. The new FEMA report on general mitigation benefits will greatly bolster the mitigation efforts. The mitigation program will work within the agency to gain more support for mitigation training at all regional meetings with local coordinators, at the Montana Association of Commissioners annual conference and other areas where the agency has a presence.

State Hazard Mitigation Officer

Through planning grant funding from FEMA, communities have been motivated to develop or update plans for mitigating hazards. Communities have been assisted in developing mitigation plans by the MT DES Mitigation Program. Mitigation Program staff conduct an annual Benefit-Cost Analysis (BCA) workshop annually for potential applications for FEMA mitigation grants and is often assisted in teaching these courses by FEMA officials. Mitigation Program staff provide technical assistance on a case-by-case basis as requested over the phone, via e-mail, or in person. Significant technical assistance is also provided during the State review process of the plans. If needed, detailed comments and suggestions for improvement are made prior to State approval and submission to FEMA.

The MT DES Mitigation Program is not the only agency providing technical assistance with local planning. Specifically, with the development of risk assessments, the local National Weather Service offices, Montana Bureau of Mines and Geology, and Montana Department of Natural Resources have assisted communities with supportive data and expert review of the various hazards being analyzed. Typically, the local communities contact their area offices directly for technical assistance. Additional resources to the communities include their DES District Field Officer, with whom they meet regularly.

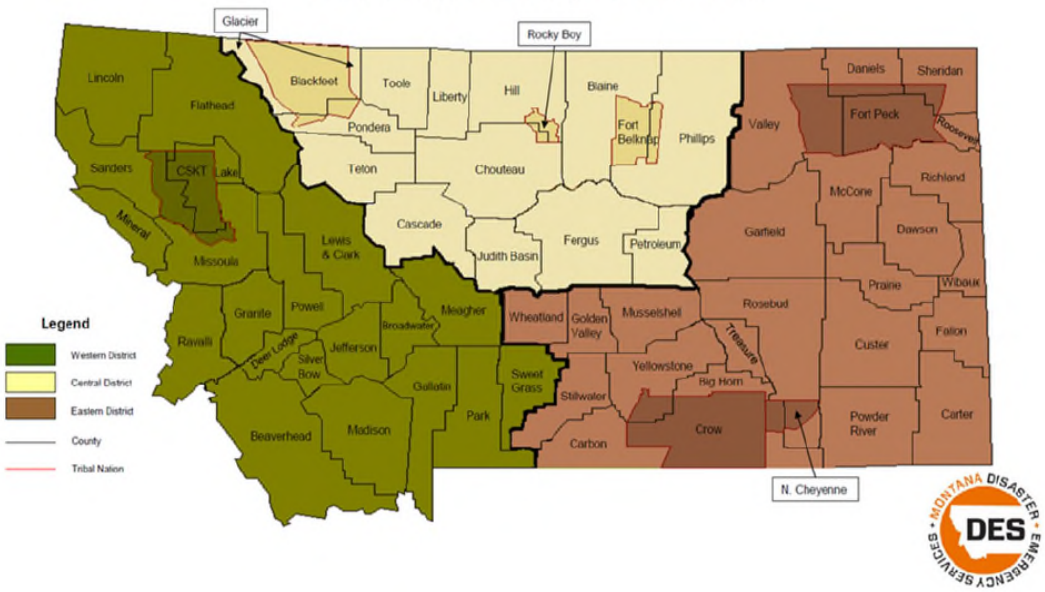
Completed local mitigation plans are submitted to the SHMO at the MT DES for state approval and submission to FEMA – Region VIII. The plan is then reviewed in detail by MT DES Mitigation Program staff for compliance with the DMA 2000. The review process at the State level typically takes up to 30 days. During this timeframe, the SHMO will approve the plan, and Mitigation Program staff will provide comments in the plan's crosswalk, and either submit the plan to FEMA for approval or return the plan to the local jurisdiction for improvements with statements specifically outlining the criteria not met. Once at FEMA, the review process may take up to 60 days for final approval to be given or returned for improvements.

MT DES Preparedness Bureau

The MT DES Preparedness Bureau is primarily responsible for assisting local and tribal governments with the development of their emergency management program which may include mitigation projects and planning. The Preparedness Bureau is divided into three DES districts within the state: Western, Central, and Eastern (see **Figure 6.1-2** for a map showing the DES districts). Each district consists of a supervisor, two District Field Officers (DFO), a grant coordinator, and a preparedness coordinator. These teams provide support, technical assistance, and coordination to jurisdictions throughout the district. The DFOs are the primary points of contacts for local and tribal coordinators and officials for the implementation of emergency management programs and initiatives.

FIGURE 6.1-2

Montana Disaster and Emergency Services Areas



Each District Team is responsible for assisting jurisdictions with non-disaster grants. These grants include:

- Emergency Management Performance Grant (EMPG): funding to assist jurisdictions in preparing for all hazards.
- State Homeland Security Grant Program (SHSGP): funding efforts to prevent terrorism and other catastrophic events
- Operation Stonegarden (OPSG): support cooperation and coordination between Customs and Border Patrol, Federal, state, local, and tribal law enforcement agencies
- Hazardous Materials Emergency Preparedness Grant (HMEP): funds to increase effectiveness in safely and efficiently handling hazardous materials incidents, implementation of the emergency planning and community right-to-know act, and comprehensive approach to training and planning for transportation of hazardous material.

The District Teams provide assistance to partners throughout the state with emergency management planning, training, and exercises across all mission areas. Staff help update the state Threat and Hazard Risk Assessment, State Preparedness Report, Montana Emergency Response Framework (**Appendix B-12**), as well as assisting and providing training and exercises.

Reorganization of the MT DES Preparedness Bureau went into effect on December 4, 2017 after the State MHMP 2018 update had been underway for three months. As such, the risk assessment results in this Plan are reported in accordance with the former structure which had the State divided into six districts. **Figure 4.1-1** presents a map of the former organizational structural. The new organization of the MT DES Preparedness Bureau combined Districts 1 and 3 into the Western District, Districts 2 and four counties in District 6 into the Central District, and Districts 4 and 5 plus four counties in District 6 into the Eastern District. The 2023 State of Montana MHMP will present the risk assessment results in accordance with the new MT DES Preparedness Bureau organizational structure.

State Floodplain Management and Dam Safety

The DNRC Water Resources Division coordinates the National Flood Insurance Program (NFIP), the associated Community Assistance Program, and the Community Rating System program in Montana. The Dam Safety Program is also coordinated by the DNRC and includes the permitting of 197 high-hazard dams within the state. The Water Projects Bureau at DNRC manages 32 high-hazard dams owned by the state. Federal dams are not included in the permitting process.

State Fire Prevention and Education

The Dept. of Natural Resources and Conservation - Forestry Division (DNRC) coordinates and is active in wildfire community preparedness, homeowner risk reduction, hazardous fuels reduction and prevention. The three tenets of the National Cohesive Wildland Fire Management Strategy; effective wildfire response, fire adapted communities, and resilient landscapes are a priority for the DNRC. The DNRC deliberately engages Montana's citizens to prepare themselves, their property and

their communities for wildfire. Federal and state funds assist with these programs and the staff needed to be effective across the state.

The DNRC understands the inter-relatedness of its Wildfire Protection, Forestry Assistance, and Trust Lands Management programs and routinely coordinates the activities of those programs to achieve mutually beneficial goals; so, we endeavor to maximize effective collaboration these programs. The Forestry Assistance Bureau within the DNRC's Forestry Division provides service to communities and private landowners to promote sustainable forests and watersheds for the benefit of all Montanans; additionally, this bureau provides financial assistance to reduce wildfire risk on non-federal property through regional cooperative hazardous fuels reduction programs.

The DNRC protects, from wildfire, tens of millions of acres of state, private, and federal land both directly and indirectly. The DNRC maximizes effective collaboration with our partners through interagency cooperation. They consistently provide leadership and influence; but also recognize that The DNRC are the net beneficiary of the relationships with both federal and local government partners. The DNRC has engaged with the State's tribal fire programs and have effective working relationships that make us all stronger.

Montana Governor's Drought and Water Supply Advisory Committee

The drought and water supply advisory committee serves as a clearinghouse for the sharing of water supply and moisture conditions on a monthly basis among state and local agency officials with responsibility to manage natural resources and support constituents most likely affected by drought. The drought statute provides guidance on the membership of the committee and its responsibilities, including development of a state drought plan which specifies actions to be taken that correspond with the state of current and expected conditions. In its monthly assessment of conditions, the committee considers various scientific indicators that quantify and forecast precipitation, mountain snowpack, streamflow, soil moisture, reservoir contents, and agricultural and livestock production. The committee also provides planning support and information sharing with watershed groups and county drought committees through this Internet website and staff contact.

State voting member agencies include the Governor's Office, DNRC, DEQ, FWP, Agriculture, Livestock, Commerce, and DES. Federal reporting partners include the Bureau of Reclamation, U.S. Geological Survey, Natural Resource Conservation Service, Agricultural Statistics Service, and the National Weather Service. Other reporters include the multi-agency Northern Rockies Coordination Center for fire conditions, Montana Tech's Groundwater Information Center, Montana Climate Office, USDA Farm Service Agency, U.S. Congressional delegation representatives, U.S. Small Business Administration, Rural Development, and Montana State University Extension Service. The committee chair is held by the Governor's representative, traditionally the Lieutenant Governor. The committee is required to meet in April and October at a minimum and monthly between those months as warranted by current and expected conditions.

Department of Public Health and Human Services (DPHHS)

A goal of the Public Health and Safety Division of DPHHS is to improve the health of Montanans to the highest possible level with objectives to prevent and control communicable disease, and to prepare

the public health system to respond to public health events and emergencies. The Public Health and Safety Division continuously monitors: the proportion of children (19-35 months) fully immunized and the number of local jurisdictions that participate in a public health emergency exercise every other year as measurement in achieving this goal.

Homeland Security

Montana has created a Senior Advisory Committee (SAC), consisting of 15 Charter organizations, that provides advice the State Homeland Security Advisor. These organizations represent different emergency service disciplines, providing a whole community approach to emergency preparedness.

The SAC provides guidance and recommendations for the following:

- State Strategic Homeland Security Plan
- Coordination between levels of government and organization to improve Montana's security from man-made and catastrophic events
- Specific programs or initiatives to prevent, protect, mitigate, respond to or recover from terrorist and other hazards in the state
- Evaluate and recommend eligible projects for funding that increase or sustain the capabilities within the state

State Multi-Hazard Mitigation (MHM) Planning Team

The State MHM Planning Team is a team of state, federal and local officials called upon by the SHMO or Governor's Authorized Representative when needed for additional mitigation support. Typically, this additional support is requested annually (or more frequently) to review mitigation actions, project applications, priorities and problem areas. For additional information on the members of the MHM Planning Team, see *Section 2.2.1* and **Appendix A**. The responsibilities of the State MHM Planning Team include:

- Participating in planning meetings and report development.
- Coordinate mitigation activities for their agency.
- Assist with project selection, ranking and development.
- Assist with updating the State's mitigation strategy for the five-year updates to the State of Montana's MHMP.

State Emergency Response Commission

State Emergency Response Commission (SERC) members are appointed by the Governor. The 29-member commission advises the Governor on emergency response and preparedness issues relevant to administering state and federal requirements. The SERC may select members, or other subject matter experts to serve on committees and subcommittees set up by the commission. The SERC recognizes and works with several committees which include: Steering Committee; Hazardous Materials Committee; All-Hazards Response Committee; Senior Advisory Committee; Montana Emergency Response Framework - Emergency Support Functions Committee; and, Emergency Alert System/Integrated Public Alert and Warning System Committee. The SERC is continually reviewing

its mission to see what improvements or changes should be made to strengthen the state's emergency response capabilities. Hazard mitigation is an important element of these capabilities.

Summary of State and Non-State Mitigation Capabilities

In addition to the state agencies and programs described above, various other state agencies have mitigation responsibilities as part of their mission, as summarized in **Table 6.1-1.**

Table 6.1-1. State Government Mitigation Responsibilities

Department or Agency	Responsibilities
Montana Office of the Governor	▪ Protects the lives and property of citizens and visitors to Montana. ▪ Lieutenant Governor heads the Montana Drought Advisory and Water Supply Committee.
Montana Board of Public Education	▪ Promotes safe, disaster resistant schools.
Montana Bureau of Mines and Geology	▪ Studies geological hazards including: earthquake, landslide, and volcanic ash.
MT Commissioner of Higher Education	▪ Promotes safe, disaster resistant universities and colleges.
Montana Dept. of Administration	▪ Designs safe state government facilities that are resistant to disaster. ▪ Plans for continuity of service throughout Montana State government.
Montana Dept. of Agriculture	▪ Mitigates bioterrorism and disease outbreaks in agriculture. ▪ Participates on the Montana Drought and Water Supply Advisory Committee.
Montana Dept. of Commerce	▪ Helps businesses mitigate disasters. ▪ Provides safe, disaster resistant housing for low-income people. ▪ Montana Ready Communities Initiate plans for long-term resiliency to disaster and promotes sustainable community development. ▪ Develops model floodplain and subdivision regulations that consider hazard mitigation for use by counties and tribes. ▪ Mitigates hazards at historic properties managed by the Montana Heritage Commission. ▪ Provides disaster information to tourists.
Montana Dept. of Corrections	▪ Provides safe, disaster resistant facilities for incarcerated populations. ▪ Maintains and exercise dams managed by agency.
Montana Dept. of Environmental Quality	▪ Conducts outreach in hazardous material spill prevention. ▪ Conducts air quality monitoring and issue advisories with regard to wildfire smoke conditions. ▪ Assists with the review of mitigation projects under the National Environmental Policy Act, as applicable.
Montana Dept. of Fish, Wildlife & Parks	▪ Performs fuel mitigation on agency-managed lands. ▪ Conducts flood mitigation at State Parks and Fishing Access sites. ▪ Participates on the Montana Drought Advisory Committee. ▪ Monitors fish and wildfire disease affected by drought.
Montana Dept. of Justice	▪ Prevents terrorism whenever possible.
Montana Dept. of Labor and Industry	▪ Encourages safe residential and commercial structures through building code enforcement. ▪ Promotes commercial and employer mitigation.
Montana Dept. of Livestock	▪ Encourages livestock health and food safety. ▪ Mitigates bioterrorism and disease outbreaks in livestock industry. ▪ Participates on the Montana Drought Advisory Committee.

Table 6.1-1. State Government Mitigation Responsibilities

Department or Agency	Responsibilities
Montana Dept. of Military Affairs	▪ Coordinates mitigation efforts statewide. ▪ Manages HMGP, FMA, Public Assistance C-G, and PDM grants from FEMA. ▪ Reviews local mitigation plans. ▪ Provides mitigation technical assistance to local governments, tribes, and state agencies. ▪ Provides regular mitigation training. ▪ Participates on the Montana Drought and Water Supply Advisory Committee ▪ Co-coordinator of the State Emergency Response Commission ▪ Protects National Guard assets from disasters. ▪ Monitors state events and protects against terrorism.
Montana Dept. of Natural Resources and Conservation	▪ Conducts fuel mitigation on state-owned land. ▪ Manages the state's floodplain program and floodplain mapping. ▪ Promotes flood mitigation. ▪ Manages NFIP grants from FEMA. ▪ Ensures maintenance and exercise of state-owned dams. ▪ Participates on the Montana Drought Advisory and Water Supply Committee.
Montana Dept. of Public Health and Human Services	▪ Provides surveillance and vaccination clinics to mitigate impacts from epidemics and disease. ▪ Provides outreach to counties to mitigate impacts of disease. ▪ Promotes safe, disaster resistant state hospitals.
Montana Dept. of Transportation	▪ Mitigates damage to the state's transportation infrastructure. ▪ Evaluates hazard information when designing roads and bridges to mitigate future damages. ▪ Conducts fuels reduction along highways. ▪ Encourages transportation safety throughout the State.
Montana Historical Society	▪ Assists with the review of mitigation projects under NEPA, as applicable.
Montana Office of the State Auditor	▪ Promotes the National Flood Insurance Program and other types of hazard insurance with the insurance industry
Montana Office of Public Instruction	▪ Promotes programs in school safety and disaster prevention education. ▪ Promotes mitigation curriculum in state secondary schools.
Montana Public Service Commission	▪ Promotes utility safety and reliability.
Montana State Fund	▪ Promotes safe, disaster resistant workplaces
Montana State Library	▪ Serves as a clearinghouse for GIS data on hazard and disaster information when available.
Montana University System	▪ Provides safe, disaster resistant campuses. ▪ State climate office assists with climate change analysis. ▪ MSU Extension Service promotes drought mitigation.

Federal partners and local non-profit organizations also contribute to the state's mitigation capabilities, as summarized in **Table 6.1-2**.

Table 6.1-2. Non-State Organizations with Mitigation Responsibilities

Organization	Responsibilities
FEDERAL PARTNERS	
U.S. Dept of Agriculture	
▪ Farm Service Agency	▪ Promotes drought mitigation.
▪ Forest Service	▪ Encourages wildfire mitigation in the WUI. ▪ Provides funding for fuel mitigation projects. ▪ Ensures maintenance and exercise of dams.

Table 6.1-2. Non-State Organizations with Mitigation Responsibilities

Organization	Responsibilities
▪ Natural Resources Conservation Service	▪ Protects watersheds through the Emergency Watershed Protection Program. ▪ Promotes mitigation from all-natural hazards. ▪ Promotes flood mitigation through purchase of easements. ▪ Promotes resource conservation. ▪ Provides technical assistance on hazards to federal, state, local, tribal, and private organizations. ▪ Provides technical and financial assistance to private landowners through Environmental Quality Incentive Program for drought, fire, and erosion.
U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration	
▪ National Weather Service	▪ Supports mitigation of weather-related hazards in local communities. ▪ Provides warning of potential hazards when possible. ▪ Provides real time entry in EAS for all weather and non-weather-related emergency messages and alerts.
U.S. Dept. of Defense	
▪ Army Corps of Engineers	▪ Promotes flood prevention. ▪ Assists with mitigation on waterways. ▪ Assists with the review of mitigation projects under NEPA, as applicable. ▪ Provides funding for flood mitigation projects. ▪ Coordinates on management and protection of levees. ▪ Ensures maintenance and exercise of dams.
U.S. Dept. Health and Human Services	
▪ Indian Health Services	▪ Coordinates preparedness activities for the Tribes.
U.S. Dept. of Homeland Security	
▪ Federal Emergency Management Agency	▪ Promotes disaster mitigation. ▪ Provides grants for mitigation activities. ▪ Reviews and approve state and local mitigation plans. ▪ Administers the HMGP and PDM competitive grants. ▪ Administers the National Flood Insurance Program. ▪ Coordinates Earthquake Hazards Reduction Program.
U.S. Dept. of Interior	
▪ Bureau of Indian Affairs	▪ Promotes disaster mitigation on tribal lands. ▪ Encourages wildfire mitigation in the WUI and rangeland areas.
▪ Bureau of Land Management	▪ Encourages mitigation in the WUI and rangeland areas. ▪ Provides funding for fuel mitigation projects. ▪ Ensures maintenance and exercise of dams.
▪ Bureau of Reclamation	▪ Ensures maintenance and exercise of dams.
▪ National Park Service	▪ Encourages wildfire mitigation in the WUI.
▪ U.S. Geological Survey	▪ Monitors river levels and snow pack. ▪ Studies seismic and other geologic hazards.
U.S. Environmental Protection Agency	
▪ EPA	▪ Protects wetlands. ▪ Promotes safe air quality. ▪ Mitigates hazardous materials contamination.
LOCAL NON-PROFIT ORGANIZATIONS	
American Red Cross	▪ Promotes disaster preparedness. ▪ Supports local mitigation efforts.
FireSafe Montana, Keep Montana Green, others	▪ Encourages wildfire mitigation in the wildland urban interface and rangeland areas.
MT Association of Conservation Districts	▪ Participates on the Montana Drought Advisory Committee.

Table 6.1-2. Non-State Organizations with Mitigation Responsibilities

Organization	Responsibilities
MT Association of Counties	▪ Informs local governments of mitigation opportunities. ▪ Introduces legislation that supports local mitigation goals.
MT Chamber of Commerce	▪ Promotes safe, disaster resistant businesses. ▪ Encourages and assist with mitigation partnerships.
MT Disaster and Emergency Services Association	▪ Promotes mitigation opportunities with local DES coordinators.
MT League of Cities and Towns	▪ Informs local governments of mitigation opportunities. ▪ Introduces legislation that supports local mitigation goals.

6.1.2 Pre-Disaster Mitigation Policies, Programs, and Capabilities

Montana's pre-disaster mitigation policies, programs, and capabilities have been essential in reducing structural and infrastructure losses and protecting public safety across the state. This section discusses the various programs that fund mitigation, the progress made, and capabilities and limitations.

Pre-Disaster Mitigation Program

Pre-Disaster Mitigation grants have been the cornerstone of mitigation in Montana. Reducing/mitigating disasters before they occur and not just after they happen is essential to mitigating losses. If PDM funding is discontinued, mitigation in Montana could be drastically reduced in scale. The following sections describe the planning projects and non-planning (construction) projects with tables showing projects completed to date. Criteria for PDM grant selection resides in the county or tribal mitigation plan. requests that the county rates any projects submitted. If the state receives more requests than can be submitted under the Notice of Funding then the SHMO would convene the Permanent Montana Mitigation Advisory group to rank and rate projects; The criteria used to rate projects will be outlined in the state's administration plan and may include; BCA score, highest risk, repetitive loss, and community needs. Mitigation Plans will always be given top priority.

Pre-Disaster Mitigation Planning Projects

The PDM Program is making an impact in Montana. All but one of Montana's 56 counties and seven tribes have completed Multi-Hazard Mitigation Plans (formerly knowns as Pre-Disaster Mitigation Plans) and many are in good standing. **Figure 6.1-3** shows the planning status of counties in Montana. **Table 6.1-3** presents the funding provided for PDM Planning Projects since 2004. Meagher County is the only county which has not completed a MHMP. At present, Golden Valley, Big Horn, Sweet Grass, counties have expired MHMPs and will be applying for funding to update their plans. MHMPs for Phillips, Mineral, Treasure, and Prairie counties are expired and have not expressed interest in applying for funding to update their plans. Flathead, Teton, Toole, Liberty, Judith Basin, and Anaconda Deer Lodge, all have plans that will expire within the next year and have not expressed interest in applying for funding to update their plans. The State's approach to reviewing, coordinating and integrating local mitigation plans has allowed for all but one county plan to be included in this State Plan update. These plans are linked to the State Plan electronically (see **Appendix D**).

Figure 6.1-3 Planning Status of Local Mitigation Plans

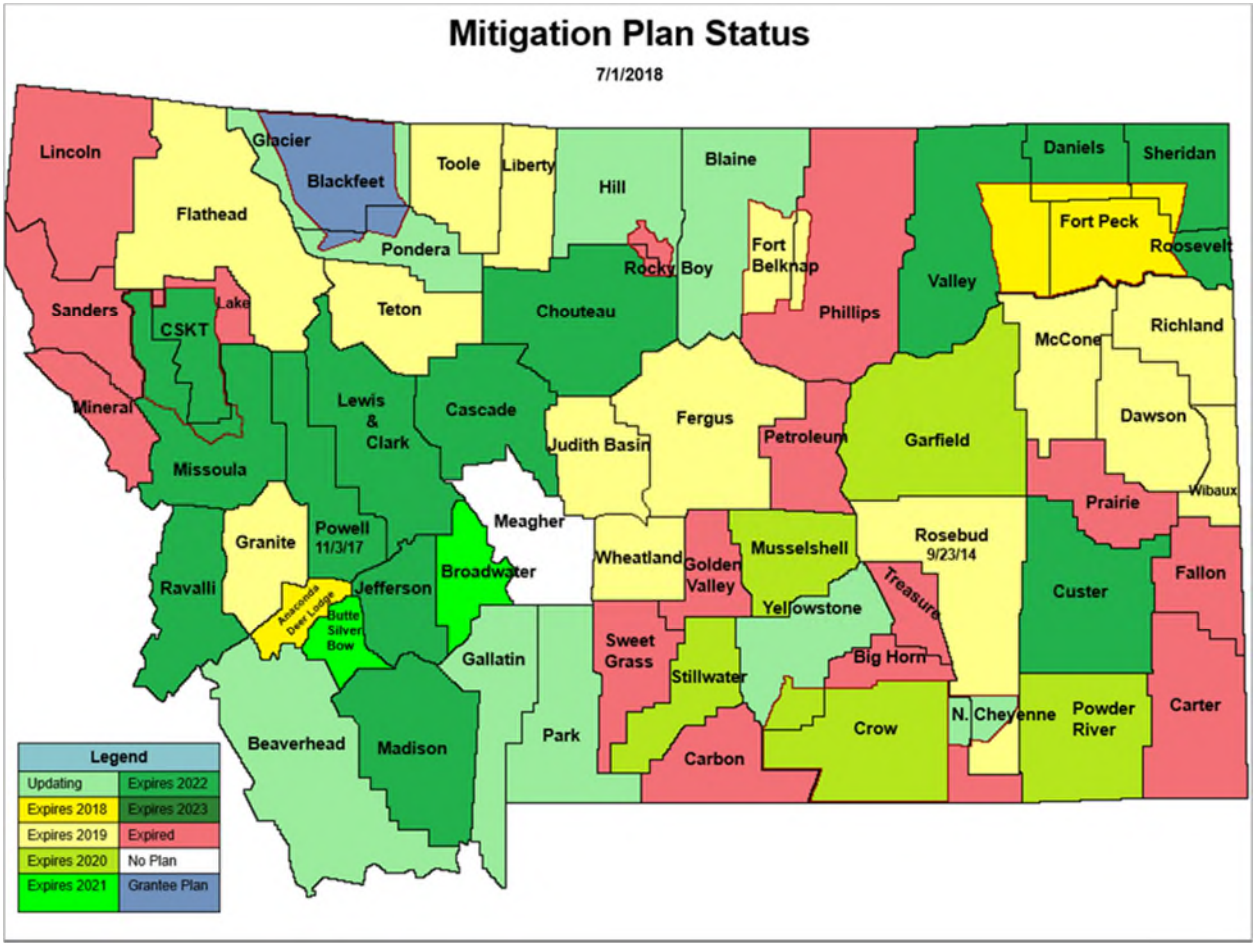


Table 6.1-3. PDM Planning Projects Since 2004

Year	Application Title	Sub-Grantee	Non-Federal Share	Federal Share	Federal Share %
2005	Remaining & Unfunded Montana Community PDM Plans	MT DES	$69,500	$208,500	75%
2005	MT University System Multi-Hazard Planning	MT University System	$85,006	$255,017	75%
2006	State of Montana PDM Plan Update	MT DES	$37,484	$112,438	75%
2007	Petroleum Co. PDM Plan Update 2007	Petroleum County	$694	$6,250	90%
2007	Northeastern Montana PDM Plan Update 2007	Valley, Sheridan & Daniels Counties	$9,167	$27,500	75%
2007	Butte-Silver Bow County Geological Hazards	Butte-Silver Bow City/County	$70,204	$210,329	75%
2008	Southwest Montana PDM Plan Update	Madison, Beaverhead & Broadwater Counties	$9,718	$29,154	75%
2008	Sweet Grass County PDM Plan	Sweet Grass County	$4,172	$12,274	75%

Table 6.1-3. PDM Planning Projects Since 2004

Year	Application Title	Sub-Grantee	Non-Federal Share	Federal Share	Federal Share %
2008	Missoula County PDM Update	Missoula, Mineral and Ravalli County	$6,488	$19,012	75%
2009	State of Montana PDM Plan Update	MT DES	$15,000	$45,001	75%
2009	Yellowstone County PDM Plan Update	Yellowstone County	$76,489	$229,467	75%
2009	DR-1767 Planning Grants Update and complete PDM Plans	Powell, Stillwater Counties, Fort Peck Reservation	$12,241	$36,722	75%
2010	Lewis and Clark & Jefferson County PDM Plan Update	Lewis & Clark and Jefferson Counties	$10,000	$30,000	75%
2010	Pondera & Glacier County PDM Update	Pondera & Glacier Counties	$11,667	$35,000	75%
2010	Park County PDM Plan Update	Park County	$3,252	$9,750	75%
2010	Carter/Fallon/Prairie PDM Plans	Carter County	$7,000	$20,624	75%
2010	Lincoln County PDM Update	Lincoln County	$6,667	$20,000	75%
2010	Custer County PDM Plan Update	Custer County	$7,667	$23,000	75%
2010	Cascade County PDM Plan	Cascade County	$5,000	$15,000	75%
2010	Deer Lodge & Granite County PDM Plan Update	Anaconda-Deer Lodge County	$5,779	$17,337	75%
2011	North Central Montana Counties PDM Plan Updates	Blaine, Hill and Phillips Counties	$17,500.00	$52,500.00	75%
2011	Lake and Sanders County and CSKT PDM Plan Updates (**CSKT withdrawn**)	Lake and Sanders Counties and CSKT	$17,500.00	$52,500.00	75%
2011	Big Horn and Carbon County PDM Plan Updates	Big Horn and Carbon Counties	$12,800.00	$36,000.00	75%
2012	Update State PDM Plan	MT DES	$30,177.25	$90,531.75	75%
2012	Dawson, Richland, Wibaux & McCone County PDM Updates	Dawson, Richland, Wibaux and McCone Counties	$30,177.25	$91,800.00	75%
2012	Montana Tech PDM Plan Update	Montana Tech	$8,333.33	$25,000.00	75%
2012	MSU Bozeman PDM Plan Update	MSU-Bozeman	$8,333.33	$25,000.00	75%
2012	Crow Montana PDM Plan	Crow Nation	$9,500.00	$28,500.00	75%
2012	Fort Belknap Tribal PDM Plan Update	Fort Belknap Nation	$8,333.33	$24,999.99	75%
2012	Liberty, Toole & Teton County PDM Plan Updates	Liberty, Toole and Teton Counties	$22,000.00	$65,999.99	75%
2012	Central Montana PDM Plan Updates	Judith Basin, Wheatland, and Musselshell Counties	$20,000.00	$60,000.00	75%
2012	Northern Cheyenne Tribal PDM Plan	Northern Cheyenne Nation	$8,750.00	$26,250.00	75%
2012	Rosebud County PDM Plan Update	Rosebud County	$7,650.00	$22,950.00	75%
2012	Fergus County PDM Plan Update	Fergus County	$27,833.33	$83,500.00	75%
2013	Powder River & Garfield County PDM Plan Updates	Powder River & Garfield Counties	$14,281.80	$42,845.39	75%
2013	Valley, Sheridan, Roosevelt & Daniels County PDM Plan Updates	Valley, Sheridan, Roosevelt & Daniels Counties	$30,666.64	$92,000.00	75%
2014	Broadwater County PDM Plan Update	Broadwater County	$8,333.34	$25,000.00	75%
2014	Butte-Silver Bow County PDM Plan Update	Butte-Silver Bow County	$8,375.00	$25,000.00	75%
2014	Madison & Beaverhead County PDM Plan Updates	Madison & Beaverhead Counties	$19,533.34	$58,600.00	75%
2014	Stillwater County Plan Update	Stillwater County	$8,333.34	$25,000.00	75%

Table 6.1-3. PDM Planning Projects Since 2004

Year	Application Title	Sub-Grantee	Non-Federal Share	Federal Share	Federal Share %
2015	Lewis and Clark & Jefferson County PDM Plan Updates	Lewis and Clark & Jefferson Counties	$16,966.68	$50,899.98	75%
2015	Cascade County PDM Plan Update	Cascade County	$8,333.34	$24,999.99	75%
2015	Pondera & Glacier County PDM Plan Updates	Pondera & Glacier Counties	$17,176.68	$51,291.32	75%
2015	Missoula & Ravalli County PDM Plan Updates	Missoula & Ravalli Counties	$12,500.00	$37,500.00	75%
2015	Park County PDM Plan Update	Park County	$6,252.00	$18,748.50	75%
2016	State Mitigation PDM Plan Update	State of Montana	$34,500.25	$103,500.75	75%
2016	Gallatin County PDM Plan Update	Gallatin County	$13,333.33	$40,000.00	75%
2016	Yellowstone County PDM Plan Update	Yellowstone County	$12,201.25	$36,603.75	75%
2016	Blaine & Hill County PDM Plan Updates	Blaine & Hill Counties	$16,666.67	$50,000.00	75%
2016	Powell County PDM Plan Update	Powell County	$8,333.33	$25,000.00	75%
2016	Custer County PDM Plan Update	Custer County	$12,500.00	$37,499.99	75%
2016	CSKT Tribal PDM Plan Update	CSKT Tribe	$7,833.67	$23,501	75%
Totals			**$820,654**	**$2,346,130**	

The State most strongly encourages county and tribal nations to update their plans prior to or if they reach their five-year expiration dates with either a PDM Planning grant or HMGP planning application. The State realizes that local jurisdictions are responsible for updating and maintaining local Mitigation Plans and acknowledge most counties and tribes have a plan in place. The State is most concerned with keeping the largest clusters of population protected with Mitigation Plans.

To improve the local plans, the standardized Risk Assessment Template (developed for the 2010 State Plan update) was enhanced with an updated methodology. The Risk Assessment Template standardizes the way "risk" is looked at so that a comparable approach can be used in future local plan updates. Local plans may also improve through the availability of county- and city-level risk assessment documentation in the State Plan. This will enhance coordination between counties and tribes where hazard vulnerability crosses jurisdictional lines. The State Plan will serve as a reference document for future local plan updates. Local capabilities will be enhanced through the continued technical assistance offered by the MT DES Mitigation Program.

PDM planning grants also typically fund the update of the State's MHMP every five years.

Pre-Disaster Mitigation Non-Planning Projects

Since 2004, FEMA has awarded competitive PDM grants (PDMC) to a number of Montana jurisdictions for mitigation construction projects. These projects require a 25 percent local match. **Table 6.1-4** presents a summary of these projects since 2005. For specific grant projects, the State uses benefit-cost reviews to determine which projects maximize benefits relative to their cost. The State encourages all jurisdictions and tribal nations to submit worthy, cost effective non-planning mitigation projects under the mitigation grants program realizing that not all of them may be selected for further review or eventual award. The State will also encourage and attempt to prioritize those

communities and jurisdictions with the highest risks and most intense development pressures to apply for non-planning mitigation projects to reduce vulnerabilities to the higher risks they are facing. The State has convened the PDM Planning Team prior to submission of these non-planning mitigation project grant applications in order to review associated benefit-cost ratios and to determine how many people are served by the projects. Based on this qualitative and quantitative review, the Planning Team ranks the projects prior to submission.

Capabilities:

- The PDM planning program has elicited a high participation rate by Montana counties and tribes.
- Communities have found assessing their hazards to be quite beneficial and informative.

Limitations:

- At times, more counties/tribes have been interested in participating than funding to support their efforts has been available.

Table 6.1-4. PDM Non-Planning (Construction) Projects Since 2004

Year	Application Title	Sub-Grantee	Non-Federal Share	Federal Share	Federal Share %
2005	Missoula County Grant Creek Flood Mitigation Project	Missoula County	$1,145,000	$3,000,000	75%
2005	Powell County/City of Deer Lodge Flood Hazard Mitigation Project	Powell County	$667,409	$2,002,228	75%
2005	Blacktail Deer Creek City/County Flood Mitigation Project	Beaverhead County	$160,260	$435,000	75%
2008	Helena South Hills Fuel Reduction 2007	City of Helena/Tri-County Fire Safe Working Group	$34,319	$102,956	75%
2008	City of Helena Tenmile Creek Water Supply Fuel Reduction Project	City of Helena	$104,277	$312,831	75%
2009	Harris Creek Bridge	Custer County	$62,330	$139,870	69%
2009	Park County Fleshman Creek Flood Mitigation Project	Park County	$760,000	$2,280,000	75%
2010	City of Helena Open Lands Fuel Reduction	City of Helena	$103,002	$308,998	75%
2011	Main Street Bridge, Deer Lodge	MDT	$692,831	$1,191,304	63%
2012	Creative Arts Center Seismic Retrofit	MSU-Bozeman	$746,921	$2,240,759	75%
2013	Wyttenhove Custer County	Custer County	$75,982	$227,947	75%
2016	Musselshell Acquisitions	Musselshell County	$966,156	$2,522,236	72%
2016	Deer Lodge Acquisition	Powell County	$24,844	$99,377	80%
2016	Stillwater Landslide	Stillwater County	$620,000	$1,860,000	75%
TOTAL			**$4,190,662**	**$14,286,278**	

National Fire Plan and Fire Prevention

The DNRC-Forestry Division coordinates National Fire Plan fire mitigation programs funded by the USDA Forest Service State and Private Forestry branch. One full-time and two half-time employees

coordinate this program, with administrative support from the Forestry Division's Business Management Bureau.

Montana's wildfire suppression costs for DNRC continue to rise each year; 2017 fire suppression costs totaled $70 million with 1,323 fires burning 743,313 acres. DNRC's fire suppression costs in the last ten years average $20.8 million annually. Fires in the wildland interface continue to pose costly challenges. Community preparedness and homeowner risk reduction efforts continue to be a priority to better protect life, property, natural resources and reduce suppression costs.

The DNRC Forestry Division implements hazardous forest fuel mitigation, community wildfire preparedness, homeowner risk reduction and wildfire prevention programs. A significant portion of the funding for these programs is provided by the USDA Forest Service State and Private Forestry under the authority of the Cooperative Forestry Assistance Act of 1978.

The DNRC uses the National Cohesive Wildland Fire Management strategy as a framework for determining how these funds are used. The three tenets of the Cohesive Strategy are effective wildfire response, fire-adapted communities, and resilient landscapes. Much of the funding is channeled into cost-share programs to assist private landowners in reducing flammable vegetation and restoring fire-adapted characteristics in the forest around their homes. This usually entails thinning, pruning, and removal of understory vegetation through mechanical means and prescribed burning. In the period between 2012 and 2018 approximately 5,000 acres of private property were treated in Missoula, Flathead, Lincoln, Mineral, Ravalli, Powell, Lewis and Clark, Silver Bow, Madison, Lake, Jefferson, Broadwater, Meagher, Park, Gallatin, Stillwater, Sweet Grass, Carbon, Powder River, Custer, Sanders, Beaverhead, Musselshell and Rosebud Counties. Most of these projects also contain an education element to provide landowners with resources suggesting other ways of reducing wildfire risk and building community capacity to adapt to living in a wildfire-prone landscape. The Forestry Division delivers these programs both through direct assistance to homeowners as well as through sub-awards (i.e. pass-through grants) to various local government and non-governmental organizations who manage projects at the local level.

DNRC also provides funding to Montana State University Forestry Extension to host a series of annual workshops to assist landowners in crafting forest stewardship plans. A significant portion of the curriculum in these workshops focuses on fire hazard risk reduction and restoring healthy forests. DNRC foresters also provide technical assistance to landowners in developing management plans and treatment plans to address wildfire risk and other land management issues.

Community preparedness, homeowner risk reduction and wildfire prevention programs are implemented across the state in various ways including but not limited to: providing education on reducing fire risk in the home ignition zone; creating Firewise USA communities and FireSafe Councils; distributing Montana Ready, Set, Go! publications; supporting the Keep Montana Green Association; providing technical assistance to partners performing similar functions at a local level; participating in the Northern Rockies Coordination Group Prevention and Education Committee; and promoting the coordination and implementation of the Fire Adapted Communities concept.

Capabilities:

- The potential for significant mitigation funding exists, if the projects qualify for and are selected for the nationally competitive National Fire Plan programs.
- Other federal land management agencies have similar funding sources available and work to complete fire mitigation projects directly with the local communities.
- State fire suppression costs can be used as match for these federal grants.
- The National Fire Plan program has created a well-coordinated mitigation system for planning and projects at the state level.
- Numerous partnerships have been and continue to be developed through this program.

Limitations:

- Funding for fire mitigation varies greatly from year to year due to the competitive nature of the program. No baseline funding exists for fire mitigation.
- The State of Montana does not have a state funded fire mitigation initiative.

Montana Earthquake Program

The Montana Earthquake program is coordinated by the MT DES Mitigation Program and is primarily a public education and outreach program. Each October is Earthquake Preparedness Month in Montana, and media outlets inform residents of preparedness and mitigation techniques they can take. Briefings and training sessions have also been conducted through this program. Montana Bureau of Mines and Geology, Earthquake Studies Office heavily supports this program through research, education, and outreach. Montana DES will continue to participate and promote the Great American Shakeout annually.

From 2009 through 2012, the Montana Dept. of Administration received FEMA funding through the National Earthquake Hazards Reduction Program Earthquake (NEHRP) State Assistance program to complete the *Critical Facility Seismic Evaluation and Hazard Reduction Project* for state-owned buildings in the Intermountain Seismic Belt. Approximately $150,000 in grant funds were used to complete a planning document and approximately 115 Tier 1 seismic evaluations of state-owned assets, including the State Capitol complex and the Montana University System facilities. These evaluations provide the information needed to apply through the FEMA mitigation grant programs for seismic retrofit projects.

Capabilities:

- Grant funds through FEMA have allowed the State to identify critical infrastructure where structural retrofits are necessary to maintain continuity of operations and government.

Limitations:

- State general funds have not always been available to support the program.

National Flood Insurance Program (NFIP) and Community Rating System (CRS)

Through funding from the Community Assistance Program, the State NFIP is coordinated by the DNRC. In Montana, 131 out of 139 communities participate in the NFIP. Twelve (12) of those communities also participate in the CRS program. The Flooding Profile in *Section 4.4.2* identifies communities in the CRS program and those who have flood hazards but don't participate in the NFIP.

Since 1978 over $9.8 million has been paid out in flood insurance claims in the State of Montana, and as of August 31, 2012, 5,814 policies have existed insuring over $1.36 billion in property. This program, specifically managed at the local level, is supported by the State Floodplain Manager, part of the DNRC-Water Resources Division.

Capabilities:

- The NFIP allows the State to assist counties and cities with floodplain problems.
- The majority of Montana flood hazard areas are regulated as part of the NFIP.

Limitations:

- Very little funding is available for NFIP education.
- Counties and cities are limited in staffing. Often the local floodplain manager has multiple duties and only issues one or two floodplain permits a year.
- Local floodplain managers, because of their other duties and infrequent floodplain development, often have very little training in the NFIP.

Map Modernization and Risk MAP Programs

In 2005 the Montana DNRC Floodplain Mapping Program became a Cooperating Technical Partner with FEMA and began participating in the Map Modernization program. The Map Modernization Program was a 5-year funded initiative put in place by Congress in 2004 to digitize and modernize floodplain mapping across the country. In 2009 FEMA-transitioned into the Risk MAP program which is aimed less at converting paper FIRMs and FHBMs to digital maps (DFIRMs) and more at performing new floodplain mapping studies, addressing errors on existing maps, identifying flood risk, and performing community engagement and efforts to better tie mapping activities to mitigation endeavors. Through the Map Modernization and Risk MAP programs, DNRC's Floodplain Mapping Program is annually applied for FEMA grant funding to help manage the floodplain mapping program and fund floodplain mapping projects in Montana.

The DNRC Floodplain Mapping Program currently consists of 3.75 FTE positions. FEMA grants currently fund 2.75 of the FTE positions in the Floodplain Mapping Program. One FTE (the State Floodplain Engineer), along with program support from the Water Operations Bureau Chief and an Administrative Assistant, and technical support from six DNRC Regional Engineering Specialists, are state-funded.

Funding for floodplain mapping projects has largely been provided by FEMA through annual Map Modernization and Risk MAP grants, with supplemental match funding provided by the State and

local stakeholders when available. Previous state legislature allocations of $100,000 biennially to assist with floodplain mapping projects were not re-allocated with the current state budget.

Since 2005, DNRC has received roughly 13 million dollars in floodplain mapping grants from FEMA. To date, 27 county-wide floodplain mapping projects have been initiated and 20 have been completed. Counties with digital FIRMs are: Blaine, Broadwater, Cascade, Carbon, Custer, Fergus, Flathead, Gallatin, Granite, Lake, Lewis & Clark, Missoula, Park, Ravalli, Richland, Sanders, Silver Bow, Stillwater, Sweet Grass, and Yellowstone. Partial county-wide or community-only digital FIRMs are available for: Lincoln County, Roosevelt County, Ennis, Whitehall, Nashua, Medicine Lake, Fort Peck, and Fort Belknap. County-wide floodplain mapping projects (using a combination of FEMA, State and local funding) are currently underway in Beaverhead, Mineral, Madison, Musselshell, Wheatland, Golden Valley, and Petroleum Counties.

Additional individual mapping studies are underway on the Swan River (Missoula County), Clearwater River (Missoula County), West Gallatin River (Gallatin County), Bozeman Creek and tributaries (Gallatin County), Yellowstone River (Richland County). In addition, the DNRC together with local stakeholders completed an approximate-level study in 2015 for the Big Hole River, involving Beaverhead, Silver Bow, Anaconda-Deer Lodge, and Madison Counties.

However, there are still large amounts of un-met floodplain mapping needs in Montana:

- 16 NFIP-participating counties still have paper format FIRMs and are considered non-modernized. Updated flood studies will need to be conducted on all the mapped floodplains in these counties to convert these counties to digital format
- Updated floodplain study needs are continually requested and documented throughout the state. These needs occur where floodplain maps were historically converted to digital format without any updated study information, or where development or physical changes to river systems have occurred over time and updated flood risk information is needed.

Considerations:

- Nationally, Congress has allocated a significant amount of funding for first the Map Modernization and then the Risk MAP initiatives.
- In the past, Montana was not as competitive as other states for national flood funding due to our low population, historic damages, lack of topographic data in many areas, and small amounts of match for individual projects. However, due to congressional efforts, recent attention and funding is starting to be directed to western states to help modernize paper-format communities.
- Partnerships with MT State Library, MT DEQ, NRCS, USACE, USGS, and other entities and communities have been built and are important to maintain for acquiring topographic data and other floodplain mapping related information.

Limitations:

- The floodplain mapping process takes 4-7 years if everything progresses without issues.

- Topographic data acquisition (LiDAR) is typically needed for new floodplain studies. Montana has limited LiDAR data. This information can be utilized for diverse purposes beyond floodplain mapping.
- Some LiDAR acquisition has been funded under the Risk MAP program.
- To maximize the continuity of the program, state funding is needed to supplement the federal funding.

Flood Mitigation Assistance Program

Since the 2013 plan update Montana has used the FMA grant for flood planning purposes as well as conduct acquisition and demolition on two repetitive loss properties. The 2017 FMA allowed for the advanced assistance opportunity for two jurisdictions, Miles City and Lewis and Clark County.

Capabilities:

- The program is focused on the most vulnerable structures based on flood insurance losses.
- The program allows for flood risk reduction measures where it can impact several property owners that hold flood insurance policies.
- Properties recently identified in floodplains due to new or preliminary DFIRMS may be able to use the FMA program for acquisitions, relocations or elevations.

Limitations:

- The 25 percent match represents a significant barrier for many homeowners, and jurisdictions.

Dam Safety Program

The dam safety program oversees and regulates the non-federal dams in Montana. High Hazard Dams (dams with potential for loss of life downstream) are required to have permits and emergency action plans. Ninety-four (94) dams are currently permitted by the State of Montana. Seven (7) additional dams are in process of getting permitted. The Montana Dam Safety Program has an ongoing education and outreach program targeting significant and low hazard dams using a Federal National Dam Safety Grant. This program is managed by the DNRC-Water Resources Division.

Capabilities:

- The dam safety program provides regulations and standards for dams, and therefore, ensures a level of safety.

Limitations:

- Over 2,635 significant and low hazard dams in Montana are not required to have a permit. In many cases, maintenance and repair may be needed.
- The general lack of county zoning in Montana allows development in inundation areas of high, significant and low hazard dams without review and/or dam reclassification.

Montana Bureau of Mines and Geology (MBMG) Earthquake Studies Office

Western Montana has a history of large damaging earthquakes, and remains seismically active. Many of these earthquakes occur along faults that do not extend to the Earth's surface, and are thus unmapped and unknown. Seismic hazards associated with earthquakes along these "blind" faults cannot be evaluated with traditional geologic studies and can only be studied by evaluations of data from a permanent network of seismograph stations. Accordingly, the mission of the MBMG Earthquake Studies Office is to monitor, analyze, and report on Montana earthquakes and make this data available to the public.

Capabilities:

- The program has the capacity to study blind faults in Montana which identify new areas vulnerable to the seismic hazard.

Limitations:

- Funding for field investigation is largely dependent on receiving grants and as such, funding is variable from year to year.

Homeland Security

Homeland Security Grant Program (HSGP) provides funding to the state for activities that address high-priority preparedness gaps across all core capabilities. The Threat and Hazard Identification and Risk Assessment and State Preparedness Report are used to help prioritize the grant projects. Since 2013, HSGP funding has remained consistent with approximately $3.6 million dollars per year that has been utilized for trainings, exercises, and equipment. Many of the projects that are completed under Homeland Security Grants provide increased capabilities to the mitigation mission area, especially operational coordination, community resilience, and long-term vulnerability reduction. While not the traditional mitigation projects, they do reduce the risk or impacts from events. Homeland Security Grant funds some limitations for typical mitigation projects, as the funds must be used for projects related to preventing, preparing for, protecting against, or responding to acts of terrorism. This however, does not preclude the training or equipment to be utilized for any hazard or event.

6.1.3 Post-Disaster Mitigation Policies, Programs, and Capabilities

Presidential disaster declarations in Montana have typically been sporadic and small in scale of total damages. The following presents Montana's post-disaster mitigation policies, programs, and capabilities.

Disaster Field Office

Following a presidential declared disaster, the State works with FEMA setting up a Disaster Field Office. When a disaster is declared, the President identifies the scope of the assistance programs and the director of FEMA designates the affected counties. A Federal Coordinating Officer (FCO) is named to direct the federal response and recovery activities and FEMA Stafford Act Employees are deployed.

The FCO will frequently set up 'shop' in the conference room of a local hotel until an 'official' Disaster Field Office is established. Once a location is found (a building of needed size to house needed staff and one that is adaptable to security and technological requirements), it develops into a fully functional office for disaster workers.

Capabilities:

- Convene response and recovery expertise to provide high level of staff response and support.
- Work with State, tribal, and local governments; non-government organizations; and private-sector organizations to support response and long-term recovery planning for highly impacted communities.
- Link recovery planning to sound risk reduction practices to encourage a more viable recovery.
- Strategically apply subject-matter expertise to help communities recover from disasters.

Limitations:

- Only available after a Presidential disaster.

Hazard Mitigation Grant Program

Following a Presidential Declared Disaster, Montana has historically received 15 percent of eligible disaster costs in funding for mitigation activities. This program, coordinated through DES by the SHMO, has received over $11.8 million following 17 Presidential disasters since 1996 (**Table 6.1-5**). Eighty-four (84) projects were funded from 2008 through 2017. These include planning, non-planning, and 5 percent projects. Typically, the HMGP program is opened up for all counties, not just those in the disaster area, and the projects are not restricted to those hazards involved in the disaster. This allows for maximum flexibility and quality in the projects submitted for funding. The only exception is the newest HMGP Post Fire (PF) that will be offered following Fire Management Assistance Grants may only be able to assist jurisdictions who were affected by the wildfire. FEMA guidance on the new program is not available for this update. **Tables 6.1-6** and **6.1-7** present the mitigation planning and non-planning projects, respectively, that have received HMGP funding from 2008 through 2017. **Table 6.1-8** presents the 5 percent projects funded from DR-1996. The SHMO convenes the Montana MHM Planning Team to assist in project selection. The criteria used to rate projects will be outlined in the state's administration plan and may include; BCA score, highest risk, repetitive loss, and community needs. Emphasis will be placed on area's that were impacted by the disaster, specifically if they are conducting risk reduction activities that coincide with the declared disaster. HMGP funding has contributed towards the update of several local mitigation plans.

Capabilities:

- As many projects as possible are funded through HMGP, and the program is typically opened up to the entire state and all identified natural hazards following a disaster.
- HMGP PF affords Montana

Limitations:

- Montana is required to follow the same procedures as a larger state but with generally less funding available for projects and their management.

Table 6.1-5. HMGP Funding by Disaster

Date	FEMA Disaster #	Location	Disaster Type	HMGP Funding
February 1996	1105	Western Montana	Flooding, Winter Storms	$268,598
March 1996	1113	Milk River, Northern Montana	Flooding, Spring Storms (road, culvert, and bridge damage)	$207,000
Spring 1997	1183	Missouri & Yellowstone Rivers	Flooding (roadway & infrastructure damage)	$883,110
Summer 2000	1340	Statewide	Wildfire	$290,766
Fall 2000	1350	Eastern Montana	Winter Storms (heavy snow loads, drifting, power outages)	$284,005
Spring 2001	1377	Big Horn County, Crow Reservation	Winter Storms (heavy snow loads, power outages)	$105,770
June 2001	1385	Gallatin, Missoula, and Powell Counties	Spring Storms (heavy snow loads, power outages)	$137,349
June 2002	1424	Northern Montana	Spring Storms, Flooding (heavy snow and rain, power outages, road damage)	$207,984
June 2008	1767	Carter, Custer, Fallon & Powder River Counties	Severe Winter Storm	$524,596
June 2010	1922	Hill and Chouteau Counties	Flooding	$84,642
2011	1996	48 Counties & 5 Reservations	Flooding	$7,614,076
2012	4074	Rosebud, Powder River Co. & No. Cheyenne Reservation	Wildland Fire	$213,750
2013	4127	8 Counties and 3 Reservations	Flooding	$293,753
2014	4172	15 Counties	Ice Jams and Flooding	$212,419
2014	4198	Blaine, Carter, Musselshell, Petroleum, and Valley Counties & Ft. Belknap Reservation	Severe Storm, Straight Line Winds	$177,773
2016	4271	Glacier, Liberty, Pondera, Teton and Toole Counties	Severe Storm, Straight Line Winds	$192,892
2016	4275	Baker (Fallon County)	Tornado	$127,316
TOTAL				**$11,825,799**

Table 6.1-6. Disaster-Funded Planning Mitigation Projects

Application Title	Sub-Grantee	Non-Federal Share	Federal Share	Federal Share %
DR-1767-MT				
DR-1767 Planning Grants Update and Complete PDM Plans	Powell, Stillwater Counties, Fort Peck Reservation	$12,241	$36,722	75%
TOTAL		**$12,241**	**$36,722**	
DR-1996-MT PROJECTS				
Update State PDM Plan	MT DES	$30,177	$90,532	75%
Dawson, Richland, Wibaux & McCone County PDM Updates	Dawson, Richland, Wibaux and McCone Counties	$30,177	$91,800	75%
Montana Tech PDM Plan Update	Montana Tech	$8,333	$25,000	75%
MSU Bozeman PDM Plan Update	MSU-Bozeman	$8,333	$25,000	75%

Table 6.1-6. Disaster-Funded Planning Mitigation Projects

Application Title	Sub-Grantee	Non-Federal Share	Federal Share	Federal Share %
Crow Montana PDM Plan	Crow Nation	$9,500	$28,500	75%
Fort Belknap Tribal PDM Plan Update	Fort Belknap Nation	$8,333	$25,000	75%
Liberty/Toole/Teton County PDM Plan Updates	Liberty, Toole & Teton Co.	$22,000	$66,000	75%
Central Montana PDM Plans	Judith Basin, Wheatland, and Musselshell Counties	$20,000	$60,000	75%
Northern Cheyenne Tribal PDM Plan	Northern Cheyenne Nation	$8,750	$26,250	75%
Rosebud County PDM Plan Update	Rosebud County	$7,650	$22,950	75%
	TOTAL	**$153,254**	**$461,032**	

Table 6.1-7. Disaster-Funded Non-Planning Mitigation Projects

Application Title	Sub-Grantee	Non-Federal Share	Federal Share	Federal Share %
DR-1767-MT PROJECTS				
Fuel Reduction Project	Yellowstone County	$38,830	$101,720	28%
2nd Street Bridge	Powell County/City of Deer Lodge	$142,411	$166,945	54%
South Hills Fuel Reduction (2009)	City of Helena	$78,519	$235,477	25%
	TOTAL	**$259,760**	**$504,142**	
DR-1996-MT PROJECTS				
Trap Club Detention Pond	Lewis & Clark County	$172,890	$518,669	75%
City of Helena Seismic	City of Helena	$111,600	$334,800	75%
Deep Creek Flood Mitigation	Broadwater County	$443,750	$1,331,250	75%
Moores Creek	Madison County	$249,408	$748,224	75%
Mathews Hall Seismic Retrofit	UM-Western	$285,968	$857,904	75%
Ten Mile Fuel Reduction	Lewis & Clark County	$129,250	$387,750	75%
Valier Pump House	Town of Valier	$47,064	$141,191	75%
Montana Law Enforcement Academy	State of Montana A&E	$31,403	$94,209	75%
Kearny Lane Bridge	Madison County	$19,000	$57,000	75%
Travelers Home	Granite County	$40,440	$121,320	75%
Whitefish Stage Road	City of Whitefish	$99,333	$298,000	75%
Acquisition 100 Main St, Deer Lodge	City of Deer Lodge	$18,757	$56,270	75%
3417 Kehrwald Acquisition, Missoula	City of Missoula	$39,730	$119,190	75%
Little Bighorn River Flood Mitigation	Crow Tribe	$202,610	$607,831	68%
Musselshell County Acquisitions	Musselshell County	$92,016	$110,346	55%
	TOTAL	**$2,160,783**	**$6,386,402**	
DR-4074-MT-PROJECTS				
U of M Western Main Hall	State of Montana A&E	$41,743	$125,229	75%
Sundial Bridge	Custer County	$30,418	$91,253	75%
	TOTAL	**$72,160**	**$216,482**	
DR-4127-MT PROJECTS				
Missoula County Fuel Reduction	Missoula County	$37,500	$112,500	75%
Fergus County Acquisitions	Fergus County	$30,418	$120,821	80%
	TOTAL	**$69,009**	**$207,028**	
DR-4172-MT PROJECTS				
Cascade Elevation	Cascade County	$17,610	$52,829	75%
Dry Creek Broadwater County	Broadwater County	$21,825	$65,475	75%
Baker Acquisition	City of Deer Lodge	$22,331	$66,994	75%
	TOTAL	**$135,908**	**$437,290**	

Table 6.1-7. Disaster-Funded Non-Planning Mitigation Projects

Application Title	Sub-Grantee	Non-Federal Share	Federal Share	Federal Share %
DR-4198-MT PROJECTS				
Musselshell Co. Stage Stop Acquisition	Musselshell County	**$53,333**	**$160,000**	75%
DR-4271- MT PROJECTS				
Toole Co. Marias Medical Center Generator	Toole County	**$35,304**	**$105,912**	75%
DR-4275 – MT PROJECTS				
Madison County Mammoth Area Fuels Reduction	Madison County	**$40,086**	**$120,257**	75%
	TOTAL	**$2,685,174**	**$7,714,003**	
	GRAND TOTAL	**$2,851,180**	**$8,278,286**	

Table 6.1-8. Five Percent HMGP Projects

Application Title	Disaster #	Federal Share	Application Title	Disaster #	Federal Share
Fire Safe MT Public Education	DR-1767	$8,246	Bull Lake	DR-1996	$11,976
Weather Radios	DR-1996	$2,250	Havre High School Generator	DR-1996	$16,650
Miles City ARC Software	DR-1996	$15,925	Granite County Medical	DR-1996	$57,941
Sweet Grass Ambulance	DR-1996	$2,246	MT DES public radio	DR-4074	$5,325
Kalispell Water System	DR-1996	$72,000	DNRC Stream guides	DR-4074	$2,730
Belgrade Generator	DR-1996	$28,079	MT DES school checklists	DR-4074	$3,339
West Yellowstone	DR-1996	$18,987	Miles City Transfer Switch	DR-4127	$3,695
Town of Browning	DR-1996	$17,258	DNRC Drought toolbox	DR-4127	$14,976
Carter County High School	DR-1996	$35,250	Sheridan Emergency	DR-4172	$13,070
Daniels Memorial	DR-1996	$7,462	Milk River stream gage	DR-4198	$7,884
Town of Superior	DR-1996	$17,342	Stillwater Co. Generator	DR-4271	$9,674
Upper Yaak	DR-1996	$11,976	Fallon County Weather	DR-4275	$7,059
Sidney Water Treatment	DR-1996	$47,411	**TOTAL**		**$438,751**

Public and Individual Assistance Mitigation

When presidential disaster Public Assistance (PA) and Individual Assistance (IA) funds become available for repairs to public and private structures and infrastructure, mitigation opportunities are taken whenever possible. Although not a separate program, mitigation is conducted following a disaster through the recovery programs (406 mitigation). PA and IA officers are trained in mitigation and will directly and indirectly mitigate hazards when repairing the damages. This mitigation is an integrated part of the disaster recovery and cannot be easily put into dollar amounts.

Capabilities:

- Mitigation during recovery allows for "cheaper" mitigation because the mitigation is done while repairing damages.
- Immediately following a disaster, the public and local officials may be more willing to invest in mitigation due to both increased awareness and public pressure.

Limitations:

- Typically, following a disaster, recovery, and not mitigation, is the primary objective.

- The mitigation costs cannot be easily separated from the recovery costs.
- Identification of mitigation opportunities depends on the recovery officers' abilities to notice them.

6.1.4 Evaluation of State Laws and Regulations

An evaluation of Montana laws and regulations was conducted to identify those sections that relate to mitigation. Many laws that can be related to mitigation are "buried" in various sections, such as Montana Code Annotated (MCA), Title 20, Chapter 6, Part 6 (MCA 20-6-621) which states that school locations are to meet building codes. Only the major sections as they pertain to mitigation will be listed here. See **Table 6.1-9** for specific legislation.

Table 6.1-9. Montana Laws and Regulations Related to Mitigation

Reference	Description	Capabilities	Limitations
MCA Title 7	Local Government	▪ Allows local governments to construct public buildings, utility services, roads, and bridges ▪ Gives local government the right to adopt their own building codes	▪ Does not require local building codes or enforcement
MCA 10-3	Disaster and Emergency Services	▪ Establishes state and local emergency management organizations and responsibilities	▪ Mentions mitigation in a very limited fashion
MCA 17-7-2	Long Range Building Program	▪ Establishes the Long Range Building Program for State facilities ▪ Consolidates and prioritizes requests for significant building improvements and new construction	▪ Does not require the consideration of disaster prevention or mitigation.
MCA 50-3	State Fire Prevention and Investigation Program	▪ Establishes State Fire Prevention Program ▪ Establishes fire inspection program for State buildings	
MCA 50-60	Building Construction Standards	▪ Authorizes State Building Code ▪ Allows for local county, city, or town building codes	Except for the energy, plumbing, and electrical codes, the State Building Code is not applicable for residential structures less than five dwelling units, unless required by local jurisdictions.
MCA 50-61	Fire Safety in Public Buildings	▪ Establishes fire safety regulations for public buildings	
MCA 50-62	Fire Hazards	▪ Allows for remediation, removal, or demolish of structures that are considered fire hazards	
MCA 50-79	Nuclear Regulation	▪ Establishes regulations for sources of ionizing radiation	
MCA Title 60	Highways and Transportation	▪ Authorizes maintenance and creation of State roads and roadway infrastructure	▪ No requirements for the mitigation of hazards
MCA Title 67	Aeronautics	▪ Provides regulations for airports and aircrafts	
MCA Title 69	Public Utilities and Carriers	▪ Establishes requirements for utility providers, including the construction of such facilities	▪ Does not require hazard considerations

Table 6.1-9. Montana Laws and Regulations Related to Mitigation

Reference	Description	Capabilities	Limitations
MCA 75-1	Montana Environmental Policy Act	▪ Establishes procedures for environmental reviews	
MCA 75-2	Air Quality	▪ Establishes air quality regulations	
MCA 75-5	Water Quality	▪ Establishes water quality regulations	
MCA 75-6	Public Water Supplies, Distribution, and Treatment	▪ Establishes regulations for the construction and operation of public water supplies and wastewater	
MCA 75-7	Aquatic Ecosystem Protections	▪ Requires the protection of streambeds and lakeshores	
MCA 75-20	Montana Major Facility Siting Act	▪ Establishes regulations regarding the placement of major energy production or transmission facilities	▪ Does not require an evaluation of natural or man-made hazards of the facility location.
MCA 76-1	Growth Policy	▪ Creates a smart growth planning process that cities and counties can use together to plan for efficient growth inside and adjacent to cities and towns. ▪ Allows streamlined subdivision review if city or county engages public in planning and adopts zoning that implements plans. ▪ Must identify where the WUI areas are located to help in planning to protect people and property from wildfire. ▪ Must avoid or mitigate adverse impacts on wildlife, waters, the natural environment, health and safety, and local services.	▪ Growth policies are not regulatory and do not have authority to deny land use.
MCA 76-2	Planning and Zoning	▪ Allows local governments to establish and manage zoning districts	▪ Does not establish statewide zoning or require it at the local level
MCA 76-3	Montana Subdivision and Platting Act	▪ Allows a subdivision to be denied that doesn't mitigate/avoid threats to public health & safety. ▪ Requires that subdivision regulations protect people and property from wildland fire. ▪ Engages DNRC and DLI in developing rules and providing incentives to help cities/counties get ahead of growth in WUI.	▪ Does not establish statewide standards for hazards
MCA 76-5	Floodplain and Floodway Management	▪ Establishes state floodplain management program and regulations ▪ Requires a Flood Protection Elevation of 2 feet above the 100-year Base Flood Elevation ▪ Establishes a Floodway Obstruction Removal Fund ▪ Initiates a comprehensive program for the delineation of designated floodplains and floodways in the state.	
MCA 76-6	Open-Space Land and Voluntary Conservation Easement Act	▪ Provides regulations for open space designations and compensation	▪ Does not emphasize open space in hazardous areas
MCA 76-11-1	Natural Resource Protection from Fire	▪ Directs DNRC to protect natural resources from fire	

Table 6.1-9. Montana Laws and Regulations Related to Mitigation

Reference	Description	Capabilities	Limitations
MCA 76-13	Timber Resources	▪ Provides for the protection of forest resources ▪ Establishes regulations to prevent uncontrolled fire starts ▪ Allows for tree disease and insect control ▪ Designation of wildland urban interface parcels	
MCA 76-14	Montana Rangeland Resources Act	▪ Allows for sagebrush and weed management	▪ Does not specifically mention fire management
MCA 85-15	Montana Dam Safety Act	▪ Allows for safe construction of dams ▪ Provides authority for dam permitting, inspection, and repair	
MCA 90-15	Natural Resource Information System	▪ Authorizes the development of a natural resource information system and a natural heritage program	

The State laws in the MCA are then translated into the Administrative Rules of Montana (ARM). This document specifies the rules as they relate to the MCA. Individual agencies are responsible for identifying and addressing the shortcomings with mitigation in their own agency rules.

6.1.5 Development in Hazard Prone Areas

Although experiencing declining populations in many eastern rural counties, Montana has been experiencing rapid population growth in the south-central and western parts of the State since the 1930's. For several years in the mid-2010's, Richland County and several other eastern Montana counties experienced rapid growth associated with the Bakken oil and gas boom. Due to low oil prices, production has tapered off but is expected to increase again when prices increase. The impact of future development is discussed for each hazard in *Section 4*.

Western Montana has been the area with the most concentrated growth in recent years. This section of the State includes several known and unknown seismic faults with prehistoric and historic major earthquake events, and therefore, growth is taking place in high probability earthquake hazard areas. Currently, little zoning or development regulations in seismically prone areas is occurring.

The state floodplain requirement of a freeboard of two feet reduces the vulnerability of new development in the mapped flood zones. This proactive approach to floodplain management helps in making new construction less prone to flood damages. However, the program is only as good as the mapping, and in some instances, development may be occurring in unmapped, flood prone areas.

Of greatest concern and magnitude; however, is the development occurring in the wildland/urban interface areas. With the greatest wildland fire hazards existing in western Montana and much of the growth occurring in this part of the State, development is occurring in the hazard prone areas. Most local jurisdictions have adopted the State's model subdivision regulations which address fuel reduction, structure placement, water supply and roadway requirements that may help reduce the risk to fire response personnel during an event. However, individual homes are often constructed in

the WUI without the benefit of subdivision review. Forested mountains continue to be places that are popular to live and accelerated growth continues in these areas.

Mitigation-related legislation that has been proposed in recent years is summarized below:

- Tax Incentive for Fuel Reduction – Failed in 2013 Session
- HB 279 - Tribes can access State Disaster Funds for 25 percent match – Passed 2011
- County Building Codes (Voluntary) – Passed 2011

6.1.6 State Funding Capabilities

The DES Division of the Dept. of Military Affairs in Montana is funded to provide emergency management services. This division, with a staff of 23 (including six field representatives) in Fiscal Year 2018, has $2.95 million for personnel and operating expenses. In Fiscal Year 2017 the state had $3.28 million. Approximately 40 percent of this budget is funded federally through EMPG funds and the other 60 percent is the state's required match paid from the state's general fund and other federal grant funds. The remaining EMPG grant funds are used to fund county and tribal DES coordinators. Most county coordinators are ½- or ¼-time for DES with other responsibilities. Historically, Montana has seen eight-year cycles that feature revenue increases for seven years – with the more rapid growth in the 5th, 6th and 7th years – capped with a revenue drop in the 8th year.

Capabilities:

- The Mitigation Program is able to offer project funding through the HMGP and PDM programs, when available.
- Federal mitigation funds are available through several State agencies.
- Travel for Mitigation Program staff is normally funded through grant management cost or grant administration funds.

Limitations:

- The programs can only grow as large as the personnel able to coordinate them.
- For federal funds, the 25 percent match is often not available.
- A mitigation program budget does not exist except through federal grants for projects.

6.2 Local Capability Assessment

Most mitigation projects in the State of Montana begin at the local level. Following a major disaster or a minor event, someone such as a county commissioner, the road crew, or a homeowner notices a problem that can be mitigated. Typically, the local officials will submit a request for mitigation grant funding as it is available. Ultimately, local mitigation projects are created, submitted, and implemented by those who live in the community. These local officials work closely with the Mitigation Program and other State and federal officials in determining the best course of action. Completed local mitigation projects are summarized in **Appendix C-4**.

Montana, being a large, mostly rural state, is managed primarily by county government with additional city and town governments in the more developed communities. Each county and tribe in Montana has a DES Coordinator. These coordinators are typically positions that are not dedicated to emergency management full-time, and most are half or quarter time. Frequently, the coordinator will also have other duties within the county such as the sheriff or the fire chief. In most cases, these coordinators are also responsible for preparedness, response, recovery, and homeland security coordination. They are assisted by six state DES district field officers who act as liaisons between the State DES office and the county DES coordinators.

MT DES intends to encourage local jurisdictions to pursue mitigation projects for repetitive loss structures or any severe repetitive loss properties identified in the future (*Project 3.1.1*). MT DES and MT DNRC will continue to coordinate and educate communities and property owners about potential funding.

6.2.1 Local Policies and Programs

The policies and programs used to mitigate natural, man-made, and technological hazards build on the community's existing capabilities. Local capabilities to support and implement mitigation include the programs and resources of various local, regional, state, and federal partners and the administrative and technical capabilities of county, tribal, and/or city/town staff who implement the legal and regulatory requirements used to manage growth (zoning, building codes, subdivision regulations, and floodplain ordinances). Although, many communities have proactive programs and policies that support mitigation, others may not be. Some of the more rural communities rely on Montana's largest cities (Billings, Missoula, Great Falls, Helena, Bozeman, Kalispell) for resources and any disaster in one of these cities would have regional impacts in rural Montana.

Table 6.2-1 presents the local planning guidelines and regulations that are used to manage growth and support mitigation. In addition to these, the National Flood Insurance Program and Community Rating System, described in *Section 6.1.2* above, are programs that add to the capabilities of local jurisdictions.

Table 6.2-1. Local Policies and Programs Affecting Hazard Mitigation

Name	Description	Capabilities	Limitations
Building Codes	A minimum State building code exists for all communities; however, several have adopted their own stronger codes.	Implemented and enforced at the local level, structural building codes (some only residential) are in place in over 40 communities.	Many local jurisdictions have not adopted local building codes, nor do they have the staffing to do so. The State building code does not address structural codes for residences under 5 dwelling units.
Zoning	Statewide zoning does not exist, nor is it required. Many communities have created zoning districts.	Many communities have adopted zoning districts, including those that consider hazard areas. The creation of zoning districts is typically a grassroots effort.	Much of Montana is not zoned for hazard areas.

Table 6.2-1. Local Policies and Programs Affecting Hazard Mitigation

Name	Description	Capabilities	Limitations
Growth Policies	State law requires local jurisdictions develop a document meeting specific criteria that addresses growth issues.	An adopted growth policy is required prior to the adoption of zoning ordinances and subdivision regulations. An assessment of the wildland-urban interface is required, as of 2009.	The growth policies are not regulatory and restrictions cannot be placed on development based on them.
Subdivision Regulations	Local jurisdictions can have regulations addressing requirements such as fire safety and open space for new subdivisions.	Local officials have the ability to regulate large development in hazard prone areas. Beginning in 2009, subdivisions can be denied where there is danger of injury to health, safety, or welfare by reason of natural hazard, including wildland fire.	Some communities may not have subdivision regulations, or they may not address natural hazards.
Planning Boards	Community planning boards can oversee growth and development and implement zoning ordinances and subdivision regulations.	Planning boards have the power to approve or deny development based on zoning ordinances and subdivision regulations.	Many planning boards are not be required to consider natural hazards while reviewing applications.
Floodplain Management	Everyday enforcement of floodplain ordinances as part of the National Flood Insurance Program are conducted at the local level.	Local floodplain managers have the ability to manage their own area floodplains. A statewide freeboard of 2 feet strengthens floodplain management across the State. Local jurisdictions have the ability to impose greater restrictions in the floodplain if desired.	Local floodplain managers are extremely part-time and may not be able to keep up with changes in the program. Much of the floodplain mapping in the State needs to be updated.

6.2.2 Local Planning and Technical Assistance

Local counties and tribes have various administrative and technical capabilities to implement mitigation projects including planners, engineers, floodplain managers, GIS personnel, emergency managers. Some of these services are contracted as outside services. Expertise from federal and state regional planning partners also contribute to the capabilities of local jurisdictions. Several of these entities are described below.

Local Disaster and Emergency Services

Each county and tribe in Montana has a DES Coordinator. The mission of County and/or Tribal DES is to save lives, prevent injury, and protect property and the environment by taking reasonable and affordable measures to mitigate, prepare for, respond to and recover from disasters. The local DES Coordinator is responsible for the planning, coordination, and implementation of all emergency management and Homeland Security related activities for the county or reservation. They are responsible for developing local mitigation plans, applying for and implementing mitigation projects, reporting on mitigation progress, and working with the State Permanent Mitigation Planning Team, as requested.

Other responsibilities include coordination of activities for the jurisdiction's Emergency Operations Center (EOC). The EOC, when activated, is a central location where representatives of local government and private sector agencies convene during disaster situations to make decisions, set priorities and coordinate resources for response and recovery. These efforts are designed to enhance the capacity of the local government to plan for, respond to, and mitigate the consequences of threats and disasters using an all-hazard framework.

DES coordinator positions are often not dedicated to emergency management full-time. Frequently, the coordinator will also have other duties within the county such as the sheriff or the fire warden. About 27 of 62 DES coordinators at the county or tribal level funded at 75 to 100 percent, 22 are funded at 25 to 75 percent, and 13 are funded at less than 25 percent. These positions are typically funded 50 percent federal through the Emergency Management Performance Grant (EMPG) program and 50 percent through the County/Tribal general funds. They are assisted by six state DES district representatives who act as liaisons between the State DES office and the county/tribal DES coordinators and with whom they meet regularly.

Local Emergency Planning Committees and Tribal Emergency Response Commissions

The mission of County Local Emergency Planning Committees (LEPCs) and Tribal Emergency Response Commissions (TERCs) is to provide resources and guidance to communities through education, coordination and assistance in haz-mat planning; and to ensure public health and safety. They do not function in actual emergency situations, but attempt to identify and catalogue potential hazards, identify available resources, and mitigate hazards when feasible. LEPCs and TERCs consist of representatives from businesses, local government, emergency responders and citizen groups located in the county or reservation. Quarterly or monthly meetings are typically held.

FireSafe Montana

FireSafe Montana is a private, non-profit organization coordinating and supporting a statewide coalition of diverse interests working together to help Montanans make their homes, neighborhoods, and communities fire safe. FireSafe Montana actively encourages and assists in the development of local FireSafe councils across the state. These councils are key to raising public awareness of local wildland fire threats and issues, motivating residents to take positive action, and providing access to the expertise and resources homeowners need to get the job done. When people take personal responsibility for applying and maintaining FireWise practices on their property, they greatly increase the chances of their homes surviving a wildfire.

Through its public information programs and materials, website, newsletter, and special events, as well as its active involvement in federal, state, and local fire mitigation efforts, FireSafe Montana is working hard to reduce the potential loss of life and property from wildfire in Montana.

National Fire Prevention Association's (NFPA) FireWise Communities Program

NFPA's FireWise Communities Program encourages local solutions for safety by involving homeowners in taking individual responsibility for preparing their homes from the risk of wildfire. FireWise is a key component of Fire Adapted Communities – a collaborative approach that connects

all those who play a role in wildfire education, planning and action with comprehensive resources to help reduce risk. The program is co-sponsored by the U.S. Forest Service, the U.S. Department of the Interior, and the National Association of State Foresters. To save lives and property from wildfire, NFPA's FireWise Communities program teaches people how to adapt to living with wildfire and encourages neighbors to work together and take action now to prevent losses. They advocate playing a role in protecting ourselves and each other from the risk of wildfire.

NOAA National Weather Service

The NWS provides weather, hydrologic, and climate forecasts and warnings for the United States for the protection of life and property and the enhancement of the national economy. NWS data and products form a national information database and infrastructure which can be used by other governmental agencies, the private sector, the public, and the global community. The NWS initiatives, described below, are making great strides in getting the hazard mitigation message out to citizens of Montana.

Building a **Weather-Ready Nation (WRN)** requires strong partnerships. NWS professionals work hand-in-hand with core partners at local, tribal, state and national levels to help ensure decision-makers have accurate, reliable and trustworthy weather, water and climate information needed to meet a joint mission to protect life and property. As part of the Weather, Water, and Climate Enterprise, we also can't do this alone with each part playing an important role collectively working to meet this mission.

Timely and relevant forecasts, watches, and warnings are major strengths of the NWS. However, NWS core partners have ever-changing and complex decisions to make that require a higher level of service to ensure public safety and the effective use of resources. This higher level of service that NWS provides is called **Impact-based Decision Support Services (IDSS)**. IDSS is forecast advice and interpretative services to assist core partners' decision-making when weather, water, or climate has a direct impact on the protection of lives and property.

The ***Weather-Ready Nation (WRN) Ambassador*** initiative is NOAA's effort to formally recognize NOAA partners who are improving the nation's readiness, responsiveness, and overall resilience against extreme weather, water, and climate events. As a WRN Ambassador, partners commit to working with NOAA and other Ambassadors to strengthen national resilience against extreme weather. In effect, the WRN Ambassador initiative helps unify the efforts across government, non-profits, academia, and private industry toward making the nation more ready, responsive, and resilient against extreme environmental hazards. WRN is a strategic outcome where society's response should be equal to the risk from all extreme weather, water, and climate hazards. WRN Ambassadors serve a pivotal role in affecting societal change — helping to build a nation that is ready, responsive, and resilient to the impacts of extreme weather and water events. To be officially recognized as a WRN Ambassador, an organization must commit to:

- Promoting Weather-Ready Nation messages and themes to their stakeholders;
- Engaging with NOAA personnel on potential collaboration opportunities;
- Sharing their success stories of preparedness and resiliency; and,
- Serving as an example by educating employees on workplace preparedness.

Montana Weather-Ready Wednesday and National Seasonal Safety Campaigns are NWS public outreach programs aimed to mitigate the effects of natural hazards through education. The aim of the National Seasonal Safety Campaign is to build a Weather-Ready Nation, one that is prepared for extreme weather, water, and climate events. NWS chose to replace national safety awareness weeks with a year-round approach for a simple reason: bad weather happens year-round. For example, severe weather can occur anytime - it does not wait for a single week in March. With the National Seasonal Safety Campaign, we seek to inform the public about seasonal weather hazards during the time they are most common. This is a 365-day a year effort and can't be confined to a single week. NWS offices in Montana are taking these campaigns one step further to promote safety that is in line with the forecast weather hazard on a weekly basis.

The ***StormReady Program*** started in 1999 to help communities develop the communication and safety skills needed to save lives and property – before and during hazard events. StormReady helps community leaders and emergency managers strengthen local safety programs through better planning, education, and awareness. Montana has 59 StormReady Designations including 22 counties, 29 communities, 2 Indian Nation, and three supporters. More information on the StormReady Program can be found at: http://www.stormready.noaa.gov/.

CoCoRaHS is an acronym for the Community Collaborative Rain, Hail and Snow Network, a program sponsored by NOAA. CoCoRaHS is a grassroots volunteer network of weather observers working together to measure and map precipitation (rain, hail and snow) in local communities. By using low-cost measurement tools, stressing training and education, and utilizing an interactive web-site, they provide accurate high-quality precipitation data to observers, decision makers and other end-users on a timely basis. Observers report precipitation information on a daily basis and it is available to the public to see. (http://www.cocorahs.org).

The ***NOAA Weather "All Hazard" Radio (NWR)*** program is provided as a public service by NOAA. NWR is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest NWS office. In conjunction with Federal, State, and Local Emergency Managers and other public officials, NWR also broadcasts warning and post-event information for all types of hazards – including natural (such as earthquakes or avalanches), environmental (such as chemical releases or oil spills), and public safety (such as AMBER alerts or 911 Telephone outages). More information on NOAA Weather Radios can be found at: http://www.nws.noaa.gov/nwr/.

6.2.3 Local Fiscal Capabilities

Mitigation projects and initiatives are largely or entirely dependent on available funding. Local jurisdictions are able to fund mitigation projects though existing local budgets, local appropriations (including referendums and bonding), and through a myriad of federal and state loan and grant programs. A number of these funding opportunities are described in **Table 6.2-2.**

Table 6.2-2. Mitigation Funding Sources

Name	Description	Agency
ALL HAZARD		
Hazard Mitigation Grant Program	Provides up to 75 percent funding for hazard mitigation measures and can be used to fund cost-effective projects that will protect public or private property in an area covered by a federal disaster declaration or that will reduce the likely damage from future disasters. Projects must fit into an overall mitigation strategy for the area identified as part of a local planning effort. All applicants must have a FEMA-approved Hazard Mitigation Plan.	FEMA
Pre-Disaster Mitigation (PDM) Competitive Grants	Provides grants through a competitive process for specific mitigation projects, including planning. Managed by MT DES.	FEMA
Public Assistance	Following a disaster, funds can be used to mitigate hazards when repairing damages to a public structure or infrastructure. Managed by MT DES.	FEMA/State
SBA Pre-Disaster Mitigation Loan Program	Provides low-interest loans to small businesses for mitigation projects.	U.S. SBA
WILDFIRE		
U.S. BLM, Community Assistance Program	BLM provides funds to communities through assistance agreements to complete mitigation projects, education and planning within the wildland urban interface.	BLM
Community Fire Protection Program	Funding for mitigation delivered via USDA Forest Service and Private Forestry Coop Fire Program. Managed by Montana DNRC.	USDA-Forest Service
Environmental Quality Incentives Program	Provides funding and technical assistance to farmers and ranchers to promote agricultural production and environmental quality as compatible goals.	USDA-NRCS
Fire Management Assistance Program	This program is authorized under Section 420 of the Stafford Act. It allows for the mitigation, management, and control of fires burning on publicly or privately-owned forest or grasslands that threaten destruction that would constitute a major disaster.	FEMA
Fire Prevention and Safety Grants	Support projects that enhance the safety of the public and firefighters from fire and related hazards. The primary goal is to target high-risk populations and reduce injury and prevent death. Eligibility includes fire departments, national, regional, state, and local organizations, Native American tribal organizations, and/or community organizations recognized for their experience and expertise in fire prevention and safety programs and activities. Private non-profit and public organizations are also eligible.	FEMS
Hazardous Fuel Reduction Grants	These grants are for hazardous fuel reduction on private lands to protect communities adjacent to National Forest System Lands where prescribed fire activities are planned. Non-profit organizations, conservation districts, county and municipal governments, fire departments are eligible for this funding.	USDA-Forest Service
National Fire Plan- Wildland Urban Interface Community and Rural Fire Assistance Grants	Assist communities at risk from catastrophic wildland fires by providing grants, technical assistance, and training for community programs that develop local capability, including: Assessment and planning, mitigation activities, and community and homeowner education and action; hazardous fuels reduction activities, including the training, monitoring or maintenance associated with such hazardous fuels reduction activities, on federal land, or on adjacent nonfederal land for activities that mitigate the threat of catastrophic fire to communities and natural resources in high risk areas; and, enhancement of knowledge and fire protection capability of rural fire districts through assistance in education and training, protective clothing and equipment purchase, and mitigation methods on a cost share basis.	U.S. Land Management Agencies

Table 6.2-2. Mitigation Funding Sources

Name	Description	Agency
Secure Rural Schools and Community Self-Determination Act - Title III-County Funds	Counties use funds to perform work under the FireWise Communities program to implement FireWise activities including conducting or assisting with community assessments, helping the community create an action plan, assisting with an annual FireWise Day, assisting with local wildfire mitigation projects, and communicating with the state liaison and the national program to ensure a smooth application process.	USDA Forest Service
Volunteer Fire Assistance Program Grants	The purpose of these grants is to organize, train and equip local firefighters to prevent and suppress wildfires. Communities under 10,000 in population are eligible for the funding. Smaller communities may join together in a group and or county effort to submit an application, even if their combined population is over 10,000.	Montana DNRC
FLOODING		
Map Modernization Program	Provides funding to establish or update floodplain mapping. Managed by Montana DNRC.	FEMA, NFIP
Flood Mitigation Assistance Program	FMA provides funding to assist states and communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the NFIP.	FEMA
Community Assistance Program	Provides funding to States to assist communities in complying with NFIP requirements. Managed by Montana DNRC.	FEMA, NFIP
USACE Section 205 Program	Focuses on solving local flood problems in urban areas, towns and communities. Can provide for local protection from flooding by construction or improvement of flood control works including studies and/or projects, tailored to be site specific, and either structural or non-structural.	USACE
USACE Section 22 Program	Focuses on preparation of comprehensive plans for development, utilization and conservation of water and related land resources. Can provide technical planning assistance in all areas related to water resources development.	USACE
DROUGHT		
Conservation District Grants	Provides funds to increase conservation district employee's hours to assist in planning, securing funding, and implementing programs that improve public outreach, improve conservation district administrative capabilities, and implement conservation plans. $10,000 award amount.	Montana DNRC Conservation Districts Bureau
Crop Insurance	available to agricultural producers, including farmers, ranchers, and others to protect themselves against either the loss of their crops due to natural disasters, such as hail, drought, and floods, or the loss of revenue due to declines in the prices of agricultural commodities.	Federal Crop Insurance Corporation
HAZARDOUS MATERIAL INCIDENTS		
Hazardous Materials Emergency Preparedness Grants.	Grant funds are passed through to local emergency management offices and HazMat teams having functional and active LEPC groups.	USDOT, Pipelines and Hazardous Materials Safety Program
DAM FAILURE		
Dam Safety Program	Provides funding to the State to promote dam safety through emergency action plans and exercises. Managed by Montana DNRC.	FEMA, State
TERRORISM		
U.S. Department of Homeland Security Grants	Enhances ability to prepare, prevent, and respond to terrorist attacks and other disasters. Localities can use grants for planning, equipment, training and exercise needs for critical infrastructure protection equipment and training for first responders.	U.S. Department of Homeland Security

Table 6.2-2. Mitigation Funding Sources

Name	Description	Agency
VARIABLE		
Community Development Block Grant (CDBG)	Eligible activities include community facilities and improvements, roads and infrastructure, housing rehab, including flood & drainage improvements. Post disaster, CDBG funding may be used to acquire a property located in a floodplain that was severely damaged, demolish a structure severely damaged by an earthquake, or repair a public facility severely damaged by a hazard event.	MT Dept. of Commerce
Renewable Resource Development Grant	Projects that conserve, manage, develop or protect Montana's renewable resources are eligible for funding. Public facility projects including drinking water, irrigation rehabilitation, dam repair, soil and water conservation and forest enhancement have received funding through this program.	Montana DNRC, Conservation and Resource Development Division
Rural Development Grants	Provides grants and loans for infrastructure and public safety development and enhancement in rural areas.	USDA, Rural Development
Economic Development Administration Grants and Investments	Invests and provides grants for community construction projects, including mitigation activities.	U.S. Department of Commerce, EDA

Additional funding sources may exist that can be used to advance mitigation priorities. These sources, although not explicitly used for mitigation, can be used to fund certain mitigation activities. In the future, these funding sources will be pursued whenever possible. In some cases, these funding sources have been used in the past and are currently being used in some local communities.

These lists of potential funding sources are not all inclusive. Many opportunities for mitigation funding exist both in the public and private sectors such as foundations and philanthropic organizations. New funding mechanisms are constantly being created while others are drying up. The funding sources targeted will depend on the specific project needing to be financed. Through continuous creativity and research, opportunities for mitigation in Montana will continue.

SECTION 7. PLAN MAINTENANCE PROCEDURES

Update of Montana's MHMP is an opportunity for the State to assess the previous mitigation strategy and evaluate the progress in implementing hazard mitigation actions. This section describes the process for updating the State of Montana MHMP. It also includes a description on how mitigation projects will be monitored and evaluated.

7.1 Process for Evaluating, Monitoring, and Updating the Plan

The State of Montana MHMP is evaluated, monitored and updated on a regular basis. Monitoring involves the process whereby all sections of the Plan are tracked for relevance and implementation over time. Evaluation is the means for assessing the effectiveness of the Plan at achieving the stated goals and objectives. Updating the Plan takes place once every five years, or as necessary due to changing conditions.

The State Hazard Mitigation Officer (SHMO) is responsible for ensuring the MHMP is monitored, evaluated and updated. The SHMO will be assisted by the two Mitigation Coordinators at MT DES in these efforts. Comments and updated information can be submitted at any time to:

Department of Military Affairs
ATTN: DES - State Hazard Mitigation Officer
1956 Mt. Majo Street
P.O. Box 4789
Fort Harrison, Montana 59636-4789

7.1.1 Process Used Over the Past Five Years

Since the 2013 State MHMP was adopted, a new Montana DES website was launched. This website, www.ReadyAndSafe.MT.com is a shared site with the Montana Dept. of Administration and absorbed the www.LetsMitigateMontana.com website that was developed as part of the 2013 State MHMP planning process. The new website is a user-friendly platform that hosts the 2013 State Plan.

The MHM Planning Team did not convene during the past five years to evaluate the 2013 State Plan. The state agencies involved in mitigation coordinated with each other independently on projects and mitigation opportunities; however, the entire group did not meet for the purposes of reviewing the MHMP. As a result, MT DES determined that a permanent Montana Multi-Hazard Mitigation (MHM) Planning Team was needed to formalize the process, and thus, this group was formed and played a large role in updating the State MHMP in 2018.

To initiate the 2018 State MHMP update, a PDM planning grant application was submitted to FEMA and awarded to the State of Montana. The State followed appropriate contracting guidelines to hire a contractor to complete the Plan update. This process was initiated 16 months prior to the expiration date of the current Plan.

MT DES sent a letter to each state agency involved in hazard mitigation requesting a representative be designated to participate in the MHM Planning Team and assist with the 2018 MHMP update.

Federal partners in mitigation and private non-profit groups were also requested to be part of the group. The MHM Planning Team came together seven times during the course of the 2018 MHMP update, as described in *Section 2*. The first meeting included a chapter-by-chapter review of the 2013 State MHMP with emphasis on new hazards, recent hazard events, consequences of climate change, and sources of data for updating the statewide hazard assessment. Subsequent meetings were held as hazard workshops to review and update the 2013 mitigation strategy. These workshops were well attended by the appropriate state agencies and partners with vested interest in the hazard being discussed. Members of the MHM Planning Team contributed information on the progress made by their agency specific to each mitigation action and activities planned over the next five years. A facilitated exchange ensued on how to improve coordination among agencies and how to more effectively integrate mitigation into other state programs. The hazard workshops accomplished what was outlined in the 2013 MHMP as a method to improve the planning process.

In lieu of conducting public meetings around the state (which have been consistently poorly attended during past State MHMP updates), briefings on the 2018 MHMP update were given at functions organized by other groups with interest in hazard mitigation. The MT DES Mitigation Coordinators presented details on the MHMP update at the Association of Montana Floodplain Mangers in Great Falls, a Tribal Transportation Conference in Bozeman, a Wildfire Symposium in Butte, and at DES Coordinator meetings in Miles City, Lewistown, and Butte.

7.1.2 Revised Process for Next Plan Update

The Montana MHM Planning Team will meet annually and review each hazard profile and the mitigation strategies. They will share mitigation opportunities as well document successes. Notes will be placed in the MHMP Appendix for the next update (**Appendix C-5**). The process outlined above for holding mitigation workshops with the MHM Planning Team to update the State Plan and stakeholder briefings at relevant meetings will be repeated during the 2023 MHMP update.

A schedule of updates, as shown in **Table 7.1-1**, demonstrates the aspects of the Plan that will be reviewed following a disaster, updates that are ongoing, completed annually, and every five years.

Table 7.1-1. Schedule of Update Activities

Plan Aspect	Post-Disaster	Ongoing	Annually	Every 5 Years
Planning Team meeting on the past year's activities, problems, and input process	X		X	
Planning process website updates		X		
Organization responsibilities			X	
Integration with other state plans				X
Integration of local plans				X
Economic data				X
Population data				X
Hazard profiles/Addition of new hazards	X			X
Hazard assessment methodology				X
History and disaster declarations	X			X
New study data		X		X
GIS data				X
State structure data				X
Data limitations				X

Table 7.1-1. Schedule of Update Activities

Plan Aspect	Post-Disaster	Ongoing	Annually	Every 5 Years
Qualitative hazard assessment				X
Goals, objectives, and potential actions	X		X	X
Funding sources		X		X
State capabilities			X	
Local capabilities	X			X
Plan and project coordination		X		X
Project prioritization		X		X
Plan evaluation process				X
Project monitoring		X		X

Following the five-year review, a copy of the updated MHMP will be submitted to the FEMA – Region VIII for approval, as required by the Disaster Mitigation Act of 2000. The next State of Montana MHMP Update is currently scheduled for 2023.

7.2 MITIGATION PROJECT MONITORING AND EVALUATION

In addition to updating the information in the State of Montana MHMP, projects and their progress towards achieving goals and objectives will be monitored. Individual projects are monitored by the state agency implementing the project or the grant. Generally, HMGP, FMA and PDM projects are monitored by MT DES, NFIP projects are monitored by the DNRC-Water Resources, National Fire Plan projects are monitored by the DNRC-Forestry Division, and earthquake mitigation projects are monitored by the Dept. of Administration or MBMG. Each agency tracks projects through their own databases and quarterly reports to federal agencies.

7.2.1 Process Used Over the Past Five Years

The Planning Team from the 2013 MHMP update was to meet on a semi-annual basis to work on program integration and implementing the statewide mitigation strategy. In general, this did not happen. State agencies coordinated on a basic level; however, a meeting was not held including the entire group to monitor and evaluate mitigation projects. As part of the 2018 MHMP update, MT DES successfully organized a group of dedicated state agency experts, federal partners and non-government organizations involved in mitigation to become part of a permanent Montana MHM Planning Team. The 2018 mitigation strategy includes input from these agencies on how projects were monitored and evaluated.

Monitoring and evaluation of projects was performed by the SHMO and MT DES Mitigation Coordinators when projects were ranked in conjunction with DR-4074, -4127, -4172, -4198, -4271, and -4275. Prior to submission of mitigation project grant applications, project narratives and benefit-cost ratios were reviewed, and it was determined how many people would be served by each of the project. Based on this qualitative and quantitative review, projects were ranked prior to submission. The SHMO and MT DES Mitigation Coordinators generally monitor the projects in conjunction with the entity who applied for the funding. **Table 7.2-1** presents the methodology used to monitor and close-out projects from the *Montana Mitigation Sub-Grant Monitoring Plan.*

Table 7.2-1. Montana Mitigation Sub-Grant Monitoring Plan

Activity	Task
I. Desk Reviews will be conducted on each Reimbursement Request submitted to Montana Disaster & Emergency Services (DES). To be complete they must include:	
	A. Copies of Invoices from contractors
	B. Copies of checks or warrants used to pay invoices
	C. A written memo or email clearly stating how much the reimbursement request is in dollar amounts
	D. A spreadsheet of "Local Match" accrued to date.
II. Quarterly Reports will also be reviewed for any problems with performance	
III. Site Visits: At a minimum the State will conduct three site visits:	
	A. The initial or "Award" visit
	B. Visit at the halfway point of regular (non-planning) project.
	C. A closeout or "Final Inspection" visit at or near project completion.
IV. Projects considered "High Risk" will be monitored more closely and receive more site visits. These may be identified by triggers or concerns with reimbursement requests, quarterly reports or Previous Years Audit Reports that contain significant deficiencies or major weaknesses. Other factors considered "High Risk" may include:	
	A. Large award amounts exceeding $500,000 Federal Share
	B. Possibility of Scope of Work (SOW) mission creep
	C. High public interest or opposition to the project
	D. Congressional interest in the project
	E. Sub-grantee difficulties with prior grants
	F. Local Match: A large amount or percentage of In-kind or soft match

7.2.2 Revised Process for Next Plan Update

The process for monitoring and evaluating mitigation projects will continue to be a responsibility of the SHMO and MT DES Mitigation Coordinators; however, the Montana MHM Planning Team will be involved going forward. This group of dedicated subject matter experts will meet as-needed, but not less than once per year, to assist with program integration, implement the statewide mitigation strategy, sub-grant development, project scoring and ranking, and to monitor and evaluate projects.

A *Mitigation Project Review Form* has been developed to document mitigation efforts in Montana (**Appendix C-5**). The form will be used to track the implementation of all mitigation activities and projects identified in the mitigation strategy, not just those funded by FEMA and will be the system for reviewing progress on achieving the goals of the mitigation strategy. The form includes the project schedule, agency/office responsible for coordination, and role of the agencies/offices identified as responsible for implementation of actions as well as the criteria and process for evaluating progress. The SHMO will be the "clearinghouse" of all mitigation that is implemented around the state so progress can be measured and accountability maintained. Completed *Mitigation Project Review Forms* will be kept in **Appendix C-5** of this Plan.

Impacts of future hazard events on land use and development will be the driving influence on mitigation priority decisions for the next five years. However, the State MHMP will look outward to the long-term 10- or 20-year planning period when prioritizing mitigation projects.

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State of Montana Multi-Hazard Mitigation Plan 2018 Update

APPENDIX A

Planning Process Documentation

APPENDIX A-1

STAKEHOLDER LIST

APPENDIX A-1				
2018 STATE OF MONTANA MHMP UPDATE				
STAKEHOLDERS LIST				
CATEGORY	**AGENCY/ORGANIZATION**	**FIRST NAME**	**LAST NAME**	**POSITION**
Business	CHS, Inc. Petroleum Terminal	Jay	Martin	
Business	F.H. Stolze Land & Lumber Co.	Brian	Hobday	Forester
Business	Montana Rail Link	Jeff	Adams	
Business	Phillips 66	TJ	Hagemo	
Business	PPL Montana	Gary	Jones	
Business	Pyramid Lumber, Inc.	Gordy	Sanders	Resource Manager
Conservation District	Beaverhead Conservation District	Jaime	Cottom	
Conservation District	Big Horn Conservation District	Gloria	Menke	
Conservation District	Big Sandy Conservation District	Barbie	Martin	
Conservation District	Bitterroot Conservation District	Julie	Ralston	
Conservation District	Blaine Conservation District	Shannon	Sattleen	
Conservation District	Broadwater Conservation District	Denise	Thompson	
Conservation District	Carbon Conservation District	Darlene	Schwend	
Conservation District	Carter Conservation District	Stephanie	Carroll	
Conservation District	Cascade Conservation District	Tenlee	Atchison	
Conservation District	Chouteau Conservation District	Lorna	Krause	
Conservation District	Custer Conservation District	Carol	Watts	
Conservation District	Daniels Conservation District	Mike	Bjarko	
Conservation District	Dawson Conservation District	Nikki	Wesolek	
Conservation District	Deer Lodge Valley	Susie	Johnson	
Conservation District	Eastern Sanders	Patsy	Meredith	
Conservation District	Fergus Conservation District	Shonny	Nordlund	
Conservation District	Flathead Conservation District	Ginger	Kauffman	
Conservation District	Gallatin Conservation District	Mary	Hendrix	
Conservation District	Garfield Conservation District	Dusty	Eike	
Conservation District	Glacier Conservation District	Belinda	Knapton	
Conservation District	Granite Conservation District	Karen	Petersen	
Conservation District	Green Mountain Conservation District	Leona	Gollen	
Conservation District	Hill Conservation District	Emily	Mayer	
Conservation District	Jefferson Conservation District	Kris	Hugulet	
Conservation District	Judith Basin Conservation District	Teresa	Wihelms	
Conservation District	Lake Conservation District	Heidi	Fleury	
Conservation District	Lewis and Clark Conservation District	Chris	Evans	
Conservation District	Liberty Conservation District	Gail	Cicon	
Conservation District	Lincoln Conservation District	Becky	Limhe	
Conservation District	Little Beaver Conservation District	Sarafina	Claeys	
Conservation District	Lower Musselshell Conservation District	Donna	Pedrazzi	
Conservation District	Madison Conservation District			
Conservation District	McCone Conservation District	Emily	Heide	
Conservation District	Meagher Conservation District	Lacey	Rasmussen	
Conservation District	Mile High Conservation District	Kris	Hugulet	
Conservation District	Mineral Conservation District	Charlee	Thompson	
Conservation District	Missoula Conservation District	Monica	Perez-Watkins	
Conservation District	North Powell Conservation District	Susie	Johnson	
Conservation District	Park Conservation District	Jessica	Mayo	
Conservation District	Petroleum Conservation District	Carie	Hess	
Conservation District	Phillips Conservation District	Jenifer	Anderson	
Conservation District	Pondera Conservation District	Lorrie	Grosfield	
Conservation District	Powder River Conservation District	Elizabeth	Riter	
Conservation District	Prairie Conservation District	Sandy	Brown	
Conservation District	Richland Conservation District	Julie	Goss	
Conservation District	Roosevelt Conservation District	Tifney	Kempton	
Conservation District	Rosebud Conservation District	Bobbi	Vannattan	
Conservation District	Ruby Valley Conservation District	Shirley	Galovic	
Conservation District	Sheridan Conservation District	Taylor	Fjeldheim	
Conservation District	Stillwater Conservation District	Tanya	Lester	
Conservation District	Sweet Grass Conservation District	Guelda	Halverson	
Conservation District	Teton Conservation District	Nancy	Moorhouse	
Conservation District	Toole Conservation District	Nea	Rice	
Conservation District	Treasure Conservation District	Angie	Stahl	
Conservation District	Upper Musselshell Conservation District	Cheryl	Miller	
Conservation District	Valley Conservation District	Penny	Shipp	
Conservation District	Wibaux Conservation District	Renee	Nelson	
Conservation District	Yellowstone Conservation District	LaVerne	Ivie	
DES District No. 1	Anaconda-Deer Lodge County OES	Bill	Converse	Emergency Manager
DES District No. 1	Anaconda-Deer Lodge County OES	Marty	Mavrinac	Deputy Emergency Manager

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2018 STATE OF MONTANA MHMP UPDATE				
STAKEHOLDERS LIST				
CATEGORY	**AGENCY/ORGANIZATION**	**FIRST NAME**	**LAST NAME**	**POSITION**
DES District No. 1	Butte / Silver Bow County OEM	Dan	Denehy	Emergency Manager
DES District No. 1	Confederated Salish and Kootenai Tribes	Dale	Nelson	Emergency Manager
DES District No. 1	Flathead County OES	Lincoln	Chutes	Deputy Emergency Manager
DES District No. 1	Flathead County OES	Rick	Sacca	Emergency Manager
DES District No. 1	Granite County OES	Rick	Day	Emergency Manager
DES District No. 1	Lake County OEM	Steve	Stanley	Emergency Manager
DES District No. 1	Lincoln County EMA	Victor L.	White	Emergency Manager
DES District No. 1	Mineral County OEM	Bob	Torrey	Emergency Manager
DES District No. 1	Missoula County OEM	Adriane	Beck	Emergency Manager
DES District No. 1	Powell County OEM	Ruth	Koehler	Emergency Manager
DES District No. 1	Ravalli County OEM	Al	Cristaldi	Deputy Emergency Manager
DES District No. 1	Ravalli County OEM	Erik	Hoover	Emergency Manager
DES District No. 1	Sanders County OEM	Bill	Naegeli	Emergency Manager
DES District No. 2	Blackfeet Tribe	Robert	Desrosier	Emergency Manager
DES District No. 2	Blackfeet Tribe	Nora	Kennedy	Deputy Emergency Manager
DES District No. 2	Blaine County DES	Mitch	Haider	Deputy Emergency Manager
DES District No. 2	Blaine County DES	Laurie	Huestis	Other
DES District No. 2	Blaine County DES	Haley	Velk	Emergency Manager
DES District No. 2	Cascade County DES			Emergency Manager
DES District No. 2	Chouteau County DES	Debbie	Gessaman	Emergency Manager
DES District No. 2	City of Great Falls OEM	Dave	Nordel	Deputy Emergency Manager
DES District No. 2	Fort Belknap Indian Community	Buddy	Horn	Emergency Manager
DES District No. 2	Glacier County DES	Charles	Farmer	Emergency Manager
DES District No. 2	Glacier County DES	Debbie	Farmer	Deputy Emergency Manager
DES District No. 2	Glacier County DES	Patrick	Stranad	Deputy Emergency Manager
DES District No. 2	Hill County OEM	Dave	Sheppard	Emergency Manager
DES District No. 2	Liberty/Toole County DES	Darrel	Stafford	Emergency Manager
DES District No. 2	Pondera County DES	Leann	Hermance	Emergency Manager
DES District No. 2	Rocky Boys Reservation/Chippewa Cree Tribe	Richard	Macdonald	Deputy Emergency Manager
DES District No. 2	Rocky Boys Reservation/Chippewa Cree Tribe	Larry	Morsette	Emergency Manager
DES District No. 2	Rocky Boys Reservation/Chippewa Cree Tribe	Janet	Runnion	Deputy Emergency Manager
DES District No. 2	Teton County DES	Florence	Anderson	Deputy Emergency Manager
DES District No. 2	Teton County DES	Debra	Coverdell	Emergency Manager
DES District No. 3	Beaverhead County DES	Tom	Wagenknecht	Emergency Manager
DES District No. 3	Broadwater County DES	Nicole	Brown	Deputy Emergency Manager
DES District No. 3	Broadwater County DES	Mike	Koenke	Emergency Manager
DES District No. 3	Broadwater County DES	Julie	Lethert	Deputy Emergency Manager
DES District No. 3	Gallatin County Emergency Management	Patrick	Lonergan	Emergency Manager
DES District No. 3	Jefferson County DES	Doug	Dodge	Emergency Manager
DES District No. 3	Lewis and Clark County DES	Brett	Lloyd	Deputy Emergency Manager
DES District No. 3	Lewis and Clark County DES	Pat	McKelvey	Deputy Emergency Manager
DES District No. 3	Lewis and Clark County DES	Paul	Spengler	Emergency Manager
DES District No. 3	Madison County DES	Lynda	Holt	Deputy Emergency Manager
DES District No. 3	Madison County DES	Dustin	Tetrault	Emergency Manager
DES District No. 3	Meagher County DES	Richard E	Seidlitz	Emergency Manager
DES District No. 3	Park County DES	Greg	Coleman	Emergency Manager
DES District No. 3	Sweet Grass County DES	Brooke	Osen	Emergency Manager
DES District No. 4	Carter County DES	Georgia	Bruski	Emergency Manager
DES District No. 4	Carter County DES	Raquel	Williams	Deputy Emergency Manager
DES District No. 4	Custer County DES	Bill	Ellis	Deputy Emergency Manager
DES District No. 4	Custer County DES	Bud	Peterson	Emergency Manager
DES District No. 4	Dawson County DES	Mary Jo	Gehnert	Emergency Manager
DES District No. 4	Dawson County DES	Tim	Mort	Deputy Emergency Manager
DES District No. 4	Fallon County DES	Dale	Butori	Deputy Emergency Manager
DES District No. 4	Fallon County DES	Chuck	Lee	Emergency Manager
DES District No. 4	Garfield County	Dale	Billing	Emergency Manager
DES District No. 4	McCone County DES	Erin	Ketchum	Emergency Manager
DES District No. 4	McCone County DES	Sandra	Larson	Deputy Emergency Manager
DES District No. 4	Powder River County DES	Allen	Drane	Deputy Emergency Manager
DES District No. 4	Powder River County DES	Becky	McEuen	Emergency Manager
DES District No. 4	Prairie County DES	John	Pisk	Emergency Manager
DES District No. 4	Richland County DES	Debra	Gilbert	Emergency Manager
DES District No. 4	Richland County DES	Robert	Gilbert	Deputy Emergency Manager
DES District No. 4	Wibaux County	Frank V.	Datta	Emergency Manager
DES District No. 5	Big Horn County DES	Ed	Auker	Emergency Manager
DES District No. 5	Big Horn County DES	Matt	Redden	Deputy Emergency Manager

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2018 STATE OF MONTANA MHMP UPDATE				
STAKEHOLDERS LIST				
CATEGORY	**AGENCY/ORGANIZATION**	**FIRST NAME**	**LAST NAME**	**POSITION**
DES District No. 5	Carbon County DES	Tom	Kohley	Emergency Manager
DES District No. 5	Carbon County DES	Quentin	Thompson	Deputy Emergency Manager
DES District No. 5	Crow Agency	Vernon	Hill	Deputy Emergency Manager
DES District No. 5	Crow Agency	Laura	Rides Horse	Emergency Manager
DES District No. 5	Golden Valley County Civil Defense	Susan	Cougill	Deputy Emergency Manager
DES District No. 5	Golden Valley County Civil Defense	Robert	Pallas	Emergency Manager
DES District No. 5	Musselshell County DES	Adam	Carlson	Emergency Manager
DES District No. 5	Northern Cheyenne	Ron	Spang	Emergency Manager
DES District No. 5	Rosebud County DES	Pat	Dennis	Deputy Emergency Manager
DES District No. 5	Rosebud County DES	Rodney	Dresbach	Deputy Emergency Manager
DES District No. 5	Rosebud County DES	Keith	Raymond	Emergency Manager
DES District No. 5	Stillwater County DES	Carole	Arkell	Emergency Manager
DES District No. 5	Stillwater County DES	Bill	Pronovost	Deputy Emergency Manager
DES District No. 5	Treasure County DES			Emergency Manager
DES District No. 5	Wheatland County DES	Randy	Cameron	Emergency Manager
DES District No. 5	Wheatland County DES	David	Jones	Deputy Emergency Manager
DES District No. 5	Yellowstone County DES	Brad	Shoemaker	Emergency Manager
DES District No. 6	Daniels County DES	Mary	Nyhus	Emergency Manager
DES District No. 6	Fergus County DES	Pam	Vosen	Emergency Manager
DES District No. 6	Fort Peck Assiniboine and Sioux Tribes	Russell	Boxer	Emergency Manager
DES District No. 6	Fort Peck Assiniboine and Sioux Tribes	Courage	Crawford	Deputy Emergency Manager
DES District No. 6	Judith Basin County DES	Nathan	Hammontree	Deputy Emergency Manager
DES District No. 6	Judith Basin County DES	Mike	Howell	Emergency Manager
DES District No. 6	Petroleum County DES	Bill	Cassell	Emergency Manager
DES District No. 6	Phillips County DES	Scott	Moran	Deputy Emergency Manager
DES District No. 6	Phillips County DES	Greg	Speer	Emergency Manager
DES District No. 6	Roosevelt County DES	Lee	Allmer	Deputy Emergency Manager
DES District No. 6	Roosevelt County DES	Lindsey	McNabb	Emergency Manager
DES District No. 6	Sheridan County DES	Curtis	Petrik	Emergency Manager
DES District No. 6	Valley County DES	Richard	Seiler	Emergency Manager
Federal Agency	Air Force EPLO	Col. Donna	Loomis	Emergency Manager
Federal Agency	Army Reserve EPLO	Sgt. Keith	Hammer	Deputy Emergency Manager
Federal Agency	Army Reserve EPLO	Col. Dave	Kontny	Emergency Manager
Federal Agency	BLM	Chris	Barth	Fire Management
Federal Agency	BLM	Mike	Dannenberg	Fire Management
Federal Agency	BLM	Karly	DeMars	Fire Management
Federal Agency	BLM	Terina	Goicoechea	Fire Management
Federal Agency	BLM	Michael J	Montgomery	Dam Safety
Federal Agency	Bureau of Reclamation	Tim	Felchle	Drought Committee Member
Federal Agency	Bureau of Reclamation	Tom	Sawatzke	Montana Area Office
Federal Agency	FEMA	Julie	Baxter	Community Planner
Federal Agency	FEMA	Donna	Boreck	Silver Jacket Committee Member
Federal Agency	FEMA	Marijo	Brandy	Silver Jacket Committee Member
Federal Agency	Libby Dam Project	Greg	Hoffman	Deputy Emergency Manager
Federal Agency	Malmstrom AFB	Brian	Wilkinson	Emergency Manager
Federal Agency	National Weather Service	Donald	Britton	
Federal Agency	National Weather Service - Billings	Tom	Frieders	Warning Coordination Meteorologist
Federal Agency	National Weather Service - Glasgow	Tanja	Fransen	Warning Coordination Meteorologist
Federal Agency	National Weather Service - Great Falls	Megan	Syner	Warning Coordination Meteorologist
Federal Agency	National Weather Service - Missoula	Marty	Whitmore	Warning Coordination Meteorologist
Federal Agency	U.S. Geological Survey	Kathy	Chase	Hydrologist
Federal Agency	U.S. Geological Survey	Lance	Clampitt	Coordinator, Geologic and Hazards Mapping,Silver Jacket Committee Member
Federal Agency	USACE	Randall	Behm	Floodplain Management, Silver Jacket Committee Member
Federal Agency	USACE	Paul	Cooke	Floodplain Coordinator
Federal Agency	USACE	Patricia	Gilbert	Fort Peck Dam
Federal Agency	USACE	Tony	Krause	Silver Jacket Committee Member
Federal Agency	USACE	Todd	Tillinger	Silver Jacket Committee Member
Federal Agency	USDA Forest Service	Kathy	Bushnell	Public Information Officer
Federal Agency	USDA Forest Service, Beaverhead-Deerlodge NF	Mike	Goicoechea	Fire Management Officer
Federal Agency	USDA Forest Service, Bitteroot National Forest			Fire Management Officer
Federal Agency	USDA Forest Service, Custer National Forest	Scott	Schuster	Fire Management Officer
Federal Agency	USDA Forest Service, Flathead National Forest	Rick	Connell	Fire Management Officer
Federal Agency	USDA Forest Service, Gallatin National Forest	Mike	Gagen	Fire Management Officer

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2018 STATE OF MONTANA MHMP UPDATE				
STAKEHOLDERS LIST				
CATEGORY	**AGENCY/ORGANIZATION**	**FIRST NAME**	**LAST NAME**	**POSITION**
Federal Agency	USDA Forest Service, Helena National Forest	Marty	Mitzkus	Region 1, Fire Management Officer
Federal Agency	USDA Forest Service, Kootenai National Forest			Fire Management Officer
Federal Agency	USDA Forest Service, Lewis & Clark National Forest			Fire Management Officer
Federal Agency	USDA, Natural Resource Conservation Service	Brian	Domonkos	Hydrologist
Federal Agency	USDA, Natural Resource Conservation Service	Lucas	Zukiewicz	Natural Resource Specialist
Federal Agency	USFWS	Jeff	Berglund	Silver Jacket Committee Member
Federal Agency	USFWS	Wayne	Kasworm	Silver Jacket Committee Member
Local Government	Anaconda-Deer Lodge County	Chas	Ariss	Floodplain Administrator
Local Government	Bearcreek, Town of	Dean	Webb	Floodplain Administrator
Local Government	Beaverhead County	Robert	Macioroski	Floodplain Administrator
Local Government	Belgrade, City of	Jason	Karp	Floodplain Administrator
Local Government	Belt, Town of	Lynn	Schilling	Region 1, C201:L201Fire Management Officer
Local Government	Big Horn County	CRAIG	TAFT	Floodplain Administrator
Local Government	Billings, City of	Brian	Anderson	Floodplain Administrator
Local Government	Blaine County, City of Chinook, City of Harlem	Shawn	Higley	Floodplain Administrator
Local Government	Boulder, City of	Diana	Van Haecke	Floodplain Administrator
Local Government	Bozeman, City of	Brian	Heaston	Floodplain Administrator
Local Government	Bozeman, City of	Richard	Hixson	Floodplain Administrator
Local Government	Broadwater County, City of Townsend	Shawn	Higley	Floodplain Administrator
Local Government	Butte-Silver Bow Planning Department	Lori	Casey	Floodplain Administrator
Local Government	Carbon County	Josh	Juarez	Floodplain Administrator
Local Government	Cascade County	Don	Simms	Floodplain Administrator
Local Government	Cascade, Town of	Jodi	Campbell	Floodplain Administrator
Local Government	Chester, City of	John	Kleinsasser	Floodplain Administrator
Local Government	Circle, City of	Tara	Thoeny	Floodplain Administrator
Local Government	Columbia Falls, City of	Susan	Niccosia	Floodplain Administrator
Local Government	Columbus, City of	Dennis	Holten	Floodplain Administrator
Local Government	Conrad, City of	John	Shevlin	Floodplain Administrator
Local Government	Culbertson, City of	KT	Northington	Floodplain Administrator
Local Government	Custer County	Bill	Ellis	Floodplain Administrator
Local Government	Cut Bank, Town of	Jim	Yeagley	Floodplain Administrator
Local Government	Darby, Town of	Nate	Robbins	Floodplain Administrator
Local Government	Dawson County	Forrest	Sanderson	Floodplain Administrator
Local Government	Deer Lodge, City of	Brian	Bender	Floodplain Administrator
Local Government	Dillon, City of	Todd	Hazelbaker	Floodplain Administrator
Local Government	Dodson, Town of	Teresa	Coleman	Floodplain Administrator
Local Government	Drummond, Town of	Cary	McLure	Floodplain Administrator
Local Government	East Helena, City of	Scott	St Claire	Floodplain Administrator
Local Government	Ekalaka, Town of	Lisa	Jourdan	Floodplain Administrator
Local Government	Ennis, Town of	Jonathan	Weaver	Floodplain Administrator
Local Government	Fairview, Town of	Faye	Carlson	Floodplain Administrator
Local Government	Fallon County, City of Baker	Mary	Grube	Floodplain Administrator
Local Government	Fergus County, Town of Denton, Town of Moore	Pamela Jo	Vosen	Floodplain Administrator
Local Government	Flathead County	Marc	Mussman	Floodplain Administrator
Local Government	Forsyth, City of	Richard	Thompson	Floodplain Administrator
Local Government	Fort Belkanp Indian Reservation	Dennis	Longknife	Floodplain Administrator
Local Government	Fort Benton	Richard	Morris	Floodplain Administrator
Local Government	Fromberg, Town of	Richard	Anderson	Floodplain Administrator
Local Government	Gallatin County	Sean	O'Callaghan	Floodplain Administrator
Local Government	Gallatin County	Chris	Scott	Floodplain Administrator
Local Government	Garfield County, Town of Jordan	Eric	Miller	Floodplain Administrator
Local Government	Glacier County	Ron	Andersen	Floodplain Administrator
Local Government	Glasgow, City of	Dan	Carney	Floodplain Administrator
Local Government	Glendive, City of	Jack	Rice	Floodplain Administrator
Local Government	Golden Valley County, Town of Ryegate	Page	Dringman	Floodplain Administrator
Local Government	Granite County	Linda	Bouck	Floodplain Administrator
Local Government	Great Falls, City of	Charlie	Sheets	Floodplain Administrator
Local Government	Hamilton, City of	Land	Hansen	Floodplain Administrator
Local Government	Hardin, City of	Joe	Connolly	Floodplain Administrator
Local Government	Harlowton, City of	Jeffery	Sell	Floodplain Administrator
Local Government	Helena, City of	Sharon	Haugen	Floodplain Administrator
Local Government	Hill County, City of Havre	Clay	Vincent	Floodplain Administrator
Local Government	Hingham, Town of	Ray	Lipp	Floodplain Administrator
Local Government	Hot Springs, Town of	Jerry	Kontos	Floodplain Administrator

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2018 STATE OF MONTANA MHMP UPDATE				
STAKEHOLDERS LIST				
CATEGORY	**AGENCY/ORGANIZATION**	**FIRST NAME**	**LAST NAME**	**POSITION**
Local Government	Jefferson County	Megan	Bullock	Floodplain Administrator
Local Government	Joliet, Town of	Amber	Foechterle	Floodplain Administrator
Local Government	Kalispell, City of	PJ	Sorensen	Floodplain Administrator
Local Government	Lake County	Jacob	Feistner	Floodplain Administrator
Local Government	Laurel, City of	Noel	Eaton	Floodplain Administrator
Local Government	Lavina, Town of	David	Kojetin	Floodplain Administrator
Local Government	Lewis and Clark County	Paul	Spengler	Floodplain Administrator
Local Government	Lewistown, City of	Holly	Phelps	Floodplain Administrator
Local Government	Liberty County	Jim	Ghekiere	Floodplain Administrator
Local Government	Lima, City of	Carla	Weidinger	Floodplain Administrator
Local Government	Lincoln County, Town of Eureka, City of Libby, City of Troy	Jake	Mertes	Floodplain Administrator
Local Government	Livingston, City of	Jim	Woodhull	Floodplain Administrator
Local Government	Lodge Grass, Town of	Joe	Lovato	Floodplain Administrator
Local Government	Madison County	Charity	Fechter	Floodplain Administrator
Local Government	Malta, City of	Lorie	Bond	Floodplain Administrator
Local Government	Meagher County	Brian	Clifton	Floodplain Administrator
Local Government	Miles City, City of	Samantha	Malenovsky	Floodplain Administrator
Local Government	Mineral County, City of Superior	Tim	Read	Floodplain Administrator
Local Government	Missoula County	Anita	McNamara	Floodplain Administrator
Local Government	Missoula, City of	Todd	Klietz	Floodplain Administrator
Local Government	Musselshell County	Adam	Carlson	Floodplain Administrator
Local Government	Nashua, Town of	Bobbi	Skyberg	Floodplain Administrator
Local Government	Neihart, Town of	Shawn	Higley	Floodplain Administrator
Local Government	Park County, Town of Clyde Park	Lawson	Moorman	Floodplain Administrator
Local Government	Philipsburg, Town of	Brett	Hamilton	Floodplain Administrator
Local Government	Phillips County	Casey	Burke	Floodplain Administrator
Local Government	Plains, Town of	Greg	Eitelberg	Floodplain Administrator
Local Government	Polson, City of	David	Simons	Floodplain Administrator
Local Government	Pondera County	Leann	Hermance	Floodplain Administrator
Local Government	Powder River County, Town of Broadus	Raymond	Ragsdale	Floodplain Administrator
Local Government	Powell County	Carla	Hamming	Floodplain Administrator
Local Government	Ravalli County	Brian	Wilkinson	Floodplain Administrator
Local Government	Red Lodge, City of	Peter	Italiano	Floodplain Administrator
Local Government	Richland County	Adam	Smith	Floodplain Administrator
Local Government	Ronan, City of	Dan	Miller	Floodplain Administrator
Local Government	Roosevelt County	Lindsey	McNabb	Floodplain Administrator
Local Government	Rosebud County	John	Marks	Floodplain Administrator
Local Government	Roundup, City of	Bruce	Holland	Floodplain Administrator
Local Government	Roundup, City of	Sandra	Jones	Floodplain Administrator
Local Government	Saco, Town of	Clint	Simpson	Floodplain Administrator
Local Government	Sanders County	Kathy	Maudrone	Floodplain Administrator
Local Government	Shelby, City of	Jim	Yeagley	Floodplain Administrator
Local Government	Sheridan, Town of	Tom	Shaffer	Floodplain Administrator
Local Government	Sidney, City of	Jeffery	Hintz	Floodplain Administrator
Local Government	St. Ignatius, Town of	Scott	Morton	Floodplain Administrator
Local Government	Stevensville, Town of	Dennis	Monroe	Floodplain Administrator
Local Government	Stillwater County	Stephanie	Moodry	Floodplain Administrator
Local Government	Sweet Grass County, City of Big Timber	Page	Dringman	Floodplain Administrator
Local Government	Teton County, City of Choteau	Paul	Wick	Floodplain Administrator
Local Government	Three Forks, City of	Kelly	Smith	Floodplain Administrator
Local Government	Toole County	Darrell	Stafford	Floodplain Administrator
Local Government	Treasure County	County	Commissioners	Floodplain Administrator
Local Government	Twin Bridges, Town of	Sam	Novich	Floodplain Administrator
Local Government	Valier, Town of	Josh	Clifford	Floodplain Administrator
Local Government	Valley Counthy	Cam	Shipp	Floodplain Administrator
Local Government	Wheatland County	Paige	Dringman	Floodplain Administrator
Local Government	White Sulphur Springs, City of	Julian	Theriault	Floodplain Administrator
Local Government	Whitefish, City of	Bailey	Minnich	Floodplain Administrator
Local Government	Whitehall, Town of	Summer	Fellows	Floodplain Administrator
Local Government	Wibaux, Town of	Debbie	Zinda	Floodplain Administrator
Local Government	Wolf Point, City of	Richard	Isle	Floodplain Administrator
Local Government	Yellowstone County	Tim	Miller	Floodplain Administrator
Local Government	Yellowstone County	Darin	Swenson	Floodplain Administrator
Local Government	Yellowstone County	Mike	Black	Floodplain Administrator
Local Organization	American Red Cross of Montana	Jacqueline	Baldwin-LeClair	Disaster Program Specialist Missoula

APPENDIX A-1				
2018 STATE OF MONTANA MHMP UPDATE				
STAKEHOLDERS LIST				
CATEGORY	**AGENCY/ORGANIZATION**	**FIRST NAME**	**LAST NAME**	**POSITION**
Local Organization	American Red Cross of Montana	Abbra	Firman	Disaster Program Manager Billings
Local Organization	American Red Cross of Montana	Ted	Koenig	Disaster Program Manager Kalispell
Local Organization	American Red Cross of Montana	Colleen	Tone	Regional Disaster Officer
Local Organization	Association of Rural Electric Coops	Gary	Wiens	
Local Organization	Beartooth RC&D	Chris	Meheus	Fuels Program Director
Local Organization	Big Sky FireSafe Council	Steve	Schumacher	
Local Organization	Bitter Root RC&D	Pam	Gouse	Office Manager
Local Organization	Central Montana RC&D	Monty	Seely	Coordinator
Local Organization	Clearwater Resource Council	Ken	Barber	Seeley Swan Mitigation Task Force
Local Organization	FireSafe Montana	Byron	Bonney	Board Member, Florence
Local Organization	FireSafe Montana	Ray	Prill	Wildfire Specialist
Local Organization	FireSafe Montana	Rocky	Infanger	Board Member, Wolf Creek
Local Organization	FireSafe Montana	Pat	McKelvey	
Local Organization	FireSafe Montana	Greg	McNally	Board Member, Helena
Local Organization	Glacier Fire Safe Council	Bruce	Running Crane	
Local Organization	Lincoln County Fire Safe Council	Ed	Levert	Lincoln Co. Forester
Local Organization	MT Assoc. of Conservation Districts	Elena	Evans	Executive Director
Local Organization	MT Assoc. of County DES Coordinators	Paul	Spengler	Lewis & Clark Co.
Local Organization	North Central Montana RC&D	LaDonna	Grotbo	Administrator
Local Organization	Northern Rockies RC&D			
Local Organization	Park County FireSafe Coalition	Greg	Coleman	
Local Organization	Tri-County FireSafe Council			
Local Organization	Whitefish Area FireSafe Council			
State Agency	Governor's Office	Mike	Cooney	Lt. Governor, Drought Committee Member
State Agency	MT Air National Guard	SMSgt. Stephen	Shovlin	Emergency Manager
State Agency	MT Bureau of Mines and Geology	Mike	Stickney	Earthquake Studies Office
State Agency	MT Climate Office	Kevin	Hyde	Mesonet Coordinator
State Agency	MT Dept. Livestock	Emily	Kaleczyc	Brucellosis Program Spec.
State Agency	MT Dept. Natural Resources & Conservation	Michael	Downey	Water Management Bureau
State Agency	MT Dept. of Administration, A&E	Jim	Whaley	Architecture & Engineering
State Agency	MT Dept. of Administration, GSA	Josh	LaFromboise	Design & Construction Bureau
State Agency	MT Dept. of Administration, ITSD	Dawn	Pizzini	State Continuity & Emergency Management Officer
State Agency	MT Dept. of Administration, Risk Management	Aric	Curtiss	Property Loss Prevention Specialist
State Agency	MT Dept. of Administration, Risk Management	Brett E.	Dahl	Administrator
State Agency	MT Dept. of Agriculture	Kim	Mangold	
State Agency	MT Dept. of Commerce	Adebowale	Awolola	
State Agency	MT Dept. of Commerce	Bruce	Brensdal	Housing Division Administrator, Drought Committee Member
State Agency	MT Dept. of Commerce	Taylor	Crowl	
State Agency	MT Dept. of Commerce	Maria	Jackson	
State Agency	MT Dept. of Commerce	Galen	Steffens	
State Agency	MT Dept. of Commerce, Community Development	Jennifer	Olson	Director
State Agency	MT Dept. of Commerce, Heritage Commission	Elijah	Allen	Operations Director
State Agency	MT Dept. of Environmental Quality	Bob	Habeck	
State Agency	MT Dept. of Environmental Quality	Liz	Ulrich	Air Quality Bureau
State Agency	MT Dept. of Military Affairs, National Guard	Jeremy	Hedges	
State Agency	MT Dept. of Natural Resources and Conservation	John	Tubbs	Director, Drought Committee Member
State Agency	MT DNRC, Forestry, Fire Preparedness	Bruce	Suenram	Deputy Chief Preparedness
State Agency	MT DNRC, Forestry, Fire Preparedness	Crystal	Beckman	Fire Prevention Specialist
State Agency	MT MT DNRC, Water Resources	Paul	Azevedo	Resource Conservation Manager, Silver Jacket Committee Member
State Agency	MT MT DNRC, Water Resources	Nicole	Decker	Civil Engeering Specialist
State Agency	MT MT DNRC, Water Resources	Chadrick	Hill	Dam Safety Program
State Agency	MT MT DNRC, Water Resources	Sam	Johnson	Billings Regional Engineer
State Agency	MT MT DNRC, Water Resources	Michele	Lemieux	Dam Safety Program
State Agency	MT MT DNRC, Water Resources	Walter	Ludlow	State Floodplain Engineer
State Agency	MT MT DNRC, Water Resources	Tiffany	Lyden	Mapping Outreach Specialist
State Agency	MT MT DNRC, Water Resources	Mike	Mahowald	Havre Regional Engineer
State Agency	MT MT DNRC, Water Resources	Worby	McNamee	Floodplain Specialist
State Agency	MT MT DNRC, Water Resources	Michelle	McNamee	Floodplain Specialist
State Agency	MT MT DNRC, Water Resources	Marc	Pitman	Kalispell Regional Engineer
State Agency	MT MT DNRC, Water Resources	Larry	Schock	Missoula Regional Engineer
State Agency	MT MT DNRC, Water Resources	Ann	Schwend	Drought Coordinator

APPENDIX A-1				
2018 STATE OF MONTANA MHMP UPDATE				
STAKEHOLDERS LIST				
CATEGORY	**AGENCY/ORGANIZATION**	**FIRST NAME**	**LAST NAME**	**POSITION**
State Agency	MT MT DNRC, Water Resources	Traci	Sears	NFIP Specialist
State Agency	MT MT DNRC, Water Resources	Steve	Story	Water Operations Bureau Chief
State Agency	MT MT DNRC, Water Resources	Sterling	Sundheim	Lewistown Regional Engineer
State Agency	MT Dept. of Transportation	Jeffery	Ebert	Butte District
State Agency	MT Dept. of Transportation	Shane	Mintz	Glendive District
State Agency	MT Dept. of Transportation	Stefan	Streeter	Billings District
State Agency	MT Dept. of Transportation	Ed	Toavs	Missoula District
State Agency	MT Dept. of Transportation	Doug	Wilmot	Great Falls District
State Agency	MT Dept. Public Health & Human Services	Jim	Murphy	Supervisor
State Agency	MT Dept. Transportation	Walt	Kerttula	
State Agency	MT Disaster and Emergency Services	Delila	Bruno	Division Administrator
State Agency	MT Disaster and Emergency Services	Rachel	Catron	SHMP Assistant
State Agency	MT Disaster and Emergency Services	Bob	Fry	District No. 3 Representative
State Agency	MT Disaster and Emergency Services	Jake	Ganieany	Response/Recovery Branch Manager
State Agency	MT Disaster and Emergency Services	Jeff	Gates	District No. 4 Representative
State Agency	MT Disaster and Emergency Services	Ed	Greiberis	Exercise Coordinator
State Agency	MT Disaster and Emergency Services	Mark	Gruener	District No. 6 Representative
State Agency	MT Disaster and Emergency Services	Charlie	Hanson	District No. 5 Representative
State Agency	MT Disaster and Emergency Services	Burke	Honzel	Response & Recovery Branch Manager, Drought Committee Member
State Agency	MT Disaster and Emergency Services	Ryan	Lee	
State Agency	MT Disaster and Emergency Services	Tam	Kolar	Logistics
State Agency	MT Disaster and Emergency Services	Sheri	Medow	Public & Ind Assist Coordinator
State Agency	MT Disaster and Emergency Services	J Lee	Okeson	Planning Coordinator
State Agency	MT Disaster and Emergency Services	Keith	Simendinger	Response Coordinator
State Agency	MT Disaster and Emergency Services	Martha Jo	Smith	District No. 1 Representative
State Agency	MT Disaster and Emergency Services	Tim	Thennis	Recovery Bureau Chief
State Agency	MT Disaster and Emergency Services	Nadene	Wadsworth	SHMO
State Agency	MT Disaster and Emergency Services	Joey	Zahara	District No. 2 Representative
State Agency	MT Fish, Wildlife & Parks	Charlie	Sperry	Responsive Management Unit Supervisor
State Agency	MT Fish, Wildlife & Parks	Renee	Lemon	Planner
State Agency	MT Historical Society	Bruce	Whittenberg	Director
State Agency	MT State Historic Preservation Office	Stan	Wilmoth	State Archaeologist
State Agency	MT State Library	Troy	Blandford	GIS Analyst -Water Info System Manager, Silver Jacket Committee Member
State Agency	MT State Library, NRIS			
Universities	MSU Billings	Jason	McGimpsey	Facilities Services Director
Universities	MSU-Bozeman, Safety & Risk Management	Dan	Archer	Property Loss Prevention Specialist
Universities	MSU-Great Falls College	Susan	Wolff	Dean/CEO
Universities	MSU-Northern	Dan	Ulmen	Director of Facilities
Universities	MT Tech	Marilyn	Cameron	Office of Environmental Health & Safety
Universities	UM-Helena College	Russ	Fillner	Asst. Dean, Fiscal & Plant
Universities	UM-Western	Nicole	Hazelbaker	Dean of Students
Universities	University of Montana	Kevin	Krebsbach	Directory, Planning and Construction
Utility	Beartooth Electric Cooperative	Jim	Webb	General Manager
Utility	Big Flat Electric Cooperative	Gretchen	Boardman	Manager
Utility	Big Horn County Electric			
Utility	Fall River Rural Electric Co-op	Bryan	Casey	Manager
Utility	Fergus Electric Coop	Scott	Sweeney	Manager
Utility	Flathead Electric Coop	Mark	Johnson	Manager
Utility	Glacier Electric Cooperative	Matthew	Hudson	Manager
Utility	Goldenwest Electric Cooperative	John	Sokoloski	Manager
Utility	Hill County Electric	CRAIG	Gates	Manager
Utility	Lincoln Electric Cooperative	Ray	Ellis	Manager
Utility	Lower Yellowstone Rural Electric Co-op	Jason	Brothen	Manager
Utility	Marias River Electric Cooperative	Kris	Ingenthron	
Utility	McCone Electric Cooperative	Mike	Hoy	Manager
Utility	Mid-Yellowstone Electric	Jason	Brothen	Manager
Utility	Missoula Electric Cooperative	Mark	Hayden	Manager
Utility	Northern Lights Inc.	Annie	Terracciano	Manager
Utility	Nor-Val Electric Cooperative			

APPENDIX A-1				
2018 STATE OF MONTANA MHMP UPDATE				
STAKEHOLDERS LIST				
CATEGORY	**AGENCY/ORGANIZATION**	**FIRST NAME**	**LAST NAME**	**POSITION**
Utility	Park Electric	Tim	Stephens	Manager
Utility	Ravalli Electric Cooperative	Mark	Grotbo	Manager
Utility	Sheridan Electric Cooperative	Rick	Knick	Manager
Utility	Southeast Electric Cooperative	Jack	Hamblin	Manager
Utility	Sun River Electric Cooperative	Scott	Odegard	Manager
Utility	Tongue River Electric	Tary	Hanson	Manager
Utility	Vigilante Electric Cooperative	Ronnie	Miller	Manager
Utility	Yellowstone Valley Electric Cooperative	Brandon	Wittman	Manager

APPENDIX A-2

PLANNING TEAM MEMBERS

APPENDIX A-2				
2018 STATE OF MONTANA MHMP UPDATE				
PLANNING TEAM MEMBERS				
CATEGORY	**FIRST NAME**	**LAST NAME**	**AGENCY/ORGANIZATION**	**POSITION**
Federal Agency	Chris	Barth	Bureau of Land Management	Fire
Federal Agency	Randy	Middlebrook	Dept. of Homeland Security	
Federal Agency	Donald	Britton	National Weather Service	
Federal Agency	Christian	Cassell	National Weather Service	
Federal Agency	Kevin	Gilmore	National Weather Service	
Federal Agency	Roger	Martin	National Weather Service	
Federal Agency	Arin	Peters	National Weather Service	Hydrologist
Federal Agency	Megan	Syner	National Weather Service	
Federal Agency	Tony D.	Krause	U.S. Army Corps of Engineers	
Federal Agency	Marty	Mitzkus	USDA Forest Service, Helena National Forest	Fire Management Officer
Local Government	Bill	Ellis	MT Assoc. of County DES Coordinators	Custer County
Local Government	Paul	Spengler	MT Assoc. of County DES Coordinators	Lewis & Clark Co.
Local Organization	Pat	McKelvey	FireSafe Montana	Wildfire Specialist
Local Organization	Ray	Prill	FireSafe Montana	Wildfire Specialist
Local Organization	Elena	Evans	MT Assoc. of Conservation Districts	Executive Director
State Agency	Mike	Stickney	MT Bureau of Mines & Geology	Earthquake Studies Office
State Agency	Jim	Whaley	MT Dept. Administration	A&E Division
State Agency	Kim	Mangold	MT Dept. Agriculture	
State Agency	Bob	Habeck	MT Dept. Environmental Quality	
State Agency	Emily	Kaleczyc	MT Dept. Livestock	Brucellosis Program Spec.
State Agency	Paul	Azevedo	MT Dept. Natural Resources & Conservation	Water Resources Division
State Agency	Crystal	Beckman	MT Dept. Natural Resources & Conservation	Fire
State Agency	Michael	Downey	MT Dept. Natural Resources & Conservation	Water Management Bureau
State Agency	Ann	Schwend	MT Dept. Natural Resources & Conservation	Water Resources Division
State Agency	Traci	Sears	MT Dept. Natural Resources & Conservation	Water Resources Division
State Agency	Taylor	Crowl	MT Dept. of Commerce	
State Agency	Maria	Jackson	MT Dept. of Commerce	
State Agency	Galen	Steffens	MT Dept. of Commerce	Planner
State Agency	Anne	Dormady	MT Dept. of Justice	Montana All Threat Inteligence Center
State Agency	Andy	Rumley	MT Dept. of Justice	Montana Analysis & Technical Information Center
State Agency	Erin	Helm	MT Dept. of Military Affairs	National Guard
State Agency	Michele	Lemieux	MT Dept. of Natural Resources and Conservation,	Dam Safety Program
State Agency	Tiffany	Lyden	MT Dept. of Natural Resources and Conservation,	Mapping Outreach Specialist
State Agency	Kevin	O'Loughlin	MT Dept. Public Health & Human Services	
State Agency	Walt	Kerttula	MT Dept. Transportation	
State Agency	Liz	Ulrich	MT DEQ Air Quality Bureau	Analysis and Planning Supervisor
State Agency	Julie	Merkel	MT DEQ Permitting	
State Agency	Rachel	Catron	MT Disaster and Emergency Services	
State Agency	Jake	Ganieany	MT Disaster and Emergency Services	Response/Recovery Branch Manager
State Agency	Ed	Greberis	MT Disaster and Emergency Services	Exercise Coordinator
State Agency	Burke	Honzel	MT Disaster and Emergency Services	
State Agency	Ryan	Lee	MT Disaster and Emergency Services	
State Agency	J.Lee	Oleson	MT Disaster and Emergency Services	
State Agency	Nadene	Wadsworth	MT Disaster and Emergency Services	State Hazard Mitigation Officer
State Agency	Joey	Zahara	MT Disaster and Emergency Services	Region 2 Emergency Manager
State Agency	Renee	Lemon	MT Fish, Wildlife & Parks	Planner
State Agency	Charlie	Sperry	MT Fish, Wildlife & Parks	
State Agency	Bruce	Whittenberg	MT Historical Society	Director
State Agency	Jeremy	Hedges	MT National Guard	
State Agency	Stan	Wilmoth	MT State Historic Preservation Office	State Archaeologist

APPENDIX A-3

PLANNING TEAM DOCUMENTATION

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN
2018 UPDATE - Planning Team Meeting #1 - Review 2013 plan

DATE: Sept 13, 2013 **LOCATION:** HAFRC FORT HARRISON

Name: (Please Print) Organization:	Affiliation or Title: Federally Salaried? (Yes or No)	Miles Traveled Round Trip to Attend Meeting	E-mail Address: Phone No.
Daphne Degrindalis Tetra Tech	Circle One: Yes (No)		daphne.degrindalis@tetratech.com 406-475-2648
ED GREIBERIS MT DES EXERCISE COORDINATOR	Circle One: (Yes) No		egreiberis@mt.gov 406-202-4955
Lynn Peterson Tetra Tech	Circle One: Yes (No)		lynn.peterson@tetratech.com 406-447-1448
Nadene Wadsworth MT DES	Circle One: (Yes) No		nwadsworth@mt.gov 406-324-4785
Rachel Catron MT DES	Circle One: (Yes) No		Rachel.Catron@mt.gov 406-324-4782
Mike Stickney MT Bureau of Mines & Geology	Circle One: Yes (No)	150	mstickney@mtech.edu 406 496-4332
Megan Syner NWS Great Falls	Circle One: (Yes) No		megan.syner@noaa.gov 406 727-0288
MARIA JACKSON MDOC	Circle One: Yes (No)	8	mjackson3@mt.gov 841-2550
TAYLOR CROWL MDOC	Circle One: Yes (No)	8	taylor.crowl@mt.gov 406-841-2863
Adebowale Awolola MDOC	Circle One: Yes (No)	8	adebowale.awolola@mt.gov 406-841-2752
Emily Kaleczyc livestock	Circle One: Yes (No)	8	ekaleczyc@mt.gov 444-9622
Meeting Start Time: 1pm		Meeting End Time: 3pm	

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN
2018 UPDATE - Planning team Meeting #1 - Review 2013 Plan

DATE: Sept 13, 2013 **LOCATION:** HAFRP Fort Harrison

Name: (Please Print) Organization:	Affiliation or Title: Federally Salaried? (Yes or No)	Miles Traveled Round Trip to Attend Meeting	E-mail Address: Phone No.
J. LEE OKESON MT DES	Circle One: (Yes) No		jokeson@mt.gov 406-324-4768
WALT KERTTULA MDT	Circle One: Yes (No)	8	wkerttula@mt.gov
Burke Honzel MT DES	Circle One: (Yes) No		bhonzel@mt.gov 406-324-4771
Jeremy Hedges MT NG	Circle One: (Yes) No		jeremy.p.hedges.mil@mail.mil 406-324-3190
STAN WILMOTH MHS / SHPO	Circle One: Yes (No)	8	swilmoth@mt.gov 444 7719
JIM WHALEY A/E	Circle One: Yes (No)	8	jwhaley@mt.gov 406-444-3106
TRACI SEARS MT DNRC	Circle One: (Yes) No		tsears@mt.gov 444-6654
RAY PRICE FireSafe Montana	Circle One: Yes (No)	8	Fire Safe MT Tri County FireSafe
PAT McKelvey FireSafe Montana	Circle One: Yes (No)	8	" "
Charlie Sperry FWP	Circle One: Yes (No)	12	csperry@mt.gov 444-3888
Elana Evans Mont. Assoc. Conservation Districts	Circle One: Yes (No)	8	eevans@macdnet.org 443-5711

Meeting Start Time: 1 pm Meeting End Time: 3 pm

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN
2018 UPDATE - Planning team Meeting #1 - Review 2013 Plan

DATE: Sept. 13, 2017 **LOCATION:** HAFRC Fort Harrison

Name: (Please Print) Organization:	Affiliation or Title: Federally Salaried? (Yes or No)	Miles Traveled Round Trip to Attend Meeting	E-mail Address: Phone No.
Ann Schwerd DNRC	Circle One: Yes (No)	6	aschwerd@mt.gov 444-1806
PAUL SPENGLER LEC CO DES	Circle One: (Yes) No	6	pspengler@lccountymt.gov 447-8285
Kim Mangold Dept Agriculture	Circle One: Yes (No)	8	kmangold@mt.gov
	Circle One: Yes No		
	Circle One: Yes No		
	Circle One: Yes No		
	Circle One: Yes No		
	Circle One: Yes No		
	Circle One: Yes No		
	Circle One: Yes No		
	Circle One: Yes No		
Meeting Start Time: 1pm		Meeting End Time: 3pm	

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN
2018 UPDATE - Planning Team Meeting #2

Earthquake
Avalanche
Landslide
Volcanic Ash

DATE: Wed. Oct 4, 2017 **LOCATION:** Fort Harrison

Name: (Please Print) Organization:	Affiliation or Title: Federally Salaried? (Yes or No)	Miles Traveled Round Trip to Attend Meeting	E-mail Address: Phone No.
Daphne Digrindafis Tetra Tech	Circle One: Yes (No)		daphne.digrindafis@tetratech.com 406-475-2648
Rachel Catron MT DES	Circle One: (Yes) No		Rachel.Catron@mt.gov
Nadene Wadsworth MT DES	Circle One: (Yes) No		nwadsworth@mt.gov 406-324-4788
Lynn Peterson Tetra Tech	Circle One: Yes (No)		lynn.peterson@tetratech.com 406-437-9856
MARIA JACKSON COMMERCE	Circle One: Yes (No)		mjackson3@mt.gov 841-2550
TAYLOR CROWL COMMERCE	Circle One: Yes (No)		taylor.crowl@mt.gov 841-2863
Adebowale Awolola Commerce	Circle One: Yes (No)		adebowale.awolola@mt.gov 841-2752
ED GREIBERIS - MTDES	Circle One: (Yes) No		egreiberis@mt.gov 202-4955
Megan Syner - NWS	Circle One: (Yes) No		megan.syner@noaa.gov 406-727-0283
~~Mike Stickney~~ MBMG	Circle One: Yes No		
~~Bill Ellis~~ ~~Custer Co. DES~~	Circle One: Yes No		

Meeting Start Time: 10 am

Meeting End Time: 11:45

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN
2018 UPDATE

Planning team #2 Earthquake Avalanche ~~landslide~~ Volcanic Ash

DATE: Wed. Oct 4, 2017 **LOCATION:** Fort Harrison

Name: (Please Print) Organization:	Affiliation or Title: Federally Salaried? (Yes or No)	Miles Traveled Round Trip to Attend Meeting	E-mail Address: Phone No.
Jake Ganieany MT DES Response & Recovery Manager	Circle One: Yes (No)	0	Jake.Ganieany@MT.gov
WALT KERTTULA MDT	Circle One: Yes (No)	8	wkerttula@mt.gov 444-6153
Ryan Lee MT DES	EMPG Grant Circle One: (Yes) No	Ø	ryanlee@mt.gov 406-324-4774
Jim WHALEY A/E Dept A	Circle One: Yes (No)	8	Jwhaley@mt.gov 406-444-3106
Bill Ellis Custer County DES	Circle One: (Yes) No	call in Ø	
Mike Stickney MT Tech	? Circle One: Yes No	call in	
	Circle One: Yes No		
	Circle One: Yes No		
	Circle One: Yes No		
	Circle One: Yes No		
	Circle One: Yes No		

Meeting Start Time: 10 am

Meeting End Time: 11:45

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN
2018 UPDATE

Planning Team #3 - Flooding & Dam Failure

DATE: Tues. Oct 17th **LOCATION:** Ft Harrison - DES Office

Name: (Please Print) Organization:	Affiliation or Title: Federally Salaried? (Yes or No)	Miles Traveled Round Trip to Attend Meeting	E-mail Address: Phone No.
Daphne Digrindakis Tetra Tech	Circle One: Yes (No)		daphne.digrindakis@tetratech.com 406-475-2648
Lynn Peterson Tetra Tech	Circle One: Yes (No)		lynn.peterson@tetratech.com 437-9856
Rachel Catron MT DES	Circle One: (Yes) No		Rachel.Catron@mt.gov
Nadene Wadsworth MT DES	Circle One: (Yes) No		nwadsworth@mt.gov
Paul Spengler L&C DES	Circle One: (Yes) No		
Elena Evans Conservation District	Circle One: Yes (No)		
Worby McNamee DNRC	FEMA Funding Circle One: (Yes) No		worby.mcnamee@mt.gov 444-1343
Tiffany Lyden DNRC	FEMA funded Circle One: (Yes) No		tlyden@mt.gov 444-0599
Michelle McNamee DNRC	FEMA funded Circle One: (Yes) No		~~Natchar~~ mphillips2@mt.gov 444-1300
WALT KERTTULA MDT	Circle One: Yes (No)		wkerttula@mt.gov 444-6153
Renee Lemon (for Charlie Sperry) FWP	Circle One: Yes (No)		rlemon@mt.gov 444-3738
Meeting Start Time: 1:30 pm		Meeting End Time: 3:15 pm	

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN
2018 UPDATE

Planning team #3 - Flooding & Dam failure

DATE: Tues. Oct. 17th **LOCATION:** Ft Harrison - DES Office

Name: (Please Print) Organization:	Affiliation or Title: Federally Salaried? (Yes or No)	Miles Traveled Round Trip to Attend Meeting	E-mail Address: Phone No.
Traci Sears DNRC-FLOODPLAIN	FEMA FUNDED Circle One: (Yes) No		tsears@mt.gov 406-885-7827
Megan Syner Ariel Peters	Circle One: (Yes) No	Megan (10) Ariel (180)	megan.syner@noaa.gov ariel.peters@noaa.gov
Tony D Krause US Army Corps of Engineers	Circle One: (Yes) No	2140	tony.d.krause@usace.army.mil
TAYLOR CROWL VISTA — commerce	Circle One: Yes (No)		taylor.crowl@mt.gov (406) 841-2863
Galen Steffens commerce - Planning	Circle One: Yes (No)		galen.steffens@mt.gov
Maria Jackson, CDD Commerce	Circle One: Yes (No)		mjackson3@mt.gov
Adebowale Awolola Commerce - VISTA	Circle One: Yes (No)		adebowale.awolola@mt.gov
Michele LeMieux DNRC Dam Safety	Circle One: Yes (No)		mlemieux@mt.gov
	Circle One: Yes No		
	Circle One: Yes No		
	Circle One: Yes No		

Meeting Start Time: 1:30 pm Meeting End Time: 3:15 pm

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN
2018 UPDATE

Planning team Meeting #4 - Severe Weather & Drought

DATE: Thurs. Nov. 2, 2017 **LOCATION:** DNRC - Helena, MT

Name: (Please Print) Organization:	Affiliation or Title: Federally Salaried? (Yes or No)	Miles Traveled Round Trip to Attend Meeting	E-mail Address: Phone No.
Daphne Digrindakis Tetra Tech	Circle One: Yes (No)		daphne.digrindakis@tetratech.com 406-475-2648
Rachel Catron MT DES	Circle One: (Yes) No		Rachel.catron@mt.gov
Nadene Wadsworth MT DES	Circle One: (Yes) No		nwadsworth@mt.gov
Lynn Peterson Tetra Tech	Circle One: Yes (No)		lynn.peterson@tetratech.com
Ed Greiberis MT DES	Circle One: (Yes) No		egreiberis@mt.gov
Ryan Lee MT DES	Circle One: (Yes) No		ryanlee@mt.gov
Jake Ganieany MT DES	Circle One: (Yes) No		Jakeganieany@mt.gov
Arin Peters NWS Great Falls	Hydrologist Circle One: (Yes) No		arinpeters@noaa.gov
Megan Syner NWS Great Falls	Circle One: (Yes) No		megan.syner@noaa.gov
Taylor Crowl Commerce	Circle One: Yes (No)		taylor.crowl@mt.gov
Mara Jackson DOC	Circle One: Yes (No)		mjackson3@mt.gov
Meeting Start Time: 1pm		Meeting End Time: 2:45pm	

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN
2018 UPDATE

Planning team #4 meeting Severe Weather & Drought

DATE: Thurs Nov 2, 2017 **LOCATION:** DNRC Helena MT

Name: (Please Print) Organization:	Affiliation or Title: Federally Salaried? (Yes or No)	Miles Traveled Round Trip to Attend Meeting	E-mail Address: Phone No.
Elena Evans Conservation Dist.	Circle One: Yes (No)	0	eevans@macdnet.org
Michael Downey DNRC	Circle One: Yes (No)	0	mdowney2@mt.gov
WALT KERTTULA MDT	Circle One: Yes (No)		wkerttula@mt.gov 444-6153
Emily Kaleczyc Livestock	Circle One: Yes (No)		ekaleczyc@mt.gov 444-9622
Kim Mangold Dept of Ag.	Circle One: Yes (No)		
Renee Lemon FWP	Circle One: Yes (No)		rlemon@mt.gov 444-3738
JIM WHALEY DEPT OF ADMINISTRATION	Circle One: Yes (No)	0	Jwhaley@mt.gov 444-3106
Bill Ellis Custer Co. DES	Circle One: (Yes) (No)		
	Circle One: Yes No		
	Circle One: Yes No		
	Circle One: Yes No		

Meeting Start Time: 1pm Meeting End Time: 2:45pm

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN
2018 UPDATE

-Planning Team Mtg #6 - Wildfire

DATE: December 6, 2017 **LOCATION:** DES - Fort Harrison

Name: (Please Print) Organization:	Affiliation or Title: Federally Salaried? (Yes or No)	Miles Traveled Round Trip to Attend Meeting	E-mail Address: Phone No.
Daphne Digrindakis Tetra Tech	Circle One: Yes (No)		daphne.digrindakis@tetratech.com 406-475-2648
Lynn Peterson Tetra Tech	Circle One: Yes (No)		lynn.peterson@tetratech.com 406-437-9856
Nadene Wadsworth MT DES	Circle One: (Yes) No		nwadsworth@mt.gov 324-4785
Rachel Catron MT DES	Circle One: (Yes) No		Rachel.Catron@mt.gov 324-4787
Kevin Olaughlin DPHHS PHHP	Circle One: (Yes) No		Kolaughlin@mt.gov 444-1611
Marty Mitzkus US Forest Service	Circle One: (Yes) No		mmitzkus@fs.fed.us 406-495-3739
Chris Barth BLM	Circle One: (Yes) No		cbarth@blm.gov 406-896-2977
Ray Prill	Circle One: Yes (No)	0	exdir@tcfsw.org 495-9005
Pat McKelvey	Circle One: Yes (No)	30	patm2850@gmail.com 499-8225
Christian Cassell National Weather Service	Circle One: (Yes) No	172	Christian.cassell@noaa.gov 406-952-3790
MARIA JACKSON Dept Commerce	Circle One: Yes (No)		mjackson3@mt.gov 841-2550

Meeting Start Time: 10:00 Meeting End Time: 12:30

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN
2018 UPDATE

Planning Team Mtg #6
Wildfire

DATE: Dec. 6, 2017 **LOCATION:** DES - Ft. Harrison

Name: (Please Print) Organization:	Affiliation or Title: Federally Salaried? (Yes or No)	Miles Traveled Round Trip to Attend Meeting	E-mail Address: Phone No.
Galen Steffens MT Dept. of Commerce	Circle One: Yes (No)		galen.steffens@mt.gov 841-2819
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WALT KERTTULA MDT	Circle One: Yes (No)		Wkerttula@mt.gov 444-6153
Burke Honzel MT DES	Circle One: (Yes) No		bhonzel@mt.gov
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Julie Merkel DEQ Permitting	Circle One: Yes (No)		jmerkel@mt.gov
Renee Lemon FWP	Circle One: Yes (No)		Rlemon@mt.gov
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Bob Habeck DEQ	Circle One: Yes (No)		bhabeck@mt.gov
	Circle One: Yes No		

Meeting Start Time: 10:00 Meeting End Time: 12:30

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN
2018 UPDATE Planning team Meeting #7 - Terrorism Cyber All Hazard

DATE: 12/13/17 **LOCATION:** Fort Harrison DES

Name: (Please Print) Organization:	Affiliation or Title: Federally Salaried? (Yes or No)	Miles Traveled Round Trip to Attend Meeting	E-mail Address: Phone No.
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Rachel Catron MT DES	Circle One: (Yes) No		Rachel.catron@mt.gov
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Kevin Okaughlin DPHHS	Circle One: (Yes) No		Kokaughlin@MT.gov 444-1611
Joey Zaharg MT-DES	Circle One: (Yes) No		jzaharg@mt.gov 406-761-4932
ERIN HELM DEPT. OF MILITARY AFFAIRS	Circle One: (Yes) No		erin.m.helm.nfg@mail.mil 406-324-3912
Randy Middlebrook DHS	Circle One: (Yes) No		randy.middlebrook@dhs.gov 406-839-1165
Andy Rumley MT Dept of Justice	Circle One: Yes (No)		arumley@mt.gov 406-444-1320
Anne Dormady MT DOJ	Circle One: Yes (No)		adormady@mt.gov 406-444-1317
Kevin Gilmore NOAA NWS-Great Falls	Circle One: (Yes) No	190	kevin.Gilmore@noaa.gov
Meeting Start Time: 10:15		Meeting End Time: 12:15	

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN
2018 UPDATE Planning team Meeting #7 - Terrorism Cyber & All Hazard

DATE: 12/13/17 **LOCATION:** Fort Harrison DES

Name: (Please Print) Organization:	Affiliation or Title: Federally Salaried? (Yes or No)	Miles Traveled Round Trip to Attend Meeting	E-mail Address: Phone No.
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Roger Martin NOAA/NWS	Circle One: Yes No	190	roger.martin@noaa.gov
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Renee Lemon FWP	Circle One: Yes No		rlemon@mt.gov 444-3738
	Circle One: Yes No		
	Circle One: Yes No		
	Circle One: Yes No		

Meeting Start Time: 10:15 Meeting End Time: 12:15

APPENDIX A-4

DOCUMENT REVISION LOGS

APPENDIX A-4 2018 STATE OF MONTANA MHMP UPDATE DOCUMENT REVISION LOG SECTION 1 - INTRODUCTION		
Sub-Section	**Description of Revision**	**Revised By:**
	TEXT CHANGES	
1.1	Updated with planning guidance for completion of State Mitigation Plans.	Tetra Tech
1.1	Provided assurance that the State will manage and administer FEMA funding in accordance with applicable federal statutes and regulations.	Tetra Tech
1.2	Indicated the source of funding for 2018 State Plan Update.	Tetra Tech
1.2	Presented 2018 hazards and list by ranking.	Tetra Tech
1.2	Indicated the climate change was analyzed as part of the risk assessment.	Tetra Tech
1.2	Updated contract number and date executed for 2018 State Plan update.	Tetra Tech
1.2	Updated with reference that Plans be updated every 5 years.	
1.2	Provided assurance that the State would amend the MHMP whenever necessary to reflect changes in state or federal laws and statues.	

APPENDIX A-4 2018 STATE OF MONTANA MHMP UPDATE DOCUMENT REVISION LOG SECTION 2 – PLANNING PROCESS		
Sub-Section	**Description of Revision**	**Revised By:**
	TEXT CHANGES	
2.1	Updated contract information between Montana DES and Tetra Tech. Added paragraph describing the timeframe for the project and general milestones.	Tetra Tech
2.1.1	Described participation of MHMP Planning Team including a detailed account of the seven meetings held to update the mitigation strategy.	Tetra Tech
2.1.2	Updated composition of Stakeholders Group and updated how they were involved in the project. Added that a FEMA-approved mitigation plan provides eligibility to the various FEMA grans programs.	Tetra Tech
2.1.3	Updated section on Public Meetings	Tetra Tech
2.1.4 (formerly 2.1.7)	Updated section to describes scope of work for 2018 MHMP update including issues that Planning Team identified during first meeting where 2013 Plan was reviewed.	
Formerly 2.1.4	Omitted section on Project Website and Social Media.	
Formerly 2.1.5	Omitted section on development of Educational Curriculum.	Tetra Tech
Formerly 2.1.6	Omitted section on Poster Display in Capital Rotunda during Montana Legislature.	Tetra Tech
2.1.5 (formerly 2.1.8)	Updated section on Plan Review and Adoption Process.	Tetra Tech
Formerly 2.2	Moved this to Section 6 – Capability Assessment. Updated information on organizations and agencies with mitigation responsibilities. Described state-interagency mitigation coordination.	Tetra Tech
2.2	Updated and revised description of mitigation-related plans and programs. Omitted plans and programs that have been replaced.	Tetra Tech
	TABLE CHANGES	
2.1-1	Updated names of Planning Team members	Tetra Tech
2.1-2	Updated details from the local meetings	Tetra Tech
Formerly 2.2-1	Updated State Government Mitigation Responsibilities and moved this table to Section 6 – Capability Assessment.	Tetra Tech
Formerly 2.2-2	Updated Non-State Government Mitigation Responsibilities and moved this table to Section 6 – Capability Assessment.	Tetra Tech

APPENDIX A-4 2018 STATE OF MONTANA MHMP UPDATE DOCUMENT REVISION LOG SECTION 3 – STATE PROFILE		
Sub-Section	**Description of Revision**	**Revised By:**
	TEXT CHANGES	
3.1	Expanded section on climate change and impacts including information from the 2017 Montana Climate Assessment.	Tetra Tech
3.2	Updated discussion on the State's inventory of assets including statistics on number and value of state-owned buildings. Updated statistics in most sections. Deleted sections on utilities and dams and replaced these with an energy profile which covers similar topics.	Tetra Tech
3.2	Added *Energy Profile* under Utilities section.	Tetra Tech
3.2	Omitted *Hazardous Material Facilities* section and moved to hazard profile in section 4.	Tetra Tech
3.3	Updated discussion on State's economy.	Tetra Tech
3.4	Updated discussion on State's population.	Tetra Tech
	TABLE CHANGES	
Table 3-1	Updated populations statistics in table entitled *Montana State Facts.*	Tetra Tech
Tables 3.1-1, -2, -3	Omitted tables on 5 hottest, coldest, and wettest places in Montana. Replaced with text narrative.	
Table 3.2.1-1	Updated statistics in table entitled *Content and Structure Value by State Agency*	Tetra Tech
Table 3.2.1-2	Updated statistics in table entitled *Major State Buildings/Complexes*	Tetra Tech
Table 3.2.1-3	Updated acreages for Montana State Trust Land	Tetra Tech
Table 3.2-8	Removed table "Top Ten Facilities with Waste Discharges" from State Profile section. Moved to Hazardous Material section.	Tetra Tech
Table 3.3-1	Updated per capita income for highest and lowest Montana counties. Added city and town data to this table.	Tetra Tech
Table 3.4-1	Reformatted table on Montana's Tribal communities.	Tetra Tech
Tables 3.4-2 through 3.4-5	Updated population statistics and created two new tables to present population gains/losses for cities and towns.	Tetra Tech
Formerly Table 3.4-1	Eliminated table on racial make-up of Montana	Tetra Tech
	FIGURE CHANGES	
Formerly Figure 3.3-1	Omitted figure entitled *Gross Domestic Product by State,* because updated data is not available in a pie chart.	Tetra Tech
Figure 3.3-1	Updated figure showing *Per Capita Personal Income by County* with data from 2016.	Tetra Tech

APPENDIX A-4 2018 STATE OF MONTANA MHMP UPDATE DOCUMENT REVISION LOG SECTION 3 – STATE PROFILE		
Sub-Section	**Description of Revision**	**Revised By:**
Figure 3.3-2	Updated figure entitled *Percent Change in Per Capita Personal Income,* with data from 2010 and 2016.	Tetra Tech
Figure 3.3-3	Added new figure entitled *Poverty in Montana, 2010*.	Tetra Tech
Figure 3.4-1	Updated figure entitled *Montana Population Density by County* with data from 2016.	Tetra Tech
Figure 3.4-2	Updated figure entitled *Montana Population Percent Change* with data from 2010 and 2016.	Tetra Tech
Figure 3.4-3	Updated figure entitled *Percent of Population 65 Years and Older and 85 Years and Older;* with *data from 2016.*	Tetra Tech

MONTANA MULTI-HAZARD MITIGATION PLAN & STATEWIDE HAZARD ASSESSMENT – 2018 UPDATE REVISION LOG SECTION 4 – RISK ASSESSMENT			
Topic	**Sub-Section**	**Description of Revision**	**Revised By**
		TEXT CHANGES	
Risk Assessment Methodology	4.1.1	Described criteria that Planning Team used to select hazards profiled in 2018 MHMP. Eliminated description of local plan status that is presented in a separate section of the Plan.	Tetra Tech
	4.1.2	Describes how the Hazards were Ranked and Prioritized indicating the changes between this Plan and 2013. Presented modification made to CPRI including economic impacts and surveys completed by Planning Team and regional DES emergency managers.	
	4.1.3	Updated section on Hazard Profiles describing methodology for developing hazard profiles with headings for: Description and History; Vulnerability and Area of Impact; Probability and Magnitude; Future Development; and, Climate Change.	
	4.1.4	Described that 2018 Plan update builds on what was presented in 2013 by incorporating data from recently completed original local mitigation plans and plan updates, analysis of State critical facilities, cultural features, and 2016 census estimates for population. Analysis methods for the general building stock utilized parcel data from the Montana Cadastral Mapping Program linked to the Structures Framework. Presented formula used to calculate annual loss.	
	4.1.5	Updated data limitations description.	
Wildfire	4.2	Updated Description and History section with statistics on wildfire ignition sources, fire behavior and intensity, fire suppression in WUI, 2013 West Mullan Fire, 2016 Roaring Lion Fire, 2017 fire season statistics including write-ups on Lodgepole Complex Fire, Lolo Peak Fire, Sapphire Complex Fire, Rice Ridge Fire, and Sprague Fire. Updated Magnitude and Probability section with analysis of state and federal wildfire statistics, probability ratings from MHMP Planning Team, and, federal and state fire management approach. Updated Vulnerability and Area of Impact section with info wildfire smoke and burned area emergency response program. Risk assessment methodology is discussed in Statewide Vulnerability section with description of data used for wildfire hazard map, analysis methods, and results. Summarized potential losses from Local Hazard Mitigation Plans in terms of hazard ranking and qualitative analysis of losses. In Future Development section discussed WUI code and other land use planning strategies including recommendations for management of development in the WUI. Provided new section on Climate Change. Updated Data Limitations section. Updated References section.	Tetra Tech
Flooding	4.3	Updated Description and History section with flood statistics from MT Climate Assessment, info on flash floods/ debris flows after wildfires, August 2013 flooding on Deep Creek in Broadwater County, and update on USACE study on Miles City levee. Under Declared Disaster section described 2013 and 2014 federal flood disasters. Updated Magnitude and Probability section with summary of flood losses from SHELDUS data, status of MT communities in NFIP, changes to NFIP, probability ratings from MHMP Planning Team. Updated Vulnerability and Area of Impact section with info on increased risk of flash flooding and debris flows associated with wildfire. Risk assessment methodology is discussed in Statewide Vulnerability section with description of data used for flood hazard map, analysis methods, and results. Summarized potential losses from Local Hazard Mitigation Plans in terms of hazard ranking and qualitative analysis of losses. In Vulnerability of State Facilities section reported on flood damages to state buildings, bridges with flood scour, and Bannack State Park flood mitigation. In Future Development section discussed 2017 model floodplain regulations. Provided new section on Climate Change. Updated Data Limitations section. Updated References section.	Tetra Tech

MONTANA MULTI-HAZARD MITIGATION PLAN & STATEWIDE HAZARD ASSESSMENT – 2018 UPDATE REVISION LOG SECTION 4 – RISK ASSESSMENT			
Topic	**Sub-Section**	**Description of Revision**	**Revised By**
Earthquakes	4.4	Updated Description and History section with info on 2017 5.8 magnitude earthquake in Lincoln. Updated Magnitude and Probability section with probability ratings from MHMP Planning Team. Updated Vulnerability and Area of Impact section with info on previously unmapped fault scarp discovered in the Bitterroot Valley in 2017 and discussion of liquifaction. Risk assessment methodology is discussed in Statewide Vulnerability section with description of data used to earthquake hazard map, analysis methods, and results. Summarized potential losses from Local Hazard Mitigation Plans in terms of hazard ranking and qualitative analysis of losses. In Vulnerability of State Facilities section updated grants received for seismic projects. Provided new section on Climate Change. Updated Data Limitations section. Updated References section.	Tetra Tech
Drought	4.5	Updated Description and History section with info from USDA on drought's impact on agricultural sector, impacts on forest and rangeland, and epic drought of 2017. Updated Magnitude and Probability section with discussion and probability ratings from MHMP Planning Team. Statewide Vulnerability section was enhanced with discussion on agriculture, municipal water supplies, Montana fisheries, and landscape level land management improvements. Summarized potential losses from Local Hazard Mitigation Plans in terms of hazard ranking and qualitative analysis of losses. Provided new section on Climate Change. Updated Data Limitations section. Updated References section.	Tetra Tech
Severe Weather	4.6	Combined severe summer and severe winter weather into one hazard profile. Under Description and History section, added details on 2018 winter storm on Blackfeet Reservation, October 2017 winter storm in Hill and Blaine Counties, 2016 tornado in Baker, and 2015 wind storm in Glendive. Updated Magnitude and Probability section with discussion and probability ratings from MHMP Planning Team. Summarized potential losses from Local Hazard Mitigation Plans in terms of hazard ranking and qualitative analysis of losses. Provided new section on Climate Change. Updated Data Limitations section. Updated References section.	Tetra Tech
Hazardous Material Incidents & Transportation Accidents	4.7	Broadened hazard profile to include transportation accidents as well as hazardous material incidents. Under Description and History section, provided discussion on railroad accidents and where they are happening, the increase in rail traffic due to energy development, description of the 1989 train explosion in Helena, the 1992 U.S. Air Force plane crash in Harlem, the 2012 train explosion in Plevna, the 2015 pipeline spill near Glendive. Updated Magnitude and Probability section with discussion and probability ratings from MHMP Planning Team. Discussed U.S. DOT provisions for Bakken crude oil rail transport in Vulnerability section. Risk assessment methodology discussed in Statewide Vulnerability section with description of data used to create haz-mat hazard area map, analysis methods, and results. Summarized potential losses from Local Hazard Mitigation Plans in terms of hazard ranking and qualitative analysis of losses. Provided new section on Climate Change. Updated Data Limitations section. Updated References section.	Tetra Tech
Disease	4.8	Broadened hazard profile to include wildlife disease as well as human health and agriculture disease (livestock and crops). Description and History section updated to include discussion on recent national public health emergencies (Ebola, Zika viruses). Wildlife disease description on brucellosis, chronic wasting disease, proliferative kidney disease, and aquatic invasive species. Magnitude and Probability section updated with discussion of economic loss from animal and wildlife disease. Statewide Vulnerability section updated with discussion on rapid response plans maintained by agencies. Summarized potential losses from Local Hazard Mitigation Plans in terms of hazard ranking and qualitative analysis of losses. Provided new section on Climate Change. Updated Data Limitations section. Updated References section.	Tetra Tech

MONTANA MULTI-HAZARD MITIGATION PLAN & STATEWIDE HAZARD ASSESSMENT – 2018 UPDATE REVISION LOG SECTION 4 – RISK ASSESSMENT			
Topic	**Sub-Section**	**Description of Revision**	**Revised By**
Landslide and Avalanche	4.9	Broadened hazard profile to include Landslide and Avalanche. Updated Description and History section with information on Stillwater County landslide in 2015. Included description of avalanche types, processes, and occurrence. Included accounts of avalanches impacting railroad in Flathead County and 2014 Missoula avalanche which destroyed homes and killed one person. Updated Magnitude and Probability section with avalanche discussion and probability ratings from MHMP Planning Team. Updated Vulnerability and Area of Impact section with discussion on topographic settings where hazards occur. Risk assessment is discussed in Statewide Vulnerability section with description of data used to create landslide hazard area map, analysis methods, and results. Summarized potential losses from Local Hazard Mitigation Plans in terms of hazard ranking and qualitative analysis of losses. Provided new section on Climate Change. Updated Data Limitations section. Updated References section.	Tetra Tech
Dam Failure	4.10	Updated number of dams in Montana. Included discussion of reservoir dam failures and top ranking high hazard dams. Updated Vulnerability and Area of Impact section with discussion on risk of operational flows. Updated Magnitude and Probability section with discussion and probability ratings from MHMP Planning Team. Risk of operational flows discussed in Vulnerability and Area of Impact section. Risk assessment is discussed in Statewide Vulnerability section with description of data used to create dam failure hazard area map, analysis methods, and results. Summarized potential losses from Local Hazard Mitigation Plans in terms of hazard ranking and qualitative analysis of losses. Provided new section on Climate Change. Updated Data Limitations section. Updated References section.	Tetra Tech
Terrorism, Violence, Civil Unrest	4.11	Updated hazard profile to include Civil Unrest and Cyber Security. Under Description and History section, provided information on current national issues including long gunman (armed intruder) terrorist acts, racial profiling/police brutality, and local civil unrest/violence issues including Rainbow Gatherings, energy development (pipeline protests, oil field violence, pipeline man camps). Discussed cyber security in terms of internet fraud and scams. Omitted discussion on biological and chemical weapons and radiological dispersion devices. Included description of Oath Keepers incident in 2015. Updated Magnitude and Probability section with discussion on potential losses from to infrastructure from terrorism and cyber security. Updated Vulnerability and Area of Impact section with discussion on risks to population and state/local governments. Provided summary of hazard ranking from local Hazard Mitigation Plans for Terrorism hazard and description of qualitative loss analysis. Provided new section on Climate Change. Updated Data Limitations section. Updated References section.	Tetra Tech
Volcanic Ash	4.12	Added information under Magnitude and Probability citing a 2015 European Science Foundation article discussing the Yellowstone volcanic eruption and reoccurrence intervals. Under Vulnerability and Area of Impact section, provided data on seismic monitoring at Yellowstone Park from article entitled "*Extreme Geohazards: Reducing the Disaster Risk and Increasing Resilience*". Summarized potential losses from Local Hazard Mitigation Plans in terms of hazard ranking and qualitative analysis of losses. Provided new section on Climate Change. Updated Data Limitations section. Updated References section.	Tetra Tech
Risk Assessment Summary	4.13	Updated section with data from 2018 MHMP Risk Assessment and future development projects from Montana Dept. of Administration.	Tetra Tech

MONTANA MULTI-HAZARD MITIGATION PLAN & STATEWIDE HAZARD ASSESSMENT – 2018 UPDATE REVISION LOG SECTION 4 – RISK ASSESSMENT			
Topic	**Sub-Section**	**Description of Revision**	**Revised By**
		TABLE CHANGES	
Risk Assessment Methodology	Table 4.1-1	Update Calculated Priority Risk Index table (formerly Table 4.2-1) with addition of Economic Impact and revised Assigned Weighting Factor.	Tetra Tech
	Table 4.1-2	Updated table summarizing results of CPRI (formerly Table 4.2-2).	
	Table 4.1-3	Created new table presenting prioritized hazards for 2018 MHMP, changes from 2013 Plan, and 2013 ranking.	
	Table 4.1-4	Created new table presenting results of survey to county/tribal DES emergency managers prioritizing hazards.	
	Table 4.1-5	Modified table to indicate vulnerability assessment methods that had been enhanced for the 2018 State Plan update, as follows: dam failure – improved GIS inundation layer including federal, local and private high hazard dams (not just state-owned dams); wildfire – a new WUI layer comprised of data from the Healthy Forest Restoration Act and USFS also added value at risk showing agricultural acreage in crops and pasture/hay; earthquake – GIS layer showing USGS Peak Ground Acceleration seismic risk zones; flooding - GIS layer of a HAZUS-derived floodplain enhanced with DFIRMs and channel migration zones; landslide – slopes >30 degrees and geologic map units of historic landslides; hazardous material incidents – ¼ mile buffer of railroads, highways and TRI facilities; and, severe weather using spatial data of significant tornados, hail, and wind events from National Climatic Data Center clustered using GIS to create impact areas. Hazards with mapped impact areas were intersected with parcel data linked to structures framework, spatially located state-owned critical facilities, cultural features, and 2016 census estimates to determine exposure to vulnerable populations. Economic impact of drought evaluated in five eastern Montana counties for spring wheat crop in drought vs. non-drought years. Disease, drought, and terrorism do not have mappable regional variation.	
Wildfire	Table 4.2-1	Updated list of historically significant wildfires.	Tetra Tech
	Table 4.2-2	Updated statistics on number of fires and acreages with data from BLM.	
	Table 4.2-3	New table with fire data from National Interagency Fire Center showing land management agency, state, local, and private acres burned.	
	Table 4.2-4	Updated statistics on disaster declarations from wildfire.	
	Table 4.2-5	Updated table of Counties with Highest Wildfire Losses with data from DNRC, BLM, and USFS.	
	Table 4.2-6	Updated table on USDA Forest Service Wildfire Statistics; 1986 to 2017.	
	Table 4.2-7	Updated table on largest and most destructive wildfires with data from DNRC, BLM, USFS, and NIFC.	
	Table 4.2-9	Updated table on Wildfire Exposure from MHMP risk assessment.	
	Table 4.2-10	Updated table entitled *Wildfire Exposure Summary for Top Counties, Cities, and Towns.*	
Flooding	Table 4.3-2	Updated statistics on Federal Disaster Declarations from Flooding.	Tetra Tech
	Table 4.3-3	Updated statistics on State Disaster Declarations from Flooding.	
	Table 4.3-4	Updated table entitled: *Top 20 Counties with Flood Losses (Adjusted to 2016 Dollars); 1960*-2017 with SHELDUS data.	
	Table 4.3-5	Updated statistics on Communities with Highest Flood Insurance Claims.	
	Table 4.3-6	Updated statistics on Counties and Communities Not Participating in NFIP.	
	Table 4.3-7	Updated statistics on NFIP Repetitive Losses.	

MONTANA MULTI-HAZARD MITIGATION PLAN & STATEWIDE HAZARD ASSESSMENT – 2018 UPDATE REVISION LOG SECTION 4 – RISK ASSESSMENT			
Topic	**Sub-Section**	**Description of Revision**	**Revised By**
	Table 4.3-8	Updated statistics on Community Rating System Eligible Communities.	
	Table 4.3-9	Updated exposure summary by DES District.	
	Table 4.3-10	Updated table entitled *Flooding Exposure Summary for Top Counties, Cities, and Towns.*	
	Table 4.3-11	Updated table on critical facilities in flood hazard area.	
	Table 4.3-12	New table on loss claims for state facilities from flooding.	
	Table 4.3-13	Updated table on state-owned bridges with scour potential.	
	Table 4.3-14	New table entitled: *Counties with Highest Flood Losses and Projected Median 1-Inch Rain Days at Mid- and End-Century* using NOAA climate change projections.	
	Table 4.3-15	New table entitled: *Counties with Projected Highest Number of Days with 1-Inch of Rain at Mid- and End of Century* using NOAA climate change projections.	
Earthquake	Table 4.4-1	Updated table entitled: *Historic Earthquakes of Montana with Magnitudes of 5.5 or Greater Since 1900.*	
	Table 4.4-3	Updated table Earthquake Exposure Summary by DES District.	Tetra Tech
	Table 4.4-4	Updated table entitled: *Exposure Summary for Top Counties, Cities and Towns*.	
	Table 4.4-5	Updated data on State-owned buildings in counties highly vulnerable to earthquake.	
	Table 4.4-6	New table summarizing state buildings with structural issues and their value.	
Drought	Table 4.5-1	Updated table entitled: *Montana Drought and other Agricultural Disasters.*	Tetra Tech
	Table 4.5-2	Updated table entitled: *Drought Insurance Claims: 1989-2014* with data from National Drought Mitigation Center.	
	Table 4.5-3	New table entitled: *Economic Loss from Drought for Five Montana Counties,* with data from the USDA, National Agricultural Statistics on spring wheat for five drought years compared to 2010, a non-drought year.	
	Table 4.5-4	New table entitled: *Top Agricultural Counties with Highest Projected Median Days per Year Over 95 Degrees at Mid- and End-Century* to illustrate projected extreme heat from climate change.	
Severe Weather	Table 4.6-2	Updated statistics on Tornadoes Causing At least One Deaths or Three Injuries in Montana with data from the National Climatic Data Center.	Tetra Tech
	Table 4.6-3	Updated table entitled: *Counties with High Frequency Severe Weather Events: 1950-2017* with data from the National Climatic Data Center.	
	Table 4.6-4	Updated table entitled: *Severe Weather Losses (Adjusted to 2016 Dollars): 1960-2017* with data from SHELDUS.	
	Table 4.6-5	Updated table entitled: *Top Counties with Severe Weather Losses (2016 Dollars): 1960*-2017 with data from SHELDUS.	
	Table 4.6-6	New table entitled: *Severe Weather Annual Loss Summary* using SHELDUS loss data and formula described in Section 4.1. Presented annual loss for each DES District, for counties with highest annual loss, and for counties with fasted population growth rates.	
	Table 4.6-7	Updated statistics on Federal Disaster Declarations from Severe Weather (1974-2017).	
	Table 4.6-8	Updated statistics on State Disaster Declarations from Severe Weather (1978-2017).	
	Table 4.6-9	Updated vulnerability analysis results by DES District including general building stock, critical facilities, cultural resources, and population.	
	Table 4.6-10	Updated table entitled: *Severe Weather Exposure Summary for Top Counties, Cities and Towns.*	

MONTANA MULTI-HAZARD MITIGATION PLAN & STATEWIDE HAZARD ASSESSMENT – 2018 UPDATE REVISION LOG SECTION 4 – RISK ASSESSMENT			
Topic	**Sub-Section**	**Description of Revision**	**Revised By**
	Table 4.6-11	Updated table entitled: *Loss Claims for State Facilities Caused by Severe Weather; 2012-2017*.	
	Table 4.6-12	New table entitled: *Counties with Greatest Population and Projected Mean Days per Year Over 95 Degrees at Mid- and End-Century* using data from NOAA.	
	Table 4.6-13	New table entitled: *Counties with Highest Number of Projected Mean Days per Year Over 95 Degrees at Mid- and End-Century* using data from NOAA.	
	Omitted	Removed table entitled: *Extreme Weather Summary* with data from National Climatic Data Center.	
Haz-Mat Incidents / Transportation Accidents	Table 4.7-1	Updated statistics on Toxic Release Facilities in Montana for 2016.	Tetra Tech
	Table 4.7-2	Updated statistics on haz-mat releases in Montana for 2008-2017 with data from National Response Center.	
	Table 4.7-3	New table entitled: *Vehicular Crash Data 2007-2016* with data from MT Dept. of Transportation.	
	Table 4.7-4	New table entitled: *Accidents at Railroad Crossings: 2008-2017* with data from Federal Railroad Administration.	
	Table 4.7-5	New table entitled: *Railroad Accidents: 2008-2017* with data from Federal Railroad Administration.	
	Table 4.7-6	Updated table entitled: *Top Highway and Railroad Haz-Mat Incidents 1990-2017* with data from U.S. Dept. of Transportation, Office of Haz-Mat Safety.	
	Table 4.7-7	Updated results from MHMP analysis by DES District.	
	Table 4.7-8	Updated table on Hazardous Material Incidents Exposure Summary for Top Counties, Cities and Towns	
Disease	Table 4.8-1	Updated table entitled: *Communicable Disease Summary; 2002-2016*	
Landslide & Avalanche	Table 4.9-1	Updated table presenting Summary of Avalanches in Montana: 2006-2017 (was in Severe Winter Weather Profile).	Tetra Tech
	Table 4.9-2	Updated SHELDUS data in table entitled: *Landslide Losses* (*Adjusted to 2016 Dollars); 1993-2017*.	
	Table 4.9-3	Updated MHMP risk assessment data in table entitled: *Landslide Exposure Summary by DES District.*	
	Table 4.9-4	Updated MHMP risk assessment data in table entitled: *Landslide Exposure Summary for Top Counties, Cities and Towns.*	
Dam Failure	Table 4.10-1	Updated statistics on number of dams in Montana.	Tetra Tech
	Table 4.10-2	Updated table of High Hazard Dams > 100 feet high or with > 100,000 acres-feet of storage. (previously located in Section 3).	
	Table 4.10-3	Updated table entitled: *Montana Dam Failures and Incidents*.	
	Table 4.10-4	Updated dam failure exposure summary by DES District.	
	Table 4.10-5	Updated table entitled *Dam Failure Exposure Summary for Top Counties, Cities, and Towns.*	
	Table 4.10-6	Updated dams requiring further analysis or rehabilitation.	
Volcanic Ash	Table 4.12-4	Updated statistics on State Building Values in Counties Highly Vulnerable to Yellowstone Eruption.	Tetra Tech
Risk Assessment Summary	Table 4.13-1	New table summarizing projected changes to hazards due to climate change.	Tetra Tech
	Table 4.13-2	Updated Hazard Summary table. Rearranged hazards according to rank. Updated probability based on CPRI. Added column for probability change due to climate change.	
	Table 4.13-3	Updated vulnerability analysis summary based on results of 2018 MHMP Risk Assessment.	
	Table 4.13-4	Updated table showing future development projects exposure to the various hazards.	

MONTANA MULTI-HAZARD MITIGATION PLAN & STATEWIDE HAZARD ASSESSMENT – 2018 UPDATE REVISION LOG SECTION 4 – RISK ASSESSMENT			
Topic	**Sub-Section**	**Description of Revision**	**Revised By**
		FIGURE CHANGES	
Risk Assessment Methodology	Figure 4.1-1	Updated table of DES Districts.	Tetra Tech
Wildfire	Figure 4.2-1 A, B, C, D, E, F	Updated figures showing wildfire area of impact in Montana with separate maps for each DES District. Maps present updated methodology for WUI and other values at risk including agricultural land (crops and pasture/hay).	Tetra Tech
	Figure 4.2-2	Updated figure that is a graphical depiction of % Exposure for Wildfire.	
	Figure 4.2-3	Updated figure that is a graphical depiction of % Exposure x Change in Population for Wildfire.	
Flooding	Figure 4.3-1	Created new figure updating ice jam data presentation.	Tetra Tech
	Figure 4.3-2 A, B, C, D, E, F	Updated flood hazard maps comprised of DFIRMs, channel migration maps, levee inundation areas, ice jam locations, and HAZUS data and produced separate map for each DES District.	
	Figure 4.3-3	Updated figure that is a graphical depiction of % Exposure for Flooding.	
	Figure 4.3-4	Updated figure that is a graphical depiction of % Exposure x Change in Population for Flooding.	
	Figure 4.3-5	Updated figure on status of Map Modernization Program.	
	Omitted	Figure showing top cities with high growth and flood exposure on aerial base map.	
Earthquake	Figure 4.4-1	Updated figure showing Intermountain Seismic Belt with data from U.S. Geological Survey.	Tetra Tech
	Figure 4.4-2 A, B, C, D	Updated figure showing Earthquake Hazard Area with data from U.S. Geological Survey and produced separate map for four DES Districts.	
	Figure 4.4-3	Updated figure that is a graphical depiction of % Exposure for Earthquake.	
	Figure 4.4-4	Updated figure that is a graphical depiction of % Exposure x Change in Population for Earthquake.	
Drought	Figure 4.5-1	Updated figure of Montana Drought Status; 2010-2017.	Tetra Tech
Severe Weather	Figure 4.6-1A, B, C, D, E, F	Updated figure showing Severe Summer Weather Hazard Area and presented data by DES District for tornadoes, hail, wind using spatial data from National Climatic Data Center.	Tetra Tech
	Figure 4.6-2	Updated figure that is a graphical depiction of % Exposure for Severe Summer Weather.	
	Figure 4.6-3	Updated figure that is a graphical depiction of % Exposure x Change in Population for Severe Summer Weather.	
	Figure 4.6-4	New figure entitled: *Degree Change in Maximum Median Annual Temperature Between 1949-2009 Maximum Mean and 2050/2099 Low and High Emission Scenarios* using data projections from NOAA.	
Haz-Mat / Transportation Accidents	Figure 4.7-1 A, B, C, D, E, F	Updated hazardous material buffer for MHMP analysis including highway, railroads, and TRI facilities. Presented by DES District in six separate figures.	Tetra Tech
	Figure 4.7-2	Updated figure that is a graphical depiction of % Exposure for Hazardous Material Incidents.	
	Figure 4.7-3	Updated figure that is a graphical depiction of % Exposure x Change in Population for Hazardous Material Incidents.	
Disease	Figure 4.8-1	New figure entitled: *Number and Incident Rate of Reported Influenza Cases by County of Residence, Montana; 2016-2017 Season.*	Tetra Tech

MONTANA MULTI-HAZARD MITIGATION PLAN & STATEWIDE HAZARD ASSESSMENT – 2018 UPDATE REVISION LOG SECTION 4 – RISK ASSESSMENT			
Topic	**Sub-Section**	**Description of Revision**	**Revised By**
Landslide / Avalanche	Figure 4.9-1 A, B, C, D, E. F	Updated landslide hazard map to include slopes over 30 percent and MBMG mapped landslide deposits from digital geologic map. Presented by DES District in 6 separate figures.	Tetra Tech
	Figure 4.9-2	Updated figure that is a graphical depiction of % Exposure for landslides.	
	Figure 4.9-3	Updated figure that is a graphical depiction of % Exposure x Change in Population for landslides.	
Dam Failure	Figure 4.10-1 A, B, C, D, E, F	Updated dam failure hazard map to include digitized inundation areas from high hazard dams. Presented by DES District in six separate figures.	Tetra Tech
	Figure 4.10-2	Updated figure that is a graphical depiction of % Exposure for dam failure.	
	Figure 4.10-3	Updated figure that is a graphical depiction of % Exposure x Change in Population for dam failure.	
	Omitted	Figure that was an aerial base with top cities with high growth and dam inundation exposure.	
Risk Assessment Summary	Figure 4.13-1	Updated composite hazard figure showing future development projects.	Tetra Tech

APPENDIX A-4 2018 STATE OF MONTANA MHMP UPDATE DOCUMENT REVISION LOG SECTION 5 – MITIGATION STRATEGY		
Sub-Section	**Description of Revision**	**Revised By**
	TEXT CHANGES	
5.1	Updated section titled "Mitigation Goals and Objectives". Discussed changes to goals and objectives between 2013 and 2018 State Plans.	Tetra Tech
5.2.1	Heading titled "Mitigation Project Review" was updated to discuss the Planning Team's review of the mitigation projects.	Tetra Tech
5.2.2	Heading titled "Prioritization Scheme" was overhauled to present simplified ranking procedure for planning and non-planning projects.	Tetra Tech
5.2.4	Heading titled "Mitigation Funding Sources" was reduced with a discussion on available funding presented under the Fiscal Capabilities heading in Section 6 – Capability Assessment.	Tetra Tech
5.2.5	Heading titled "Status of Montana's Mitigation Strategy" was updated and completed planning projects were listed.	Tetra Tech
5.3	Heading titled "Local Plan Integration" was updated to discuss how local and tribal plans were integrated into the 2018 Montana State Plan.	Tetra Tech
	TABLE CHANGES	
Table 5.1-1	Updated order of mitigation goals and objectives as they now coincide with hazard ranking	Tetra Tech
Table 5.2-1	Updated table with revised project ranking score thresholds	Tetra Tech
Table 5.2-2	Updated table with 2018 mitigation strategy – goals, objectives and projects, hazard mitigated, project type, priority ranking, and state priority.	Tetra Tech
Table 5.2-3	Updated table outlining progress made and implementation details for 2018 mitigation strategy.	Tetra Tech
Table 5.2.4	Updated table titled "Completed/Planned Mitigation Construction Projects with Matching Funds"	Tetra Tech
Formerly Table 5.2-X	Table titled "Mitigation Funding Sources" Moved to Section 6 – Capability Assessment under Fiscal Capabilities	Tetra Tech
	FIGURE CHANGES	
Figure 5.2-1	Updated figure with locations of prior and ongoing FEMA-funded Wildfire mitigation projects.	Tetra Tech
Figure 5.2-2	Updated figure with locations of prior and ongoing FEMA-funded Flood mitigation projects.	Tetra Tech

MONTANA MULTI-HAZARD MITIGATION PLAN & STATEWIDE HAZARD ASSESSMENT – 2018 UPDATE REVISION LOG SECTION 6 – CAPABILITY ASSESSMENT		
Sub-Section	**Description of Revision**	**Revised By:**
	TEXT CHANGES	
6.1	State Capability Assessment. Summarized state capabilities and move paragraphs on MT DES's self-assessment to subsequent section.	Tetra Tech
6.1.1	State Mitigation Structure. Added new section of MT DES Division and discussed restructuring of branches that support mitigation including Response, Recovery and Mitigation Bureau and Preparedness Bureau that incorporated details on SHMO and DES District Representatives. Included discussion on challenges and accomplishments of MT DES Mitigation Program. Updated discussion on DNRC's Fire Prevention and Education program and MHM Planning Team. Added new writeup on State Emergency Response Commission.	Tetra Tech
6.1.2	State Mitigation Policies, Program, and Capabilities: Discussed process for updating local plans. Updated discussion of National Fire Plan and Fire Prevention, NFIP and CRS, Map Modernization and Risk MAP program, Dam Safety program, and Homeland Security. Moved discussion on National Weather Service initiatives and FireSafe Montana to local capability section. Added discussion on Montana Bureau of Mines and Geology Earthquake Studies Office.	Tetra Tech
6.1.3	Post-Disaster Mitigation Policies, Program, and Capabilities: Updated statistics on HMGP, capabilities and limitations. Updated sections on Public and Individual Assistance Mitigation.	Tetra Tech
6.1.5	Development in Hazard Prone Areas: Identified areas where growth is happening. Updated section on mitigation-related legislation.	Tetra Tech
6.1.6	State Funding Capabilities: Updated data on DES budget, capabilities and limitations.	Tetra Tech
6.2	Local Capability Assessment: Updated data on local planning and technical assistance. Updated Local Planning and Technical Assistance section with additional information on SHMO, Local DES, LEPC/TERCs, FireSafe Montana, National FireWise Communities program, and National Weather Service initiatives.	Tetra Tech
	TABLE CHANGES	
6.1-1	Table new to this section entitled *State Government Mitigation Responsibilities*. This was formerly located in Section 2. Table was updated with additional information.	Tetra Tech
6.1-2	Table new to this section entitled *Non-State Organizations with Mitigation Responsibilities*. This was formerly located in Section. Table was updated with additional information.	Tetra Tech
6.1-3	Formerly Table 6.1-1. Updated table with mitigation planning projects since 2013.	Tetra Tech
6.1-4	Formerly Table 6.1-2. Updated table with mitigation construction projects since 2013.	Tetra Tech
6.1-5	Formerly Table 6.1-3. Updated table with HMGP funding for disasters since 1996.	Tetra Tech
6.1-6	Formerly Table 6.1-5. Updated table on Disaster-funded Planning Mitigation Projects	Tetra Tech
6.1-7	Formerly Table 6.1-4. Updated table on Disaster-funded Planning Mitigation Projects	Tetra Tech
6.1-8	Formerly Table 6.1-6. Updated table on HMGP Five Percent Projects to include recent disasters.	Tetra Tech

MONTANA MULTI-HAZARD MITIGATION PLAN & STATEWIDE HAZARD ASSESSMENT – 2018 UPDATE REVISION LOG SECTION 6 – CAPABILITY ASSESSMENT		
Sub-Section	**Description of Revision**	**Revised By:**
6.2-2	New table to this section entitled *Mitigation Funding Sources*. Was formerly in Section 5 as two tables.	Tetra Tech
FIGURE CHANGES		
6.1-1	New figure entitled: *MT Disaster and Emergency Services* showing organizational structure.	Tetra Tech
6.1-2	New figure entitled: *Montana Disaster and Emergency Services Areas* showing new district divisions.	Tetra Tech
6.1-3	Updated map showing planning status of local Mitigation Plans	Tetra Tech
Formerly 6.1-2	Omitted map showing Montana StormReady Counties, Tribes, and Communities. Included updated info in text form.	Tetra Tech
Formerly 6.1-3	Omitted map showing NOAA Weather Radio Sties and Coverage in Montana.	Tetra Tech

APPENDIX A-4 2018 STATE OF MONTANA MHMP UPDATE DOCUMENT REVISION LOG SECTION 7 – PLAN MAINTENANCE PROCEDURES		
Sub-Section	**Description of Revision**	**Revised By:**
TEXT CHANGES		
7.1.1	Plan Evaluation and Maintenance: Revised section to reflect process that was used over the past five years including description of new DES website, formation of Permanent Montana Mitigation Planning Team, having agency workshops during MHMP Update, and presenting briefings on MHMP at meetings organized by other relevant groups.	Tetra Tech
7.1.2	Revised section to reflect revised process for next plan update.	Tetra Tech
7.2.1	Project Monitoring/Evaluation: Revised section to reflect process that was used over the past five years.	Tetra Tech
7.2.2	Revised section to reflect revised process for next plan update including annual meetings with Montana MHM Planning Team, and new Mitigation Project Review Form.	Tetra Tech
TABLE CHANGES		
7.1-1	Schedule of Update Activities was revised to reflect what is needed.	Tetra Tech

APPENDIX A-4 2018 STATE OF MONTANA MHMP UPDATE DOCUMENT REVISION LOG SECTION 8 – REFERENCES		
Sub-Section	**Description of Revision**	**Revised By:**
	TEXT CHANGES	
8.1	Updated State Profile References (Section 3).	Tetra Tech
8.2	Updated Wildfire References (Section 4.2).	Tetra Tech
8.3	Updated Flooding References (Section 4.3).	Tetra Tech
8.4	Updated Earthquake References (Section 4.4).	Tetra Tech
8.5	Updated Drought References (Section 4.5).	Tetra Tech
8.6	Updated Severe Weather References (Section 4.6).	Tetra Tech
8.7	Updated Hazardous Material Incident and Transportation Accident References (Section 4.7).	Tetra Tech
8.8	Updated Disease References (Section 4.8).	Tetra Tech
8.9	Updated Landslide and Avalanche References (Section 4.9).	Tetra Tech
8.10	Updated Dam Failure References (Section 4.10).	Tetra Tech
8.11	Updated Terrorism, Violence, Civil Unrest, and Cyber Security References (Section 4.11).	Tetra Tech
8.12	Updated Volcanic Ash References (Section 4.12).	Tetra Tech

State of Montana Multi-Hazard Mitigation Plan 2018 Update

APPENDIX B

Risk Assessment Documentation

APPENDIX B-1

LOCAL PLAN HAZARD RANKINGS

APPENDIX B-1			
2018 STATE OF MONTANA MHMP UPDATE			
LOCAL MHMP HAZARD RANKINGS			
DES District	**Plan Year**	**County**	**Local Hazard Ranking**
3	**2017**	**Beaverhead**	
			1. Earthquake
			2. Flood
			3. Wildfire
			4. Severe Weather
			5. Utility and Energy Failure
			6. Disease and Environmental Contamination
			7. Utility/Energy Failure
			8. Drought
			9. Urban Fire
			10. Terrorism and Civil Unrest
			11. Volcanic Ash
			12. Aircraft Accident
			13. Transportation Accident
5	**2012**	**Big Horn**	
			1. Drought
			2. Flooding
			3. Severe Winter Weather
			4. Severe Summer Weather
			5. Haz-Mat & Transportation Accidents
			6. Earthquakes
			7. Volcanic Ash
			8. Landslides
			9. Power Outage/Loss of Communication
2	**2012**	**Blaine**	
			1. Wildfire
			2. Haz-Mat Incidents
			3. Transportation Accidents
			4. Flooding
			5. Dam Failure
			6. Severe Winter Weather
			7. Severe Summer Weather & Drought
			8. Structure Fire
			9. All Hazards
3	**2016**	**Broadwater**	
			1. Wildfire
			2. Haz-Mat & Transp. Accidents
			3. Structure Fire
			4. Flooding
			5. Severe Weather & Drought
			6. Communicable Disease

APPENDIX B-1			
2018 STATE OF MONTANA MHMP UPDATE			
LOCAL MHMP HAZARD RANKINGS			
DES District	Plan Year	County	Local Hazard Ranking
			7. Earthquake
			8. Terrorism
			9. Dam Failure
			10. Landslide
			11. All Hazard
5	**2012**	**Carbon**	
			Hazard Ranking Not in Plan
4	**2012**	**Carter**	
			1. Severe Winter Storms
			2. Wildfire
			3. Drought/Extreme Heat
			4. Flooding
			5. Windstorms & Hail
			6. Severe Thunderstorms
			7. Dam Failure
			8. Natural Gas Pipelines
2	**2017**	**Cascade**	
			1. Haz-Mat Incidents
			2. Wildfire
			3. Severe Weather & Drought
			4. Communicable Disease
			5. Transportation Accidents
			6. Flooding & Dam Failure
			7. Terrorism
			8. Cyber Security
			9. All Hazard
2	**2017**	**Chouteau**	
			1. Wildfire
			2. Severe Weather
			3. Agro-Security
			4. Flooding
			5. Contagious Disease
			6. Earthquakes
			7. Mass Casualty
			8. Dam Failure
			9. Bomb Threat
			10. Cyber Security
			11. Airplane Crash
			12. Tactical Law Enforcement Incident
			13. Structure Fire
			14. Haz-Mat Incident

APPENDIX B-1			
2018 STATE OF MONTANA MHMP UPDATE			
LOCAL MHMP HAZARD RANKINGS			
DES District	**Plan Year**	**County**	**Local Hazard Ranking**
4	**2017**	**Custer**	
			1. Wildfire
			2. Severe Weather
			3. Drought
			4. Flooding & Levee/Dam Failure
			5. Haz-Mat & Transportation Accidents
			6. Terrorism
			7. Communicable Disease
			8. Structure Fire
			9. All Hazards
6	**2016**	**Daniels**	
			1. Severe Summer Weather
			2. Severe Winter Weather
			3. Structure Fire
			4. Infectious Disease
			5. Wildfire
			6. Flooding
			7. Dam Failure
			8. Haz-Mat Incident
			9. Tornado
			10. Transportation Accidents
4	**2014**	**Dawson**	
			1. Flooding
			2. Haz-Mat Incidents
			3. Severe Summer Weather
			4. Severe Winter Weather
			5. Drought
			6. Wildfire
			7. Landslide
			8. Terrorism
1	**2013**	**Anaconda-Deer Lodge**	
			1. Flood
			2. Wildland Fire
			3. Severe Winter Weather
			4. Earthquake
			5. Disease Outbreak
			6. Drought, Blight, and Infestation
			7. Severe Thunderstorms, Tornadoes, and Wind
			8. Hazardous Material Release
			9. Highway Transportation Accident
			10. Urban Fire / Explosion

APPENDIX B-1			
2018 STATE OF MONTANA MHMP UPDATE			
LOCAL MHMP HAZARD RANKINGS			
DES District	Plan Year	County	Local Hazard Ranking
			11. Cyber Attack / Failure
			12. Dam Failure
			13. Large Public Event
			14. Utility Outage
			15. Bioterrorism
			16. Radioactive Release
			17. Terrorism
			18. Volcanic Ashfall
			19. Aircraft Crash
			20. Landslide & Avalanche
			21. Railroad Transportation Accident
4	**2012**	**Fallon**	
			1. Haz-Mat Incidents
			2. Severe Winter Weather
			3. Wildfire
			4. Oil Pipeline
			5. Drought
			6. Major Power Outage
			7. Train Derailment
			8. Flooding
			9. Explosive Fire
			10. Hail
			11. Oil Well Blowouts
			12. Winds
			13. Tornado
			14. Dispatch Center Disaster
			15. West Nile Virus
6	**2014**	**Fergus**	
			1. Drought
			2. Flooding
			3. Landslide
			4. Severe Summer Weather
			5. Severe Winter Weather
			6. Wildfire
			7. Communicable Disease
			8. Dam Failure
			9. Haz-Mat Incident
			10. Terrorism
1	**2014**	**Flathead**	
			1. Wildfire
			2. Flooding
			3. Haz-Mat Incidents

APPENDIX B-1			
2018 STATE OF MONTANA MHMP UPDATE			
LOCAL MHMP HAZARD RANKINGS			
DES District	**Plan Year**	**County**	**Local Hazard Ranking**
			4. Severe Winter Weather
			5.Communicable Disease
			6. Transporation Accidents
			7. Severe Summer Weather
			8. Earthquake
			9. Lanslide
			10. Terrorism
			11. Dam Failure
			12. Volcanic Ash
3	**2012**	**Gallatin**	
			1. Wildfire
			2. Earthquake
			3. Haz-Mat Incident
			4. Flooding
			5. Communicable Disease
			6. Drought
			7. Severe Winter Weather
			8. Utility Outage
			9. Severe Summer Weather
			10. Highway Accident
			11. Dam Failure
			12. Terrorism
			13. Railroad Accident
			14. Volcanic Ash
			15. Structure Fire
			16. Avalance & Landslide
			17. Aviation Accident
			18. Civil Unrest and Violence
4	**2014**	**Garfield**	
			1. Drought
			2. Flooding
			3. Landslide
			4. Severe Summer Weather
			5. Severe Winter Weather
			6. Wildfire
			7. Communicable Disease
			8. Haz-Mat Incident
			9. Terrorism & Violence
2	**2011**	**Glacier**	
			1. Severe Winter Weather
			2. Wildfire

APPENDIX B-1			
2018 STATE OF MONTANA MHMP UPDATE			
LOCAL MHMP HAZARD RANKINGS			
DES District	**Plan Year**	**County**	**Local Hazard Ranking**
			3. Flooding
			4. Communicable Disease
			5. Haz-Mat Incidents
			6. Severe Summer Weather
			7. Earthquakes
			8. Drought
			9. Dam Failure
			10. All Hazards
5	**2007**	**Golden Valley**	
			1. Flooding
			2. Wildfire
			3. Severe Winter Weather
			4. Severe Summer Weather
			5. Haz-Mat & Transp. Accidents
			6. Dam Failure
			7. All Hazards
1	**2013**	**Granite**	
			1. Wildfire
			2. Transportation Accident
			3. Winter Storms and Extended Cold
			4. Flooding
			5. Communicable Disease
			6. Hazardous Materials Release
			7. Wind, Tornadoes, and Severe Thunderstorms
			8. Dam Failure
			9. Drought
			10. Earthquakes
			11. Utility and Communications Failure
			12. Terrorism
			13. Water Supply and Watershed Contamination
			14. Volcanic Ash
			15. Avalanche & Landslide
2	**2012**	**Hill**	
			1. Wildfire
			2. Severe Winter Weather
			3. Flooding
			4. Dam Failure
			5. Structure Fire
			6. Transportation Accidents
			7. Landslide/Land Slippage
			8. Severe Summer Weather & Drought
			9. Haz-Mat Incidents

APPENDIX B-1			
2018 STATE OF MONTANA MHMP UPDATE			
LOCAL MHMP HAZARD RANKINGS			
DES District	Plan Year	County	Local Hazard Ranking
			10. Communicable Disease
			11. All Hazards
3	2017	Jefferson	
			1. Wildfire
			2. Haz-Mat Incidents
			3. Severe Weather & Drought
			4. Flooding & Dam Failure
			5. Transportation Accidents
			6. Earthquakes
			7. Terrorism
			8. Communicable Disease
			9. All Hazards
6	2013	Judith Basin	
			1. Drought
			2. Wildfire
			3. Flooding
			4. Severe Summer Weather
			5. Severe Winter Weather
			6. Agro-Security
			7. Haz-Mat & Transp. Accidents
			8. All Hazards
1	2012	Lake	
			1. Wildfire
			2. Haz-Mat & Transportation Accidents
			3. Landslides
			4. Structure Fire
			5. Severe Winter Weather
			6. Flooding
			7. Communicable Disease
			8. Severe Summer Weather
			9. Earthquakes
			10. Dam Failure
3	2017	Lewis & Clark	
			1. Wildfire
			2. Flooding
			3. Earthquake
			4. Severe Weather & Drought
			5. Haz-Mat Incidents
			6. Disease
			7. Dam Failure
			8. Terrorism
			9. All Hazard

APPENDIX B-1			
2018 STATE OF MONTANA MHMP UPDATE			
LOCAL MHMP HAZARD RANKINGS			
DES District	Plan Year	County	Local Hazard Ranking
2	2013	Liberty	
			1. Severe Summer Weather
			2. Haz-Mat Incidents
			3. Severe Winter Weather
			4. Wildfire
			5. Drought
			6. Flooding
1	2011	Lincoln	
			1. Wildfire
			2. Structure Fire
			3. Flooding
			4. Dam Failure
			5. Haz-Mat Incidents
			6. Railroad Accidents
			7. Severe Winter Weather
			8. Severe Summer Weather
			9. Landslides
			10. Earthquakes
			11. All Hazards
4	2014	McCone	
			1. Severe Summer Weather
			2. Severe Winter Weather
			3. Flooding
			4. Haz-Mat Incidents
			5. Drought
			6. Wildfire
3	2017	Madison	
			1. Earthquake
			2. Flooding
			3. Wildfire
			4. Utility and Energy Failure
			5. Severe Winter Weather
			6. Communicable Disease
			7. Haz-Mat Incidents
			8. Structure Collapse
			9. Drought
			10. Terrorism and Civil Unrest
			11. Transportation Accidents
			12. Volcanic Ash
			13. Landslide & Avalanche
1	2012	Mineral	

APPENDIX B-1			
2018 STATE OF MONTANA MHMP UPDATE			
LOCAL MHMP HAZARD RANKINGS			
DES District	**Plan Year**	**County**	**Local Hazard Ranking**
			1. Wildfire
			2. Severe Summer Weather
			3. Severe Winter Weather
			4. Flooding - Flash & Regional
			5. Haz-Mat Incidents
			6. Utility Disruption
			7. Flooding - Ice Dams
			8. Earthquakes
			9. Landslide
			10. Volcanic Ash
1	**2017**	**Missoula**	
			1. Wildfire
			2. Haz-Mat & Train Derailments
			3. Flooding
			4. Severe Weather & Drought
			5. Earthquakes
			6. Communicable Disease
			7. Avalanches
			8. Dam Failure
			9. All Hazards
5	**2013**	**Musselshell**	
			1. Flooding
			2. Wildfire
			3. Haz-Mat & Transportation Accidents
			4. Severe Weather
			5. All Hazards
3	**2011**	**Park**	
			1. Flooding
			2. Wildfire
			3. Earthquakes
			4. Haz-Mat Incidents
			5. Wind
			6. Severe Winter Weather
			7. Severe Summer Weather
			8. Communicable Disease
			9. Drought
			10. Highway Accident
			11. Structure Fire
			12. Dam Failure
			13. Utility Outage
			14. Volcanic Ash
			15. Terrorism

APPENDIX B-1			
2018 STATE OF MONTANA MHMP UPDATE			
LOCAL MHMP HAZARD RANKINGS			
DES District	Plan Year	County	Local Hazard Ranking
			16. Aviation Accident
			17. Railroad Accident
			18. Avalanche & Landslide
6	2008	Petroleum	
			1. Severe Summer Weather
			2. Wildfire
			3. Severe Winter Weather
			4. Flooding
			5. Drought & Infestation
			6. Structure Fire
			7. Communicable Disease
			8. Haz-Mat Incidents
			9. Terrorism
			10. Volcanic Ash
			11. Earthquake
6	2012	Phillips	
			1. Wildfire
			2. Severe Winter Weather
			3. Flooding
			4. Railroad Accidents
			5. Haz-Mat Incidents
			6. Severe Summer Weather
			7. Drought
			8. Structure Fire
			9. Dam Failure
			10. All Hazards
2	2011	Pondera	
			1. Haz-Mat Incidents
			2. Severe Winter Weather
			3. Flooding
			4. Wildfire
			5. Severe Summer Weather
			6. Dam Failure
			7. Drought
			8. Structure Fire
			9. Highway Accidents
			10. Railroad Accidents
			11. All Hazards
4	2015	Powder River	
			1. Drought
			2. Flooding

APPENDIX B-1			
2018 STATE OF MONTANA MHMP UPDATE			
LOCAL MHMP HAZARD RANKINGS			
DES District	**Plan Year**	**County**	**Local Hazard Ranking**
			3. Severe Summer Wea ther
			4. Severe Winter Weather
			5. Wildfire
			6. Communicable Disease
			7. Haz-Mat Incidents
			8. Terrorism & Violence
1	**2017**	**Powell**	
			1. Wildfire
			2. Flooding
			3. Earthquakes
			4. Haz-Mat Incidents
			5. Severe Weather
			6. Drought
			7. Prison Emergencies-Terrorism
			8. Landslides
			9. Dam Failure
			10. Volcanic Ash
4	**2012**	**Prairie**	
			1. Severe Weather
			2. Wildfire
			3. Oil & Natural Gas Pipelines
			4. Transportation Accidents
			5. Haz-Mat Incidents
			6. Drought
			7. Communicable Disease
			8. Structure Fire
			9. Mass Casualties
			10. Dam Failure
			11. Volcanis Ash
			12. Earthquake
			13. Terrorism & Violence
			14. Insect Infestation
			15. West Nile Virus
1	**2017**	**Ravalli**	
			1. Wildfire
			2. Flooding
			3. Severe Weather & Drought
			4. Haz-Mat & Transportation Accidents
			5. Communicable Disease
			6. Structure Fire
			7. Earthquakes

APPENDIX B-1			
2018 STATE OF MONTANA MHMP UPDATE			
LOCAL MHMP HAZARD RANKINGS			
DES District	**Plan Year**	**County**	**Local Hazard Ranking**
			8. Dam Failure
			9. All Hazards
4	**2014**	**Richland**	
			1. Flooding
			2. Haz-Mat Incident
			3. Severe Summer Weather
			4. Severe Winter Weather
			5. Drought
			6. Wildfire
			7. Communicable Disease
			8. Landslide
			9. Dam Failure
6	**2016**	**Roosevelt**	
			1. Dam Failure
			2. Flooding
			3. Severe Summer Weather
			4. Infectious Disease
			5. Haz-Mat Incidents
			6. Wildfire
			7. Earthquake
			8. Structure Fire
			9. Transp. Accidents
			10. Severe Winter Weather
5	**2013**	**Rosebud**	
			1. Drought
			2. Severe Thunderstorms
			3. Wildfire
			4. Severe Winter Weather
			5. Flooding
			6. Haz-Mat Incidents
			7. Severe Summer Weather
			8. Earthquake
1	**2012**	**Sanders**	
			1. Wildfire
			2. Railroad Accidents
			3. Haz-Mat Incidents
			4. Flooding
			5. Landslides
			6. Drought
			7. Severe Winter Weather
			8. Structure Fire
			9. Earthquake

APPENDIX B-1			
2018 STATE OF MONTANA MHMP UPDATE			
LOCAL MHMP HAZARD RANKINGS			
DES District	Plan Year	County	Local Hazard Ranking
			10. Summer Weather
			11. Dam Failure
			12. All Hazards
6	**2016**	**Sheridan**	
			1. Flooding
			2. Severe Winter Weather
			3. Severe Summer Weather
			4. Dam Failure
			5. Structure Fire
			6. Infectious Disease
			7. Wildfire
			8. Haz-Mat Incident
			9. Tornado
			10. Transp. Accidents
			11. Civil Disobedience
1	**2016**	**Butte-Silver Bow**	
			1. Haz-Mat Incidents
			2. Wildfire
			3. Earthquakes
			4. Severe Weather
			5. Transportation Accidents
			6. Communicable Disease
			7. Terrorism
			8. Flooding & Dam Failure
			9. All Hazards
5	**2015**	**Stillwater**	
			1. Wildfire
			2. Haz-Mat & Transportation Accidents
			3. Severe Weather
			4. Flooding & Dam Failure
			5. Communicable Disease
			6. Drought
			7. Landslide & Avalanche
			8. Terrorism
3	**2005**	**Sweetgrass**	
			1. Fire
			2. Flood
			3. Severre Weather
			4. Haz-Mat Accident
			5. Infectious Diseases
			6. Earthquake
			7. Volcanic Fallout

APPENDIX B-1			
2018 STATE OF MONTANA MHMP UPDATE			
LOCAL MHMP HAZARD RANKINGS			
DES District	Plan Year	County	Local Hazard Ranking
			8. Terrorism/Bioterrorism
			9. Nuclear
2	2014	Teton	
			1. Drought
			2. Flooding
			3. Earthquakes
			4. Haz-Mat Incidents
			5. Landslides
			6. Severe Summer Weather
			7. Severe Winter Weather
			8. Wildfire
2	2013	Toole	
			1. Drought
			2. Haz-Mat Incidents
			3. Bowing Saline Dust
			4. Wildfire
			5. Severe Winter Weather
			6. Severe Summer Weather
			7. Flooding
5	2007	Treasure	
			1. Wildfire
			2. Severe Winter Weather
			3. Haz-Mat Incidents
			4. Severe Thunderstorm
			5. Agriculture Hazards
			6. Communicable Disease
			7. Flooding
			8. Landslide & Sinkholes
			9. Severe Summer Weather
			10. Terrorism
			11. Utility & Communication Failure
			12. Water & Air Contamination
			13. Transp. Accidents
			14. Earthquake
			15. Volcanic Ash
6	2016	Valley	
			1. Flooding
			2. Dam Failure
			3. Haz-Mat Incidents
			4. Severe Winter Weather
			5. Severe Summer Weather
			6. Structure Fire

APPENDIX B-1			
2018 STATE OF MONTANA MHMP UPDATE			
LOCAL MHMP HAZARD RANKINGS			
DES District	Plan Year	County	Local Hazard Ranking
			7. Wildfire
			8. Infectious Disease
			9. Subsidence
			10. Tornado
			11. Transp. Accidents
			12. Civil Disobedience
5	**2013**	**Wheatland**	
			1. Severe Winter Weather
			2. Severe Summer Weather
			3. Flooding
			4. Wildfire
			5. Dam Failure
			6. Haz-Mat & Transportation Accidents
			7. Communicable Disease
			8. All Hazard
4	**2014**	**Wibaux**	
			1. Haz-Mat Incidents
			2. Severe Summer Weather
			3. Severe Winter Weather
			4. Flooding
			5. Wildfire
			6. Drought
5	**2012**	**Yellowstone**	
			1. Severe Summer Weather
			2. Flooding
			3. Tornado
			4. Wildfire
			5. Severe Winter Weather
			6. Landslides
			7. Dam Failure
			8. Earthquake
			9. Volcanic Ash
			10. Drought
			11. Expansive Soils
2	**2007**	**Blackfeet Reservation**	
			1. Flooding
			2. Wildfire
			3. Severe Winter Weather
			4. Severe Summer Weather
			5. Dam Failure
			6. Haz-Mat Incidents

APPENDIX B-1			
2018 STATE OF MONTANA MHMP UPDATE			
LOCAL MHMP HAZARD RANKINGS			
DES District	Plan Year	County	Local Hazard Ranking
			7. Drought
			8. All Hazards
5	2015	Crow Reservation	
			1. Flooding
			2. Severe Summer Weather
			3. Severe Winter Weather
			4. Wildfire
			5. Dam Failure
			6. Drought
			7. Haz-Mat Incidents
			8. Landslides
			9. Communicable Disease
			10. Terrorism & Violence
1	2017	Flathead Reservation - CSKT	
			1. Wildfire
			2. Haz-Mat & Transp. Accidents
			3. Landslides
			4. Structure Fire
			5. Severe Winter Weather
			6. Flooding
			7. Communicable Disease
			8. Severe Summer Weather
			9. Earthquakes
			10. Dam Failure
6	2012	Fort Peck Reservation	
			1. Flooding
			2. Wildfires
			3. Severe Winter Weather
			4. Severe Summer Weather
			5. Haz-Mat Incidents
			6. Terrorism
2	2013	Fort Belknap	
			1. Drought
			2. Wildfire
			3. Flooding
			4. Severe Winter Weather
			5. Communicable Disease
			6. Severe Summer Weather
			7. Haz-Mat Incidents
			8. All Hazards
5	2006	No. Cheyene Reservation	

APPENDIX B-1			
2018 STATE OF MONTANA MHMP UPDATE			
LOCAL MHMP HAZARD RANKINGS			
DES District	**Plan Year**	**County**	**Local Hazard Ranking**
			1. Severe Winter Weather
			2. Wildfire
			3. Haz-Mat Incidents
			4. Water Quality Contamination
2	**2010**	**Rocky Boys Reservation**	
			1. Flooding
			2. Wildfire
			3. Severe Winter Weather
			4. Severe Summer Weather
			5. Dam Failure
			6. All Hazards
			7. Landslide/Landslippage

APPENDIX B-2

STATE CRITICAL FACILITY LIST

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
3	Aeronautics Dell Electrical Building	DEPARTMENT OF TRANSPORTATION	1 mile northwest of Dell off Interstate 15	DELL	Beaverhead		Other	Owned Property	Wood frame	$26,499	45.666561	-111.045997
3	Dillon Readiness Center	DEPARTMENT OF MILITARY AFFAIRS	1070 Highway 41	DILLON	Beaverhead	2000	Armory	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$5,290,581	46.584539	-112.015633
3	KUFM Dillon (WMC)	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	710 S Atlantic St. WMC Heating Plant	DILLON	Beaverhead		Other	Leased Property	Unprotected steel frame with non-combustible (masonry) exterior	$50,000	45.938000	-112.510000
3	Auditorium & Shop	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	710 S. Atlantic	DILLON	Beaverhead	1952	State University	Owned Property	Wood frame	$2,652,247	46.587782	-111.996723
3	Block Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	710 S. Atlantic	DILLON	Beaverhead	1970	State University	Owned Property	Reinforced Concrete	$12,221,413	45.837320	-106.904510
3	Centennial Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	750 E. Cornell	DILLON	Beaverhead	1964	Res Apt Complex	Owned Property	Reinforced concrete frame	$3,485,454	45.642847	-109.299984
3	Clark Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	750 E. Cornell	DILLON	Beaverhead	1967	Res Apt Complex	Owned Property	Reinforced concrete frame	$4,574,377	46.587490	-112.019692
3	Davis Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	710 S. Atlantic	DILLON	Beaverhead	1959	Res Apt Complex	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$3,802,992	46.396998	-112.756516
3	Engineer's Cottage	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	710 S. Atlantic	DILLON	Beaverhead	1925	Cottages/Residential	Owned Property	Wood frame	$67,949	48.197372	-114.302893
3	Family Housing	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	710 S. Atlantic	DILLON	Beaverhead	1958	Res Apt Complex	Owned Property	Reinforced concrete frame	$1,717,829	46.381455	-112.797696
3	Heating Plant & Garage	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	710 S. Atlantic	DILLON	Beaverhead	1926	Power Plant	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,001,967	45.667691	-111.051449
3	Jordan Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	750 E. Cornell	DILLON	Beaverhead	1958	Res Apt Complex	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$506,946	46.861259	-113.987996
3	Library Administration	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	710 S. Atlantic	DILLON	Beaverhead	1969	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$15,267,576	48.997849	-111.960343
3	Main Hall Building	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	710 S. Atlantic	DILLON	Beaverhead	1896	State University	Owned Property	Joisted Masonry	$28,922,882	46.859004	-113.987248
3	Matthews Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	710 S. Atlantic	DILLON	Beaverhead	1919	Res Apt Complex	Owned Property	Joisted Masonry	$11,442,081	46.852651	-113.986052
3	Old Library Building	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	710 S. Atlantic	DILLON	Beaverhead	1924	State University	Owned Property	Reinforced concrete frame	$2,467,568	48.151398	-104.510055
3	Osborne Residence (Curious Minds)	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	710 S. Atlantic	DILLON	Beaverhead	1954	State University	Owned Property	Wood frame	$111,901	46.863299	-113.987674
3	PHYSICAL ED BUILDING - DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	710 S. Atlantic	DILLON	Beaverhead	1975	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$15,779,695	48.629116	-112.315457
3	South Campus Housing	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	434 E. Poindexter	DILLON	Beaverhead	1954	Res Apt Complex	Owned Property	null	$196,717	48.626647	-112.319637
3	STUDENT UNION BUILDING - DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	710 S. Atlantic	DILLON	Beaverhead	1958	State University	Owned Property	Reinforced concrete frame	$2,540,420	46.859436	-113.984366
3	Swysgood Technology Center (STC)	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	710 South Atlantic	DILLON	Beaverhead	2002	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$6,912,898	45.208283	-112.637181

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
5	Hardin - UA (Big Horn) OPA	PUBLIC HEALTH & HUMAN SERVICES	23 8th St W.	HARDIN	Big Horn		Governmental Building	Leased Property	null	$64,294	45.668034	-110.973766
2	MHP - WAPA (Blaine County) Microwave Tower	DEPARTMENT OF JUSTICE	7 miles NW of Chinook	CHINOOK	Blaine		Other	Owned Property	null	$51,267	48.804972	-105.432029
3	Toston Dam Power House	DEPARTMENT OF NATURAL RESOURCES	Toston Dam Road	TOSTON	Broadwater	1989	Power Plant	Owned Property	Reinforced concrete frame	$25,562,814	45.208083	-112.638652
3	Toston Dam Rubber Dams	DEPARTMENT OF NATURAL RESOURCES	Toston Dam Road	TOSTON	Broadwater	1989	Power Plant	Owned Property	null	$1,984,136	46.587511	-112.019465
3	Toston Dam Sub-station	DEPARTMENT OF NATURAL RESOURCES	Toston Dam Road	TOSTON	Broadwater		Power Plant	Owned Property	null	$1,491,948	45.667926	-111.051630
5	MHP-SHANE RIDGE MICROWAVE TOWER	DEPARTMENT OF JUSTICE	15 miles SE of Columbus	COLUMBUS	Carbon		Other	Owned Property	null	$163,402	44.687812	-111.114151
5	RED LODGE - Lease #8148 (OPA/CFS/APS)	PUBLIC HEALTH & HUMAN SERVICES	10 S OAKES AVE.	RED LODGE	Carbon		Governmental Building	Leased Property	null	$31,937	48.541569	-109.679842
5	Red Lodge Translator	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - Billings	Mount Maurice	Red Lodge	Carbon		Other	Leased Property		$25,000	48.540916	-109.679947
2	KUSM TV TRANSMITTER SITE-BLACK EAGLE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	3300 Old Havre Highway	BLACK EAGLE	Cascade	2014	Other	Leased Property	Joisted Masonry	$583,371	45.670632	-111.061213
2	MHP - Sullivan A Microwave Tower	DEPARTMENT OF JUSTICE	15 miles W of Cascade	CASCADE	Cascade		Other	Owned Property	null	$59,304	48.287184	-115.489204
2	KUSM TV Transmitter Site-Sullivan	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Mission Road	Cascade	Cascade	2012	Other	Leased Property	Metal Lighweight or Prefabricated	$84,604	48.368151	-107.917330
2	Academic Building	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	3911 Central Ave.	GREAT FALLS	Cascade	1972	Governmental Building	Owned Property	Joisted Masonry	$9,892,973	46.011639	-112.556827
2	Boiler House	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	3911 Central Ave.	GREAT FALLS	Cascade	1952	Power Plant	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$465,497	46.013417	-112.559500
2	Classroom Building	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	3911 Central Ave.	GREAT FALLS	Cascade	1960	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$906,352	45.208782	-112.638613
2	Food Service Building	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	3911 Central Ave.	GREAT FALLS	Cascade	1983	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$975,103	45.664791	-111.046076
2	PE & Therapy Center	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	3911 Central Ave.	GREAT FALLS	Cascade	1984	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$3,963,682	45.664259	-111.045708
2	Residential Cottage II	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	3911 Central Ave.	GREAT FALLS	Cascade	1983	Res Apt Complex	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$4,090,586	45.208952	-112.637152
2	Residential Cottages I	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	3911 Central Ave.	GREAT FALLS	Cascade	1983	Res Apt Complex	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$4,090,586	46.877327	-113.996273
2	Vocational Shop Building	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	3911 Central Ave.	GREAT FALLS	Cascade	1956	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$812,738	46.023042	-112.552267
2	Own - Ag Development/Grain Inspection Laboratory	DEPARTMENT OF AGRICULTURE	821 17th St N.	GREAT FALLS	Cascade	1935	Laboratory	Owned Property	Wood frame	$969,265	46.022562	-112.552180
2	Leased - Gt. Falls YTC	DEPARTMENT OF CORRECTIONS	4212 3rd Avenue S.	GREAT FALLS	Cascade		Juvenile Hall	Leased Property	null	$63,813	46.022289	-112.552165
2	Regional HQ Building	DEPARTMENT OF FISH, WILDLIFE & PARKS	4600 Giant Springs Rd	GREAT FALLS	Cascade	1987	Governmental Building	Owned Property	Wood frame	$2,531,127	46.861861	-113.986280
2	MHP - Flying J Microwave Tower	DEPARTMENT OF JUSTICE	Great Falls	GREAT FALLS	Cascade		Other	Owned Property	null	$24,300	47.876726	-114.033192
2	MHP - Gore Hill Microwave Tower	DEPARTMENT OF JUSTICE	Great Falls	GREAT FALLS	Cascade		Other	Owned Property	null	$10,970	46.381886	-112.794737
2	Great Falls Office/Shop	DEPARTMENT OF TRANSPORTATION	104 18th Avenue NE	GREAT FALLS	Cascade	1963	Office	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,755,689	48.542138	-109.686046

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
2	Main Building	UNIVERSITY SYSTEM, GREAT FALLS COLLEGE MONTANA STATE UNIVERSITY	2100 16th Ave S	GREAT FALLS	Cascade	1976	State University	Owned Property	Joisted Masonry	$53,111,131	47.505454	-111.239507
2	Trades Building	UNIVERSITY SYSTEM, GREAT FALLS COLLEGE MONTANA STATE UNIVERSITY	2100 16th Ave S	GREAT FALLS	Cascade	2008	State University	Owned Property	Fire-protected steel frame	$4,392,209	46.858849	-113.983774
2	BENEFIS HEALTH CARE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	400 15th Ave So Suite 101-7 & 201	GREAT FALLS	Cascade	2003	State University	Leased Property	Wood frame	$582,363	46.858906	-114.059335
4	Miles City Data Center (SMDC)	DEPARTMENT OF ADMINISTRATION	114 S Haynes Avenue	MILES CITY	Custer	2010	Office	Owned Property	Reinforced concrete frame	$10,872,477	46.012808	-112.559297
4	Academic Training Center	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	4 North Haynes Avenue	MILES CITY	Custer	1966	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$3,406,737	46.396982	-112.760724
4	Housing Unit E	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	4 North Haynes Avenue	MILES CITY	Custer	2000	Jail	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,104,005	47.876726	-114.033192
4	Main Building/PHYCF	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	4 North Haynes Avenue	MILES CITY	Custer	2000	Jail	Owned Property	Fireprotected Steel	$14,560,064	47.876726	-114.033192
4	Physical Training Center	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	4 North Haynes Avenue	MILES CITY	Custer	1968	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$4,835,185	45.668506	-111.051427
4	Spirituality Center	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	4 North Haynes Avenue	MILES CITY	Custer	1983	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,113,317	45.662401	-110.584516
4	Warehouse/Maintenance	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	4 North Haynes Avenue	MILES CITY	Custer	1971	Garage, Service Center	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$555,482	45.695595	-110.769029
4	Regional HQ - Building	DEPARTMENT OF FISH, WILDLIFE & PARKS	352 I-94 Business Loop	MILES CITY	Custer	1991	Governmental Building	Owned Property	Wood frame	$2,282,995	48.172641	-114.346822
4	Miles City Armory	DEPARTMENT OF MILITARY AFFAIRS	2500 Main Street	MILES CITY	Custer	1957	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$5,214,479	45.667625	-111.055037
4	Miles City Readiness Center	DEPARTMENT OF MILITARY AFFAIRS	1020 N Haynes Ave.	MILES CITY	Custer	2015	Armory	Owned Property	(IV) Masonry Non-Combustible	$12,536,969	46.380964	-112.801588
4	Miles City Office/Shop II	DEPARTMENT OF TRANSPORTATION	217 N. 4th Street	MILES CITY	Custer	1997	Office	Owned Property	Steel frame with combustible exterior walls	$2,399,029	46.381092	-112.800460
4	KYPR Radio Station/Signals to Butte	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	3.3 miles E/SE	MILES CITY	Custer		Other	Leased Property	null	$42,635	46.381591	-112.802615
6	MHP - Scobey Microwave Tower	DEPARTMENT OF JUSTICE	4 miles E of Scobey	SCOBEY	Daniels		Other	Owned Property	null	$34,529	48.541954	-109.685398
6	Aeronautics NDB - Scobey	DEPARTMENT OF TRANSPORTATION	48 deg - 48' - 25.1" N, 105 deg - 26' - 32.0" W	SCOBEY	Daniels		Other	Owned Property	Steel frame with combustible exterior walls	$2,417	46.012072	-112.557878
4	Eastmont Cottage 1 Office & Ed	DEPARTMENT OF CORRECTIONS	700 E Little St.	GLENDIVE	Dawson	1969	Jail	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,129,527	47.719729	-104.153032

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
4	Eastmont Cottage 3 - Long Term Care Facility	DEPARTMENT OF CORRECTIONS	700 E Little St.	GLENDIVE	Dawson	1977	Jail	Owned Property	Steel frame with combustible exterior walls	$3,324,365	47.719974	-104.153326
4	Eastmont Garage/Shop	DEPARTMENT OF CORRECTIONS	700 E Little St.	GLENDIVE	Dawson	1971	Garage, Service Center	Owned Property	Steel frame with combustible exterior walls	$162,865	47.128488	-104.688705
4	Eastmont Multi-Purpose Building & Addition	DEPARTMENT OF CORRECTIONS	700 E Little St.	GLENDIVE	Dawson	1969	Jail	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,347,689	47.115316	-104.689806
4	Makoshika SP - Building - Visitor Center	DEPARTMENT OF FISH, WILDLIFE & PARKS	1301 Snyder Ave.	GLENDIVE	Dawson	1994	Museum	Owned Property	Wood frame	$1,042,132	47.115316	-104.689806
4	MHP - Highway Patrol, Glendive	DEPARTMENT OF JUSTICE	76 Highway 16	GLENDIVE	Dawson	1975	Governmental Building	Owned Property	Wood frame	$219,671	47.115316	-104.689806
4	MHP-BELLE PRARIE MICROWAVE	DEPARTMENT OF JUSTICE	207 W BELL ST	GLENDIVE	Dawson		Other	Owned Property	null	$272,820	47.115316	-104.689806
4	Aeronautics NDB - Glendive	DEPARTMENT OF TRANSPORTATION	47 deg - 8' - 1.0" N, 104 deg - 48' - 15.0" W	GLENDIVE	Dawson		Other	Owned Property	Wood frame	$15,417	46.858388	-113.987648
4	Glendive Office/Shop	DEPARTMENT OF TRANSPORTATION	503 N River Avenue	GLENDIVE	Dawson	1946	Office	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,929,679	47.876726	-114.032857
4	Eastern Montana Veteran's Home	PUBLIC HEALTH & HUMAN SERVICES, VETERANS' HOME - GLENDIVE	2000 Montana Avenue	GLENDIVE	Dawson	1995	Hospital, Nursing Home	Owned Property	Wood frame	$10,541,761	46.859669	-113.988141
1	Washoe Park Hatchery - Building - Creek Water Intake	DEPARTMENT OF FISH, WILDLIFE & PARKS	600 West Pennsylvania St.	ANACONDA	Deer Lodge	1989	Power Plant	Owned Property	Wood Frame	$52,023	45.669284	-111.057314
1	MHP-LOST CREEK MICROWAVE TOWER	DEPARTMENT OF JUSTICE	923 W 5TH ST	ANACONDA	Deer Lodge		Other	Owned Property	null	$197,623	45.669229	-111.056454
1	Anaconda Armory	DEPARTMENT OF MILITARY AFFAIRS	101 N Polk	ANACONDA	Deer Lodge	1970	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,637,856	46.848491	-113.989633
1	Administrative Annex	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	58 Garnet Way	Warm Spring	Deer Lodge	1919	Office	Owned Property	Steel frame with combustible exterior walls	$2,890,253	47.056021	-109.425693
1	MT State Hospital	DEPARTMENT OF ADMINISTRATION	300 Garnet Ave.	WARM SPRINGS	Deer Lodge		Hospital, Nursing Home	Leased Property	null	$200,000	45.667961	-111.050928
1	Warm Springs Boiler Plant (Mechanics Garage)	DEPARTMENT OF CORRECTIONS	Warm Springs	WARM SPRINGS	Deer Lodge	1909	Garage, Service Center	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$484,520	45.660266	-111.045295
1	WATCH Warm Springs	DEPARTMENT OF CORRECTIONS	201 Orofino Way N	WARM SPRINGS	Deer Lodge	1986	Jail	Owned Property	Reinforced Concrete	$15,648,539	46.120486	-111.407744
1	Doctor's Residence No. 41	PUBLIC HEALTH & HUMAN SERVICES	65 Mystic Way	Warm Springs	Deer Lodge	1966	Cottages/Residential	Owned Property	Wood Frame	$110,045	46.120029	-111.408265
1	Doctor's Residence No. 42	PUBLIC HEALTH & HUMAN SERVICES	51 Mystic Way	Warm Springs	Deer Lodge	1966	Cottages/Residential	Owned Property	Wood Frame	$91,262	46.120675	-111.407478
1	Duplex No. 13	PUBLIC HEALTH & HUMAN SERVICES	87 Mystic Way	Warm Springs	Deer Lodge	1958	Cottages/Residential	Owned Property	Wood Frame	$24,359	46.396982	-112.760724
1	Duplex No. 14	PUBLIC HEALTH & HUMAN SERVICES	117 Mystic Way	Warm Springs	Deer Lodge	1958	Cottages/Residential	Owned Property	Wood Frame	$24,359	46.845555	-114.072768
1	Duplex No. 17	PUBLIC HEALTH & HUMAN SERVICES	171 Mystic Way	Warm Springs	Deer Lodge	1958	Cottages/Residential	Owned Property	Wood Frame	$24,359	46.845479	-114.071122
1	Duplex No. 18	PUBLIC HEALTH & HUMAN SERVICES	179 Mystic Way	Warm Springs	Deer Lodge	1958	Cottages/Residential	Owned Property	Wood Frame	$24,359	46.845726	-114.069174
1	Duplex No. 19	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	5 Hidden Way	WARM SPRINGS	Deer Lodge	1949	Cottages/Residential	Owned Property	Wood frame	$269,838	47.485415	-111.271021
1	Johnson House Group Home	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	137 Mystic Way	WARM SPRINGS	Deer Lodge	1958	Cottages/Residential	Owned Property	Wood frame	$118,355	45.666507	-111.050432
1	Maintenance Office	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	317 Orofino Way	WARM SPRINGS	Deer Lodge	1945	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$602,019	46.394214	-112.848174

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
1	McColllum House Group Home	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	30 Garrity Way	WARM SPRINGS	Deer Lodge	1915	Cottages/Residential	Owned Property	Wood frame	$232,651	46.233528	-112.116919
1	Mickleberry House	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	389 Trapper Way	WARM SPRINGS	Deer Lodge	1918	Cottages/Residential	Owned Property	Wood frame	$128,035	46.860764	-113.987361
1	MT Haggin Group Home	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	45 Hidden Way	WARM SPRINGS	Deer Lodge	1949	Cottages/Residential	Owned Property	Wood frame	$269,838	46.381591	-112.801659
1	NEW HEATING PLANT	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	203 Trapper Way	WARM SPRINGS	Deer Lodge	1970	Power Plant	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,010,694	46.381477	-112.801131
1	PINTLAR LODGE	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	290 Oxbow Way	WARM SPRINGS	Deer Lodge	1970	Hospital, Nursing Home	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$819,687	46.381948	-112.801102
1	Recovery Center	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	32 Trapper Way	WARM SPRINGS	Deer Lodge	1971	Office	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,849,427	46.381848	-112.800632
1	Residence D	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	164 Garrity Way	WARM SPRINGS	Deer Lodge	1908	Cottages/Residential	Owned Property	Wood frame	$68,557	46.382348	-112.800589
1	Residence E	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	191 Garrity Way	WARM SPRINGS	Deer Lodge	1917	Cottages/Residential	Owned Property	Wood frame	$84,296	46.382248	-112.800032
1	Residence F	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	205 Garrity Way	WARM SPRINGS	Deer Lodge	1917	Cottages/Residential	Owned Property	Wood frame	$84,296	46.860818	-113.982814
1	Residence G	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	100 Mt Evans Way	WARM SPRINGS	Deer Lodge	1920	Cottages/Residential	Owned Property	Wood frame	$126,690	46.860052	-113.983750
1	Residence H	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	102 Mt Evans Way	WARM SPRINGS	Deer Lodge	1920	Cottages/Residential	Owned Property	Wood frame	$99,139	46.859003	-113.985178
1	SPRATT BUILDING	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	351 Fleecer Way	WARM SPRINGS	Deer Lodge	1976	Hospital, Nursing Home	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$3,630,396	46.586335	-112.015826
1	Theraputic Learning Center	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	156 Garnet Way	WARM SPRINGS	Deer Lodge	1951	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$3,914,553	45.665648	-111.051535
1	Warm Springs Facility	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	100 Garnet Way	WARM SPRINGS	Deer Lodge	2000	Hospital, Nursing Home	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$34,555,687	46.396982	-112.760724
4	Aeronautics NDB - Baker	DEPARTMENT OF TRANSPORTATION	101 Airport Road	BAKER	Fallon		Other	Owned Property	Steel frame with combustible exterior walls	$15,822	45.669114	-111.057423
6	MHP - Garneill (Pinkim Moved) Microwave Tower	DEPARTMENT OF JUSTICE	2 miles NE Garneill	GARNEILL	Fergus		Other	Owned Property	null	$58,379	46.585625	-112.014048
6	MHP - South Moccasin (Fergus) Microwave Tower	DEPARTMENT OF JUSTICE	10 miles NW of Lewistown	LEWISTOWN	Fergus		Other	Owned Property	null	$23,750	46.843899	-113.996761
6	Lewistown Armory	DEPARTMENT OF MILITARY AFFAIRS	190 Armory Road	LEWISTOWN	Fergus	1960	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,002,561	46.843927	-113.996389
6	Lewistown Office and Shop	DEPARTMENT OF TRANSPORTATION	1620 Airport Road	LEWISTOWN	Fergus	1965	Garage, Service Center	Owned Property	Steel frame with combustible exterior walls	$680,149	46.843928	-113.995810
6	Main Building & Addition	PUBLIC HEALTH & HUMAN SERVICES, MENTAL HEALTH NURSING CARE CENTER	800 Casino Creek Drive	LEWISTOWN	Fergus	1952	Hospital, Nursing Home	Owned Property	Joisted Masonry	$19,408,341	46.843233	-113.996731
6	Three-Stall Garage	PUBLIC HEALTH & HUMAN SERVICES, MENTAL HEALTH NURSING CARE CENTER	800 Casino Creek Drive	LEWISTOWN	Fergus		Garage, Vehicle Storage	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$99,327	46.843212	-113.996355

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
6	Lewistown Translator/Transmitter	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	S. Moccasin Mount, 9.5 miles N.N.W. of town	LEWISTOWN	Fergus		Other	Leased Property	Joisted Masonry	$159,674	46.843159	-113.995803
1	Nursing Home & Dom &Special Care Unit 69-73-84-02	PUBLIC HEALTH & HUMAN SERVICES, VETERANS' HOME - COLUMBIA FALLS	400 Veterans Dr.	COLUMBIA FALLS	Flathead	1970	Hospital, Nursing Home	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$16,638,591	46.602387	-111.994023
1	Superintendent's Cottage	PUBLIC HEALTH & HUMAN SERVICES, VETERANS' HOME - COLUMBIA FALLS	400 Veterans Dr.	COLUMBIA FALLS	Flathead	1899	Cottages/Residential	Owned Property	Wood frame	$312,832	46.587466	-112.016611
1	Lone Pine SP - Building - Visitor Center	DEPARTMENT OF FISH, WILDLIFE & PARKS	300 Lone Pine Rd.	KALISPELL	Flathead	1982	Museum	Owned Property	Wood frame	$1,401,629	47.002350	-112.106964
1	Regional HQ Building	DEPARTMENT OF FISH, WILDLIFE & PARKS	490 N Meridian Rd.	KALISPELL	Flathead	1990	Governmental Building	Owned Property	null	$3,859,259	46.020376	-112.421793
1	MHP - Kalispell Dispatch Microwave Tower	DEPARTMENT OF JUSTICE	3.5 miles NW of Kalispell	KALISPELL	Flathead		Other	Owned Property	null	$34,559	46.389743	-105.756898
1	MHP - Kalispell Water Tower Microwave Tower	DEPARTMENT OF JUSTICE	Kalispell	KALISPELL	Flathead		Other	Owned Property	null	$28,274	46.584727	-112.017053
1	Kalispell AFRC	DEPARTMENT OF MILITARY AFFAIRS	2989 Hwy 93 North	KALISPELL	Flathead	2005	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$10,692,875	47.876689	-114.033799
1	Kalispell AFRC Fire Pump Building	DEPARTMENT OF MILITARY AFFAIRS	2989 Hwy 93 North	KALISPELL	Flathead	2005	Pump House	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$401,231	47.916149	-108.604011
1	NWLO Fire Cache	DEPARTMENT OF NATURAL RESOURCES	655 Timberwolf Parkway, Suite 2	KALISPELL	Flathead	2009	Storage	Owned Property	Wood frame	$1,708,960	45.670691	-111.050447
1	NWLO Helicopter Hanger	DEPARTMENT OF NATURAL RESOURCES	A-8 Ryan Lane	KALISPELL	Flathead	2006	Airport Hangars	Owned Property	Metal Lightweight or Prefabricated	$182,336	46.383161	-112.798263
1	Kalispell Office & Shop	DEPARTMENT OF TRANSPORTATION	85 5th Avenue EN	KALISPELL	Flathead	1999	Office	Owned Property	Steel frame with combustible exterior walls	$2,664,291	46.596863	-112.034572
1	KALISPELL REGIONAL MEDICAL CTR	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	310 SUNNYVIEW LANE	KALISPELL	Flathead	2007	State University	Leased Property	Joisted Masonry	$230,546	45.665513	-111.052487
1	KUSM TV Transmitter Site-Line Pine Site	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Kookoosint Trail	Kalispell	Flathead	2012	Other	Leased Property	Wood Frame	$46,394	47.501380	-111.233797
1	NWARC RESIDENCE #1	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	4570 Montana 35	KALISPELL	Flathead	1925	Res Apt Complex	Owned Property	null	$102,279	45.667700	-111.050174
1	KUFM Kalispell	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lone Pine State Park	KALISPELL	Flathead		Other	Leased Property	Wood frame	$50,000	45.892190	-111.549275
1	Conrad Mansion Museum		300 Woodland Ave.	KALISPELL	Flathead	1895	Museum	Leased Property	null	$0	46.844785	-113.996719
1	MHP - Black Tail Microwave Tower	DEPARTMENT OF JUSTICE	5 miles E of Lakside	LAKESIDE	Flathead		Other	Owned Property	null	$102,091	46.844567	-113.996185
1	KUSM TV Transmitter Site-Blacktail	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Blacktail Road	Lakeside	Flathead	2012	Other	Leased Property	Joisted Masonry	$353,956	46.844492	-113.995850
1	MHP - Big Mountain Microwave Tower	DEPARTMENT OF JUSTICE	7 miles North of Whitefish	WHITEFISH	Flathead		Other	Owned Property	null	$36,176	46.180918	-112.790329
1	KUFM FAA Peak Whitefish	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Big Mountain FAA Peak	WHITEFISH	Flathead		Other	Leased Property	Wood frame	$50,000	46.133154	-112.956521
3	Gallatin Readiness Center	DEPARTMENT OF MILITARY AFFAIRS	350 Airport Road	BELGRADE	Gallatin	2003	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$9,233,463	45.668988	-111.057421
3	Leased - Ag Sciences/Bozeman Laboratory	DEPARTMENT OF AGRICULTURE	MSU McCall Hall Rm 10	BOZEMAN	Gallatin	1952	Laboratory	Leased Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,453,013	45.670631	-111.061213
3	Regional HQ Building	DEPARTMENT OF FISH, WILDLIFE & PARKS	1400 South 19th	BOZEMAN	Gallatin	1987	Governmental Building	Owned Property	Wood frame	$2,956,315	45.666977	-111.060383
3	Diagnostic Laboratory Bozeman Contents	DEPARTMENT OF LIVESTOCK	S. 19th & Lincoln	BOZEMAN	Gallatin		Laboratory	Leased Property	null	$601,384	45.667653	-111.061446

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DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
3	Bozeman Office & Shop	DEPARTMENT OF TRANSPORTATION	907 N. Rouse	BOZEMAN	Gallatin	1939	Office	Owned Property	Wood frame	$1,667,047	45.668839	-111.058458
3	FACILITIES HEAT PLANT GENERATOR BLDG	University System, Montana State University	West Grant Street (no official address)	Bozeman	Gallatin	1922	Power Plant	Owned Property	Joisted Masonry	$4,170,986	45.670601	-111.061203
3	Bozeman Translator	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	113 Sourdough Ridge Road	BOZEMAN	Gallatin		Other	Leased Property	null	$13,563	45.666977	-111.061071
3	KBMC Transmitter Facilities	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	High Flat, 11 miles W.S.W. of Bozeman	BOZEMAN	Gallatin		Other	Leased Property	null	$543,046	45.667938	-111.061560
3	1 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1 GLACIER COURT	BOZEMAN	Gallatin	1957	Res Apt Complex	Owned Property	Wood frame	$28,413	45.668697	-111.058600
3	10 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	10 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.670472	-111.061155
3	1002 S. 15TH STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1002 S. 15TH STREET	BOZEMAN	Gallatin	1957	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.667179	-111.061112
3	1004 S. 15TH STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1004 S. 15TH STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.852273	-113.985074
3	1006 S. 15TH STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1006 S. 15TH STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.668593	-111.058561
3	101 BRANEGAN COURT TOWNHOUSES	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	101 BRANEGAN COURT	BOZEMAN	Gallatin	1976	Res Apt Complex	Owned Property	Joisted Masonry	$222,889	45.670628	-111.061213
3	101 EAST JULIA MARTIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	101 EAST JULIA MARTIN DRIVE	BOZEMAN	Gallatin	1968	Res Apt Complex	Owned Property	Joisted Masonry	$252,689	45.667216	-111.060810
3	101 GRANT CHAMBERLAIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	101 GRANT CHAMBERLAIN DRIVE	BOZEMAN	Gallatin	1975	Res Apt Complex	Owned Property	Joisted Masonry	$875,560	46.852534	-113.984776
3	101 MCINTOSH COURT TOWNHOUSES	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	101 MCINTOSH COURT	BOZEMAN	Gallatin	1996	Res Apt Complex	Owned Property	Wood frame	$251,250	45.669284	-111.056531
3	101 PAISLEY COURT FLATS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	101 PAISLEY COURT	BOZEMAN	Gallatin	1985	Res Apt Complex	Owned Property	Wood frame	$390,682	45.668332	-111.058129
3	102 BRANEGAN COURT TOWNHOUSES	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	102 BRANEGAN COURT	BOZEMAN	Gallatin	1976	Res Apt Complex	Owned Property	Joisted Masonry	$222,889	46.848455	-113.991897
3	102 EAST JULIA MARTIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	102 EAST JULIA MARTIN DRIVE	BOZEMAN	Gallatin	1968	Res Apt Complex	Owned Property	Joisted Masonry	$127,017	45.668007	-111.045332
3	102 GRANT CHAMBERLAIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	102 GRANT CHAMBERLAIN DRIVE	BOZEMAN	Gallatin	1975	Res Apt Complex	Owned Property	Joisted Masonry	$860,580	45.668480	-111.060040
3	102 MCINTOSH COURT TOWNHOUSES	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	102 MCINTOSH COURT	BOZEMAN	Gallatin	1996	Res Apt Complex	Owned Property	Wood Frame	$273,536	46.848343	-113.991651
3	102 PAISLEY COURT FLATS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	102 PAISLEY COURT	BOZEMAN	Gallatin	1985	Res Apt Complex	Owned Property	Wood Frame	$375,461	45.668680	-111.059874
3	103 BRANEGAN COURT TOWNHOUSES	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	103 BRANEGAN COURT	BOZEMAN	Gallatin	1976	Res Apt Complex	Owned Property	Joisted Masonry	$222,889	45.668815	-111.059972
3	103 EAST JULIA MARTIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	103 EAST JULIA MARTIN DRIVE	BOZEMAN	Gallatin	1968	Res Apt Complex	Owned Property	Joisted Masonry	$252,689	45.668854	-111.060092

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DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
3	103 GRANT CHAMBERLAIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	103 GRANT CHAMBERLAIN DRIVE	BOZEMAN	Gallatin	1975	Res Apt Complex	Owned Property	Joisted Masonry	$860,580	45.668844	-111.060420
3	103 MCINTOSH COURT TOWNHOUSES	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	103 MCINTOSH COURT	BOZEMAN	Gallatin	1996	Res Apt Complex	Owned Property	Wood Frame	$234,028	45.668816	-111.060530
3	103 PAISLEY COURT FLATS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	103 PAISLEY COURT	BOZEMAN	Gallatin	1985	Res Apt Complex	Owned Property	Wood Frame	$375,461	46.852428	-113.984764
3	104 BRANEGAN COURT TOWNHOUSES	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	104 BRANEGAN COURT	BOZEMAN	Gallatin	1976	Res Apt Complex	Owned Property	Joisted Masonry	$222,889	45.668591	-111.060559
3	104 EAST JULIA MARTIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	104 EAST JULIA MARTIN DRIVE	BOZEMAN	Gallatin	1968	Res Apt Complex	Owned Property	Joisted Masonry	$127,017	46.851794	-113.984773
3	104 GRANT CHAMBERLAIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	104 GRANT CHAMBERLAIN DRIVE	BOZEMAN	Gallatin	1975	Res Apt Complex	Owned Property	Joisted Masonry	$860,580	45.668214	-111.060303
3	104 MCINTOSH COURT TOWNHOUSES	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	104 MCINTOSH COURT	BOZEMAN	Gallatin	1996	Res Apt Complex	Owned Property	Wood Frame	$234,028	45.667755	-111.060302
3	104 PAISLEY COURT FLATS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	104 PAISLEY COURT	BOZEMAN	Gallatin	1985	Res Apt Complex	Owned Property	Wood Frame	$375,461	45.669226	-111.056292
3	105 BRANEGAN COURT TOWNHOUSES	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	105 BRANEGAN COURT	BOZEMAN	Gallatin	1976	Res Apt Complex	Owned Property	Joisted Masonry	$222,889	46.847889	-113.991610
3	105 EAST JULIA MARTIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	105 EAST JULIA MARTIN DRIVE	BOZEMAN	Gallatin	1968	Res Apt Complex	Owned Property	Joisted Masonry	$252,689	46.848016	-113.991891
3	105 GRANT CHAMBERLAIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	105 GRANT CHAMBERLAIN DRIVE	BOZEMAN	Gallatin	1975	Res Apt Complex	Owned Property	Joisted Masonry	$860,580	45.668258	-111.055244
3	105 MCINTOSH COURT TOWNHOUSES	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	105 MCINTOSH COURT	BOZEMAN	Gallatin	1996	Res Apt Complex	Owned Property	Wood Frame	$234,028	45.667779	-111.055834
3	105 PAISLEY COURT FLATS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	105 PAISLEY COURT	BOZEMAN	Gallatin	1985	Res Apt Complex	Owned Property	Wood Frame	$375,461	45.668199	-111.055302
3	106 BRANEGAN COURT TOWNHOUSES	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	106 BRANEGAN COURT	BOZEMAN	Gallatin	1976	Res Apt Complex	Owned Property	Joisted Masonry	$222,889	45.668466	-111.057422
3	106 EAST JULIA MARTIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	106 EAST JULIA MARTIN DRIVE	BOZEMAN	Gallatin	1968	Res Apt Complex	Owned Property	Joisted Masonry	$127,017	45.668256	-111.055410
3	106 GRANT CHAMBERLAIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	106 GRANT CHAMBERLAIN DRIVE	BOZEMAN	Gallatin	1975	Res Apt Complex	Owned Property	Joisted Masonry	$860,580	45.668203	-111.055464
3	106 MCINTOSH COURT TOWNHOUSES	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	106 MCINTOSH COURT	BOZEMAN	Gallatin	1996	Res Apt Complex	Owned Property	Wood Frame	$234,028	45.668358	-111.057422
3	106 PAISLEY COURT FLATS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	106 PAISLEY COURT	BOZEMAN	Gallatin	1985	Res Apt Complex	Owned Property	Wood Frame	$375,461	45.667779	-111.055831
3	107 BRANEGAN COURT TOWNHOUSES	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	107 BRANEGAN COURT	BOZEMAN	Gallatin	1976	Res Apt Complex	Owned Property	Joisted Masonry	$222,889	45.668250	-111.057422
3	107 EAST JULIA MARTIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	107 EAST JULIA MARTIN DRIVE	BOZEMAN	Gallatin	1968	Res Apt Complex	Owned Property	Joisted Masonry	$252,689	45.667693	-111.055816
3	107 MCINTOSH COURT TOWNHOUSES	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	107 MCINTOSH COURT	BOZEMAN	Gallatin	1996	Res Apt Complex	Owned Property	Wood Frame	$273,536	45.667691	-111.055816

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
3	107 PAISLEY COURT FLATS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	107 PAISLEY COURT	BOZEMAN	Gallatin	1985	Res Apt Complex	Owned Property	Wood Frame	$375,461	45.669285	-111.056373
3	108 BRANEGAN COURT TOWNHOUSES	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	108 BRANEGAN COURT	BOZEMAN	Gallatin	1976	Res Apt Complex	Owned Property	Joisted Masonry	$222,889	46.847893	-113.992225
3	108 EAST JULIA MARTIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	108 EAST JULIA MARTIN DRIVE	BOZEMAN	Gallatin	1968	Res Apt Complex	Owned Property	Joisted Masonry	$252,689	46.848192	-113.992226
3	108 MCINTOSH COURT TOWNHOUSES	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	108 MCINTOSH COURT	BOZEMAN	Gallatin	1996	Res Apt Complex	Owned Property	Wood Frame	$273,536	45.667583	-111.056333
3	108 PAISLEY COURT FLATS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	108 PAISLEY COURT	BOZEMAN	Gallatin	1985	Res Apt Complex	Owned Property	Wood Frame	$375,461	46.847927	-113.992632
3	109 EAST JULIA MARTIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	109 EAST JULIA MARTIN DRIVE	BOZEMAN	Gallatin	1968	Res Apt Complex	Owned Property	Joisted Masonry	$127,017	45.668202	-111.055793
3	109 MCINTOSH COURT TOWNHOUSES	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	109 MCINTOSH COURT	BOZEMAN	Gallatin	1996	Res Apt Complex	Owned Property	Wood Frame	$234,028	45.668256	-111.055973
3	109 PAISLEY COURT FLATS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	109 PAISLEY COURT	BOZEMAN	Gallatin	1985	Res Apt Complex	Owned Property	Wood Frame	$375,461	45.667583	-111.057093
3	11 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	11 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.668199	-111.055982
3	110 EAST JULIA MARTIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	110 EAST JULIA MARTIN DRIVE	BOZEMAN	Gallatin	1968	Res Apt Complex	Owned Property	Joisted Masonry	$127,017	45.668255	-111.056130
3	1102 S 6th Avenue	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1102 SO 6th	BOZEMAN	Gallatin	1950	Res Apt Complex	Owned Property	Wood frame	$814,928	45.668202	-111.056130
3	111 EAST JULIA MARTIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	111 EAST JULIA MARTIN DRIVE	BOZEMAN	Gallatin	1968	Res Apt Complex	Owned Property	Joisted Masonry	$127,017	45.668256	-111.056283
3	112 WEST JULIA MARTIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	112 WEST JULIA MARTIN DRIVE	BOZEMAN	Gallatin	1971	Res Apt Complex	Owned Property	Joisted Masonry	$288,331	45.668200	-111.056283
3	113 WEST JULIA MARTIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	113 WEST JULIA MARTIN DRIVE	BOZEMAN	Gallatin	1971	Res Apt Complex	Owned Property	Joisted Masonry	$288,331	46.848304	-113.992646
3	114 WEST JULIA MARTIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	114 WEST JULIA MARTIN DRIVE	BOZEMAN	Gallatin	1971	Res Apt Complex	Owned Property	Joisted Masonry	$288,331	45.668255	-111.056441
3	115 WEST JULIA MARTIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	115 WEST JULIA MARTIN DRIVE	BOZEMAN	Gallatin	1971	Res Apt Complex	Owned Property	Joisted Masonry	$288,331	45.668203	-111.056472
3	116 WEST JULIA MARTIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	116 WEST JULIA MARTIN DRIVE	BOZEMAN	Gallatin	1971	Res Apt Complex	Owned Property	Joisted Masonry	$288,331	45.667916	-111.056682
3	117 WEST JULIA MARTIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	117 WEST JULIA MARTIN DRIVE	BOZEMAN	Gallatin	1971	Res Apt Complex	Owned Property	Joisted Masonry	$288,331	45.668167	-111.056774
3	118 WEST JULIA MARTIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	118 WEST JULIA MARTIN DRIVE	BOZEMAN	Gallatin	1971	Res Apt Complex	Owned Property	Joisted Masonry	$288,331	45.667799	-111.056683
3	119 WEST JULIA MARTIN DRIVE APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	119 WEST JULIA MARTIN DRIVE	BOZEMAN	Gallatin	1971	Res Apt Complex	Owned Property	Joisted Masonry	$288,331	45.668154	-111.056774
3	12 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	12 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.668142	-111.056775

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
3	1209 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1209 FOX STREET	BOZEMAN	Gallatin	1957	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.668134	-111.056749
3	1209 GOPHER STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1209 GOPHER STREET	BOZEMAN	Gallatin	1957	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.668026	-111.056762
3	1210 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1210 FOX STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.667810	-111.056763
3	1210 S. 15TH STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1210 S. 15TH STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.847643	-113.992900
3	1211 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1211 FOX STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.847916	-113.993097
3	1212 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1212 FOX STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.848192	-113.992887
3	1212 S. 15TH STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1212 S. 15TH STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.847830	-113.992870
3	1213 GOPHER STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1213 GOPHER STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.848327	-113.993096
3	1214 S. 15TH STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1214 S. 15TH STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.669226	-111.055770
3	1223 GOPHER STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1223 GOPHER STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.847388	-113.992951
3	1225 GOPHER STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1225 GOPHER STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.847224	-113.992604
3	13 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	13 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.847072	-113.992982
3	1401 W. GARFIELD STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1401 W. GARFIELD STREET	BOZEMAN	Gallatin	1957	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.846839	-113.993038
3	1402 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1402 FOX STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.846681	-113.992658
3	1403 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1403 FOX STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.846494	-113.993040
3	1403 W. GARFIELD STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1403 W. GARFIELD STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.669226	-111.057084
3	1404 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1404 FOX STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.668988	-111.055619
3	1405 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1405 FOX STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.846255	-113.993039
3	1406 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1406 FOX STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.851909	-113.984765
3	1407 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1407 FOX STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.846097	-113.992650
3	1408 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1408 FOX STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.852025	-113.984761

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
3	1409 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1409 FOX STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.845893	-113.993034
3	1410 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1410 FOX STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.851781	-113.985063
3	1412 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1412 FOX STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.851913	-113.985086
3	1413 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1413 FOX STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.669284	-111.055743
3	1414 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1414 FOX STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.845561	-113.993034
3	1415 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1415 FOX STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.845192	-113.993028
3	1417 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1417 FOX STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.845390	-113.992660
3	1419 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1419 FOX STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.852017	-113.985083
3	1421 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1421 FOX STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.852273	-113.984763
3	1425 FOX STREET HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1425 FOX STREET	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.668802	-111.055638
3	18 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	18 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.844689	-113.992671
3	2 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	2 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.844851	-113.993030
3	20 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	20 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.844486	-113.993019
3	21 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	21 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.669284	-111.055650
3	22 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	22 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.845600	-113.993641
3	23 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	23 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.845439	-113.993961
3	25 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	25 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.845278	-113.993639
3	26 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	26 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.669206	-111.055541
3	27 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	27 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.668466	-111.055619
3	29 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	29 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.669168	-111.055541
3	3 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	3 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.669042	-111.055544

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
3	31 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	31 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.669280	-111.057084
3	33 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	33 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.850126	-113.986168
3	35 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	35 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.850191	-113.986495
3	37 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	37 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.850481	-113.986319
3	39 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	39 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.850881	-113.986222
3	4 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	4 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.668925	-111.055542
3	40 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	40 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.850885	-113.986505
3	41 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	41 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.850715	-113.986504
3	42 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	42 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.850703	-113.986199
3	43 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	43 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.668790	-111.055544
3	44 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	44 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.668682	-111.055544
3	45 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	45 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.668565	-111.055545
3	46 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	46 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.668457	-111.055543
3	47 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	47 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.669229	-111.056931
3	48 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	48 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.668722	-111.057084
3	49 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	49 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.850477	-113.986480
3	5 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	5 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.850996	-113.985649
3	50 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	50 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.849948	-113.986535
3	51 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	51 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.849562	-113.986251
3	52 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	52 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.668771	-111.057084
3	53 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	53 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.849531	-113.985975

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
3	54 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	54 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.668716	-111.056922
3	55 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	55 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.849755	-113.985898
3	8 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	8 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	45.668777	-111.056931
3	9 GLACIER COURT HOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	9 GLACIER COURT	BOZEMAN	Gallatin	1964	Res Apt Complex	Owned Property	Wood Frame	$28,413	46.849688	-113.986548
3	AJM JOHNSON HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Grant Street (no official address)	BOZEMAN	Gallatin	1954	State University	Owned Property	Reinforced Concrete	$13,243,722	45.668722	-111.056760
3	ANIMAL BIOSCIENCE BUILDING	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	South 11th Avenue (no official address)	BOZEMAN	Gallatin	2010	State University	Owned Property	Fireprotected Steel	$15,459,877	45.668771	-111.056760
3	ATKINSON QUADRANGLE RESIDENCE HALL A	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Cleveland (no official address)	BOZEMAN	Gallatin	1935	Res Apt Complex	Owned Property	Fireprotected Steel	$1,216,151	45.668716	-111.056612
3	Atkinson Quadrangle Residence Hall B	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Cleveland (no official address)	BOZEMAN	Gallatin	1935	Res Apt Complex	Owned Property	Fireprotected Steel	$1,216,151	45.668777	-111.056612
3	Atkinson Quadrangle Residence Hall C	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Cleveland (no official address)	BOZEMAN	Gallatin	1935	Res Apt Complex	Owned Property	Fireprotected Steel	$1,335,133	45.668716	-111.056454
3	Atkinson Quadrangle Residence Hall D	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Cleveland (no official address)	BOZEMAN	Gallatin	1935	Res Apt Complex	Owned Property	Fireprotected Steel	$1,335,133	45.668777	-111.056454
3	Atkinson Quadrangle Residence Hall E	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Cleveland (no official address)	BOZEMAN	Gallatin	1935	Res Apt Complex	Owned Property	Fireprotected Steel	$1,221,736	45.669284	-111.057003
3	Atkinson Quadrangle Residence Hall F	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Cleveland (no official address)	BOZEMAN	Gallatin	1935	Res Apt Complex	Owned Property	Fireprotected Steel	$132,384	45.668722	-111.056292
3	BRICK BREEDEN FIELDHOUSE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	South11th Avenue (no official address)	BOZEMAN	Gallatin	1958	State University	Owned Property	Joisted Masonry	$40,214,704	46.849372	-113.985979
3	CFT BUILDING #4	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	2310 UNIVERSITY WAY BUILDING 4	BOZEMAN	Gallatin	2005	Laboratory	Leased Property	Fireprotected Steel	$418,311	46.849327	-113.986457
3	CHEMISTRY BIOCHEMISTRY BLDG	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	South 11th Avenue (no official address)	BOZEMAN	Gallatin	2007	Laboratory	Owned Property	Fireprotected Steel	$40,367,656	46.849210	-113.985957
3	COBLEIGH HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	South 7th Avenue (no official address)	BOZEMAN	Gallatin	1970	Laboratory	Owned Property	Joisted Masonry	$35,803,820	45.668771	-111.056292
3	COOLEY LABORATORY	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	South 11th Avenue (no official address)	BOZEMAN	Gallatin	1960	Laboratory	Owned Property	Joisted Masonry	$13,700,546	46.849275	-113.985975
3	Facilities Propane Tank System	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Grant Street (no official address)	BOZEMAN	Gallatin		Power Plant	Owned Property	Metal Lightweight or Prefabricated	$500,115	46.849118	-113.985977
3	GAINES HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Grant Street (no official address)	BOZEMAN	Gallatin	1961	State University	Owned Property	Reinforced Concrete	$33,262,789	45.668716	-111.056121
3	Gallatin Hall	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Garfield (no official address)	BOZEMAN	Gallatin	2013	Res Apt Complex	Owned Property	Fireprotected Steel	$7,974,141	46.848878	-113.986429
3	GIRVIN FARM RESIDENCE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	5515 Stucky Road, BOZEMAN MT 59718	BOZEMAN	Gallatin	1958	Res Apt Complex	Owned Property	Wood frame	$203,742	45.668777	-111.056130

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

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3	HAMILTON HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	South 7th Avenue (no official address)	BOZEMAN	Gallatin	1910	Office	Owned Property	Joisted Masonry	$8,359,251	45.668722	-111.055973
3	HANNON RESIDENCE HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	South 7th Avenue (no official address)	BOZEMAN	Gallatin	1955	Res Apt Complex	Owned Property	Fireprotected Steel	$15,681,441	45.668771	-111.055973
3	HAPNER RESIDENCE HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Cleveland (no official address)	BOZEMAN	Gallatin	1959	Res Apt Complex	Owned Property	Fireprotected Steel	$17,564,504	46.848672	-113.986165
3	Jefferson Hall	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Garfield (no official address)	BOZEMAN	Gallatin	1998	Res Apt Complex	Owned Property	Fireprotected Steel	$3,945,013	46.864982	-113.988924
3	JOHNSON FAMILY LIVESTOCK (BLS2)	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West of South 19th Avenue & Lincoln Street	BOZEMAN	Gallatin	2008	Laboratory	Owned Property	Fireprotected Steel	$4,843,284	46.864001	-113.989023
3	Johnstone Center Residence Hall	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Harrison St.	Bozeman	Gallatin	1955	Res Apt Complex	Owned Property	Reinforced Concrete	$24,657,938	46.848192	-113.986333
3	JUTILA RESEARCH LAB (BSL3)	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West of South 19th & Lincoln Street	BOZEMAN	Gallatin	2007	Laboratory	Owned Property	Fireprotected Steel	$3,223,423	46.864054	-113.989013
3	KUSM TV Transmitter Site-Bozeman Pass	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Quinn Creek Road	Bozeman	Gallatin	2012	Other	Leased Property	Joisted Masonry	$96,252	46.864001	-113.988843
3	KUSM TV Transmitter Site-Green Mountain	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Stublar Road	Bozeman	Gallatin	2012	Other	Leased Property	Joisted Masonry	$1,022,911	46.848182	-113.986589
3	LANGFORD RESIDENCE HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Harrison Street (no official address)	BOZEMAN	Gallatin	1960	Res Apt Complex	Owned Property	Fireprotected Steel	$18,703,223	46.864054	-113.988833
3	LEON JOHNSON HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Arthur St (northwest of Montana Hall)	BOZEMAN	Gallatin	1973	Laboratory	Owned Property	Joisted Masonry	$44,923,560	46.848612	-113.986403
3	LEWIS HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Garfield Street (no official address)	BOZEMAN	Gallatin	1923	Laboratory	Owned Property	Reinforced Concrete	$14,917,403	46.864978	-113.988604
3	LINFIELD HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	South 11th Avenue (no official address)	BOZEMAN	Gallatin	1909	State University	Owned Property	Joisted Masonry	$14,441,446	46.864001	-113.988654
3	LOUISE SHUNK DAYCARE AND COMMUNITY CENTER	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1295 West Garfield	BOZEMAN	Gallatin	1987	Other	Owned Property	Wood frame	$1,014,542	46.864054	-113.988644
3	Madison Hall	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Garfield (no official address)	BOZEMAN	Gallatin	1998	Res Apt Complex	Owned Property	Fireprotected Steel	$3,945,013	46.864052	-113.988464
3	MARSH LAB MODULAR # 1	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1922 WEST LINCOLN STREET	BOZEMAN	Gallatin	1998	Laboratory	Owned Property	Metal Lightweight or Prefabricated	$451,157	46.848051	-113.986296
3	MARSH LAB MODULAR # 2	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1922 WEST LINCOLN STREET	BOZEMAN	Gallatin	2001	Laboratory	Owned Property	Metal Lightweight or Prefabricated	$623,605	46.864978	-113.988361
3	MARSH LABORATORY	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1911 WEST LINCOLN STREET	BOZEMAN	Gallatin	1961	Laboratory	Owned Property	Reinforced Concrete	$15,458,238	46.864001	-113.988442
3	MCCALL HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	South11th Avenue (no official address)	BOZEMAN	Gallatin	1952	Laboratory	Owned Property	Reinforced Concrete	$3,871,939	46.864052	-113.988284
3	MILLER DINING HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Grant Street (no official address)	BOZEMAN	Gallatin	1964	State University	Owned Property	Reinforced Concrete	$13,041,785	46.864063	-113.988041
3	MOLECULAR BEAM FACILITY	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Kagy Boulevard (no official address)	BOZEMAN	Gallatin	1972	Laboratory	Owned Property	Wood frame	$707,191	46.864978	-113.988122

APPENDIX B-2. STATE CRITICAL FACILITY LIST

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DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
3	MONTANA HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Garfield (no official address)	BOZEMAN	Gallatin	1896	Office	Owned Property	Joisted Masonry	$14,931,556	46.864063	-113.987771
3	MUSEUM OF THE ROCKIES	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	600 KAGY BOULEVARD	BOZEMAN	Gallatin	1987	Museum	Owned Property	Fireprotected Steel	$30,640,855	46.864113	-113.988334
3	NELSON STORY TOWER APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	101 Nelson Story	BOZEMAN	Gallatin	1968	Res Apt Complex	Owned Property	Reinforced Concrete	$6,852,764	46.864967	-113.987911
3	NORTH HEDGES RESIDENCE HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Grant Street (no official address)	BOZEMAN	Gallatin	1965	Res Apt Complex	Owned Property	Fireprotected Steel	$23,965,828	46.864967	-113.987731
3	PETER KOCH TOWER APARTMENTS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	101 Peter Koch Street	BOZEMAN	Gallatin	1968	Res Apt Complex	Owned Property	Reinforced Concrete	$6,852,764	46.864011	-113.987574
3	PLANT BIOSCIENCE BUILDING	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	South 11th Avenue (no official address)	BOZEMAN	Gallatin	1999	Laboratory	Owned Property	Fireprotected Steel	$17,015,551	46.864972	-113.987394
3	PLANT GROWTH CENTER	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	South 11th Avenue (no official address)	BOZEMAN	Gallatin	1986	Laboratory	Owned Property	Fireprotected Steel	$25,025,135	46.864972	-113.987183
3	PLEW BUILDING	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Grant Street (no official address)	BOZEMAN	Gallatin	1952	Office	Owned Property	Fireprotected Steel	$3,362,710	46.864011	-113.987394
3	REID HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Garfield Street (no official address)	BOZEMAN	Gallatin	1959	State University	Owned Property	Joisted Masonry	$29,586,240	46.864063	-113.987321
3	RENNE LIBRARY	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Garfield Street (no official address)	BOZEMAN	Gallatin	1949	Library	Owned Property	Joisted Masonry	$130,473,324	46.864063	-113.987141
3	ROBERTS HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Garfield Street (no official address)	BOZEMAN	Gallatin	1922	State University	Owned Property	Reinforced Concrete	$21,985,943	46.847963	-113.986666
3	ROSKIE RESIDENCE HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Grant Street (no official address)	BOZEMAN	Gallatin	1966	Res Apt Complex	Owned Property	Reinforced Concrete	$17,225,901	46.847903	-113.986664
3	SAFETY RISK MGMT NOPPER BLDG LEASED	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1160 Research Drive	BOZEMAN	Gallatin	1984	Laboratory	Owned Property	Fireprotected Steel	$2,083,472	46.864908	-113.989187
3	SOUTH HEDGES RESIDENCE HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Grant Street (no official address)	BOZEMAN	Gallatin	1965	Res Apt Complex	Owned Property	Fireprotected Steel	$22,912,438	46.848610	-113.986566
3	STRAND UNION BUILDING	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Grant Street (no official address)	BOZEMAN	Gallatin	1939	State University	Owned Property	Joisted Masonry	$64,518,749	46.848577	-113.986143
3	SWINGLE HEALTH CENTER	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	South 7th Avenue (no official address)	BOZEMAN	Gallatin	1957	Clinics	Owned Property	Fireprotected Steel	$7,088,192	46.848748	-113.986157
3	TAYLOR HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	South 11th Avenue (no official address)	BOZEMAN	Gallatin	1896	Office	Owned Property	Wood Frame	$3,223,748	45.669229	-111.056603
3	TIETZ HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	East of South 11th Avenue (no official address)	BOZEMAN	Gallatin	1985	Laboratory	Owned Property	Fireprotected Steel	$5,342,243	46.848594	-113.988122
3	TINSELY HOMESTEAD	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	600 KAGY BOULEVARD, BOZEMAN MT 59717	BOZEMAN	Gallatin	1989	Museum	Owned Property	Wood frame	$437,559	46.848478	-113.988095
3	TRAPHAGEN HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West of South 11th Avenue (no official address)	BOZEMAN	Gallatin	1920	State University	Owned Property	Joisted Masonry	$11,816,599	46.848298	-113.988070
3	VISUAL COMMUNICATIONS BUILDING	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Grant (no official address)	BOZEMAN	Gallatin	1983	State University	Owned Property	Fireprotected Steel	$20,305,396	46.863306	-113.989222

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3	WILSON HALL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	West Garfield Street (no official address)	BOZEMAN	Gallatin	1974	State University	Owned Property	Fireprotected Steel	$28,642,840	46.847662	-113.988051
3	Yellowstone Hall	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	South 15th Avenue	Bozeman	Gallatin	2016	Res Apt Complex	Owned Property	Fireprotected Steel	$4,676,632	45.669284	-111.056693
3	FT. ELLIS RESIDENCE	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	33336 Frontage Road	BOZEMAN	Gallatin	1931	Res Apt Complex	Owned Property	null	$217,114	46.848581	-113.989248
3	FT. ELLIS SECOND HOUSE	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	33336 Frontage Road	BOZEMAN	Gallatin	1932	Res Apt Complex	Owned Property	null	$112,450	46.848472	-113.989225
3	Lutz Farm Residence	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	McGuire Creek Road	BOZEMAN	Gallatin		Res Apt Complex	Owned Property	null	$153,136	46.848246	-113.989220
3	Cheever Hall	UNIVERSITY SYSTEM, MSU, EXTENSION SERVICE	MSU-Bozeman Campus	BOZEMAN	Gallatin		State University	Leased Property	null	$7,905	46.848116	-113.989230
3	Romney Gym (5104 owner)	UNIVERSITY SYSTEM, MSU, EXTENSION SERVICE	MSU-Bozeman Campus	BOZEMAN	Gallatin		State University	Leased Property	null	$11,457	46.848590	-113.988473
3	KUSM TV Transmitter Site-High Flat	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	High Flat Road	Gallatin Gateway	Gallatin	2012	Other	Leased Property	Joisted Masonry	$196,472	46.595411	-112.015731
3	Lewis & Clark Caverns SP - Building - Visitor Center w/Restroom	DEPARTMENT OF FISH, WILDLIFE & PARKS	19 miles W of Three Forks on MT 2	THREE FORKS	Gallatin	1963	Museum	Owned Property	Wood Frame	$251,183	45.666473	-111.046987
3	Airport CFR Building 1	DEPARTMENT OF TRANSPORTATION	625 Yellowstone Airport Road	WEST YELLOWSTONE	Gallatin	1965	Garage, Service Center	Owned Property	Unreinforced concrete frame	$506,619	47.505021	-111.239344
3	Airport CFR Building 2	DEPARTMENT OF TRANSPORTATION	721 Yellowstone Airport Road	WEST YELLOWSTONE	Gallatin	2015	Garage, Vehicle Storage	Leased Property	Fireprotected Steel	$0	46.382961	-112.802572
3	Airport Terminal, Administration Bldg	DEPARTMENT OF TRANSPORTATION	721 Yellowstone Airport Road	WEST YELLOWSTONE	Gallatin	1965	Office	Owned Property	Unreinforced concrete frame	$1,957,658	46.383085	-112.796731
3	Airport WYS - NDB shack	DEPARTMENT OF TRANSPORTATION	721 Yellowstone Airport Road	WEST YELLOWSTONE	Gallatin	1965	Other	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$135,417	46.408523	-105.822635
3	Airport WYS Generator Shack	DEPARTMENT OF TRANSPORTATION	721 Yellowstone Airport Road	WEST YELLOWSTONE	Gallatin		Other	Owned Property	Unreinforced concrete frame	$38,461	46.180964	-112.792794
4	Aeronautics NDB - Jordan	DEPARTMENT OF TRANSPORTATION	47 deg - 20' - 0.0" N, 106 deg - 56' - 15.0" W	JORDAN	Garfield		Other	Owned Property	Steel frame with combustible exterior walls	$2,417	47.017111	-114.014598
2	Aeronautics Browning Electrical Building	DEPARTMENT OF TRANSPORTATION	Starr Browning Airport	Browning	Glacier		Other	Owned Property	Wood frame	$21,275	46.848277	-113.988478
2	MHP - Santa Rita Glacier County Microwave Tower	DEPARTMENT OF JUSTICE	8 miles N of Santa Rita	CUT BANK	Glacier		Other	Owned Property	null	$102,260	46.127011	-112.927450
2	Cut Bank - UA (Glacier) CFS	PUBLIC HEALTH & HUMAN SERVICES	1210 E Main	CUT BANK	Glacier		Governmental Building	Leased Property	null	$32,554	45.669306	-111.053338
2	Cut Bank Translator	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Tank Hill, 1/2 mile S.E. of Mem. Hospital	CUT BANK	Glacier		Other	Leased Property	null	$10,000	45.602305	-105.936724
2	MHP - Hill County Sheriff's Office Microwave Tower	DEPARTMENT OF JUSTICE	1.5 miles W of Havre	HAVRE	Hill		Other	Owned Property	null	$91,086	46.862522	-113.987670
2	MHP #1 Mountain Tower	DEPARTMENT OF JUSTICE	Section 23, Township 30 North, Range 15 Feet	HAVRE	Hill		Other	Owned Property		$20,000	45.667135	-111.055227
2	Havre Armory	DEPARTMENT OF MILITARY AFFAIRS	1050 2nd St West	HAVRE	Hill	1970	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,789,809	45.765173	-111.145621
2	Havre Armory Annex	DEPARTMENT OF MILITARY AFFAIRS	1050 2nd St West	HAVRE	Hill	1985	Governmental Building	Owned Property	Wood frame	$575,843	46.585266	-112.015823
2	Havre Readiness Center	DEPARTMENT OF MILITARY AFFAIRS	1050 2nd St W	HAVRE	Hill	2006	Armory	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,702,596	45.656655	-111.073280

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STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
2	Havre, MT Translator	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	800 Wilson Ave	HAVRE	Hill		Other	Leased Property	null	$16,031	48.207207	-106.629043
2	Food Service	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	MSU-Northern- 1150-B SUB Drive	HAVRE	Hill	1971	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$3,638,477	48.207775	-106.628730
2	Gymnasium	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	MSU-Northern 100 College Road West	HAVRE	Hill	1957	State University	Owned Property	Joisted Masonry	$9,719,306	48.198586	-106.648048
2	Library Building	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	MSU-Northern 180 College Road West	HAVRE	Hill	1987	Library	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$11,258,592	47.109962	-104.714508
2	MacKenzie Hall	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	1200 Buttrey Drive South	HAVRE	Hill	1971	Res Apt Complex	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$8,199,512	47.523512	-111.300399
2	Morgan Hall	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	MSU-Northern - 1110 Buttrey Drive	HAVRE	Hill	1957	Res Apt Complex	Owned Property	Joisted Masonry	$6,849,812	46.382733	-112.799347
2	PHYSICAL PLANT BUILDING - HAVRE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	MSU-Northern - 300 13th Street West	HAVRE	Hill	1967	Garage, Service Center	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$644,218	46.382719	-112.803086
2	Student & Family Housing 1210	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	1210 Bonine Drive	HAVRE	Hill	1960	Res Apt Complex	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$531,374	48.540881	-109.688600
2	Student & Family Housing 1215	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	1215 Bonine Drive	HAVRE	Hill	1960	Res Apt Complex	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$624,510	46.384573	-112.801744
2	Student & Family Housing 1220	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	1220 Bonine Drive	HAVRE	Hill	1960	Res Apt Complex	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$295,207	46.252292	-114.127114
2	Student & Family Housing 1225	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	1225 Bonine Drive	HAVRE	Hill	1960	Res Apt Complex	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$624,510	46.246647	-114.168149
2	Student & Family Housing 1230	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	1230 Bonine Drive	HAVRE	Hill	1960	Res Apt Complex	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$898,846	45.667567	-111.047909
2	Student Union	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	MSU-Northern 1150 - A SUB Drive	HAVRE	Hill	1960	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$4,774,744	46.602518	-111.991730
2	NARC Residences/Lab (Apt 1-9) & Thackery House	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	Star Route 36, Box 43	HAVRE	Hill	1881	Res Apt Complex	Owned Property		$3,177,555	46.602557	-111.991469
3	Repair/Fuel/Garage (addition to #44)	DEPARTMENT OF CORRECTIONS	2 Riverside Rd.	BOULDER	Jefferson	1952	Power Plant	Owned Property	null	$270,113	45.667207	-111.058983
3	Administration/Education	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	2 Riverside Rd.	BOULDER	Jefferson	1960	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,266,829	46.847646	-113.989674
3	Housing Unit 14	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	2 Riverside Rd.	BOULDER	Jefferson	1972	Juvenile Hall	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,440,858	45.667646	-111.061446
3	Industries/Maintenance Building	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	2 Riverside Rd.	BOULDER	Jefferson	1972	Governmental Building	Owned Property	null	$1,306,877	45.668761	-111.058138
3	Programs Building #15	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	2 Riverside Rd	BOULDER	Jefferson	1972	Lodge	Owned Property	null	$1,278,103	45.670188	-111.060551

APPENDIX B-2. STATE CRITICAL FACILITY LIST

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3	Pump House South of River	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	2 Riverside Rd.	BOULDER	Jefferson	1960	Power Plant	Owned Property	Wood frame	$50,018	45.670475	-111.061153
3	Bldg 1 - 6 Boulder	PUBLIC HEALTH & HUMAN SERVICES, MONTANA DEVELOPMENTAL CENTER	501 E. 4th Avenue	BOULDER	Jefferson	1996	Cottages/Residential	Owned Property	Wood frame	$1,669,065	45.667098	-111.060195
3	Industries/Heating bldg 9	PUBLIC HEALTH & HUMAN SERVICES, MONTANA DEVELOPMENTAL CENTER	310 4th Avenue	BOULDER	Jefferson	1996	Power Plant	Owned Property	Wood frame	$1,485,764	45.668137	-111.061542
3	Recreation 102	PUBLIC HEALTH & HUMAN SERVICES, MONTANA DEVELOPMENTAL CENTER	310 4th Avenue	BOULDER	Jefferson	1950	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$3,363,771	45.668842	-111.058249
3	Treatment BLDG 8	PUBLIC HEALTH & HUMAN SERVICES, MONTANA DEVELOPMENTAL CENTER	310 4th Avenue	BOULDER	Jefferson	1996	Governmental Building	Owned Property	Wood Frame	$2,498,763	45.670970	-111.059383
3	KUFM Butte	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	XL Heights	BUTTE	Jefferson		Other	Leased Property	null	$50,000	47.326386	-106.951887
3	Maintenance Shop	UNIVERSITY SYSTEM, HELENA COLLEGE UNIVERSITY OF MONTANA	1115 North Sanders	HELENA	Jefferson	2001	Garage, Service Center	Owned Property	Wood frame	$130,509	47.535251	-111.282875
3	Helena Transmitter	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	21 Miles SW of Helena (Legal Descrip Below)	HELENA	Jefferson		Other	Leased Property	null	$15,000	48.011552	-114.365622
3	KUSM TV Transmitter Site-XL Heights	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	X-L Heights Road	Jefferson City	Jefferson	2012	Other	Leased Property	Metal Lighweight or Prefabricated	$322,620	47.289468	-112.008711
1	MHP - Jette Lake County Microwave Tower	DEPARTMENT OF JUSTICE	2 miles SE of Big Arm	BIG ARM	Lake		Other	Owned Property	null	$58,064	45.668862	-111.057424
1	Swan Lake Light Plant	DEPARTMENT OF NATURAL RESOURCES	34925 MT Hwy 83	BIGFORK	Lake		Power Plant	Owned Property	null	$47,295	45.667855	-111.058176
1	Swan Youth Center Dining Hall	DEPARTMENT OF NATURAL RESOURCES, SWAN RIVER FOREST CAMP	34925 MT Hwy 83	BIGFORK	Lake		Governmental Building	Owned Property	Wood frame	$440,184	45.669625	-111.057790
1	Swan Youth Center Generator House	DEPARTMENT OF NATURAL RESOURCES, SWAN RIVER FOREST CAMP	34925 MT Hwy 83	BIGFORK	Lake		Power Plant	Owned Property	Wood frame	$4,277	45.670635	-111.061212
1	Swan Youth Center Lodge, Dormitory & Addition	DEPARTMENT OF NATURAL RESOURCES, SWAN RIVER FOREST CAMP	34925 MT Hwy 83	BIGFORK	Lake	1968	Governmental Building	Owned Property	Wood frame	$2,260,912	45.666977	-111.058471
1	Elrod Laboratory, Yellowbay	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	32125 Bio Station Lane	POLSON	Lake	1968	Laboratory	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$3,349,455	48.503844	-111.855048
1	Fire House	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	32125 Bio Station Lane	POLSON	Lake	1951	Storage	Owned Property	Wood frame	$67,836	47.717695	-104.184646
1	Fresh Water Research Lab	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	32125 Bio Station Lane	POLSON	Lake	1981	Laboratory	Owned Property	Wood frame	$1,997,757	46.851636	-113.986064

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1	KUFM Polson	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Jette Mountain	POLSON	Lake		Other	Leased Property	Unprotected steel frame with non-combustible (masonry) exterior	$50,000	46.858833	-113.985637
1	Lakeside Laboratory	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	32125 Bio Station Lane	POLSON	Lake	1968	State University	Owned Property	Wood frame	$2,144,229	46.861743	-113.985157
1	Lift Station 1	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	32125 Bio Station Lane	POLSON	Lake	1979	Pump House	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$56,153	45.208103	-112.641223
1	Lift Station 2	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	32125 Bio Station Lane	POLSON	Lake	1976	Pump House	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$63,261	45.665579	-111.053771
1	Museum	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	32125 Bio Station Lane	POLSON	Lake	1968	Museum	Owned Property	Wood frame	$46,343	46.408523	-105.822635
1	Prescott Center Cafeteria	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	32125 Bio Station Lane	POLSON	Lake	1985	State University	Owned Property	Wood frame	$1,557,278	46.182147	-112.790717
1	Prescott Center Dormitory	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	32125 Bio Station Lane	POLSON	Lake	1985	State University	Owned Property	Wood frame	$1,083,335	46.858862	-113.984638
1	Waste Water Treatment Plant	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	32125 Bio Station Lane	POLSON	Lake	1976	Other	Owned Property	null	$918,078	45.666395	-111.047642
3	DES Mobile Command Post Storage	DEPARTMENT OF MILITARY AFFAIRS	1956 MT Majo Street	FORT HARRISON	Lewis & Clark	2008	Storage	Owned Property	null	$241,190	46.177377	-112.790737
3	Aviation & Support Facility-Office	DEPARTMENT OF ADMINISTRATION	2800 Airport Rd	HELENA	Lewis & Clark	1960	Office	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$3,206,080	45.668524	-111.046023
3	Aviation & Support Facility-Shop	DEPARTMENT OF ADMINISTRATION	2800 Airport Rd	HELENA	Lewis & Clark	1958	Garage, Service Center	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$3,381,386	45.669677	-111.047333
3	Board of Health	DEPARTMENT OF ADMINISTRATION	1301 Lockey	HELENA	Lewis & Clark	1919	Office	Owned Property	Reinforced concrete frame	$852,908	45.736392	-107.606388
3	Boiler Plant	DEPARTMENT OF ADMINISTRATION	120 N Roberts	HELENA	Lewis & Clark	1968	Power Plant	Owned Property	Reinforced concrete frame	$2,850,805	46.437899	-109.851858
3	Capitol Annex	DEPARTMENT OF ADMINISTRATION	118 N Roberts	HELENA	Lewis & Clark		Office	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$258,219	48.552845	-109.702729
3	Capitol Building	DEPARTMENT OF ADMINISTRATION	1301 E 6th	HELENA	Lewis & Clark	1889	Governmental Building	Owned Property	Reinforced concrete frame	$145,098,564	48.552845	-109.702729
3	Cogswell Building	DEPARTMENT OF ADMINISTRATION	1401 Lockey	HELENA	Lewis & Clark	1955	Laboratory	Owned Property	Reinforced concrete frame	$23,751,374	48.553021	-109.702768
3	Colonial Drive Building	DEPARTMENT OF ADMINISTRATION	2401 Colonial Drive	HELENA	Lewis & Clark	1998	Office	Leased Property	Fireprotected Steel	$255,000	48.548180	-109.703845
3	Comm Political Practices	DEPARTMENT OF ADMINISTRATION	1205 8th	HELENA	Lewis & Clark		Office	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$354,428	46.848561	-114.012417
3	Dianne Bldg.	DEPARTMENT OF ADMINISTRATION	1218 6th Ave.	HELENA	Lewis & Clark	1954	Office	Owned Property	Wood frame	$1,069,717	46.858370	-113.986238
3	DPHHS Headquarters Building	DEPARTMENT OF ADMINISTRATION	111 N Sanders	HELENA	Lewis & Clark	1975	Office	Owned Property	Reinforced Concrete	$10,694,849	46.011588	-112.557832
3	FWP-1420 6TH AVE	DEPARTMENT OF ADMINISTRATION	1420 E 6th	HELENA	Lewis & Clark	1965	Office	Owned Property	Wood frame	$4,292,590	46.011900	-112.562205
3	Generator Building (ITSD)	DEPARTMENT OF ADMINISTRATION	125 N Roberts	HELENA	Lewis & Clark	2009	Other	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$582,737	45.209043	-112.638324
3	Helena Data Center (SMDC) behind MDT	DEPARTMENT OF ADMINISTRATION	490 18th Street	HELENA	Lewis & Clark	2010	Office	Owned Property	Reinforced concrete frame	$22,598,839	46.011173	-112.558383
3	Justice Building	DEPARTMENT OF ADMINISTRATION	215 N Sanders	HELENA	Lewis & Clark	1982	Library	Owned Property	Fire-protected steel frame	$26,121,372	46.862028	-113.992182
3	Labor & Industry (Walt Sullivan)	DEPARTMENT OF ADMINISTRATION	1315 Lockey	HELENA	Lewis & Clark	1959	Office	Owned Property	Fire-protected steel frame	$11,538,734	46.630593	-112.094803

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3	MDT Helena HQ Building (PBX) ONLY	DEPARTMENT OF ADMINISTRATION	2701 Prospect Avenue	HELENA	Lewis & Clark		Office	Owned Property	null	$1,000,000	46.589058	-111.988789
3	Metcalf Building	DEPARTMENT OF ADMINISTRATION	1520 E 6th	HELENA	Lewis & Clark	1982	Office	Owned Property	Reinforced concrete frame	$20,468,873	46.587000	-111.992000
3	Mitchell Building	DEPARTMENT OF ADMINISTRATION	125 N Roberts	HELENA	Lewis & Clark	1949	Office	Owned Property	Reinforced Concrete	$32,876,695	46.602470	-111.992150
3	Old Livestock Building	DEPARTMENT OF ADMINISTRATION	1310 Lockey	HELENA	Lewis & Clark	1919	Office	Owned Property	Reinforced concrete frame	$1,319,367	46.588447	-111.991967
3	OPI Building	DEPARTMENT OF ADMINISTRATION	1227 11th Avenue	HELENA	Lewis & Clark	1968	Office	Owned Property	Reinforced concrete frame	$4,131,282	46.617017	-112.097335
3	Scott Hart Building	DEPARTMENT OF ADMINISTRATION	302 N Roberts	HELENA	Lewis & Clark	1936	Office	Owned Property	Reinforced concrete frame	$16,805,048	46.338562	-112.291538
3	Sec. of State Records Mgmt Bureau Bldg 1	DEPARTMENT OF ADMINISTRATION	1320 Bozeman	HELENA	Lewis & Clark	1960	Quonset Warehouse	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,382,853	46.589846	-112.040727
3	Sec. of State Records Mgmt Bureau Bldg 2	DEPARTMENT OF ADMINISTRATION	1320 Bozeman	HELENA	Lewis & Clark	1960	Quonset Warehouse	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,065,908	46.382918	-112.801887
3	Tax Appeal Board	DEPARTMENT OF ADMINISTRATION	1209 8th	HELENA	Lewis & Clark		Office	Owned Property	Wood frame	$407,134	46.383575	-112.801944
3	Teachers Retirement	DEPARTMENT OF ADMINISTRATION	1500 E 6th	HELENA	Lewis & Clark	1968	Office	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,337,054	46.382790	-112.800118
3	Veterans & Pioneers Memorial Bldg.	DEPARTMENT OF ADMINISTRATION	225 N Roberts	HELENA	Lewis & Clark	1952	Museum	Owned Property	Reinforced concrete frame	$19,073,783	46.226144	-112.116849
3	Ag/Livestock Bldg.- Helena	DEPARTMENT OF AGRICULTURE	302 N Roberts	HELENA	Lewis & Clark	1936	Governmental Building	Leased Property	Reinforced concrete frame	$324,717	46.408838	-105.821712
3	Leased - Ag Development/Ag Stats	DEPARTMENT OF AGRICULTURE	10 West 15th Street	HELENA	Lewis & Clark		Governmental Building	Leased Property	null	$7,683	46.588918	-112.040591
3	PERD Building, Leased to Justice Legal Services	DEPARTMENT OF COMMERCE	1712 9th Avenue	HELENA	Lewis & Clark	1971	Office	Owned Property	Fire-protected steel frame	$1,442,106	46.396982	-112.760724
3	Hangar No. 5 Helena Regional Airport	DEPARTMENT OF FISH, WILDLIFE & PARKS	Airport Road	HELENA	Lewis & Clark	1981	Airport Hangars	Owned Property	Metal Lightweight or Prefabricated	$124,003	46.396982	-112.760724
3	Hanger No. 6 Helena Regional Airport	DEPARTMENT OF FISH, WILDLIFE & PARKS	Airport Road	HELENA	Lewis & Clark	1987	Airport Hangars	Owned Property	Metal Lightweight or Prefabricated	$223,204	45.774626	-108.496447
3	Regional HQ - Building - D of A	DEPARTMENT OF FISH, WILDLIFE & PARKS	1420 East 6th Ave.	HELENA	Lewis & Clark	1975	Governmental Building	Leased Property	Wood frame	$1,026,799	46.396982	-112.760724
3	ITSD - HAFRC DOJ FUSION Center	DEPARTMENT OF JUSTICE	1956 Mt. Majo St / Fort Harrison	HELENA	Lewis & Clark		Governmental Building	Leased Property	null	$3,032,134	46.233528	-112.116919
3	MHP - Comm Center, Helena	DEPARTMENT OF JUSTICE	1900 WILLIAMS ST	HELENA	Lewis & Clark		Governmental Building	Leased Property	null	$490,148	46.226144	-112.116849
3	MHP - Fort Harris Microwave Tower	DEPARTMENT OF JUSTICE	Helena	HELENA	Lewis & Clark		Other	Owned Property	null	$26,970	46.382291	-112.802715
3	MHP - Hangar, Helena	DEPARTMENT OF JUSTICE	27 AIRPORT RD (HANGAR B)	HELENA	Lewis & Clark		Airport Hangars	Leased Property	null	$206,301	46.859201	-113.986461
3	MHP - Hogback Microwave Tower	DEPARTMENT OF JUSTICE	13 miles NE of Helena	HELENA	Lewis & Clark		Other	Owned Property	null	$39,163	46.621104	-112.095883
3	MHP/GCD Helena	DEPARTMENT OF JUSTICE	2550 Prospect	HELENA	Lewis & Clark		Office	Leased Property	null	$1,427,708	46.860528	-113.982079
3	MLEA - Aspen Cottage	DEPARTMENT OF JUSTICE	2260 Sierra Rd. East	HELENA	Lewis & Clark	1926	State University	Owned Property	Wood frame	$588,381	46.860842	-113.984776
3	MLEA - Cafeteria	DEPARTMENT OF JUSTICE	2260 Sierra Rd. East	HELENA	Lewis & Clark	1960	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$647,819	45.666465	-111.055877
3	MLEA - Clinic Building	DEPARTMENT OF JUSTICE	2260 Sierra Rd. East	HELENA	Lewis & Clark	1969	State University	Owned Property	null	$219,692	46.861255	-113.988928
3	MLEA - Cottonwood Cottage	DEPARTMENT OF JUSTICE	2260 Sierra Rd. East	HELENA	Lewis & Clark	1960	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$690,318	45.664597	-111.065760
3	MLEA - Gymnasium	DEPARTMENT OF JUSTICE	2260 Sierra Rd. East	HELENA	Lewis & Clark	1926	State University	Owned Property	Wood frame	$655,664	46.177047	-112.792573
3	MLEA - Maple Cottage No. 2	DEPARTMENT OF JUSTICE	2260 Sierra Rd. East	HELENA	Lewis & Clark	1920	State University	Owned Property	Wood frame	$2,190,662	45.670575	-111.049107
3	MLEA - Pump House	DEPARTMENT OF JUSTICE	2260 Sierra Rd. East	HELENA	Lewis & Clark	1940	State University	Owned Property	null	$72,092	45.208543	-112.637394

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3	MLEA - School Building & Administration	DEPARTMENT OF JUSTICE	2260 Sierra Rd. East	HELENA	Lewis & Clark	1920	State University	Owned Property	Wood frame	$2,183,940	46.586202	-112.013979
3	MLEA - Spruce Cottage	DEPARTMENT OF JUSTICE	2260 Sierra Rd. East	HELENA	Lewis & Clark	1920	State University	Owned Property	Wood frame	$1,781,371	45.664772	-111.064626
3	MLEA - Water Tank & Tower	DEPARTMENT OF JUSTICE	2260 Sierra Rd. East	HELENA	Lewis & Clark	1950	State University	Owned Property	null	$389,651	48.257366	-114.326732
3	MLEA Training Facility	DEPARTMENT OF JUSTICE	2260 SIERRA ROAD EAST	HELENA	Lewis & Clark	2010	State University	Owned Property	Reinforced concrete frame	$3,774,231	48.257366	-114.326732
3	BSD Weights & Measures	DEPARTMENT OF LABOR & INDUSTRY	2801 N. Cooke	HELENA	Lewis & Clark		Laboratory	Leased Property	null	$597,815	48.202252	-114.306689
3	Helena UI Phone Claims	DEPARTMENT OF LABOR & INDUSTRY	100 N. Park	HELENA	Lewis & Clark		Office	Leased Property	null	$382,824	48.215290	-114.322020
3	Helena 1049th Armory	DEPARTMENT OF MILITARY AFFAIRS	2199 Williams Street	HELENA	Lewis & Clark		Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$330,083	45.624876	-111.260362
3	Helena OMS	DEPARTMENT OF MILITARY AFFAIRS	2177 Williams Street	HELENA	Lewis & Clark	1971	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,093,317	45.797074	-108.526073
3	Womack Armory	DEPARTMENT OF MILITARY AFFAIRS	Womack Bldg, Ft Harrison	HELENA	Lewis & Clark	1971	Armory	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$3,145,595	45.658383	-108.571443
3	Mitchell Building (includes special equipment)	DEPARTMENT OF REVENUE	125 N Roberts	HELENA	Lewis & Clark		Office	Leased Property	Reinforced concrete frame	$180,430	46.826307	-111.710300
3	New Liquor Warehouse	DEPARTMENT OF REVENUE	2517 Airport Road	HELENA	Lewis & Clark	1977	Quonset Warehouse	Owned Property	Reinforced concrete frame	$22,073,687	45.597268	-110.545159
3	Aeronautics Helena Operation Building	DEPARTMENT OF TRANSPORTATION	2630 Airport Road	HELENA	Lewis & Clark	1958	Office	Owned Property	Unreinforced concrete frame	$1,520,713	46.860358	-113.987807
3	Aeronautics Shop	DEPARTMENT OF TRANSPORTATION	2630 Airport Road	HELENA	Lewis & Clark	1958	Garage, Service Center	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$362,665	46.007542	-112.442525
3	Helena Hanger Helena Airport	DEPARTMENT OF TRANSPORTATION	2630 Airport Road	HELENA	Lewis & Clark		Airport Hangars	Owned Property	Steel frame with combustible exterior walls	$421,607	45.208165	-112.641196
3	Helena HQ Office Complex	DEPARTMENT OF TRANSPORTATION	2701 Prospect Avenue	HELENA	Lewis & Clark	1978	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$37,694,257	48.506108	-114.348191
3	Montana Historical Society	MONTANA HISTORICAL SOCIETY	225 N Roberts	HELENA	Lewis & Clark	1952	Museum	Leased Property	null	$3,255,358	46.230056	-114.236459
3	Helena Data Center	MONTANA STATE LIBRARY	490 18th St.	HELENA	Lewis & Clark	2010	Governmental Building	Leased Property	null	$163,567	46.769741	-112.024019
3	Montana State Library (Justice Building)	MONTANA STATE LIBRARY	1515 E. 6th Avenue	HELENA	Lewis & Clark	1982	Library	Leased Property	Fire-protected steel frame	$2,007,988	48.175685	-114.350372
3	IBM Building	PUBLIC EMPLOYEES RETIREMENT DIVISION	100 N. Park, Ste 200	HELENA	Lewis & Clark		Office	Owned Property	Fire-protected steel frame	$13,578,758	48.379222	-115.559138
3	Records Management Center Warehouse	SECRETARY OF STATE	1320 Bozeman St	HELENA	Lewis & Clark		Garage, Parts Storage	Leased Property	null	$10,000	47.773613	-114.269253
3	Montana State Fund Building	STATE FUND	855 Front Street	HELENA	Lewis & Clark	2010	Office	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$38,102,581	47.017444	-114.013947
3	Donaldson Building	UNIVERSITY SYSTEM, HELENA COLLEGE UNIVERSITY OF MONTANA	1115 North Roberts	HELENA	Lewis & Clark	1967	State University	Owned Property	Joisted Masonry	$22,399,358	46.748476	-112.330991
3	KGLT RADIO TRANSLATOR HELENA	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	20 MILES NE OF HELENA 46-49-32.0 N, 111-42-26.0 W	HELENA	Lewis & Clark	2010	Other	Leased Property	Metal Lightweight or Prefabricated	$0	45.665157	-110.795921
3	KUSM TV TRANSMITTER SITE-BELMONT MOUNTAIN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	BLOSSBURG ROAD	HELENA	Lewis & Clark	2012	Other	Leased Property	Metal Lightweight or Prefabricated	$125,625	45.780610	-109.192112
3	KUSM TV Transmitter Site-Helena North Hill	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	No Creek Ct.	Helena	Lewis & Clark	2012	Other	Leased Property	Wood Frame	$156,278	46.802529	-113.972829

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
3	KUFM Helena (N. Hills)	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	N. Hills Seiban Ranch	HELENA	Lewis & Clark		Other	Leased Property	Wood frame	$50,000	45.673151	-110.867386
3	Montana Natural Heritage Program	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1515 East Sixth Ave.	HELENA	Lewis & Clark		Library	Leased Property	null	$13,905	46.769639	-112.024417
3	Aeronautics Lincoln Electrical Building	DEPARTMENT OF TRANSPORTATION	1842 South Airport Road	LINCOLN	Lewis & Clark	2006	Other	Owned Property	Steel stud	$44,547	47.054496	-109.440698
3	MHP - Wirth Ranch Microwave Tower	DEPARTMENT OF JUSTICE	1.5 miles W of Wolf Creek	WOLF CREEK	Lewis & Clark		Other	Owned Property	null	$34,526	46.180598	-112.789568
3	KUSM TV Transmitter Site-Wirth	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Wirth Drive	Wolf Creek Road	Lewis & Clark	2012	Other	Leased Property	Metal Lighweight or Prefabricated	$84,604	45.668251	-111.048383
2	Aeronautics NDB - Chester	DEPARTMENT OF TRANSPORTATION	Liberty County Airport	CHESTER	Liberty		Other	Owned Property	Wood frame	$2,822	48.788668	-104.523624
2	Chester MT Translator	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Royal Mountain	CHESTER	Liberty		Other	Leased Property	null	$112,709	46.471418	-108.548646
2	MHP - Mt Royal (leased by MDT) Microwave Tower	DEPARTMENT OF JUSTICE	7 miles SE of Whitlash	WHITLASH	Liberty		Other	Owned Property	null	$88,223	47.876726	-114.033192
1	Aeronautics NDB - Eureka	DEPARTMENT OF TRANSPORTATION	48 deg - 58' - 13.9" N, 115 deg - 5' - 3.6" W	EUREKA	Lincoln		Other	Owned Property	Steel frame with combustible exterior walls	$2,417	45.232061	-112.618027
1	MHP - Highway Patrol, Libby	DEPARTMENT OF JUSTICE	952 East Spruce, Suite 203	LIBBY	Lincoln		Governmental Building	Leased Property	null	$4,099	46.842548	-113.995913
1	Libby Armory	DEPARTMENT OF MILITARY AFFAIRS	1004 Treasure Ave.	LIBBY	Lincoln	1990	Governmental Building	Owned Property	Reinforced concrete frame	$2,655,382	46.842361	-113.996638
1	Aeronautics NDB - Libby	DEPARTMENT OF TRANSPORTATION	48 deg - 18' - 16.0" N, 115 deg - 29' - 43.0" W	LIBBY	Lincoln		Other	Owned Property	Steel frame with combustible exterior walls	$15,417	45.667606	-111.050916
1	KUFM Libby Transmitter	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Libby	Libby	Lincoln	2011	Other	Owned Property	Wood Frame	$54,816	47.045889	-109.451125
3	Big Sky Translator	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Andesite Peak - 45 16' 25	BIG SKY	Madison		Other	Leased Property	null	$30,000	46.848190	-113.989613
3	Aeronautics NDB - Ennis	DEPARTMENT OF TRANSPORTATION	#1 Airport Road	ENNIS	Madison		Other	Owned Property	Wood frame	$3,224	46.586960	-112.019359
3	McFarland Curatorial Center	MONTANA HERITAGE COMMISSION	Curatorial Addition to Townsite	VIRGINIA CITY	Madison	1999	Museum	Leased Property	Wood frame	$236,979	46.180918	-112.789356
4	Aeronautics NDB - Circle	DEPARTMENT OF TRANSPORTATION	101 Airport Road	CIRCLE	McCone		Other	Owned Property	Steel frame with combustible exterior walls	$2,417	47.710747	-104.184489
4	MHP - Deadman McCone Cnty Microwave Tower	DEPARTMENT OF JUSTICE	8 miles NE of Fort Peck	FORT PECK	McCone		Other	Owned Property	null	$43,943	46.861306	-113.984794
4	Wolf Point Translator	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - Billings	6.5 miles NW of Wolf Point	Wolf Point	McCone		Other	Leased Property		$95,000	46.618000	-112.097000
1	Palmer Complex PBX only	DEPARTMENT OF ADMINISTRATION	2681 Palmer St	MISSOULA	Missoula		Office	Leased Property	null	$500,000	45.813464	-111.055349
1	Missoula Assessment and Sanction	DEPARTMENT OF CORRECTIONS	2340 Mullan Road	MISSOULA	Missoula		Jail	Leased Property	null	$48,364	48.541090	-109.683136
1	Missoula Airport Hanger - Building	DEPARTMENT OF FISH, WILDLIFE & PARKS	1 Corporate Way	MISSOULA	Missoula		Airport Hangars	Leased Property	null	$10,261	45.666235	-111.055247
1	Regional HQ - Building	DEPARTMENT OF FISH, WILDLIFE & PARKS	3201 Spurgin Road	MISSOULA	Missoula	1981	Governmental Building	Owned Property	Wood Frame	$2,664,834	47.486180	-111.269686
1	FSD - Forensics, Missoula	DEPARTMENT OF JUSTICE	2679 Palmer Street	MISSOULA	Missoula	2000	Laboratory	Owned Property	Wood frame	$11,394,653	47.056392	-109.425750
1	Missoula Armed Forces Reserve Center	DEPARTMENT OF MILITARY AFFAIRS	9383 Running West Road	MISSOULA	Missoula	2010	Governmental Building	Owned Property	Fire-protected steel frame	$15,028,199	46.408838	-105.821712
1	FORESTRY DIVISION HEADQUARTERS BUILDING A	DEPARTMENT OF NATURAL RESOURCES	2705 Spurgin Road	MISSOULA	Missoula	1964	Office	Owned Property	null	$2,948,198	45.209125	-112.640222

APPENDIX B-2. STATE CRITICAL FACILITY LIST

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DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
1	Missoula Helicopter Hanger	DEPARTMENT OF NATURAL RESOURCES	3150 Maverick Lane	MISSOULA	Missoula	2010	Airport Hangars	Owned Property	null	$152,443	46.011193	-112.556832
1	Missoula Unit Fire Cache	DEPARTMENT OF NATURAL RESOURCES	3206 Maverick Lane	MISSOULA	Missoula		Quonset Warehouse	Owned Property	null	$18,684	46.384017	-112.797949
1	Missoula Unit Office	DEPARTMENT OF NATURAL RESOURCES	3206 Maverick Lane	MISSOULA	Missoula		Office	Owned Property	null	$251,954	46.380949	-112.798548
1	Missoula Headquarters Office & Shop	DEPARTMENT OF TRANSPORTATION	2100 West Broadway	MISSOULA	Missoula	1968	Office	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,191,725	46.182263	-112.794680
1	KUSM TV Transmitter Site-Dean Stone	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Larch Camp Road	Missoula	Missoula	2012	Other	Leased Property	Joisted Masonry	$479,532	46.230679	-112.114069
1	KUSM TV Transmitter Site-TV Mountain	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Point 6 Road	Missoula	Missoula	2012	Other	Leased Property	Metal Lighweight or Prefabricated	$26,461	47.089373	-104.706600
1	1000-1006 Yreka Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1000-1006 Yreka Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$260,427	48.347811	-107.876151
1	100-106 Helena Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	100-106 Helena Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	46.885788	-114.029242
1	1008-1014 Yreka Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1008-1014 Yreka Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$323,544	46.859340	-113.982908
1	101-107 Helena Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	101-107 Helena Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	45.664195	-111.065320
1	1016-1022 Yreka Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1016-1022 Yreka Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$256,995	45.664457	-111.065263
1	1024-1030 Yreka Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1024-1030 Yreka Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$323,544	45.664332	-111.064539
1	1032-1042 Yreka Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1032-1042 Yreka Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$795,995	46.382462	-112.802230
1	1044-1050 Yreka Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1044-1050 Yreka Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$530,853	46.859281	-113.985633
1	108-114 Helena Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	108-114 Helena Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$263,861	45.209545	-112.638745
1	109-115 Helena Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	109-115 Helena Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$263,861	46.385387	-112.804056
1	1101-1110 Coloma Drive	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1101-1110 Coloma Drive	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	Wood frame	$1,242,303	45.665578	-111.052481
1	1111-1115 Coloma Drive	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1111-1115 Coloma Drive	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	Wood frame	$645,994	46.178149	-112.790175
1	116-122 Helena Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	116-122 Helena Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	45.295334	-111.952874
1	117-123 Helena Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	117-123 Helena Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	46.862448	-113.983713
1	1201-1204 Coloma Drive	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1201-1204 Coloma Drive	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	Wood frame	$265,445	46.589000	-111.993000
1	1205-1208 Coloma Drive	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1205-1208 Coloma Drive	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	Wood frame	$265,445	46.587447	-112.013864

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DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
1	1301-1304 Granite Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1301-1304 Granite Court	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	Wood frame	$461,926	47.932167	-108.577389
1	1305-1309 Granite Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1305-1309 Granite Court	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	Wood frame	$645,968	48.329778	-112.036083
1	1401-1407 Granite Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1305-1309 Granite Court	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	Wood frame	$819,367	48.504869	-114.343252
1	1408-1412 Granite Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1408-1412 Granite Court	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	Wood frame	$645,994	48.010778	-114.363194
1	1501-1504 Cinnabar Drive	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1501-1504 Cinnabar Drive	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	Wood frame	$265,445	46.620868	-112.095871
1	1601-1608 Cinnabar Drive	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1601-1608 Cinnabar Drive	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	Wood frame	$994,854	46.312862	-109.713547
1	1609-1613 Cinnabar Drive	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1609-1613 Cinnabar Drive	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	Wood frame	$645,994	48.200306	-104.532000
1	1701-1704 Cinnabar Drive	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1701-1704 Cinnabar Drive	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	Wood frame	$396,144	48.030610	-106.314800
1	1705-1713 Cinnabar Drive	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1705-1713 Cinnabar Drive	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	Wood frame	$759,287	45.838681	-112.757842
1	1801-1808 Emigrant Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1801-1808 Emigrant Court	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	Wood frame	$690,493	47.465056	-111.353361
1	1809-1812 Emigrant Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1809-1812 Emigrant Court	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	Wood frame	$495,332	46.617734	-112.097098
1	1813-1820 Emigrant Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1813-1820 Emigrant Court	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	null	$690,493	46.819917	-109.661361
1	1901-1908 Jardine Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1901-1908 Jardine Court	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	null	$652,332	48.109361	-106.720917
1	1909-1912 Jardine Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1909-1912 Jardine Court	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	Wood frame	$495,200	47.458750	-111.389972
1	1913-1920 Jardine Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1913-1920 Jardine Court	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	Precast frame	$652,332	46.602493	-111.992801
1	2001-2008 Laurin Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2001-2008 Laurin Court	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	Wood frame	$652,332	47.117325	-104.734381
1	200-206 Helena Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	200-206 Helena Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$260,427	48.384973	-115.543353
1	2009-2012 Laurin Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2009-2012 Laurin Court	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	Wood frame	$495,200	48.552444	-109.706833
1	201-207 Helena Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	201-207 Helena Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$260,427	48.369111	-107.156028
1	2013-2020 Laurin Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2013-2020 Laurin Court	MISSOULA	Missoula	1997	Res Apt Complex	Owned Property	Wood frame	$689,436	46.824759	-111.704084
1	208-214 Helena Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	208-214 Helena Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$263,861	47.773469	-114.268865

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DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
1	209-215 Helena Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	209-215 Helena Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Precast frame	$263,861	48.235810	-114.350030
1	2101-2108 Pardee Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2101-2108 Pardee Court	MISSOULA	Missoula	1997	Res Apt Complex	Owned Property	Wood frame	$689,436	48.212861	-114.321278
1	2109-2112 Pardee Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2109-2112 Pardee Court	MISSOULA	Missoula	1993	Res Apt Complex	Owned Property	Wood frame	$505,763	48.854637	-111.138762
1	2113-2120 Pardee Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2113-2120 Pardee Court	MISSOULA	Missoula	1997	Res Apt Complex	Owned Property	Wood frame	$689,436	48.693583	-104.595028
1	216-222 Helena Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	216-222 Helena Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$260,427	48.453417	-107.458361
1	217-223 Helena Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	217-223 Helena Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$260,427	48.791450	-112.309961
1	2201-2208 Landusky Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2201-2208 Landusky Court	MISSOULA	Missoula	1997	Res Apt Complex	Owned Property	Wood frame	$689,436	48.801389	-105.348611
1	2209-2211 Landusky Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2209-2211 Landusky Court	MISSOULA	Missoula	1993	Res Apt Complex	Owned Property	Wood frame	$505,763	47.177917	-109.536111
1	2213-2220 Landusky Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2213-2220 Landusky Court	MISSOULA	Missoula	1997	Res Apt Complex	Owned Property	Wood frame	$689,436	47.289694	-112.009417
1	2301-2304 Robar Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2301-2304 Robar Court	MISSOULA	Missoula	1993	Res Apt Complex	Owned Property	Wood frame	$505,763	47.800833	-111.711111
1	2305-2307 Robar Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2305-2307 Robar Court	MISSOULA	Missoula	1993	Res Apt Complex	Owned Property	Wood frame	$505,763	48.658403	-109.321997
1	2309-2312 Robar Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2309-2312 Robar Court	MISSOULA	Missoula	1993	Res Apt Complex	Owned Property	Wood frame	$505,763	47.001183	-112.103458
1	300-306 Bannack Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	300-306 Bannack Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	48.339299	-109.743843
1	301-307 Bannack Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	301-307 Bannack Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	46.199334	-107.335213
1	308-314 Bannack Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	308-314 Bannack Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$263,861	46.592021	-111.993495
1	309-315 Bannack Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	309-315 Bannack Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$263,861	47.104843	-104.715349
1	316-322 Bannack Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	316-322 Bannack Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	46.128034	-112.968129
1	317-323 Bannack Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	317-323 Bannack Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	45.512028	-109.138028
1	324-334 Bannack Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	324-334 Bannack Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$795,995	46.181302	-112.796081
1	400-406 Bannack Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	400-406 Bannack Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	46.408009	-105.828910
1	401-407 Bannack Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	401-407 Bannack Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	46.406863	-105.820622

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DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
1	408-414 Bannack Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	408-414 Bannack Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	46.407820	-105.855277
1	409-415 Bannack Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	409-415 Bannack Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	46.417707	-105.821563
1	417-423 Bannack Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	417-423 Bannack Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$327,506	46.011266	-112.557426
1	424-430 Bannack Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	424- 430 Bannack Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$398,688	45.666059	-111.054204
1	432-438 Bannack Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	432-438 Bannack Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	46.858651	-113.988744
1	500-506 Garnet Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	500-506 Garnet Court	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	46.012770	-112.558032
1	508-514 Garnet Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	508-514 Garnet Court	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	46.912998	-114.079782
1	509-515 Garnet Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	509-515 Garnet Court	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$327,506	46.960808	-114.129939
1	516-526 Garnet Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	516-526 Garnet Court	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$795,995	46.881933	-114.027825
1	517-523 Garnet Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	517-523 Garnet Court	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	46.884542	-114.023062
1	525-531 Garnet Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	525-531 Garnet Court	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	46.856057	-114.057547
1	600-610 Pioneer Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	600-610 Pioneer Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$795,995	46.859405	-114.063549
1	601 S Fifth E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	601 S Fifth E.	MISSOULA	Missoula	1987	Res Apt Complex	Owned Property	Wood frame	$506,291	46.856813	-114.058574
1	601 S Sixth E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	601 S Fifth E.	MISSOULA	Missoula	1988	Res Apt Complex	Owned Property	Wood frame	$409,900	46.585439	-112.015487
1	601-607 Pioneer Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	601-607 Pioneer Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$260,427	46.585471	-112.016024
1	602 S Sixth E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	602 S Sixth E.	MISSOULA	Missoula	1988	Res Apt Complex	Owned Property	Wood frame	$180,673	46.661992	-111.976799
1	609 S Sixth E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	609 S Sixth E.	MISSOULA	Missoula		Res Apt Complex	Owned Property	Wood frame	$314,829	46.662438	-111.974988
1	609-615 Pioneer Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	609-615 Pioneer Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$260,427	46.660804	-111.974898
1	610 S Sixth E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	610 S Sixth E.	MISSOULA	Missoula	1985	Res Apt Complex	Owned Property	Wood frame	$424,028	46.661897	-111.973486
1	612-618 Pioneer Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	612-618 Pioneer Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	46.662120	-111.974074
1	615 S Fifth E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	615 S Fifth E.	MISSOULA	Missoula	1988	Res Apt Complex	Owned Property	Wood frame	$302,549	46.662523	-111.973780

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
1	615 S Sixth E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	615 S Fifth E.	MISSOULA	Missoula	1984	Res Apt Complex	Owned Property	Wood frame	$272,840	46.662778	-111.976659
1	616 & 616-1/2 S Sixth E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	616 S Sixth E.	MISSOULA	Missoula	1987	Res Apt Complex	Owned Property	Wood frame	$496,916	46.662789	-111.974864
1	620 S Sixth E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	620 S Sixth E.	MISSOULA	Missoula	1989	Res Apt Complex	Owned Property	Wood frame	$340,907	46.661663	-111.977557
1	620-626 Pioneer Court N	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	620-626 Pioneer Court N	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$260,427	46.662587	-111.976984
1	625 S Fifth E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	625 S Fifth E.	MISSOULA	Missoula		Res Apt Complex	Owned Property	Wood frame	$330,673	46.662630	-111.975715
1	625 S. Sixth East	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	625 S Fifth E.	MISSOULA	Missoula	1945	Res Apt Complex	Owned Property	Wood frame	$402,242	45.660660	-111.044486
1	626 S Sixth E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	626 S Sixth E.	MISSOULA	Missoula	1984	Res Apt Complex	Owned Property	Wood frame	$389,258	45.667536	-111.049347
1	630 S Sixth E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	630 S Sixth E.	MISSOULA	Missoula		Res Apt Complex	Owned Property	Wood frame	$254,089	46.586348	-112.016522
1	633 S Fifth E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	633 S Fifth E.	MISSOULA	Missoula	1985	Res Apt Complex	Owned Property	Wood frame	$419,935	46.586777	-112.013884
1	636 S Sixth E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	636 S Sixth E.	MISSOULA	Missoula	1988	Res Apt Complex	Owned Property	Wood frame	$214,789	46.596000	-112.035346
1	638 - 644 S Sixth E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	638 S Sixth E.	MISSOULA	Missoula	1986	Res Apt Complex	Owned Property	Wood frame	$447,532	46.586435	-112.014015
1	639 S. Fifth East	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	639 S. Fifth East	MISSOULA	Missoula		Res Apt Complex	Owned Property	Wood frame	$103,559	45.774903	-108.495990
1	645 S Fifth E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	645 S Fifth E.	MISSOULA	Missoula	1988	Res Apt Complex	Owned Property	Wood frame	$297,664	48.542428	-109.682658
1	645 S. Sixth E.,	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	645 S. Sixth E.	MISSOULA	Missoula	1940	Res Apt Complex	Owned Property	Wood frame	$456,876	46.382362	-112.803542
1	657 & 657-1/2 S Fifth E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	657 S Fifth E.	MISSOULA	Missoula	1987	Res Apt Complex	Owned Property	Wood frame	$318,889	46.177248	-112.793598
1	659 & 659-1/2 S Fifth E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	659 S Fifth E.	MISSOULA	Missoula	1984	Res Apt Complex	Owned Property	Wood frame	$417,824	46.180826	-112.789514
1	659 S Sixth E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	659 S Sixth E.	MISSOULA	Missoula	1988	Res Apt Complex	Owned Property	null	$416,501	46.396982	-112.760724
1	664 S Sixth East	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	664 S Sixth East	MISSOULA	Missoula	1940	Res Apt Complex	Owned Property	Wood frame	$238,968	47.876726	-114.033192
1	666 S Sixth E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	666 S Sixth E.	MISSOULA	Missoula	1984	Res Apt Complex	Owned Property	Wood frame	$352,330	46.010817	-112.556907
1	700-706 Pioneer Court S	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	700-706 Pioneer Court S	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	45.658779	-111.045554
1	701-707 Pioneer Court S	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	701-707 Pioneer Court S	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$327,506	46.862381	-113.986393

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
1	702 Arthur	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	702 Arthur	MISSOULA	Missoula	1988	Res Apt Complex	Owned Property	Wood frame	$209,590	46.396982	-112.760724
1	708-714 Pioneer Court S	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	708-714 Pioneer Court S	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	null	$330,937	46.382369	-112.797477
1	716-722 Pioneer Court S	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	716-722 Pioneer Court S	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	48.498126	-109.795794
1	724-730 Pioneer Court S	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	724-730 Pioneer Court S	MISSOULA	Missoula	1966	Res Apt Complex	Owned Property	Wood frame	$330,937	46.860299	-113.988948
1	801-807 Ophir Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	801-807 Ophir Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$260,427	46.013072	-112.562077
1	809-815 Ophir Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	809-815 Ophir Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$260,427	46.860917	-113.983761
1	817-823 Ophir Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	817-823 Ophir Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$323,544	46.861246	-113.983759
1	820 Arthur Ave. (Int. Prog. 600/610 Eddy)	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	820 Arthur Ave.	MISSOULA	Missoula		Res Apt Complex	Owned Property	Wood frame	$628,632	45.667877	-111.058588
1	833-839 Ophir Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	833-839 Ophir Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$795,995	46.181081	-112.792484
1	900-906 Rimini Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	900-906 Rimini Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$260,427	46.602000	-111.998000
1	901-907 Rimini Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	901-907 Rimini Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$323,544	46.861574	-113.987994
1	908-914 Rimini Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	908-914 Rimini Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$260,427	45.666642	-111.054384
1	909-915 Rimini Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	909-915 Rimini Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$323,544	46.859289	-113.985202
1	916-922 Rimini Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	916-922 Rimini Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$323,544	48.364518	-114.210002
1	917-923 Rimini Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	917-923 Rimini Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$323,544	48.189405	-114.133982
1	924-930 Rimini Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	924-930 Rimini Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$323,544	48.235846	-114.351104
1	925-931 Rimini Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	925-931 Rimini Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$323,544	48.179522	-114.308240
1	932-942 Rimini Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	932-942 Rimini Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$795,995	46.860323	-113.989009
1	933-951 Rimini Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	933-951 Rimini Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$529,926	45.208777	-112.640683
1	944-962 Rimini Court	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	944-962 Rimini Court	MISSOULA	Missoula	1967	Res Apt Complex	Owned Property	Wood frame	$529,926	46.585181	-112.017117
1	Aber Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	844 Connell Avenue	MISSOULA	Missoula	1968	State University	Owned Property	Reinforced Concrete	$18,235,709	46.589415	-112.018798

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
1	Adams Center (Shelter)	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	800 Van Buren St.	Missoula	Missoula	1953	State University	Owned Property	Unreinforced concrete frame	$44,476,146	45.207289	-112.639562
1	Administration Building	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	909 S Ave W.	MISSOULA	Missoula	1968	State University	Owned Property	Joisted Masonry	$11,067,248	47.514749	-111.277814
1	Bio Research Building	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1310 Maurice Ave.	MISSOULA	Missoula	2004	Laboratory	Owned Property	Wood frame	$4,712,821	46.884835	-114.030708
1	Chemistry/Pharmacy	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1350 Mansfield Avenue	MISSOULA	Missoula	1938	State University	Owned Property	Joisted Masonry	$21,216,250	46.857881	-113.988273
1	Corbin Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1025 Maurice Avenue	MISSOULA	Missoula	1927	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$4,697,681	45.597575	-110.546513
1	Craig Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1301 Maurice Avenue	MISSOULA	Missoula	1953	State University	Owned Property	Reinforced concrete frame	$14,868,884	46.382337	-112.797913
1	Craighead Apartments	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1900 Maurice Avenue	MISSOULA	Missoula	1957	Res Apt Complex	Owned Property	Reinforced concrete frame	$11,373,322	47.505021	-111.239344
1	Curry Health Center	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	634 Eddy Avenue	MISSOULA	Missoula	1956	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$18,291,850	46.589049	-112.010593
1	Davidson Honors College	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1235 Madeline Avenue	MISSOULA	Missoula	1996	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$6,083,716	46.863548	-113.985113
1	Don Anderson Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	800 Daly Ave	MISSOULA	Missoula	2007	State University	Owned Property	Reinforced Concrete	$17,134,274	45.667987	-111.059452
1	Duniway Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	635 McLeod Avenue	MISSOULA	Missoula	1956	State University	Owned Property	Joisted Masonry	$5,885,982	45.797654	-108.521796
1	Elrod Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	640 Keith Avenue	MISSOULA	Missoula	1921	State University	Owned Property	Joisted Masonry	$5,696,978	46.862693	-113.985264
1	Emma B. Lommasson Center	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	625 University Avenue	MISSOULA	Missoula	1955	State University	Owned Property	Wood Frame	$20,811,705	45.798880	-108.523936
1	Family Medical Residency of Western Montana at PHC	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	401 W Railroad St. W.	MISSOULA	Missoula		State University	Leased Property	Joisted Masonry	$91,512	45.797471	-108.520738
1	Fine Arts	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	715 Connell Avenue	MISSOULA	Missoula	1935	State University	Owned Property	Joisted Masonry	$19,501,042	45.207380	-112.637863
1	Forestry	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1310 Madeline Avenue	MISSOULA	Missoula	1921	State University	Owned Property	Joisted Masonry	$5,962,125	46.011264	-112.557910
1	Gallagher Building	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	925 Maurice Avenue	MISSOULA	Missoula	1996	State University	Owned Property	Joisted Masonry	$34,249,894	48.539362	-109.690869
1	Health & Business Bldg	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	909 S Ave W.	MISSOULA	Missoula	1979	State University	Owned Property	Joisted Masonry	$6,125,280	46.863161	-113.979449
1	Health Sciences	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	720 Keith Avenue	MISSOULA	Missoula	1962	State University	Owned Property	Reinforced concrete frame	$20,383,127	46.408523	-105.822635
1	Heating Plant UM	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	840 Connell Avenue	MISSOULA	Missoula	1923	Power Plant	Owned Property	Wood frame	$34,310,088	46.182631	-112.791662
1	International Center (formerly Linguistics)	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	700 McLeod Ave.	MISSOULA	Missoula	1937	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,893,043	45.668912	-111.052580

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
1	James E. Todd Building	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	25 Campus Drive	MISSOULA	Missoula	1998	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$9,599,469	45.668254	-111.053250
1	Jeanette Rankin Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	815 Daly Avenue	MISSOULA	Missoula	1909	State University	Owned Property	Joisted Masonry	$4,412,768	45.664961	-111.044873
1	Jesse Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	610 Daly Avenue	MISSOULA	Missoula	1968	State University	Owned Property	Reinforced concrete frame	$18,235,709	47.876719	-114.034417
1	Knowles Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	630 University Avenue	MISSOULA	Missoula	1963	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$11,676,365	47.876726	-114.033192
1	KUFM Pt. 6 (Top of Snowbowl)	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	TV Mountain Top of Snowbowl	MISSOULA	Missoula	1973	Other	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$430,438	46.396982	-112.760724
1	Lewis and Clark Villages Unit A	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	3000 S. Higgins	MISSOULA	Missoula	2004	Res Apt Complex	Owned Property	Wood frame	$1,312,846	46.225334	-112.117584
1	Lewis and Clark Villages Unit B	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	3000 S. Higgins	MISSOULA	Missoula	2004	Res Apt Complex	Owned Property	Wood frame	$1,312,839	46.013125	-112.556580
1	Lewis and Clark Villages Unit C	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	3000 S. Higgins	MISSOULA	Missoula	2004	Res Apt Complex	Owned Property	Wood frame	$1,312,839	46.226144	-112.116849
1	Lewis and Clark Villages Unit D	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	3000 S Higgins	MISSOULA	Missoula	2004	Res Apt Complex	Owned Property	Wood frame	$1,312,839	46.396982	-112.760724
1	Lewis and Clark Villages Unit E	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	3000 S Higgins	MISSOULA	Missoula	2004	Res Apt Complex	Owned Property	Wood frame	$1,312,839	46.385258	-112.798078
1	Lewis and Clark Villages Unit F	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	3000 S. Higgins	MISSOULA	Missoula	2004	Res Apt Complex	Owned Property	Wood frame	$1,312,839	46.600094	-112.017841
1	Lewis and Clark Villages Unit G	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	3000 S. Higgins	MISSOULA	Missoula	2004	Res Apt Complex	Owned Property	Wood frame	$1,312,839	46.183346	-112.789562
1	Lewis and Clark Villages Unit H	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	3000 S. Higgins	MISSOULA	Missoula	2004	Res Apt Complex	Owned Property	Wood frame	$1,312,839	46.233528	-112.116919
1	Lewis and Clark Villages Unit I	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	3000 S. Higgins	MISSOULA	Missoula	2004	Res Apt Complex	Owned Property	Wood frame	$1,312,839	45.186386	-109.248254
1	Lewis and Clark Villages Unit J	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	3000 S. Higgins	MISSOULA	Missoula	2004	Res Apt Complex	Owned Property	Wood frame	$1,312,839	45.121302	-109.273353
1	Lewis and Clark Villages Unit K	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	3000 S. Higgins	MISSOULA	Missoula	2004	Res Apt Complex	Owned Property	Wood frame	$1,312,839	46.859646	-114.036892
1	Liberal Arts	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	725 Daly Avenue	MISSOULA	Missoula	1953	State University	Owned Property	Reinforced Concrete	$28,202,243	48.210340	-106.641753
1	Mansfield Center at Palmer Street	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2675 Palmer Street Suite E	MISSOULA	Missoula	2003	State University	Leased Property	Unprotected steel frame with non-combustible (masonry) exterior	$79,195	45.839166	-108.477561
1	Mansfield Library	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	910 McLeod Avenue	MISSOULA	Missoula	1973	State University	Owned Property	Reinforced concrete frame	$180,632,424	46.396689	-105.865550
1	Mathematics	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1255 Mansfield Avenue	MISSOULA	Missoula	1903	State University	Owned Property	Joisted Masonry	$5,977,387	46.586827	-112.015611
1	McGill Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	920 Van Buren Street	MISSOULA	Missoula	1953	State University	Owned Property	Reinforced Concrete	$15,702,590	45.665507	-111.061773

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
1	Miller Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1330 Arthur Avenue	MISSOULA	Missoula	1965	State University	Owned Property	Reinforced concrete frame	$14,302,623	47.531125	-111.231327
1	Music Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	930 Maurice Avenue	MISSOULA	Missoula	1953	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$11,881,460	48.203784	-114.330341
1	Native American Center (Payne Family)	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1210 Maurice	MISSOULA	Missoula	2010	State University	Owned Property	Reinforced Concrete	$8,060,335	45.666785	-111.050012
1	Natural Science Annex	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1040 Madiline Ave.	MISSOULA	Missoula	1938	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,594,735	46.382833	-112.800903
1	Natural Sciences (Botany Building)	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1040 Madeline Avenue	MISSOULA	Missoula	1919	State University	Owned Property	Joisted Masonry	$5,479,950	45.666692	-111.048743
1	North Corbin	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1025 Maurice Avenue	MISSOULA	Missoula	1956	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,993,826	45.796294	-108.525587
1	North Underground Lect. Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1340 Mansfield Ave.	MISSOULA	Missoula	1999	State University	Owned Property	Reinforced concrete frame	$2,281,197	46.226144	-112.116849
1	O'Conner Center for Rocky Mountain West (old NAS)	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	600 University	MISSOULA	Missoula	1955	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$491,552	46.176525	-112.789822
1	Pantzer Hall Dormitory	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	615 Keith Avenue	MISSOULA	Missoula	1996	Res Apt Complex	Owned Property	Reinforced Concrete	$15,926,748	46.176330	-112.790190
1	Performing Arts & Radio Television	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	735 S 6th Street East	MISSOULA	Missoula	1984	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$21,137,982	46.176245	-112.790312
1	Phyllis J. Washington Education Center	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	745 Eddy	MISSOULA	Missoula	2009	State University	Owned Property	Joisted Masonry	$22,649,692	46.179754	-112.785922
1	PHYSICAL PLANT BUILDING - MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	12 Campus Drive	MISSOULA	Missoula	1968	State University	Owned Property	Joisted Masonry	$5,598,942	46.179503	-112.785889
1	SCHREIBER GYM (SHELTER)	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	950 Keith Avenue	MISSOULA	Missoula	1922	State University	Owned Property	Joisted Masonry	$9,462,150	47.506154	-111.239482
1	Science Complex - Charles H. Clapp Bldg.	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	845 Keith Avenue	MISSOULA	Missoula	1971	State University	Owned Property	Reinforced Concrete	$36,974,452	47.506154	-111.239482
1	Seismograph Station (Pattee Canyon)	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Pattee Canyon Rd.	MISSOULA	Missoula	1972	Other	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$22,064	45.666868	-111.046069
1	Sisson Apartments	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1900 Maurice Avenue	MISSOULA	Missoula	1957	Res Apt Complex	Owned Property	Joisted Masonry	$11,373,322	45.665418	-111.049449
1	Skaggs Building	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1325 Mansfield Avenue	MISSOULA	Missoula	1981	State University	Owned Property	Reinforced concrete frame	$49,579,462	45.665150	-111.054515
1	Social Science	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1010 Mansfield Avenue	MISSOULA	Missoula	1921	State University	Owned Property	Joisted Masonry	$25,800,375	46.441679	-108.541913
1	Stone Hall (old Journalism)	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	825 McLeod Avenue	MISSOULA	Missoula	1937	State University	Owned Property	Joisted Masonry	$7,704,587	45.668001	-111.065854
1	Sub Station Switch Gear Building	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	840 Connell Ave.	MISSOULA	Missoula		Power Plant	Owned Property	Reinforced Concrete	$166,753	45.862925	-108.307867
1	Trade & Technology I	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	3639 S Ave W.	MISSOULA	Missoula	1972	State University	Owned Property	Steel frame with combustible exterior walls	$4,437,141	45.862925	-108.307867

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
1	Trade & Technology II	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	3639 S Ave W.	MISSOULA	Missoula	1977	State University	Owned Property	Steel frame with combustible exterior walls	$4,177,012	46.858545	-113.982477
1	Trade & Technology III	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	3639 S Ave W.	MISSOULA	Missoula	1973	State University	Owned Property	Steel frame with combustible exterior walls	$774,142	46.012073	-112.556911
1	Turner Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1105 Maurice Aveneu	MISSOULA	Missoula	1938	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$6,014,498	46.858119	-113.984145
1	University Center	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	915 Daly Avenue	MISSOULA	Missoula	1969	State University	Owned Property	Reinforced Concrete	$47,241,148	45.796230	-108.523136
1	University Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	900 University Avenue	MISSOULA	Missoula	1898	State University	Owned Property	Joisted Masonry	$10,628,518	46.587114	-112.016886
1	Urey Lecture Hall	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1340 Mansfield Avenue	MISSOULA	Missoula	1980	State University	Owned Property	Reinforced concrete frame	$2,403,805	46.600000	-112.017000
5	Aeronautics NDB - Roundup	DEPARTMENT OF TRANSPORTATION	#1 Roundup Airport Road	ROUNDUP	Musselshell		Other	Owned Property	Steel frame with combustible exterior walls	$15,417	48.541675	-109.680002
5	Roundup - UA (Musselshell) OPA/CFS	PUBLIC HEALTH & HUMAN SERVICES	26 Main St.	ROUNDUP	Musselshell		Governmental Building	Leased Property	null	$30,491	48.541649	-109.679457
3	Paradise Valley Translator	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - Billings	Meyers Ranch, 18 miles NE of Emigrant	Emigrant	Park		Other	Leased Property		$150,000	45.664047	-111.064608
3	Livingston Armory	DEPARTMENT OF MILITARY AFFAIRS	24 Fleshman Creek Road	LIVINGSTON	Park	1991	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,254,253	47.177821	-109.535788
3	Livingston Translator	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Quinn Peak, 10 miles W.N.W. of town	LIVINGSTON	Park		Other	Leased Property	null	$10,000	48.388861	-115.566141
3	KGLT RADIO TRANSLATOR LIVINGSTON	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	15 MILES S OFLIVINGSTON 45-35-52.0 N,110-32-44 W	LIVINGSTON	Park	2010	Other	Leased Property	Metal Lightweight or Prefabricated	$0	46.860868	-113.986057
6	Malta Armory	DEPARTMENT OF MILITARY AFFAIRS	HC 72, 1 Mile S. Hwy 191	MALTA	Phillips	1965	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,138,101	45.208434	-112.639256
6	Aeronautics NDB - Malta	DEPARTMENT OF TRANSPORTATION	48 deg - 22' - 43.0" N, 107 deg - 55' - 12.0" W	MALTA	Phillips		Other	Owned Property	Steel frame with combustible exterior walls	$2,417	48.541476	-109.687683
6	MHP - Saco Phillips County Microwave Tower	DEPARTMENT OF JUSTICE	6 miles E of Saco	SACO	Phillips		Other	Owned Property	null	$93,604	48.541559	-109.680666
6	Landusky Mine Backup Generator	DEPARTMENT OF ENVIRONMENTAL QUALITY	Landusky Mine-Landusky Route-Landusky City	ZORTMAN	Phillips	2002	Power Plant	Owned Property	Fire-protected steel frame	$179,123	46.385760	-112.813516
6	Zortman Mine Backup Generator	DEPARTMENT OF ENVIRONMENTAL QUALITY	Zortman Mine-POBox 225, 225 Main Street	ZORTMAN	Phillips	2002	Power Plant	Owned Property	Fire-protected steel frame	$182,036	45.665616	-111.055956
6	MHP - Antonine Phillips Cnty Microwave Tower	DEPARTMENT OF JUSTICE	17 km W of HWY 191	ZORTMAN	Phillips		Other	Owned Property	null	$66,449	47.929975	-108.561127
2	Aeronautics NDB - Conrad	DEPARTMENT OF TRANSPORTATION	48 deg - 11' - 18.0" N, 111 deg - 54' - 48.0" W	CONRAD	Pondera		Other	Owned Property	Steel frame with combustible exterior walls	$2,417	44.689140	-111.110796
2	MHP - Belgian Hills Pondera Cnty Microwave Tower	DEPARTMENT OF JUSTICE	10 NE Valier	VALIER	Pondera		Other	Owned Property	null	$58,540	46.587064	-112.014359
4	Ashland Translator	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Home Creek Butte, 27KM E of Ashland	ASHLAND	Powder River		Other	Leased Property	null	$16,512	46.852410	-113.985074
4	Broadus Translator	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - Billings	Russell Hill, 5 km SE of Broadus	Broadus	Powder River		Other	Leased Property		$10,000	46.848489	-113.988499

APPENDIX B-2. STATE CRITICAL FACILITY LIST

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DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
1	MT State Prison	DEPARTMENT OF ADMINISTRATION	600 Conley Lake Rd.	DEER LODGE	Powell		Jail	Leased Property	null	$250,000	45.669452	-111.046337
1	Cook Chill (Food Factory)	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	600 Conley Lake Rd	DEER LODGE	Powell	2000	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$6,704,725	45.669618	-111.046291
1	H S Laundry/Education	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	600 Conley Lake Rd	DEER LODGE	Powell	1995	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$6,954,891	45.669861	-111.046153
1	Industrial Complex Furniture Shop	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	600 Conley Lake Rd.	DEER LODGE	Powell	1975	Garage, Service Center	Owned Property	Wood frame	$2,516,384	45.669859	-111.045941
1	Industrial Complex Warehouse	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	600 Conley Lake Rd.	DEER LODGE	Powell	1986	Garage, Service Center	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,975,895	45.669613	-111.045813
1	Industries Furniture Shop Addition	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	600 Conley Lake Rd.	DEER LODGE	Powell	2001	Garage, Service Center	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,903,903	45.669446	-111.045774
1	Laundry	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	600 Conley Lake Rd	DEER LODGE	Powell		Governmental Building	Owned Property	null	$249,223	45.208735	-112.640263
1	License Plate Distribution Center	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	600 Conley Lake Rd.	DEER LODGE	Powell	2016	Governmental Building	Owned Property	Metal Lightweight or Prefabricated	$1,880,961	46.602472	-111.990780
1	MVM Building	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	600 Conley Lake Rd.	DEER LODGE	Powell	1975	Garage, Service Center	Owned Property	Steel frame with combustible exterior walls	$3,514,381	46.602472	-111.990780
1	MVM Building Addition	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	MSP	DEER LODGE	Powell		Garage, Service Center	Owned Property		$156,151	47.488919	-111.300836
1	Parlor	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	600 Conley Lake Rd	DEER LODGE	Powell	1949	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$6,369,890	45.278042	-111.450095
1	Print & Sign	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	600 Conley Lake Rd.	DEER LODGE	Powell	1975	Garage, Parts Storage	Owned Property	Fireprotected Steel	$4,179,127	45.750053	-109.955045
1	Ranch 2 Shop Building	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	600 Conley Lake Rd.	DEER LODGE	Powell		Garage, Service Center	Owned Property	Steel frame with combustible exterior walls	$234,769	45.794410	-108.519689
1	Toyota Building (Add'n to MVM)	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	600 Conley Lake Rd.	DEER LODGE	Powell		Garage, Service Center	Owned Property	Steel frame with combustible exterior walls	$220,097	45.744583	-108.589398
1	Vocational Education MVM Addition	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	600 Conley Lake Rd.	DEER LODGE	Powell		Garage, Service Center	Owned Property	null	$366,828	45.802377	-108.530586
1	Close Unit I	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1979	Jail	Owned Property	Reinforced concrete frame	$5,625,979	45.762288	-108.538285
1	Close Unit II	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1979	Jail	Owned Property	Reinforced concrete frame	$5,625,979	45.789308	-108.506123
1	Close Unit III	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1986	Jail	Owned Property	Reinforced concrete frame	$7,390,510	46.858717	-113.986406
1	Conley Lake Lodge	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd.	DEER LODGE	Powell		Jail	Owned Property	Wood frame	$267,567	46.233552	-112.113253
1	DOC Training Center	DEPARTMENT OF CORRECTIONS, STATE PRISON	442 Gulf Course Rd	DEER LODGE	Powell	1963	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$838,498	45.208444	-112.638271
1	Fire Truck Garage	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1996	Garage, Vehicle Storage	Owned Property	Wood frame	$75,915	46.584698	-112.017698

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
1	Guard Station (Rear)	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1976	Jail	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$50,933	47.506139	-111.240327
1	Guard Tower #1	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell		Jail	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$31,797	46.585721	-112.016944
1	High Security Gym	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1950	Jail	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,231,735	45.688886	-111.031981
1	High Security Support Building	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1982	Jail	Owned Property	Reinforced concrete frame	$3,272,376	45.645684	-111.021645
1	High Side Food Service Building	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1976	Jail	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$3,079,732	45.663295	-111.050620
1	Infirmary Building	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1985	Hospital, Nursing Home	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,782,952	45.410546	-105.358369
1	Low Security Gym	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1984	Jail	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,763,040	46.611985	-112.019309
1	Low Security Housing Unit D	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1990	Jail	Owned Property	Reinforced concrete frame	$3,430,769	45.981661	-112.528063
1	Low Security Support (Rothe)	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1968	Jail	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$6,954,898	45.981661	-112.528063
1	Main Prison Warehouse	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1988	Garage, Parts Storage	Owned Property	Steel frame with combustible exterior walls	$2,219,605	45.968764	-112.516368
1	Maintenance Complex	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1965	Garage, Service Center	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,440,273	46.585471	-112.017104
1	Martz Diagnostic and Intake Unit (MDIU)	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	2004	Jail	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$8,827,763	46.585765	-112.018171
1	Maximum Security Unit	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1986	Jail	Owned Property	Reinforced concrete frame	$7,600,907	45.208014	-112.637137
1	MSP Armory	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1968	Office	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,293,285	46.013127	-112.555638
1	Reception Building	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1968	Jail	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,656,087	45.656086	-111.047558
1	Religious Activity Center	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1979	Jail	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$659,244	45.666899	-111.053000
1	Unit A Commons	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1974	Jail	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$577,761	46.010758	-112.557428
1	Unit A Housing	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1976	Jail	Owned Property	Reinforced concrete frame	$5,048,659	45.669071	-111.050102
1	Unit B Commons	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1974	Jail	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$577,761	46.858068	-113.985580
1	Unit B Housing	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1976	Jail	Owned Property	Reinforced concrete frame	$5,048,659	48.854747	-111.140968
1	Unit C Commons	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell		Jail	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$577,761	46.013287	-112.541722

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1	Unit C Housing	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1976	Jail	Owned Property	Reinforced concrete frame	$5,048,659	45.208100	-112.636476
1	Wallace Administration Building	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1979	Office	Owned Property	Reinforced concrete frame	$4,522,847	47.505021	-111.239344
1	Warehouse/Canteen	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	2009	Garage, Parts Storage	Owned Property	null	$557,770	46.383475	-112.800303
1	Work Dorm/Expansion	DEPARTMENT OF CORRECTIONS, STATE PRISON	400 Conley Lake Rd	DEER LODGE	Powell	1995	Jail	Owned Property	Metal Lightweight or Prefabricated	$6,506,868	46.383889	-112.800746
1	Treasure State Correctional Training Center	DEPARTMENT OF CORRECTIONS, TREASURE STATE CORRECTION TC	1100 Conley Lake Road	DEER LODGE	Powell	1998	Jail	Owned Property	Wood frame	$4,690,170	46.385387	-112.801045
1	Hamilton Airport Hanger - Building	DEPARTMENT OF FISH, WILDLIFE & PARKS	309 Airport Rd.	Hamilton	Ravalli	2002	Airport Hangars	Leased Property	(I) Frame	$10,224	46.263015	-106.669859
1	Hamilton Armory	DEPARTMENT OF MILITARY AFFAIRS	910 West Main	HAMILTON	Ravalli	1965	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,014,737	47.876648	-114.033802
1	KUFM Hamilton (Grubstake)	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1017 Grub Stake Rd (by)	HAMILTON	Ravalli		Other	Owned Property	null	$54,816	46.884865	-114.029732
4	Sidney Armory	DEPARTMENT OF MILITARY AFFAIRS	2190 West Holly	SIDNEY	Richland	1957	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,137,338	48.364518	-114.210002
4	Aeronautics NDB - Sidney	DEPARTMENT OF TRANSPORTATION	60 Airport Road	SIDNEY	Richland		Other	Owned Property	Steel frame with combustible exterior walls	$15,417	47.750051	-113.823712
4	EARC Foreman Residence	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	1 mile N of Sidney, Hwy 200	SIDNEY	Richland	1950	Res Apt Complex	Owned Property		$111,213	47.750051	-113.823712
4	EARC Superintendent Residence	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	1 mile N of Sidney, Hwy 200	SIDNEY	Richland	1970	Res Apt Complex	Owned Property		$171,022	47.750051	-113.823712
6	MHP - Culbertson Microwave Tower	DEPARTMENT OF JUSTICE	3 miles NE of Culbertson	CULBERTSON	Roosevelt		Other	Owned Property	null	$40,871	44.689220	-111.110781
6	Culbertson Armory	DEPARTMENT OF MILITARY AFFAIRS	819 6th Avenue East	CULBERTSON	Roosevelt	1980	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,215,519	45.665912	-111.048425
6	Aeronautics NDB - Wolf Point	DEPARTMENT OF TRANSPORTATION	48 deg - 6' - 16.0" N, 105 deg - 36' - 5.0" W	WOLF POINT	Roosevelt		Other	Owned Property	Wood frame	$2,417	48.090119	-105.640554
6	Wolf Point Office & Shop	DEPARTMENT OF TRANSPORTATION	200 E. HWY 25	WOLF POINT	Roosevelt	1937	Office	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,444,427	48.035323	-105.520662
5	Colstrip Translator	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Little Wolf Mount, 13.5 miles W.S.W. of town	COLSTRIP	Rosebud		Other	Leased Property	null	$100,000	48.096489	-105.574838
5	Aeronautics NDB - Forsyth	DEPARTMENT OF TRANSPORTATION	46 deg - 16' - 15.0" N, 106 deg - 40' - 25.1" W	FORSYTH	Rosebud		Other	Owned Property	Steel frame with combustible exterior walls	$15,417	46.390529	-112.771374
5	Forsyth Translator	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	F. Hill, 46 15' 39	FORSYTH	Rosebud		Other	Leased Property	null	$10,000	46.177297	-112.791036
6	MHP - Plentywood (Sheridan County) Microwave Tower	DEPARTMENT OF JUSTICE	7 miles S of Plentywood	PLENTYWOOD	Sheridan		Other	Owned Property	null	$57,579	46.600000	-112.017000
6	Aeronautics NDB - Plentywood	DEPARTMENT OF TRANSPORTATION	48 deg - 47' - 42.0" N, 104 deg - 31' - 36.0" W	PLENTYWOOD	Sheridan		Other	Owned Property	Steel frame with combustible exterior walls	$2,417	46.802209	-113.973200
1	MHP - FLEECER MICROWAVE TOWER	DEPARTMENT OF JUSTICE	BUTTE SILVERBOW COUNTY	BUTTE	Silver Bow		Other	Owned Property	null	$185,000	46.848148	-113.988472

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
1	Butte Armory	DEPARTMENT OF MILITARY AFFAIRS	600 Gilman St	BUTTE	Silver Bow	2000	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,462,831	46.847727	-113.989177
1	Butte Armory Annex	DEPARTMENT OF MILITARY AFFAIRS	600 Gilman St	BUTTE	Silver Bow	2000	Governmental Building	Owned Property	Wood frame	$665,833	46.847903	-113.988549
1	Butte Office & Shop	DEPARTMENT OF TRANSPORTATION	3751 Wynne Avenue	BUTTE	Silver Bow	1970	Office	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$3,001,225	46.847715	-113.988596
1	Centennial Hall (Student Residence-East)	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	1225 Broadway	BUTTE	Silver Bow	1999	Res Apt Complex	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$5,602,331	46.861984	-113.982426
1	Chemistry - Biology Building (CBB) - H	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	1300 W. Park Street	BUTTE	Silver Bow	1921	State University	Owned Property	Joisted Masonry	$13,390,609	47.505021	-111.239344
1	College of Technology	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	25 Basin Creek Rd.	BUTTE	Silver Bow	1983	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$23,056,194	46.408523	-105.822635
1	Engineering Hall-H	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	1300 W. Park Street	BUTTE	Silver Bow	1923	State University	Owned Property	Unreinforced concrete frame	$3,892,937	46.863724	-113.983291
1	Engineering Laboratory-Classroom Building	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	1300 W. Park Street	BUTTE	Silver Bow	1984	State University	Owned Property	Joisted Masonry	$13,455,609	46.848551	-114.012748
1	Family Student Housing - Lexington Apartments	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	1001 - 1039 Lexington Ave	BUTTE	Silver Bow	1950	Res Apt Complex	Owned Property	Wood frame	$2,294,578	46.226144	-112.116849
1	Family Student Housing - Missoula Apartments North	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	1001 - 1039 Missoula Ave	BUTTE	Silver Bow	1950	Res Apt Complex	Owned Property	Wood frame	$2,294,578	46.181458	-112.789927
1	Family Student Housing - Missoula Apartments South	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	1000 - 1038 Missoula Ave	BUTTE	Silver Bow	1950	Res Apt Complex	Owned Property	Wood frame	$2,294,578	48.603028	-113.107606
1	Health Sciences Building (Former Petroleum Bldg)	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	1300 W. Park Street	BUTTE	Silver Bow	1953	State University	Owned Property	Reinforced concrete frame	$7,799,478	44.731291	-112.715037
1	Health, Physical Education, & Recreation Bldg	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	1300 W. Park Street	BUTTE	Silver Bow	1980	State University	Owned Property	Reinforced concrete frame	$20,882,870	46.602105	-111.992953
1	Heating Plant Building	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	1300 W. Park Street	BUTTE	Silver Bow	1969	Power Plant	Owned Property	Reinforced concrete frame	$1,610,611	46.958110	-112.647421
1	Library Building & Auditorium Building (joined)	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	1300 W. Park Street	BUTTE	Silver Bow	1977	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$41,825,755	46.353431	-104.274545
1	Main Hall-H	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	1300 W. Park Street	BUTTE	Silver Bow	1896	State University	Owned Property	Joisted Masonry	$10,291,503	48.510161	-110.979316
1	Mill Building-H	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	1300 W. Park Street	BUTTE	Silver Bow	1908	State University	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$3,957,441	47.822188	-112.168873
1	Mining Geology Building (M&G)	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	1300 W. Park Street	BUTTE	Silver Bow	1972	State University	Owned Property	Reinforced concrete frame	$13,504,935	47.421359	-105.561354
1	Museum Building-H	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	1300 W. Park Street	BUTTE	Silver Bow	1940	Museum	Owned Property	Reinforced concrete frame	$9,416,756	48.169884	-111.977815
1	Natural Resources Building	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	1505 W. Park Street	BUTTE	Silver Bow	2009	State University	Owned Property	Reinforced concrete frame	$18,862,957	45.266766	-111.649662
1	PHYSICAL PLANT BUILDING - BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	1300 W. Park Street	BUTTE	Silver Bow	1948	Garage, Parts Storage	Owned Property	Reinforced concrete frame	$385,609	48.919218	-115.086543

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
1	Prospector Hall (Student Residence-West)-H	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	1301 W. Park Street	BUTTE	Silver Bow	1935	Res Apt Complex	Owned Property	Reinforced concrete frame	$7,491,647	46.267731	-106.623143
1	Science & Engineering Building (S&E)-H	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	1300 W. Park Street	BUTTE	Silver Bow	1925	State University	Owned Property	Joisted Masonry	$9,431,901	48.209629	-106.626501
1	STUDENT UNION BUILDING - BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	1300 W. Park Street	BUTTE	Silver Bow	1960	State University	Owned Property	Reinforced concrete frame	$9,604,045	47.136229	-104.807446
1	Clark Chateau	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	321 W. Broadway	BUTTE	Silver Bow	1898	Museum	Leased Property	null	$0	46.446977	-109.855640
5	Columbus Translator	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	2 miles W. of town	COLUMBUS	Stillwater		Other	Leased Property	null	$10,000	44.688084	-111.113856
5	KUSM TV Transmitter Site-Columbus	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Lone Tree Road	Columbus	Stillwater	2012	Other	Leased Property	Metal Lighweight or Prefabricated	$90,729	44.686661	-111.114568
3	Big Timber Transmitter	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	5.5 Mile South of Big Timber (Legal Descrip Below	BIG TIMBER	Sweet Grass		Other	Leased Property	null	$100,000	45.667632	-111.061446
2	Aeronautics NDB - Choteau	DEPARTMENT OF TRANSPORTATION	103 Airport Road	CHOTEAU	Teton		Other	Owned Property	Steel frame with combustible exterior walls	$2,417	48.540716	-111.866669
2	MHP - Teton Microwave Tower	DEPARTMENT OF JUSTICE	2 miles S of Dutton	DUTTON	Teton		Other	Owned Property	null	$58,540	46.617266	-112.097334
2	Aeronautics NDB - Shelby	DEPARTMENT OF TRANSPORTATION	80 Airport Road	SHELBY	Toole		Other	Owned Property	Steel frame with combustible exterior walls	$15,822	45.208061	-112.639851
2	Shelby Translator	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	145 1st Ave SE Shelby - 48 30' 43	SHELBY	Toole		Other	Leased Property	null	$34,674	46.861764	-113.981785
2	Coutts/Sweetgrass Vehicle Inspection Station	DEPARTMENT OF TRANSPORTATION	I-15 Canadian Border	Sweet Grass	Toole		Governmental Building	Leased Property		$74,329	47.750051	-113.823712
5	MHP Hysham Tower	DEPARTMENT OF JUSTICE	Section 10, Township 5 North, Range 35 East	HYSHAM	Treasure		Other	Owned Property		$250,000	45.766667	-108.458194
6	Regional HQ - Building	DEPARTMENT OF FISH, WILDLIFE & PARKS	1 Airport Rd	GLASGOW	Valley	1986	Governmental Building	Owned Property	Wood frame	$1,157,021	46.858762	-113.988016
6	MHP - Gideon (Valley County) Microwave Tower	DEPARTMENT OF JUSTICE	4.8 miles SW of Glasgow	GLASGOW	Valley		Other	Owned Property	null	$62,504	46.176865	-112.792567
6	Glasgow Armory	DEPARTMENT OF MILITARY AFFAIRS	81 Airport Road	GLASGOW	Valley	1970	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,076,584	46.176979	-112.793277
6	Glasgow Multi-Purp Indoor Range Facility	DEPARTMENT OF MILITARY AFFAIRS	81 Airport Road	GLASGOW	Valley	1992	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$570,704	46.177451	-112.793754
6	Aeronautics NDB - Glasgow	DEPARTMENT OF TRANSPORTATION	100 Airport Road	GLASGOW	Valley		Other	Owned Property	Wood frame	$2,417	46.177127	-112.793535
6	Glasgow Translator	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	1.5 miles W. of city water tanks	GLASGOW	Valley		Other	Leased Property	null	$10,000	46.177315	-112.793122
6	MHP - Hinsdale/Valley County Microwave Tower	DEPARTMENT OF JUSTICE	2.5 miles SW of Hinsdale	HINSDALE	Valley		Other	Owned Property	null	$50,268	45.636144	-111.273450
5	MHP - Cooney Microwave Tower	DEPARTMENT OF JUSTICE	8.5 miles SE of Harlowtown	HARLOWTON	Wheatland		Other	Owned Property	null	$55,781	45.668034	-110.973766
5	Harlowton Armory	DEPARTMENT OF MILITARY AFFAIRS	9895 Highway 12 West	HARLOWTON	Wheatland	1984	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$1,758,068	46.587064	-112.015239
5	Aeronautics NDB - Harlowton	DEPARTMENT OF TRANSPORTATION	46 deg - 25' - 59.8" N, 109 deg - 40' - 25.1" W	HARLOWTON	Wheatland		Other	Owned Property	Steel frame with combustible exterior walls	$2,417	45.665550	-111.050494

APPENDIX B-2. STATE CRITICAL FACILITY LIST

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Critical Facility Name	Reporting Entity	Address	City	County	Year Built	Occupancy Type	Ownership	Construction	Total Value	Latitude	Longitude
5	Industries Building	DEPARTMENT OF CORRECTIONS, MONTANA WOMEN'S PRISON	701 27th St.	BILLINGS	Yellowstone	1998	Jail	Owned Property	Reinforced concrete frame	$1,019,018	46.852530	-113.985068
5	Montana Women's Prison Main Building	DEPARTMENT OF CORRECTIONS, MONTANA WOMEN'S PRISON	701 27th St S.	BILLINGS	Yellowstone	1985	Jail	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$26,005,069	46.847656	-113.990265
5	Billings Airport Hanger -	DEPARTMENT OF FISH, WILDLIFE & PARKS	Logan Int'l Airport	BILLINGS	Yellowstone	1988	Airport Hangars	Owned Property	Metal Lightweight or Prefabricated	$150,345	45.668034	-111.061533
5	Regional HQ - Building	DEPARTMENT OF FISH, WILDLIFE & PARKS	2300 Lake Elmo Dr	BILLINGS	Yellowstone	1989	Governmental Building	Owned Property	Wood frame	$2,399,499	45.667970	-111.058024
5	Billings UI Phone Claims	DEPARTMENT OF LABOR & INDUSTRY	624 N 24th St	BILLINGS	Yellowstone	1958	Office	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,095,660	45.670422	-111.057965
5	Billings AFRC	DEPARTMENT OF MILITARY AFFAIRS	2915 Gabel Road	BILLINGS	Yellowstone	1999	Governmental Building	Owned Property	Reinforced concrete frame	$22,712,860	45.670503	-111.061186
5	Billings Office & Shop	DEPARTMENT OF TRANSPORTATION	424 Morey Lane	BILLINGS	Yellowstone	1981	Office	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,835,741	45.666968	-111.059164
5	Billings - Owned AMDD MH Cntr -Lessee	PUBLIC HEALTH & HUMAN SERVICES	1245 N 29th	BILLINGS	Yellowstone	1960	Governmental Building	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$2,099,965	46.847909	-113.989681
5	KEMC Radio Station - 406 Marbara Lane	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	406 Marbara Lane	BILLINGS	Yellowstone	1970	State University	Owned Property	Wood frame	$829,269	45.667639	-111.061446
5	KEMC Transmitter Facilities	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	6544 Keller Road, 6 miles S. of Billings	BILLINGS	Yellowstone		Other	Leased Property	Wood Frame	$550,095	45.668197	-111.057983
5	Petro/Rimrock/SUB Complex	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	1500 University Drive	BILLINGS	Yellowstone	1962	State University	Owned Property	Reinforced concrete frame	$51,580,563	45.670727	-111.058621
5	Phys Plant - 324 N Rim Terr	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	324 N. Rim Terrrace	BILLINGS	Yellowstone	1979	State University	Owned Property	Reinforced concrete frame	$2,226,840	45.670633	-111.061213
5	PHYSICAL ED BUILDING - BILLINGS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	1500 University Drive	BILLINGS	Yellowstone	1961	State University	Owned Property	Reinforced concrete frame	$16,895,592	45.667162	-111.059291
5	Rental House/MSUB Daycare - 2630 Normal	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	2630 Normal	BILLINGS	Yellowstone	1936	Cottages/Residential	Owned Property	Wood frame	$212,680	46.847903	-113.989431
5	Science Hall	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	1500 University Drive	BILLINGS	Yellowstone	1947	Laboratory	Owned Property	Unprotected steel frame with non-combustible (masonry) exterior	$15,528,073	45.668133	-111.061543
5	KUSM TV TRANSMITTER SITE-KTVQ STUDIOS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	3203 3RD AVENUE N.	BILLINGS	Yellowstone	2012	Other	Leased Property	Fireprotected Steel	$84,504	45.668411	-111.058105
5	KUSM TV Transmitter Site-Sacrifice Cliff	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Coburn Road	Billings	Yellowstone	2012	Other	Leased Property	Joisted Masonry	$901,422	45.670985	-111.059333
5	SARC RESIDENCE #3	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	748 RR Hwy.	HUNTLEY	Yellowstone	1917	Res Apt Complex	Owned Property	null	$182,022	45.781300	-108.512705
5	SARC RESIDENCE #4	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	748 RR Hwy.	HUNTLEY	Yellowstone	1917	Res Apt Complex	Owned Property	null	$222,505	48.176083	-114.350056

APPENDIX B-3

WILDFIRE VULNERABILITY ASSESSMENT DOCUMENTATION

APPENDIX B-3. VULNERABILITY ASSESSMENT DOCUMENTATION - WILDFIRE

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Wildfire sq. miles	Total sq. miles	Percent Wildfire sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Wildfire Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Wildfire Hazard Area	Residential Exposure in Wildfire Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Wildfire Hazard Area	CAI Exposure in Wildfire Hazard Area	Total Population in Hazard Area	<18 in Wildfire Hazard Area	>65 in Wildfire Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Montana	40,305	146,923	27.4%	829	$3,596,319,710	248	$572,826,009	379,924	$65,567,813,250	186,418	$34,253,227,928	89,351	$31,241,965,630	49,700	$14,743,649,199	539,158.9	113,580.9	109,150.7	316,427.3	126	96
3	**Beaverhead County**	1,129.99	5,572.5	20.3%	21	$120,039,992	2	$5,317,080	3,023	$398,456,637	1,615	$249,715,940	2,017	$477,421,099	1,337	$308,834,242	3,472	615	726	2,132	6	2
	Dillon city		1.7	0.0%	0	$0	0		1,178	$128,495,669	50	$8,845,643	230	$70,904,492	41	$9,824,535	108	19	22	66	2	0
	Lima town		0.5	0.0%	0	$0	0		135	$8,569,730	6	$332,824	11	$1,208,935	1	$35,000	13	2	3	8	0	0
	Balance of Beaverhead County		5,570.3		21	$120,039,992	2	$5,317,080	1,710	$261,391,238	1,559	$240,537,473	1,776	$405,307,672	1,295	$298,974,707	3,352	593	701	2,058	4	0
5	**Big Horn County**	1,213.17	5,013.9	24.2%	1	$64,294	0		3,168	$358,629,629	2,031	$238,579,954	872	$190,843,437	534	$90,589,975	7,451	2,528	944	3,979	5	2
	Hardin city		1.6	0.0%	0	$0	0		905	$97,296,363	69	$7,041,071	134	$32,479,192	20	$3,545,235	250	86	29	135	0	0
	Lodge Grass town		0.3	0.0%	0	$0	0		149	$10,790,706	89	$10,943,436	22	$17,123,392	6	$952,894	323	111	38	174	0	0
	Balance of Big Horn County		5,012.0		1	$64,294	0	$0	2,114	$250,542,560	1,873	$220,595,447	716	$141,240,853	508	$86,091,846	6,877	2,331	877	3,669	5	0
2	**Blaine County**	744.53	4,235.9	17.6%	1	$51,267	0		1,409	$115,967,606	348	$29,721,728	2,309	$361,010,008	1,400	$215,664,599	1,078	301	225	552	0	0
	Chinook city		0.5	0.0%	0	$0	0		674	$60,190,802	53	$4,333,661	106	$19,309,682	15	$1,474,155	152	46	22	84	0	0
	Harlem city		0.4	0.0%	0	$0	0		352	$22,108,616	8	$613,119	68	$8,956,732	13	$1,411,233	23	7	3	13	0	0
	Balance of Blaine County		4,235.0		1	$51,267	0	$0	383	$33,668,188	287	$24,774,948	2,135	$332,743,594	1,372	$212,779,211	903	248	200	455	0	0
3	**Broadwater County**	551.77	1,236.8	44.6%	3	$29,038,899	0		3,442	$520,588,070	2,032	$344,681,715	795	$153,085,694	564	$118,358,650	4,870	947	1,145	2,778	1	1
	Townsend city		1.5	0.0%	0	$0	0		1,133	$116,996,708	17	$2,773,589	147	$21,344,104	6	$1,376,402	39	8	9	23	0	0
	Balance of Broadwater County		1,235.3		3	$29,038,899	0	$0	2,309	$403,591,362	2,015	$341,908,126	648	$131,741,590	558	$116,982,248	4,831	939	1,136	2,756	1	0
5	**Carbon County**	1,005.80	2,060.7	48.8%	3	$220,339	1	$25,000	4,812	$912,472,742	2,523	$570,028,162	1,434	$312,638,485	1,087	$231,432,834	5,987	1,042	1,561	3,383	5	2
	Bearcreek town		0.1	0.0%	0	$0	0		57	$6,138,654	1	$34,207	2	$269,414	0		2	0	1	1	0	0
	Bridger town		0.8	0.0%	0	$0	0		322	$30,656,055	27	$5,306,688	49	$8,990,475	8	$1,555,996	61	11	15	36	0	0
	Fromberg town		0.4	0.0%	0	$0	0		218	$16,035,910	9	$926,550	21	$1,157,410	10	$3,093,046	20	4	5	12	0	0
	Joliet town		0.3	0.0%	0	$0	0		241	$27,420,117	18	$1,366,344	20	$2,267,652	4	$273,087	41	7	10	24	0	0
	Red Lodge city		2.7	0.0%	0	$0	0		1,366	$249,897,767	27	$9,517,100	162	$49,294,962	11	$4,504,985	61	11	15	36	1	0
	Balance of Carbon County		2,056.4		3	$220,339	1	$25,000	2,608	$582,324,239	2,441	$552,877,273	1,180	$250,658,572	1,054	$222,005,720	5,800	1,009	1,517	3,275	4	0
4	**Carter County**	372.85	3,346.4	11.1%	0	$0	0		405	$20,620,826	59	$4,698,474	1,012	$117,527,687	395	$45,397,317	140	27	36	78	0	0
	Ekalaka town		1.0	0.0%	0	$0	0		323	$14,713,910	8	$477,045	40	$3,481,214	7	$147,147	19	4	5	11	0	0
	Balance of Carter County		3,345.4		0	$0	0	$0	82	$5,906,916	51	$4,221,429	972	$114,046,473	388	$45,250,170	121	23	31	67	0	0
2	**Cascade County**	1,284.12	2,708.4	47.4%	20	$90,365,664	3	$2,566,397	28,943	$4,349,791,994	6,420	$1,064,620,734	4,285	$2,555,983,982	1,691	$559,379,979	15,559	3,430	2,987	9,142	14	5
	Belt city		0.3	0.0%	0	$0	0		98	$8,912,233	17	$2,743,063	16	$5,432,574	23	$9,030,780	40	9	7	24	0	0
	Cascade town		0.5	0.0%	20	$90,365,664	0		267	$28,222,039	13	$3,536,526	61	$9,822,750	2	$97,306	31	7	5	18	1	0
	Great Falls city		23.0	0.0%	0	$0	2	$2,555,427	21,838	$3,214,111,195	808	$146,111,511	1,980	$1,834,875,305	194	$91,567,457	2,082	448	440	1,194	2	0
	Neihart town		1.6	0.0%	0	$0	0		57	$5,297,372	5	$1,156,193	14	$2,901,487	1	$8,770	12	3	2	7	0	0
	Balance of Cascade County		2,682.9		0	0.0	1	$10,970	6,683	$1,093,249,155	5,577	$911,073,441	2,214	$702,951,866	1,471	$458,675,666	13,395	2,964	2,532	7,899	11	0
2	**Chouteau County**	645.32	3,992.9	16.2%	0	$0	0		1,880	$212,079,581	563	$62,593,520	1,258	$200,554,092	344	$71,916,575	1,490	347	283	860	4	0
	Big Sandy town		0.5	0.0%	0	$0	0		324	$26,480,771	0		42	$4,231,062	9	$886,068					0	0
	Fort Benton city		1.5	0.0%	0	$0	0		795	$106,352,375	4	$382,020	111	$15,435,130	12	$2,271,280	10	2	2	6	0	0
	Geraldine town		0.6	0.0%	0	$0	0		150	$9,556,033	1	$141,080	21	$2,592,594	7	$799,482	3	1	0	1	0	0
	Balance of Chouteau County		3,990.3		0	$0	0	$0	611	$69,690,402	558	$62,070,420	1,084	$178,295,306	316	$67,959,745	1,478	344	281	853	4	0
4	**Custer County**	445.06	3,789.3	11.7%	12	$59,923,374	10	$52,309,866	4,678	$531,010,978	1,199	$156,623,579	1,711	$297,665,123	752	$131,018,526	3,039	618	716	1,705	0	0
	Ismay town		0.4	0.0%	0	$0	0		29	$349,883	0		10	$1,387,354	0						0	0
	Miles City city		3.3	0.0%	0	$0	7	$37,447,267	3,312	$363,057,565	394	$33,127,975	433	$104,957,053	79	$17,827,883	1,123	206	348	569	0	0
	Balance of Custer County		3,785.6		12	$59,923,374	3	$14,862,599	1,337	$167,603,530	805	$123,495,604	1,268	$191,320,716	673	$113,190,643	1,916	412	368	1,136	0	0
6	**Daniels County**	228.38	1,426.1	16.0%	2	$36,946	2	$36,946	906	$81,170,595	126	$10,381,004	976	$93,098,998	292	$33,295,338	251	55	64	132	0	0
	Flaxville town		0.1	0.0%	0	$0	0		87	$4,797,361	0		16	$766,732	3	$196,335					0	0
	Scobey city		0.7	0.0%	0	$0	0		675	$64,548,974	3	$517,073	128	$10,135,214	18	$2,003,010	6	1	2	3	0	0
	Balance of Daniels County		1,425.3		2	$36,946	2	$36,946	144	$11,824,260	123	$9,863,931	832	$82,197,052	271	$31,095,993	245	54	62	129	0	0
4	**Dawson County**	388.51	2,380.7	16.3%	10	$20,985,926	2	$235,088	3,163	$409,229,017	1,372	$171,669,866	908	$162,010,623	319	$62,986,852	3,153	697	629	1,827	0	0
	Glendive city		3.5	0.0%	0	$0	0		1,604	$225,892,962	72	$8,739,554	230	$56,394,894	27	$7,454,069	161	37	29	96	0	0
	Richey town		0.3	0.0%	0	$0	0		165	$8,909,873	2	$256,760	23	$2,890,873	3	$348,270	4	1	1	3	0	0
	Balance of Dawson County		2,376.9		10	$20,985,926	2	$235,088	1,394	$174,426,182	1,298	$162,673,552	655	$102,724,856	289	$55,184,513	2,987	659	599	1,728	0	0
1	**Deer Lodge County**	362.46	740.6	48.9%	30	$71,273,714	29	$71,076,091	4,234	$406,037,841	1,795	$202,954,854	509	$103,961,907	248	$58,011,613	4,630	682	1,092	2,856	3	2
	Anaconda-Deer Lodge County		740.6	0.0%	30	$71,273,714	29	$71,076,091	4,234	$406,037,841	1,795	$202,954,854	509	$103,961,907	248	$58,011,613	4,630	682	1,092	2,856	3	0
4	**Fallon County**	274.48	1,621.2	16.9%	1	$15,822	1	$15,822	1,223	$120,111,206	209	$27,991,160	1,285	$157,284,133	430	$55,255,000	516	138	86	293	2	1
	Baker city		1.1	0.0%	0	$0	1	$15,822	882	$83,620,710	62	$5,823,706	144	$33,873,913	17	$1,937,344	153	41	25	87	0	0
	Plevna town		0.4	0.0%	0	$0	0		106	$6,148,692	10	$761,010	78	$8,870,026	5	$473,111	25	7	4	14	0	0
	Balance of Fallon County		1,619.6		1	$15,822	0	$0	235	$30,341,804	137	$21,406,444	1,063	$114,540,194	408	$52,844,545	338	90	56	192	2	0
6	**Fergus County**	950.18	4,345.2	21.9%	7	$21,432,181	0		4,690	$556,548,908	1,331	$188,780,673	2,019	$402,403,647	875	$155,431,710	3,347	682	859	1,805	4	1
	Denton town		0.7	0.0%	0	$0	0		152	$13,428,059	2	$310,010	29	$4,382,026	5	$832,376	5	1	1	2	0	0
	Grass Range town		0.1	0.0%	0	$0	0		82	$4,930,605	3	$474,234	14	$1,525,471	6	$551,060	7	1	2	4	0	0
	Lewistown city		5.2	0.0%	0	$0	0		2,796	$320,465,500	246	$26,330,939	396	$106,823,714	73	$15,252,348	757	141	243	373	0	0
	Moore town		0.3	0.0%	0	$0	0		102	$6,944,815	4	$142,960	19	$4,216,005	1	$35,000	9	2	2	5	0	0
	Winifred town		0.5	0.0%	0	$0	0		90	$8,768,234	3	$245,540	20	$4,365,641	8	$1,625,288	7	1	2	4	0	0
	Balance of Fergus County		4,338.3		7	$21,432,181	0	$0	1,468	$202,011,695	1,073	$161,276,990	1,541	$281,090,790	782	$137,135,638	2,563	536	610	1,417	4	0
1	**Flathead County**	1,910.98	5,252.4	36.4%	20	$38,896,279	8	$2,142,524	41,342	$8,600,413,799	27,905	$5,901,543,909	8,138	$3,832,482,719	5,466	$2,266,664,982	124,016	27,246	23,295	73,476	5	2
	Columbia Falls city		2.1	0.0%	0	$0	0		1,739	$255,171,515	251	$36,163,587	327	$117,184,528	42	$29,362,680	622	138	114	371	1	0
	Kalispell city		11.8	0.0%	0	$0	0		7,553	$1,271,291,249	1,901	$336,446,136	1,714	$1,065,757,780	150	$62,711,679	5,501	1,180	1,140	3,181	0	0
	Whitefish city		11.8	0.0%	0	$0	0		4,029	$1,153,743,638	755	$254,626,742	522	$350,353,977	45	$29,521,341	5,255	1,161	962	3,132	0	0
	Balance of Flathead County		5,226.8		20	$38,896,279	8	$2,142,524	28,021	$5,920,207,397	24,998	$5,274,307,444	5,575	$2,299,186,434	5,229	$2,145,069,282	112,638	24,767	21,079	66,791	4	0
3	**Gallatin County**	1,456.57	2,632.5	55.3%	207	$963,139,971	14	$14,226,562	40,035	$10,930,545,091	18,391	$5,323,042,335	5,191	$4,169,858,220	2,976	$1,545,329,899	52,483	10,421	7,257	34,805	6	2
	Belgrade city		3.1	0.0%	0	$0	0		2,764	$496,929,312	191	$16,434,222	204	$120,870,378	85	$57,516,537	536	92	136	308	0	0
	Bozeman city		19.9	0.0%	0	$0	0		16,722	$4,743,491,928	1,089	$225,933,512	1,511	$2,235,363,972	93	$82,532,652	5,210	958	1,053	3,199	2	0
	Manhattan town		1.7	0.0%	0	$0	0		657	$115,292,092	116	$13,002,246	71	$33,496,346	14	$3,215,828	277	56	33	188	0	0
	Three Forks city		1.4	0.0%	0	$0	0		787	$99,273,886	50	$8,082,065	104	$26,353,553	9	$2,851,082	146	30	17	99	0	0
	West Yellowstone town		0.8	0.0%	0	$0	0		639	$139,663,482	0		244	$183,049,311	2	$1,606,572					0	0

APPENDIX B-3. VULNERABILITY ASSESSMENT DOCUMENTATION - WILDFIRE

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Wildfire sq. miles	Total sq. miles	Percent Wildfire sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Wildfire Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Wildfire Hazard Area	Residential Exposure in Wildfire Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Wildfire Hazard Area	CAI Exposure in Wildfire Hazard Area	Total Population in Hazard Area	<18 in Wildfire Hazard Area	>65 in Wildfire Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Balance of Gallatin County		2,605.7		207	$963,139,971	14	$14,226,562	18,466	$5,335,894,391	16,945	$5,059,590,290	3,057	$1,570,724,660	2,773	$1,397,607,228	46,314	9,285	6,017	31,012	4	0
4	**Garfield County**	423.18	4,843.5	8.7%	1	$2,417	1	$2,417	558	$40,352,973	86	$8,241,481	828	$98,380,657	246	$39,521,650	206	45	48	112	0	0
	Jordan town		0.3	0.0%	0	$0	0		257	$15,353,948	37	$3,948,849	31	$4,176,477	8	$2,180,542	88	20	21	48	0	0
	Balance of Garfield County		4,843.1		1	$2,417	1	$2,417	301	$24,999,025	49	$4,292,632	797	$94,204,180	238	$37,341,108	117	26	27	64	0	0
2	**Glacier County**	860.70	3,034.9	28.4%	4	$166,089	3	$133,535	2,176	$173,809,579	701	$65,804,031	1,208	$513,342,768	713	$404,001,011	2,231	670	331	1,229	0	0
	Browning town		0.3	0.0%	0	$0	0		207	$8,297,087	50	$4,127,534	61	$9,037,744	12	$5,363,990	232	47	99	86	0	0
	Cut Bank city		1.2	0.0%	0	$0	1	$10,000	1,122	$90,953,194	24	$2,643,914	151	$37,600,597	4	$502,135	74	23	9	42	0	0
	Balance of Glacier County		3,033.4		4	$166,089	2	$123,535	847	$74,559,298	627	$59,032,583	996	$466,704,427	697	$398,134,886	1,925	601	223	1,101	0	0
5	**Golden Valley County**	258.04	1,174.1	22.0%	0	$0	0		288	$22,545,552	34	$2,735,294	240	$51,388,053	110	$34,207,389	78	15	21	41	0	0
	Lavina town		1.0	0.0%	0	$0	0		91	$7,521,010	0		15	$1,533,018	4	$757,896					0	0
	Ryegate town		0.8	0.0%	0	$0	0		141	$10,234,886	0		15	$1,769,218	4	$211,690					0	0
	Balance of Golden Valley County		1,172.4		0	$0	0	$0	56	$4,789,656	34	$2,735,294	210	$48,085,817	102	$33,237,803	78	15	21	41	0	0
1	**Granite County**	795.31	1,730.9	45.9%	0	$0	0		1,604	$210,828,137	927	$140,247,480	530	$156,924,788	366	$125,723,720	2,271	366	670	1,235	4	2
	Drummond town		0.5	0.0%	0	$0	0		144	$11,391,136	10	$907,364	48	$5,493,281	4	$1,229,382	22	4	6	12	0	0
	Philipsburg town		0.8	0.0%	0	$0	0		503	$53,845,654	19	$3,467,743	77	$16,673,401	12	$2,647,600	42	7	12	23	0	0
	Balance of Granite County		1,729.5		0	$0	0	$0	957	$145,591,347	898	$135,872,373	405	$134,758,106	350	$121,846,738	2,208	355	651	1,201	4	0
2	**Hill County**	858.09	2,915.3	29.4%	19	$55,432,027	7	$7,372,920	6,281	$754,306,279	3,047	$361,305,363	2,439	$478,811,374	1,263	$259,598,752	8,129	2,236	1,179	4,715	4	2
	Havre city		3.4	0.0%	0	$0	5	$4,175,365	2,954	$365,822,286	198	$23,333,934	390	$113,681,709	74	$25,237,269	521	143	76	302	0	0
	Hingham town		0.2	0.0%	0	$0	0		165	$13,864,635	5	$576,255	27	$3,866,422	13	$1,803,594	13	4	2	8	0	0
	Balance of Hill County		2,911.7		19	$55,432,027	2	$3,197,555	3,162	$374,619,358	2,844	$337,395,174	2,022	$361,263,243	1,176	$232,557,889	7,595	2,089	1,101	4,405	4	0
3	**Jefferson County**	856.09	1,657.8	51.6%	14	$15,148,292	9	$6,000,418	4,016	$744,240,161	3,270	$666,633,319	694	$117,529,005	546	$93,104,554	8,633	1,653	2,104	4,876	7	2
	Boulder town		1.1	0.0%	0	$0	5	$4,334,695	356	$36,918,541	8	$1,191,572	47	$6,824,156	0		20	4	4	12	3	0
	Whitehall town		0.7	0.0%	0	$0	0		325	$32,838,125	46	$6,929,157	47	$9,146,159	5	$1,317,701	274	22	187	65	0	0
	Balance of Jefferson County		1,656.0		14	$15,148,292	4	$1,665,723	3,335	$674,483,495	3,216	$658,512,590	600	$101,558,690	541	$91,786,853	8,338	1,627	1,913	4,799	4	0
6	**Judith Basin County**	448.34	1,868.3	24.0%	0	$0	0		783	$67,357,916	342	$23,617,762	682	$119,016,564	297	$65,518,900	746	139	179	427	0	0
	Hobson town		0.2	0.0%	0	$0	0		116	$11,542,201	13	$1,466,442	21	$3,191,010	5	$1,097,431	28	5	7	16	0	0
	Stanford town		0.4	0.0%	0	$0	0		248	$24,191,487	13	$995,078	49	$6,993,739	10	$1,165,184	28	5	7	16	0	0
	Balance of Judith Basin County		1,867.6		0	$0	0	$0	419	$31,624,228	316	$21,156,242	612	$108,831,815	282	$63,256,285	689	129	165	395	0	0
1	**Lake County**	1,046.76	1,652.1	63.4%	16	$14,144,458	16	$14,144,458	16,679	$3,044,070,013	14,366	$2,722,786,884	4,157	$907,884,902	3,562	$739,718,859	35,296	8,477	7,596	19,223	0	0
	Polson city		4.3	0.0%	0	$0	0		1,550	$239,716,220	309	$47,016,001	307	$110,486,890	36	$14,182,986	735	179	151	405	0	0
	Ronan city		1.1	0.0%	0	$0	0		498	$51,240,897	49	$5,452,420	188	$43,266,142	32	$8,202,434	117	28	24	64	0	0
	St. Ignatius town		0.5	0.0%	0	$0	0		227	$24,362,098	44	$7,592,159	33	$6,506,490	4	$677,440	105	25	22	58	0	0
	Balance of Lake County		1,646.2		16	$14,144,458	16	$14,144,458	14,404	$2,728,750,798	13,964	$2,662,726,304	3,629	$747,625,380	3,490	$716,655,999	34,339	8,244	7,399	18,696	0	0
3	**Lewis and Clark County**	1,391.95	3,493.5	39.8%	77	$528,411,633	24	$23,048,839	28,356	$4,838,187,380	16,879	$2,652,734,688	2,990	$1,486,292,152	1,233	$318,909,089	46,865	9,839	9,375	27,651	15	5
	East Helena town		4.1	0.0%	0	$0	0		778	$95,292,980	478	$83,937,331	55	$16,849,629	22	$5,858,142	2,552	551	452	1,549	0	0
	Helena city		16.5	0.0%	0	$0	0		10,487	$2,070,264,423	830	$127,379,215	1,613	$1,127,469,517	137	$53,185,483	2,476	517	507	1,453	8	0
	Balance of Lewis and Clark County		3,472.8		77	$528,411,633	24	$23,048,839	17,091	$2,672,629,977	15,571	$2,441,418,142	1,322	$341,973,006	1,074	$259,865,464	41,838	8,772	8,416	24,649	7	0
2	**Liberty County**	325.98	1,446.4	22.5%	3	$203,754	1	$2,822	540	$55,198,775	169	$12,609,315	727	$148,145,426	279	$80,077,688	426	93	84	249	0	0
	Chester town		0.5	0.0%	0	$0	1	$2,822	347	$38,384,265	2	$105,460	85	$11,176,620	15	$3,592,452	5	1	1	3	0	0
	Balance of Liberty County		1,445.9		3	$203,754	0	$0	193	$16,814,510	167	$12,503,855	642	$136,968,806	264	$76,485,236	421	92	83	246	0	0
1	**Lincoln County**	1,417.18	3,673.2	38.6%	5	$2,732,131	2	$17,834	14,201	$1,669,255,057	10,937	$1,371,574,805	4,037	$814,443,340	3,304	$655,327,245	24,268	4,466	6,480	13,323	0	0
	Eureka town		1.0	0.0%	0	$0	0		576	$49,995,833	132	$13,873,081	79	$16,254,364	25	$3,570,120	292	54	78	160	0	0
	Libby city		1.7	0.0%	0	$0	0		1,887	$171,393,838	509	$49,251,534	407	$97,831,857	55	$31,066,855	1,149	212	307	631	0	0
	Rexford town		0.1	0.0%	0	$0	0		62	$5,237,363	13	$2,156,422	7	$1,125,453	1	$246,990	29	5	8	16	0	0
	Troy city		0.7	0.0%	0	$0	0		543	$42,346,210	137	$11,204,191	99	$14,488,626	42	$5,359,849	303	56	81	166	0	0
	Balance of Lincoln County		3,669.7		5	$2,732,131	2	$17,834	11,133	$1,400,281,813	10,146	$1,295,089,577	3,445	$684,743,040	3,181	$615,083,431	22,496	4,139	6,006	12,350	0	0
3	**Madison County**	1,162.46	3,602.4	32.3%	3	$270,203	2	$33,224	4,154	$804,105,665	2,566	$554,627,996	1,301	$368,696,283	918	$264,964,284	5,802	898	1,718	3,186	9	4
	Ennis town		0.6	0.0%	0	$0	0		533	$84,019,269	54	$14,505,068	85	$24,326,354	6	$2,739,413	200	19	116	66	0	0
	Sheridan town		1.0	0.0%	2	$59,996	0		1,971	$206,039,798	28	$7,298,229	54	$8,980,370	6	$2,477,104	62	10	18	35	0	0
	Twin Bridges town		1.0	0.0%	0	$0	0		232	$25,593,322	0		47	$8,125,500	0						0	0
	Virginia City town		0.9	0.0%	0	$0	0		167	$26,178,533	2	$373,730	30	$5,366,969	0		4	1	1	2	1	0
	Balance of Madison County		3,598.8		1	$210,207	2	$33,224	1,251	$462,274,743	2,482	$532,450,969	1,085	$321,897,090	906	$259,747,767	5,535	869	1,583	3,083	8	0
4	**McCone County**	445.34	2,679.2	16.6%	3	$141,360	2	$97,417	532	$44,530,155	121	$10,698,321	679	$82,125,293	251	$29,724,821	280	58	61	161	3	1
	Circle town		0.8	0.0%	0	$0	0		335	$27,003,251	15	$2,035,060	66	$14,581,192	0		35	7	8	20	0	0
	Balance of McCone County		2,678.4		3.0	$141,360	2	$97,417	197	$17,526,904	106	$8,663,261	613	$67,544,101	251	$29,724,821	245	50	54	141	3	0
3	**Meagher County**	462.97	2,392.1	19.4%	0	$0	0		1,199	$128,110,116	415	$48,180,655	412	$92,624,757	194	$43,510,673	1,025	183	282	560	0	0
	White Sulphur Springs city		1.0	0.0%	0	$0	0		630	$61,212,327	12	$1,574,565	45	$6,869,617	4	$804,507	30	5	8	16	0	0
	Balance of Meagher County		2,391.1		0	$0	0	$0	569	$66,897,789	403	$46,606,090	367	$85,755,140	190	$42,706,166	995	178	274	543	0	0
1	**Mineral County**	796.67	1,222.0	65.2%	0	$0	0		2,023	$203,747,490	1,439	$150,478,045	404	$84,723,652	307	$60,511,250	4,303	747	1,294	2,263	2	1
	Alberton town		0.5	0.0%	0	$0	0		197	$14,926,025	6	$2,562,884	20	$2,465,222	0		41	8	7	26	0	0
	Superior town		1.1	0.0%	0	$0	0		381	$36,464,606	69	$5,869,857	72	$20,494,160	6	$1,201,164	272	48	78	146	0	0
	Balance of Mineral County		1,220.4		0	$0	0	$0	1,445	$152,356,859	1,364	$142,045,304	312	$61,764,270	301	$59,310,086	3,990	691	1,208	2,091	2	0
1	**Missoula County**	1,552.43	2,614.9	59.4%	203	$1,032,240,117	13	$28,756,528	16,873	$2,860,469,867	11,875	$1,869,747,507	1,421	$1,152,881,550	936	$549,050,839	34,899	6,577	5,795	22,526	13	3
	Missoula city		29.0	0.0%	203	$1,032,240,117	1	$774,142	4,975	$984,652,873	2,195	$324,557,070	470	$595,032,016	83	$53,666,576	8,380	1,554	1,504	5,323	8	0
	Balance of Missoula County		2,585.9		0	$0	12	$27,982,386	11,898	$1,875,816,994	9,680	$1,545,190,437	951	$557,849,534	853	$495,384,263	26,518	5,023	4,292	17,203	5	0
5	**Musselshell County**	362.58	1,869.6	19.4%	2	$45,908	1	$15,417	1,730	$148,155,396	696	$66,674,801	734	$146,591,301	353	$55,416,902	1,771	338	472	961	0	0
	Melstone town		0.6	0.0%	0	$0	0		39	$2,012,685	1	$35,000	7	$754,186	0		2	0	1	1	0	0
	Roundup city		1.3	0.0%	0	$0	0		837	$63,457,673	19	$2,795,779	129	$18,353,849	2	$284,522	46	9	11	26	0	0
	Balance of Musselshell County		1,867.7		2	$45,908	1	$15,417	854	$82,685,038	676	$63,844,022	598	$127,483,266	351	$55,132,380	1,722	328	461	933	0	0
3	**Park County**	1,125.37	2,811.7	40.0%	4	$2,414,253	3	$160,000	6,087	$1,151,416,662	3,301	$717,932,160	1,680	$821,834,484	1,024	$557,723,972	7,606	1,407	1,677	4,522	3	2
	Clyde Park town		0.4	0.0%	0	$0	0		134	$13,924,845	6	$704,878	23	$4,042,499	4	$778,608	14	3	3	8	0	0
	Livingston city		5.7	0.0%	0	$0	0		2,567	$392,434,781	270	$51,536,529	537	$198,955,646	58	$24,159,320	695	115	212	369	0	0
	Balance of Park County		2,805.6		4	$2,414,253	3	$160,000	3,386	$745,057,036	3,025	$665,690,753	1,120	$618,836,339	962	$532,786,044	6,897	1,290	1,462	4,145	3	0

APPENDIX B-3. VULNERABILITY ASSESSMENT DOCUMENTATION - WILDFIRE

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Wildfire sq. miles	Total sq. miles	Percent Wildfire sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Wildfire Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Wildfire Hazard Area	Residential Exposure in Wildfire Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Wildfire Hazard Area	CAI Exposure in Wildfire Hazard Area	Total Population in Hazard Area	<18 in Wildfire Hazard Area	>65 in Wildfire Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
6	**Petroleum County**	113.89	1,672.5	6.8%	0	$0	0		184	$23,127,789	9	$723,220	204	$28,781,751	48	$8,250,100	21	4	5	12	0	0
	Winnett town		1.0	0.0%	0	$0	0		148	$19,210,729	2	$70,000	21	$2,591,917	0		5	1	1	3	0	0
	Balance of Petroleum County		1,671.5		0	$0	0	$0	36	$3,917,060	7	$653,220	183	$26,189,834	48	$8,250,100	16	3	4	9	0	0
6	**Phillips County**	526.65	5,208.5	10.1%	6	$1,661,730	4	$1,389,003	1,695	$155,044,408	426	$39,445,100	1,402	$250,190,823	572	$100,383,527	1,147	227	373	547	3	2
	Dodson town		0.2	0.0%	0	$0	0		70	$2,222,512	3	$95,770	5	$140,341	2	$215,770	7	2	1	4	0	0
	Malta city		1.0	0.0%	0	$0	1	$1,138,101	996	$103,409,948	100	$9,567,974	144	$29,008,393	33	$6,731,865	306	52	130	124	0	0
	Saco town		0.3	0.0%	0	$0	0		134	$6,873,752	0		15	$1,887,736	2	$56,770					0	0
	Balance of Phillips County		5,207.0		6	$1,661,730	3	$250,902	495	$42,538,196	323	$29,781,356	1,238	$219,154,353	535	$93,379,122	835	174	242	418	3	0
2	**Pondera County**	514.81	1,640.4	31.4%	2	$60,957	1	$2,417	1,815	$200,092,707	322	$37,168,285	883	$265,160,665	399	$143,315,798	922	218	188	516	0	0
	Conrad city		1.2	0.0%	0	$0	0		1,126	$122,656,189	28	$4,157,379	156	$57,675,177	17	$7,450,940	98	23	20	55	0	0
	Valier town		0.9	0.0%	0	$0	0		295	$29,342,500	5	$684,580	47	$8,582,116	5	$1,368,262	13	3	3	7	0	0
	Balance of Pondera County		1,638.3		2	$60,957	1	$2,417	394	$48,094,018	289	$32,326,326	680	$198,903,372	377	$134,496,596	811	191	166	454	0	0
4	**Powder River County**	539.64	3,297.5	16.4%	2	$26,512	1	$10,000	350	$31,752,451	129	$11,930,038	642	$113,734,309	282	$37,102,380	283	49	70	164	0	0
	Broadus town		0.4	0.0%	0	$0	0		218	$19,631,053	8	$530,497	71	$8,590,919	2	$304,966	18	3	4	10	0	0
	Balance of Powder River County		3,297.1		2	$26,512	1	$10,000	132	$12,121,398	121	$11,399,541	571	$105,143,390	280	$36,797,414	265	46	66	154	0	0
1	**Powell County**	648.01	2,329.6	27.8%	47	$139,753,982	47	$139,753,982	2,509	$325,066,746	926	$171,169,881	697	$217,400,046	437	$154,499,048	3,123	484	615	2,024	4	1
	Deer Lodge city		1.4	0.0%	30	$71,273,714	0		1,455	$118,373,521	84	$18,937,708	160	$37,299,244	22	$30,147,956	313	48	62	203	2	0
	Balance of Powell County		2,328.2		17	$68,480,268	47	$139,753,982	1,054	$206,693,225	842	$152,232,173	537	$180,100,802	415	$124,351,092	2,810	436	554	1,821	2	0
4	**Prairie County**	304.80	1,740.2	17.5%	0	$0	0		527	$28,742,376	142	$6,785,858	525	$56,615,772	270	$29,329,896	349	70	104	175	4	1
	Terry town		0.8	0.0%	0	$0	0		382	$21,559,157	0		43	$3,618,679	8	$1,027,878				0	0	0
	Balance of Prairie County		1,739.4		0	$0	0	$0	145	$7,183,219	142	$6,785,858	482	$52,997,093	262	$28,302,018	349	70	104	175	4	0
1	**Ravalli County**	1,307.71	2,398.2	54.5%	3	$1,079,777	2	$65,040	19,277	$3,692,614,691	15,328	$3,027,142,936	3,023	$930,619,898	2,679	$755,053,284	38,017	7,307	9,909	20,801	4	2
	Darby town		0.6	0.0%	0	$0	0		455	$65,564,435	72	$10,799,906	20	$5,525,704	8	$1,556,350	175	34	43	98	0	0
	Hamilton city		2.4	0.0%	0	$0	0		2,371	$402,402,609	687	$91,246,410	207	$138,471,668	52	$22,714,257	1,669	327	411	932	0	0
	Pinesdale town		1.3	0.0%	0	$0	0		163	$30,828,359	69	$14,485,368	42	$6,383,047	8	$1,486,847	168	33	41	94	0	0
	Stevensville town		1.0	0.0%	0	$0	0		956	$165,432,372	133	$14,481,308	64	$20,620,328	9	$2,840,180	323	63	80	180	0	0
	Balance of Ravalli County		2,392.9		3	$1,079,777	2	$65,040	15,332	$3,028,386,916	14,367	$2,896,129,944	2,690	$759,619,151	2,602	$726,455,650	35,681	6,849	9,334	19,498	4	0
4	**Richland County**	524.98	2,101.9	25.0%	4	$1,434,990	1	$15,417	2,979	$516,039,930	899	$153,993,022	1,646	$420,114,426	864	$245,656,775	2,364	589	385	1,389	0	0
	Fairview town		0.8	0.0%	0	$0	0		313	$29,368,800	12	$2,413,679	37	$7,407,985	3	$606,316	30	8	4	18	0	0
	Sidney city		2.4	0.0%	0	$0	0		1,697	$319,755,649	98	$21,149,600	342	$108,260,768	107	$39,038,012	246	63	33	150	0	0
	Balance of Richland County		2,098.7		4	$1,434,990	1	$15,417	969	$166,915,481	789	$130,429,743	1,267	$304,445,673	754	$206,012,447	2,087	517	349	1,221	0	0
6	**Roosevelt County**	607.51	2,366.6	25.7%	4	$3,703,234	3	$2,258,807	2,085	$172,781,506	346	$35,131,751	1,674	$267,647,926	713	$148,297,559	1,654	495	331	829	2	1
	Bainville town		1.0	0.0%	0	$0	0		116	$8,253,760	0		17	$1,186,389	5	$799,425					0	0
	Brockton town		0.2	0.0%	0	$0	0		21	$718,776	4	$410,270	5	$430,537	1	$83,550	14	5	2	8	0	0
	Culbertson town		0.5	0.0%	0	$0	1	$2,215,519	452	$46,606,757	12	$1,359,628	78	$11,849,589	6	$1,864,675	42	14	5	24	0	0
	Froid town		0.3	0.0%	0	$0	0		127	$5,583,947	11	$337,871	15	$809,020	3	$234,605	39	13	4	22	0	0
	Poplar city		0.3	0.0%	0	$0	0		239	$11,492,367	6	$301,834	40	$3,179,375	1	$61,620	21	7	2	12	0	0
	Wolf Point city		0.8	0.0%	0	$0	0		746	$61,499,644	22	$1,194,182	105	$12,969,709	18	$5,290,725	156	25	90	41	0	0
	Balance of Roosevelt County		2,363.6		4	$3,703,234	2	$43,288	384	$38,626,255	291	$31,527,966	1,414	$237,223,307	679	$139,962,959	1,381	431	228	722	2	0
5	**Rosebud County**	886.23	5,020.4	17.7%	3	$125,417	2	$25,417	2,477	$239,021,461	574	$51,886,227	1,810	$213,766,468	917	$104,230,766	1,692	475	319	898	0	0
	Colstrip city		4.1	0.0%	0	$0	0		980	$109,503,560	16	$2,063,223	250	$31,692,015	6	$512,568	45	13	7	25	0	0
	Forsyth city		1.2	0.0%	0	$0	0		896	$75,056,501	20	$2,637,622	141	$26,550,423	6	$419,103	56	17	8	31	0	0
	Balance of Rosebud County		5,015.1		3	$125,417	2	$25,417	601	$54,461,400	538	$47,185,382	1,419	$155,524,030	905	$103,299,095	1,591	445	304	842	0	0
1	**Sanders County**	1,443.62	2,786.9	51.8%	0	$0	0		4,955	$571,408,477	3,355	$424,746,831	1,849	$320,122,376	1,545	$265,640,556	8,741	1,544	2,608	4,589	0	0
	Hot Springs town		0.4	0.0%	0	$0	0		343	$29,433,542	42	$4,134,901	53	$9,621,606	8	$923,174	141	25	40	76	0	0
	Plains town		0.6	0.0%	0	$0	0		547	$44,751,633	65	$6,495,921	88	$17,655,569	13	$2,520,096	168	30	48	90	0	0
	Thompson Falls city		1.6	0.0%	0	$0	0		666	$67,891,731	58	$7,748,219	85	$16,866,473	16	$2,484,586	201	36	57	108	0	0
	Balance of Sanders County		2,784.4		0	$0	0	$0	3,399	$429,331,571	3,190	$406,367,790	1,623	$275,978,728	1,508	$259,712,700	8,230	1,452	2,463	4,316	0	0
6	**Sheridan County**	322.33	1,703.6	18.9%	2	$59,996	1	$2,417	1,971	$206,039,798	332	$28,163,613	1,503	$172,072,215	414	$53,888,076	717	151	153	412	0	0
	Medicine Lake town		0.4	0.0%	0	$0	0		159	$9,705,581	1	$99,662	24	$1,200,353	6	$209,060	2	0	0	1	0	0
	Outlook town		1.2	0.0%	0	$0	0		44	$2,946,970	0		10	$552,096	2	$263,536					0	0
	Plentywood city		1.3	0.0%	0	$0	0		785	$88,640,393	36	$2,978,811	136	$18,201,885	21	$2,657,131	78	16	17	45	0	0
	Westby town		0.6	0.0%	0	$0	0		102	$4,909,517	8	$494,974	15	$1,132,999	5	$156,600	17	4	4	10	0	0
	Balance of Sheridan County		1,700.1		2	$59,996	1	$2,417	881	$99,837,337	287	$24,590,166	1,318	$150,984,882	380	$50,601,749	620	131	133	356	0	0
1	**Silver Bow County**	409.16	718.0	57.0%	26	$227,661,811	18	$197,929,329	13,122	$1,426,148,334	4,469	$689,099,434	1,585	$807,024,197	508	$519,096,333	12,795	2,455	2,999	7,340	5	2
	Walkerville town		2.2	0.0%	0	$0	1	$2,294,578	342	$24,138,167	278	$18,293,443	6	$334,643	0		617	127	112	378	1	0
	Butte-Silver Bow (remainder)		715.7		26	$227,661,811	17	$195,634,751	12,780	$1,402,010,167	4,191	$670,805,991	1,579	$806,689,554	508	$519,096,333	12,178	2,329	2,887	6,962	4	0
5	**Stillwater County**	688.05	1,804.7	38.1%	2	$100,729	1	$10,000	2,790	$487,586,815	2,268	$405,340,408	943	$192,170,926	652	$115,950,452	5,534	1,189	1,277	3,067	0	0
	Columbus town		1.3	0.0%	0	$0	0		448	$58,806,556	38	$6,872,173	97	$44,373,190	10	$3,064,709	93	20	20	53	0	0
	Balance of Stillwater County		1,803.4		2	$100,729	1	$10,000	2,342	$428,780,259	2,230	$398,468,235	846	$147,797,736	642	$112,885,743	5,441	1,169	1,257	3,014	0	0
3	**Sweet Grass County**	489.70	1,860.9	26.3%	1	$100,000	0		1,559	$263,525,756	723	$149,071,417	1,251	$384,985,550	771	$254,210,784	1,843	381	455	1,007	0	0
	Big Timber city		1.0	0.0%	0	$0	0		772	$99,628,903	44	$8,097,224	157	$34,833,465	5	$2,077,501	112	23	28	61	0	0
	Balance of Sweet Grass County		1,860.0		1	$100,000	0	$0	787	$163,896,853	679	$140,974,193	1,094	$350,152,085	766	$252,133,283	1,731	358	427	945	0	0
2	**Teton County**	607.13	2,289.5	26.5%	2	$60,957	1	$58,540	1,834	$226,386,656	574	$83,085,475	1,107	$240,507,233	624	$126,568,289	1,463	345	331	787	1	1
	Choteau city		1.5	0.0%	0	$0	0		743	$81,363,094	23	$3,587,729	102	$23,811,077	25	$8,231,769	58	14	13	31	0	0
	Dutton town		0.4	0.0%	0	$0	0		159	$17,819,673	13	$1,453,281	30	$5,356,644	12	$1,955,157	33	8	7	17	0	0
	Fairfield town		0.3	0.0%	0	$0	0		266	$30,208,145	36	$5,570,704	46	$13,369,957	14	$2,723,377	90	21	20	48	0	0
	Balance of Teton County		2,287.4		2	$60,957	1	$58,540	666	$96,995,744	502	$72,473,761	929	$197,969,555	573	$113,657,986	1,283	303	290	690	1	0
2	**Toole County**	568.42	1,943.9	29.2%	3	$124,825	0		1,702	$149,272,962	127	$14,916,645	806	$214,874,251	241	$54,808,518	309	58	52	199	2	1
	Kevin town		0.4	0.0%	0	$0	0		101	$4,284,353	5	$328,762	9	$317,749	2	$69,270	11	2	2	7	0	0
	Shelby city		5.9	0.0%	0	$0	0		1,175	$110,467,515	19	$2,908,719	196	$76,850,372	24	$16,670,675	43	8	7	27	0	0
	Sunburst town		2.0	0.0%	0	$0	0		208	$12,619,612	1	$85,177	25	$3,026,807	1	$139,600	2	0	0	1	0	0
	Balance of Toole County		1,935.5		3	$124,825	0	$0	218	$21,901,482	102	$11,593,987	576	$134,679,323	214	$37,928,973	253	48	43	163	2	0

APPENDIX B-3. VULNERABILITY ASSESSMENT DOCUMENTATION - WILDFIRE

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Wildfire sq. miles	Total sq. miles	Percent Wildfire sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Wildfire Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Wildfire Hazard Area	Residential Exposure in Wildfire Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Wildfire Hazard Area	CAI Exposure in Wildfire Hazard Area	Total Population in Hazard Area	<18 in Wildfire Hazard Area	>65 in Wildfire Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
5	**Treasure County**	139.45	983.5	14.2%	1	$250,000	0		194	$12,369,442	30	$2,451,928	362	$46,827,867	205	$28,233,670	69	13	19	37	2	1
	Hysham town		0.2	0.0%	0	$0	0		159	$9,401,270	2	$128,980	20	$2,281,485	8	$1,347,208	5	1	1	2	0	0
	Balance of Treasure County		983.2		1	$250,000	0	$0	35	$2,968,172	28	$2,322,948	342	$44,546,382	197	$26,886,462	64	12	18	35	2	0
6	**Valley County**	669.33	5,058.5	13.2%	7	$2,929,498	5	$1,709,972	2,863	$365,588,943	1,050	$145,574,076	1,209	$208,523,811	475	$88,390,150	2,820	635	632	1,554	0	0
	Fort Peck town		0.9	0.0%	0	$0	0		118	$21,485,471	0		10	$2,092,827	0						0	0
	Glasgow city		1.4	0.0%	0	$0	2	$1,086,584	1,353	$173,782,829	43	$4,207,401	217	$55,123,436	28	$7,847,861	197	44	44	108	0	0
	Nashua town		0.7	0.0%	0	$0	0		200	$13,107,033	9	$1,077,038	17	$1,596,474	5	$527,370	20	5	5	11	0	0
	Opheim town		0.2	0.0%	0	$0	0		76	$3,977,464	3	$202,788	14	$1,365,742	2	$273,286	7	2	2	4	0	0
	Balance of Valley County		5,055.3		7	$2,929,498	3	$623,389	1,116	$153,236,146	995	$140,086,849	951	$148,345,332	440	$79,741,633	2,597	584	582	1,431	0	0
5	**Wheatland County**	271.38	1,425.9	19.0%	3	$1,816,266	1	$2,417	850	$65,290,360	171	$13,627,994	392	$102,480,647	152	$65,603,032	400	92	100	208	0	0
	Harlowton city		0.6	0.0%	0	$0	0		569	$43,661,633	22	$1,792,212	81	$8,532,547	8	$1,570,640	51	12	13	27	0	0
	Judith Gap city		0.3	0.0%	0	$0	0		89	$5,833,159	2	$155,271	10	$1,334,639	1	$13,040	5	1	1	2	0	0
	Balance of Wheatland County		1,425.0		3	$1,816,266	1	$2,417	192	$15,795,568	147	$11,680,511	301	$92,613,461	143	$64,019,352	344	79	86	179	0	0
4	**Wibaux County**	132.52	888.1	14.9%	0	$0	0		318	$24,265,482	26	$3,317,179	518	$58,984,045	204	$22,777,438	56	12	14	30	0	0
	Wibaux town		1.1	0.0%	0	$0	0		290	$20,843,967	4	$529,360	54	$4,948,635	14	$1,797,768	9	2	2	5	0	0
	Balance of Wibaux County		887.0		0	$0	0	$0	28	$3,421,515	22	$2,787,819	464	$54,035,410	190	$20,979,670	47	10	12	25	0	0
5	**Yellowstone County**	1,034.76	2,646.8	39.1%	19	$148,531,721	4	$1,856,044	58,853	$10,961,976,827	14,570	$2,680,412,434	5,429	$4,499,091,639	2,030	$1,071,760,785	37,235	8,615	6,513	22,106	10	3
	Billings city		43.0	0.0%	0	$0	0		41,447	$7,866,273,265	1,712	$313,263,288	3,014	$3,285,025,446	217	$220,869,613	4,444	1,006	857	2,581	4	0
	Broadview town		0.2	0.0%	0	$0	0		79	$9,621,070	5	$732,796	10	$2,904,982	1	$828,714	12	3	2	7	0	0
	Laurel city		2.1	0.0%	0	$0	0		2,701	$394,711,073	264	$49,670,385	187	$100,223,386	41	$29,134,462	671	158	109	405	0	0
	Balance of Yellowstone County		2,601.4		19	$148,531,721	4	$1,856,044	14,626	$2,691,371,419	12,589	$2,316,745,965	2,218	$1,110,937,825	1,771	$820,927,996	32,108	7,449	5,545	19,114	6	0

APPENDIX B-3. CRITICAL FACILITIES IN WILDFIRE HAZARD AREA
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Beaverhead	DELL	DEPARTMENT OF TRANSPORTATION	Aeronautics Dell Electrical Building	1 mile northwest of Dell off Interstate 15	44.731291	-112.715037	$26,499
Beaverhead	DILLON	DEPARTMENT OF MILITARY AFFAIRS	Dillon Readiness Center	1070 Highway 41	45.232061	-112.618027	$5,290,581
Carbon	Red Lodge	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - Billings	Red Lodge Translator	Mount Maurice	45.121302	-109.273353	$25,000
Cascade	GREAT FALLS	DEPARTMENT OF FISH, WILDLIFE & PARKS	Regional HQ Building	4600 Giant Springs Rd	47.531125	-111.231327	$2,531,127
Cascade	GREAT FALLS	DEPARTMENT OF JUSTICE	MHP - Flying J Microwave Tower	Great Falls	47.465056	-111.353361	$24,300
Cascade	GREAT FALLS	DEPARTMENT OF JUSTICE	MHP - Gore Hill Microwave Tower	Great Falls	47.458750	-111.389972	$10,970
Custer	MILES CITY	DEPARTMENT OF ADMINISTRATION	Miles City Data Center (SMDC)	114 S Haynes Avenue	46.406863	-105.820622	$10,872,477
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Academic Training Center	4 North Haynes Avenue	46.408523	-105.822635	$3,406,737
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Housing Unit E	4 North Haynes Avenue	46.408838	-105.821712	$1,104,005
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Main Building/PHYCF	4 North Haynes Avenue	46.408838	-105.821712	$14,560,064
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Physical Training Center	4 North Haynes Avenue	46.408523	-105.822635	$4,835,185
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Spirituality Center	4 North Haynes Avenue	46.408523	-105.822635	$2,113,317
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Warehouse/Maintenance	4 North Haynes Avenue	46.408523	-105.822635	$555,482
Custer	MILES CITY	DEPARTMENT OF FISH, WILDLIFE & PARKS	Regional HQ - Building	352 I-94 Business Loop	46.396689	-105.865550	$2,282,995
Custer	MILES CITY	DEPARTMENT OF MILITARY AFFAIRS	Miles City Readiness Center	1020 N Haynes Ave.	46.417707	-105.821563	$12,536,969
Custer	MILES CITY	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	KYPR Radio Station/Signals to Butte	3.3 miles E/SE	46.389743	-105.756898	$42,635
Daniels	SCOBEY	DEPARTMENT OF JUSTICE	MHP - Scobey Microwave Tower	4 miles E of Scobey	48.801389	-105.348611	$34,529
Daniels	SCOBEY	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Scobey	48 deg - 48' - 25.1" N, 105 deg - 26' - 32.0" W	48.804972	-105.432029	$2,417
Dawson	GLENDIVE	DEPARTMENT OF JUSTICE	MHP - Highway Patrol, Glendive	76 Highway 16	47.117325	-104.734381	$219,671
Dawson	GLENDIVE	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Glendive	47 deg - 8' - 1.0" N, 104 deg - 48' - 15.0" W	47.136229	-104.807446	$15,417
Deer Lodge	ANACONDA	DEPARTMENT OF FISH, WILDLIFE & PARKS	Washoe Park Hatchery - Building - Creek Water Intake	600 West Pennsylvania St.	46.133154	-112.956521	$52,023
Deer Lodge	ANACONDA	DEPARTMENT OF MILITARY AFFAIRS	Anaconda Armory	101 N Polk	46.127011	-112.927450	$1,637,856
Deer Lodge	Warm Spring	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Administrative Annex (113)	58 Garnet Way	46.181458	-112.789927	$2,890,253
Deer Lodge	WARM SPRINGS	DEPARTMENT OF ADMINISTRATION	MT State Hospital	300 Garnet Ave	46.180826	-112.789514	$200,000
Deer Lodge	WARM SPRINGS	DEPARTMENT OF CORRECTIONS	Warm Springs Boiler Plant (Mechanics Garage)	Warm Springs	46.180964	-112.792794	$484,520
Deer Lodge	WARM SPRINGS	DEPARTMENT OF CORRECTIONS	WATCH Warm Springs	201 Orofino Way N	46.180598	-112.789568	$15,648,539
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Doctor's Residence No. 41	65 Mystic Way	46.177297	-112.791036	$110,045
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Doctor's Residence No. 42	51 Mystic Way	46.177377	-112.790737	$91,262
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Duplex No. 13	87 Mystic Way	46.176865	-112.792567	$24,359
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Duplex No. 14	117 Mystic Way	46.176979	-112.793277	$24,359
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Duplex No. 17	171 Mystic Way	46.177451	-112.793754	$24,359
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Duplex No. 18	179 Mystic Way	46.177127	-112.793535	$24,359
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Duplex No. 19	5 Hidden Way	46.177315	-112.793122	$269,838
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Johnson House Group Home	137 MYstic Way	46.177047	-112.792573	$118,355
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Maintenance Office	317 Orofino Way	46.182263	-112.794680	$602,019
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	McColllum House Group Home	30 Garrity Way	46.178149	-112.790175	$232,651
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Mickleberry House	389 Trapper Way	46.181302	-112.796081	$128,035
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	MT Haggin Group Home	45 Hidden Way	46.177248	-112.793598	$269,838
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	NEW HEATING PLANT (107)	203 Trapper Way	46.181081	-112.792484	$2,010,694
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	PINTLAR LODGE (546)	290 Oxbow Way	46.182631	-112.791662	$819,687
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Recovery Center	32 Trapper Way	46.183346	-112.789562	$2,849,427
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Residence D	164 Garrity Way	46.176525	-112.789822	$68,557
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Residence E	191 Garrity Way	46.176330	-112.790190	$84,296
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Residence F	205 Garrity Way	46.176245	-112.790312	$84,296
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Residence G	100 Mt Evans Way	46.179754	-112.785922	$126,690
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Residence H	102 Mt Evans Way	46.179503	-112.785889	$99,139
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	SPRATT BUILDING (219)	351 Fleecer Way	46.182147	-112.790717	$3,630,396
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Theraputic Learning Center	156 Garnet Way	46.180918	-112.789356	$3,914,553
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Warm Springs Facility	100 Garnet Way	46.180918	-112.790329	$34,555,687
Fallon	BAKER	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Baker	101 Airport Road	46.353431	-104.274545	$15,822
Flathead	KALISPELL	DEPARTMENT OF FISH, WILDLIFE & PARKS	Lone Pine SP - Building - Visitor Center	300 Lone Pine Rd.	48.172641	-114.346822	$1,401,629
Flathead	Kalispell	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Line Pine Site	Kookoosint Trail	48.176083	-114.350056	$46,394
Flathead	KALISPELL	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	NWARC RESIDENCE #1	4570 Montana 35, KALISPELL MT 59901	48.189405	-114.133982	$102,279
Flathead	KALISPELL	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM Kalispell	Lone Pine State Park	48.175685	-114.350372	$50,000
Flathead	LAKESIDE	DEPARTMENT OF JUSTICE	MHP - Black Tail Microwave Tower	5 miles E of Lakside	48.010778	-114.363194	$102,091
Flathead	Lakeside	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Blacktail	Blacktail Road	48.011552	-114.365622	$353,956
Flathead	WHITEFISH	DEPARTMENT OF JUSTICE	MHP - Big Mountain Microwave Tower	7 miles North of Whitefish	48.504869	-114.343252	$36,176
Flathead	WHITEFISH	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM FAA Peak Whitefish	Big Mountain FAA Peak	48.506108	-114.348191	$50,000
Gallatin	BELGRADE	DEPARTMENT OF MILITARY AFFAIRS	Gallatin Readiness Center	350 Airport Road	45.765173	-111.145621	$9,233,463
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Bozeman Translator	113 Sourdough Ridge Road	45.645684	-111.021645	$13,563
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	KBMC Transmitter Facilities	High Flat, 11 miles W.S.W. of Bozeman	45.624876	-111.260362	$543,046
Gallatin	Bozeman	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Bozeman Pass	Quinn Creek Road	45.665157	-110.795921	$96,252
Gallatin	Bozeman	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Green Mountain	Stublar Road	45.673151	-110.867386	$1,022,911
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	FT. ELLIS RESIDENCE	33336 Frontage Road	45.668034	-110.973766	$217,114
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	FT. ELLIS SECOND HOUSE	33336 Frontage Road	45.668034	-110.973766	$112,450
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	Lutz Farm Residence	McGuire Creek Road	45.813464	-111.055349	$153,136
Gallatin	Gallatin Gateway	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-High Flat	High Flat Road	45.636144	-111.273450	$196,472

APPENDIX B-3. CRITICAL FACILITIES IN WILDFIRE HAZARD AREA							
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE							
COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Gallatin	WEST YELLOWSTONE	DEPARTMENT OF TRANSPORTATION	Airport CFR Building 1	625 Yellowstone Airport Road	44.687812	-111.114151	$506,619
Gallatin	WEST YELLOWSTONE	DEPARTMENT OF TRANSPORTATION	Airport CFR Building 2	721 Yellowstone Airport Road	44.688084	-111.113856	
Gallatin	WEST YELLOWSTONE	DEPARTMENT OF TRANSPORTATION	Airport Terminal, Administration Bldg	721 Yellowstone Airport Road	44.686661	-111.114568	$1,957,658
Gallatin	WEST YELLOWSTONE	DEPARTMENT OF TRANSPORTATION	Airport WYS - NDB shack	721 Yellowstone Airport Road	44.689140	-111.110796	$135,417
Gallatin	WEST YELLOWSTONE	DEPARTMENT OF TRANSPORTATION	Airport WYS Generator Shack	721 Yellowstone Airport Road	44.689220	-111.110781	$38,461
Garfield	JORDAN	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Jordan	47 deg - 20' - 0.0" N, 106 deg - 56' - 15.0" W	47.326386	-106.951887	$2,417
Glacier	Browning	DEPARTMENT OF TRANSPORTATION	Aeronautics Browning Electrical Building	Starr Browning Airport	48.603028	-113.107606	$21,275
Glacier	CUT BANK	DEPARTMENT OF JUSTICE	MHP - Santa Rita Glacier County Microwave Tower	8 miles N of Santa Rita	48.791450	-112.309961	$102,260
Glacier	CUT BANK	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Cut Bank Translator	Tank Hill, 1/2 mile S.E. of Mem. Hospital	48.626647	-112.319637	$10,000
Hill	HAVRE	DEPARTMENT OF JUSTICE	MHP - Hill County Sheriff's Office Microwave Tower	1.5 miles W of Havre	48.552444	-109.706833	$91,086
Hill	HAVRE	DEPARTMENT OF JUSTICE	MHP #1 Mountain Tower	Section 23, Township 30 North, Range 15 Feet	48.339299	-109.743843	$20,000
Hill	HAVRE	DEPARTMENT OF MILITARY AFFAIRS	Havre Armory	1050 2nd St West	48.552845	-109.702729	$1,789,809
Hill	HAVRE	DEPARTMENT OF MILITARY AFFAIRS	Havre Armory Annex	1050 2nd St West	48.552845	-109.702729	$575,843
Hill	HAVRE	DEPARTMENT OF MILITARY AFFAIRS	Havre Readiness Center (add to Havre Armory)	1050 2nd St W	48.553021	-109.702768	$1,702,596
Hill	HAVRE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Havre, MT Translator	800 Wilson Ave	48.548180	-109.703845	$16,031
Hill	HAVRE	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	NARC Residences/Lab (Apt 1-9) & Thackery House	Star Route 36, Box 43	48.498126	-109.795794	$3,177,555
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS	Repair/Fuel/Garage (addition to #44)	2 Riverside Rd.	46.226144	-112.116849	$270,113
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	Administration/Education	2 Riverside Rd.	46.226144	-112.116849	$1,266,829
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	Housing Unit 14	2 Riverside Rd.	46.226144	-112.116849	$1,440,858
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	Industries/Maintenance Building	2 Riverside Rd.	46.226144	-112.116849	$1,306,877
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	Programs Building #15	2 Riverside Rd	46.225334	-112.117584	$1,278,103
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	Pump House South of River	2 Riverside Rd.	46.226144	-112.116849	$50,018
Jefferson	BUTTE	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM Butte	XL Heights	46.007542	-112.442525	$50,000
Jefferson	HELENA	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Helena Transmitter	21 Miles SW of Helena	46.338562	-112.291538	$15,000
Jefferson	Jefferson City	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-XL Heights	X-L Heights Road	46.020376	-112.421793	$322,620
Lake	BIG ARM	DEPARTMENT OF JUSTICE	MHP - Jette Lake County Microwave Tower	2 miles SE of Big Arm	47.773469	-114.268865	$58,064
Lake	BIGFORK	DEPARTMENT OF NATURAL RESOURCES	Swan Lake Light Plant	34925 MT Hwy 83	47.750051	-113.823712	$47,295
Lake	BIGFORK	DEPARTMENT OF NATURAL RESOURCES, SWAN RIVER FOREST CAMP	Swan Youth Center Dining Hall	34925 MT Hwy 83	47.750051	-113.823712	$440,184
Lake	BIGFORK	DEPARTMENT OF NATURAL RESOURCES, SWAN RIVER FOREST CAMP	Swan Youth Center Generator House	34925 MT Hwy 83	47.750051	-113.823712	$4,277
Lake	BIGFORK	DEPARTMENT OF NATURAL RESOURCES, SWAN RIVER FOREST CAMP	Swan Youth Center Lodge, Dormitory & Addition	34925 MT Hwy 83	47.750051	-113.823712	$2,260,912
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Elrod Laboratory, Yellowbay	32125 Bio Station Lane	47.876726	-114.032857	$3,349,455
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Fire House	32125 Bio Station Lane	47.876726	-114.033192	$67,836
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Fresh Water Research Lab	32125 Bio Station Lane	47.876648	-114.033802	$1,997,757
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM Polson	Jette Mountain	47.773613	-114.269253	$50,000
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lakeside Laboratory	32125 Bio Station Lane	47.876689	-114.033799	$2,144,229
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lift Station 1	32125 Bio Station Lane	47.876726	-114.033192	$56,153
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lift Station 2	32125 Bio Station Lane	47.876726	-114.033192	$63,261
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Museum	32125 Bio Station Lane	47.876726	-114.033192	$46,343
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Prescott Center Cafeteria	32125 Bio Station Lane	47.876719	-114.034417	$1,557,278
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Prescott Center Dormitory	32125 Bio Station Lane	47.876726	-114.033192	$1,083,335
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Waste Water Treatment Plant	32125 Bio Station Lane	47.876726	-114.033192	$918,078
Lewis & Clark	FORT HARRISON	DEPARTMENT OF MILITARY AFFAIRS	DES Mobile Command Post Storage	1956 MT Majo Street	46.617266	-112.097334	$241,190
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	ITSD - HAFRC DOJ FUSION Center	1956 Mt. Majo St / Fort Harrison	46.621104	-112.095883	$3,032,134
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MHP - Comm Center, Helena	1900 WILLIAMS ST	46.620868	-112.095871	$490,148
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MHP - Fort Harris Microwave Tower	Helena	46.617734	-112.097098	$26,970
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Aspen Cottage	2260 Sierra Rd. East	46.661992	-111.976799	$588,381
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Cafeteria	2260 Sierra Rd. East	46.662438	-111.974988	$647,819
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Clinic Building	2260 Sierra Rd. East	46.660804	-111.974898	$219,692
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Cottonwood Cottage	2260 Sierra Rd. East	46.661897	-111.973486	$690,318
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Gymnasium	2260 Sierra Rd. East	46.662120	-111.974074	$655,664
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Maple Cottage No. 2	2260 Sierra Rd. East	46.662523	-111.973780	$2,190,662
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Pump House	2260 Sierra Rd. East	46.662778	-111.976659	$72,092
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - School Building & Administration	2260 Sierra Rd. East	46.662789	-111.974864	$2,183,940
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Spruce Cottage	2260 Sierra Rd. East	46.661663	-111.977557	$1,781,371
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Water Tank & Tower	2260 Sierra Rd. East	46.662587	-111.976984	$389,651
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA Training Facility	2260 SIERRA ROAD EAST	46.662630	-111.975715	$3,774,231
Lewis & Clark	HELENA	DEPARTMENT OF MILITARY AFFAIRS	Helena 1049th Armory	2199 Williams Street	46.630593	-112.094803	$330,083
Lewis & Clark	HELENA	DEPARTMENT OF MILITARY AFFAIRS	Helena OMS	2177 Williams Street	46.617017	-112.097335	$2,093,317
Lewis & Clark	HELENA	DEPARTMENT OF MILITARY AFFAIRS	Womack Armory	Womack Bldg, Ft Harrison	46.618000	-112.097000	$3,145,595
Lewis & Clark	HELENA	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV TRANSMITTER SITE-BELMONT MOUNTAIN	BLOSSBURG ROAD	46.748476	-112.330991	$125,625
Lewis & Clark	Helena	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Helena North Hill	No Creek Ct.	46.769639	-112.024417	$156,278
Lewis & Clark	HELENA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM Helena (N. Hills)	N. Hills Seiban Ranch	46.769741	-112.024019	$50,000
Lewis & Clark	LINCOLN	DEPARTMENT OF TRANSPORTATION	Aeronautics Lincoln Electrical Building	1842 South Airport Road	46.958110	-112.647421	$44,547
Lewis & Clark	WOLF CREEK	DEPARTMENT OF JUSTICE	MHP - Wirth Ranch Microwave Tower	1.5 miles W of Wolf Creek	47.001183	-112.103458	$34,526
Lewis & Clark	Wolf Creek Road	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Wirth	Wirth Drive	47.002350	-112.106964	$84,604
Liberty	CHESTER	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Chester	Liberty County Airport	48.510161	-110.979316	$2,822
Lincoln	EUREKA	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Eureka	48 deg - 58' - 13.9" N, 115 deg - 5' - 3.6" W	48.919218	-115.086543	$2,417

APPENDIX B-3. CRITICAL FACILITIES IN WILDFIRE HAZARD AREA							
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE							
COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Lincoln	LIBBY	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Libby	48 deg - 18' - 16.0" N, 115 deg - 29' - 43.0" W	48.287184	-115.489204	$15,417
Madison	BIG SKY	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Big Sky Translator	Andesite Peak - 45 16' 25	45.278042	-111.450095	$30,000
Madison	ENNIS	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Ennis	#1 Airport Road	45.266766	-111.649662	$3,224
McCone	CIRCLE	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Circle	101 Airport Road	47.421359	-105.561354	$2,417
McCone	Wolf Point	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - Billings	Wolf Point Translator	6.5 miles NW of Wolf Point	48.035323	-105.520662	$95,000
Missoula	MISSOULA	DEPARTMENT OF FISH, WILDLIFE & PARKS	Missoula Airport Hanger - Building	1 Corporate Way	46.912998	-114.079782	$10,261
Missoula	MISSOULA	DEPARTMENT OF MILITARY AFFAIRS	Missoula Armed Forces Reserve Center	9383 Running West Road	46.960808	-114.129939	$15,028,199
Missoula	MISSOULA	DEPARTMENT OF NATURAL RESOURCES	FORESTRY DIVISION HEADQUARTERS BUILDING A	2705 Spurgin Road	46.858906	-114.059335	$2,948,198
Missoula	MISSOULA	DEPARTMENT OF NATURAL RESOURCES	Missoula Helicopter Hanger	3150 Maverick Lane	46.856057	-114.057547	$152,443
Missoula	MISSOULA	DEPARTMENT OF NATURAL RESOURCES	Missoula Unit Fire Cache	3206 Maverick Lane	46.859405	-114.063549	$18,684
Missoula	MISSOULA	DEPARTMENT OF NATURAL RESOURCES	Missoula Unit Office	3206 Maverick Lane	46.856813	-114.058574	$251,954
Missoula	Missoula	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Dean Stone	Larch Camp Road	46.802529	-113.972829	$479,532
Missoula	Missoula	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-TV Mountain	Point 6 Road	47.017111	-114.014598	$26,461
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM Pt. 6 (Top of Snowbowl)	TV Mountain Top of Snowbowl	47.017444	-114.013947	$430,438
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Seismograph Station (Pattee Canyon)	Pattee Canyon Rd.	46.802209	-113.973200	$22,064
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Trade & Technology I	3639 S Ave W.	46.845555	-114.072768	$4,437,141
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Trade & Technology II	3639 S Ave W.	46.845479	-114.071122	$4,177,012
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Trade & Technology III	3639 S Ave W.	46.845726	-114.069174	$774,142
Musselshell	ROUNDUP	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Roundup	#1 Roundup Airport Road	46.471418	-108.548646	$15,417
Park	Emigrant	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - Billings	Paradise Valley Translator	Meyers Ranch, 18 miles NE of Emigrant	45.597575	-110.546513	$150,000
Park	LIVINGSTON	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Livingston Translator	Quinn Peak, 10 miles W.N.W. of town	45.695595	-110.769029	$10,000
Park	LIVINGSTON	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KGLT RADIO TRANSLATOR LIVINGSTON	15 MILES S OFLIVINGSTON 45-35-52.0 N,110-32-44 W	45.597268	-110.545159	
Phillips	MALTA	DEPARTMENT OF MILITARY AFFAIRS	Malta Armory	HC 72, 1 Mile S. Hwy 191	48.347811	-107.876151	$1,138,101
Phillips	MALTA	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Malta	48 deg - 22' - 43.0" N, 107 deg - 55' - 12.0" W	48.368151	-107.917330	$2,417
Phillips	ZORTMAN	DEPARTMENT OF ENVIRONMENTAL QUALITY	Zortman Mine Backup Generator	Zortman Mine-POBox 225, 225 Main Street	47.929975	-108.561127	$182,036
Phillips	ZORTMAN	DEPARTMENT OF JUSTICE	MHP - Antonine Phillips Cnty Microwave Tower	17 km W of HWY 191	47.932167	-108.577389	$66,449
Pondera	CONRAD	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Conrad	48 deg - 11' - 18.0" N, 111 deg - 54' - 48.0" W	48.169884	-111.977815	$2,417
Powder River	Broadus	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - Billings	Broadus Translator	Russell Hill, 5 km SE of Broadus	45.410546	-105.358369	$10,000
Powell	DEER LODGE	DEPARTMENT OF ADMINISTRATION	MT State Prison	600 Conley Lake Rd	46.396982	-112.760724	$250,000
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Cook Chill (Food Factory)	600 Conley Lake Rd	46.381455	-112.797696	$6,704,725
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	H S Laundry/Education	600 Conley Lake Rd	46.384573	-112.801744	$6,954,891
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Industrial Complex Furniture Shop	600 Conley Lake Rd	46.396982	-112.760724	$2,516,384
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Industrial Complex Warehouse	600 Conley Lake Rd	46.396982	-112.760724	$1,975,895
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Industries Furniture Shop Addition	600 Conley Lake Rd	46.396982	-112.760724	$1,903,903
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Laundry	600 Conley Lake Rd	46.383161	-112.798263	$249,223
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	License Plate Distribution Center	600 Conley Lake Rd	46.396982	-112.760724	$1,880,961
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	MVM Building	600 Conley Lake Rd	46.396982	-112.760724	$3,514,381
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	MVM Building Addition	MSP	46.382369	-112.797477	$156,151
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Parlor	600 Conley Lake Rd	46.382337	-112.797913	$6,369,890
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Print & Sign	600 Conley Lake Rd	46.396982	-112.760724	$4,179,127
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Ranch 2 Shop Building	600 Conley Lake Rd	46.396982	-112.760724	$234,769
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Toyota Building (Add'n to MVM)	600 Conley Lake Rd	46.396982	-112.760724	$220,097
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Vocational Education MVM Addition	600 Conley Lake Rd	46.396982	-112.760724	$366,828
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Close Unit I	400 Conley Lake Rd	46.383475	-112.800303	$5,625,979
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Close Unit II	400 Conley Lake Rd	46.383889	-112.800746	$5,625,979
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Close Unit III	400 Conley Lake Rd	46.385387	-112.801045	$7,390,510
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Conley Lake Lodge	400 Conley Lake Rd.	46.396998	-112.756516	$267,567
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	DOC Training Center	442 Gulf Course Rd	46.390529	-112.771374	$838,498
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Fire Truck Garage	400 Conley Lake Rd	46.381886	-112.794737	$75,915
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Guard Station (Rear)	400 Conley Lake Rd	46.382733	-112.799347	$50,933
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Guard Tower #1	400 Conley Lake Rd	46.382719	-112.803086	$31,797
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	High Security Gym	400 Conley Lake Rd	46.382918	-112.801887	$2,231,735
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	High Security Support Building	400 Conley Lake Rd	46.383575	-112.801944	$3,272,376
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	High Side Food Service Building	400 Conley Lake Rd	46.382790	-112.800118	$3,079,732
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Infirmary Building	400 Conley Lake Rd	46.382291	-112.802715	$1,782,952
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Low Security Gym	400 Conley Lake Rd	46.380964	-112.801588	$1,763,040
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Low Security Housing Unit D	400 Conley Lake Rd	46.381092	-112.800460	$3,430,769
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Low Security Support (Rothe)	400 Conley Lake Rd	46.381591	-112.802615	$6,954,898
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Main Prison Warehouse	400 Conley Lake Rd	46.384017	-112.797949	$2,219,605
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Maintenance Complex	400 Conley Lake Rd	46.380949	-112.798548	$2,440,273
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Martz Diagnostic and Intake Unit (MDIU)	400 Conley Lake Rd	46.382462	-112.802230	$8,827,763
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Maximum Security Unit	400 Conley Lake Rd	46.385387	-112.804056	$7,600,907
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	MSP Armory	400 Conley Lake Rd	46.382362	-112.803542	$2,293,285
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Reception Building	400 Conley Lake Rd	46.385258	-112.798078	$2,656,087
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Religious Activity Center	400 Conley Lake Rd	46.382833	-112.800903	$659,244
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Unit A Commons	400 Conley Lake Rd	46.381591	-112.801659	$577,761
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Unit A Housing	400 Conley Lake Rd	46.381477	-112.801131	$5,048,659

APPENDIX B-3. CRITICAL FACILITIES IN WILDFIRE HAZARD AREA							
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE							
COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Unit B Commons	400 Conley Lake Rd	46.381948	-112.801102	$577,761
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Unit B Housing	400 Conley Lake Rd	46.381848	-112.800632	$5,048,659
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Unit C Commons	400 Conley Lake Rd	46.382348	-112.800589	$577,761
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Unit C Housing	400 Conley Lake Rd	46.382248	-112.800032	$5,048,659
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Wallace Administration Building	400 Conley Lake Rd	46.382961	-112.802572	$4,522,847
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Warehouse/Canteen	400 Conley Lake Rd	46.383085	-112.796731	$557,770
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Work Dorm/Expansion	400 Conley Lake Rd	46.385760	-112.813516	$6,506,868
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, TREASURE STATE CORRECTION TC	Treasure State Correctional Training Center	1100 Conley Lake Road	46.394214	-112.848174	$4,690,170
Ravalli	Hamilton	DEPARTMENT OF FISH, WILDLIFE & PARKS	Hamilton Airport Hanger - Building	309 Airport Rd.	46.252292	-114.127114	$10,224
Ravalli	HAMILTON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM Hamilton (Grubstake)	1017 Grub Stake Rd (by)	46.230056	-114.236459	$54,816
Richland	SIDNEY	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Sidney	60 Airport Road	47.710747	-104.184489	$15,417
Roosevelt	CULBERTSON	DEPARTMENT OF JUSTICE	MHP - Culbertson Microwave Tower	3 miles NE of Culbertson	48.200306	-104.532000	$40,871
Roosevelt	CULBERTSON	DEPARTMENT OF MILITARY AFFAIRS	Culbertson Armory	819 6th Avenue East	48.151398	-104.510055	$2,215,519
Roosevelt	WOLF POINT	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Wolf Point	48 deg - 6' - 16.0" N, 105 deg - 36' - 5.0" W	48.096489	-105.574838	$2,417
Rosebud	FORSYTH	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Forsyth	46 deg - 16' - 15.0" N, 106 deg - 40' - 25.1" W	46.267731	-106.623143	$15,417
Rosebud	FORSYTH	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Forsyth Translator	F. Hill, 46 15' 39	46.263015	-106.669859	$10,000
Sheridan	PLENTYWOOD	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Plentywood	48 deg - 47' - 42.0" N, 104 deg - 31' - 36.0" W	48.788668	-104.523624	$2,417
Silver Bow	BUTTE	DEPARTMENT OF TRANSPORTATION	Butte Office & Shop	3751 Wynne Avenue	45.968764	-112.516368	$3,001,225
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Chemistry - Biology Building (CBB) - H	1300 W. Park Street	46.010758	-112.557428	$13,390,609
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	College of Technology	25 Basin Creek Rd.	45.938000	-112.510000	$23,056,194
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Engineering Laboratory-Classroom Building	1300 W. Park Street	46.013417	-112.559500	$13,455,609
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Family Student Housing - Lexington Apartments	1001 - 1039 Lexington Ave	46.023042	-112.552267	$2,294,578
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Family Student Housing - Missoula Apartments North	1001 - 1039 Missoula Ave	46.022562	-112.552180	$2,294,578
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Family Student Housing - Missoula Apartments South	1000 - 1038 Missoula Ave	46.022289	-112.552165	$2,294,578
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Health Sciences Building (Former Petroleum Bldg)	1300 W. Park Street	46.011588	-112.557832	$7,799,478
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Health, Physical Education, & Recreation Bldg	1300 W. Park Street	46.011900	-112.562205	$20,882,870
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Heating Plant Building	1300 W. Park Street	46.011173	-112.558383	$1,610,611
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Library Building & Auditorium Building (joined)	1300 W. Park Street	46.012808	-112.559297	$41,825,755
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Main Hall-H	1300 W. Park Street	46.011193	-112.556832	$10,291,503
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Mill Building-H	1300 W. Park Street	46.011266	-112.557426	$3,957,441
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Mining Geology Building (M&G)	1300 W. Park Street	46.012770	-112.558032	$13,504,935
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Museum Building-H	1300 W. Park Street	46.010817	-112.556907	$9,416,756
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Natural Resources Building	1505 W. Park Street	46.013072	-112.562077	$18,862,957
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	PHYSICAL PLANT BUILDING - BUTTE	1300 W. Park Street	46.011264	-112.557910	$385,609
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	STUDENT UNION BUILDING - BUTTE	1300 W. Park Street	46.012072	-112.557878	$9,604,045
Stillwater	COLUMBUS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Columbus Translator	2 miles W. of town	45.642847	-109.299984	$10,000
Teton	DUTTON	DEPARTMENT OF JUSTICE	MHP - Teton Microwave Tower	2 miles S of Dutton	47.800833	-111.711111	$58,540
Valley	GLASGOW	DEPARTMENT OF MILITARY AFFAIRS	Glasgow Armory	81 Airport Road	48.207207	-106.629043	$1,076,584
Valley	GLASGOW	DEPARTMENT OF MILITARY AFFAIRS	Glasgow Multi-Purp Indoor Range Facility	81 Airport Road	48.207775	-106.628730	$570,704
Valley	GLASGOW	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Glasgow	100 Airport Road	48.209629	-106.626501	$2,417
Valley	GLASGOW	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Glasgow Translator	1.5 miles W. of city water tanks	48.198586	-106.648048	$10,000
Valley	HINSDALE	DEPARTMENT OF JUSTICE	MHP - Hinsdale/Valley County Microwave Tower	2.5 miles SW of Hinsdale	48.369111	-107.156028	$50,268
Wheatland	HARLOWTON	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Harlowton	46 deg - 25' - 59.8" N, 109 deg - 40' - 25.1" W	46.446977	-109.855640	$2,417
Yellowstone	BILLINGS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	KEMC Transmitter Facilities	6544 Keller Road, 6 miles S. of Billings	45.658383	-108.571443	$550,095
Yellowstone	Billings	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Sacrifice Cliff	Coburn Road	45.766667	-108.458194	$901,422
Yellowstone	HUNTLEY	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	SARC RESIDENCE #3	748 RR Hwy.	45.862925	-108.307867	$182,022
Yellowstone	HUNTLEY	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	SARC RESIDENCE #4	748 RR Hwy.	45.862925	-108.307867	$222,505

APPENDIX B-3. COUNTY PERCENT EXPOSURE RANKING - WILDFIRE									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	County	Census 2010	2016 Est	% Population Change	Building Permits	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
1	3	Jefferson County	11,406	11,853	3.77%	5	$759,737,873	88.16%	3.32%
2	1	Lake County	28,746	29,758	3.40%	44	$3,462,505,743	87.62%	2.98%
3	1	Ravalli County	40,212	42,088	4.46%	20	$3,782,196,220	81.81%	3.65%
4	1	Lincoln County	19,687	19,259	-2.22%	8	$2,026,902,050	81.61%	-1.81%
5	1	Sanders County	11,413	11,534	1.05%	0	$690,387,387	77.44%	0.81%
6	5	Stillwater County	9,117	9,406	3.07%	0	$521,290,860	76.69%	2.36%
7	1	Mineral County	4,223	4,184	-0.93%	1	$210,989,295	73.14%	-0.68%
8	1	Granite County	3,079	3,368	8.58%	NA	$265,971,200	72.32%	6.21%
9	3	Madison County	7,691	7,924	2.94%	7	$819,592,280	69.88%	2.05%
0	3	Broadwater County	5,612	5,747	2.35%	0	$463,040,365	68.73%	1.61%
11	2	Glacier County	13,399	13,694	2.15%	0	$469,805,042	68.37%	1.47%
12	1	Flathead County	90,928	98,082	7.29%	316	$8,168,208,891	65.70%	4.79%
13	5	Carbon County	10,078	10,460	3.65%	8	$801,460,996	65.42%	2.39%
14	3	Park County	15,636	16,114	2.97%	44	$1,275,656,132	64.65%	1.92%
15	3	Beaverhead County	9,246	9,401	1.65%	3	$558,550,182	63.77%	1.05%
16	3	Sweet Grass County	3,651	3,623	-0.77%	1	$403,282,201	62.19%	-0.48%
17	1	Missoula County	109,299	116,130	5.88%	930	$2,418,798,346	60.27%	3.55%
18	1	Powell County	7,027	6,858	-2.46%	32	$325,668,929	60.03%	-1.48%
19	5	Big Horn County	12,865	13,343	3.58%	2	$329,169,929	59.91%	2.15%
20	1	Silver Bow County	34,200	34,553	1.02%	86	$1,208,195,767	54.10%	0.55%
21	5	Treasure County	718	692	-3.76%	0	$30,685,598	51.84%	-1.95%
22	2	Blaine County	6,491	6,601	1.67%	0	$245,386,327	51.45%	0.86%
23	1	Deer Lodge County	9,298	9,085	-2.34%	17	$260,966,467	51.17%	-1.20%
24	2	Hill County	16,096	16,542	2.70%	4	$620,904,115	50.35%	1.36%
25	5	Golden Valley County	884	831	-6.38%	NA	$36,942,683	49.97%	-3.19%
26	6	Judith Basin County	2,072	1,940	-6.80%	NA	$89,136,662	47.83%	-3.25%
27	5	Wheatland County	2,168	2,117	-2.41%	NA	$79,231,026	47.23%	-1.14%
28	3	Lewis and Clark County	63,395	67,282	5.78%	176	$2,971,643,777	46.99%	2.71%
29	2	Liberty County	2,339	2,409	2.91%	NA	$92,687,003	45.58%	1.32%
30	3	Gallatin County	89,513	104,502	14.34%	1,550	$6,868,372,234	45.48%	6.52%
31	2	Teton County	6,073	6,056	-0.28%	1	$209,653,764	44.90%	-0.13%
32	4	Richland County	9,746	11,482	15.12%	16	$399,649,797	42.69%	6.45%
33	4	Prairie County	1,179	1,182	0.25%	NA	$36,115,754	42.31%	0.11%
34	6	Roosevelt County	10,425	11,305	7.78%	1	$183,429,310	41.65%	3.24%
35	3	Meagher County	1,891	1,827	-3.50%	NA	$91,691,328	41.54%	-1.46%
36	5	Musselshell County	4,538	4,589	1.11%	1	$122,091,703	41.42%	0.46%
37	4	Dawson County	8,966	9,327	3.87%	1	$234,656,718	41.08%	1.59%
38	6	Valley County	7,369	7,539	2.25%	4	$233,964,226	40.75%	0.92%
39	2	Pondera County	6,153	6,084	-1.13%	1	$180,484,083	38.79%	-0.44%
40	4	Carter County	1,160	1,203	3.57%	1	$50,095,791	36.26%	1.30%
41	6	Fergus County	11,586	11,413	-1.52%	1	$344,212,383	35.89%	-0.54%
42	4	Custer County	11,699	11,924	1.89%	0	$287,642,105	34.71%	0.65%
43	6	Phillips County	4,253	4,133	-2.90%	2	$139,828,627	34.51%	-1.00%
44	5	Rosebud County	9,233	9,287	0.58%	1	$156,116,993	34.48%	0.20%
45	4	Garfield County	1,206	1,310	7.94%	0	$47,763,131	34.43%	2.73%
46	4	Powder River County	1,743	1,746	0.17%	NA	$49,032,418	33.70%	0.06%
47	2	Chouteau County	5,813	5,759	-0.94%	10	$134,510,095	32.60%	-0.31%
48	4	McCone County	1,734	1,700	-2.00%	0	$40,423,142	31.92%	-0.64%
49	4	Wibaux County	1,017	1,093	6.95%	8	$26,094,617	31.35%	2.18%
50	4	Fallon County	2,890	3,120	7.37%	35	$83,246,160	30.01%	2.21%
51	6	Daniels County	1,751	1,755	0.23%	0	$43,676,342	25.06%	0.06%
52	5	Yellowstone County	147,972	158,437	6.61%	1,198	$3,752,173,219	24.27%	1.60%
53	2	Cascade County	81,327	81,755	0.52%	242	$1,624,000,713	23.52%	0.12%
54	6	Sheridan County	3,384	3,648	7.24%	2	$82,051,689	21.70%	1.57%
55	2	Toole County	5,324	4,977	-6.97%	2	$69,725,163	19.15%	-1.33%
56	6	Petroleum County	494	489	-1.02%	NA	$8,973,320	17.29%	-0.18%

APPENDIX B-3. COUNTY PERCENT EXPOSURE X POPULATION CHANGE RANKING - WILDFIRE									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	**DES District**	**County**	**Census 2010**	**2016 Est**	**% Population Change**	**Building Permits**	**Total Exposure (Residential + Other)**	**% Hazard Exposure / Total Exposure**	**Vulnerability Factor (% Exposure x % Population Change)**
1	3	Gallatin County	89,513	104,502	14.34%	1,550	$6,868,372,234	45.48%	6.52%
2	4	Richland County	9,746	11,482	15.12%	16	$399,649,797	42.69%	6.45%
3	1	Granite County	3,079	3,368	8.58%	NA	$265,971,200	72.32%	6.21%
4	1	Flathead County	90,928	98,082	7.29%	316	$8,168,208,891	65.70%	4.79%
5	1	Ravalli County	40,212	42,088	4.46%	20	$3,782,196,220	81.81%	3.65%
6	1	Missoula County	109,299	116,130	5.88%	930	$2,418,798,346	60.27%	3.55%
7	3	Jefferson County	11,406	11,853	3.77%	5	$759,737,873	88.16%	3.32%
8	6	Roosevelt County	10,425	11,305	7.78%	1	$183,429,310	41.65%	3.24%
9	1	Lake County	28,746	29,758	3.40%	44	$3,462,505,743	87.62%	2.98%
10	4	Garfield County	1,206	1,310	7.94%	0	$47,763,131	34.43%	2.73%
11	3	Lewis and Clark County	63,395	67,282	5.78%	176	$2,971,643,777	46.99%	2.71%
12	5	Carbon County	10,078	10,460	3.65%	8	$801,460,996	65.42%	2.39%
13	5	Stillwater County	9,117	9,406	3.07%	0	$521,290,860	76.69%	2.36%
14	4	Fallon County	2,890	3,120	7.37%	35	$83,246,160	30.01%	2.21%
15	4	Wibaux County	1,017	1,093	6.95%	8	$26,094,617	31.35%	2.18%
16	5	Big Horn County	12,865	13,343	3.58%	2	$329,169,929	59.91%	2.15%
17	3	Madison County	7,691	7,924	2.94%	7	$819,592,280	69.88%	2.05%
18	3	Park County	15,636	16,114	2.97%	44	$1,275,656,132	64.65%	1.92%
19	3	Broadwater County	5,612	5,747	2.35%	0	$463,040,365	68.73%	1.61%
20	5	Yellowstone County	147,972	158,437	6.61%	1,198	$3,752,173,219	24.27%	1.60%
21	4	Dawson County	8,966	9,327	3.87%	1	$234,656,718	41.08%	1.59%
22	6	Sheridan County	3,384	3,648	7.24%	2	$82,051,689	21.70%	1.57%
23	2	Glacier County	13,399	13,694	2.15%	0	$469,805,042	68.37%	1.47%
24	2	Hill County	16,096	16,542	2.70%	4	$620,904,115	50.35%	1.36%
25	2	Liberty County	2,339	2,409	2.91%	NA	$92,687,003	45.58%	1.32%
26	4	Carter County	1,160	1,203	3.57%	1	$50,095,791	36.26%	1.30%
27	3	Beaverhead County	9,246	9,401	1.65%	3	$558,550,182	63.77%	1.05%
28	6	Valley County	7,369	7,539	2.25%	4	$233,964,226	40.75%	0.92%
29	2	Blaine County	6,491	6,601	1.67%	0	$245,386,327	51.45%	0.86%
30	1	Sanders County	11,413	11,534	1.05%	0	$690,387,387	77.44%	0.81%
31	4	Custer County	11,699	11,924	1.89%	0	$287,642,105	34.71%	0.65%
32	1	Silver Bow County	34,200	34,553	1.02%	86	$1,208,195,767	54.10%	0.55%
33	5	Musselshell County	4,538	4,589	1.11%	1	$122,091,703	41.42%	0.46%
34	5	Rosebud County	9,233	9,287	0.58%	1	$156,116,993	34.48%	0.20%
35	2	Cascade County	81,327	81,755	0.52%	242	$1,624,000,713	23.52%	0.12%
36	4	Prairie County	1,179	1,182	0.25%	NA	$36,115,754	42.31%	0.11%
37	4	Powder River County	1,743	1,746	0.17%	NA	$49,032,418	33.70%	0.06%
38	6	Daniels County	1,751	1,755	0.23%	0	$43,676,342	25.06%	0.06%
38	2	Teton County	6,073	6,056	-0.28%	1	$209,653,764	44.90%	-0.13%
39	6	Petroleum County	494	489	-1.02%	NA	$8,973,320	17.29%	-0.18%
40	2	Chouteau County	5,813	5,759	-0.94%	10	$134,510,095	32.60%	-0.31%
41	2	Pondera County	6,153	6,084	-1.13%	1	$180,484,083	38.79%	-0.44%
42	3	Sweet Grass County	3,651	3,623	-0.77%	1	$403,282,201	62.19%	-0.48%
43	6	Fergus County	11,586	11,413	-1.52%	1	$344,212,383	35.89%	-0.54%
44	4	McCone County	1,734	1,700	-2.00%	0	$40,423,142	31.92%	-0.64%
45	1	Mineral County	4,223	4,184	-0.93%	1	$210,989,295	73.14%	-0.68%
46	6	Phillips County	4,253	4,133	-2.90%	2	$139,828,627	34.51%	-1.00%
47	5	Wheatland County	2,168	2,117	-2.41%	NA	$79,231,026	47.23%	-1.14%
48	1	Deer Lodge County	9,298	9,085	-2.34%	17	$260,966,467	51.17%	-1.20%
49	2	Toole County	5,324	4,977	-6.97%	2	$69,725,163	19.15%	-1.33%
50	3	Meagher County	1,891	1,827	-3.50%	NA	$91,691,328	41.54%	-1.46%
51	1	Powell County	7,027	6,858	-2.46%	32	$325,668,929	60.03%	-1.48%
52	1	Lincoln County	19,687	19,259	-2.22%	8	$2,026,902,050	81.61%	-1.81%
53	5	Treasure County	718	692	-3.76%	0	$30,685,598	51.84%	-1.95%
54	5	Golden Valley County	884	831	-6.38%	NA	$36,942,683	49.97%	-3.19%
55	6	Judith Basin County	2,072	1,940	-6.80%	NA	$89,136,662	47.83%	-3.25%

APPENDIX B-3. LOCAL PLAN EXPOSURE SUMMARY - WILDFIRE

DES District	Geography	Census 2010	Census 2016 Estimate	% Change 2010 to 2016	# Building Permits (2016)	Original Local Plan FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan	Estimated Societal Loss/ Exposure from Local Plan	Estimated Economic Loss from Local Plan	Ref	Local Plan Update #1 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #1	Estimated Societal Loss/ Exposure from Local Plan Update #1	Estimated Economic Loss from Local Plan Update #1	Ref	Local Plan Update #2 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #2	Estimated Societal Loss/ Exposure from Local Plan Update #2	Estimated Economic Loss from Local Plan Update #2	Ref
	Montana	989,415	1,042,520	5.09%	4,781															
3	**Beaverhead County**	9,246	9,401	1.65%	3	2004				3	2010	$24M	2,530	NA	3	2017				1
	Dillon city	4,134	4,257	2.89%								Low-Moderate	Moderate	Low-Moderate	3		Low-Moderate	Moderate	Low-Moderate	1
	Lima town	221	224	1.34%								Low-Moderate	Moderate	Low-Moderate	3		Low-Moderate	Moderate	Low-Moderate	1
	Balance of Beaverhead County	4,891	4,920	0.59%								Moderate-High	Moderate	Moderate	3		Moderate-High	Moderate	Moderate	1
5	**Big Horn County**	12,865	13,343	3.58%	2	2006	NA	NA	NA	2	2012	$30,000,000	NA	NA	2					
	Hardin city	3,505	3,829	8.46%																
	Lodge Grass town	428	446	4.04%																
	Balance of Big Horn County	8,932	9,068	1.50%																
2	**Blaine County**	6,491	6,601	1.67%	0	2006				14	2012				14					
	Chinook city	1,203	1,233	2.43%								R=$34,265,641 C=$16,856,623	1,203	NA	14					
	Harlem city	808	823	1.82%								R=$11,123,951 C=$8,691,175	808	NA	14					
	Balance of Blaine County	4,480	4,545	1.43%								R=$41,990,458 C=$15,176,147	4,332	NA	14					
3	**Broadwater County**	5,612	5,747	2.35%	0	2004				3	2009	$99.3M	1,920	NA	3	2016				14
	Townsend city	1,878	1,978	5.06%								Moderate	Moderate	Moderate-High	3		R=$51,784,962 C=$15,235,768	1,878; <18=414	NA	14
	Balance of Broadwater County	3,734	3,769	0.93%								Moderate-High	Moderate	Moderate-High	3		R=$168,428,645 C=$25,732,065	3,179; <18=695	NA	14
5	**Carbon County**	10,078	10,460	3.65%	8	2006	$0	0	$716,476	2	2012	NA	NA	NA	2					
	Bearcreek town	79	84	5.95%																
	Bridger town	708	732	3.28%																
	Fromberg town	438	445	1.57%																
	Joliet town	595	640	7.03%																
	Red Lodge city	2,125	2,237	5.01%																
	Balance of Carbon County	6,133	6,322	2.99%																
4	**Carter County**	1,160	1,203	3.57%	1	2005					2012	High	Moderate	High	12					
	Ekalaka town	332	353	5.95%																
	Balance of Carter County	828	850	2.59%																
2	**Cascade County**	81,327	81,755	0.52%	242	2012				14	2017				14					
	Belt city	597	588	-1.53%			R=$16,138,830 C=$5,425,834	597	NA			R=$8,663,740 C=$4,223,279	230; <18=53; >65=32	NA	14					
	Cascade town	685	688	0.44%			R=$22,517,751 C=$10,051,395	685	NA			R=$25,278,675 C=$6,731,463	613; <18=140; >65=91	NA	14					
	Great Falls city	58,505	59,178	1.14%			R=$2,555,386,799 C=$3,670,964,476	58,505	NA			R=$106,532,382 C=$15,769,986	853; <18=195; >655=127	NA	14					
	Neihart town	51	50	-2.00%			R=$14,994,082 C=$1,380,923	51	NA			R=$5,425,218 C=$1,871,664	148; <18=34; >65=22	NA	14					
	Balance of Cascade County	21,489	21,251	-1.12%			R=$949,977,937 C=$164,230,650	19,968	NA			R=$1,299,940,864 C=$166,381,741	16,359; <18=3,733; >65=2,429	NA	14					
2	**Chouteau County**	5,813	5,759	-0.94%	10	2010	$147M	NA	NA	5	2017	>147M	NA	NA	5					
	Big Sandy town	598	590	-1.36%																
	Fort Benton city	1,464	1,456	-0.55%																
	Geraldine town	261	261	0.00%																
	Balance of Chouteau County	3,490	3,452	-1.10%																
4	**Custer County**	11,699	11,924	1.89%	0	2005	Moderate	Moderate	2		2012	$1.18M	0	NA	2	2017				14
	Ismay town	19	21	9.52%													R=$461,458 C=$1,071,856	12; <18=5; >65=4	NA	14
	Miles City city	8,410	8,647	2.74%													NA	NA	NA	14
	Balance of Custer County	3,270	3,256	-0.43%													R=$112,698,205 C=$25,361,985	1,174; <18=425: >65=380	NA	14
6	**Daniels County**	1,751	1,755	0.23%	0	2003				14	2008	$5.6M	300	NA	3	2016				8
	Flaxville town	71	71	0.00%								Moderate	Low-Moderate	Moderate	3		Moderate	Moderate	Moderate	8
	Scobey city	1,017	1,032	1.45%								Low-Moderate	Low-Moderate	Moderate	3		Moderate	Moderate	Moderate	8
	Balance of Daniels County	663	652	-1.69%								Moderate	Low-Moderate	Moderate	3		Moderate	Moderate	Moderate	8
4	**Dawson County**	8,966	9,327	3.87%	1	2006				2	2014				9					
	Glendive city	4,935	5,332	7.45%								$26,148,437	25%	NA	9					
	Richey town	177	187	5.35%								$1,631,948	25%	NA	9					
	Balance of Dawson County	3,854	3,808	-1.21%								$20,199,796	4,137	NA	9					
1	**Deer Lodge County**	9,298	9,085	-2.34%	17	2005	$29.6M; High	127; Moderate	Moderate	3	2013	$1,18M; High	Moderate	Moderate	3					
	Anaconda-Deer Lodge County	9,298	9,085	-2.34%																
4	**Fallon County**	2,890	3,120	7.37%	35	2006				12	2012	Moderate	NA	NA	12					
	Baker city	1,741	1,990	12.51%																

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	Plevna town	162	176	7.95%																
	Balance of Fallon County	987	954	-3.46%																
6	**Fergus County**	11,586	11,413	-1.52%	1	2008	$37.1M	788	High	3	2014				9					
	Denton town	255	247	-3.24%								High	High	High	9					
	Grass Range town	110	108	-1.85%								High	High	High	9					
	Lewistown city	5,901	5,870	-0.53%								High	1,475	High	9					
	Moore town	193	198	2.53%								High	High	High	9					
	Winifred town	208	206	-0.97%								High	High	High	9					
	Balance of Fergus County	4,919	4,784	-2.82%								$48,881,247	5,685	High	9					
1	**Flathead County**	90,928	98,082	7.29%	316	2009	High	Moderate	NA		2014				14					
	Columbia Falls city	4,688	5,241	10.55%								R=$8,257,028 C=$5,232,384	495	NA	14					
	Kalispell city	19,927	22,761	12.45%								R=$0 C=$298,500	462	NA	14					
	Whitefish city	6,357	7,279	12.67%								R=$650,672,548 C=$1,070	6,376	NA	14					
	Balance of Flathead County	59,956	62,801	4.53%								R=$2,032,751,499 C=$129,577,438	24,122	NA	14					
3	**Gallatin County**	89,513	104,502	14.34%	1,550	2006	High	Moderate	Moderate	6	2012	High	High	Moderate	6					
	Belgrade city	7,389	8,254	10.48%																
	Bozeman city	37,280	45,250	17.61%																
	Manhattan town	1,520	1,691	10.11%																
	Three Forks city	1,869	1,944	3.86%																
	West Yellowstone town	1,271	1,353	6.06%																
	Balance of Gallatin County	40,184	46,010	12.66%																
4	**Garfield County**	1,206	1,310	7.94%	0	2007	$4.2M	228	Moderate-High	3	2014				9					
	Jordan town	343	399	14.04%								R=$784,050 O=$65,920	35	NA	9					
	Balance of Garfield County	863	911	5.27%								NA	950	NA	9					
2	**Glacier County**	13,399	13,694	2.15%	0	2005	NA	NA	NA		2012				14					
	Browning town	1,016	1,031	1.45%								R=$5,854,778 C=$8,321,712	1,016	NA	14					
	Cut Bank city	2,869	3,012	4.75%								R=$66,953,635 C=$31,515,389	2,869	NA	14					
	Balance of Glacier County	9,514	9,651	1.42%								R=$23,713,663 C=$12,423,029	944	NA	14					
5	**Golden Valley County**	884	831	-6.38%	NA	2008	NA	NA	NA	14										
	Lavina town	187	173	-8.09%																
	Ryegate town	245	236	-3.81%																
	Balance of Golden Valley County	452	422	-7.11%																
1	**Granite County**	3,079	3,368	8.58%	NA	2006	$8.2M	Moderate	$17.3M	3	2013				3					
	Drummond town	309	348	11.21%								$500K; Low-Moderate	Low	Moderate-High	3					
	Philipsburg town	820	920	10.87%								$3M; Moderate	Moderate	Moderate-High	3					
	Balance of Granite County	1,950	2,100	7.14%								$1.09M; High	Moderate	Moderate-High	3					
2	**Hill County**	16,096	16,542	2.70%	4	2006	$110.11M	NA	NA	14	2012				14					
	Havre city	9,310	9,846	5.44%								R=$276,922,586 C=$95,882,412	9,310	NA	14					
	Hingham town	118	122	3.28%								R=$4,028,150 C=$1,503,363	118	NA	14					
	Balance of Hill County	6,668	6,574	-1.43%								R=$148,811,244 C=$99,826,454	6,882	NA	14					
3	**Jefferson County**	11,406	11,853	3.77%	5	2005				3	2011				14	2017				14
	Boulder town	1,183	1,230	3.82%								R=$24,902,761 C=$7,775,364	1,183	NA	14		R=$32,662,686 C=$7,588,581	1,249; <18=244	NA	14
	Whitehall town	1,038	1,114	6.82%								R=$31,207,320 C=$8,389,386	1,038	NA	14		R=$33,969,396 C=$12,099,667	1,387; <18=302	NA	14
	Balance of Jefferson County	9,185	9,509	3.41%								R=$456,191,186 C=$32,280,874	10,760	NA	14		R=$635,528,119 C=$49,687,099	9,384; <18-2,202	NA	14
6	**Judith Basin County**	2,072	1,940	-6.80%	NA	2008	NA	NA	NA	14	2013				14					
	Hobson town	215	218	1.38%								R=$5,772,217 C=$1,147,579	215; <18=46	NA	14					
	Stanford town	401	384	-4.43%								R=$12,580,413 C=$3,397,313	401; <18=78	NA	14					
	Balance of Judith Basin County	1,456	1,338	-8.82%								R=$60,446,276 C=$23,509,487	1,456; <18=303	NA	14					
1	**Lake County**	28,746	29,758	3.40%	44	2006					2012				14					
	Polson city	4,488	4,777	6.05%								R=$0; C=$0	0	NA	14					

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	Ronan city	1,871	2,016	7.19%								R=$989,415; =$0	27	NA	14					
	St. Ignatius town	842	824	-2.18%								R=$0; C=$0	0	NA	14					
	Balance of Lake County	21,545	22,141	2.69%								R=$1,239,691,127 C=$71,969,078	14,024	NA	14					
3	**Lewis and Clark County**	63,395	67,282	5.78%	176	2005	$145M	NA	NA		2011				14	2017				14
	East Helena town	1,984	2,074	4.34%								R=$57,693,923 C=$30,011,517	1,984	NA	14		R=73,916,041 C=$30,793,990	2,832; <18=700	NA	14
	Helena city	28,190	31,169	9.56%								R=$1,055,814,324 C=$973,513,449	28,190	NA	14		R=$1,193,293,067 C=$919,413,720	30,649; <18=6,243	NA	14
	Balance of Lewis and Clark County	33,221	34,039	2.40%								R=$1,233,951,621 C=$130,278,630	31,731	NA	14		R=$1,960,261,802 C=$139,997,055	30,562; <18=7,632	NA	14
2	**Liberty County**	2,339	2,409	2.91%	NA	2007	Low	Low	NA	2	2013				2					
	Chester town	847	884	4.19%								$49,394,991	NA	NA	2					
	Balance of Liberty County	1,492	1,525	2.16%								$5,942,070	NA	NA	2					
1	**Lincoln County**	19,687	19,259	-2.22%	8	2005	2	2	NA		2012				14					
	Eureka town	1,037	1,086	4.51%								R=$31,994,452 C=$14,243,200	1,037	NA	14					
	Libby city	2,628	2,678	1.87%								R=$91,407,855 C=$69,596,903	2,628	NA	14					
	Rexford town	105	151	30.46%								R=$2,799,110 C=$1,122,084	105	NA	14					
	Troy city	938	890	-5.39%								R=$22,091,420 C=$11,945,412	938	NA	14					
	Balance of Lincoln County	14,979	14,454	-3.63%								R=$627,506,102 C=$104,503,782	14,971	NA	14					
3	**Madison County**	7,691	7,924	2.94%	7	2004				3	2010	$2.9B	4,022	NA	3	2017				1
	Ennis town	838	890	5.84%								Low-Moderate	Moderate	Low-Moderate	3		Low-Moderate	Moderate	Low-Moderate	1
	Sheridan town	642	677	5.17%								Moderate	Moderate	Moderate	3		Moderate	Moderate	Moderate	1
	Twin Bridges town	375	395	5.06%								Low-Moderate	Moderate	Low-Moderate	3		Low-Moderate	Moderate	Low-Moderate	1
	Virginia City town	190	198	4.04%								Moderate	Moderate	Moderate	3		Moderate	Moderate	Moderate	1
	Balance of Madison County	5,646	5,764	2.05%								High	Moderate	Moderate	3		High	Moderate	Moderate	1
4	**McCone County**	1,734	1,700	-2.00%	0	2006	NA	NA	NA	4	2014				9					
	Circle town	615	619	0.65%								$2,030,914	155	NA	9					
	Balance of McCone County	1,119	1,081	-3.52%								$2,197,881	1,090	NA	9					
3	**Meagher County**	1,891	1,827	-3.50%	NA															
	White Sulphur Springs city	939	908	-3.41%																
	Balance of Meagher County	952	919	-3.59%																
1	**Mineral County**	4,223	4,184	-0.93%	1	2005					2012				1					
	Alberton town	420	417	-0.72%								Very High	High	NA	1					
	Superior town	812	826	1.69%								Very High	High	NA	1					
	Balance of Mineral County	2,991	2,941	-1.70%								Very High	High	NA	1					
1	**Missoula County**	109,299	116,130	5.88%	930	2004	$50M-$100M	High	NA	1	2011	$4.9M; AL=$197K	High	NA	1	2017				14
	Missoula city	66,788	72,364	7.71%													R=$2,919,107,711 C=$1,687,426,720	73,210	NA	14
	Balance of Missoula County	42,511	43,766	2.87%													R=$2,624,077,721 C=$428,219,524	35,080	NA	14
5	**Musselshell County**	4,538	4,589	1.11%	1	2008	NA	NA	NA	14	2013				14					
	Melstone town	96	107	10.28%								R=$2,926,150 C=$678,983	96; <18=20	NA	14					
	Roundup city	1,788	1,840	2.83%								R=$43,977,529 C=$14,236,542	1,788; <18=424	NA	14					
	Balance of Musselshell County	2,654	2,642	-0.45%								R=$111,445,876 C=$29,543,616	2,540; <18=458	NA	14					
3	**Park County**	15,636	16,114	2.97%	44	2006	$0	0	$983,230	3	2012				3					
	Clyde Park town	288	309	6.80%								$3M; Moderate	Moderate	NA	3					
	Livingston city	7,044	7,401	4.82%								$500K; Low-Moderate	Low-Moderate	NA	3					
	Balance of Park County	8,304	8,404	1.19%								$3.2M; High	Moderate	Moderate-High	3					
6	**Petroleum County**	494	489	-1.02%	NA	2003					2008	$212K	189	NA	3					
	Winnett town	182	185	1.62%								Low-Moderate	Low-Moderate	Moderate	3					
	Balance of Petroleum County	312	304	-2.63%								Moderate	Low-Moderate	Moderate	3					
6	**Phillips County**	4,253	4,133	-2.90%	2	2006				14	2012				14					
	Dodson town	124	124	0.00%								R=$1,584,670 C=$348,513	124	NA	14					
	Malta city	1,997	1,950	-2.41%								R=$54,166,275 C=$4,354	2,106	NA	14					

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	Saco town	197	197	0.00%								R=$5,163,951 C=$2,392,372	197	NA	14					
	Balance of Phillips County	1,935	1,862	-3.92%								R=$36,318,253 C=$14,026,318	1,552	NA	14					
2	**Pondera County**	6,153	6,084	-1.13%	1	2005					2011				14					
	Conrad city	2,570	2,550	-0.78%								R=$79,257,595 C=$35,834,664	2,570	NA	14					
	Valier town	509	498	-2.21%								R=$15,978,735 C=$5,196,467	509	NA	14					
	Balance of Pondera County	3,074	3,036	-1.25%								R=$61,675,038 C=$30,077,868	848	NA	14					
4	**Powder River County**	1,743	1,746	0.17%	NA	2007				3	2011	$16.1M	594	$29.50	3	2015				9
	Broadus town	468	481	2.70%													R=1,087,567 O=$207,999	127	NA	9
	Balance of Powder River County	1,275	1,265	-0.79%													NA	1,274	NA	9
1	**Powell County**	7,027	6,858	-2.46%	32	2004					2012	High	NA	NA	10	2017				7
	Deer Lodge city	3,111	2,994	-3.91%													979	NA	NA	7
	Balance of Powell County	3,916	3,864	-1.35%													4,746	NA	NA	7
4	**Prairie County**	1,179	1,182	0.25%	NA	2006					2012	Moderate	NA	NA	12					
	Terry town	605	609	0.66%																
	Balance of Prairie County	574	573	-0.17%																
1	**Ravalli County**	40,212	42,088	4.46%	20	2005				1	2012	$27.7M; AL=$550K	High	NA	1	2017				14
	Darby town	720	763	5.64%								Very High	High	NA	1		R=$5,896,029 C=$2,642,957	543	NA	14
	Hamilton city	4,348	4,674	6.97%								Very High	High	NA	1		R=$1,491,349 C=$3,614,880	233	NA	14
	Pinesdale town	917	967	5.17%								Very High	High	NA	1		NA	NA	NA	14
	Stevensville town	1,809	1,963	7.85%								Very High	High	NA	1		R=452,334; C=$0	46	NA	14
	Balance of Ravalli County	32,418	33,721	3.86%								Very High	High	NA	1		R=$801,887,880 C=$49,828,587	13,421	NA	14
4	**Richland County**	9,746	11,482	15.12%	16	2006	NA	NA	NA	4	2014				9					
	Fairview town	840	922	8.89%								$4,287,611	25%	NA	9					
	Sidney city	5,191	6,566	20.94%								$67,637,310	25%	NA	9					
	Balance of Richland County	3,715	3,994	6.99%								$12,963,035	4,330	NA	9					
6	**Roosevelt County**	10,425	11,305	7.78%	1	2004				14	2016				8					
	Bainville town	208	314	33.76%			$5.3M	111	NA	14		Moderate	Moderate	Moderate	8					
	Brockton town	255	243	-4.94%			$458K	12	NA	14		Moderate	Moderate	Moderate	8					
	Culbertson town	714	804	11.19%			$4.66M	96	NA	14		Moderate	Moderate	Moderate	8					
	Froid town	185	201	7.96%			$2M	39	NA	14		Moderate	Moderate	Moderate	8					
	Poplar city	810	854	5.15%			$6.2M	175	NA	14		Moderate	Moderate	Moderate	8					
	Wolf Point city	2,621	2,806	6.59%			$10.1M	269	NA	14		Moderate	Moderate	Moderate	8					
	Balance of Roosevelt County	5,632	6,083	7.41%			$165.1M	4,089	NA	14		Moderate	Moderate	Moderate	8					
5	**Rosebud County**	9,233	9,287	0.58%	1	2007	$44.5M	1,735	$42.3M	3	2013	667	1,735	NA	2					
	Colstrip city	2,214	2,311	4.20%								$110,084,135	NA	NA	2					
	Forsyth city	1,777	1,869	4.92%								$107,254,642	NA	NA	2					
	Balance of Rosebud County	5,242	1,903	-175.46%								$68,028,786	NA	NA	2					
1	**Sanders County**	11,413	11,534	1.05%	0	2012				14										
	Hot Springs town	544	557	2.33%			R=$15,659,095 C=$7,776,054	544	NA	14										
	Plains town	1,048	1,071	2.15%			R=$28,632,062 C=$24,082,081	1,048	NA	14										
	Thompson Falls city	1,313	1,356	3.17%			R=$43,655,598 C=$21,722,279	1,313	NA	4										
	Balance of Sanders County	8,508	8,550	0.49%			R=$505,241,444 C=$69,662,352	8,508	NA	14										
6	**Sheridan County**	3,384	3,648	7.24%	2	2003	$16,527,416	214.9	NA	14	2008	$1.1M	447	Moderate	3	2016				8
	Medicine Lake town	225	241	6.64%								Moderate	Low-Moderate	Moderate	3		Moderate	Moderate	Moderate	8
	Outlook town	47	52	9.62%								Moderate	Low-Moderate	Moderate	3		Moderate	Moderate	Moderate	8
	Plentywood city	1,734	1,904	8.93%								Moderate	Low-Moderate	Moderate	3		Moderate	Moderate	Moderate	8
	Westby town	168	174	3.45%								Moderate	Low-Moderate	Moderate	3		Moderate	Moderate	Moderate	8
	Balance of Sheridan County	1,210	1,277	5.25%								Moderate	Low-Moderate	Moderate	3		Moderate	Moderate	Moderate	8
1	**Silver Bow County**	34,200	34,553	1.02%	86	2004				3	2010				14	2016				14
	Butte-Silver Bow (remainder)	33,525	33,853	0.97%								$3,564,760,000	<18=8,017 >65=5,452 <Poverty=4,920	NA	14		R=$244,987,311 C=$82,592,669	6,533; <18= 1,468	NA	14
	Walkerville town	675	700	3.57%								$7,844,025	<18=101 >65=52 <Poverty=47	NA	14		R=$10,507,778 C=$1,266,984	450; <18=93	NA	14

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5	**Stillwater County**	9,117	9,406	3.07%	0	2010	$10M	Moderate	NA	3	2015				14					
	Columbus town	1,893	2,028	6.66%			Low-Moderate	Moderate	High	3		R=$65,383,045 C=$46,507,380	1,893; <18=492	NA	14					
	Balance of Stillwater County	7,224	7,378	2.09%			Moderate-High	Moderate	High	3		R=$320,954,896 C=$25,706,091	4,710; <18=951	NA	14					
3	**Sweet Grass County**	3,651	3,623	-0.77%	1	2005					2010	NA	NA	NA	13					
	Big Timber city	1,641	1,645	0.24%																
	Balance of Sweet Grass County	2,010	1,978	-1.62%																
2	**Teton County**	6,073	6,056	-0.28%	1	2006	NA	NA	NA	NA	2014	NA	NA	NA	2					
	Choteau city	1,684	1,686	0.12%																
	Dutton town	316	308	-2.60%																
	Fairfield town	708	922	23.21%																
	Balance of Teton County	3,365	3,140	-7.17%																
2	**Toole County**	5,324	4,977	-6.97%	2	2007	Low-Medium	Low	NA	2	2013				2					
	Kevin town	154	138	-11.59%								$5,397,891	NA	NA	2					
	Shelby city	3,376	3,216	-4.98%								$214,536,709	NA	NA	2					
	Sunburst town	375	338	-10.95%								$18,957,288	NA	NA	2					
	Balance of Toole County	1,419	1,285	-10.43%								$83,490,192	NA	NA	2					
5	**Treasure County**	718	692	-3.76%	0	2007	$451K	150	$20M	3										
	Hysham town	312	301	-3.65%																
	Balance of Treasure County	406	391	-3.84%																
6	**Valley County**	7,369	7,539	2.25%	4	2003				14	2008	$19.5M	1,942	Moderate	3	2016				8
	Fort Peck town	233	247	5.67%								Moderate	Low-Moderate	Moderate	3		Moderate	Moderate	Moderate	8
	Glasgow city	3,250	3,364	3.39%								Moderate	Low-Moderate	Moderate	3		Moderate	Moderate	Moderate	8
	Nashua town	290	290	0.00%								Moderate-High	Low-Moderate	Moderate	3		Moderate	Moderate	Moderate	8
	Opheim town	85	290	70.69%								Moderate	Low-Moderate	Moderate	3		Low	Low	Low	8
	Balance of Valley County	3,511	3,348	-4.87%								Moderate-High	Low-Moderate	Moderate	3		Moderate	Moderate	Moderate	8
5	**Wheatland County**	2,168	2,117	-2.41%	NA	2007	NA	NA	NA	14	2013				14					
	Harlowton city	997	984	-1.32%								R=$26,758,207 C=$6,486,016	997; <18=192	NA	14					
	Judith Gap city	126	123	-2.44%								R=$2,299,410 C=$752,870	126; <18=13	NA	14					
	Balance of Wheatland County	1,045	1,010	-3.47%								R=$60,832,579 C=$12,058,615	820; <18=260	NA	14					
4	**Wibaux County**	1,017	1,093	6.95%	8	2006	NA	NA	NA	2	2014				9					
	Wibaux town	589	649	9.24%								$498,556	150	NA	9					
	Balance of Wibaux County	428	444	3.60%								$2,730,081	430	NA	9					
5	**Yellowstone County**	147,972	158,437	6.61%	1,198	2005	NA	NA	NA		2012	$356K	Moderate	NA	1					
	Billings city	104,170	110,323	5.58%																
	Broadview town	192	193	0.52%																
	Laurel city	6,718	6,865	2.14%																
	Balance of Yellowstone County	36,892	41,056	10.14%																
2	**Blackfeet Indian Reservation**	10,405				2008	NA	NA	NA	14										
2	**Rocky Boy's Indian Reservation**	3,323				2008					2010	R=$106,458,496 CF=$59,106,372	<16=1,053; >64=132; <Poverty=1,062	NA	14					
2	**Fort Belknap Indian Reservation**	2,851				2007	NA	NA	NA	14	2013	$11,528,000	2,823	NA	14					
6	**Fort Peck Indian Reservation**	10,008				2004				14	2012	Moderate	NA	NA	10					
5	**Crow Indian Reservation**	6,863				2008	NA	NA	NA	4	2015	$4,017,881	66%	NA	9					
5	**Northern Cheyenne Indian Res.**	4,789				2008	NA	NA	NA	4										
1	**Flathead Indian Reservation**	28,359				2006	$301.4M	8,801	NA	NA	2017				11					

NOTES:
R = Residential
C = Commercial/Agricultural/Industrial
CF = Critical Facilities
AL = Annual Loss
M = Million
K = Thousand
B = Billion
O = Other
NA = Not Analyzed or Not Quantitied

REFERENCES:
1 = Respec (formerly Adkins, PBS&J, Land & Water)
2 = Beck Consulting & AMEC
3 = Big Sky Hazard Management
4 = Cossitt Consulting
5 = Fire Logistics, Inc.
6 = Gallatin County
7 = Great West Engineering and Powell County
8 = Integrated Solutions Consulting
9 = KLJ
10 = Morrison-Maierle
11 = Risks and Rewards Management
12 = Single Tree Consulting
13 = Sweet Grass County
14 = Tetra Tech (formerly Maxim Tech)

APPENDIX B-4

FLOODING VULNERABILITY ASSESSMENT DOCUMENTATION

APPENDIX B-4. VULNERABILITY ASSESSMENT DOCUMENTATION - FLOODING

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Flood sq. miles	Total sq. miles	Percent Flood sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Flood Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Flood Hazard Area	Residential Exposure in Flood Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Flood Hazard Area	CAI Exposure in Flood Hazard Area	Total Population in Hazard Area	<18 in Flood Hazard Area	>65 in Flood Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Montana	5,859	146,923	4.0%	829	$3,596,319,710	39	$128,085,325	379,924	$65,567,813,250	31,157	$4,446,490,972	89,351	$31,241,965,630	7,795	$2,620,257,377	102,682.1	22,036.8	20,457.8	60,187.5	126	56
3	**Beaverhead County**	145.34	5,572.5	2.6%	21	$120,039,992	0	$0	3,023	$398,456,637	382	$52,698,203	2,017	$477,421,099	214	$55,536,867	821.3	145.4	171.7	504.3	6	2
	Dillon city	0.17	1.7	9.9%	0	$0	0	$0	1,178	$128,495,669	34	$2,940,852	230	$70,904,492	4	$1,446,399	73.1	12.9	15.3	44.9	2	0
	Lima town	0.11	0.5	19.9%	0	$0	0	$0	135	$8,569,730	33	$1,704,016	11	$1,208,935	0		71.0	12.6	14.8	43.6	0	0
	Balance of Beaverhead County	145.06	5,570.3		21	$120,039,992	0	$0	1,710	$261,391,238	315	$48,053,335	1,776	$405,307,672	210	$54,090,468	677.2	119.9	141.5	415.8	4	0
5	**Big Horn County**	145.58	5,013.9	2.9%	1	$64,294	0	$0	3,168	$358,629,629	298	$39,767,447	872	$190,843,437	126	$17,159,024	1,081.7	371.0	126.6	584.1	5	3
	Hardin city	0.03	1.6	2.1%	0	$0	0	$0	905	$97,296,363	2	$313,913	134	$32,479,192	0		7.3	2.5	0.8	3.9	0	0
	Lodge Grass town	0.01	0.3	2.6%	0	$0	0	$0	149	$10,790,706	1	$854,370	22	$17,123,392	0		3.6	1.2	0.4	2.0	0	0
	Balance of Big Horn County	145.54	5,012.0		1	$64,294	0	$0	2,114	$250,542,560	295	$38,599,164	716	$141,240,853	126	$17,159,024	1,070.9	367.3	125.3	578.3	5	0
2	**Blaine County**	248.08	4,235.9	5.9%	1	$51,267	0	$0	1,409	$115,967,606	384	$31,231,440	2,309	$361,010,008	428	$48,183,851	1,102.1	332.8	158.7	610.6	0	0
	Chinook city	0.21	0.5	40.4%	0	$0	0	$0	674	$60,190,802	243	$20,400,471	106	$19,309,682	2	$186,780	697.4	210.6	100.4	386.4	0	0
	Harlem city	0.08	0.4	20.0%	0	$0	0	$0	352	$22,108,616	19	$692,401	68	$8,956,732	1	$156,349	54.5	16.5	7.9	30.2	0	0
	Balance of Blaine County	247.79	4,235.0		1	$51,267	0	$0	383	$33,668,188	122	$10,138,568	2,135	$332,743,594	425	$47,840,722	350.1	105.7	50.4	194.0	0	0
3	**Broadwater County**	76.68	1,236.8	6.2%	3	$29,038,899	3	$29,038,899	3,442	$520,588,070	88	$14,254,345	795	$153,085,694	61	$8,026,910	204.2	41.0	45.3	117.8	1	1
	Townsend city	0.53	1.5	34.9%	0	$0	0	$0	1,133	$116,996,708	7	$409,440	147	$21,344,104	2	$340,020	16.2	3.3	3.6	9.4	0	0
	Balance of Broadwater County	76.15	1,235.3		3	$29,038,899	3	$29,038,899	2,309	$403,591,362	81	$13,844,905	648	$131,741,590	59	$7,686,890	187.9	37.8	41.7	108.4	1	0
5	**Carbon County**	69.13	2,060.7	3.4%	3	$220,339	0	$0	4,812	$912,472,742	504	$91,366,808	1,434	$312,638,485	202	$45,650,214	1,248.8	208.9	362.0	677.9	5	1
	Bearcreek town	0.01	0.1	10.4%	0	$0	0	$0	57	$6,138,654	2	$309,756	2	$269,414	0		4.5	0.8	1.1	2.6	0	0
	Bridger town	0.00	0.8	0.0%	0	$0	0	$0	322	$30,656,055	0		49	$8,990,475	0						0	0
	Fromberg town	0.26	0.4	59.4%	0	$0	0	$0	218	$16,035,910	104	$6,299,178	21	$1,157,410	2	$270,768	236.1	42.3	56.7	137.2	0	0
	Joliet town	0.02	0.3	9.0%	0	$0	0	$0	241	$27,420,117	4	$581,966	20	$2,267,652	0		9.1	1.6	2.2	5.3	0	0
	Red Lodge city	0.11	2.7	4.1%	0	$0	0	$0	1,366	$249,897,767	53	$10,140,621	162	$49,294,962	3	$811,420	145.3	26.0	34.9	84.4	1	1
	Balance of Carbon County	68.72	2,056.4		3	$220,339	0	$0	2,608	$582,324,239	341	$74,035,287	1,180	$250,658,572	197	$44,568,026	853.8	138.2	267.2	448.4	4	0
4	**Carter County**	108.40	3,346.4	3.2%	0	$0	0	$0	405	$20,620,826	66	$2,512,732	1,012	$117,527,687	68	$5,935,764	157.1	29.7	40.2	87.2	0	0
	Ekalaka town	0.24	1.0	23.6%	0	$0	0	$0	323	$14,713,910	65	$2,427,624	40	$3,481,214	7	$656,118	154.7	29.2	39.6	85.9	0	0
	Balance of Carter County	108.16	3,345.4		0	$0	0	$0	82	$5,906,916	1	$85,108	972	$114,046,473	61	$5,279,646	2.4	0.4	0.6	1.3	0	0
2	**Cascade County**	141.29	2,708.4	5.2%	20	$90,365,664	0	$0	28,943	$4,349,791,994	3,127	$464,913,676	4,285	$2,555,983,982	465	$237,546,737	7,973.1	1,749.2	1,561.8	4,662.0	14	4
	Belt city	0.16	0.3	51.7%	0	$0	0	$0	98	$8,912,233	44	$4,367,519	16	$5,432,574	10	$2,465,070	103.4	23.2	18.5	61.7	0	0
	Cascade town	0.02	0.5	3.4%	0	$0	0	$0	267	$28,222,039	0		61	$9,822,750	0					0.0	1	0
	Great Falls city	3.34	23.0	14.5%	0	$0	0	$0	21,838	$3,214,111,195	1,665	$221,111,548	1,980	$1,834,875,305	189	$165,222,703	4,459.8	962.3	932.9	2,564.6	2	1
	Neihart town	0.11	1.6	7.0%	0	$0	0	$0	57	$5,297,372	12	$943,736	14	$2,901,487	3	$157,930	28.2	6.3	5.0	16.8	0	0
	Balance of Cascade County	137.66	2,682.9		20	90,365,663.6	0	$0	6,683	$1,093,249,155	1,406	$238,490,873	2,214	$702,951,866	263	$69,701,034	3,381.7	757.5	605.3	2,018.8	11	0
2	**Chouteau County**	129.18	3,992.9	3.2%	0	$0	0	$0	1,880	$212,079,581	223	$39,674,217	1,258	$200,554,092	105	$13,524,755	2,427.5	565.6	461.2	1,400.7	4	1
	Big Sandy town	0.00	0.5	0.0%	0	$0	0	$0	324	$26,480,771	0		42	$4,231,062	0						0	0
	Fort Benton city	0.31	1.5	20.2%	0	$0	0	$0	795	$106,352,375	207	$37,643,607	111	$15,435,130	63	$9,282,023	2,387.5	556.3	453.6	1,377.6	0	0
	Geraldine town	0.00	0.6	0.0%	0	$0	0	$0	150	$9,556,033	0		21	$2,592,594	0						0	0
	Balance of Chouteau County	128.87	3,990.3		0	$0	0	$0	611	$69,690,402	16	$2,030,610	1,084	$178,295,306	42	$4,242,732	40.0	9.3	7.6	23.1	4	0
4	**Custer County**	137.91	3,789.3	3.6%	12	$59,923,374	2	$14,935,997	4,678	$531,010,978	3,015	$286,568,842	1,711	$297,665,123	435	$75,764,259	7,812.7	1,538.7	2,030.1	4,243.9	0	0
	Ismay town	0.07	0.4	16.8%	0	$0	0	$0	29	$349,883	0		10	$1,387,354	2	$160,960					0	0
	Miles City city	2.13	3.3	64.3%	0	$0	1	$2,399,029	3,312	$363,057,565	2,549	$248,756,573	433	$104,957,053	284	$51,264,038	6,624.0	1,300.7	1,735.6	3,587.6	0	0
	Balance of Custer County	135.71	3,785.6		12	$59,923,374	1	$12,536,969	1,337	$167,603,530	466	$37,812,269	1,268	$191,320,716	149	$24,339,261	1,188.7	237.9	294.5	656.3	0	0
6	**Daniels County**	68.07	1,426.1	4.8%	2	$36,946	0	$0	906	$81,170,595			976	$93,098,998	25	$2,134,718					0	0
	Flaxville town	0.00	0.1	0.0%	0	$0	0	$0	87	$4,797,361			16	$766,732	0						0	0
	Scobey city	0.00	0.7	0.0%	0	$0	0	$0	675	$64,548,974			128	$10,135,214	0						0	0
	Balance of Daniels County	68.07	1,425.3		2	$36,946	0	$0	144	$11,824,260			832	$82,197,052	25	$2,134,718					0	0
4	**Dawson County**	87.01	2,380.7	3.7%	10	$20,985,926	0	$0	3,163	$409,229,017	277	$26,105,259	908	$162,010,623	40	$10,363,153	620.5	140.8	110.6	369.0	0	0
	Glendive city	0.85	3.5	24.4%	0	$0	0	$0	1,604	$225,892,962	213	$18,569,867	230	$56,394,894	13	$5,591,174	477.1	108.3	85.1	283.7	0	0
	Richey town	0.00	0.3	0.0%	0	$0	0	$0	165	$8,909,873	0		23	$2,890,873	0						0	0
	Balance of Dawson County	86.16	2,376.9		10	$20,985,926	0	$0	1,394	$174,426,182	64	$7,535,392	655	$102,724,856	27	$4,771,979	143.4	32.5	25.5	85.3	0	0
1	**Deer Lodge County**	14.47	740.6	2.0%	30	$71,273,714	1	$52,023	4,234	$406,037,841	128	$10,670,848	509	$103,961,907	13	$20,025,437	272.6	40.9	60.5	171.2	3	0
	Anaconda-Deer Lodge County	14.47	740.6	2.0%	30	$71,273,714	1	$52,023	4,234	$406,037,841	128	$10,670,848	509	$103,961,907	13	$20,025,437	272.6	40.9	60.5	171.2	3	0
4	**Fallon County**	38.82	1,621.2	2.4%	1	$15,822	0	$0	1,223	$120,111,206	8	$439,733	1,285	$157,284,133	31	$3,725,481	19.8	5.3	3.3	11.2	2	0
	Baker city	0.01	1.1	0.7%	0	$0	0	$0	882	$83,620,710	0		144	$33,873,913	0						0	0
	Plevna town	0.04	0.4	8.4%	0	$0	0	$0	106	$6,148,692	4	$375,823	78	$8,870,026	0		9.9	2.6	1.6	5.6	0	0
	Balance of Fallon County	38.77	1,619.6		1	$15,822	0	$0	235	$30,341,804	4	$63,910	1,063	$114,540,194	31	$3,725,481	9.9	2.6	1.6	5.6	2	0
6	**Fergus County**	107.00	4,345.2	2.5%	7	$21,432,181	0	$0	4,690	$556,548,908	463	$41,938,163	2,019	$402,403,647	149	$24,271,962	1,165.5	243.6	277.4	644.5	4	2
	Denton town	0.35	0.7	48.9%	0	$0	0	$0	152	$13,428,059	50	$4,141,803	29	$4,382,026	24	$3,654,552	112.5	23.5	26.8	62.2	0	0
	Grass Range town	0.04	0.1	31.3%	0	$0	0	$0	82	$4,930,605	22	$1,111,312	14	$1,525,471	8	$756,409	49.5	10.3	11.8	27.4	0	0
	Lewistown city	0.32	5.2	6.1%	0	$0	0	$0	2,796	$320,465,500	319	$27,929,453	396	$106,823,714	40	$9,404,003	816.8	170.7	194.4	451.7	0	0
	Moore town	0.04	0.3	13.9%	0	$0	0	$0	102	$6,944,815	2	$174,600	19	$4,216,005	4	$993,324	4.5	0.9	1.1	2.5	0	0
	Winifred town	0.12	0.5	23.8%	0	$0	0	$0	90	$8,768,234	1	$339,220	20	$4,365,641	1	$125,040	2.3	0.5	0.5	1.2	0	0
	Balance of Fergus County	106.12	4,338.3		7	$21,432,181	0	$0	1,468	$202,011,695	69	$8,241,775	1,541	$281,090,790	72	$9,338,634	180.0	37.6	42.8	99.5	4	0
1	**Flathead County**	268.12	5,252.4	5.1%	20	$38,896,279	0	$0	41,342	$8,600,413,799	4,885	$845,565,815	8,138	$3,832,482,719	838	$338,299,562	24,195.2	5,311.6	4,560.3	14,323.3	5	1
	Columbia Falls city	0.23	2.1	11.1%	0	$0	0	$0	1,739	$255,171,515	60	$7,836,521	327	$117,184,528	17	$9,325,223	394.3	87.2	72.1	235.0	1	1

APPENDIX B-4. VULNERABILITY ASSESSMENT DOCUMENTATION - FLOODING
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Flood sq. miles	Total sq. miles	Percent Flood sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Flood Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Flood Hazard Area	Residential Exposure in Flood Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Flood Hazard Area	CAI Exposure in Flood Hazard Area	Total Population in Hazard Area	<18 in Flood Hazard Area	>65 in Flood Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Kalispell city	0.86	11.8	7.3%	0	$0	0	$0	7,553	$1,271,291,249	402	$56,543,702	1,714	$1,065,757,780	87	$50,056,770	2,388.2	527.8	437.0	1,423.4	0	0
	Whitefish city	5.62	11.8	47.4%	0	$0	0	$0	4,029	$1,153,743,638	193	$41,552,600	522	$350,353,977	26	$15,940,119	1,706.2	377.1	312.2	1,016.9	0	0
	Balance of Flathead County	261.41	5,226.8		20	$38,896,279	0	$0	28,021	$5,920,207,397	4,230	$739,632,992	5,575	$2,299,186,434	708	$262,977,450	19,706.4	4,319.6	3,738.9	11,648.0	4	0
3	**Gallatin County**	100.45	2,632.5	3.8%	207	$963,139,971	1	$251,183	40,035	$10,930,545,091	1,317	$269,947,247	5,191	$4,169,858,220	346	$154,834,146	5,751.1	1,150.8	756.6	3,843.6	6	1
	Belgrade city	0.12	3.1	3.8%	0	$0	0	$0	2,764	$496,929,312	0		204	$120,870,378	0						0	0
	Bozeman city	0.66	19.9	3.3%	0	$0	0	$0	16,722	$4,743,491,928	152	$37,040,373	1,511	$2,235,363,972	29	$27,349,135	1,362.3	276.5	162.1	923.6	2	0
	Manhattan town	0.00	1.7	0.0%	0	$0	0	$0	657	$115,292,092	0		71	$33,496,346	0						0	0
	Three Forks city	0.80	1.4	59.2%	0	$0	1	$251,183	787	$99,273,886	454	$56,359,313	104	$26,353,553	53	$11,375,864	1,375.0	262.5	235.9	876.6	0	0
	West Yellowstone town	0.00	0.8	0.0%	0	$0	0	$0	639	$139,663,482	0		244	$183,049,311	0						0	0
	Balance of Gallatin County	98.87	2,605.7		207	$963,139,971	0	$0	18,466	$5,335,894,391	711	$176,547,561	3,057	$1,570,724,660	264	$116,109,147	3,013.8	611.8	358.6	2,043.3	4	0
4	**Garfield County**	223.26	4,843.5	4.6%	1	$2,417	0	$0	558	$40,352,973	46	$3,518,331	828	$98,380,657	43	$4,876,578	109.9	24.3	25.5	60.1	0	0
	Jordan town	0.04	0.3	10.9%	0	$0	0	$0	257	$15,353,948	19	$849,733	31	$4,176,477	0		45.4	10.0	10.5	24.8	0	0
	Balance of Garfield County	223.22	4,843.1		1	$2,417	0	$0	301	$24,999,025	27	$2,668,598	797	$94,204,180	43	$4,876,578	64.5	14.3	15.0	35.3	0	0
2	**Glacier County**	96.48	3,034.9	3.2%	4	$166,089	0	$0	2,176	$173,809,579	90	$5,725,093	1,208	$513,342,768	72	$21,811,492	355.2	85.2	113.7	156.3	0	0
	Browning town	0.06	0.3	21.5%	0	$0	0	$0	207	$8,297,087	64	$2,570,682	61	$9,037,744	7	$1,983,274	196.5	61.3	22.8	112.4	0	0
	Cut Bank city	0.00	1.2	0.3%	0	$0	0	$0	1,122	$90,953,194	0		151	$37,600,597	0						0	0
	Balance of Glacier County	96.41	3,033.4		4	$166,089	0	$0	847	$74,559,298	26	$3,154,411	996	$466,704,427	65	$19,828,218	158.8	23.9	90.9	43.9	0	0
5	**Golden Valley County**	35.48	1,174.1	3.0%	0	$0	0	$0	288	$22,545,552	12	$1,090,412	240	$51,388,053	26	$4,670,604	27.5	5.4	7.4	14.6	0	0
	Lavina town	0.38	1.0	37.2%	0	$0	0	$0	91	$7,521,010	0		15	$1,533,018	1	$81,550					0	0
	Ryegate town	0.17	0.8	23.0%	0	$0	0	$0	141	$10,234,886	5	$381,898	15	$1,769,218	2	$177,910	11.5	2.2	3.1	6.1	0	0
	Balance of Golden Valley County	34.93	1,172.4		0	$0	0	$0	56	$4,789,656	7	$708,514	210	$48,085,817	23	$4,411,144	16.0	3.1	4.3	8.5	0	0
1	**Granite County**	36.67	1,730.9	2.1%	0	$0	0	$0	1,604	$210,828,137	152	$18,249,972	530	$156,924,788	36	$13,842,389	453.3	73.0	133.7	246.6	4	0
	Drummond town	0.30	0.5	55.0%	0	$0	0	$0	144	$11,391,136	30	$2,618,922	48	$5,493,281	3	$524,824	162.1	26.1	47.8	88.2	0	0
	Philipsburg town	0.01	0.8	1.0%	0	$0	0	$0	503	$53,845,654	1	$83,391	77	$16,673,401	0		2.2	0.4	0.6	1.2	0	0
	Balance of Granite County	36.36	1,729.5		0	$0	0	$0	957	$145,591,347	121	$15,547,659	405	$134,758,106	33	$13,317,565	289.1	46.5	85.3	157.3	4	0
2	**Hill County**	159.27	2,915.3	5.5%	19	$55,432,027	0	$0	6,281	$754,306,279	1,152	$117,144,721	2,439	$478,811,374	266	$62,924,716	3,203.3	880.9	464.5	1,857.9	4	2
	Havre city	0.54	3.4	15.8%	0	$0	0	$0	2,954	$365,822,286	613	$64,504,993	390	$113,681,709	120	$41,006,384	1,785.8	491.1	258.9	1,035.7	0	0
	Hingham town	0.00	0.2	0.0%	0	$0	0	$0	165	$13,864,635	0		27	$3,866,422	0						0	0
	Balance of Hill County	158.72	2,911.7		19	$55,432,027	0	$0	3,162	$374,619,358	539	$52,639,728	2,022	$361,263,243	146	$21,918,332	1,417.6	389.8	205.5	822.2	4	0
3	**Jefferson County**	30.73	1,657.8	1.9%	14	$15,148,292	1	$130,509	4,016	$744,240,161	187	$17,018,355	694	$117,529,005	45	$5,616,417	497.0	99.9	102.4	294.7	7	2
	Boulder town	0.23	1.1	20.3%	0	$0	1	$130,509	356	$36,918,541	68	$5,902,883	47	$6,824,156	7	$467,487	170.7	34.3	35.2	101.2	3	2
	Whitehall town	0.17	0.7	23.6%	0	$0	0	$0	325	$32,838,125	42	$3,421,611	47	$9,146,159	2	$272,134	105.4	21.2	21.7	62.5	0	0
	Balance of Jefferson County	30.33	1,656.0		14	$15,148,292	0	$0	3,335	$674,483,495	77	$7,693,861	600	$101,558,690	36	$4,876,796	220.9	44.4	45.5	131.0	4	0
6	**Judith Basin County**	25.87	1,868.3	1.4%	0	$0	0	$0	783	$67,357,916	4	$466,088	682	$119,016,564	25	$3,796,733	8.7	1.6	2.1	5.0	0	0
	Hobson town	0.00	0.2	0.0%	0	$0	0	$0	116	$11,542,201	0		21	$3,191,010	0						0	0
	Stanford town	0.00	0.4	0.0%	0	$0	0	$0	248	$24,191,487	0		49	$6,993,739	0						0	0
	Balance of Judith Basin County	25.87	1,867.6		0	$0	0	$0	419	$31,624,228	4	$466,088	612	$108,831,815	25	$3,796,733	8.7	1.6	2.1	5.0	0	0
1	**Lake County**	193.19	1,652.1	11.7%	16	$14,144,458	0	$0	16,679	$3,044,070,013	376	$72,211,394	4,157	$907,884,902	71	$12,237,337	894.9	217.5	184.3	493.1	0	0
	Polson city	0.21	4.3	4.9%	0	$0	0	$0	1,550	$239,716,220	5	$1,034,412	307	$110,486,890	0		11.9	2.9	2.5	6.6	0	0
	Ronan city	0.02	1.1	2.0%	0	$0	0	$0	498	$51,240,897	0		188	$43,266,142	0						0	0
	St. Ignatius town	0.05	0.5	9.2%	0	$0	0	$0	227	$24,362,098	5	$516,771	33	$6,506,490	0		11.9	2.9	2.5		0	0
	Balance of Lake County	192.91	1,646.2		16	$14,144,458	0	$0	14,404	$2,728,750,798	366	$70,660,211	3,629	$747,625,380	71	$12,237,337	871.1	211.7	179.4	480.0	0	0
3	**Lewis and Clark County**	96.82	3,493.5	2.8%	77	$528,411,633	12	$49,522,714	28,356	$4,838,187,380	2,079	$277,964,325	2,990	$1,486,292,152	247	$158,421,506	6,389.0	1,362.3	1,198.3	3,828.3	15	5
	East Helena town	0.47	4.1	11.6%	0	$0	0	$0	778	$95,292,980	80	$8,133,748	55	$16,849,629	13	$2,419,042	347.5	75.1	61.5	210.9	0	0
	Helena city	0.55	16.5	3.3%	0	$0	2	$38,110,264	10,487	$2,070,264,423	250	$49,731,754	1,613	$1,127,469,517	107	$127,596,374	1,616.0	349.1	286.0	980.9	8	2
	Balance of Lewis & Clark County	95.80	3,472.8		77	$528,411,633	10	$11,412,450	17,091	$2,672,629,977	1,749	$220,098,823	1,322	$341,973,006	127	$28,406,090	4,425.5	938.2	850.8	2,636.5	7	0
2	**Liberty County**	58.32	1,446.4	4.0%	3	$203,754	0	$0	540	$55,198,775	96	$8,075,803	727	$148,145,426	77	$11,756,609	241.9	53.0	47.7	141.3	0	0
	Chester town	0.11	0.5	22.8%	0	$0	0	$0	347	$38,384,265	89	$7,514,841	85	$11,176,620	34	$4,140,429	224.3	49.1	44.2	131.0	0	0
	Balance of Liberty County	58.21	1,445.9		3	$203,754	0	$0	193	$16,814,510	7	$560,962	642	$136,968,806	43	$7,616,180	17.6	3.9	3.5	10.3	0	0
1	**Lincoln County**	65.49	3,673.2	1.8%	5	$2,732,131	0	$0	14,201	$1,669,255,057	1,030	$108,361,789	4,037	$814,443,340	148	$32,169,912	2,276.3	418.8	607.8	1,249.7	0	0
	Eureka town	0.15	1.0	14.7%	0	$0	0	$0	576	$49,995,833	7	$463,032	79	$16,254,364	0		15.5	2.8	4.1	8.5	0	0
	Libby city	0.22	1.7	13.3%	0	$0	0	$0	1,887	$171,393,838	186	$18,363,014	407	$97,831,857	15	$1,323,277	411.1	75.6	109.8	225.7	0	0
	Rexford town	0.00	0.1	0.0%	0	$0	0	$0	62	$5,237,363	0		7	$1,125,453	0						0	0
	Troy city	0.03	0.7	5.0%	0	$0	0	$0	543	$42,346,210	8	$590,357	99	$14,488,626	3	$277,727	17.7	3.3	4.7		0	0
	Balance of Lincoln County	65.08	3,669.7		5	$2,732,131	0	$0	11,133	$1,400,281,813	829	$88,945,386	3,445	$684,743,040	130	$30,568,908	1,832.1	337.1	489.2	1,005.8	0	0
3	**Madison County**	95.40	3,602.4	2.6%	3	$270,203	1	$236,979	4,154	$804,105,665	436	$62,723,128	1,301	$368,696,283	186	$48,498,604	972.3	152.6	278.1	541.6	9	2
	Ennis town	0.03	0.6	4.7%	0	$0	0	$0	533	$84,019,269	12	$1,786,462	85	$24,326,354	7	$1,907,962	26.8	4.2	7.7	14.9	0	0
	Sheridan town	0.05	1.0	4.5%	2	$59,996	0	$0	1,971	$206,039,798	10	$1,162,633	54	$8,980,370	1	$33,410	22.3	3.5	6.4	12.4	0	0
	Twin Bridges town	0.71	1.0	70.4%	0	$0	0	$0	232	$25,593,322	186	$19,745,996	47	$8,125,500	44	$7,541,016	414.8	65.1	118.6	231.0	0	0
	Virginia City town	0.01	0.9	1.4%	0	$0	1	$236,979	167	$26,178,533	0		30	$5,366,969	0						1	1
	Balance of Madison County	94.60	3,598.8		1	$210,207	0	$0	1,251	$462,274,743	228	$40,028,037	1,085	$321,897,090	134	$39,016,216	508.4	79.8	145.4	283.2	8	0
4	**McCone County**	131.13	2,679.2	4.9%	3	$141,360	0	$0	532	$44,530,155	14	$1,263,733	679	$82,125,293	44	$5,055,017	32.3	6.7	7.1	18.6	3	1
	Circle town	0.09	0.8	11.8%	0	$0	0	$0	335	$27,003,251	2	$154,585	66	$14,581,192	0		4.6	1.0	1.0	2.7	0	0
	Balance of McCone County	131.04	2,678.4		3.0	$141,360	0	$0	197	$17,526,904	12	$1,109,148	613	$67,544,101	44	$5,055,017	27.7	5.7	6.1	15.9	3	0

APPENDIX B-4. VULNERABILITY ASSESSMENT DOCUMENTATION - FLOODING

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Flood sq. miles	Total sq. miles	Percent Flood sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Flood Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Flood Hazard Area	Residential Exposure in Flood Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Flood Hazard Area	CAI Exposure in Flood Hazard Area	Total Population in Hazard Area	<18 in Flood Hazard Area	>65 in Flood Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
3	**Meagher County**	29.57	2,392.1	1.2%	0	$0	0	$0	1,199	$128,110,116	51	$4,251,298	412	$92,624,757	25	$3,764,885	126.0	22.5	34.6	68.8	0	0
	White Sulphur Springs city	0.00	1.0	0.5%	0	$0	0	$0	630	$61,212,327	2	$210,798	45	$6,869,617	0		4.9	0.9	1.4	2.7	0	0
	Balance of Meagher County	29.56	2,391.1		0	$0	0	$0	569	$66,897,789	49	$4,040,500	367	$85,755,140	25	$3,764,885	121.0	21.7	33.3	66.1	0	0
1	**Mineral County**	12.48	1,222.0	1.0%	0	$0	0	$0	2,023	$203,747,490	211	$28,279,240	404	$84,723,652	48	$12,320,415	651.5	115.3	187.0	349.2	2	0
	Alberton town	0.02	0.5	2.9%	0	$0	0	$0	197	$14,926,025	0		20	$2,465,222	2	$280,561					0	0
	Superior town	0.20	1.1	19.0%	0	$0	0	$0	381	$36,464,606	19	$2,186,807	72	$20,494,160	1	$97,531	50.7	9.0	14.6	27.2	0	0
	Balance of Mineral County	12.27	1,220.4		0	$0	0	$0	1,445	$152,356,859	192	$26,092,433	312	$61,764,270	45	$11,942,323	600.7	106.3	172.4	322.0	2	0
1	**Missoula County**	74.37	2,614.9	2.8%	203	$1,032,240,117	7	$2,170,263	16,873	$2,860,469,867	1,265	$253,146,901	1,421	$1,152,881,550	143	$117,968,849	8,027.7	1,517.7	1,312.1	5,197.9	13	2
	Missoula city	2.53	29.0	8.7%	190	$1,003,483,589	7	$2,170,263	4,975	$984,652,873	376	$99,075,432	470	$595,032,016	44	$66,853,999	5,520.7	1,033.8	946.1	3,540.8	8	1
	Balance of Missoula County	71.85	2,585.9		13	$28,756,528	0	$0	11,898	$1,875,816,994	889	$154,071,469	951	$557,849,534	99	$51,114,850	2,507.1	483.9	366.0	1,657.2	5	0
5	**Musselshell County**	71.00	1,869.6	3.8%	2	$45,908	0	$0	1,730	$148,155,396	183	$11,114,815	734	$146,591,301	62	$7,516,726	444.7	88.9	102.7	253.0	0	0
	Melstone town	0.00	0.6	0.0%	0	$0	0	$0	39	$2,012,685	0		7	$754,186	0						0	0
	Roundup city	0.22	1.3	16.8%	0	$0	0	$0	837	$63,457,673	131	$8,233,658	129	$18,353,849	11	$886,761	318.3	63.7	73.5	181.1	0	0
	Balance of Musselshell County	70.79	1,867.7		2	$45,908	0	$0	854	$82,685,038	52	$2,881,157	598	$127,483,266	51	$6,629,965	126.4	25.3	29.2	71.9	0	0
3	**Park County**	65.84	2,811.7	2.3%	4	$2,414,253	0	$0	6,087	$1,151,416,662	544	$104,597,495	1,680	$821,834,484	153	$56,583,752	1,240.3	232.0	262.9	745.4	3	2
	Clyde Park town	0.03	0.4	6.9%	0	$0	0	$0	134	$13,924,845	2	$519,866	23	$4,042,499	0		4.6	0.9	1.0	2.7	0	0
	Livingston city	1.46	5.7	25.5%	0	$0	0	$0	2,567	$392,434,781	183	$23,798,182	537	$198,955,646	45	$10,949,230	417.2	78.0	88.5	250.8	0	0
	Balance of Park County	64.36	2,805.6		4	$2,414,253	0	$0	3,386	$745,057,036	359	$80,279,447	1,120	$618,836,339	108	$45,634,522	818.5	153.1	173.5	491.9	3	0
6	**Petroleum County**	77.19	1,672.5	4.6%	0	$0	0	$0	184	$23,127,789	4	$174,970	204	$28,781,751	23	$4,044,680	9.2	1.7	2.2	5.3	0	0
	Winnett town	0.25	1.0	24.2%	0	$0	0	$0	148	$19,210,729	0		21	$2,591,917	0						0	0
	Balance of Petroleum County	76.94	1,671.5		0	$0	0	$0	36	$3,917,060	4	$174,970	183	$26,189,834	23	$4,044,680	9.2	1.7	2.2	5.3	0	0
6	**Phillips County**	315.87	5,208.5	6.1%	6	$1,661,730	0	$0	1,695	$155,044,408	405	$42,726,325	1,402	$250,190,823	272	$40,593,806	915.3	211.4	195.0	508.9	3	1
	Dodson town	0.00	0.2	0.0%	0	$0	0	$0	70	$2,222,512	0		5	$140,341	0						0	0
	Malta city	0.44	1.0	42.7%	0	$0	0	$0	996	$103,409,948	280	$29,990,979	144	$29,008,393	72	$12,340,104	632.8	146.2	134.8	351.8	0	0
	Saco town	0.02	0.3	6.1%	0	$0	0	$0	134	$6,873,752	0		15	$1,887,736	0						0	0
	Balance of Phillips County	315.41	5,207.0		6	$1,661,730	0	$0	495	$42,538,196	125	$12,735,346	1,238	$219,154,353	200	$28,253,702	282.5	65.3	60.2	157.1	3	0
2	**Pondera County**	62.53	1,640.4	3.8%	2	$60,957	0	$0	1,815	$200,092,707	51	$3,214,544	883	$265,160,665	40	$5,337,384	128.5	30.3	26.2	72.0	0	0
	Conrad city	0.01	1.2	0.9%	0	$0	0	$0	1,126	$122,656,189	31	$1,137,031	156	$57,675,177	4	$475,440	78.1	18.4	15.9	43.7	0	0
	Valier town	0.00	0.9	0.0%	0	$0	0	$0	295	$29,342,500	0		47	$8,582,116	0						0	0
	Balance of Pondera County	62.52	1,638.3		2	$60,957	0	$0	394	$48,094,018	20	$2,077,513	680	$198,903,372	36	$4,861,944	50.4	11.9	10.3	28.2	0	0
4	**Powder River County**	113.71	3,297.5	3.4%	2	$26,512	0	$0	350	$31,752,451	29	$2,190,738	642	$113,734,309	53	$5,765,263	63.5	10.9	15.8	36.8	0	0
	Broadus town	0.04	0.4	10.5%	0	$0	0	$0	218	$19,631,053	18	$1,105,896	71	$8,590,919	9	$1,108,880	39.4	6.8	9.8	22.9	0	0
	Balance of Powder River County	113.67	3,297.1		2	$26,512	0	$0	132	$12,121,398	11	$1,084,842	571	$105,143,390	44	$4,656,383	24.1	4.1	6.0	14.0	0	0
1	**Powell County**	53.53	2,329.6	2.3%	47	$139,753,982	0	$0	2,509	$325,066,746	132	$17,246,027	697	$217,400,046	69	$15,400,266	618.8	95.9	121.9	401.0	4	0
	Deer Lodge city	0.18	1.4	12.8%	0	$0	0	$0	1,455	$118,373,521	62	$4,642,528	160	$37,299,244	13	$1,827,656	189.0	29.3	37.2	122.5	2	0
	Balance of Powell County	53.35	2,328.2		47	$139,753,982	0	$0	1,054	$206,693,225	70	$12,603,499	537	$180,100,802	56	$13,572,610	429.8	66.6	84.7	278.5	2	0
4	**Prairie County**	44.40	1,740.2	2.6%	0	$0	0	$0	527	$28,742,376	2	$184,888	525	$56,615,772	24	$2,338,549	4.9	1.0	1.5	2.5	4	2
	Terry town	0.00	0.8	0.0%	0	$0	0	$0	382	$21,559,157	0		43	$3,618,679	0					0.0	0	0
	Balance of Prairie County	44.40	1,739.4		0	$0	0	$0	145	$7,183,219	2	$184,888	482	$52,997,093	24	$2,338,549	4.9	1.0	1.5	2.5	4	0
1	**Ravalli County**	61.81	2,398.2	2.6%	3	$1,079,777	1	$10,224	19,277	$3,692,614,691	759	$159,348,581	3,023	$930,619,898	202	$89,180,149	1,924.6	377.2	473.4	1,073.9	4	0
	Darby town	0.03	0.6	5.3%	0	$0	0	$0	455	$65,564,435	15	$1,146,931	20	$5,525,704	0		36.5	7.1	9.0	20.3	0	0
	Hamilton city	0.52	2.4	21.7%	0	$0	0	$0	2,371	$402,402,609	37	$12,252,738	207	$138,471,668	22	$20,911,665	143.4	28.1	35.3	80.0	0	0
	Pinesdale town	0.00	1.3	0.0%	0	$0	0	$0	163	$30,828,359	0		42	$6,383,047	0						0	0
	Stevensville town	0.00	1.0	0.3%	0	$0	0	$0	956	$165,432,372	0		64	$20,620,328	0						0	0
	Balance of Ravalli County	61.25	2,392.9		3	$1,079,777	1	$10,224	15,332	$3,028,386,916	707	$145,948,912	2,690	$759,619,151	180	$68,268,484	1,744.7	342.0	429.2	973.6	4	0
4	**Richland County**	158.98	2,101.9	7.6%	4	$1,434,990	0	$0	2,979	$516,039,930	352	$56,268,184	1,646	$420,114,426	118	$35,976,344	963.0	227.3	199.2	536.5	0	0
	Fairview town	0.08	0.8	10.0%	0	$0	0	$0	313	$29,368,800	17	$1,632,760	37	$7,407,985	5	$1,313,389	42.7	11.0	5.7	26.0	0	0
	Sidney city	0.28	2.4	11.3%	0	$0	0	$0	1,697	$319,755,649	246	$42,654,619	342	$108,260,768	24	$6,280,585	696.9	158.7	163.8	374.5	0	0
	Balance of Richland County	158.62	2,098.7		4	$1,434,990	0	$0	969	$166,915,481	89	$11,980,805	1,267	$304,445,673	89	$28,382,370	223.4	57.6	29.7	136.0	0	0
6	**Roosevelt County**	245.20	2,366.6	10.4%	4	$3,703,234	1	$2,417	2,085	$172,781,506	123	$11,501,280	1,674	$267,647,926	142	$17,896,550	552.8	156.3	134.7	261.8	2	1
	Bainville town	0.00	1.0	0.0%	0	$0	0	$0	116	$8,253,760	0		17	$1,186,389	0						0	0
	Brockton town	0.00	0.2	0.4%	0	$0	0	$0	21	$718,776	0		5	$430,537	0						0	0
	Culbertson town	0.08	0.5	15.7%	0	$0	0	$0	452	$46,606,757	25	$2,485,800	78	$11,849,589	4	$272,600	88.5	29.4	9.9	49.2	0	0
	Froid town	0.00	0.3	1.3%	0	$0	0	$0	127	$5,583,947	0		15	$809,020	0						0	0
	Poplar city	0.00	0.3	0.0%	0	$0	0	$0	239	$11,492,367	0		40	$3,179,375	0						0	0
	Wolf Point city	0.00	0.8	0.1%	0	$0	0	$0	746	$61,499,644	0		105	$12,969,709	0						0	0
	Balance of Roosevelt County	245.11	2,363.6		4	$3,703,234	1	$2,417	384	$38,626,255	98	$9,015,480	1,414	$237,223,307	138	$17,623,950	464.3	126.9	124.8	212.6	2	0
5	**Rosebud County**	171.50	5,020.4	3.4%	3	$125,417	0	$0	2,477	$239,021,461	443	$30,279,962	1,810	$213,766,468	205	$19,176,984	1,244.8	367.2	183.0	694.6	0	0
	Colstrip city	0.27	4.1	6.7%	0	$0	0	$0	980	$109,503,560	19	$2,459,289	250	$31,692,015	45	$1,273,061	53.4	15.8	7.8	29.8	0	0
	Forsyth city	0.28	1.2	24.0%	0	$0	0	$0	896	$75,056,501	265	$20,798,655	141	$26,550,423	6	$884,443	744.6	219.7	109.5	415.5	0	0
	Balance of Rosebud County	170.95	5,015.1		3	$125,417	0	$0	601	$54,461,400	159	$7,022,018	1,419	$155,524,030	154	$17,019,480	446.8	131.8	65.7	249.3	0	0
1	**Sanders County**	91.45	2,786.9	3.3%	0	$0	0	$0	4,955	$571,408,477	732	$104,637,583	1,849	$320,122,376	205	$38,551,934	2,475.4	430.8	764.1	1,280.5	0	0
	Hot Springs town	0.04	0.4	11.7%	0	$0	0	$0	343	$29,433,542	15	$1,296,399	53	$9,621,606	14	$3,950,197	57.5	10.3	16.4	30.7	0	0
	Plains town	0.03	0.6	4.9%	0	$0	0	$0	547	$44,751,633	37	$2,639,855	88	$17,655,569	0		154.7	27.8	44.1	82.8	0	0

APPENDIX B-4. VULNERABILITY ASSESSMENT DOCUMENTATION - FLOODING

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Flood sq. miles	Total sq. miles	Percent Flood sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Flood Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Flood Hazard Area	Residential Exposure in Flood Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Flood Hazard Area	CAI Exposure in Flood Hazard Area	Total Population in Hazard Area	<18 in Flood Hazard Area	>65 in Flood Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Thompson Falls city	0.18	1.6	11.5%	0	$0	0	$0	666	$67,891,731	93	$13,559,681	85	$16,866,473	31	$5,996,441	618.8	111.4	176.4	331.1	0	0
	Balance of Sanders County	91.19	2,784.4		0	$0	0	$0	3,399	$429,331,571	587	$87,141,648	1,623	$275,978,728	160	$28,605,296	1,644.5	281.2	527.3	835.9	0	0
6	**Sheridan County**	117.62	1,703.6	6.9%	2	$59,996	0	$0	1,971	$206,039,798	176	$19,840,841	1,503	$172,072,215	47	$4,025,324	380.2	80.2	81.4	218.6	0	0
	Medicine Lake town	0.05	0.4	11.5%	0	$0	0	$0	159	$9,705,581	2	$199,324	24	$1,200,353	0		4.3	0.9	0.9	2.5	0	0
	Outlook town	0.00	1.2	0.0%	0	$0	0	$0	44	$2,946,970	0		10	$552,096	0						0	0
	Plentywood city	0.17	1.3	13.0%	0	$0	0	$0	785	$88,640,393	155	$18,685,097	136	$18,201,885	3	$291,498	334.8	70.6	71.6	192.5	0	0
	Westby town	0.14	0.6	25.0%	0	$0	0	$0	102	$4,909,517	6	$160,868	15	$1,132,999	4	$309,612	13.0	2.7	2.8	7.5	0	0
	Balance of Sheridan County	117.26	1,700.1		2	$59,996	0	$0	881	$99,837,337	323	$38,165,746	1,318	$150,984,882	40	$3,424,214	697.7	147.2	149.3	401.2	0	0
1	**Silver Bow County**	13.64	718.0	1.9%	26	$227,661,811	0	$0	13,122	$1,426,148,334	266	$23,487,356	1,585	$807,024,197	53	$42,811,907	663.8	136.2	120.7	406.9	5	2
	Walkerville town	0.00	2.2	0.0%	0	$0	0	$0	342	$24,138,167	0		6	$334,643	0						1	0
	Butte-Silver Bow (remainder)	13.64	715.7		26	$227,661,811	0	$0	12,780	$1,402,010,167	266	$23,487,356	1,579	$806,689,554	53	$42,811,907	663.8	136.2	120.7	406.9	4	0
5	**Stillwater County**	64.74	1,804.7	3.6%	2	$100,729	0	$0	2,790	$487,586,815	387	$62,839,998	943	$192,170,926	101	$24,249,080	944.3	202.5	283.6	458.2	0	0
	Columbus town	0.42	1.3	32.6%	0	$0	0	$0	448	$58,806,556	35	$4,620,071	97	$44,373,190	9	$6,557,926	85.4	18.4	18.3	48.8	0	0
	Balance of Stillwater County	64.32	1,803.4		2	$100,729	0	$0	2,342	$428,780,259	352	$58,219,927	846	$147,797,736	92	$17,691,154	858.9	184.1	265.3	409.5	0	0
3	**Sweet Grass County**	40.70	1,860.9	2.2%	1	$100,000	0	$0	1,559	$263,525,756	77	$17,429,508	1,251	$384,985,550	155	$53,762,274	195.8	40.4	48.2	107.2	0	0
	Big Timber city	0.04	1.0	4.0%	0	$0	0	$0	772	$99,628,903	2	$329,237	157	$34,833,465	0		5.1	1.1	1.3	2.8	0	0
	Balance of Sweet Grass County	40.66	1,860.0		1	$100,000	0	$0	787	$163,896,853	75	$17,100,271	1,094	$350,152,085	155	$53,762,274	190.7	39.4	46.9	104.4	0	0
2	**Teton County**	86.73	2,289.5	3.8%	2	$60,957	0	$0	1,834	$226,386,656	46	$5,721,465	1,107	$240,507,233	44	$10,731,607	115.0	27.1	26.0	61.9	1	0
	Choteau city	0.07	1.5	4.8%	0	$0	0	$0	743	$81,363,094	16	$1,346,160	102	$23,811,077	1	$48,600	40.0	9.4	9.0	21.5	0	0
	Dutton town	0.00	0.4	0.0%	0	$0	0	$0	159	$17,819,673	0		30	$5,356,644	0						0	0
	Fairfield town	0.00	0.3	0.0%	0	$0	0	$0	266	$30,208,145	0		46	$13,369,957	0						0	0
	Balance of Teton County	86.66	2,287.4		2	$60,957	0	$0	666	$96,995,744	30	$4,375,305	929	$197,969,555	43	$10,683,007	75.0	17.7	17.0	40.4	1	0
2	**Toole County**	76.66	1,943.9	3.9%	3	$124,825	0	$0	1,702	$149,272,962	244	$15,198,673	806	$214,874,251	51	$9,035,552	793.0	149.1	134.0	509.9	2	1
	Kevin town	0.12	0.4	31.8%	0	$0	0	$0	101	$4,284,353	3	$336,378	9	$317,749	2	$22,150	6.7	1.3	1.1	4.3	0	0
	Shelby city	1.13	5.9	19.1%	0	$0	0	$0	1,175	$110,467,515	239	$14,650,845	196	$76,850,372	28	$5,482,013	781.8	147.0	132.1	502.7	0	0
	Sunburst town	0.29	2.0	14.4%	0	$0	0	$0	208	$12,619,612	0		25	$3,026,807	0						0	0
	Balance of Toole County	75.12	1,935.5		3	$124,825	0	$0	218	$21,901,482	2	$211,450	576	$134,679,323	21	$3,531,389	4.5	0.8	0.8	2.9	2	0
5	**Treasure County**	58.31	983.5	5.9%	1	$250,000	0	$0	194	$12,369,442	24	$807,559	362	$46,827,867	72	$7,516,399	55.2	10.2	15.3	29.8	2	1
	Hysham town	0.04	0.2	15.2%	0	$0	0	$0	159	$9,401,270	18	$512,099	20	$2,281,485	3	$252,049	41.4	7.6	11.5	22.3	0	0
	Balance of Treasure County	58.27	983.2		1	$250,000	0	$0	35	$2,968,172	6	$295,460	342	$44,546,382	69	$7,264,350	13.8	2.5	3.8	7.4	2	0
6	**Valley County**	321.49	5,058.5	6.4%	7	$2,929,498	0	$0	2,863	$365,588,943	110	$13,067,751	1,209	$208,523,811	109	$26,606,182	248.6	55.9	55.7	137.0	0	0
	Fort Peck town	0.00	0.9	0.0%	0	$0	0	$0	118	$21,485,471	0		10	$2,092,827	0						0	0
	Glasgow city	0.02	1.4	1.7%	0	$0	0	$0	1,353	$173,782,829	5	$622,905	217	$55,123,436	0		11.3	2.5	2.5	6.2	0	0
	Nashua town	0.22	0.7	30.8%	0	$0	0	$0	200	$13,107,033	32	$2,408,174	17	$1,596,474	8	$474,383	72.3	16.3	16.2	39.8	0	0
	Opheim town		0.2	0.0%	0	$0	0	$0	76	$3,977,464	0		14	$1,365,742	0					0.0	0	0
	Balance of Valley County	321.25	5,055.3		7	$2,929,498	0	$0	1,116	$153,236,146	73	$10,036,672	951	$148,345,332	101	$26,131,799	165.0	37.1	37.0	90.9	0	0
5	**Wheatland County**	48.22	1,425.9	3.4%	3	$1,816,266	0	$0	850	$65,290,360	77	$4,212,931	392	$102,480,647	53	$8,088,923	180.2	41.4	45.0	93.7	0	0
	Harlowton city	0.12	0.6	19.1%	0	$0	0	$0	569	$43,661,633	39	$1,858,465	81	$8,532,547	0		91.3	21.0	22.8	47.5	0	0
	Judith Gap city	0.00	0.3	0.0%	0	$0	0	$0	89	$5,833,159	0		10	$1,334,639	0						0	0
	Balance of Wheatland County	48.11	1,425.0		3	$1,816,266	0	$0	192	$15,795,568	38	$2,354,466	301	$92,613,461	53	$8,088,923	88.9	20.5	22.2	46.2	0	0
4	**Wibaux County**	21.45	888.1	2.4%	0	$0	0	$0	318	$24,265,482	19	$1,323,148	518	$58,984,045	16	$894,538	40.9	8.8	10.3	21.7	0	0
	Wibaux town	0.19	1.1	17.4%	0	$0	0	$0	290	$20,843,967	15	$1,004,468	54	$4,948,635	7	$173,290	32.3	7.0	8.2	17.1	0	0
	Balance of Wibaux County	21.26	887.0		0	$0	0	$0	28	$3,421,515	4	$318,680	464	$54,035,410	9	$721,248	8.6	1.9	2.2	4.6	0	0
5	**Yellowstone County**	127.80	2,646.8	4.8%	19	$148,531,721	1	$2,835,741	58,853	$10,961,976,827	3,606	$541,930,992	5,429	$4,499,091,639	478	$513,458,301	9,359.4	2,141.6	1,722.4	5,495.4	10	1
	Billings city	3.26	43.0	7.6%	0	$0	1	$2,835,741	41,447	$7,866,273,265	2,079	$329,279,111	3,014	$3,285,025,446	178	$342,581,590	5,419.8	1,235.1	1,015.4	3,169.2	4	0
	Broadview town	0.00	0.2	0.0%	0	$0	0	$0	79	$9,621,070	0		10	$2,904,982	0						0	0
	Laurel city	0.16	2.1	7.3%	0	$0	0	$0	2,701	$394,711,073	78	$2,164,881	187	$100,223,386	15	$8,487,187	190.3	44.7	30.8	114.8	0	0
	Balance of Yellowstone County	124.38	2,601.4		19	$148,531,721	0	$0	14,626	$2,691,371,419	1,449	$210,487,000	2,218	$1,110,937,825	285	$162,389,524	3,749.3	861.8	676.1	2,211.4	6	0

APPENDIX B-4. CRITICAL FACILITIES IN FLOOD HAZARD AREA

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Broadwater	TOSTON	DEPARTMENT OF NATURAL RESOURCES	Toston Dam Power House	Toston Dam Road	46.120486	-111.407744	$25,562,814
Broadwater	TOSTON	DEPARTMENT OF NATURAL RESOURCES	Toston Dam Rubber Dams	Toston Dam Road	46.120029	-111.408265	$1,984,136
Broadwater	TOSTON	DEPARTMENT OF NATURAL RESOURCES	Toston Dam Sub-station	Toston Dam Road	46.120675	-111.407478	$1,491,948
Custer	MILES CITY	DEPARTMENT OF TRANSPORTATION	Miles City Office/Shop II	217 N. 4th Street	46.407820	-105.855277	$2,399,029
Custer	MILES CITY	DEPARTMENT OF MILITARY AFFAIRS	Miles City Readiness Center	1020 N Haynes Ave.	46.417707	-105.821563	$12,536,969
Deer Lodge	ANACONDA	DEPARTMENT OF FISH, WILDLIFE & PARKS	Washoe Park Hatchery - Building - Creek Water Intake	600 West Pennsylvania St.	46.133154	-112.956521	$52,023
Gallatin	THREE FORKS	DEPARTMENT OF FISH, WILDLIFE & PARKS	Lewis & Clark Caverns SP - Building - Visitor Center w/Restroom	19 miles W of Three Forks on MT 2	45.892190	-111.549275	$251,183
Jefferson	HELENA	UNIVERSITY SYSTEM, HELENA COLLEGE UNIVERSITY OF MONTANA	Maintenance Shop	1115 North Sanders	46.230679	-112.114069	$130,509
Lewis & Clark	HELENA	DEPARTMENT OF AGRICULTURE	Leased - Ag Development/Ag Stats	10 West 15th Street	46.596863	-112.034572	$7,683
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Aspen Cottage	2260 Sierra Rd. East	46.661992	-111.976799	$588,381
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Cafeteria	2260 Sierra Rd. East	46.662438	-111.974988	$647,819
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Clinic Building	2260 Sierra Rd. East	46.660804	-111.974898	$219,692
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Cottonwood Cottage	2260 Sierra Rd. East	46.661897	-111.973486	$690,318
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Gymnasium	2260 Sierra Rd. East	46.662120	-111.974074	$655,664
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Maple Cottage No. 2	2260 Sierra Rd. East	46.662523	-111.973780	$2,190,662
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Pump House	2260 Sierra Rd. East	46.662778	-111.976659	$72,092
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - School Building & Administration	2260 Sierra Rd. East	46.662789	-111.974864	$2,183,940
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Water Tank & Tower	2260 Sierra Rd. East	46.662587	-111.976984	$389,651
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA Training Facility	2260 SIERRA ROAD EAST	46.662630	-111.975715	$3,774,231
Lewis & Clark	HELENA	STATE FUND	Montana State Fund Building	855 Front Street	46.596000	-112.035346	$38,102,581
Madison	VIRGINIA CITY	MONTANA HERITAGE COMMISSION	McFarland Curatorial Center	Curatorial Addition to Townsite	45.295334	-111.952874	$236,979
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	601 S Fifth E	601 S Fifth E.	46.864982	-113.988924	$506,291
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	615 S Fifth E	615 S Fifth E.	46.864978	-113.988604	$302,549
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	625 S Fifth E	625 S Fifth E.	46.864978	-113.988361	$330,673
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	633 S Fifth E	633 S Fifth E.	46.864978	-113.988122	$419,935
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	639 S. Fifth East	639 S. Fifth East	46.864967	-113.987911	$103,559
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	645 S Fifth E	645 S Fifth E.	46.864967	-113.987731	$297,664
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	702 Arthur	702 Arthur	46.864908	-113.989187	$209,590
Ravalli	Hamilton	DEPARTMENT OF FISH, WILDLIFE & PARKS	Hamilton Airport Hanger - Building	309 Airport Rd.	46.252292	-114.127114	$10,224
Roosevelt	WOLF POINT	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Wolf Point	48 deg - 6' - 16.0" N, 105 deg - 36' - 5.0" W	48.096489	-105.574838	$2,417
Yellowstone	BILLINGS	DEPARTMENT OF TRANSPORTATION	Billings Office & Shop	424 Morey Lane	45.762288	-108.538285	$2,835,741

APPENDIX B-4. COUNTY PERCENT EXPOSURE RANKING - FLOODING									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	County	Census 2010	2016 Est	% Population Change	Building Permits	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
1	4	Custer County	11,699	11,924	1.89%	0	$362,333,101	43.72%	0.83%
2	6	Phillips County	4,253	4,133	-2.90%	2	$83,320,131	20.56%	-0.60%
3	2	Blaine County	6,491	6,601	1.67%	0	$79,415,291	16.65%	0.28%
4	1	Sanders County	11,413	11,534	1.05%	0	$143,189,517	16.06%	0.17%
5	2	Hill County	16,096	16,542	2.70%	4	$180,069,437	14.60%	0.39%
6	1	Mineral County	4,223	4,184	-0.93%	1	$40,599,655	14.07%	-0.13%
7	5	Treasure County	718	692	-3.76%	0	$8,323,958	14.06%	-0.53%
8	2	Chouteau County	5,813	5,759	-0.94%	10	$53,198,972	12.89%	-0.12%
9	5	Stillwater County	9,117	9,406	3.07%	0	$87,089,078	12.81%	0.39%
10	3	Beaverhead County	9,246	9,401	1.65%	3	$108,235,070	12.36%	0.20%
11	5	Carbon County	10,078	10,460	3.65%	8	$137,017,022	11.18%	0.41%
12	3	Sweet Grass County	3,651	3,623	-0.77%	1	$71,191,782	10.98%	-0.08%
13	5	Rosebud County	9,233	9,287	0.58%	1	$49,456,946	10.92%	0.06%
14	5	Big Horn County	12,865	13,343	3.58%	2	$56,926,471	10.36%	0.37%
15	2	Cascade County	81,327	81,755	0.52%	242	$702,460,413	10.17%	0.05%
16	4	Richland County	9,746	11,482	15.12%	16	$92,244,528	9.85%	1.49%
17	2	Liberty County	2,339	2,409	2.91%	NA	$19,832,412	9.75%	0.28%
18	1	Flathead County	90,928	98,082	7.29%	316	$1,183,865,377	9.52%	0.69%
19	3	Madison County	7,691	7,924	2.94%	7	$111,221,732	9.48%	0.28%
20	1	Missoula County	109,299	116,130	5.88%	930	$371,115,750	9.25%	0.54%
21	1	Granite County	3,079	3,368	8.58%	NA	$32,092,361	8.73%	0.75%
22	3	Park County	15,636	16,114	2.97%	44	$161,181,247	8.17%	0.24%
23	6	Petroleum County	494	489	-1.02%	NA	$4,219,650	8.13%	-0.08%
24	5	Golden Valley County	884	831	-6.38%	NA	$5,761,016	7.79%	-0.50%
25	5	Wheatland County	2,168	2,117	-2.41%	NA	$12,301,854	7.33%	-0.18%
26	6	Valley County	7,369	7,539	2.25%	4	$39,673,933	6.91%	0.16%
27	6	Fergus County	11,586	11,413	-1.52%	1	$66,210,125	6.90%	-0.10%
27	3	Lewis and Clark County	63,395	67,282	5.78%	176	$436,385,831	6.90%	0.40%
28	5	Yellowstone County	147,972	158,437	6.61%	1,198	$1,055,389,293	6.83%	0.45%
29	6	Roosevelt County	10,425	11,305	7.78%	1	$29,397,830	6.67%	0.52%
30	2	Toole County	5,324	4,977	-6.97%	2	$24,234,225	6.66%	-0.46%
31	4	Dawson County	8,966	9,327	3.87%	1	$36,468,412	6.38%	0.25%
32	5	Musselshell County	4,538	4,589	1.11%	1	$18,631,541	6.32%	0.07%
33	6	Sheridan County	3,384	3,648	7.24%	2	$23,866,165	6.31%	0.46%
34	4	Carter County	1,160	1,203	3.57%	1	$8,448,496	6.12%	0.22%
35	4	Garfield County	1,206	1,310	7.94%	0	$8,394,909	6.05%	0.48%
36	1	Deer Lodge County	9,298	9,085	-2.34%	17	$30,696,285	6.02%	-0.14%
37	0	Powell County	7,027	6,858	-2.46%	32	$32,646,293	6.02%	-0.15%
38	1	Lincoln County	19,687	19,259	-2.22%	8	$140,531,701	5.66%	-0.13%
39	4	Powder River County	1,743	1,746	0.17%	NA	$7,956,001	5.47%	0.01%
40	1	Ravalli County	40,212	42,088	4.46%	20	$248,528,730	5.38%	0.24%
41	4	McCone County	1,734	1,700	-2.00%	0	$6,318,750	4.99%	-0.10%
42	2	Glacier County	13,399	13,694	2.15%	0	$27,536,585	4.01%	0.09%
43	3	Meagher County	1,891	1,827	-3.50%	NA	$8,016,183	3.63%	-0.13%
44	2	Teton County	6,073	6,056	-0.28%	1	$16,453,072	3.52%	-0.01%
45	3	Broadwater County	5,612	5,747	2.35%	0	$22,281,255	3.31%	0.08%
46	1	Silver Bow County	34,200	34,553	1.02%	86	$66,299,263	2.97%	0.03%
47	4	Prairie County	1,179	1,182	0.25%	NA	$2,523,437	2.96%	0.01%
48	3	Gallatin County	89,513	104,502	14.34%	1,550	$424,781,393	2.81%	0.40%
49	4	Wibaux County	1,017	1,093	6.95%	8	$2,217,686	2.66%	0.19%
50	3	Jefferson County	11,406	11,853	3.77%	5	$22,634,772	2.63%	0.10%
51	6	Judith Basin County	2,072	1,940	-6.80%	NA	$4,262,821	2.29%	-0.16%
52	1	Lake County	28,746	29,758	3.40%	44	$84,448,731	2.14%	0.07%
53	2	Pondera County	6,153	6,084	-1.13%	1	$8,551,928	1.84%	-0.02%
54	4	Fallon County	2,890	3,120	7.37%	35	$4,165,214	1.50%	0.11%
55	6	Daniels County	1,751	1,755	0.23%	0	$2,134,718	1.22%	0.00%

APPENDIX B-4. COUNTY PERCENT EXPOSURE X POPULATION CHANGE RANKING - FLOODING									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	**DES District**	**County**	**Census 2010**	**2016 Est**	**% Population Change**	**Building Permits**	**Total Exposure (Residential + Other)**	**% Hazard Exposure / Total Exposure**	**Vulnerability Factor (% Exposure x % Population Change)**
1	4	Richland County	9,746	11,482	15.12%	16	$92,244,528	9.85%	1.49%
2	4	Custer County	11,699	11,924	1.89%	0	$362,333,101	43.72%	0.83%
3	1	Granite County	3,079	3,368	8.58%	NA	$32,092,361	8.73%	0.75%
4	1	Flathead County	90,928	98,082	7.29%	316	$1,183,865,377	9.52%	0.69%
5	1	Missoula County	109,299	116,130	5.88%	930	$371,115,750	9.25%	0.54%
6	6	Roosevelt County	10,425	11,305	7.78%	1	$29,397,830	6.67%	0.52%
7	4	Garfield County	1,206	1,310	7.94%	0	$8,394,909	6.05%	0.48%
8	6	Sheridan County	3,384	3,648	7.24%	2	$23,866,165	6.31%	0.46%
9	5	Yellowstone County	147,972	158,437	6.61%	1,198	$1,055,389,293	6.83%	0.45%
10	5	Carbon County	10,078	10,460	3.65%	8	$137,017,022	11.18%	0.41%
11	3	Gallatin County	89,513	104,502	14.34%	1,550	$424,781,393	2.81%	0.40%
11	3	Lewis and Clark County	63,395	67,282	5.78%	176	$436,385,831	6.90%	0.40%
12	2	Hill County	16,096	16,542	2.70%	4	$180,069,437	14.60%	0.39%
12	5	Stillwater County	9,117	9,406	3.07%	0	$87,089,078	12.81%	0.39%
13	5	Big Horn County	12,865	13,343	3.58%	2	$56,926,471	10.36%	0.37%
14	2	Liberty County	2,339	2,409	2.91%	NA	$19,832,412	9.75%	0.28%
14	3	Madison County	7,691	7,924	2.94%	7	$111,221,732	9.48%	0.28%
14	2	Blaine County	6,491	6,601	1.67%	0	$79,415,291	16.65%	0.28%
15	4	Dawson County	8,966	9,327	3.87%	1	$36,468,412	6.38%	0.25%
16	3	Park County	15,636	16,114	2.97%	44	$161,181,247	8.17%	0.24%
16	1	Ravalli County	40,212	42,088	4.46%	20	$248,528,730	5.38%	0.24%
17	4	Carter County	1,160	1,203	3.57%	1	$8,448,496	6.12%	0.22%
18	3	Beaverhead County	9,246	9,401	1.65%	3	$108,235,070	12.36%	0.20%
19	4	Wibaux County	1,017	1,093	6.95%	8	$2,217,686	2.66%	0.19%
20	1	Sanders County	11,413	11,534	1.05%	0	$143,189,517	16.06%	0.17%
21	6	Valley County	7,369	7,539	2.25%	4	$39,673,933	6.91%	0.16%
22	4	Fallon County	2,890	3,120	7.37%	35	$4,165,214	1.50%	0.11%
23	3	Jefferson County	11,406	11,853	3.77%	5	$22,634,772	2.63%	0.10%
24	2	Glacier County	13,399	13,694	2.15%	0	$27,536,585	4.01%	0.09%
25	3	Broadwater County	5,612	5,747	2.35%	0	$22,281,255	3.31%	0.08%
26	1	Lake County	28,746	29,758	3.40%	44	$84,448,731	2.14%	0.07%
26	5	Musselshell County	4,538	4,589	1.11%	1	$18,631,541	6.32%	0.07%
27	5	Rosebud County	9,233	9,287	0.58%	1	$49,456,946	10.92%	0.06%
28	2	Cascade County	81,327	81,755	0.52%	242	$702,460,413	10.17%	0.05%
29	1	Silver Bow County	34,200	34,553	1.02%	86	$66,299,263	2.97%	0.03%
30	4	Powder River County	1,743	1,746	0.17%	NA	$7,956,001	5.47%	0.01%
30	4	Prairie County	1,179	1,182	0.25%	NA	$2,523,437	2.96%	0.01%
31	6	Daniels County	1,751	1,755	0.23%	0	$2,134,718	1.22%	0.00%
32	2	Teton County	6,073	6,056	-0.28%	1	$16,453,072	3.52%	-0.01%
33	2	Pondera County	6,153	6,084	-1.13%	1	$8,551,928	1.84%	-0.02%
34	6	Petroleum County	494	489	-1.02%	NA	$4,219,650	8.13%	-0.08%
35	3	Sweet Grass County	3,651	3,623	-0.77%	1	$71,191,782	10.98%	-0.08%
36	4	McCone County	1,734	1,700	-2.00%	0	$6,318,750	4.99%	-0.10%
37	6	Fergus County	11,586	11,413	-1.52%	1	$66,210,125	6.90%	-0.10%
38	2	Chouteau County	5,813	5,759	-0.94%	10	$53,198,972	12.89%	-0.12%
39	1	Lincoln County	19,687	19,259	-2.22%	8	$140,531,701	5.66%	-0.13%
39	3	Meagher County	1,891	1,827	-3.50%	NA	$8,016,183	3.63%	-0.13%
39	1	Mineral County	4,223	4,184	-0.93%	1	$40,599,655	14.07%	-0.13%
40	1	Deer Lodge County	9,298	9,085	-2.34%	17	$30,696,285	6.02%	-0.14%
41	0	Powell County	7,027	6,858	-2.46%	32	$32,646,293	6.02%	-0.15%
42	6	Judith Basin County	2,072	1,940	-6.80%	NA	$4,262,821	2.29%	-0.16%
43	5	Wheatland County	2,168	2,117	-2.41%	NA	$12,301,854	7.33%	-0.18%
44	2	Toole County	5,324	4,977	-6.97%	2	$24,234,225	6.66%	-0.46%
45	5	Golden Valley County	884	831	-6.38%	NA	$5,761,016	7.79%	-0.50%
46	5	Treasure County	718	692	-3.76%	0	$8,323,958	14.06%	-0.53%
47	6	Phillips County	4,253	4,133	-2.90%	2	$83,320,131	20.56%	-0.60%

APPENDIX B-4. CITY-TOWN PERCENT EXPOSURE RANKING - FLOODING									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	**DES District**	**City / Town**	**County**	**Census 2010**	**2016 Est**	**% Population Change**	**Total Exposure (Residential + Other)**	**% Hazard Exposure / Total Exposure**	**Vulnerability Factor (% Exposure x % Population Change)**
1	3	Twin Bridges town	Madison County	375	395	5.06%	$27,287,012	80.93%	4.10%
2	4	Miles City city	Custer County	8,410	8,647	2.74%	$300,020,611	64.10%	1.76%
3	3	Three Forks city	Gallatin County	1,869	1,944	3.86%	$67,735,177	53.92%	2.08%
4	2	Belt city	Cascade County	597	588	-1.53%	$6,832,589	47.63%	-0.73%
5	6	Denton town	Fergus County	255	247	-3.24%	$7,796,355	43.77%	-1.42%
6	2	Fort Benton city	Chouteau County	1,464	1,456	-0.55%	$46,925,630	38.53%	-0.21%
7	5	Fromberg town	Carbon County	438	445	1.57%	$6,569,946	38.21%	0.60%
8	6	Malta city	Phillips County	1,997	1,950	-2.41%	$42,331,083	31.97%	-0.77%
9	6	Grass Range town	Fergus County	110	108	-1.85%	$1,867,721	28.93%	-0.54%
10	2	Browning town	Glacier County	1,016	1,031	1.45%	$4,553,956	26.27%	0.38%
11	2	Chinook city	Blaine County	1,203	1,233	2.43%	$20,587,251	25.90%	0.63%
12	2	Chester town	Liberty County	847	884	4.19%	$11,655,270	23.52%	0.98%
13	1	Thompson Falls city	Sanders County	1,313	1,356	3.17%	$19,556,122	23.07%	0.73%
14	2	Havre city	Hill County	9,310	9,846	5.44%	$105,511,377	22.00%	1.20%
15	5	Forsyth city	Rosebud County	1,777	1,869	4.92%	$21,683,098	21.34%	1.05%
16	6	Nashua town	Valley County	290	290	0.00%	$2,882,557	19.60%	0.00%
17	1	Drummond town	Granite County	309	348	11.21%	$3,143,746	18.62%	2.09%
18	6	Plentywood city	Sheridan County	1,734	1,904	8.93%	$18,976,595	17.76%	1.59%
19	3	Lima town	Beaverhead County	221	224	1.34%	$1,704,016	17.43%	0.23%
20	4	Ekalaka town	Carter County	332	353	5.95%	$3,083,742	16.95%	1.01%
21	3	Boulder town	Jefferson County	1,183	1,230	3.82%	$6,370,370	14.56%	0.56%
22	2	Neihart town	Cascade County	51	50	-2.00%	$1,101,666	13.44%	-0.27%
23	1	Hot Springs town	Sanders County	544	557	2.33%	$5,246,596	13.43%	0.31%
24	4	Sidney city	Richland County	5,191	6,566	20.94%	$48,935,204	11.43%	2.39%
25	5	Roundup city	Musselshell County	1,788	1,840	2.83%	$9,120,419	11.15%	0.32%
26	5	Columbus town	Stillwater County	1,893	2,028	6.66%	$11,177,997	10.83%	0.72%
27	2	Shelby city	Toole County	3,376	3,216	-4.98%	$20,132,858	10.75%	-0.53%
28	1	Missoula city	Missoula County	66,788	72,364	7.71%	$165,929,431	10.50%	0.81%
29	6	Moore town	Fergus County	193	198	2.53%	$1,167,924	10.46%	0.26%
30	3	East Helena town	Lewis and Clark County	1,984	2,074	4.34%	$10,552,790	9.41%	0.41%
31	4	Ismay town	Custer County	19	21	9.52%	$160,960	9.27%	0.88%
32	3	Whitehall town	Jefferson County	1,038	1,114	6.82%	$3,693,745	8.80%	0.60%
33	6	Lewistown city	Fergus County	5,901	5,870	-0.53%	$37,333,456	8.74%	-0.05%
34	4	Glendive city	Dawson County	4,935	5,332	7.45%	$24,161,041	8.56%	0.64%
35	4	Fairview town	Richland County	840	922	8.89%	$2,946,149	8.01%	0.71%
36	4	Broadus town	Powder River County	468	481	2.70%	$2,214,776	7.85%	0.21%
37	2	Kevin town	Toole County	154	138	-11.59%	$358,528	7.79%	-0.90%
37	6	Westby town	Sheridan County	168	174	3.45%	$470,480	7.79%	0.27%
38	2	Great Falls city	Cascade County	58,505	59,178	1.14%	$386,334,251	7.65%	0.09%
39	1	Libby city	Lincoln County	2,628	2,678	1.87%	$19,686,291	7.31%	0.14%
40	5	Hysham town	Treasure County	312	301	-3.65%	$764,148	6.54%	-0.24%
41	1	Hamilton city	Ravalli County	4,348	4,674	6.97%	$33,164,403	6.13%	0.43%
42	5	Billings city	Yellowstone County	104,170	110,323	5.58%	$671,860,701	6.02%	0.34%
43	3	Livingston city	Park County	7,044	7,401	4.82%	$34,747,412	5.88%	0.28%
44	3	Helena city	Lewis and Clark County	28,190	31,169	9.56%	$177,328,128	5.55%	0.53%
45	5	Bearcreek town	Carbon County	79	84	5.95%	$309,756	4.83%	0.29%
46	6	Culbertson town	Roosevelt County	714	804	11.19%	$2,758,400	4.72%	0.53%
47	5	Ryegate town	Golden Valley County	245	236	-3.81%	$559,808	4.66%	-0.18%
48	1	Columbia Falls city	Flathead County	4,688	5,241	10.55%	$17,161,744	4.61%	0.49%
49	4	Wibaux town	Wibaux County	589	649	9.24%	$1,177,758	4.57%	0.42%
50	1	Kalispell city	Flathead County	19,927	22,761	12.45%	$106,600,472	4.56%	0.57%
51	4	Jordan town	Garfield County	343	399	14.04%	$849,733	4.35%	0.61%
52	1	Plains town	Sanders County	1,048	1,071	2.15%	$2,639,855	4.23%	0.09%
53	1	Deer Lodge city	Powell County	3,111	2,994	-3.91%	$6,470,184	4.16%	-0.16%
54	1	Superior town	Mineral County	812	826	1.69%	$2,284,338	4.01%	0.07%
55	1	Whitefish city	Flathead County	6,357	7,279	12.67%	$57,492,719	3.82%	0.48%
56	5	Red Lodge city	Carbon County	2,125	2,237	5.01%	$10,952,041	3.66%	0.18%
57	5	Harlowton city	Wheatland County	997	984	-1.32%	$1,858,465	3.56%	-0.05%
58	6	Winifred town	Fergus County	208	206	-0.97%	$464,260	3.53%	-0.03%
59	3	Ennis town	Madison County	838	890	5.84%	$3,694,424	3.41%	0.20%
60	5	Lodge Grass town	Big Horn County	428	446	4.04%	$854,370	3.06%	0.12%
61	1	Walkerville town	Silver Bow County	675	700	3.57%	$66,299,263	3.00%	0.11%
62	3	Clyde Park town	Park County	288	309	6.80%	$519,866	2.89%	0.20%
63	2	Harlem city	Blaine County	808	823	1.82%	$848,750	2.73%	0.05%
64	5	Colstrip city	Rosebud County	2,214	2,311	4.20%	$3,732,350	2.64%	0.11%

APPENDIX B-4. CITY-TOWN PERCENT EXPOSURE RANKING - FLOODING									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	**DES District**	**City / Town**	**County**	**Census 2010**	**2016 Est**	**% Population Change**	**Total Exposure (Residential + Other)**	**% Hazard Exposure / Total Exposure**	**Vulnerability Factor (% Exposure x % Population Change)**
65	4	Plevna town	Fallon County	162	176	7.95%	$375,823	2.50%	0.20%
66	3	Dillon city	Beaverhead County	4,134	4,257	2.89%	$4,387,251	2.20%	0.06%
67	5	Laurel city	Yellowstone County	6,718	6,865	2.14%	$10,652,068	2.15%	0.05%
68	5	Joliet town	Carbon County	595	640	7.03%	$581,966	1.96%	0.14%
69	6	Medicine Lake town	Sheridan County	225	241	6.64%	$199,324	1.83%	0.12%
70	1	St. Ignatius town	Lake County	842	824	-2.18%	$516,771	1.67%	-0.04%
71	1	Darby town	Ravalli County	720	763	5.64%	$1,146,931	1.61%	0.09%
71	1	Alberton town	Mineral County	420	417	-0.72%	$280,561	1.61%	-0.01%
72	1	Troy city	Lincoln County	938	890	-5.39%	$868,084	1.53%	-0.08%
73	2	Choteau city	Teton County	1,684	1,686	0.12%	$1,394,760	1.33%	0.00%
74	3	Bozeman city	Gallatin County	37,280	45,250	17.61%	$64,389,508	0.92%	0.16%
75	5	Lavina town	Golden Valley County	187	173	-8.09%	$81,550	0.90%	-0.07%
76	2	Conrad city	Pondera County	2,570	2,550	-0.78%	$1,612,471	0.89%	-0.01%
77	1	Eureka town	Lincoln County	1,037	1,086	4.51%	$463,032	0.70%	0.03%
78	3	Sheridan town	Madison County	642	677	5.17%	$1,196,043	0.56%	0.03%
79	3	Townsend city	Broadwater County	1,878	1,978	5.06%	$749,460	0.54%	0.03%
80	4	Circle town	McCone County	615	619	0.65%	$154,585	0.37%	0.00%
81	3	White Sulphur Springs city	Meagher County	939	908	-3.41%	$210,798	0.31%	-0.01%
82	1	Polson city	Lake County	4,488	4,777	6.05%	$1,034,412	0.30%	0.02%
83	6	Glasgow city	Valley County	3,250	3,364	3.39%	$622,905	0.27%	0.01%
84	3	Big Timber city	Sweet Grass County	1,641	1,645	0.24%	$329,237	0.24%	0.00%
85	5	Hardin city	Big Horn County	3,505	3,829	8.46%	$313,913	0.24%	0.02%
86	1	Philipsburg town	Granite County	820	920	10.87%	$83,391	0.12%	0.01%
87	6	Bainville town	Roosevelt County	208	314	33.76%	$0	0.00%	0.00%
87	4	Baker city	Fallon County	1,741	1,990	12.51%	$0	0.00%	0.00%
87	3	Belgrade city	Gallatin County	7,389	8,254	10.48%	$0	0.00%	0.00%
87	2	Big Sandy town	Chouteau County	598	590	-1.36%	$0	0.00%	0.00%
87	5	Bridger town	Carbon County	708	732	3.28%	$0	0.00%	0.00%
87	5	Broadview town	Yellowstone County	192	193	0.52%	$0	0.00%	0.00%
87	6	Brockton town	Roosevelt County	255	243	-4.94%	$0	0.00%	0.00%
87	2	Cascade town	Cascade County	685	688	0.44%	$0	0.00%	0.00%
87	2	Cut Bank city	Glacier County	2,869	3,012	4.75%	$0	0.00%	0.00%
87	6	Dodson town	Phillips County	124	124	0.00%	$0	0.00%	0.00%
87	2	Dutton town	Teton County	316	308	-2.60%	$0	0.00%	0.00%
87	2	Fairfield town	Teton County	708	922	23.21%	$0	0.00%	0.00%
87	6	Flaxville town	Daniels County	71	71	0.00%	$0	0.00%	0.00%
87	6	Fort Peck town	Valley County	233	247	5.67%	$0	0.00%	0.00%
87	6	Froid town	Roosevelt County	185	201	7.96%	$0	0.00%	0.00%
87	2	Geraldine town	Chouteau County	261	261	0.00%	$0	0.00%	0.00%
87	2	Hingham town	Hill County	118	122	3.28%	$0	0.00%	0.00%
87	6	Hobson town	Judith Basin County	215	218	1.38%	$0	0.00%	0.00%
87	5	Judith Gap city	Wheatland County	126	123	-2.44%	$0	0.00%	0.00%
87	3	Manhattan town	Gallatin County	1,520	1,691	10.11%	$0	0.00%	0.00%
87	5	Melstone town	Musselshell County	96	107	10.28%	$0	0.00%	0.00%
87	6	Opheim town	Valley County	85	290	70.69%	$0	0.00%	0.00%
87	6	Outlook town	Sheridan County	47	52	9.62%	$0	0.00%	0.00%
87	1	Pinesdale town	Ravalli County	917	967	5.17%	$0	0.00%	0.00%
87	6	Poplar city	Roosevelt County	810	854	5.15%	$0	0.00%	0.00%
87	1	Rexford town	Lincoln County	105	151	30.46%	$0	0.00%	0.00%
87	4	Richey town	Dawson County	177	187	5.35%	$0	0.00%	0.00%
87	1	Ronan city	Lake County	1,871	2,016	7.19%	$0	0.00%	0.00%
87	6	Saco town	Phillips County	197	197	0.00%	$0	0.00%	0.00%
87	6	Scobey city	Daniels County	1,017	1,032	1.45%	$0	0.00%	0.00%
87	6	Stanford town	Judith Basin County	401	384	-4.43%	$0	0.00%	0.00%
87	1	Stevensville town	Ravalli County	1,809	1,963	7.85%	$0	0.00%	0.00%
87	2	Sunburst town	Toole County	375	338	-10.95%	$0	0.00%	0.00%
87	4	Terry town	Prairie County	605	609	0.66%	$0	0.00%	0.00%
87	2	Valier town	Pondera County	509	498	-2.21%	$0	0.00%	0.00%
87	3	Virginia City town	Madison County	190	198	4.04%	$0	0.00%	0.00%
87	3	West Yellowstone town	Gallatin County	1,271	1,353	6.06%	$0	0.00%	0.00%
87	6	Winnett town	Petroleum County	182	185	1.62%	$0	0.00%	0.00%
87	6	Wolf Point city	Roosevelt County	2,621	2,806	6.59%	$0	0.00%	0.00%

APPENDIX B-4. CITY-TOWN PERCENT EXPOSURE X POPULATION CHANGE RANKING - FLOODING									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	**DES District**	**City / Town**	**County**	**Census 2010**	**2016 Est**	**% Population Change**	**Total Exposure (Residential + Other)**	**% Hazard Exposure / Total Exposure**	**Vulnerability Factor (% Exposure x % Population Change)**
1	3	Twin Bridges town	Madison County	375	395	5.06%	$27,287,012	80.93%	4.10%
2	4	Sidney city	Richland County	5,191	6,566	20.94%	$48,935,204	11.43%	2.39%
3	1	Drummond town	Granite County	309	348	11.21%	$3,143,746	18.62%	2.09%
4	3	Three Forks city	Gallatin County	1,869	1,944	3.86%	$67,735,177	53.92%	2.08%
5	4	Miles City city	Custer County	8,410	8,647	2.74%	$300,020,611	64.10%	1.76%
6	6	Plentywood city	Sheridan County	1,734	1,904	8.93%	$18,976,595	17.76%	1.59%
7	2	Havre city	Hill County	9,310	9,846	5.44%	$105,511,377	22.00%	1.20%
8	5	Forsyth city	Rosebud County	1,777	1,869	4.92%	$21,683,098	21.34%	1.05%
9	4	Ekalaka town	Carter County	332	353	5.95%	$3,083,742	16.95%	1.01%
10	2	Chester town	Liberty County	847	884	4.19%	$11,655,270	23.52%	0.98%
11	4	Ismay town	Custer County	19	21	9.52%	$160,960	9.27%	0.88%
12	1	Missoula city	Missoula County	66,788	72,364	7.71%	$165,929,431	10.50%	0.81%
13	1	Thompson Falls city	Sanders County	1,313	1,356	3.17%	$19,556,122	23.07%	0.73%
14	5	Columbus town	Stillwater County	1,893	2,028	6.66%	$11,177,997	10.83%	0.72%
15	4	Fairview town	Richland County	840	922	8.89%	$2,946,149	8.01%	0.71%
16	4	Glendive city	Dawson County	4,935	5,332	7.45%	$24,161,041	8.56%	0.64%
17	2	Chinook city	Blaine County	1,203	1,233	2.43%	$20,587,251	25.90%	0.63%
18	4	Jordan town	Garfield County	343	399	14.04%	$849,733	4.35%	0.61%
19	5	Fromberg town	Carbon County	438	445	1.57%	$6,569,946	38.21%	0.60%
19	3	Whitehall town	Jefferson County	1,038	1,114	6.82%	$3,693,745	8.80%	0.60%
20	1	Kalispell city	Flathead County	19,927	22,761	12.45%	$106,600,472	4.56%	0.57%
21	3	Boulder town	Jefferson County	1,183	1,230	3.82%	$6,370,370	14.56%	0.56%
22	3	Helena city	Lewis and Clark County	28,190	31,169	9.56%	$177,328,128	5.55%	0.53%
22	6	Culbertson town	Roosevelt County	714	804	11.19%	$2,758,400	4.72%	0.53%
23	1	Columbia Falls city	Flathead County	4,688	5,241	10.55%	$17,161,744	4.61%	0.49%
24	1	Whitefish city	Flathead County	6,357	7,279	12.67%	$57,492,719	3.82%	0.48%
25	1	Hamilton city	Ravalli County	4,348	4,674	6.97%	$33,164,403	6.13%	0.43%
26	4	Wibaux town	Wibaux County	589	649	9.24%	$1,177,758	4.57%	0.42%
27	3	East Helena town	Lewis and Clark County	1,984	2,074	4.34%	$10,552,790	9.41%	0.41%
28	2	Browning town	Glacier County	1,016	1,031	1.45%	$4,553,956	26.27%	0.38%
29	5	Billings city	Yellowstone County	104,170	110,323	5.58%	$671,860,701	6.02%	0.34%
30	5	Roundup city	Musselshell County	1,788	1,840	2.83%	$9,120,419	11.15%	0.32%
31	1	Hot Springs town	Sanders County	544	557	2.33%	$5,246,596	13.43%	0.31%
32	5	Bearcreek town	Carbon County	79	84	5.95%	$309,756	4.83%	0.29%
33	3	Livingston city	Park County	7,044	7,401	4.82%	$34,747,412	5.88%	0.28%
34	6	Westby town	Sheridan County	168	174	3.45%	$470,480	7.79%	0.27%
35	6	Moore town	Fergus County	193	198	2.53%	$1,167,924	10.46%	0.26%
36	3	Lima town	Beaverhead County	221	224	1.34%	$1,704,016	17.43%	0.23%
37	4	Broadus town	Powder River County	468	481	2.70%	$2,214,776	7.85%	0.21%
38	3	Ennis town	Madison County	838	890	5.84%	$3,694,424	3.41%	0.20%
38	4	Plevna town	Fallon County	162	176	7.95%	$375,823	2.50%	0.20%
38	3	Clyde Park town	Park County	288	309	6.80%	$519,866	2.89%	0.20%
39	5	Red Lodge city	Carbon County	2,125	2,237	5.01%	$10,952,041	3.66%	0.18%
40	3	Bozeman city	Gallatin County	37,280	45,250	17.61%	$64,389,508	0.92%	0.16%
41	5	Joliet town	Carbon County	595	640	7.03%	$581,966	1.96%	0.14%
41	1	Libby city	Lincoln County	2,628	2,678	1.87%	$19,686,291	7.31%	0.14%
42	5	Lodge Grass town	Big Horn County	428	446	4.04%	$854,370	3.06%	0.12%
42	6	Medicine Lake town	Sheridan County	225	241	6.64%	$199,324	1.83%	0.12%
43	5	Colstrip city	Rosebud County	2,214	2,311	4.20%	$3,732,350	2.64%	0.11%
43	1	Walkerville town	Silver Bow County	675	700	3.57%	$66,299,263	3.00%	0.11%
44	1	Darby town	Ravalli County	720	763	5.64%	$1,146,931	1.61%	0.09%
44	1	Plains town	Sanders County	1,048	1,071	2.15%	$2,639,855	4.23%	0.09%
44	2	Great Falls city	Cascade County	58,505	59,178	1.14%	$386,334,251	7.65%	0.09%
45	1	Superior town	Mineral County	812	826	1.69%	$2,284,338	4.01%	0.07%
46	3	Dillon city	Beaverhead County	4,134	4,257	2.89%	$4,387,251	2.20%	0.06%
47	2	Harlem city	Blaine County	808	823	1.82%	$848,750	2.73%	0.05%
47	5	Laurel city	Yellowstone County	6,718	6,865	2.14%	$10,652,068	2.15%	0.05%
48	1	Eureka town	Lincoln County	1,037	1,086	4.51%	$463,032	0.70%	0.03%
48	3	Sheridan town	Madison County	642	677	5.17%	$1,196,043	0.56%	0.03%
48	3	Townsend city	Broadwater County	1,878	1,978	5.06%	$749,460	0.54%	0.03%
49	5	Hardin city	Big Horn County	3,505	3,829	8.46%	$313,913	0.24%	0.02%
49	1	Polson city	Lake County	4,488	4,777	6.05%	$1,034,412	0.30%	0.02%
50	1	Philipsburg town	Granite County	820	920	10.87%	$83,391	0.12%	0.01%
50	6	Glasgow city	Valley County	3,250	3,364	3.39%	$622,905	0.27%	0.01%
51	4	Circle town	McCone County	615	619	0.65%	$154,585	0.37%	0.00%

APPENDIX B-4. CITY-TOWN PERCENT EXPOSURE X POPULATION CHANGE RANKING - FLOODING									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	City / Town	County	Census 2010	2016 Est	% Population Change	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
51	2	Choteau city	Teton County	1,684	1,686	0.12%	$1,394,760	1.33%	0.00%
51	3	Big Timber city	Sweet Grass County	1,641	1,645	0.24%	$329,237	0.24%	0.00%
51	6	Bainville town	Roosevelt County	208	314	33.76%	$0	0.00%	0.00%
51	4	Baker city	Fallon County	1,741	1,990	12.51%	$0	0.00%	0.00%
51	3	Belgrade city	Gallatin County	7,389	8,254	10.48%	$0	0.00%	0.00%
51	2	Big Sandy town	Chouteau County	598	590	-1.36%	$0	0.00%	0.00%
51	5	Bridger town	Carbon County	708	732	3.28%	$0	0.00%	0.00%
51	5	Broadview town	Yellowstone County	192	193	0.52%	$0	0.00%	0.00%
51	6	Brockton town	Roosevelt County	255	243	-4.94%	$0	0.00%	0.00%
51	2	Cascade town	Cascade County	685	688	0.44%	$0	0.00%	0.00%
51	2	Cut Bank city	Glacier County	2,869	3,012	4.75%	$0	0.00%	0.00%
51	6	Dodson town	Phillips County	124	124	0.00%	$0	0.00%	0.00%
51	2	Dutton town	Teton County	316	308	-2.60%	$0	0.00%	0.00%
51	2	Fairfield town	Teton County	708	922	23.21%	$0	0.00%	0.00%
51	6	Flaxville town	Daniels County	71	71	0.00%	$0	0.00%	0.00%
51	6	Fort Peck town	Valley County	233	247	5.67%	$0	0.00%	0.00%
51	6	Froid town	Roosevelt County	185	201	7.96%	$0	0.00%	0.00%
51	2	Geraldine town	Chouteau County	261	261	0.00%	$0	0.00%	0.00%
51	2	Hingham town	Hill County	118	122	3.28%	$0	0.00%	0.00%
51	6	Hobson town	Judith Basin County	215	218	1.38%	$0	0.00%	0.00%
51	5	Judith Gap city	Wheatland County	126	123	-2.44%	$0	0.00%	0.00%
51	3	Manhattan town	Gallatin County	1,520	1,691	10.11%	$0	0.00%	0.00%
51	5	Melstone town	Musselshell County	96	107	10.28%	$0	0.00%	0.00%
51	6	Nashua town	Valley County	290	290	0.00%	$2,882,557	19.60%	0.00%
51	6	Opheim town	Valley County	85	290	70.69%	$0	0.00%	0.00%
51	6	Outlook town	Sheridan County	47	52	9.62%	$0	0.00%	0.00%
51	1	Pinesdale town	Ravalli County	917	967	5.17%	$0	0.00%	0.00%
51	6	Poplar city	Roosevelt County	810	854	5.15%	$0	0.00%	0.00%
51	1	Rexford town	Lincoln County	105	151	30.46%	$0	0.00%	0.00%
51	4	Richey town	Dawson County	177	187	5.35%	$0	0.00%	0.00%
51	1	Ronan city	Lake County	1,871	2,016	7.19%	$0	0.00%	0.00%
51	6	Saco town	Phillips County	197	197	0.00%	$0	0.00%	0.00%
51	6	Scobey city	Daniels County	1,017	1,032	1.45%	$0	0.00%	0.00%
51	6	Stanford town	Judith Basin County	401	384	-4.43%	$0	0.00%	0.00%
51	1	Stevensville town	Ravalli County	1,809	1,963	7.85%	$0	0.00%	0.00%
51	2	Sunburst town	Toole County	375	338	-10.95%	$0	0.00%	0.00%
51	4	Terry town	Prairie County	605	609	0.66%	$0	0.00%	0.00%
51	2	Valier town	Pondera County	509	498	-2.21%	$0	0.00%	0.00%
51	3	Virginia City town	Madison County	190	198	4.04%	$0	0.00%	0.00%
51	3	West Yellowstone town	Gallatin County	1,271	1,353	6.06%	$0	0.00%	0.00%
51	6	Winnett town	Petroleum County	182	185	1.62%	$0	0.00%	0.00%
51	6	Wolf Point city	Roosevelt County	2,621	2,806	6.59%	$0	0.00%	0.00%
52	2	Conrad city	Pondera County	2,570	2,550	-0.78%	$1,612,471	0.89%	-0.01%
52	3	White Sulphur Springs city	Meagher County	939	908	-3.41%	$210,798	0.31%	-0.01%
52	1	Alberton town	Mineral County	420	417	-0.72%	$280,561	1.61%	-0.01%
53	6	Winifred town	Fergus County	208	206	-0.97%	$464,260	3.53%	-0.03%
54	1	St. Ignatius town	Lake County	842	824	-2.18%	$516,771	1.67%	-0.04%
55	6	Lewistown city	Fergus County	5,901	5,870	-0.53%	$37,333,456	8.74%	-0.05%
55	5	Harlowton city	Wheatland County	997	984	-1.32%	$1,858,465	3.56%	-0.05%
56	5	Lavina town	Golden Valley County	187	173	-8.09%	$81,550	0.90%	-0.07%
57	1	Troy city	Lincoln County	938	890	-5.39%	$868,084	1.53%	-0.08%
58	1	Deer Lodge city	Powell County	3,111	2,994	-3.91%	$6,470,184	4.16%	-0.16%
59	5	Ryegate town	Golden Valley County	245	236	-3.81%	$559,808	4.66%	-0.18%
60	2	Fort Benton city	Chouteau County	1,464	1,456	-0.55%	$46,925,630	38.53%	-0.21%
61	5	Hysham town	Treasure County	312	301	-3.65%	$764,148	6.54%	-0.24%
62	2	Neihart town	Cascade County	51	50	-2.00%	$1,101,666	13.44%	-0.27%
63	2	Shelby city	Toole County	3,376	3,216	-4.98%	$20,132,858	10.75%	-0.53%
64	6	Grass Range town	Fergus County	110	108	-1.85%	$1,867,721	28.93%	-0.54%
65	2	Belt city	Cascade County	597	588	-1.53%	$6,832,589	47.63%	-0.73%
66	6	Malta city	Phillips County	1,997	1,950	-2.41%	$42,331,083	31.97%	-0.77%
67	2	Kevin town	Toole County	154	138	-11.59%	$358,528	7.79%	-0.90%
68	6	Denton town	Fergus County	255	247	-3.24%	$7,796,355	43.77%	-1.42%

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	Montana	989,415	1,042,520	5.09%	4,781															
3	**Beaverhead County**	9,246	9,401	1.65%	3	2004	$65.7M	NA	$20.2M	3	2010				3	2017				1
	Dillon city	4,134	4,257	2.89%			Moderate-High	Moderate	Moderate	3							Moderate-High	Moderate	Moderate	1
	Lima town	221	224	1.34%			Moderate-High	Moderate	Moderate	3							Moderate-High	Moderate	Moderate	1
	Balance of Beaverhead County	4,891	4,920	0.59%			Moderate-High	Moderate	Moderate	3							Moderate-High	Moderate	Moderate	1
5	**Big Horn County**	12,865	13,343	3.58%	2	2006				2	2012	$30,369	1,348	$630,000	2					
	Hardin city	3,505	3,829	8.46%			$0	0	NA	2		NA	NA	NA	2					
	Lodge Grass town	428	446	4.04%			$7.6M	NA	NA	2		R=$110,398 C=$6,571,176			2					
	Balance of Big Horn County	8,932	9,068	1.50%			Millions	652	$30.8M	2										
2	**Blaine County**	6,491	6,601	1.67%	0	2006				14	2012				14					
	Chinook city	1,203	1,233	2.43%								R=$1,742,396 C=$306,527	127	NA	14					
	Harlem city	808	823	1.82%								R=$513,348 C=$694,485	151	NA	14					
	Balance of Blaine County	4,480	4,545	1.43%								R=$22,672,057 C=$5,082,450	1,455	NA	14					
3	**Broadwater County**	5,612	5,747	2.35%	0	2004				3	2009	$5.2M	NA	$10M	3	2016				14
	Townsend city	1,878	1,978	5.06%								Moderate-High	Moderate	Moderate	3		R=$795,974 C=$13,103,571	161; <18=47	NA	14
	Balance of Broadwater County	3,734	3,769	0.93%								Moderate-High	Moderate	Moderate	3		R=$42,525,286 C=$25,732,065	1,713; <18=366	NA	14
5	**Carbon County**	10,078	10,460	3.65%	8	2006				2	2012				2					
	Bearcreek town	79	84	5.95%								$875,807	NA	NA	2					
	Bridger town	708	732	3.28%								$0	NA	NA	2					
	Fromberg town	438	445	1.57%								$6.7M	NA	NA	2					
	Joliet town	595	640	7.03%								$1M	NA	NA	2					
	Red Lodge city	2,125	2,237	5.01%								$31.5M	NA	NA	2					
	Balance of Carbon County	6,133	6,322	2.99%								$207M	NA	NA	2					
4	**Carter County**	1,160	1,203	3.57%	1	2005					2012	High	Moderate	High	12					
	Ekalaka town	332	353	5.95%																
	Balance of Carter County	828	850	2.59%																
2	**Cascade County**	81,327	81,755	0.52%	242	2012				14	2017				14					
	Belt city	597	588	-1.53%			R = $8,865,776 C = $4,708,606	400	NA	14		R=$2,997,636 C=$1,517,036	71; <18=16; >65=11	NA	14					
	Cascade town	685	688	0.44%			R = $20,597,413 C = $9,012,735	685	NA	14		R=$0; C=$0	0	NA	14					
	Great Falls city	58,505	59,178	1.14%			R = $123,710,664 C = $111,234,635	3,327	NA	14		R=$92,198,951; C=$3,420,803	747; <18=171; >65=111	NA	14					
	Neihart town	51	50	-2.00%			R = $14,994,082 C = $1,380,923	51	NA	14		R=$685,682; C=$0	26; <18=6; >65=4	NA	14					
	Balance of Cascade County	21,489	21,251	-1.12%			R = $270,556,020 C = $48,043,905	8,679	NA	14										
2	**Chouteau County**	5,813	5,759	-0.94%	10	2010				5	2017				5					
	Big Sandy town	598	590	-1.36%								NA	NA	NA	5					
	Fort Benton city	1,464	1,456	-0.55%			$39M	NA	NA	5		$39M	NA	NA	5					
	Geraldine town	261	261	0.00%								NA	NA	NA	5					
	Balance of Chouteau County	3,490	3,452	-1.10%			$45M	NA	NA	5		$45M	NA	NA	5					
4	**Custer County**	11,699	11,924	1.89%	0	2005	$5.7-$43.2M	Moderate	NA	2	2012				2	2017				14
	Ismay town	19	21	9.52%								$6M	26	NA	2		R=$0; C=$0	0	NA	14
	Miles City city	8,410	8,647	2.74%								$1B	8,492	NA	2		R=$227,885,598 C=$50,389,426	3,251; <18=1,179; >65=1,053	NA	14
	Balance of Custer County	3,270	3,256	-0.43%								$385M	3,178	NA	2		R=$27,076,987 C=$7,277,753	417; <18=151; >65=135	NA	14
6	**Daniels County**	1,751	1,755	0.23%	0	2003				14	2008	$456K	0	$440K	3	2016				8
	Flaxville town	71	71	0.00%								Low-Moderate	Moderate	Low-Moderate	3		Low	Low	Low	8
	Scobey city	1,017	1,032	1.45%								Low-Moderate	Moderate	Low-Moderate	3		Moderate	Moderate	Moderate	8
	Balance of Daniels County	663	652	-1.69%								Low-Moderate	Moderate	Low-Moderate	3		Moderate	Moderate	Moderate	8
4	**Dawson County**	8,966	9,327	3.87%	1	2006	$23M	NA	NA	2	2014				9					
	Glendive city	4,935	5,332	7.45%			$9.975M	NA	NA	2		$13,174,524	686	NA	9					
	Richey town	177	187	5.35%								NA	NA	NA	9					
	Balance of Dawson County	3,854	3,808	-1.21%								$21,025,878	5,484	NA	9					
1	**Deer Lodge County**	9,298	9,085	-2.34%	17	2005	$2.6M; High	479	High	3	2013	$6M; Moderate-High	Moderate	Moderate	3					
	Anaconda-Deer Lodge County	9,298	9,085	-2.34%																

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4	**Fallon County**	2,890	3,120	7.37%	35	2006	$111,421-$557,102	NA	NA	12	2012	$5.5M; Moderate	NA	$1.9M	12					
	Baker city	1,741	1,990	12.51%								$15.9M	NA	NA	12					
	Plevna town	162	176	7.95%																
	Balance of Fallon County	987	954	-3.46%																
6	**Fergus County**	11,586	11,413	-1.52%	1	2008	$33.2M	NA	NA	3	2014				9					
	Denton town	255	247	-3.24%			Moderate	NA	NA	3		R=$1,816,864 O=$1,349,738	97; 38%	NA	9					
	Grass Range town	110	108	-1.85%			Moderate-High	NA	NA	3		R=$383,489 O=$147,809	42; 38%	NA	9					
	Lewistown city	5,901	5,870	-0.53%			Moderate	NA	NA	3		R=$1,074,455 O=$1,385,328	472; 8%	NA	9					
	Moore town	193	198	2.53%			Moderate	NA	NA	3		R=$75,366 O=$189,974	66; 34%	NA	9					
	Winifred town	208	206	-0.97%			Low-Moderate	NA	NA	3		R=$330,679 O=$0	29; 14%	NA	9					
	Balance of Fergus County	4,919	4,784	-2.82%								R=$9,797,615 O=$1,075,513	46; 1%	NA	9					
1	**Flathead County**	90,928	98,082	7.29%	316	2009	Very High	Moderate	NA		2014				14					
	Columbia Falls city	4,688	5,241	10.55%								R=$4,627,771 C=$0	500	NA	14					
	Kalispell city	19,927	22,761	12.45%								R=$12,025,723 C=$1,220,620	2,120	NA	14					
	Whitefish city	6,357	7,279	12.67%								R=$54,556,085 C=$17,773,297	1,533	NA	14					
	Balance of Flathead County	59,956	62,801	4.53%								R=$495,843,950 C=$24,995,530	17,030	NA	14					
3	**Gallatin County**	89,513	104,502	14.34%	1,550	2006	Moderate	Moderate	Moderate	6	2012	Moderate	Moderate	Moderate	6					
	Belgrade city	7,389	8,254	10.48%																
	Bozeman city	37,280	45,250	17.61%																
	Manhattan town	1,520	1,691	10.11%																
	Three Forks city	1,869	1,944	3.86%																
	West Yellowstone town	1,271	1,353	6.06%																
	Balance of Gallatin County	40,184	46,010	12.66%																
4	**Garfield County**	1,206	1,310	7.94%	0	2007	$2.4M	Moderate	$1.5M	3	2014				9					
	Jordan town	343	399	14.04%								R=$1,805,694 O=$226,183	117	NA	9					
	Balance of Garfield County	863	911	5.27%								R=$2,562,194 O=$3,950	63	NA	9					
2	**Glacier County**	13,399	13,694	2.15%	0	2005					2012				14					
	Browning town	1,016	1,031	1.45%								R=$2,285,076 C=$3,137,949	434	NA	14					
	Cut Bank city	2,869	3,012	4.75%								R=$45,920 C=$21,817	11	NA	14					
	Balance of Glacier County	9,514	9,651	1.42%								R=$8,603,777 C=$845,400	619	NA	14					
5	**Golden Valley County**	884	831	-6.38%	NA	2008				14										
	Lavina town	187	173	-8.09%			$69K	1	NA	14										
	Ryegate town	245	236	-3.81%			$659K	1	NA	14										
	Balance of Golden Valley County	452	422	-7.11%			$125K	3	NA	14										
1	**Granite County**	3,079	3,368	8.58%	NA	2006	$11.5M	777	Moderate	3	2013	$1,78M; Moderate-High	Moderate	Moderate	3					
	Drummond town	309	348	11.21%								$289K; Moderate	Moderate	Moderate	3					
	Philipsburg town	820	920	10.87%								Low-Moderate	Moderate	Moderate	3					
	Balance of Granite County	1,950	2,100	7.14%																
2	**Hill County**	16,096	16,542	2.70%	4	2006	$15,808,021	339	NA	14	2012				14					
	Havre city	9,310	9,846	5.44%								R=$154,111 C=$613,700	400	NA	14					
	Hingham town	118	122	3.28%								R=$0; C=$0	0	NA	14					
	Balance of Hill County	6,668	6,574	-1.43%								R=$26,001,147 C=$12,486,562	2,414	NA	14					
3	**Jefferson County**	11,406	11,853	3.77%	5	2005				3	2011				14	2017				14
	Boulder town	1,183	1,230	3.82%								R=$4,804,520 C=$941,892	525	NA	14		R=$4,514,480 C=$358,854	124; <18=36	NA	14
	Whitehall town	1,038	1,114	6.82%								R=$2,459,909 C=$325,218	251	NA	14		R=$2,187,926 C=$229,240	77; <18=22	NA	14
	Balance of Jefferson County	9,185	9,509	3.41%								R=$56,580,143 C=$15,455,967	4,910	NA	14		R=$8,997,763 C=$348,240	245; <18=72	NA	14

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6	**Judith Basin County**	2,072	1,940	-6.80%	NA	2008				14	2013				14					
	Hobson town	215	218	1.38%			$0	0	NA	14		R=$0; C=$0	0	NA	14					
	Stanford town	401	384	-4.43%			$29M	0	NA	14		R=$0; C=$0	0	NA	14					
	Balance of Judith Basin County	1,456	1,338	-8.82%			$20.8M	262	NA	14		R=$21,415,517 C=$2,536,062	918; <18=190	NA	14					
1	**Lake County**	28,746	29,758	3.40%	44	2006	$73,171,600	603	NA		2012				14					
	Polson city	4,488	4,777	6.05%								R=$10,314,441 C=$1,322,741	337	NA	14					
	Ronan city	1,871	2,016	7.19%								R=$515,416 C=$14,259,884	94	NA	14					
	St. Ignatius town	842	824	-2.18%								R=$4,604,999 C=$181,280	251	NA	14					
	Balance of Lake County	21,545	22,141	2.69%								R=608,995,285 C=$24,472,893	7,659	NA	14					
3	**Lewis and Clark County**	63,395	67,282	5.78%	176	2005	$2M	NA	NA		2011				14	2017				14
	East Helena town	1,984	2,074	4.34%								R=$5,012,016 C=$3,861,424	242	NA	14		R=$4,426,268 C=$667,490	72; <18=27	NA	14
	Helena city	28,190	31,169	9.56%								R=$1,749,553 C=$117,900	923	NA	14		R=$1,191,269 C=$0	12; <18=5	NA	14
	Balance of Lewis and Clark County	33,221	34,039	2.40%								R=$87,224,898 C=$20,723,657	8,423	NA	14		R=$66,130,133 C=$3,711,475	922; <18=344	NA	14
2	**Liberty County**	2,339	2,409	2.91%	NA	2007	Medium-High	Medium	NA	2	2013				2					
	Chester town	847	884	4.19%			$3,813,506			2		$219,220	NA	NA	2					
	Balance of Liberty County	1,492	1,525	2.16%			$281,361			2		$878,222	NA	NA	2					
1	**Lincoln County**	19,687	19,259	-2.22%	8	2005	3	2	NA		2012				14					
	Eureka town	1,037	1,086	4.51%								R=$590,806 C=$1,462,671	137	NA	14					
	Libby city	2,628	2,678	1.87%								R=$11,206,490 C=$4,644,427	669	NA	14					
	Rexford town	105	151	30.46%								R=$0 C=$0	0	NA	14					
	Troy city	938	890	-5.39%								R=$1,214,815 C=$1,553,373	181	NA	14					
	Balance of Lincoln County	14,979	14,454	-3.63%								R=$177,689,718 C=$22,808,645	8,284	NA	14					
3	**Madison County**	7,691	7,924	2.94%	7	2004				3	2010	$30.9M	NA	$18.7M	3	2017				1
	Ennis town	838	890	5.84%								Low-Moderate	Moderate	Moderate	3		Low-Moderate	Moderate	Moderate	1
	Sheridan town	642	677	5.17%								Low-Moderate	Low-Moderate	Moderate	3		Low-Moderate	Low-Moderate	Moderate	1
	Twin Bridges town	375	395	5.06%								Moderate	Moderate	Moderate-High	3		Moderate	Moderate	Moderate-High	1
	Virginia City town	190	198	4.04%								Low-Moderate	Moderate	Moderate	3		Low-Moderate	Moderate	Moderate	1
	Balance of Madison County	5,646	5,764	2.05%								Moderate	Moderate	Moderate	3		Moderate	Moderate	Moderate-High	1
4	**McCone County**	1,734	1,700	-2.00%	0	2006				4	2014				9					
	Circle town	615	619	0.65%			$477K	NA	NA			$139,074	NA	NA	9					
	Balance of McCone County	1,119	1,081	-3.52%								$9,921,171	NA	NA	9					
3	**Meagher County**	1,891	1,827	-3.50%	NA															
	White Sulphur Springs city	939	908	-3.41%																
	Balance of Meagher County	952	919	-3.59%																
1	**Mineral County**	4,223	4,184	-0.93%	1	2005					2012	$18.3M AL=$182,628			1					
	Alberton town	420	417	-0.72%								Riverine=Low Ice Jam=Very Low	Riverine=Low Ice Jam=Very Low	NA	1					
	Superior town	812	826	1.69%								Riverine=High Ice Jam=Low	Riverine=High Ice Jam=Low	NA	1					
	Balance of Mineral County	2,991	2,941	-1.70%								Riverine=High Ice Jam=Low	Riverine=High Ice Jam=Low	NA	1					
1	**Missoula County**	109,299	116,130	5.88%	930	2004	$30M	Moderate	NA	1	2011	Riverine=$41.4M; AL=$413,870 Ice Jam=$500K; AL=$20K	Flash/Region= High; Ice Jam= Moderate	NA	1	2017				14
	Missoula city	66,788	72,364	7.71%													R=$14,006,703 C=$735,150	46	NA	14
	Balance of Missoula County	42,511	43,766	2.87%													R=$51,792,145 C=$1,510,380	614	NA	14
5	**Musselshell County**	4,538	4,589	1.11%	1	2008				14	2013				14					
	Melstone town	96	107	10.28%			$0	0	NA	14		R=$0; C=$0	0	NA	14					
	Roundup city	1,788	1,840	2.83%			$1.8M	33	NA	14		R=$1,240,967 C=$984,897	153; <18=46	NA	14					

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	Balance of Musselshell County	2,654	2,642	-0.45%			$1,642,170	50	NA	14		R=$37,477,379 C=$3,200,179	1,750; <18=329	NA	14					
3	**Park County**	15,636	16,114	2.97%	44	2006				3	2012				3					
	Clyde Park town	288	309	6.80%								$104K; Moderate	NA	NA	3					
	Livingston city	7,044	7,401	4.82%								$67K; Moderate	NA	NA	3					
	Balance of Park County	8,304	8,404	1.19%								$24.5M; Moderate-High	NA	NA	3					
6	**Petroleum County**	494	489	-1.02%	NA	2003					2008	$990K	NA	$500K	3					
	Winnett town	182	185	1.62%								Low-Moderate	Low-Moderate	Low-Moderate	3					
	Balance of Petroleum County	312	304	-2.63%								Moderate	Moderate	Low-Moderate	3					
6	**Phillips County**	4,253	4,133	-2.90%	2	2006				14	2012				14					
	Dodson town	124	124	0.00%								R=$0; C=$0	0	NA	14					
	Malta city	1,997	1,950	-2.41%								R=$19,180,048 C=$20,953,537	743	NA	14					
	Saco town	197	197	0.00%								R=$186,804 C=$2,094	33	NA	14					
	Balance of Phillips County	1,935	1,862	-3.92%								R=$26,147,719 C=$4,322,070	1,510	NA	14					
2	**Pondera County**	6,153	6,084	-1.13%	1	2005					2011				14					
	Conrad city	2,570	2,550	-0.78%								R=$154,888 C=$21,484,390	19	NA	14					
	Valier town	509	498	-2.21%								R=$0; C=$0	0	NA	14					
	Balance of Pondera County	3,074	3,036	-1.25%								R=$16,634,015 C=$12,739,315	2,323	NA	14					
4	**Powder River County**	1,743	1,746	0.17%	NA	2007	$8M	Moderate	$28K	3	2011	High	Moderate	Moderate	3	2015				9
	Broadus town	468	481	2.70%													R=$356,484 O=$866,360	32	NA	9
	Balance of Powder River County	1,275	1,265	-0.79%													R=$1,215,050 O=$24,583	60	NA	9
0	**Powell County**	7,027	6,858	-2.46%	32	2004					2012				10	2017	800 structures	NA	NA	7
	Deer Lodge city	3,111	2,994	-3.91%			$297M; Moderate	NA	NA											
	Balance of Powell County	3,916	3,864	-1.35%			$64.7M	NA	$3M											
4	**Prairie County**	1,179	1,182	0.25%	NA	2006	NA	NA	NA		2012				12					
	Terry town	605	609	0.66%																
	Balance of Prairie County	574	573	-0.17%																
1	**Ravalli County**	40,212	42,088	4.46%	20	2005	$5-$10M	High	NA	1	2012	Flash/Regional AL=$267,760 IceJam AL=$28K	Flash/Region= High IceJam= High		1	2017				14
	Darby town	720	763	5.64%								High	High		1		R=$0; C=$0	0	NA	14
	Hamilton city	4,348	4,674	6.97%								High	High		1		R=$4,243,040 C=$1,889,230	15	NA	14
	Pinesdale town	917	967	5.17%								Low	Low		1		NA	NA	NA	14
	Stevensville town	1,809	1,963	7.85%								High	High		1		R=$200,453 C=$0	16	NA	14
	Balance of Ravalli County	32,418	33,721	3.86%								High	High		1		R=53,984,175 C=$525,090	469	NA	14
4	**Richland County**	9,746	11,482	15.12%	16	2006				4	2014				9					
	Fairview town	840	922	8.89%			$1.6M	NA	NA	4		$1,108,250	44	NA	9					
	Sidney city	5,191	6,566	20.94%			$9.2M	NA	NA	4		$3,440,643	138	NA	9					
	Balance of Richland County	3,715	3,994	6.99%								$29,296,977	1,397	NA	9					
6	**Roosevelt County**	10,425	11,305	7.78%	1	2004				14	2016				8					
	Bainville town	208	314	33.76%			$4.9M	102	NA	14		Low	Low	Low	8					
	Brockton town	255	243	-4.94%			$3.7K	0	NA	14		Low	Low	Low	8					
	Culbertson town	714	804	11.19%			$20.5M	427	NA	14		High	High	High	8					
	Froid town	185	201	7.96%			$3.86M	77	NA	14		Low	Low	Low	8					
	Poplar city	810	854	5.15%			$44.8M	1,269	NA	14		Moderate	Moderate	Moderate	8					
	Wolf Point city	2,621	2,806	6.59%			$44.5M	1,200	NA	14		Moderate	Moderate	Moderate	8					
	Balance of Roosevelt County	5,632	6,083	7.41%			$170M	4,326	NA	14		Moderate	Moderate	Moderate	8					
5	**Rosebud County**	9,233	9,287	0.58%	1	2007	$37.3M	Moderate	$100M	3	2013				2					
	Colstrip city	2,214	2,311	4.20%																
	Forsyth city	1,777	1,869	4.92%								$19,306,232	NA	NA	2					
	Balance of Rosebud County	5,242	1,903	-175.46%								$4,241,133	1,461	$26,049	2					
1	**Sanders County**	11,413	11,534	1.05%	0	2012				14										
	Hot Springs town	544	557	2.33%			R=$2,058,187 C=$1,562,883	148	NA	14										
	Plains town	1,048	1,071	2.15%			R=$3,609,661 C=$939,521	250	NA	14										

APPENDIX B-4. LOCAL PLAN EXPOSURE SUMMARY - FLOODING

DES District	Geography	Census 2010	Census 2016 Estimate	% Change 2010 to 2016	# Building Permits (2016)	Original Local Plan FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan	Estimated Societal Loss/ Exposure from Local Plan	Estimated Economic Loss from Local Plan	Ref	Local Plan Update #1 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #1	Estimated Societal Loss/ Exposure from Local Plan Update #1	Estimated Economic Loss from Local Plan Update #1	Ref	Local Plan Update #2 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #2	Estimated Societal Loss/ Exposure from Local Plan Update #2	Estimated Economic Loss from Local Plan Update #2	Ref
	Thompson Falls city	1,313	1,356	3.17%			R=$3,017,662 C=$238,310	0	NA	14										
	Balance of Sanders County	8,508	8,550	0.49%			R=$108,705,347 C=$12,683,148	3,857	NA	14										
6	**Sheridan County**	3,384	3,648	7.24%	2	2003	$7,142,582	98.6	NA	14	2008	$575K	Moderate	$1.5M	3	2016				8
	Medicine Lake town	225	241	6.64%								Low-Moderate	Moderate	Low-Moderate	3		Moderate	Moderate	Moderate	8
	Outlook town	47	52	9.62%								Low	Moderate	Low-Moderate	3		Moderate	Moderate	Moderate	8
	Plentywood city	1,734	1,904	8.93%								Low-Moderate	Moderate	Low-Moderate	3		Moderate	Moderate	Moderate	8
	Westby town	168	174	3.45%								Low	Moderate	Low-Moderate	3		Moderate	Moderate	Moderate	8
	Balance of Sheridan County	1,210	1,277	5.25%								Low-Moderate	Moderate	Low-Moderate	3		Moderate	Moderate	Moderate	8
1	**Silver Bow County**	34,200	34,553	1.02%	86	2004	$7M	Moderate	Moderate	3	2010				14	2016				14
	Butte-Silver Bow (remainder)	33,525	33,853	0.97%								$149,733,808	<18=301 >65=247 <Poverty=120	NA	14		R=$83,947,497 C=$118,932,594	5,254; <18=1,194	NA	14
	Walkerville town	675	700	3.57%								0	0	NA	14		R=$0; C=$0	0	NA	14
5	**Stillwater County**	9,117	9,406	3.07%	0	2010	$11.4M	Moderate	$11.3M	3	2015				14					
	Columbus town	1,893	2,028	6.66%			Moderate	Moderate	NA	3		R=$2,914,724 C=$8,872,961	197; <18=48	NA	14					
	Balance of Stillwater County	7,224	7,378	2.09%			Moderate	Moderate	NA	3		R=$150,168,840 C=$6,229,662	3,857; <18=802	NA	14					
3	**Sweet Grass County**	3,651	3,623	-0.77%	1	2005					2010	NA	NA	NA	13					
	Big Timber city	1,641	1,645	0.24%																
	Balance of Sweet Grass County	2,010	1,978	-1.62%																
2	**Teton County**	6,073	6,056	-0.28%	1	2006					2014				2					
	Choteau city	1,684	1,686	0.12%			$16.3M	NA	NA			$4,172,180	NA	NA	2					
	Dutton town	316	308	-2.60%								NA	NA	NA	2					
	Fairfield town	708	922	23.21%								NA	NA	NA	2					
	Balance of Teton County	3,365	3,140	-7.17%			$35.9M	NA	NA			$6,803,497	NA	NA	2					
2	**Toole County**	5,324	4,977	-6.97%	2	2007	$222,544; Medium	Low	NA	2	2013				2					
	Kevin town	154	138	-11.59%								$0	NA	NA	2					
	Shelby city	3,376	3,216	-4.98%								$122,350	NA	NA	2					
	Sunburst town	375	338	-10.95%								$0	NA	NA	2					
	Balance of Toole County	1,419	1,285	-10.43%								$414,480	NA	NA	2					
5	**Treasure County**	718	692	-3.76%	0	2007	$2M	Moderate	$990K	3										
	Hysham town	312	301	-3.65%																
	Balance of Treasure County	406	391	-3.84%																
6	**Valley County**	7,369	7,539	2.25%	4	2003	$88,417.74	1319.7	NA	14	2008	$10.75M	NA	$1.9M	3	2016				8
	Fort Peck town	233	247	5.67%								Moderate	Moderate	Moderate	3		Low	Low	Low	8
	Glasgow city	3,250	3,364	3.39%								$3.7M	Moderate-High	Moderate	3		Very High	Very High	Very High	8
	Nashua town	290	290	0.00%								$473K	Moderate-High	Moderate	3		Moderate	Moderate	Moderate	8
	Opheim town	85	290	70.69%								Low-Moderate	Low-Moderate	Moderate	3		Low	Low	Low	8
	Balance of Valley County	3,511	3,348	-4.87%								Moderate-High	Moderate-High	Moderate	3		High	High	High	8
5	**Wheatland County**	2,168	2,117	-2.41%	NA	2007				14	2013				14					
	Harlowton city	997	984	-1.32%			$288K	5	NA	14		R=$1,071,593 C=$6,486,016	133; <18=23	NA	14					
	Judith Gap city	126	123	-2.44%			$0	0	NA	14		R=$0; C=$0	0	NA	14					
	Balance of Wheatland County	1,045	1,010	-3.47%			$1.5M	11	NA	14		R=$24,347,878 C=$12,058,615	841; <18= 225	NA	14					
4	**Wibaux County**	1,017	1,093	6.95%	8	2006	$2.5M	NA	NA	2	2014				9					
	Wibaux town	589	649	9.24%								$3,288,569	230	NA	9					
	Balance of Wibaux County	428	444	3.60%								$4,252,469	284	NA	9					
5	**Yellowstone County**	147,972	158,437	6.61%	1,198	2005					2012	$1.1M	High	NA	1					
	Billings city	104,170	110,323	5.58%																
	Broadview town	192	193	0.52%																
	Laurel city	6,718	6,865	2.14%																
	Balance of Yellowstone County	36,892	41,056	10.14%																
2	**Blackfeet Indian Reservation**	10,405				2008	$13.2M	327	NA	14										
2	**Rocky Boy's Indian Reservation**	3,323				2008					2010	R=$2,679,638 CF=$0	<16=25; >64=4; <Poverty=25	NA	14					
2	**Fort Belknap Indian Reservation**	2,851				2007	$721.4K	10	NA	14	2013	$6,072,000	1,256	NA	14					
6	**Fort Peck Indian Reservation**	10,008				2004				14	2012	$133.6M	622	$11.3M	10					
5	**Crow Indian Reservation**	6,863				2008	NA	NA	NA	4	2015	R=$6,987,438 O=$2,691,577	1,214	NA	9					
5	**Northern Cheyenne Indian Res.**	4,789				2008	NA	NA	NA	4										
1	**Flathead Indian Reservation**	28,359				2006	$404.9M	1,462	NA	NA	2017				11					

APPENDIX B-4. LOCAL PLAN EXPOSURE SUMMARY - FLOODING

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NOTES:
R = Residential
C = Commercial/Agricultural/Industrial
CF = Critical Facilities
AL = Annual Loss
M = Million
K = Thousand
B = Billion
O = Other
NA = Not Analyzed or Not Quantitied

REFERENCES:
1 = Respec (formerly Adkins, PBS&J, Land & Water)
2 = Beck Consulting & AMEC
3 = Big Sky Hazard Management
4 = Cossitt Consulting
5 = Fire Logistics, Inc.
6 = Gallatin County
7 = Great West Engineering and Powell County
8 = Integrated Solutions Consulting
9 = KLJ
10 = Morrison-Maierle
11 = Risks and Rewards Management
12 = Single Tree Consulting
13 = Sweet Grass County
14 = Tetra Tech (formerly Maxim Tech)

APPENDIX B-5

EARTHQUAKE VULNERABILITY ASSESSMENT DOCUMENTATION

APPENDIX B-5. VULNERABILITY ASSESSMENT DOCUMENTATION - EARTHQUAKE
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Earthquake sq. miles	Total sq. miles	Percent Earthquake sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Earthquake Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Earthquake Hazard Area	Residential Exposure in Earthquake Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Earthquake Hazard Area	CAI Exposure in Earthquake Hazard Area	Total Population in Hazard Area	<18 in Earthquake Hazard Area	>65 in Earthquake Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Montana	39,822	146,923	27.1%	829	$3,596,319,710	602	$2,989,264,905	379,924	$65,567,813,250	182,583	$35,443,824,759	89,351	$31,241,965,630	33,512	$14,881,869,926	829,619.8	171,667.5	149,240.9	508,711.5	126	58
3	**Beaverhead County**	4,365.48	5,572.5	78.3%	21	$120,039,992	21	$120,039,992	3,023	$398,456,637	2797	$370,999,657	2,017	$477,421,099	1738	$419,161,428	6,196.9	1,067.8	1,424.9	3,704.2	6	3
	Dillon city	1.68	1.7	100.0%	0	$0	19	$114,722,911	1,178	$128,495,669	1178	$128,495,669	230	$70,904,492	230	$70,904,492	2,716.1	451.7	697.4	1,567.0	2	1
	Lima town	0.55	0.5	100.0%	0	$0	0		135	$8,569,730	135	$8,569,730	11	$1,208,935	11	$1,208,935	290.3	51.4	60.7	178.2	0	0
	Balance of Beaverhead County	4,363.26	5,570.3		21	$120,039,992	2	$5,317,080	1,710	$261,391,238	1484	$233,934,258	1,776	$405,307,672	1497	$347,048,001	3,190.6	564.7	666.8	1,959.0	4	0
5	**Big Horn County**	0.00	5,013.9	0.0%	1	$64,294	0		3,168	$358,629,629	0		872	$190,843,437	0						5	0
	Hardin city	0.00	1.6	0.0%	0	$0	0		905	$97,296,363	0		134	$32,479,192	0						0	0
	Lodge Grass town	0.00	0.3	0.0%	0	$0	0		149	$10,790,706	0		22	$17,123,392	0						0	0
	Balance of Big Horn County	0.00	5,012.0		1	$64,294	0	$0	2,114	$250,542,560	0	$0	716	$141,240,853	0	$0	0.0	0.0	0.0	0.0	5	0
2	**Blaine County**	0.00	4,235.9	0.0%	1	$51,267	0		1,409	$115,967,606	0		2,309	$361,010,008	0						0	0
	Chinook city	0.00	0.5	0.0%	0	$0	0		674	$60,190,802	0		106	$19,309,682	0						0	0
	Harlem city	0.00	0.4	0.0%	0	$0	0		352	$22,108,616	0		68	$8,956,732	0						0	0
	Balance of Blaine County	0.00	4,235.0		1	$51,267	0	$0	383	$33,668,188	0	$0	2,135	$332,743,594	0	$0	0.0	0.0	0.0	0.0	0	0
3	**Broadwater County**	1,236.79	1,236.8	100.0%	3	$29,038,899	3	$29,038,899	3,442	$520,588,070	3442	$520,588,070	795	$153,085,694	795	$153,085,694	8,935.9	1,604.1	2,111.4	5,220.4	1	1
	Townsend city	1.52	1.5	100.0%	0	$0	0		1,133	$116,996,708	1133	$116,996,708	147	$21,344,104	147	$21,344,104	3,397.3	527.9	818.0	2,051.4	0	0
	Balance of Broadwater County	1,235.27	1,235.3		3	$29,038,899	3	$29,038,899	2,309	$403,591,362	2309	$403,591,362	648	$131,741,590	648	$131,741,590	5,538.6	1,076.3	1,293.4	3,169.0	1	0
5	**Carbon County**	357.36	2,060.7	17.3%	3	$220,339	0		4,812	$912,472,742	75	$17,533,488	1,434	$312,638,485	3	$531,210	170.3	30.5	40.9	98.9	5	1
	Bearcreek town	0.00	0.1	0.0%	0	$0	0		57	$6,138,654	0		2	$269,414	0						0	0
	Bridger town	0.00	0.8	0.0%	0	$0	0		322	$30,656,055	0		49	$8,990,475	0						0	0
	Fromberg town	0.00	0.4	0.0%	0	$0	0		218	$16,035,910	0		21	$1,157,410	0						0	0
	Joliet town	0.00	0.3	0.0%	0	$0	0		241	$27,420,117	0		20	$2,267,652	0						0	0
	Red Lodge city	0.00	2.7	0.0%	0	$0	0		1,366	$249,897,767	0		162	$49,294,962	0						1	0
	Balance of Carbon County	357.36	2,056.4		3	$220,339	0	$0	2,608	$582,324,239	75	$17,533,488	1,180	$250,658,572	3	$531,210	170.3	30.5	40.9	98.9	4	0
4	**Carter County**	0.00	3,346.4	0.0%	0	$0	0		405	$20,620,826	0		1,012	$117,527,687	0						0	0
	Ekalaka town	0.00	1.0	0.0%	0	$0	0		323	$14,713,910	0		40	$3,481,214	0						0	0
	Balance of Carter County	0.00	3,345.4		0	$0	0	$0	82	$5,906,916	0	$0	972	$114,046,473	0	$0	0.0	0.0	0.0	0.0	0	0
2	**Cascade County**	0.00	2,708.4	0.0%	20	$90,365,664	0		28,943	$4,349,791,994	0		4,285	$2,555,983,982	0						14	0
	Belt city	0.00	0.3	0.0%	0	$0	0		98	$8,912,233	0		16	$5,432,574	0						0	0
	Cascade town	0.00	0.5	0.0%	20	$90,365,664	0		267	$28,222,039	0		61	$9,822,750	0						1	0
	Great Falls city	0.00	23.0	0.0%	0	$0	0		21,838	$3,214,111,195	0		1,980	$1,834,875,305	0						2	0
	Neihart town	0.00	1.6	0.0%	0	$0	0		57	$5,297,372	0		14	$2,901,487	0						0	0
	Balance of Cascade County	0.00	2,682.9		0	0.0	0	$0	6,683	$1,093,249,155	0	$0	2,214	$702,951,866	0	$0	0.0	0.0	0.0	0.0	11	0
2	**Chouteau County**	0.00	3,992.9	0.0%	0	$0	0		1,880	$212,079,581	0		1,258	$200,554,092	0						4	0
	Big Sandy town	0.00	0.5	0.0%	0	$0	0		324	$26,480,771	0		42	$4,231,062	0						0	0
	Fort Benton city	0.00	1.5	0.0%	0	$0	0		795	$106,352,375	0		111	$15,435,130	0						0	0
	Geraldine town	0.00	0.6	0.0%	0	$0	0		150	$9,556,033	0		21	$2,592,594	0						0	0
	Balance of Chouteau County	0.00	3,990.3		0	$0	0	$0	611	$69,690,402	0	$0	1,084	$178,295,306	0	$0	0.0	0.0	0.0	0.0	4	0
4	**Custer County**	0.00	3,789.3	0.0%	12	$59,923,374	0		4,678	$531,010,978	0		1,711	$297,665,123	0						0	0
	Ismay town	0.00	0.4	0.0%	0	$0	0		29	$349,883	0		10	$1,387,354	0						0	0
	Miles City city	0.00	3.3	0.0%	0	$0	0		3,312	$363,057,565	0		433	$104,957,053	0						0	0
	Balance of Custer County	0.00	3,785.6		12	$59,923,374	0	$0	1,337	$167,603,530	0	$0	1,268	$191,320,716	0	$0	0.0	0.0	0.0	0.0	0	0
6	**Daniels County**	0.00	1,426.1	0.0%	2	$36,946	0		906	$81,170,595	0		976	$93,098,998	0						0	0
	Flaxville town	0.00	0.1	0.0%	0	$0	0		87	$4,797,361	0		16	$766,732	0						0	0
	Scobey city	0.00	0.7	0.0%	0	$0	0		675	$64,548,974	0		128	$10,135,214	0						0	0
	Balance of Daniels County	0.00	1,425.3		2	$36,946	0	$0	144	$11,824,260	0	$0	832	$82,197,052	0	$0	0.0	0.0	0.0	0.0	0	0
4	**Dawson County**	0.00	2,380.7	0.0%	10	$20,985,926	0		3,163	$409,229,017	0		908	$162,010,623	0						0	0
	Glendive city	0.00	3.5	0.0%	0	$0	0		1,604	$225,892,962	0		230	$56,394,894	0						0	0
	Richey town	0.00	0.3	0.0%	0	$0	0		165	$8,909,873	0		23	$2,890,873	0						0	0
	Balance of Dawson County	0.00	2,376.9		10	$20,985,926	0	$0	1,394	$174,426,182	0	$0	655	$102,724,856	0	$0	0.0	0.0	0.0	0.0	0	0
1	**Deer Lodge County**	0.00	740.6	0.0%	30	$71,273,714	0		4,234	$406,037,841	0		509	$103,961,907	0						3	0
	Anaconda-Deer Lodge County	0.00	740.6	0.0%	30	$71,273,714	0	$0	4,234	$406,037,841	0	$0	509	$103,961,907	0	$0	0.0	0.0	0.0	0.0	3	0
4	**Fallon County**	0.00	1,621.2	0.0%	1	$15,822	0		1,223	$120,111,206	0		1,285	$157,284,133	0						2	0
	Baker city	0.00	1.1	0.0%	0	$0	0		882	$83,620,710	0		144	$33,873,913	0						0	0
	Plevna town	0.00	0.4	0.0%	0	$0	0		106	$6,148,692	0		78	$8,870,026	0						0	0
	Balance of Fallon County	0.00	1,619.6		1	$15,822	0	$0	235	$30,341,804	0	$0	1,063	$114,540,194	0	$0	0.0	0.0	0.0	0.0	2	0
6	**Fergus County**	0.00	4,345.2	0.0%	7	$21,432,181	0		4,690	$556,548,908	0		2,019	$402,403,647	0						4	0
	Denton town	0.00	0.7	0.0%	0	$0	0		152	$13,428,059	0		29	$4,382,026	0						0	0
	Grass Range town	0.00	0.1	0.0%	0	$0	0		82	$4,930,605	0		14	$1,525,471	0						0	0
	Lewistown city	0.00	5.2	0.0%	0	$0	0		2,796	$320,465,500	0		396	$106,823,714	0						0	0
	Moore town	0.00	0.3	0.0%	0	$0	0		102	$6,944,815	0		19	$4,216,005	0						0	0
	Winifred town	0.00	0.5	0.0%	0	$0	0		90	$8,768,234	0		20	$4,365,641	0						0	0
	Balance of Fergus County	0.00	4,338.3		7	$21,432,181	0	$0	1,468	$202,011,695	0	$0	1,541	$281,090,790	0	$0	0.0	0.0	0.0	0.0	4	0
1	**Flathead County**	4,758.12	5,252.4	90.6%	20	$38,896,279	20	$38,896,279	41,342	$8,600,413,799	41189	$8,583,838,429	8,138	$3,832,482,719	7977	$3,789,813,701	234,396.4	51,332.4	44,632.4	138,431.5	5	2
	Columbia Falls city	2.05	2.1	100.0%	0	$0	2	$16,951,424	1,739	$255,171,515	1739	$255,171,515	327	$117,184,528	327	$117,184,528	10,091.4	2,194.1	1,980.5	5,916.9	1	1
	Kalispell city	11.80	11.8	100.0%	0	$0	10	$19,802,332	7,553	$1,271,291,249	7553	$1,271,291,249	1,714	$1,065,757,780	1714	$1,065,757,780	55,886.2	12,133.4	11,031.0	32,721.8	0	0
	Whitefish city	11.84	11.8	100.0%	0	$0	0		4,029	$1,153,743,638	4029	$1,153,743,638	522	$350,353,977	522	$350,353,977	44,494.2	9,779.0	8,343.0	26,372.1	0	0
	Balance of Flathead County	4,732.43	5,226.8		20	$38,896,279	8	$2,142,524	28,021	$5,920,207,397	27868	$5,903,632,027	5,575	$2,299,186,434	5414	$2,256,517,416	123,924.6	27,225.9	23,277.9	73,420.8	4	0
3	**Gallatin County**	2,632.52	2,632.5	100.0%	207	$963,139,971	207	$963,139,971	40,035	$10,930,545,091	40035	$10,930,545,091	5,191	$4,169,858,220	5191	$4,169,858,220	249,138.0	49,992.6	32,175.7	166,969.7	6	3
	Belgrade city	3.09	3.1	100.0%	0	$0	0		2,764	$496,929,312	2764	$496,929,312	204	$120,870,378	204	$120,870,378	18,941.1	3,728.5	2,759.7	12,452.9	0	0
	Bozeman city	19.87	19.9	100.0%	0	$0	192	$948,662,225	16,722	$4,743,491,928	16722	$4,743,491,928	1,511	$2,235,363,972	1511	$2,235,363,972	169,319.8	34,205.5	20,871.5	114,242.9	2	1
	Manhattan town	1.72	1.7	100.0%	0	$0	0		657	$115,292,092	657	$115,292,092	71	$33,496,346	71	$33,496,346	2,570.0	505.1	378.1	1,686.9	0	0
	Three Forks city	1.35	1.4	100.0%	0	$0	1	$251,183	787	$99,273,886	787	$99,273,886	104	$26,353,553	104	$26,353,553	2,461.5	449.8	509.6	1,502.1	0	0
	West Yellowstone town	0.79	0.8	100.0%	0	$0	0		639	$139,663,482	639	$139,663,482	244	$183,049,311	244	$183,049,311	3,130.9	635.6	372.6	2,122.8	0	0

APPENDIX B-5. VULNERABILITY ASSESSMENT DOCUMENTATION - EARTHQUAKE
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Earthquake sq. miles	Total sq. miles	Percent Earthquake sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Earthquake Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Earthquake Hazard Area	Residential Exposure in Earthquake Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Earthquake Hazard Area	CAI Exposure in Earthquake Hazard Area	Total Population in Hazard Area	<18 in Earthquake Hazard Area	>65 in Earthquake Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Balance of Gallatin County	2,605.70	2,605.7		207	$963,139,971	14	$14,226,562	18,466	$5,335,894,391	18466	$5,335,894,391	3,057	$1,570,724,660	3057	$1,570,724,660	52,714.6	10,468.3	7,284.2	34,962.2	4	0
4	**Garfield County**	0.00	4,843.5	0.0%	1	$2,417	0		558	$40,352,973	0		828	$98,380,657	0						0	0
	Jordan town	0.00	0.3	0.0%	0	$0	0		257	$15,353,948	0		31	$4,176,477	0						0	0
	Balance of Garfield County	0.00	4,843.1		1	$2,417	0	$0	301	$24,999,025	0	$0	797	$94,204,180	0	$0	0.0	0.0	0.0	0.0	0	0
2	**Glacier County**	2,740.37	3,034.9	90.3%	4	$166,089	4	$166,089	2,176	$173,809,579	2171	$173,488,939	1,208	$513,342,768	1191	$509,858,560	7,127.2	2,095.8	1,189.2	3,842.2	0	0
	Browning town	0.28	0.3	100.0%	0	$0	0		207	$8,297,087	207	$8,297,087	61	$9,037,744	61	$9,037,744	669.3	208.8	77.6	382.8	0	0
	Cut Bank city	1.16	1.2	100.0%	0	$0	1	$32,554	1,122	$90,953,194	1122	$90,953,194	151	$37,600,597	151	$37,600,597	3,794.0	1,081.4	730.1	1,982.6	0	0
	Balance of Glacier County	2,738.92	3,033.4		4	$166,089	3	$133,535	847	$74,559,298	842	$74,238,658	996	$466,704,427	979	$463,220,219	2,663.9	805.5	381.5	1,476.8	0	0
5	**Golden Valley County**	0.00	1,174.1	0.0%	0	$0	0		288	$22,545,552	0		240	$51,388,053	0						0	0
	Lavina town	0.00	1.0	0.0%	0	$0	0		91	$7,521,010	0		15	$1,533,018	0						0	0
	Ryegate town	0.00	0.8	0.0%	0	$0	0		141	$10,234,886	0		15	$1,769,218	0						0	0
	Balance of Golden Valley County	0.00	1,172.4		0	$0	0	$0	56	$4,789,656	0	$0	210	$48,085,817	0	$0	0.0	0.0	0.0	0.0	0	0
1	**Granite County**	490.25	1,730.9	28.3%	0	$0	0		1,604	$210,828,137	486	$52,829,525	530	$156,924,788	242	$38,328,358	1,305.2	210.1	385.0	710.1	4	0
	Drummond town	0.55	0.5	100.0%	0	$0	0		144	$11,391,136	144	$11,391,136	48	$5,493,281	48	$5,493,281	532.2	85.7	157.0	289.5	0	0
	Philipsburg town	0.00	0.8	0.0%	0	$0	0		503	$53,845,654	0		77	$16,673,401	0						0	0
	Balance of Granite County	489.70	1,729.5		0	$0	0	$0	957	$145,591,347	342	$41,438,389	405	$134,758,106	194	$32,835,077	773.1	124.5	228.1	420.6	4	0
2	**Hill County**	0.00	2,915.3	0.0%	19	$55,432,027	0		6,281	$754,306,279	0		2,439	$478,811,374	0						4	0
	Havre city	0.00	3.4	0.0%	0	$0	0		2,954	$365,822,286	0		390	$113,681,709	0						0	0
	Hingham town	0.00	0.2	0.0%	0	$0	0		165	$13,864,635	0		27	$3,866,422	0						0	0
	Balance of Hill County	0.00	2,911.7		19	$55,432,027	0	$0	3,162	$374,619,358	0	$0	2,022	$361,263,243	0	$0	0.0	0.0	0.0	0.0	4	0
3	**Jefferson County**	1,624.04	1,657.8	98.0%	14	$15,148,292	14	$15,148,292	4,016	$744,240,161	4016	$744,240,161	694	$117,529,005	694	$117,529,005	10,584.7	2,028.6	2,571.1	5,985.0	7	3
	Boulder town	1.12	1.1	100.0%	0	$0	5	$9,147,873	356	$36,918,541	356	$36,918,541	47	$6,824,156	47	$6,824,156	973.0	179.1	265.6	528.4	3	2
	Whitehall town	0.71	0.7	100.0%	0	$0	0		325	$32,838,125	325	$32,838,125	47	$9,146,159	47	$9,146,159	815.7	164.0	168.0	483.7	0	0
	Balance of Jefferson County	1,622.22	1,656.0		14	$15,148,292	9	$6,000,418	3,335	$674,483,495	3335	$674,483,495	600	$101,558,690	600	$101,558,690	8,795.9	1,685.6	2,137.5	4,972.8	4	0
6	**Judith Basin County**	0.00	1,868.3	0.0%	0	$0	0		783	$67,357,916	0		682	$119,016,564	0						0	0
	Hobson town	0.00	0.2	0.0%	0	$0	0		116	$11,542,201	0		21	$3,191,010	0						0	0
	Stanford town	0.00	0.4	0.0%	0	$0	0		248	$24,191,487	0		49	$6,993,739	0						0	0
	Balance of Judith Basin County	0.00	1,867.6		0	$0	0	$0	419	$31,624,228	0	$0	612	$108,831,815	0	$0	0.0	0.0	0.0	0.0	0	0
1	**Lake County**	1,652.15	1,652.1	100.0%	16	$14,144,458	16	$14,144,458	16,679	$3,044,070,013	16679	$3,044,070,013	4,157	$907,884,902	4157	$907,884,902	42,907.0	10,107.2	9,879.8	22,920.0	0	0
	Polson city	4.31	4.3	100.0%	0	$0	0		1,550	$239,716,220	1550	$239,716,220	307	$110,486,890	307	$110,486,890	5,215.0	1,127.8	1,530.0	2,557.2	0	0
	Ronan city	1.14	1.1	100.0%	0	$0	0		498	$51,240,897	498	$51,240,897	188	$43,266,142	188	$43,266,142	1,580.1	344.1	455.7	780.3	0	0
	St. Ignatius town	0.52	0.5	100.0%	0	$0	0		227	$24,362,098	227	$24,362,098	33	$6,506,490	33	$6,506,490	699.5	130.1	274.3	295.1	0	0
	Balance of Lake County	1,646.18	1,646.2		16	$14,144,458	16	$14,144,458	14,404	$2,728,750,798	14404	$2,728,750,798	3,629	$747,625,380	3629	$747,625,380	35,412.4	8,505.2	7,619.8	19,287.4	0	0
3	**Lewis and Clark County**	2,686.05	3,493.5	76.9%	77	$528,411,633	75	$528,292,503	28,356	$4,838,187,380	27172	$4,707,033,051	2,990	$1,486,292,152	2755	$1,435,375,165	128,454.4	27,143.9	25,030.9	76,279.5	15	5
	East Helena town	4.08	4.1	100.0%	0	$0	0		778	$95,292,980	778	$95,292,980	55	$16,849,629	55	$16,849,629	4,051.8	857.5	784.7	2,409.7	0	0
	Helena city	16.53	16.5	100.0%	0	$0	51	$505,323,631	10,487	$2,070,264,423	10487	$2,070,264,423	1,613	$1,127,469,517	1613	$1,127,469,517	79,876.9	16,952.3	15,285.5	47,639.1	8	4
	Balance of Lewis and Clark County	2,665.44	3,472.8		77	$528,411,633	24	$22,968,872	17,091	$2,672,629,977	15907	$2,541,475,648	1,322	$341,973,006	1087	$291,056,019	44,525.7	9,334.2	8,960.8	26,230.7	7	0
2	**Liberty County**	0.00	1,446.4	0.0%	3	$203,754	0		540	$55,198,775	0		727	$148,145,426	0						0	0
	Chester town	0.00	0.5	0.0%	0	$0	0		347	$38,384,265	0		85	$11,176,620	0						0	0
	Balance of Liberty County	0.00	1,445.9		3	$203,754	0	$0	193	$16,814,510	0	$0	642	$136,968,806	0	$0	0.0	0.0	0.0	0.0	0	0
1	**Lincoln County**	975.44	3,673.2	26.6%	5	$2,732,131	0		14,201	$1,669,255,057	508	$56,988,087	4,037	$814,443,340	270	$45,381,575	1,122.7	206.6	299.8	616.4	0	0
	Eureka town	0.00	1.0	0.0%	0	$0	0		576	$49,995,833	0		79	$16,254,364	0						0	0
	Libby city	0.00	1.7	0.0%	0	$0	0		1,887	$171,393,838	0		407	$97,831,857	0						0	0
	Rexford town	0.00	0.1	0.0%	0	$0	0		62	$5,237,363	0		7	$1,125,453	0						0	0
	Troy city	0.00	0.7	0.0%	0	$0	0		543	$42,346,210	0		99	$14,488,626	0						0	0
	Balance of Lincoln County	975.44	3,669.7		5	$2,732,131	0	$0	11,133	$1,400,281,813	508	$56,988,087	3,445	$684,743,040	270	$45,381,575	1,122.7	206.6	299.8	616.4	0	0
3	**Madison County**	3,602.36	3,602.4	100.0%	3	$270,203	3	$270,203	4,154	$804,105,665	4154	$804,105,665	1,301	$368,696,283	1301	$368,696,283	9,527.3	1,457.2	2,900.4	5,169.7	9	4
	Ennis town	0.59	0.6	100.0%	0	$0	0		533	$84,019,269	533	$84,019,269	85	$24,326,354	85	$24,326,354	1,292.9	190.1	428.3	674.5	0	0
	Sheridan town	1.01	1.0	100.0%	2	$59,996	0		1,971	$206,039,798	427	$61,222,334	54	$8,980,370	54	$8,980,370	1,032.0	149.1	353.7	529.1	0	0
	Twin Bridges town	1.01	1.0	100.0%	0	$0	0		232	$25,593,322	232	$25,593,322	47	$8,125,500	47	$8,125,500	517.4	81.2	148.0	288.2	0	0
	Virginia City town	0.95	0.9	100.0%	0	$0	1	$236,979	167	$26,178,533	167	$26,178,533	30	$5,366,969	30	$5,366,969	372.4	58.5	106.5	207.4	1	1
	Balance of Madison County	3,598.80	3,598.8		1	$210,207	2	$33,224	1,251	$462,274,743	2795	$607,092,207	1,085	$321,897,090	1085	$321,897,090	6,312.6	978.2	1,864.0	3,470.5	8	0
4	**McCone County**	0.00	2,679.2	0.0%	3	$141,360	0		532	$44,530,155	0		679	$82,125,293	0						3	0
	Circle town	0.00	0.8	0.0%	0	$0	0		335	$27,003,251	0		66	$14,581,192	0						0	0
	Balance of McCone County	0.00	2,678.4		3.0	$141,360	0	$0	197	$17,526,904	0	$0	613	$67,544,101	0	$0	0.0	0.0	0.0	0.0	3	0
3	**Meagher County**	589.51	2,392.1	24.6%	0	$0	0		1,199	$128,110,116	101	$14,878,202	412	$92,624,757	87	$18,561,658	249.5	44.7	68.6	136.2	0	0
	White Sulphur Springs city	0.00	1.0	0.0%	0	$0	0		630	$61,212,327	0		45	$6,869,617	0						0	0
	Balance of Meagher County	589.51	2,391.1		0	$0	0	$0	569	$66,897,789	101	$14,878,202	367	$85,755,140	87	$18,561,658	249.5	44.7	68.6	136.2	0	0
1	**Mineral County**	225.07	1,222.0	18.4%	0	$0	0		2,023	$203,747,490	388	$31,053,576	404	$84,723,652	84	$12,791,463	1,182.8	209.4	339.5	634.0	2	0
	Alberton town	0.00	0.5	0.0%	0	$0	0		197	$14,926,025	0		20	$2,465,222	0						0	0
	Superior town	0.00	1.1	0.0%	0	$0	0		381	$36,464,606	0		72	$20,494,160	0						0	0
	Balance of Mineral County	225.07	1,220.4		0	$0	0	$0	1,445	$152,356,859	388	$31,053,576	312	$61,764,270	84	$12,791,463	1,182.8	209.4	339.5	634.0	2	0
1	**Missoula County**	1,970.99	2,614.9	75.4%	203	$1,032,240,117	198	$1,022,350,226	16,873	$2,860,469,867	13268	$2,058,288,598	1,421	$1,152,881,550	1184	$931,869,616	59,088.9	11,071.8	10,097.6	37,919.5	13	4
	Missoula city	23.39	29.0	80.6%	203	$1,032,240,117	190	$1,003,483,589	4,975	$984,652,873	4547	$862,532,275	470	$595,032,016	422	$489,664,882	33,600.7	6,247.5	5,956.1	21,397.0	8	4
	Balance of Missoula County	1,947.60	2,585.9		0	$0	8	$18,866,637	11,898	$1,875,816,994	8721	$1,195,756,323	951	$557,849,534	762	$442,204,734	25,488.2	4,824.3	4,141.5	16,522.5	5	0
5	**Musselshell County**	0.00	1,869.6	0.0%	2	$45,908	0		1,730	$148,155,396	0		734	$146,591,301	0						0	0
	Melstone town	0.00	0.6	0.0%	0	$0	0		39	$2,012,685	0		7	$754,186	0						0	0
	Roundup city	0.00	1.3	0.0%	0	$0	0		837	$63,457,673	0		129	$18,353,849	0						0	0
	Balance of Musselshell County	0.00	1,867.7		2	$45,908	0	$0	854	$82,685,038	0	$0	598	$127,483,266	0	$0	0.0	0.0	0.0	0.0	0	0
3	**Park County**	2,461.85	2,811.7	87.6%	4	$2,414,253	4	$2,414,253	6,087	$1,151,416,662	6035	$1,142,468,554	1,680	$821,834,484	1599	$785,269,984	14,158.4	2,571.1	3,324.5	8,262.8	3	2
	Clyde Park town	0.36	0.4	100.0%	0	$0	0		134	$13,924,845	134	$13,924,845	23	$4,042,499	23	$4,042,499	305.5	57.1	64.8	183.6	0	0
	Livingston city	5.71	5.7	100.0%	0	$0	1	$2,254,253	2,567	$392,434,781	2567	$392,434,781	537	$198,955,646	537	$198,955,646	6,171.6	1,092.8	1,566.9	3,512.0	0	0
	Balance of Park County	2,455.78	2,805.6		4	$2,414,253	3	$160,000	3,386	$745,057,036	3334	$736,108,928	1,120	$618,836,339	1039	$582,271,839	7,681.2	1,421.2	1,692.9	4,567.1	3	0

APPENDIX B-5. VULNERABILITY ASSESSMENT DOCUMENTATION - EARTHQUAKE
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Earthquake sq. miles	Total sq. miles	Percent Earthquake sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Earthquake Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Earthquake Hazard Area	Residential Exposure in Earthquake Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Earthquake Hazard Area	CAI Exposure in Earthquake Hazard Area	Total Population in Hazard Area	<18 in Earthquake Hazard Area	>65 in Earthquake Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
6	**Petroleum County**	0.00	1,672.5	0.0%	0	$0	0		184	$23,127,789	0		204	$28,781,751	0						0	0
	Winnett town	0.00	1.0	0.0%	0	$0	0		148	$19,210,729	0		21	$2,591,917	0						0	0
	Balance of Petroleum County	0.00	1,671.5		0	$0	0	$0	36	$3,917,060	0	$0	183	$26,189,834	0	$0	0.0	0.0	0.0	0.0	0	0
6	**Phillips County**	0.00	5,208.5	0.0%	6	$1,661,730	0		1,695	$155,044,408	0		1,402	$250,190,823	0						3	0
	Dodson town	0.00	0.2	0.0%	0	$0	0		70	$2,222,512	0		5	$140,341	0						0	0
	Malta city	0.00	1.0	0.0%	0	$0	0		996	$103,409,948	0		144	$29,008,393	0						0	0
	Saco town	0.00	0.3	0.0%	0	$0	0		134	$6,873,752	0		15	$1,887,736	0						0	0
	Balance of Phillips County	0.00	5,207.0		6	$1,661,730	0	$0	495	$42,538,196	0	$0	1,238	$219,154,353	0	$0	0.0	0.0	0.0	0.0	3	0
2	**Pondera County**	920.33	1,640.4	56.1%	2	$60,957	1	$58,540	1,815	$200,092,707	444	$46,435,337	883	$265,160,665	301	$87,099,225	1,396.1	329.5	284.8	781.8	0	0
	Conrad city	0.00	1.2	0.0%	0	$0	0		1,126	$122,656,189	0		156	$57,675,177	0						0	0
	Valier town	0.86	0.9	100.0%	0	$0	0		295	$29,342,500	295	$29,342,500	47	$8,582,116	47	$8,582,116	965.2	227.8	196.9	540.5	0	0
	Balance of Pondera County	919.47	1,638.3		2	$60,957	1	$58,540	394	$48,094,018	149	$17,092,837	680	$198,903,372	254	$78,517,109	430.9	101.7	87.9	241.3	0	0
4	**Powder River County**	0.00	3,297.5	0.0%	2	$26,512	0		350	$31,752,451	0		642	$113,734,309	0						0	0
	Broadus town	0.00	0.4	0.0%	0	$0	0		218	$19,631,053	0		71	$8,590,919	0						0	0
	Balance of Powder River County	0.00	3,297.1		2	$26,512	0	$0	132	$12,121,398	0	$0	571	$105,143,390	0	$0	0.0	0.0	0.0		0	0
1	**Powell County**	1,937.32	2,329.6	83.2%	47	$139,753,982	0		2,509	$325,066,746	615	$83,573,783	697	$217,400,046	379	$84,513,934	1,631.3	252.8	321.4	1,057.1	4	1
	Deer Lodge city	0.00	1.4	0.0%	30	$71,273,714	0		1,455	$118,373,521	0		160	$37,299,244	0						2	0
	Balance of Powell County	1,937.32	2,328.2		17	$68,480,268	0	$0	1,054	$206,693,225	615	$83,573,783	537	$180,100,802	379	$84,513,934	1,631.3	252.8	321.4	1,057.1	2	0
4	**Prairie County**	0.00	1,740.2	0.0%	0	$0	0		527	$28,742,376	0		525	$56,615,772	0						4	0
	Terry town	0.00	0.8	0.0%	0	$0	0		382	$21,559,157	0		43	$3,618,679	0						0	0
	Balance of Prairie County	0.00	1,739.4		0	$0	0	$0	145	$7,183,219	0	$0	482	$52,997,093	0	$0	0.0	0.0	0.0	0.0	4	0
1	**Ravalli County**	0.00	2,398.2	0.0%	3	$1,079,777	0		19,277	$3,692,614,691	0		3,023	$930,619,898	0						4	0
	Darby town	0.00	0.6	0.0%	0	$0	0		455	$65,564,435	0		20	$5,525,704	0						0	0
	Hamilton city	0.00	2.4	0.0%	0	$0	0		2,371	$402,402,609	0		207	$138,471,668	0						0	0
	Pinesdale town	0.00	1.3	0.0%	0	$0	0		163	$30,828,359	0		42	$6,383,047	0						0	0
	Stevensville town	0.00	1.0	0.0%	0	$0	0		956	$165,432,372	0		64	$20,620,328	0						0	0
	Balance of Ravalli County	0.00	2,392.9		3	$1,079,777	0	$0	15,332	$3,028,386,916	0	$0	2,690	$759,619,151	0	$0	0.0	0.0	0.0	0.0	4	0
4	**Richland County**	0.00	2,101.9	0.0%	4	$1,434,990	0		2,979	$516,039,930	0		1,646	$420,114,426	0						0	0
	Fairview town	0.00	0.8	0.0%	0	$0	0		313	$29,368,800	0		37	$7,407,985	0						0	0
	Sidney city	0.00	2.4	0.0%	0	$0	0		1,697	$319,755,649	0		342	$108,260,768	0						0	0
	Balance of Richland County	0.00	2,098.7		4	$1,434,990	0	$0	969	$166,915,481	0		1,267	$304,445,673	0		0.0	0.0	0.0	0.0	0	0
6	**Roosevelt County**	0.00	2,366.6	0.0%	4	$3,703,234	0		2,085	$172,781,506	0		1,674	$267,647,926	0						2	0
	Bainville town	0.00	1.0	0.0%	0	$0	0		116	$8,253,760	0		17	$1,186,389	0						0	0
	Brockton town	0.00	0.2	0.0%	0	$0	0		21	$718,776	0		5	$430,537	0						0	0
	Culbertson town	0.00	0.5	0.0%	0	$0	0		452	$46,606,757	0		78	$11,849,589	0						0	0
	Froid town	0.00	0.3	0.0%	0	$0	0		127	$5,583,947	0		15	$809,020	0						0	0
	Poplar city	0.00	0.3	0.0%	0	$0	0		239	$11,492,367	0		40	$3,179,375	0						0	0
	Wolf Point city	0.00	0.8	0.0%	0	$0	0		746	$61,499,644	0		105	$12,969,709	0						0	0
	Balance of Roosevelt County	0.00	2,363.6		4	$3,703,234	0	$0	384	$38,626,255	0	$0	1,414	$237,223,307	0	$0	0.0	0.0	0.0	0.0	2	0
5	**Rosebud County**	0.00	5,020.4	0.0%	3	$125,417	0		2,477	$239,021,461	0		1,810	$213,766,468	0						0	0
	Colstrip city	0.00	4.1	0.0%	0	$0	0		980	$109,503,560	0		250	$31,692,015	0						0	0
	Forsyth city	0.00	1.2	0.0%	0	$0	0		896	$75,056,501	0		141	$26,550,423	0						0	0
	Balance of Rosebud County	0.00	5,015.1		3	$125,417	0	$0	601	$54,461,400	0	$0	1,419	$155,524,030	0	$0	0.0	0.0	0.0	0.0	0	0
1	**Sanders County**	2,275.08	2,786.9	81.6%	0	$0	0		4,955	$571,408,477	4426	$509,153,870	1,849	$320,122,376	1503	$257,167,109	13,997.1	2,445.7	4,282.3	7,269.1	0	0
	Hot Springs town	0.36	0.4	100.0%	0	$0	0		343	$29,433,542	343	$29,433,542	53	$9,621,606	53	$9,621,606	1,372.6	232.3	449.8	690.5	0	0
	Plains town	0.61	0.6	100.0%	0	$0	0		547	$44,751,633	547	$44,751,633	88	$17,655,569	88	$17,655,569	2,212.4	383.5	689.2	1,139.8	0	0
	Thompson Falls city	1.58	1.6	100.0%	0	$0	0		666	$67,891,731	666	$67,891,731	85	$16,866,473	85	$16,866,473	2,913.0	509.6	888.8	1,514.6	0	0
	Balance of Sanders County	2,272.53	2,784.4		0	$0	0	$0	3,399	$429,331,571	2870	$367,076,964	1,623	$275,978,728	1277	$213,023,461	7,499.0	1,320.3	2,254.5	3,924.2	0	0
6	**Sheridan County**	0.00	1,703.6	0.0%	2	$59,996	0		1,971	$206,039,798	0		1,503	$172,072,215	0						0	0
	Medicine Lake town	0.00	0.4	0.0%	0	$0	0		159	$9,705,581	0		24	$1,200,353	0						0	0
	Outlook town	0.00	1.2	0.0%	0	$0	0		44	$2,946,970	0		10	$552,096	0						0	0
	Plentywood city	0.00	1.3	0.0%	0	$0	0		785	$88,640,393	0		136	$18,201,885	0						0	0
	Westby town	0.00	0.6	0.0%	0	$0	0		102	$4,909,517	0		15	$1,132,999	0						0	0
	Balance of Sheridan County	0.00	1,700.1		2	$59,996	0		881	$99,837,337	0	$0	1,318	$150,984,882	0	$0	0.0	0.0	0.0	0.0	0	0
1	**Silver Bow County**	441.09	718.0	61.4%	26	$227,661,811	26	$227,661,811	13,122	$1,426,148,334	12787	$1,375,498,265	1,585	$807,024,197	1493	$571,946,651	32,458.9	6,419.6	6,845.9	19,193.4	5	2
	Walkerville town	2.23	2.2	100.0%	0	$0	0		342	$24,138,167	342	$24,138,167	6	$334,643	6	$334,643	759.2	155.6	138.2	465.4	1	1
	Butte-Silver Bow (remainder)	438.87	715.7		26	$227,661,811	26	$227,661,811	12,780	$1,402,010,167	12445	$1,351,360,098	1,579	$806,689,554	1487	$571,612,008	31,699.6	6,263.9	6,707.7	18,728.0	4	0
5	**Stillwater County**	303.41	1,804.7	16.8%	2	$100,729	0		2,790	$487,586,815	58	$13,615,147	943	$192,170,926	13	$1,535,982	141.5	30.4	30.3	80.8	0	0
	Columbus town	0.00	1.3	0.0%	0	$0	0		448	$58,806,556	0		97	$44,373,190	0						0	0
	Balance of Stillwater County	303.41	1,803.4		2	$100,729	0	$0	2,342	$428,780,259	58	$13,615,147	846	$147,797,736	13	$1,535,982	141.5	30.4	30.3	80.8	0	0
3	**Sweet Grass County**	296.84	1,860.9	16.0%	1	$100,000	0		1,559	$263,525,756	55	$13,350,946	1,251	$384,985,550	43	$14,394,331	139.7	28.8	34.3	76.5	0	0
	Big Timber city	0.00	1.0	0.0%	0	$0	0		772	$99,628,903	0		157	$34,833,465	0						0	0
	Balance of Sweet Grass County	296.84	1,860.0		1	$100,000	0	$0	787	$163,896,853	55	$13,350,946	1,094	$350,152,085	43	$14,394,331	139.7	28.8	34.3	76.5	0	0
2	**Teton County**	553.16	2,289.5	24.2%	2	$60,957	0		1,834	$226,386,656	33	$4,787,548	1,107	$240,507,233	29	$14,274,007	82.5	19.5	18.6	44.4	1	0
	Choteau city	0.00	1.5	0.0%	0	$0	0		743	$81,363,094	0		102	$23,811,077	0						0	0
	Dutton town	0.00	0.4	0.0%	0	$0	0		159	$17,819,673	0		30	$5,356,644	0						0	0
	Fairfield town	0.00	0.3	0.0%	0	$0	0		266	$30,208,145	0		46	$13,369,957	0						0	0
	Balance of Teton County	553.16	2,287.4		2	$60,957	0	$0	666	$96,995,744	33	$4,787,548	929	$197,969,555	29	$14,274,007	82.5	19.5	18.6	44.4	1	0
2	**Toole County**	726.86	1,943.9	37.4%	3	$124,825	3	$124,825	1,702	$149,272,962	1649	$144,460,757	806	$214,874,251	483	$146,941,865	5,227.3	967.3	951.6	3,308.4	2	1
	Kevin town	0.39	0.4	100.0%	0	$0	0		101	$4,284,353	101	$4,284,353	9	$317,749	9	$317,749	250.9	47.2	42.4	161.3	0	0
	Shelby city	5.92	5.9	100.0%	0	$0	2	$50,496	1,175	$110,467,515	1175	$110,467,515	196	$76,850,372	196	$76,850,372	4,116.2	758.4	763.8	2,594.0	0	0
	Sunburst town	2.03	2.0	100.0%	0	$0	0		208	$12,619,612	208	$12,619,612	25	$3,026,807	25	$3,026,807	490.6	92.2	82.9	315.4	0	0
	Balance of Toole County	718.53	1,935.5		3	$124,825	1	$74,329	218	$21,901,482	165	$17,089,277	576	$134,679,323	253	$66,746,937	369.6	69.5	62.5	237.7	2	0

APPENDIX B-5. VULNERABILITY ASSESSMENT DOCUMENTATION - EARTHQUAKE
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Earthquake sq. miles	Total sq. miles	Percent Earthquake sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Earthquake Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Earthquake Hazard Area	Residential Exposure in Earthquake Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Earthquake Hazard Area	CAI Exposure in Earthquake Hazard Area	Total Population in Hazard Area	<18 in Earthquake Hazard Area	>65 in Earthquake Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
5	**Treasure County**	0.00	983.5	0.0%	1	$250,000	0		194	$12,369,442	0		362	$46,827,867	0						2	0
	Hysham town	0.00	0.2	0.0%	0	$0	0		159	$9,401,270	0		20	$2,281,485	0						0	0
	Balance of Treasure County	0.00	983.2		1	$250,000	0	$0	35	$2,968,172	0	$0	342	$44,546,382	0	$0	0.0	0.0	0.0	0.0	2	0
6	**Valley County**	0.00	5,058.5	0.0%	7	$2,929,498	0		2,863	$365,588,943	0		1,209	$208,523,811	0						0	0
	Fort Peck town	0.00	0.9	0.0%	0	$0	0		118	$21,485,471	0		10	$2,092,827	0						0	0
	Glasgow city	0.00	1.4	0.0%	0	$0	0		1,353	$173,782,829	0		217	$55,123,436	0						0	0
	Nashua town	0.00	0.7	0.0%	0	$0	0		200	$13,107,033	0		17	$1,596,474	0						0	0
	Opheim town	0.00	0.2	0.0%	0	$0	0		76	$3,977,464	0		14	$1,365,742	0						0	0
	Balance of Valley County	0.00	5,055.3		7	$2,929,498	0	$0	1,116	$153,236,146	0	$0	951	$148,345,332	0	$0	0.0	0.0	0.0	0.0	0	0
5	**Wheatland County**	0.00	1,425.9	0.0%	3	$1,816,266	0		850	$65,290,360	0		392	$102,480,647	0						0	0
	Harlowton city	0.00	0.6	0.0%	0	$0	0		569	$43,661,633	0		81	$8,532,547	0						0	0
	Judith Gap city	0.00	0.3	0.0%	0	$0	0		89	$5,833,159	0		10	$1,334,639	0						0	0
	Balance of Wheatland County	0.00	1,425.0		3	$1,816,266	0	$0	192	$15,795,568	0	$0	301	$92,613,461	0	$0	0.0	0.0	0.0	0.0	0	0
4	**Wibaux County**	0.00	888.1	0.0%	0	$0	0		318	$24,265,482	0		518	$58,984,045	0						0	0
	Wibaux town	0.00	1.1	0.0%	0	$0	0		290	$20,843,967	0		54	$4,948,635	0						0	0
	Balance of Wibaux County	0.00	887.0		0	$0	0	$0	28	$3,421,515	0	$0	464	$54,035,410	0	$0	0.0	0.0	0.0	0.0	0	0
5	**Yellowstone County**	0.00	2,646.8	0.0%	19	$148,531,721	0		58,853	$10,961,976,827	0		5,429	$4,499,091,639	0						10	0
	Billings city	0.00	43.0	0.0%	0	$0	0		41,447	$7,866,273,265	0		3,014	$3,285,025,446	0						4	0
	Broadview town	0.00	0.2	0.0%	0	$0	0		79	$9,621,070	0		10	$2,904,982	0						0	0
	Laurel city	0.00	2.1	0.0%	0	$0	0		2,701	$394,711,073	0		187	$100,223,386	0						0	0
	Balance of Yellowstone County	0.00	2,601.4		19	$148,531,721	0	$0	14,626	$2,691,371,419	0	$0	2,218	$1,110,937,825	0	$0	0.0	0.0	0.0	0.0	6	0

APPENDIX B-5. CRITICAL FACILITIES IN EARTHQUAKE HAZARD AREA
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Beaverhead	DELL	DEPARTMENT OF TRANSPORTATION	Aeronautics Dell Electrical Building	1 mile northwest of Dell off Interstate 15	44.731291	-112.715037	$26,499
Beaverhead	DILLON	DEPARTMENT OF MILITARY AFFAIRS	Dillon Readiness Center	1070 Highway 41	45.232061	-112.618027	$5,290,581
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM Dillon (WMC)	710 S Atlantic St. WMC Heating Plant	45.208165	-112.641196	$50,000
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Auditorium & Shop	710 S. Atlantic	45.208735	-112.640263	$2,652,247
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Block Hall	710 S. Atlantic	45.208444	-112.638271	$12,221,413
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Centennial Hall	750 E. Cornell	45.208014	-112.637137	$3,485,454
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Clark Hall	750 E. Cornell	45.208100	-112.636476	$4,574,377
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Davis Hall	710 S. Atlantic	45.208283	-112.637181	$3,802,992
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Engineer's Cottage	710 S. Atlantic	45.208782	-112.638613	$67,949
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Family Housing	710 S. Atlantic	45.208952	-112.637152	$1,717,829
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Heating Plant & Garage	710 S. Atlantic	45.209043	-112.638324	$2,001,967
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Jordan Hall	750 E. Cornell	45.208543	-112.637394	$506,946
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Library Administration	710 S. Atlantic	45.208434	-112.639256	$15,267,576
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Main Hall Building	710 S. Atlantic	45.209125	-112.640222	$28,922,882
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Matthews Hall	710 S. Atlantic	45.209545	-112.638745	$11,442,081
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Old Library Building	710 S. Atlantic	45.208777	-112.640683	$2,467,568
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Osborne Residence (Curious Minds)	710 S. Atlantic	45.207289	-112.639562	$111,901
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	PHYSICAL ED BUILDING - DILLON	710 S. Atlantic	45.207380	-112.637863	$15,779,695
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	South Campus Housing	434 E. Poindexter	45.208103	-112.641223	$196,717
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	STUDENT UNION BUILDING - DILLON	710 S. Atlantic	45.208061	-112.639851	$2,540,420
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Swysgood Technology Center (STC)	710 South Atlantic	45.208083	-112.638652	$6,912,898
Broadwater	TOSTON	DEPARTMENT OF NATURAL RESOURCES	Toston Dam Power House	Toston Dam Road	46.120486	-111.407744	$25,562,814
Broadwater	TOSTON	DEPARTMENT OF NATURAL RESOURCES	Toston Dam Rubber Dams	Toston Dam Road	46.120029	-111.408265	$1,984,136
Broadwater	TOSTON	DEPARTMENT OF NATURAL RESOURCES	Toston Dam Sub-station	Toston Dam Road	46.120675	-111.407478	$1,491,948
Flathead	COLUMBIA FALLS	PUBLIC HEALTH & HUMAN SERVICES, VETERANS' HOME - COLUMBIA FALLS	Nursing Home & Dom &Special Care Unit 69-73-84-02	400 Veterans Dr.	48.364518	-114.210002	$16,638,591
Flathead	COLUMBIA FALLS	PUBLIC HEALTH & HUMAN SERVICES, VETERANS' HOME - COLUMBIA FALLS	Superintendent's Cottage	400 Veterans Dr.	48.364518	-114.210002	$312,832
Flathead	KALISPELL	DEPARTMENT OF FISH, WILDLIFE & PARKS	1) Regional HQ Building	490 N Meridian Rd	48.203784	-114.330341	$3,859,259
Flathead	KALISPELL	DEPARTMENT OF FISH, WILDLIFE & PARKS	Lone Pine SP - Building - Visitor Center	300 Lone Pine Rd	48.172641	-114.346822	$1,401,629
Flathead	KALISPELL	DEPARTMENT OF JUSTICE	MHP - Kalispell Dispatch Microwave Tower	3.5 miles NW of Kalispell	48.235810	-114.350030	$34,559
Flathead	KALISPELL	DEPARTMENT OF JUSTICE	MHP - Kalispell Water Tower Microwave Tower	Kalispell	48.212861	-114.321278	$28,274
Flathead	KALISPELL	DEPARTMENT OF MILITARY AFFAIRS	Kalispell AFRC	2989 Hwy 93 North	48.257366	-114.326732	$10,692,875
Flathead	KALISPELL	DEPARTMENT OF MILITARY AFFAIRS	Kalispell AFRC Fire Pump Building	2989 Hwy 93 North	48.257366	-114.326732	$401,231
Flathead	KALISPELL	DEPARTMENT OF NATURAL RESOURCES	NWLO Fire Cache	655 Timberwolf Parkway, Suite 2	48.235846	-114.351104	$1,708,960
Flathead	KALISPELL	DEPARTMENT OF NATURAL RESOURCES	NWLO Helicopter Hanger	A-8 Ryan Lane	48.179522	-114.308240	$182,336
Flathead	KALISPELL	DEPARTMENT OF TRANSPORTATION	Kalispell Office & Shop	85 5th Avenue EN	48.202252	-114.306689	$2,664,291
Flathead	KALISPELL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KALISPELL REGIONAL MEDICAL CTR	310 SUNNYVIEW LANE	48.215290	-114.322020	$230,546
Flathead	Kalispell	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Line Pine Site	Kookoosint Trail	48.176083	-114.350056	$46,394
Flathead	KALISPELL	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	NWARC RESIDENCE #1	4570 Montana 35	48.189405	-114.133982	$102,279
Flathead	KALISPELL	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM Kalispell	Lone Pine State Park	48.175685	-114.350372	$50,000
Flathead	KALISPELL		Conrad Mansion Museum	300 Woodland Ave	48.197372	-114.302893	$0
Flathead	LAKESIDE	DEPARTMENT OF JUSTICE	MHP - Black Tail Microwave Tower	5 miles E of Lakside	48.010778	-114.363194	$102,091
Flathead	Lakeside	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Blacktail	Blacktail Road	48.011552	-114.365622	$353,956
Flathead	WHITEFISH	DEPARTMENT OF JUSTICE	MHP - Big Mountain Microwave Tower	7 miles North of Whitefish	48.504869	-114.343252	$36,176
Flathead	WHITEFISH	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM FAA Peak Whitefish	Big Mountain FAA Peak	48.506108	-114.348191	$50,000
Gallatin	BELGRADE	DEPARTMENT OF MILITARY AFFAIRS	Gallatin Readiness Center	350 Airport Road	45.765173	-111.145621	$9,233,463
Gallatin	BOZEMAN	DEPARTMENT OF AGRICULTURE	Leased - Ag Sciences/Bozeman Laboratory	MSU McCall Hall Rm 10	45.665513	-111.052487	$2,453,013
Gallatin	BOZEMAN	DEPARTMENT OF FISH, WILDLIFE & PARKS	3) Regional HQ Building	1400 South 19th	45.665507	-111.061773	$2,956,315
Gallatin	BOZEMAN	DEPARTMENT OF LIVESTOCK	Diagnostic Laboratory Bozeman Contents	S. 19th & Lincoln	45.664047	-111.064608	$601,384
Gallatin	BOZEMAN	DEPARTMENT OF TRANSPORTATION	Bozeman Office & Shop	907 N. Rouse	45.688886	-111.031981	$1,667,047
Gallatin	Bozeman	University System, Montana State University	FACILITIES HEAT PLANT GENERATOR BLDG	West Grant Street (no official address)	45.664791	-111.046076	$4,170,986
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Bozeman Translator	113 Sourdough Ridge Road	45.645684	-111.021645	$13,563
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	KBMC Transmitter Facilities	High Flat, 11 miles W.S.W. of Bozeman	45.624876	-111.260362	$543,046
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1 GLACIER COURT HOUSE	1 GLACIER COURT	45.669284	-111.057314	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	10 GLACIER COURT HOUSE	10 GLACIER COURT	45.669229	-111.056454	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1002 S. 15TH STREET HOUSE	1002 S. 15TH STREET	45.669114	-111.057423	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1004 S. 15TH STREET HOUSE	1004 S. 15TH STREET	45.668988	-111.057421	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1006 S. 15TH STREET HOUSE	1006 S. 15TH STREET	45.668862	-111.057424	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	101 BRANEGAN COURT TOWNHOUSES	101 BRANEGAN COURT	45.667632	-111.061446	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	101 EAST JULIA MARTIN DRIVE APARTMENTS	101 EAST JULIA MARTIN DRIVE	45.667855	-111.058176	$252,689
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	101 GRANT CHAMBERLAIN DRIVE APARTMENTS	101 GRANT CHAMBERLAIN DRIVE	45.669625	-111.057790	$875,560
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	101 MCINTOSH COURT TOWNHOUSES	101 MCINTOSH COURT	45.670635	-111.061212	$251,250
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	101 PAISLEY COURT FLATS	101 PAISLEY COURT	45.666977	-111.058471	$390,682
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	102 BRANEGAN COURT TOWNHOUSES	102 BRANEGAN COURT	45.668034	-111.061533	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	102 EAST JULIA MARTIN DRIVE APARTMENTS	102 EAST JULIA MARTIN DRIVE	45.667970	-111.058024	$127,017
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	102 GRANT CHAMBERLAIN DRIVE APARTMENTS	102 GRANT CHAMBERLAIN DRIVE	45.670422	-111.057965	$860,580
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	102 MCINTOSH COURT TOWNHOUSES	102 MCINTOSH COURT	45.670503	-111.061186	$273,536
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	102 PAISLEY COURT FLATS	102 PAISLEY COURT	45.666968	-111.059164	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	103 BRANEGAN COURT TOWNHOUSES	103 BRANEGAN COURT	45.667639	-111.061446	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	103 EAST JULIA MARTIN DRIVE APARTMENTS	103 EAST JULIA MARTIN DRIVE	45.668197	-111.057983	$252,689
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	103 GRANT CHAMBERLAIN DRIVE APARTMENTS	103 GRANT CHAMBERLAIN DRIVE	45.670727	-111.058621	$860,580
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	103 MCINTOSH COURT TOWNHOUSES	103 MCINTOSH COURT	45.670633	-111.061213	$234,028
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	103 PAISLEY COURT FLATS	103 PAISLEY COURT	45.667162	-111.059291	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	104 BRANEGAN COURT TOWNHOUSES	104 BRANEGAN COURT	45.668133	-111.061543	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	104 EAST JULIA MARTIN DRIVE APARTMENTS	104 EAST JULIA MARTIN DRIVE	45.668411	-111.058105	$127,017

APPENDIX B-5. CRITICAL FACILITIES IN EARTHQUAKE HAZARD AREA
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	104 GRANT CHAMBERLAIN DRIVE APARTMENTS	104 GRANT CHAMBERLAIN DRIVE	45.670985	-111.059333	$860,580
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	104 MCINTOSH COURT TOWNHOUSES	104 MCINTOSH COURT	45.670632	-111.061213	$234,028
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	104 PAISLEY COURT FLATS	104 PAISLEY COURT	45.667207	-111.058983	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	105 BRANEGAN COURT TOWNHOUSES	105 BRANEGAN COURT	45.667646	-111.061446	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	105 EAST JULIA MARTIN DRIVE APARTMENTS	105 EAST JULIA MARTIN DRIVE	45.668761	-111.058138	$252,689
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	105 GRANT CHAMBERLAIN DRIVE APARTMENTS	105 GRANT CHAMBERLAIN DRIVE	45.670188	-111.060551	$860,580
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	105 MCINTOSH COURT TOWNHOUSES	105 MCINTOSH COURT	45.670475	-111.061153	$234,028
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	105 PAISLEY COURT FLATS	105 PAISLEY COURT	45.667098	-111.060195	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	106 BRANEGAN COURT TOWNHOUSES	106 BRANEGAN COURT	45.668137	-111.061542	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	106 EAST JULIA MARTIN DRIVE APARTMENTS	106 EAST JULIA MARTIN DRIVE	45.668842	-111.058249	$127,017
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	106 GRANT CHAMBERLAIN DRIVE APARTMENTS	106 GRANT CHAMBERLAIN DRIVE	45.670970	-111.059383	$860,580
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	106 MCINTOSH COURT TOWNHOUSES	106 MCINTOSH COURT	45.670631	-111.061213	$234,028
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	106 PAISLEY COURT FLATS	106 PAISLEY COURT	45.666977	-111.060383	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	107 BRANEGAN COURT TOWNHOUSES	107 BRANEGAN COURT	45.667653	-111.061446	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	107 EAST JULIA MARTIN DRIVE APARTMENTS	107 EAST JULIA MARTIN DRIVE	45.668839	-111.058458	$252,689
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	107 MCINTOSH COURT TOWNHOUSES	107 MCINTOSH COURT	45.670601	-111.061203	$273,536
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	107 PAISLEY COURT FLATS	107 PAISLEY COURT	45.666977	-111.061071	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	108 BRANEGAN COURT TOWNHOUSES	108 BRANEGAN COURT	45.667938	-111.061560	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	108 EAST JULIA MARTIN DRIVE APARTMENTS	108 EAST JULIA MARTIN DRIVE	45.668697	-111.058600	$252,689
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	108 MCINTOSH COURT TOWNHOUSES	108 MCINTOSH COURT	45.670472	-111.061155	$273,536
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	108 PAISLEY COURT FLATS	108 PAISLEY COURT	45.667179	-111.061112	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	109 EAST JULIA MARTIN DRIVE APARTMENTS	109 EAST JULIA MARTIN DRIVE	45.668593	-111.058561	$127,017
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	109 MCINTOSH COURT TOWNHOUSES	109 MCINTOSH COURT	45.670628	-111.061213	$234,028
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	109 PAISLEY COURT FLATS	109 PAISLEY COURT	45.667216	-111.060810	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	11 GLACIER COURT HOUSE	11 GLACIER COURT	45.669284	-111.056531	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	110 EAST JULIA MARTIN DRIVE APARTMENTS	110 EAST JULIA MARTIN DRIVE	45.668332	-111.058129	$127,017
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1102 S 6th Avenue	1102 SO 6th	45.668007	-111.045332	$814,928
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	111 EAST JULIA MARTIN DRIVE APARTMENTS	111 EAST JULIA MARTIN DRIVE	45.668480	-111.060040	$127,017
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	112 WEST JULIA MARTIN DRIVE APARTMENTS	112 WEST JULIA MARTIN DRIVE	45.668680	-111.059874	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	113 WEST JULIA MARTIN DRIVE APARTMENTS	113 WEST JULIA MARTIN DRIVE	45.668815	-111.059972	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	114 WEST JULIA MARTIN DRIVE APARTMENTS	114 WEST JULIA MARTIN DRIVE	45.668854	-111.060092	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	115 WEST JULIA MARTIN DRIVE APARTMENTS	115 WEST JULIA MARTIN DRIVE	45.668844	-111.060420	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	116 WEST JULIA MARTIN DRIVE APARTMENTS	116 WEST JULIA MARTIN DRIVE	45.668816	-111.060530	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	117 WEST JULIA MARTIN DRIVE APARTMENTS	117 WEST JULIA MARTIN DRIVE	45.668591	-111.060559	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	118 WEST JULIA MARTIN DRIVE APARTMENTS	118 WEST JULIA MARTIN DRIVE	45.668214	-111.060303	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	119 WEST JULIA MARTIN DRIVE APARTMENTS	119 WEST JULIA MARTIN DRIVE	45.667755	-111.060302	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	12 GLACIER COURT HOUSE	12 GLACIER COURT	45.669226	-111.056292	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1209 FOX STREET HOUSE	1209 FOX STREET	45.668258	-111.055244	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1209 GOPHER STREET HOUSE	1209 GOPHER STREET	45.667779	-111.055834	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1210 FOX STREET HOUSE	1210 FOX STREET	45.668199	-111.055302	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1210 S. 15TH STREET HOUSE	1210 S. 15TH STREET	45.668466	-111.057422	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1211 FOX STREET HOUSE	1211 FOX STREET	45.668256	-111.055410	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1212 FOX STREET HOUSE	1212 FOX STREET	45.668203	-111.055464	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1212 S. 15TH STREET HOUSE	1212 S. 15TH STREET	45.668358	-111.057422	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1213 GOPHER STREET HOUSE	1213 GOPHER STREET	45.667779	-111.055831	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1214 S. 15TH STREET HOUSE	1214 S. 15TH STREET	45.668250	-111.057422	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1223 GOPHER STREET HOUSE	1223 GOPHER STREET	45.667693	-111.055816	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1225 GOPHER STREET HOUSE	1225 GOPHER STREET	45.667691	-111.055816	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	13 GLACIER COURT HOUSE	13 GLACIER COURT	45.669285	-111.056373	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1401 W. GARFIELD STREET HOUSE	1401 W. GARFIELD STREET	45.667583	-111.056333	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1402 FOX STREET HOUSE	1402 FOX STREET	45.668202	-111.055793	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1403 FOX STREET HOUSE	1403 FOX STREET	45.668256	-111.055973	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1403 W. GARFIELD STREET HOUSE	1403 W. GARFIELD STREET	45.667583	-111.057093	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1404 FOX STREET HOUSE	1404 FOX STREET	45.668199	-111.055982	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1405 FOX STREET HOUSE	1405 FOX STREET	45.668255	-111.056130	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1406 FOX STREET HOUSE	1406 FOX STREET	45.668202	-111.056130	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1407 FOX STREET HOUSE	1407 FOX STREET	45.668256	-111.056283	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1408 FOX STREET HOUSE	1408 FOX STREET	45.668200	-111.056283	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1409 FOX STREET HOUSE	1409 FOX STREET	45.668255	-111.056441	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1410 FOX STREET HOUSE	1410 FOX STREET	45.668203	-111.056472	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1412 FOX STREET HOUSE	1412 FOX STREET	45.667916	-111.056682	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1413 FOX STREET HOUSE	1413 FOX STREET	45.668167	-111.056774	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1414 FOX STREET HOUSE	1414 FOX STREET	45.667799	-111.056683	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1415 FOX STREET HOUSE	1415 FOX STREET	45.668154	-111.056774	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1417 FOX STREET HOUSE	1417 FOX STREET	45.668142	-111.056775	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1419 FOX STREET HOUSE	1419 FOX STREET	45.668134	-111.056749	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1421 FOX STREET HOUSE	1421 FOX STREET	45.668026	-111.056762	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1425 FOX STREET HOUSE	1425 FOX STREET	45.667810	-111.056763	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	18 GLACIER COURT HOUSE	18 GLACIER COURT	45.669226	-111.055770	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	2 GLACIER COURT HOUSE	2 GLACIER COURT	45.669226	-111.057084	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	20 GLACIER COURT HOUSE	20 GLACIER COURT	45.668988	-111.055619	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	21 GLACIER COURT HOUSE	21 GLACIER COURT	45.669284	-111.055743	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	22 GLACIER COURT HOUSE	22 GLACIER COURT	45.668802	-111.055638	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	23 GLACIER COURT HOUSE	23 GLACIER COURT	45.669284	-111.055650	$28,413

APPENDIX B-5. CRITICAL FACILITIES IN EARTHQUAKE HAZARD AREA
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	25 GLACIER COURT HOUSE	25 GLACIER COURT	45.669206	-111.055541	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	26 GLACIER COURT HOUSE	26 GLACIER COURT	45.668466	-111.055619	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	27 GLACIER COURT HOUSE	27 GLACIER COURT	45.669168	-111.055541	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	29 GLACIER COURT HOUSE	29 GLACIER COURT	45.669042	-111.055544	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	3 GLACIER COURT HOUSE	3 GLACIER COURT	45.669280	-111.057084	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	31 GLACIER COURT HOUSE	31 GLACIER COURT	45.668925	-111.055542	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	33 GLACIER COURT HOUSE	33 GLACIER COURT	45.668790	-111.055544	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	35 GLACIER COURT HOUSE	35 GLACIER COURT	45.668682	-111.055544	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	37 GLACIER COURT HOUSE	37 GLACIER COURT	45.668565	-111.055545	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	39 GLACIER COURT HOUSE	39 GLACIER COURT	45.668457	-111.055543	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	4 GLACIER COURT HOUSE	4 GLACIER COURT	45.669229	-111.056931	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	40 GLACIER COURT HOUSE	40 GLACIER COURT	45.668722	-111.057084	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	41 GLACIER COURT HOUSE	41 GLACIER COURT	45.668771	-111.057084	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	42 GLACIER COURT HOUSE	42 GLACIER COURT	45.668716	-111.056922	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	43 GLACIER COURT HOUSE	43 GLACIER COURT	45.668777	-111.056931	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	44 GLACIER COURT HOUSE	44 GLACIER COURT	45.668722	-111.056760	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	45 GLACIER COURT HOUSE	45 GLACIER COURT	45.668771	-111.056760	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	46 GLACIER COURT HOUSE	46 GLACIER COURT	45.668716	-111.056612	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	47 GLACIER COURT HOUSE	47 GLACIER COURT	45.668777	-111.056612	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	48 GLACIER COURT HOUSE	48 GLACIER COURT	45.668716	-111.056454	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	49 GLACIER COURT HOUSE	49 GLACIER COURT	45.668777	-111.056454	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	5 GLACIER COURT HOUSE	5 GLACIER COURT	45.669284	-111.057003	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	50 GLACIER COURT HOUSE	50 GLACIER COURT	45.668722	-111.056292	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	51 GLACIER COURT HOUSE	51 GLACIER COURT	45.668771	-111.056292	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	52 GLACIER COURT HOUSE	52 GLACIER COURT	45.668716	-111.056121	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	53 GLACIER COURT HOUSE	53 GLACIER COURT	45.668777	-111.056130	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	54 GLACIER COURT HOUSE	54 GLACIER COURT	45.668722	-111.055973	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	55 GLACIER COURT HOUSE	55 GLACIER COURT	45.668771	-111.055973	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	8 GLACIER COURT HOUSE	8 GLACIER COURT	45.669229	-111.056603	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	9 GLACIER COURT HOUSE	9 GLACIER COURT	45.669284	-111.056693	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	AJM JOHNSON HALL	Grant Street (no official address)	45.665912	-111.048425	$13,243,722
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	ANIMAL BIOSCIENCE BUILDING	South 11th Avenue (no official address)	45.669306	-111.053338	$15,459,877
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	ATKINSON QUADRANGLE RESIDENCE HALL A	West Cleveland (no official address)	45.669452	-111.046337	$1,216,151
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Atkinson Quadrangle Residence Hall B	West Cleveland (no official address)	45.669618	-111.046291	$1,216,151
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Atkinson Quadrangle Residence Hall C	West Cleveland (no official address)	45.669861	-111.046153	$1,335,133
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Atkinson Quadrangle Residence Hall D	West Cleveland (no official address)	45.669859	-111.045941	$1,335,133
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Atkinson Quadrangle Residence Hall E	West Cleveland (no official address)	45.669613	-111.045813	$1,221,736
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Atkinson Quadrangle Residence Hall F	West Cleveland (no official address)	45.669446	-111.045774	$132,384
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	BRICK BREEDEN FIELDHOUSE	South11th Avenue (no official address)	45.663295	-111.050620	$40,214,704
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	CFT BUILDING #4	2310 UNIVERSITY WAY BUILDING 4	45.656086	-111.047558	$418,311
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	CHEMISTRY BIOCHEMISTRY BLDG	South 11th Avenue (no official address)	45.669071	-111.050102	$40,367,656
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	COBLEIGH HALL	South 7th Avenue (no official address)	45.666561	-111.045997	$35,803,820
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	COOLEY LABORATORY	South 11th Avenue (no official address)	45.667691	-111.051449	$13,700,546
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Facilities Propane Tank System	West Grant Street (no official address)	45.664259	-111.045708	$500,115
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	GAINES HALL	Grant Street (no official address)	45.665550	-111.050494	$33,262,789
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Gallatin Hall	West Garfield (no official address)	45.667135	-111.055227	$7,974,141
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	GIRVIN FARM RESIDENCE	5515 Stucky Road	45.656655	-111.073280	$203,742
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	HAMILTON HALL	South 7th Avenue (no official address)	45.667567	-111.047909	$8,359,251
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	HANNON RESIDENCE HALL	South 7th Avenue (no official address)	45.668524	-111.046023	$15,681,441
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	HAPNER RESIDENCE HALL	West Cleveland (no official address)	45.669677	-111.047333	$17,564,504
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Jefferson Hall	West Garfield (no official address)	45.666465	-111.055877	$3,945,013
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	JOHNSON FAMILY LIVESTOCK (BLS2)	West of South 19th Avenue & Lincoln Street	45.664597	-111.065760	$4,843,284
Gallatin	Bozeman	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Johnstone Center Residence Hall	West Harrison St.	45.670575	-111.049107	$24,657,938
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	JUTILA RESEARCH LAB (BSL3)	West of South 19th & Lincoln Street	45.664772	-111.064626	$3,223,423
Gallatin	Bozeman	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Bozeman Pass	Quinn Creek Road	45.665157	-110.795921	$96,252
Gallatin	Bozeman	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Green Mountain	Stublar Road	45.673151	-110.867386	$1,022,911
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	LANGFORD RESIDENCE HALL	West Harrison Street (no official address)	45.670691	-111.050447	$18,703,223
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	LEON JOHNSON HALL	West Arthur St (northwest of Montana Hall)	45.667700	-111.050174	$44,923,560
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	LEWIS HALL	West Garfield Street (no official address)	45.667606	-111.050916	$14,917,403
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	LINFIELD HALL	South 11th Avenue (no official address)	45.668506	-111.051427	$14,441,446
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	LOUISE SHUNK DAYCARE AND COMMUNITY CENTER	1295 West Garfield, BOZEMAN MT 59717	45.667625	-111.055037	$1,014,542
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Madison Hall	West Garfield (no official address)	45.666235	-111.055247	$3,945,013
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	MARSH LAB MODULAR # 1	1922 WEST LINCOLN STREET	45.664195	-111.065320	$451,157
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	MARSH LAB MODULAR # 2	1922 WEST LINCOLN STREET	45.664457	-111.065263	$623,605
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	MARSH LABORATORY	1911 WEST LINCOLN STREET	45.664332	-111.064539	$15,458,238
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	MCCALL HALL	South11th Avenue (no official address)	45.665578	-111.052481	$3,871,939
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	MILLER DINING HALL	West Grant Street (no official address)	45.666059	-111.054204	$13,041,785
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	MOLECULAR BEAM FACILITY	Kagy Boulevard (no official address)	45.660660	-111.044486	$707,191
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	MONTANA HALL	West Garfield (no official address)	45.667536	-111.049347	$14,931,556
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	MUSEUM OF THE ROCKIES	600 KAGY BOULEVARD	45.658779	-111.045554	$30,640,855
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	NELSON STORY TOWER APARTMENTS	101 Nelson Story	45.667877	-111.058588	$6,852,764
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	NORTH HEDGES RESIDENCE HALL	West Grant Street (no official address)	45.666642	-111.054384	$23,965,828
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	PETER KOCH TOWER APARTMENTS	101 Peter Koch Street	45.667987	-111.059452	$6,852,764
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	PLANT BIOSCIENCE BUILDING	South 11th Avenue (no official address)	45.668912	-111.052580	$17,015,551

APPENDIX B-5. CRITICAL FACILITIES IN EARTHQUAKE HAZARD AREA
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	PLANT GROWTH CENTER	South 11th Avenue (no official address)	45.668254	-111.053250	$25,025,135
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	PLEW BUILDING	West Grant Street (no official address)	45.664961	-111.044873	$3,362,710
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	REID HALL	West Garfield Street (no official address)	45.666785	-111.050012	$29,586,240
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	RENNE LIBRARY	West Garfield Street (no official address)	45.666692	-111.048743	$130,473,324
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	ROBERTS HALL	West Garfield Street (no official address)	45.666868	-111.046069	$21,985,943
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	ROSKIE RESIDENCE HALL	West Grant Street (no official address)	45.665150	-111.054515	$17,225,901
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	SAFETY RISK MGMT NOPPER BLDG LEASED	1160 Research Drive	45.668001	-111.065854	$2,083,472
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	SOUTH HEDGES RESIDENCE HALL	West Grant Street (no official address)	45.665579	-111.053771	$22,912,438
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	STRAND UNION BUILDING	West Grant Street (no official address)	45.666395	-111.047642	$64,518,749
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	SWINGLE HEALTH CENTER	South 7th Avenue (no official address)	45.666473	-111.046987	$7,088,192
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	TAYLOR HALL	South 11th Avenue (no official address)	45.667926	-111.051630	$3,223,748
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	TIETZ HALL	East of South 11th Avenue (no official address)	45.667961	-111.050928	$5,342,243
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	TINSELY HOMESTEAD	600 KAGY BOULEVARD	45.660266	-111.045295	$437,559
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	TRAPHAGEN HALL	West of South 11th Avenue (no official address)	45.666507	-111.050432	$11,816,599
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	VISUAL COMMUNICATIONS BUILDING	West Grant (no official address)	45.665648	-111.051535	$20,305,396
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	WILSON HALL	West Garfield Street (no official address)	45.668251	-111.048383	$28,642,840
Gallatin	Bozeman	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Yellowstone Hall	South 15th Avenue	45.665616	-111.055956	$4,676,632
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	FT. ELLIS RESIDENCE	33336 Frontage Road	45.668034	-110.973766	$217,114
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	FT. ELLIS SECOND HOUSE	33336 Frontage Road	45.668034	-110.973766	$112,450
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	Lutz Farm Residence	McGuire Creek Road	45.813464	-111.055349	$153,136
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MSU, EXTENSION SERVICE	Cheever Hall	MSU-Bozeman Campus	45.666899	-111.053000	$7,905
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MSU, EXTENSION SERVICE	Romney Gym (5104 owner)	MSU-Bozeman Campus	45.665418	-111.049449	$11,457
Gallatin	Gallatin Gateway	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-High Flat	High Flat Road	45.636144	-111.273450	$196,472
Gallatin	THREE FORKS	DEPARTMENT OF FISH, WILDLIFE & PARKS	Lewis & Clark Caverns SP - Building - Visitor Center w/Restroom	19 miles W of Three Forks on MT 2	45.892190	-111.549275	$251,183
Gallatin	WEST YELLOWSTONE	DEPARTMENT OF TRANSPORTATION	Airport CFR Building 1	625 Yellowstone Airport Road	44.687812	-111.114151	$506,619
Gallatin	WEST YELLOWSTONE	DEPARTMENT OF TRANSPORTATION	Airport CFR Building 2	721 Yellowstone Airport Road	44.688084	-111.113856	$0
Gallatin	WEST YELLOWSTONE	DEPARTMENT OF TRANSPORTATION	Airport Terminal, Administration Bldg	721 Yellowstone Airport Road	44.686661	-111.114568	$1,957,658
Gallatin	WEST YELLOWSTONE	DEPARTMENT OF TRANSPORTATION	Airport WYS - NDB shack	721 Yellowstone Airport Road	44.689140	-111.110796	$135,417
Gallatin	WEST YELLOWSTONE	DEPARTMENT OF TRANSPORTATION	Airport WYS Generator Shack	721 Yellowstone Airport Road	44.689220	-111.110781	$38,461
Glacier	Browning	DEPARTMENT OF TRANSPORTATION	Aeronautics Browning Electrical Building	Starr Browning Airport	48.603028	-113.107606	$21,275
Glacier	CUT BANK	DEPARTMENT OF JUSTICE	MHP - Santa Rita Glacier County Microwave Tower	8 miles N of Santa Rita	48.791450	-112.309961	$102,260
Glacier	CUT BANK	PUBLIC HEALTH & HUMAN SERVICES	Cut Bank - UA (Glacier) CFS	1210 E Main, CUT BANK MT 59427	48.629116	-112.315457	$32,554
Glacier	CUT BANK	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Cut Bank Translator	Tank Hill, 1/2 mile S.E. of Mem. Hospital	48.626647	-112.319637	$10,000
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS	Repair/Fuel/Garage (addition to #44)	2 Riverside Rd	46.226144	-112.116849	$270,113
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	Administration/Education	2 Riverside Rd	46.226144	-112.116849	$1,266,829
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	Housing Unit 14	2 Riverside Rd	46.226144	-112.116849	$1,440,858
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	Industries/Maintenance Building	2 Riverside Rd	46.226144	-112.116849	$1,306,877
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	Programs Building #15	2 Riverside Rd	46.225334	-112.117584	$1,278,103
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	Pump House South of River	2 Riverside Rd	46.226144	-112.116849	$50,018
Jefferson	BOULDER	PUBLIC HEALTH & HUMAN SERVICES, MONTANA DEVELOPMENTAL CENTER	Bldg 1 - 6 Boulder	501 E. 4th Avenue	46.233552	-112.113253	$1,669,065
Jefferson	BOULDER	PUBLIC HEALTH & HUMAN SERVICES, MONTANA DEVELOPMENTAL CENTER	Industries/Heating bldg 9	310 4th Avenue	46.233528	-112.116919	$1,485,764
Jefferson	BOULDER	PUBLIC HEALTH & HUMAN SERVICES, MONTANA DEVELOPMENTAL CENTER	Recreation 102	310 4th Avenue	46.233528	-112.116919	$3,363,771
Jefferson	BOULDER	PUBLIC HEALTH & HUMAN SERVICES, MONTANA DEVELOPMENTAL CENTER	Treatment BLDG 8	310 4th Avenue	46.233528	-112.116919	$2,498,763
Jefferson	BUTTE	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM Butte	XL Heights	46.007542	-112.442525	$50,000
Jefferson	HELENA	UNIVERSITY SYSTEM, HELENA COLLEGE UNIVERSITY OF MONTANA	Maintenance Shop	1115 North Sanders	46.230679	-112.114069	$130,509
Jefferson	HELENA	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Helena Transmitter	21 Miles SW of Helena (Legal Descrip Below)	46.338562	-112.291538	$15,000
Jefferson	Jefferson City	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-XL Heights	X-L Heights Road	46.020376	-112.421793	$322,620
Lake	BIG ARM	DEPARTMENT OF JUSTICE	MHP - Jette Lake County Microwave Tower	2 miles SE of Big Arm	47.773469	-114.268865	$58,064
Lake	BIGFORK	DEPARTMENT OF NATURAL RESOURCES	Swan Lake Light Plant	34925 MT Hwy 83	47.750051	-113.823712	$47,295
Lake	BIGFORK	DEPARTMENT OF NATURAL RESOURCES, SWAN RIVER FOREST CAMP	Swan Youth Center Dining Hall	34925 MT Hwy 83	47.750051	-113.823712	$440,184
Lake	BIGFORK	DEPARTMENT OF NATURAL RESOURCES, SWAN RIVER FOREST CAMP	Swan Youth Center Generator House	34925 MT Hwy 83	47.750051	-113.823712	$4,277
Lake	BIGFORK	DEPARTMENT OF NATURAL RESOURCES, SWAN RIVER FOREST CAMP	Swan Youth Center Lodge, Dormitory & Addition	34925 MT Hwy 83	47.750051	-113.823712	$2,260,912
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Elrod Laboratory, Yellowbay	32125 Bio Station Lane	47.876726	-114.032857	$3,349,455
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Fire House	32125 Bio Station Lane	47.876726	-114.033192	$67,836
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Fresh Water Research Lab	32125 Bio Station Lane	47.876648	-114.033802	$1,997,757
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM Polson	Jette Mountain	47.773613	-114.269253	$50,000
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lakeside Laboratory	32125 Bio Station Lane	47.876689	-114.033799	$2,144,229
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lift Station 1	32125 Bio Station Lane	47.876726	-114.033192	$56,153
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lift Station 2	32125 Bio Station Lane	47.876726	-114.033192	$63,261
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Museum	32125 Bio Station Lane	47.876726	-114.033192	$46,343
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Prescott Center Cafeteria	32125 Bio Station Lane	47.876719	-114.034417	$1,557,278
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Prescott Center Dormitory	32125 Bio Station Lane	47.876726	-114.033192	$1,083,335
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Waste Water Treatment Plant	32125 Bio Station Lane	47.876726	-114.033192	$918,078
Lewis & Clark	FORT HARRISON	DEPARTMENT OF MILITARY AFFAIRS	DES Mobile Command Post Storage	1956 MT Majo Street	46.617266	-112.097334	$241,190
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Aviation & Support Facility-Office	2800 Airport Rd	46.602472	-111.990780	$3,206,080
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Aviation & Support Facility-Shop	2800 Airport Rd	46.602472	-111.990780	$3,381,386
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Board of Health	1301 Lockey	46.584698	-112.017698	$852,908
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Boiler Plant	120 N Roberts	46.585721	-112.016944	$2,850,805
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Capitol Annex	118 N Roberts	46.585471	-112.017104	$258,219
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Capitol Building	1301 E 6th	46.585765	-112.018171	$145,098,564
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Cogswell Building	1401 Lockey	46.584539	-112.015633	$23,751,374
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Colonial Drive Building	2401 Colonial Drive	46.587782	-111.996723	$255,000
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Comm Political Practices	1205 8th	46.587490	-112.019692	$354,428
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Dianne Bldg.	1218 6th Ave.	46.586960	-112.019359	$1,069,717

APPENDIX B-5. CRITICAL FACILITIES IN EARTHQUAKE HAZARD AREA
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	DPHHS Headquarters Building	111 N Sanders	46.585625	-112.014048	$10,694,849
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	FWP-1420 6TH AVE	1420 E 6th	46.587064	-112.015239	$4,292,590
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Generator Building (ITSD)	125 N Roberts	46.585266	-112.015823	$582,737
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Helena Data Center (SMDC) behind MDT	490 18th Street	46.587000	-111.992000	$22,598,839
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Justice Building	215 N Sanders	46.586202	-112.013979	$26,121,372
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Labor & Industry (Walt Sullivan)	1315 Lockey	46.584727	-112.017053	$11,538,734
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	MDT Helena HQ Building (PBX) ONLY	2701 Prospect Avenue	46.589000	-111.993000	$1,000,000
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Metcalf Building	1520 E 6th	46.587447	-112.013864	$20,468,873
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Mitchell Building	125 N Roberts	46.585439	-112.015487	$32,876,695
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Old Livestock Building	1310 Lockey	46.585181	-112.017117	$1,319,367
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	OPI Building	1227 11th Avenue	46.589415	-112.018798	$4,131,282
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Scott Hart Building	302 N Roberts	46.587114	-112.016886	$16,805,048
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Sec. of State Records Mgmt Bureau Bldg 1	1320 Bozeman	46.600000	-112.017000	$2,382,853
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Sec. of State Records Mgmt Bureau Bldg 2	1320 Bozeman	46.600000	-112.017000	$1,065,908
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Tax Appeal Board (was) - 1209 8TH	1209 8th	46.587511	-112.019465	$407,134
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Teachers Retirement	1500 E 6th	46.587064	-112.014359	$1,337,054
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Veterans & Pioneers Memorial Bldg.	225 N Roberts	46.586335	-112.015826	$19,073,783
Lewis & Clark	HELENA	DEPARTMENT OF AGRICULTURE	Ag/Livestock Bldg.- Helena	302 N Roberts	46.587466	-112.016611	$324,717
Lewis & Clark	HELENA	DEPARTMENT OF AGRICULTURE	Leased - Ag Development/Ag Stats	10 West 15th Street	46.596863	-112.034572	$7,683
Lewis & Clark	HELENA	DEPARTMENT OF COMMERCE	PERD Building, Leased to Justice Legal Services	1712 9th Avenue	46.589049	-112.010593	$1,442,106
Lewis & Clark	HELENA	DEPARTMENT OF FISH, WILDLIFE & PARKS	9) Regional HQ - Building - D of A	1420 East 6th Ave	46.586827	-112.015611	$1,026,799
Lewis & Clark	HELENA	DEPARTMENT OF FISH, WILDLIFE & PARKS	Hangar No. 5 Helena Regional Airport	Airport Road	46.602518	-111.991730	$124,003
Lewis & Clark	HELENA	DEPARTMENT OF FISH, WILDLIFE & PARKS	Hanger No. 6 Helena Regional Airport	Airport Road	46.602557	-111.991469	$223,204
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	ITSD - HAFRC DOJ FUSION Center	1956 Mt. Majo St / Fort Harrison	46.621104	-112.095883	$3,032,134
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MHP - Comm Center, Helena	1900 WILLIAMS ST	46.620868	-112.095871	$490,148
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MHP - Fort Harris Microwave Tower	Helena	46.617734	-112.097098	$26,970
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MHP - Hangar, Helena	27 AIRPORT RD (HANGAR B)	46.602493	-111.992801	$206,301
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MHP - Hogback Microwave Tower	13 miles NE of Helena	46.824759	-111.704084	$39,163
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MHP/GCD Helena	2550 Prospect	46.592021	-111.993495	$1,427,708
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Aspen Cottage	2260 Sierra Rd. East	46.661992	-111.976799	$588,381
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Cafeteria	2260 Sierra Rd. East	46.662438	-111.974988	$647,819
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Clinic Building	2260 Sierra Rd. East	46.660804	-111.974898	$219,692
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Cottonwood Cottage	2260 Sierra Rd. East	46.661897	-111.973486	$690,318
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Gymnasium	2260 Sierra Rd. East	46.662120	-111.974074	$655,664
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Maple Cottage No. 2	2260 Sierra Rd. East	46.662523	-111.973780	$2,190,662
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Pump House	2260 Sierra Rd. East	46.662778	-111.976659	$72,092
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - School Building & Administration	2260 Sierra Rd. East	46.662789	-111.974864	$2,183,940
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Spruce Cottage	2260 Sierra Rd. East	46.661663	-111.977557	$1,781,371
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Water Tank & Tower	2260 Sierra Rd. East	46.662587	-111.976984	$389,651
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA Training Facility	2260 SIERRA ROAD EAST	46.662630	-111.975715	$3,774,231
Lewis & Clark	HELENA	DEPARTMENT OF LABOR & INDUSTRY	BSD Weights & Measures	2801 N. Cooke	46.611985	-112.019309	$597,815
Lewis & Clark	HELENA	DEPARTMENT OF LABOR & INDUSTRY	Helena UI Phone Claims	100 N. Park	46.589846	-112.040727	$382,824
Lewis & Clark	HELENA	DEPARTMENT OF MILITARY AFFAIRS	Helena 1049th Armory	2199 Williams Street	46.630593	-112.094803	$330,083
Lewis & Clark	HELENA	DEPARTMENT OF MILITARY AFFAIRS	Helena OMS	2177 Williams Street	46.617017	-112.097335	$2,093,317
Lewis & Clark	HELENA	DEPARTMENT OF MILITARY AFFAIRS	Womack Armory	Womack Bldg, Ft Harrison	46.618000	-112.097000	$3,145,595
Lewis & Clark	HELENA	DEPARTMENT OF REVENUE	Mitchell Building (includes special equipment)	125 N Roberts	46.585471	-112.016024	$180,430
Lewis & Clark	HELENA	DEPARTMENT OF REVENUE	New Liquor Warehouse	2517 Airport Road	46.602000	-111.998000	$22,073,687
Lewis & Clark	HELENA	DEPARTMENT OF TRANSPORTATION	Aeronautics Helena Operation Building	2630 Airport Road	46.602105	-111.992953	$1,520,713
Lewis & Clark	HELENA	DEPARTMENT OF TRANSPORTATION	Aeronautics Shop	2630 Airport Road	46.602387	-111.994023	$362,665
Lewis & Clark	HELENA	DEPARTMENT OF TRANSPORTATION	Helena Hanger Helena Airport	2630 Airport Road	46.602470	-111.992150	$421,607
Lewis & Clark	HELENA	DEPARTMENT OF TRANSPORTATION	Helena HQ Office Complex	2701 Prospect Avenue	46.588447	-111.991967	$37,694,257
Lewis & Clark	HELENA	MONTANA HISTORICAL SOCIETY	Montana Historical Society	225 N Roberts	46.586348	-112.016522	$3,255,358
Lewis & Clark	HELENA	MONTANA STATE LIBRARY	Helena Data Center	490 18th St	46.589058	-111.988789	$163,567
Lewis & Clark	HELENA	MONTANA STATE LIBRARY	Montana State Library (Justice Building)	1515 E. 6th Avenue	46.586435	-112.014015	$2,007,988
Lewis & Clark	HELENA	PUBLIC EMPLOYEES RETIREMENT DIVISION	IBM Building	100 N. Park, Ste 200	46.588918	-112.040591	$13,578,758
Lewis & Clark	HELENA	SECRETARY OF STATE	Records Management Center Warehouse	1320 Bozeman St	46.600094	-112.017841	$10,000
Lewis & Clark	HELENA	STATE FUND	Montana State Fund Building	855 Front Street	46.596000	-112.035346	$38,102,581
Lewis & Clark	HELENA	UNIVERSITY SYSTEM, HELENA COLLEGE UNIVERSITY OF MONTANA	Donaldson Building	1115 North Roberts	46.595411	-112.015731	$22,399,358
Lewis & Clark	HELENA	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KGLT RADIO TRANSLATOR HELENA	20 MILES NE OF HELENA 46-49-32.0 N, 111-42-26.0 W	46.826307	-111.710300	$0
Lewis & Clark	HELENA	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV TRANSMITTER SITE-BELMONT MOUNTAIN	BLOSSBURG ROAD	46.748476	-112.330991	$125,625
Lewis & Clark	Helena	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Helena North Hill	No Creek Ct.	46.769639	-112.024417	$156,278
Lewis & Clark	HELENA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM Helena (N. Hills)	N. Hills Seiban Ranch	46.769741	-112.024019	$50,000
Lewis & Clark	HELENA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Montana Natural Heritage Program	1515 East Sixth Ave	46.586777	-112.013884	$13,905
Lewis & Clark	LINCOLN	DEPARTMENT OF TRANSPORTATION	Aeronautics Lincoln Electrical Building	1842 South Airport Road	46.958110	-112.647421	$44,547
Madison	BIG SKY	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Big Sky Translator	Andesite Peak - 45 16' 25	45.278042	-111.450095	$30,000
Madison	ENNIS	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Ennis	#1 Airport Road	45.266766	-111.649662	$3,224
Madison	VIRGINIA CITY	MONTANA HERITAGE COMMISSION	McFarland Curatorial Center	Curatorial Addition to Townsite	45.295334	-111.952874	$236,979
Missoula	MISSOULA	DEPARTMENT OF ADMINISTRATION	Palmer Complex PBX only	2681 Palmer St	46.884835	-114.030708	$500,000
Missoula	MISSOULA	DEPARTMENT OF CORRECTIONS	Missoula Assessment and Sanction	2340 Mullan Road	46.881933	-114.027825	$48,364
Missoula	MISSOULA	DEPARTMENT OF FISH, WILDLIFE & PARKS	2) Missoula Airport Hanger - Building	1 Corporate Way	46.912998	-114.079782	$10,261
Missoula	MISSOULA	DEPARTMENT OF FISH, WILDLIFE & PARKS	2) Regional HQ - Building	3201 Spurgin Road	46.859646	-114.036892	$2,664,834
Missoula	MISSOULA	DEPARTMENT OF JUSTICE	FSD - Forensics, Missoula	2679 Palmer Street	46.884865	-114.029732	$11,394,653
Missoula	MISSOULA	DEPARTMENT OF MILITARY AFFAIRS	Missoula Armed Forces Reserve Center	9383 Running West Road	46.960808	-114.129939	$15,028,199
Missoula	MISSOULA	DEPARTMENT OF NATURAL RESOURCES	FORESTRY DIVISION HEADQUARTERS BUILDING A	2705 Spurgin Road	46.858906	-114.059335	$2,948,198

APPENDIX B-5. CRITICAL FACILITIES IN EARTHQUAKE HAZARD AREA
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Missoula	MISSOULA	DEPARTMENT OF NATURAL RESOURCES	Missoula Helicopter Hanger	3150 Maverick Lane	46.856057	-114.057547	$152,443
Missoula	MISSOULA	DEPARTMENT OF NATURAL RESOURCES	Missoula Unit Fire Cache	3206 Maverick Lane	46.859405	-114.063549	$18,684
Missoula	MISSOULA	DEPARTMENT OF NATURAL RESOURCES	Missoula Unit Office	3206 Maverick Lane	46.856813	-114.058574	$251,954
Missoula	MISSOULA	DEPARTMENT OF TRANSPORTATION	Missoula Headquarters Office & Shop	2100 West Broadway	46.884542	-114.023062	$2,191,725
Missoula	Missoula	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-TV Mountain	Point 6 Road	47.017111	-114.014598	$26,461
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1000-1006 Yreka Court	1000-1006 Yreka Court	46.848491	-113.989633	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	100-106 Helena Court N	100-106 Helena Court N	46.852410	-113.985074	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1008-1014 Yreka Court	1008-1014 Yreka Court	46.848190	-113.989613	$323,544
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	101-107 Helena Court N	101-107 Helena Court N	46.852530	-113.985068	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1016-1022 Yreka Court	1016-1022 Yreka Court	46.847656	-113.990265	$256,995
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1024-1030 Yreka Court	1024-1030 Yreka Court	46.847909	-113.989681	$323,544
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1032-1042 Yreka Court	1032-1042 Yreka Court	46.847903	-113.989431	$795,995
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1044-1050 Yreka Court	1044-1050 Yreka Court	46.847646	-113.989674	$530,853
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	108-114 Helena Court N	108-114 Helena Court N	46.852273	-113.985074	$263,861
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	109-115 Helena Court N	109-115 Helena Court N	46.852534	-113.984776	$263,861
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1101-1110 Coloma Drive	1101-1110 Coloma Drive	46.848455	-113.991897	$1,242,303
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1111-1115 Coloma Drive	1111-1115 Coloma Drive	46.848343	-113.991651	$645,994
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	116-122 Helena Court N	116-122 Helena Court N	46.852428	-113.984764	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	117-123 Helena Court N	117-123 Helena Court N	46.851794	-113.984773	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1201-1204 Coloma Drive	1201-1204 Coloma Drive	46.847889	-113.991610	$265,445
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1205-1208 Coloma Drive	1205-1208 Coloma Drive	46.848016	-113.991891	$265,445
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1301-1304 Granite Court	1301-1304 Granite Court	46.847893	-113.992225	$461,926
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1305-1309 Granite Court	1305-1309 Granite Court	46.848192	-113.992226	$645,968
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1401-1407 Granite Court	1305-1309 Granite Court	46.847927	-113.992632	$819,367
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1408-1412 Granite Court	1408-1412 Granite Court	46.848304	-113.992646	$645,994
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1501-1504 Cinnabar Drive	1501-1504 Cinnabar Drive	46.847643	-113.992900	$265,445
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1601-1608 Cinnabar Drive	1601-1608 Cinnabar Drive	46.847916	-113.993097	$994,854
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1609-1613 Cinnabar Drive	1609-1613 Cinnabar Drive	46.848192	-113.992887	$645,994
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1701-1704 Cinnabar Drive	1701-1704 Cinnabar Drive	46.847830	-113.992870	$396,144
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1705-1713 Cinnabar Drive	1705-1713 Cinnabar Drive	46.848327	-113.993096	$759,287
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1801-1808 Emigrant Court	1801-1808 Emigrant Court	46.847388	-113.992951	$690,493
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1809-1812 Emigrant Court	1809-1812 Emigrant Court	46.847224	-113.992604	$495,332
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1813-1820 Emigrant Court	1813-1820 Emigrant Court	46.847072	-113.992982	$690,493
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1901-1908 Jardine Court	1901-1908 Jardine Court	46.846839	-113.993038	$652,332
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1909-1912 Jardine Court	1909-1912 Jardine Court	46.846681	-113.992658	$495,200
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1913-1920 Jardine Court	1913-1920 Jardine Court	46.846494	-113.993040	$652,332
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2001-2008 Laurin Court	2001-2008 Laurin Court	46.846255	-113.993039	$652,332
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	200-206 Helena Court N	200-206 Helena Court N	46.851909	-113.984765	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2009-2012 Laurin Court	2009-2012 Laurin Court	46.846097	-113.992650	$495,200
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	201-207 Helena Court N	201-207 Helena Court N	46.852025	-113.984761	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2013-2020 Laurin Court	2013-2020 Laurin Court	46.845893	-113.993034	$689,436
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	208-214 Helena Court N	208-214 Helena Court N	46.851781	-113.985063	$263,861
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	209-215 Helena Court N	209-215 Helena Court N	46.851913	-113.985086	$263,861
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2101-2108 Pardee Court	2101-2108 Pardee Court	46.845561	-113.993034	$689,436
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2109-2112 Pardee Court	2109-2112 Pardee Court	46.845192	-113.993028	$505,763
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2113-2120 Pardee Court	2113-2120 Pardee Court	46.845390	-113.992660	$689,436
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	216-222 Helena Court N	216-222 Helena Court N	46.852017	-113.985083	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	217-223 Helena Court N	217-223 Helena Court N	46.852273	-113.984763	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2201-2208 Landusky Court	2201-2208 Landusky Court	46.844689	-113.992671	$689,436
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2209-2211 Landusky Court	2209-2211 Landusky Court	46.844851	-113.993030	$505,763
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2213-2220 Landusky Court	2213-2220 Landusky Court	46.844486	-113.993019	$689,436
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2301-2304 Robar Court	2301-2304 Robar Court	46.845600	-113.993641	$505,763
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2305-2307 Robar Court	2305-2307 Robar Court	46.845439	-113.993961	$505,763
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2309-2312 Robar Court	2309-2312 Robar Court	46.845278	-113.993639	$505,763
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	300-306 Bannack Court N	300-306 Bannack Court N	46.850126	-113.986168	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	301-307 Bannack Court N	301-307 Bannack Court N	46.850191	-113.986495	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	308-314 Bannack Court N	308-314 Bannack Court N	46.850481	-113.986319	$263,861
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	309-315 Bannack Court N	309-315 Bannack Court N	46.850881	-113.986222	$263,861
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	316-322 Bannack Court N	316-322 Bannack Court N	46.850885	-113.986505	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	317-323 Bannack Court N	317-323 Bannack Court N	46.850715	-113.986504	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	324-334 Bannack Court N	324-334 Bannack Court N	46.850703	-113.986199	$795,995
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	400-406 Bannack Court N	400-406 Bannack Court N	46.850477	-113.986480	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	401-407 Bannack Court N	401-407 Bannack Court N	46.850996	-113.985649	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	408-414 Bannack Court N	408-414 Bannack Court N	46.849948	-113.986535	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	409-415 Bannack Court N	409-415 Bannack Court N	46.849562	-113.986251	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	417-423 Bannack Court N	417-423 Bannack Court N	46.849531	-113.985975	$327,506
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	424-430 Bannack Court N	424- 430 Bannack Court N	46.849755	-113.985898	$398,688
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	432-438 Bannack Court N	432-438 Bannack Court N	46.849688	-113.986548	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	500-506 Garnet Court	500-506 Garnet Court	46.849372	-113.985979	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	508-514 Garnet Court	508-514 Garnet Court	46.849327	-113.986457	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	509-515 Garnet Court	509-515 Garnet Court	46.849210	-113.985957	$327,506
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	516-526 Garnet Court	516-526 Garnet Court	46.849275	-113.985975	$795,995
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	517-523 Garnet Court	517-523 Garnet Court	46.849118	-113.985977	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	525-531 Garnet Court	525-531 Garnet Court	46.848878	-113.986429	$330,937

APPENDIX B-5. CRITICAL FACILITIES IN EARTHQUAKE HAZARD AREA
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	600-610 Pioneer Court N	600-610 Pioneer Court N	46.848672	-113.986165	$795,995
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	601 S Fifth E	601 S Fifth E	46.864982	-113.988924	$506,291
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	601 S Sixth E	601 S Sixth E	46.864001	-113.989023	$409,900
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	601-607 Pioneer Court N	601-607 Pioneer Court N	46.848192	-113.986333	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	602 S Sixth E	602 S Sixth E	46.864054	-113.989013	$180,673
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	609 S Sixth E	609 S Sixth E	46.864001	-113.988843	$314,829
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	609-615 Pioneer Court N	609-615 Pioneer Court N	46.848182	-113.986589	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	610 S Sixth E	610 S Sixth E	46.864054	-113.988833	$424,028
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	612-618 Pioneer Court N	612-618 Pioneer Court N	46.848612	-113.986403	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	615 S Fifth E	615 S Fifth E	46.864978	-113.988604	$302,549
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	615 S Sixth E	615 S Sixth E	46.864001	-113.988654	$272,840
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	616 & 616-1/2 S Sixth E	616 S Sixth E	46.864054	-113.988644	$496,916
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	620 S Sixth E	620 S Sixth E	46.864052	-113.988464	$340,907
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	620-626 Pioneer Court N	620-626 Pioneer Court N	46.848051	-113.986296	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	625 S Fifth E	625 S Fifth E	46.864978	-113.988361	$330,673
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	625 S. Sixth East	625 S. Sixth East	46.864001	-113.988442	$402,242
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	626 S Sixth E	626 S Sixth E	46.864052	-113.988284	$389,258
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	630 S Sixth E	630 S Sixth E	46.864063	-113.988041	$254,089
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	633 S Fifth E	633 S Fifth E	46.864978	-113.988122	$419,935
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	636 S Sixth E	636 S Sixth E	46.864063	-113.987771	$214,789
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	638 - 644 S Sixth E	638 S Sixth E	46.864113	-113.988334	$447,532
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	639 S. Fifth East	639 S. Fifth East	46.864967	-113.987911	$103,559
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	645 S Fifth E	645 S Fifth E	46.864967	-113.987731	$297,664
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	645 S. Sixth E.,	645 S. Sixth E.	46.864011	-113.987574	$456,876
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	657 & 657-1/2 S Fifth E	657 S Fifth E	46.864972	-113.987394	$318,889
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	659 & 659-1/2 S Fifth E	659 S Fifth E	46.864972	-113.987183	$417,824
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	659 S Sixth E	659 S Sixth E	46.864011	-113.987394	$416,501
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	664 S Sixth East	664 S Sixth East	46.864063	-113.987321	$238,968
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	666 S Sixth E	666 S Sixth E	46.864063	-113.987141	$352,330
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	700-706 Pioneer Court S	700-706 Pioneer Court S	46.847963	-113.986666	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	701-707 Pioneer Court S	701-707 Pioneer Court S	46.847903	-113.986664	$327,506
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	702 Arthur	702 Arthur	46.864908	-113.989187	$209,590
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	708-714 Pioneer Court S	708-714 Pioneer Court S	46.848610	-113.986566	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	716-722 Pioneer Court S	716-722 Pioneer Court S	46.848577	-113.986143	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	724-730 Pioneer Court S	724-730 Pioneer Court S	46.848748	-113.986157	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	801-807 Ophir Court	801-807 Ophir Court	46.848594	-113.988122	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	809-815 Ophir Court	809-815 Ophir Court	46.848478	-113.988095	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	817-823 Ophir Court	817-823 Ophir Court	46.848298	-113.988070	$323,544
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	820 Arthur Ave. (Int. Prog. 600/610 Eddy)	820 Arthur Ave.	46.863306	-113.989222	$628,632
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	833-839 Ophir Court	833-839 Ophir Court	46.847662	-113.988051	$795,995
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	900-906 Rimini Court	900-906 Rimini Court	46.848581	-113.989248	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	901-907 Rimini Court	901-907 Rimini Court	46.848472	-113.989225	$323,544
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	908-914 Rimini Court	908-914 Rimini Court	46.848246	-113.989220	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	909-915 Rimini Court	909-915 Rimini Court	46.848116	-113.989230	$323,544
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	916-922 Rimini Court	916-922 Rimini Court	46.848590	-113.988473	$323,544
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	917-923 Rimini Court	917-923 Rimini Court	46.848489	-113.988499	$323,544
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	924-930 Rimini Court	924-930 Rimini Court	46.848277	-113.988478	$323,544
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	925-931 Rimini Court	925-931 Rimini Court	46.848148	-113.988472	$323,544
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	932-942 Rimini Court	932-942 Rimini Court	46.847727	-113.989177	$795,995
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	933-951 Rimini Court	933-951 Rimini Court	46.847903	-113.988549	$529,926
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	944-962 Rimini Court	944-962 Rimini Court	46.847715	-113.988596	$529,926
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Aber Hall	844 Connell Avenue	46.861984	-113.982426	$18,235,709
Missoula	Missoula	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Adams Center (Shelter)	800 Van Buren St.	46.863724	-113.983291	$44,476,146
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Administration Building	909 S Ave W.	46.848551	-114.012748	$11,067,248
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Bio Research Building	1310 Maurice Ave.	46.858717	-113.986406	$4,712,821
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Chemistry/Pharmacy	1350 Mansfield Avenue	46.858068	-113.985580	$21,216,250
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Corbin Hall	1025 Maurice Avenue	46.861259	-113.987996	$4,697,681
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Craig Hall	1301 Maurice Avenue	46.859004	-113.987248	$14,868,884
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Craighead Apartments	1900 Maurice Avenue	46.852651	-113.986052	$11,373,322
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Curry Health Center	634 Eddy Avenue	46.863299	-113.987674	$18,291,850
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Davidson Honors College	1235 Madeline Avenue	46.859436	-113.984366	$6,083,716
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Don Anderson Hall	800 Daly Ave	46.861306	-113.984794	$17,134,274
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Duniway Hall	635 McLeod Avenue	46.858762	-113.988016	$5,885,982
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Elrod Hall	640 Keith Avenue	46.858388	-113.987648	$5,696,978
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Emma B. Lommasson Center	625 University Avenue	46.859669	-113.988141	$20,811,705
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Family Medical Residency of Western Montana at PHC	401 W Railroad St. W.	46.877327	-113.996273	$91,512
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Fine Arts (includes 10/97 remodel)	715 Connell Avenue	46.861861	-113.986280	$19,501,042
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Forestry	1310 Madeline Avenue	46.858849	-113.983774	$5,962,125
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Gallagher Building	925 Maurice Avenue	46.862522	-113.987670	$34,249,894
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Health & Business Bldg	909 S Ave W.	46.848561	-114.012417	$6,125,280
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Health Sciences	720 Keith Avenue	46.858370	-113.986238	$20,383,127
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Heating Plant UM	840 Connell Avenue	46.862028	-113.992182	$34,310,088
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	International Center (formerly Linguistics)	700 McLeod Ave.	46.859201	-113.986461	$1,893,043
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	James E. Todd Building	25 Campus Drive	46.860528	-113.982079	$9,599,469

APPENDIX B-5. CRITICAL FACILITIES IN EARTHQUAKE HAZARD AREA
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Jeanette Rankin Hall	815 Daly Avenue	46.860842	-113.984776	$4,412,768
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Jesse Hall	610 Daly Avenue	46.861255	-113.988928	$18,235,709
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Knowles Hall	630 University Avenue	46.860358	-113.987807	$11,676,365
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM Pt. 6 (Top of Snowbowl)	TV Mountain Top of Snowbowl	47.017444	-114.013947	$430,438
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit A	3000 S. Higgins	46.844785	-113.996719	$1,312,846
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit B	3000 S. Higgins	46.844567	-113.996185	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit C	3000 S. Higgins	46.844492	-113.995850	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit D	3000 S Higgins	46.843899	-113.996761	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit E	3000 S Higgins	46.843927	-113.996389	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit F	3000 S. Higgins	46.843928	-113.995810	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit G	3000 S. Higgins	46.843233	-113.996731	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit H	3000 S. Higgins	46.843212	-113.996355	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit I	3000 S. Higgins	46.843159	-113.995803	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit J	3000 S. Higgins	46.842548	-113.995913	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit K	3000 S. Higgins	46.842361	-113.996638	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Liberal Arts	725 Daly Avenue	46.860868	-113.986057	$28,202,243
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Mansfield Center at Palmer Street	2675 Palmer Street Suite E	46.885788	-114.029242	$79,195
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Mansfield Library	910 McLeod Avenue	46.859340	-113.982908	$180,632,424
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Mathematics	1255 Mansfield Avenue	46.859281	-113.985633	$5,977,387
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	McGill Hall	920 Van Buren Street	46.862448	-113.983713	$15,702,590
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Miller Hall	1330 Arthur Avenue	46.858651	-113.988744	$14,302,623
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Music Hall	930 Maurice Avenue	46.862381	-113.986393	$11,881,460
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Native American Center (Payne Family)	1210 Maurice	46.860299	-113.988948	$8,060,335
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Natural Science Annex	1040 Madiline Ave.	46.860917	-113.983761	$1,594,735
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Natural Sciences (Botany Building)	1040 Madeline Avenue	46.861246	-113.983759	$5,479,950
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	North Corbin	1025 Maurice Avenue	46.861574	-113.987994	$2,993,826
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	North Underground Lect. Hall	1340 Mansfield Ave.	46.859289	-113.985202	$2,281,197
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	O'Conner Center for Rocky Mountain West (old NAS)	600 University	46.860323	-113.989009	$491,552
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Pantzer Hall Dormitory	615 Keith Avenue	46.857881	-113.988273	$15,926,748
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Performing Arts & Radio Television	735 S 6th Street East	46.863548	-113.985113	$21,137,982
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Phyllis J. Washington Education Center	745 Eddy	46.862693	-113.985264	$22,649,692
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	PHYSICAL PLANT BUILDING - MISSOULA	12 Campus Drive	46.863161	-113.979449	$5,598,942
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	SCHREIBER GYM (SHELTER)	950 Keith Avenue	46.858545	-113.982477	$9,462,150
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Science Complex - Charles H. Clapp Bldg.	845 Keith Avenue	46.858119	-113.984145	$36,974,452
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Sisson Apartments	1900 Maurice Avenue	46.851636	-113.986064	$11,373,322
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Skaggs Building	1325 Mansfield Avenue	46.858833	-113.985637	$49,579,462
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Social Science	1010 Mansfield Avenue	46.861743	-113.985157	$25,800,375
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Stone Hall (old Journalism)	825 McLeod Avenue	46.858862	-113.984638	$7,704,587
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Sub Station Switch Gear Building	840 Connell Ave	46.861764	-113.981785	$166,753
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Turner Hall	1105 Maurice Aveneu	46.860764	-113.987361	$6,014,498
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	University Center	915 Daly Avenue	46.860818	-113.982814	$47,241,148
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	University Hall	900 University Avenue	46.860052	-113.983750	$10,628,518
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Urey Lecture Hall	1340 Mansfield Avenue	46.859003	-113.985178	$2,403,805
Park	Emigrant	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - Billings	Paradise Valley Translator	Meyers Ranch, 18 miles NE of Emigrant	45.597575	-110.546513	$150,000
Park	LIVINGSTON	DEPARTMENT OF MILITARY AFFAIRS	Livingston Armory	24 Fleshman Creek Road	45.662401	-110.584516	$2,254,253
Park	LIVINGSTON	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Livingston Translator	Quinn Peak, 10 miles W.N.W. of town	45.695595	-110.769029	$10,000
Park	LIVINGSTON	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KGLT RADIO TRANSLATOR LIVINGSTON	15 MILES S OFLIVINGSTON 45-35-52.0 N,110-32-44 W	45.597268	-110.545159	$0
Pondera	VALIER	DEPARTMENT OF JUSTICE	MHP - Belgian Hills Pondera Cnty Microwave Tower	10 NE Valier	48.329778	-112.036083	$58,540
Silver Bow	BUTTE	DEPARTMENT OF JUSTICE	MHP - FLEECER MICROWAVE TOWER	BUTTE SILVERBOW COUNTY	45.838681	-112.757842	$185,000
Silver Bow	BUTTE	DEPARTMENT OF MILITARY AFFAIRS	Butte Armory	600 Gilman St	45.981661	-112.528063	$2,462,831
Silver Bow	BUTTE	DEPARTMENT OF MILITARY AFFAIRS	Butte Armory Annex	600 Gilman St	45.981661	-112.528063	$665,833
Silver Bow	BUTTE	DEPARTMENT OF TRANSPORTATION	Butte Office & Shop	3751 Wynne Avenue	45.968764	-112.516368	$3,001,225
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Centennial Hall (Student Residence-East)	1225 Broadway	46.013127	-112.555638	$5,602,331
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Chemistry - Biology Building (CBB) - H	1300 W. Park Street	46.010758	-112.557428	$13,390,609
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	College of Technology	25 Basin Creek Rd.	45.938000	-112.510000	$23,056,194
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Engineering Hall-H	1300 W. Park Street	46.011639	-112.556827	$3,892,937
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Engineering Laboratory-Classroom Building	1300 W. Park Street	46.013417	-112.559500	$13,455,609
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Family Student Housing - Lexington Apartments	1001 - 1039 Lexington Ave	46.023042	-112.552267	$2,294,578
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Family Student Housing - Missoula Apartments North	1001 - 1039 Missoula Ave	46.022562	-112.552180	$2,294,578
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Family Student Housing - Missoula Apartments South	1000 - 1038 Missoula Ave	46.022289	-112.552165	$2,294,578
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Health Sciences Building (Former Petroleum Bldg)	1300 W. Park Street	46.011588	-112.557832	$7,799,478
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Health, Physical Education, & Recreation Bldg	1300 W. Park Street	46.011900	-112.562205	$20,882,870
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Heating Plant Building	1300 W. Park Street	46.011173	-112.558383	$1,610,611
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Library Building & Auditorium Building (joined)	1300 W. Park Street	46.012808	-112.559297	$41,825,755
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Main Hall-H	1300 W. Park Street	46.011193	-112.556832	$10,291,503
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Mill Building-H	1300 W. Park Street	46.011266	-112.557426	$3,957,441
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Mining Geology Building (M&G)	1300 W. Park Street	46.012770	-112.558032	$13,504,935
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Museum Building-H	1300 W. Park Street	46.010817	-112.556907	$9,416,756
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Natural Resources Building	1505 W. Park Street	46.013072	-112.562077	$18,862,957
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	PHYSICAL PLANT BUILDING - BUTTE	1300 W. Park Street	46.011264	-112.557910	$385,609
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Prospector Hall (Student Residence-West)-H	1301 W. Park Street	46.013125	-112.556580	$7,491,647
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Science & Engineering Building (S&E)-H	1300 W. Park Street	46.012073	-112.556911	$9,431,901
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	STUDENT UNION BUILDING - BUTTE	1300 W. Park Street	46.012072	-112.557878	$9,604,045
Silver Bow	BUTTE	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Clark Chateau	321 W. Broadway	46.013287	-112.541722	$0

APPENDIX B-5. CRITICAL FACILITIES IN EARTHQUAKE HAZARD AREA							
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE							
COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Toole	SHELBY	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Shelby	80 Airport Road	48.540716	-111.866669	$15,822
Toole	SHELBY	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Shelby Translator	145 1st Ave SE Shelby - 48 30' 43	48.503844	-111.855048	$34,674
Toole	Sweet Grass	DEPARTMENT OF TRANSPORTATION	Coutts/Sweetgrass Vehicle Inspection Station	I-15 Canadian Border	48.997849	-111.960343	$74,329

APPENDIX B-5. COUNTY PERCENT EXPOSURE RANKING - EARTHQUAKE									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	County	Census 2010	2016 Est	% Population Change	Building Permits	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
1	3	Broadwater County	5,612	5,747	2.35%	0	$673,673,764	100.00%	2.35%
1	3	Gallatin County	89,513	104,502	14.34%	1,550	$15,100,403,311	100.00%	14.34%
1	3	Jefferson County	11,406	11,853	3.77%	5	$861,769,166	100.00%	3.77%
1	1	Lake County	28,746	29,758	3.40%	44	$3,951,954,915	100.00%	3.40%
1	3	Madison County	7,691	7,924	2.94%	7	$1,172,801,948	100.00%	2.94%
2	1	Flathead County	90,928	98,082	7.29%	316	$12,373,652,130	99.52%	7.26%
3	2	Glacier County	13,399	13,694	2.15%	0	$683,347,499	99.45%	2.14%
4	3	Park County	15,636	16,114	2.97%	44	$1,927,738,538	97.69%	2.90%
5	3	Lewis and Clark County	63,395	67,282	5.78%	176	$6,142,408,216	97.12%	5.61%
6	3	Beaverhead County	9,246	9,401	1.65%	3	$790,161,085	90.21%	1.49%
7	1	Silver Bow County	34,200	34,553	1.02%	86	$1,947,444,916	87.21%	0.89%
8	1	Sanders County	11,413	11,534	1.05%	0	$766,320,979	85.96%	0.90%
9	2	Toole County	5,324	4,977	-6.97%	2	$291,402,622	80.02%	-5.58%
10	1	Missoula County	109,299	116,130	5.88%	930	$2,990,158,214	74.51%	4.38%
11	1	Powell County	7,027	6,858	-2.46%	32	$168,087,717	30.99%	-0.76%
12	2	Pondera County	6,153	6,084	-1.13%	1	$133,534,562	28.70%	-0.33%
13	1	Granite County	3,079	3,368	8.58%	NA	$91,157,883	24.79%	2.13%
14	1	Mineral County	4,223	4,184	-0.93%	1	$43,845,039	15.20%	-0.14%
15	3	Meagher County	1,891	1,827	-3.50%	NA	$33,439,860	15.15%	-0.53%
16	3	Sweet Grass County	3,651	3,623	-0.77%	1	$27,745,277	4.28%	-0.03%
17	1	Lincoln County	19,687	19,259	-2.22%	8	$102,369,662	4.12%	-0.09%
18	2	Teton County	6,073	6,056	-0.28%	1	$19,061,555	4.08%	-0.01%
19	5	Stillwater County	9,117	9,406	3.07%	0	$15,151,129	2.23%	0.07%
20	5	Carbon County	10,078	10,460	3.65%	8	$18,064,698	1.47%	0.05%
21	5	Big Horn County	12,865	13,343	3.58%	2	$0	0.00%	0.00%
21	2	Blaine County	6,491	6,601	1.67%	0	$0	0.00%	0.00%
21	4	Carter County	1,160	1,203	3.57%	1	$0	0.00%	0.00%
21	2	Cascade County	81,327	81,755	0.52%	242	$0	0.00%	0.00%
21	2	Chouteau County	5,813	5,759	-0.94%	10	$0	0.00%	0.00%
21	4	Custer County	11,699	11,924	1.89%	0	$0	0.00%	0.00%
21	6	Daniels County	1,751	1,755	0.23%	0	$0	0.00%	0.00%
21	4	Dawson County	8,966	9,327	3.87%	1	$0	0.00%	0.00%
21	1	Deer Lodge County	9,298	9,085	-2.34%	17	$0	0.00%	0.00%
21	6	Fergus County	11,586	11,413	-1.52%	1	$0	0.00%	0.00%
21	4	Garfield County	1,206	1,310	7.94%	0	$0	0.00%	0.00%
21	5	Golden Valley County	884	831	-6.38%	NA	$0	0.00%	0.00%
21	2	Hill County	16,096	16,542	2.70%	4	$0	0.00%	0.00%
21	6	Judith Basin County	2,072	1,940	-6.80%	NA	$0	0.00%	0.00%
21	2	Liberty County	2,339	2,409	2.91%	NA	$0	0.00%	0.00%
21	4	McCone County	1,734	1,700	-2.00%	0	$0	0.00%	0.00%
21	5	Musselshell County	4,538	4,589	1.11%	1	$0	0.00%	0.00%
21	6	Petroleum County	494	489	-1.02%	NA	$0	0.00%	0.00%
21	6	Phillips County	4,253	4,133	-2.90%	2	$0	0.00%	0.00%
21	4	Powder River County	1,743	1,746	0.17%	NA	$0	0.00%	0.00%
21	4	Prairie County	1,179	1,182	0.25%	NA	$0	0.00%	0.00%
21	1	Ravalli County	40,212	42,088	4.46%	20	$0	0.00%	0.00%
21	4	Richland County	9,746	11,482	15.12%	16	$0	0.00%	0.00%
21	6	Roosevelt County	10,425	11,305	7.78%	1	$0	0.00%	0.00%
21	5	Rosebud County	9,233	9,287	0.58%	1	$0	0.00%	0.00%
21	6	Sheridan County	3,384	3,648	7.24%	2	$0	0.00%	0.00%
21	5	Treasure County	718	692	-3.76%	0	$0	0.00%	0.00%
21	6	Valley County	7,369	7,539	2.25%	4	$0	0.00%	0.00%
21	5	Wheatland County	2,168	2,117	-2.41%	NA	$0	0.00%	0.00%
21	4	Wibaux County	1,017	1,093	6.95%	8	$0	0.00%	0.00%
21	5	Yellowstone County	147,972	158,437	6.61%	1,198	$0	0.00%	0.00%

APPENDIX B-5. COUNTY PERCENT EXPOSURE X POPULATION CHANGE RANKING - EARTHQUAKE									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	County	Census 2010	2016 Est	% Population Change	Building Permits	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
1	3	Gallatin County	89,513	104,502	14.34%	1,550	$15,100,403,311	100.00%	14.34%
2	1	Flathead County	90,928	98,082	7.29%	316	$12,373,652,130	99.52%	7.26%
3	3	Lewis and Clark County	63,395	67,282	5.78%	176	$6,142,408,216	97.12%	5.61%
4	1	Missoula County	109,299	116,130	5.88%	930	$2,990,158,214	74.51%	4.38%
5	3	Jefferson County	11,406	11,853	3.77%	5	$861,769,166	100.00%	3.77%
6	1	Lake County	28,746	29,758	3.40%	44	$3,951,954,915	100.00%	3.40%
7	3	Madison County	7,691	7,924	2.94%	7	$1,172,801,948	100.00%	2.94%
8	3	Park County	15,636	16,114	2.97%	44	$1,927,738,538	97.69%	2.90%
9	3	Broadwater County	5,612	5,747	2.35%	0	$673,673,764	100.00%	2.35%
10	2	Glacier County	13,399	13,694	2.15%	0	$683,347,499	99.45%	2.14%
11	1	Granite County	3,079	3,368	8.58%	NA	$91,157,883	24.79%	2.13%
12	3	Beaverhead County	9,246	9,401	1.65%	3	$790,161,085	90.21%	1.49%
13	1	Sanders County	11,413	11,534	1.05%	0	$766,320,979	85.96%	0.90%
14	1	Silver Bow County	34,200	34,553	1.02%	86	$1,947,444,916	87.21%	0.89%
15	5	Stillwater County	9,117	9,406	3.07%	0	$15,151,129	2.23%	0.07%
16	5	Carbon County	10,078	10,460	3.65%	8	$18,064,698	1.47%	0.05%
17	5	Big Horn County	12,865	13,343	3.58%	2	$0	0.00%	0.00%
17	2	Blaine County	6,491	6,601	1.67%	0	$0	0.00%	0.00%
17	4	Carter County	1,160	1,203	3.57%	1	$0	0.00%	0.00%
17	2	Cascade County	81,327	81,755	0.52%	242	$0	0.00%	0.00%
17	2	Chouteau County	5,813	5,759	-0.94%	10	$0	0.00%	0.00%
17	4	Custer County	11,699	11,924	1.89%	0	$0	0.00%	0.00%
17	6	Daniels County	1,751	1,755	0.23%	0	$0	0.00%	0.00%
17	4	Dawson County	8,966	9,327	3.87%	1	$0	0.00%	0.00%
17	1	Deer Lodge County	9,298	9,085	-2.34%	17	$0	0.00%	0.00%
17	6	Fergus County	11,586	11,413	-1.52%	1	$0	0.00%	0.00%
17	4	Garfield County	1,206	1,310	7.94%	0	$0	0.00%	0.00%
17	5	Golden Valley County	884	831	-6.38%	NA	$0	0.00%	0.00%
17	2	Hill County	16,096	16,542	2.70%	4	$0	0.00%	0.00%
17	6	Judith Basin County	2,072	1,940	-6.80%	NA	$0	0.00%	0.00%
17	2	Liberty County	2,339	2,409	2.91%	NA	$0	0.00%	0.00%
17	4	McCone County	1,734	1,700	-2.00%	0	$0	0.00%	0.00%
17	5	Musselshell County	4,538	4,589	1.11%	1	$0	0.00%	0.00%
17	6	Petroleum County	494	489	-1.02%	NA	$0	0.00%	0.00%
17	6	Phillips County	4,253	4,133	-2.90%	2	$0	0.00%	0.00%
17	4	Powder River County	1,743	1,746	0.17%	NA	$0	0.00%	0.00%
17	4	Prairie County	1,179	1,182	0.25%	NA	$0	0.00%	0.00%
17	1	Ravalli County	40,212	42,088	4.46%	20	$0	0.00%	0.00%
17	4	Richland County	9,746	11,482	15.12%	16	$0	0.00%	0.00%
17	6	Roosevelt County	10,425	11,305	7.78%	1	$0	0.00%	0.00%
17	5	Rosebud County	9,233	9,287	0.58%	1	$0	0.00%	0.00%
17	6	Sheridan County	3,384	3,648	7.24%	2	$0	0.00%	0.00%
71	5	Treasure County	718	692	-3.76%	0	$0	0.00%	0.00%
17	6	Valley County	7,369	7,539	2.25%	4	$0	0.00%	0.00%
17	5	Wheatland County	2,168	2,117	-2.41%	NA	$0	0.00%	0.00%
17	4	Wibaux County	1,017	1,093	6.95%	8	$0	0.00%	0.00%
17	5	Yellowstone County	147,972	158,437	6.61%	1,198	$0	0.00%	0.00%
18	2	Teton County	6,073	6,056	-0.28%	1	$19,061,555	4.08%	-0.01%
19	3	Sweet Grass County	3,651	3,623	-0.77%	1	$27,745,277	4.28%	-0.03%
20	1	Lincoln County	19,687	19,259	-2.22%	8	$102,369,662	4.12%	-0.09%
21	1	Mineral County	4,223	4,184	-0.93%	1	$43,845,039	15.20%	-0.14%
22	2	Pondera County	6,153	6,084	-1.13%	1	$133,534,562	28.70%	-0.33%
23	3	Meagher County	1,891	1,827	-3.50%	NA	$33,439,860	15.15%	-0.53%
24	1	Powell County	7,027	6,858	-2.46%	32	$168,087,717	30.99%	-0.76%
25	2	Toole County	5,324	4,977	-6.97%	2	$291,402,622	80.02%	-5.58%

APPENDIX B-5. CITY-TOWN PERCENT EXPOSURE X RANKING - EARTHQUAKE									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	City / Town	County	Census 2010	2016 Est	% Population Change	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
1	3	Bozeman city	Gallatin County	37,280	45,250	17.61%	$6,978,855,900	100.00%	17.61%
1	3	Helena city	Lewis and Clark County	28,190	31,169	9.56%	$3,197,733,940	100.00%	9.56%
1	1	Kalispell city	Flathead County	19,927	22,761	12.45%	$2,337,049,029	100.00%	12.45%
1	1	Whitefish city	Flathead County	6,357	7,279	12.67%	$1,504,097,615	100.00%	12.67%
1	3	Belgrade city	Gallatin County	7,389	8,254	10.48%	$617,799,690	100.00%	10.48%
1	3	Livingston city	Park County	7,044	7,401	4.82%	$591,390,427	100.00%	4.82%
1	1	Columbia Falls city	Flathead County	4,688	5,241	10.55%	$372,356,043	100.00%	10.55%
1	1	Polson city	Lake County	4,488	4,777	6.05%	$350,203,110	100.00%	6.05%
1	3	West Yellowstone town	Gallatin County	1,271	1,353	6.06%	$322,712,793	100.00%	6.06%
1	3	Dillon city	Beaverhead County	4,134	4,257	2.89%	$199,400,161	100.00%	2.89%
1	2	Shelby city	Toole County	3,376	3,216	-4.98%	$187,317,887	100.00%	-4.98%
1	3	Manhattan town	Gallatin County	1,520	1,691	10.11%	$148,788,438	100.00%	10.11%
1	3	Townsend city	Broadwater County	1,878	1,978	5.06%	$138,340,812	100.00%	5.06%
1	2	Cut Bank city	Glacier County	2,869	3,012	4.75%	$128,553,791	100.00%	4.75%
1	3	Three Forks city	Gallatin County	1,869	1,944	3.86%	$125,627,439	100.00%	3.86%
1	3	East Helena town	Lewis and Clark County	1,984	2,074	4.34%	$112,142,609	100.00%	4.34%
1	3	Ennis town	Madison County	838	890	5.84%	$108,345,623	100.00%	5.84%
1	1	Ronan city	Lake County	1,871	2,016	7.19%	$94,507,039	100.00%	7.19%
1	1	Thompson Falls city	Sanders County	1,313	1,356	3.17%	$84,758,204	100.00%	3.17%
1	1	Plains town	Sanders County	1,048	1,071	2.15%	$62,407,202	100.00%	2.15%
1	3	Boulder town	Jefferson County	1,183	1,230	3.82%	$43,742,697	100.00%	3.82%
1	3	Whitehall town	Jefferson County	1,038	1,114	6.82%	$41,984,284	100.00%	6.82%
1	1	Hot Springs town	Sanders County	544	557	2.33%	$39,055,148	100.00%	2.33%
1	2	Valier town	Pondera County	509	498	-2.21%	$37,924,616	100.00%	-2.21%
1	3	Twin Bridges town	Madison County	375	395	5.06%	$33,718,822	100.00%	5.06%
1	3	Virginia City town	Madison County	190	198	4.04%	$31,545,502	100.00%	4.04%
1	1	St. Ignatius town	Lake County	842	824	-2.18%	$30,868,588	100.00%	-2.18%
1	3	Clyde Park town	Park County	288	309	6.80%	$17,967,344	100.00%	6.80%
1	2	Browning town	Glacier County	1,016	1,031	1.45%	$17,334,831	100.00%	1.45%
1	1	Drummond town	Granite County	309	348	11.21%	$16,884,417	100.00%	11.21%
1	2	Sunburst town	Toole County	375	338	-10.95%	$15,646,419	100.00%	-10.95%
1	3	Lima town	Beaverhead County	221	224	1.34%	$9,778,665	100.00%	1.34%
1	2	Kevin town	Toole County	154	138	-11.59%	$4,602,102	100.00%	-11.59%
2	1	Walkerville town	Silver Bow County	675	700	3.57%	$1,922,972,106	87.06%	3.11%
3	1	Missoula city	Missoula County	66,788	72,364	7.71%	$1,352,197,157	85.60%	6.60%
4	3	Sheridan town	Madison County	642	677	5.17%	$70,202,704	32.65%	1.69%
5	1	Alberton town	Mineral County	420	417	-0.72%	$0	0.00%	0.00%
5	6	Bainville town	Roosevelt County	208	314	33.76%	$0	0.00%	0.00%
5	4	Baker city	Fallon County	1,741	1,990	12.51%	$0	0.00%	0.00%
5	5	Bearcreek town	Carbon County	79	84	5.95%	$0	0.00%	0.00%
5	2	Belt city	Cascade County	597	588	-1.53%	$0	0.00%	0.00%
5	2	Big Sandy town	Chouteau County	598	590	-1.36%	$0	0.00%	0.00%
5	3	Big Timber city	Sweet Grass County	1,641	1,645	0.24%	$0	0.00%	0.00%
5	5	Billings city	Yellowstone County	104,170	110,323	5.58%	$0	0.00%	0.00%
5	5	Bridger town	Carbon County	708	732	3.28%	$0	0.00%	0.00%
5	4	Broadus town	Powder River County	468	481	2.70%	$0	0.00%	0.00%
5	5	Broadview town	Yellowstone County	192	193	0.52%	$0	0.00%	0.00%
5	6	Brockton town	Roosevelt County	255	243	-4.94%	$0	0.00%	0.00%
5	2	Cascade town	Cascade County	685	688	0.44%	$0	0.00%	0.00%
5	2	Chester town	Liberty County	847	884	4.19%	$0	0.00%	0.00%
5	2	Chinook city	Blaine County	1,203	1,233	2.43%	$0	0.00%	0.00%
5	2	Choteau city	Teton County	1,684	1,686	0.12%	$0	0.00%	0.00%
5	4	Circle town	McCone County	615	619	0.65%	$0	0.00%	0.00%
5	5	Colstrip city	Rosebud County	2,214	2,311	4.20%	$0	0.00%	0.00%
5	5	Columbus town	Stillwater County	1,893	2,028	6.66%	$0	0.00%	0.00%
5	2	Conrad city	Pondera County	2,570	2,550	-0.78%	$0	0.00%	0.00%
5	6	Culbertson town	Roosevelt County	714	804	11.19%	$0	0.00%	0.00%
5	1	Darby town	Ravalli County	720	763	5.64%	$0	0.00%	0.00%
5	1	Deer Lodge city	Powell County	3,111	2,994	-3.91%	$0	0.00%	0.00%
5	6	Denton town	Fergus County	255	247	-3.24%	$0	0.00%	0.00%
5	6	Dodson town	Phillips County	124	124	0.00%	$0	0.00%	0.00%
5	2	Dutton town	Teton County	316	308	-2.60%	$0	0.00%	0.00%
5	4	Ekalaka town	Carter County	332	353	5.95%	$0	0.00%	0.00%
5	1	Eureka town	Lincoln County	1,037	1,086	4.51%	$0	0.00%	0.00%
5	2	Fairfield town	Teton County	708	922	23.21%	$0	0.00%	0.00%

APPENDIX B-5. CITY-TOWN PERCENT EXPOSURE X RANKING - EARTHQUAKE									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	City / Town	County	Census 2010	2016 Est	% Population Change	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
5	4	Fairview town	Richland County	840	922	8.89%	$0	0.00%	0.00%
5	6	Flaxville town	Daniels County	71	71	0.00%	$0	0.00%	0.00%
5	5	Forsyth city	Rosebud County	1,777	1,869	4.92%	$0	0.00%	0.00%
5	2	Fort Benton city	Chouteau County	1,464	1,456	-0.55%	$0	0.00%	0.00%
5	6	Fort Peck town	Valley County	233	247	5.67%	$0	0.00%	0.00%
5	6	Froid town	Roosevelt County	185	201	7.96%	$0	0.00%	0.00%
5	5	Fromberg town	Carbon County	438	445	1.57%	$0	0.00%	0.00%
5	2	Geraldine town	Chouteau County	261	261	0.00%	$0	0.00%	0.00%
5	6	Glasgow city	Valley County	3,250	3,364	3.39%	$0	0.00%	0.00%
5	4	Glendive city	Dawson County	4,935	5,332	7.45%	$0	0.00%	0.00%
5	6	Grass Range town	Fergus County	110	108	-1.85%	$0	0.00%	0.00%
5	2	Great Falls city	Cascade County	58,505	59,178	1.14%	$0	0.00%	0.00%
5	1	Hamilton city	Ravalli County	4,348	4,674	6.97%	$0	0.00%	0.00%
5	5	Hardin city	Big Horn County	3,505	3,829	8.46%	$0	0.00%	0.00%
5	2	Harlem city	Blaine County	808	823	1.82%	$0	0.00%	0.00%
5	5	Harlowton city	Wheatland County	997	984	-1.32%	$0	0.00%	0.00%
5	2	Havre city	Hill County	9,310	9,846	5.44%	$0	0.00%	0.00%
5	2	Hingham town	Hill County	118	122	3.28%	$0	0.00%	0.00%
5	6	Hobson town	Judith Basin County	215	218	1.38%	$0	0.00%	0.00%
5	5	Hysham town	Treasure County	312	301	-3.65%	$0	0.00%	0.00%
5	4	Ismay town	Custer County	19	21	9.52%	$0	0.00%	0.00%
5	5	Joliet town	Carbon County	595	640	7.03%	$0	0.00%	0.00%
5	4	Jordan town	Garfield County	343	399	14.04%	$0	0.00%	0.00%
5	5	Judith Gap city	Wheatland County	126	123	-2.44%	$0	0.00%	0.00%
5	5	Laurel city	Yellowstone County	6,718	6,865	2.14%	$0	0.00%	0.00%
5	5	Lavina town	Golden Valley County	187	173	-8.09%	$0	0.00%	0.00%
5	6	Lewistown city	Fergus County	5,901	5,870	-0.53%	$0	0.00%	0.00%
5	1	Libby city	Lincoln County	2,628	2,678	1.87%	$0	0.00%	0.00%
5	5	Lodge Grass town	Big Horn County	428	446	4.04%	$0	0.00%	0.00%
5	6	Malta city	Phillips County	1,997	1,950	-2.41%	$0	0.00%	0.00%
5	6	Medicine Lake town	Sheridan County	225	241	6.64%	$0	0.00%	0.00%
5	5	Melstone town	Musselshell County	96	107	10.28%	$0	0.00%	0.00%
5	4	Miles City city	Custer County	8,410	8,647	2.74%	$0	0.00%	0.00%
5	6	Moore town	Fergus County	193	198	2.53%	$0	0.00%	0.00%
5	6	Nashua town	Valley County	290	290	0.00%	$0	0.00%	0.00%
5	2	Neihart town	Cascade County	51	50	-2.00%	$0	0.00%	0.00%
5	6	Opheim town	Valley County	85	290	70.69%	$0	0.00%	0.00%
5	6	Outlook town	Sheridan County	47	52	9.62%	$0	0.00%	0.00%
5	1	Philipsburg town	Granite County	820	920	10.87%	$0	0.00%	0.00%
5	1	Pinesdale town	Ravalli County	917	967	5.17%	$0	0.00%	0.00%
5	6	Plentywood city	Sheridan County	1,734	1,904	8.93%	$0	0.00%	0.00%
5	4	Plevna town	Fallon County	162	176	7.95%	$0	0.00%	0.00%
5	6	Poplar city	Roosevelt County	810	854	5.15%	$0	0.00%	0.00%
5	5	Red Lodge city	Carbon County	2,125	2,237	5.01%	$0	0.00%	0.00%
5	1	Rexford town	Lincoln County	105	151	30.46%	$0	0.00%	0.00%
5	4	Richey town	Dawson County	177	187	5.35%	$0	0.00%	0.00%
5	5	Roundup city	Musselshell County	1,788	1,840	2.83%	$0	0.00%	0.00%
5	5	Ryegate town	Golden Valley County	245	236	-3.81%	$0	0.00%	0.00%
5	6	Saco town	Phillips County	197	197	0.00%	$0	0.00%	0.00%
5	6	Scobey city	Daniels County	1,017	1,032	1.45%	$0	0.00%	0.00%
5	4	Sidney city	Richland County	5,191	6,566	20.94%	$0	0.00%	0.00%
5	6	Stanford town	Judith Basin County	401	384	-4.43%	$0	0.00%	0.00%
5	1	Stevensville town	Ravalli County	1,809	1,963	7.85%	$0	0.00%	0.00%
5	1	Superior town	Mineral County	812	826	1.69%	$0	0.00%	0.00%
5	4	Terry town	Prairie County	605	609	0.66%	$0	0.00%	0.00%
5	1	Troy city	Lincoln County	938	890	-5.39%	$0	0.00%	0.00%
5	6	Westby town	Sheridan County	168	174	3.45%	$0	0.00%	0.00%
5	3	White Sulphur Springs city	Meagher County	939	908	-3.41%	$0	0.00%	0.00%
5	4	Wibaux town	Wibaux County	589	649	9.24%	$0	0.00%	0.00%
5	6	Winifred town	Fergus County	208	206	-0.97%	$0	0.00%	0.00%
5	6	Winnett town	Petroleum County	182	185	1.62%	$0	0.00%	0.00%
5	6	Wolf Point city	Roosevelt County	2,621	2,806	6.59%	$0	0.00%	0.00%

APPENDIX B-5. CITY-TOWN PERCENT EXPOSURE X POPULATION CHANGE RANKING - EARTHQUAKE									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	City / Town	County	Census 2010	2016 Est	% Population Change	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
1	3	Bozeman city	Gallatin County	37,280	45,250	17.61%	$6,978,855,900	100.00%	17.61%
2	1	Whitefish city	Flathead County	6,357	7,279	12.67%	$1,504,097,615	100.00%	12.67%
3	1	Kalispell city	Flathead County	19,927	22,761	12.45%	$2,337,049,029	100.00%	12.45%
4	1	Drummond town	Granite County	309	348	11.21%	$16,884,417	100.00%	11.21%
5	1	Columbia Falls city	Flathead County	4,688	5,241	10.55%	$372,356,043	100.00%	10.55%
6	3	Belgrade city	Gallatin County	7,389	8,254	10.48%	$617,799,690	100.00%	10.48%
7	3	Manhattan town	Gallatin County	1,520	1,691	10.11%	$148,788,438	100.00%	10.11%
8	3	Helena city	Lewis and Clark County	28,190	31,169	9.56%	$3,197,733,940	100.00%	9.56%
9	1	Ronan city	Lake County	1,871	2,016	7.19%	$94,507,039	100.00%	7.19%
10	3	Whitehall town	Jefferson County	1,038	1,114	6.82%	$41,984,284	100.00%	6.82%
11	3	Clyde Park town	Park County	288	309	6.80%	$17,967,344	100.00%	6.80%
12	1	Missoula city	Missoula County	66,788	72,364	7.71%	$1,352,197,157	85.60%	6.60%
13	3	West Yellowstone town	Gallatin County	1,271	1,353	6.06%	$322,712,793	100.00%	6.06%
14	1	Polson city	Lake County	4,488	4,777	6.05%	$350,203,110	100.00%	6.05%
15	3	Ennis town	Madison County	838	890	5.84%	$108,345,623	100.00%	5.84%
16	3	Twin Bridges town	Madison County	375	395	5.06%	$33,718,822	100.00%	5.06%
16	3	Townsend city	Broadwater County	1,878	1,978	5.06%	$138,340,812	100.00%	5.06%
17	3	Livingston city	Park County	7,044	7,401	4.82%	$591,390,427	100.00%	4.82%
18	2	Cut Bank city	Glacier County	2,869	3,012	4.75%	$128,553,791	100.00%	4.75%
19	3	East Helena town	Lewis and Clark County	1,984	2,074	4.34%	$112,142,609	100.00%	4.34%
20	3	Virginia City town	Madison County	190	198	4.04%	$31,545,502	100.00%	4.04%
21	3	Three Forks city	Gallatin County	1,869	1,944	3.86%	$125,627,439	100.00%	3.86%
22	3	Boulder town	Jefferson County	1,183	1,230	3.82%	$43,742,697	100.00%	3.82%
23	1	Thompson Falls city	Sanders County	1,313	1,356	3.17%	$84,758,204	100.00%	3.17%
24	1	Walkerville town	Silver Bow County	675	700	3.57%	$1,922,972,106	87.06%	3.11%
25	3	Dillon city	Beaverhead County	4,134	4,257	2.89%	$199,400,161	100.00%	2.89%
26	1	Hot Springs town	Sanders County	544	557	2.33%	$39,055,148	100.00%	2.33%
27	1	Plains town	Sanders County	1,048	1,071	2.15%	$62,407,202	100.00%	2.15%
28	3	Sheridan town	Madison County	642	677	5.17%	$70,202,704	32.65%	1.69%
29	2	Browning town	Glacier County	1,016	1,031	1.45%	$17,334,831	100.00%	1.45%
30	3	Lima town	Beaverhead County	221	224	1.34%	$9,778,665	100.00%	1.34%
31	1	Alberton town	Mineral County	420	417	-0.72%	$0	0.00%	0.00%
31	6	Bainville town	Roosevelt County	208	314	33.76%	$0	0.00%	0.00%
31	4	Baker city	Fallon County	1,741	1,990	12.51%	$0	0.00%	0.00%
31	5	Bearcreek town	Carbon County	79	84	5.95%	$0	0.00%	0.00%
31	2	Belt city	Cascade County	597	588	-1.53%	$0	0.00%	0.00%
31	2	Big Sandy town	Chouteau County	598	590	-1.36%	$0	0.00%	0.00%
31	3	Big Timber city	Sweet Grass County	1,641	1,645	0.24%	$0	0.00%	0.00%
31	5	Billings city	Yellowstone County	104,170	110,323	5.58%	$0	0.00%	0.00%
31	5	Bridger town	Carbon County	708	732	3.28%	$0	0.00%	0.00%
31	4	Broadus town	Powder River County	468	481	2.70%	$0	0.00%	0.00%
31	5	Broadview town	Yellowstone County	192	193	0.52%	$0	0.00%	0.00%
31	6	Brockton town	Roosevelt County	255	243	-4.94%	$0	0.00%	0.00%
31	2	Cascade town	Cascade County	685	688	0.44%	$0	0.00%	0.00%
31	2	Chester town	Liberty County	847	884	4.19%	$0	0.00%	0.00%
31	2	Chinook city	Blaine County	1,203	1,233	2.43%	$0	0.00%	0.00%
31	2	Choteau city	Teton County	1,684	1,686	0.12%	$0	0.00%	0.00%
31	4	Circle town	McCone County	615	619	0.65%	$0	0.00%	0.00%
31	5	Colstrip city	Rosebud County	2,214	2,311	4.20%	$0	0.00%	0.00%
31	5	Columbus town	Stillwater County	1,893	2,028	6.66%	$0	0.00%	0.00%
31	2	Conrad city	Pondera County	2,570	2,550	-0.78%	$0	0.00%	0.00%
31	6	Culbertson town	Roosevelt County	714	804	11.19%	$0	0.00%	0.00%
31	1	Darby town	Ravalli County	720	763	5.64%	$0	0.00%	0.00%
31	1	Deer Lodge city	Powell County	3,111	2,994	-3.91%	$0	0.00%	0.00%
31	6	Denton town	Fergus County	255	247	-3.24%	$0	0.00%	0.00%
31	6	Dodson town	Phillips County	124	124	0.00%	$0	0.00%	0.00%
31	2	Dutton town	Teton County	316	308	-2.60%	$0	0.00%	0.00%
31	4	Ekalaka town	Carter County	332	353	5.95%	$0	0.00%	0.00%
31	1	Eureka town	Lincoln County	1,037	1,086	4.51%	$0	0.00%	0.00%
31	2	Fairfield town	Teton County	708	922	23.21%	$0	0.00%	0.00%
31	4	Fairview town	Richland County	840	922	8.89%	$0	0.00%	0.00%
31	6	Flaxville town	Daniels County	71	71	0.00%	$0	0.00%	0.00%
31	5	Forsyth city	Rosebud County	1,777	1,869	4.92%	$0	0.00%	0.00%
31	2	Fort Benton city	Chouteau County	1,464	1,456	-0.55%	$0	0.00%	0.00%
31	6	Fort Peck town	Valley County	233	247	5.67%	$0	0.00%	0.00%

APPENDIX B-5. CITY-TOWN PERCENT EXPOSURE X POPULATION CHANGE RANKING - EARTHQUAKE									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	City / Town	County	Census 2010	2016 Est	% Population Change	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
31	6	Froid town	Roosevelt County	185	201	7.96%	$0	0.00%	0.00%
31	5	Fromberg town	Carbon County	438	445	1.57%	$0	0.00%	0.00%
31	2	Geraldine town	Chouteau County	261	261	0.00%	$0	0.00%	0.00%
31	6	Glasgow city	Valley County	3,250	3,364	3.39%	$0	0.00%	0.00%
31	4	Glendive city	Dawson County	4,935	5,332	7.45%	$0	0.00%	0.00%
31	6	Grass Range town	Fergus County	110	108	-1.85%	$0	0.00%	0.00%
31	2	Great Falls city	Cascade County	58,505	59,178	1.14%	$0	0.00%	0.00%
31	1	Hamilton city	Ravalli County	4,348	4,674	6.97%	$0	0.00%	0.00%
31	5	Hardin city	Big Horn County	3,505	3,829	8.46%	$0	0.00%	0.00%
31	2	Harlem city	Blaine County	808	823	1.82%	$0	0.00%	0.00%
31	5	Harlowton city	Wheatland County	997	984	-1.32%	$0	0.00%	0.00%
31	2	Havre city	Hill County	9,310	9,846	5.44%	$0	0.00%	0.00%
31	2	Hingham town	Hill County	118	122	3.28%	$0	0.00%	0.00%
31	6	Hobson town	Judith Basin County	215	218	1.38%	$0	0.00%	0.00%
31	5	Hysham town	Treasure County	312	301	-3.65%	$0	0.00%	0.00%
31	4	Ismay town	Custer County	19	21	9.52%	$0	0.00%	0.00%
31	5	Joliet town	Carbon County	595	640	7.03%	$0	0.00%	0.00%
31	4	Jordan town	Garfield County	343	399	14.04%	$0	0.00%	0.00%
31	5	Judith Gap city	Wheatland County	126	123	-2.44%	$0	0.00%	0.00%
31	5	Laurel city	Yellowstone County	6,718	6,865	2.14%	$0	0.00%	0.00%
31	5	Lavina town	Golden Valley County	187	173	-8.09%	$0	0.00%	0.00%
31	6	Lewistown city	Fergus County	5,901	5,870	-0.53%	$0	0.00%	0.00%
31	1	Libby city	Lincoln County	2,628	2,678	1.87%	$0	0.00%	0.00%
31	5	Lodge Grass town	Big Horn County	428	446	4.04%	$0	0.00%	0.00%
31	6	Malta city	Phillips County	1,997	1,950	-2.41%	$0	0.00%	0.00%
31	6	Medicine Lake town	Sheridan County	225	241	6.64%	$0	0.00%	0.00%
31	5	Melstone town	Musselshell County	96	107	10.28%	$0	0.00%	0.00%
31	4	Miles City city	Custer County	8,410	8,647	2.74%	$0	0.00%	0.00%
31	6	Moore town	Fergus County	193	198	2.53%	$0	0.00%	0.00%
31	6	Nashua town	Valley County	290	290	0.00%	$0	0.00%	0.00%
31	2	Neihart town	Cascade County	51	50	-2.00%	$0	0.00%	0.00%
31	6	Opheim town	Valley County	85	290	70.69%	$0	0.00%	0.00%
31	6	Outlook town	Sheridan County	47	52	9.62%	$0	0.00%	0.00%
31	1	Philipsburg town	Granite County	820	920	10.87%	$0	0.00%	0.00%
31	1	Pinesdale town	Ravalli County	917	967	5.17%	$0	0.00%	0.00%
31	6	Plentywood city	Sheridan County	1,734	1,904	8.93%	$0	0.00%	0.00%
31	4	Plevna town	Fallon County	162	176	7.95%	$0	0.00%	0.00%
31	6	Poplar city	Roosevelt County	810	854	5.15%	$0	0.00%	0.00%
31	5	Red Lodge city	Carbon County	2,125	2,237	5.01%	$0	0.00%	0.00%
31	1	Rexford town	Lincoln County	105	151	30.46%	$0	0.00%	0.00%
31	4	Richey town	Dawson County	177	187	5.35%	$0	0.00%	0.00%
31	5	Roundup city	Musselshell County	1,788	1,840	2.83%	$0	0.00%	0.00%
31	5	Ryegate town	Golden Valley County	245	236	-3.81%	$0	0.00%	0.00%
31	6	Saco town	Phillips County	197	197	0.00%	$0	0.00%	0.00%
31	6	Scobey city	Daniels County	1,017	1,032	1.45%	$0	0.00%	0.00%
31	4	Sidney city	Richland County	5,191	6,566	20.94%	$0	0.00%	0.00%
31	6	Stanford town	Judith Basin County	401	384	-4.43%	$0	0.00%	0.00%
31	1	Stevensville town	Ravalli County	1,809	1,963	7.85%	$0	0.00%	0.00%
31	1	Superior town	Mineral County	812	826	1.69%	$0	0.00%	0.00%
31	4	Terry town	Prairie County	605	609	0.66%	$0	0.00%	0.00%
31	1	Troy city	Lincoln County	938	890	-5.39%	$0	0.00%	0.00%
31	6	Westby town	Sheridan County	168	174	3.45%	$0	0.00%	0.00%
31	3	White Sulphur Springs city	Meagher County	939	908	-3.41%	$0	0.00%	0.00%
31	4	Wibaux town	Wibaux County	589	649	9.24%	$0	0.00%	0.00%
31	6	Winifred town	Fergus County	208	206	-0.97%	$0	0.00%	0.00%
31	6	Winnett town	Petroleum County	182	185	1.62%	$0	0.00%	0.00%
31	6	Wolf Point city	Roosevelt County	2,621	2,806	6.59%	$0	0.00%	0.00%
32	1	St. Ignatius town	Lake County	842	824	-2.18%	$30,868,588	100.00%	-2.18%
33	2	Valier town	Pondera County	509	498	-2.21%	$37,924,616	100.00%	-2.21%
34	2	Shelby city	Toole County	3,376	3,216	-4.98%	$187,317,887	100.00%	-4.98%
35	2	Sunburst town	Toole County	375	338	-10.95%	$15,646,419	100.00%	-10.95%
36	2	Kevin town	Toole County	154	138	-11.59%	$4,602,102	100.00%	-11.59%

APPENDIX B-5. LOCAL PLAN EXPOSURE SUMMARY - EARTHQUAKE

DES District	Geography	Census 2010	Census 2016 Estimate	% Change 2010 to 2016	# Building Permits (2016)	Original Local Plan FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan	Estimated Societal Loss/ Exposure from Local Plan	Estimated Economic Loss from Local Plan	Ref	Local Plan Update #1 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #1	Estimated Societal Loss/ Exposure from Local Plan Update #1	Estimated Economic Loss from Local Plan Update #1	Ref	Local Plan Update #2 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #2	Estimated Societal Loss/ Exposure from Local Plan Update #2	Estimated Economic Loss from Local Plan Update #2	Ref
	Montana	989,415	1,042,520	5.09%	4,781															
3	**Beaverhead County**	9,246	9,401	1.65%	3	2004	$20.2M	520,000	NA	3	2010	$27.3M	1 fatality	NA	3	2017				1
	Dillon city	4,134	4,257	2.89%								Moderate-High	Moderate	Moderate-High			Moderate-High	Moderate	Moderate-High	1
	Lima town	221	224	1.34%								Moderate-High	Moderate	Moderate-High			Moderate-High	Moderate	Moderate-High	1
	Balance of Beaverhead County	4,891	4,920	0.59%								Moderate-High	Moderate	Moderate-High			Moderate-High	Moderate	Moderate-High	1
5	**Big Horn County**	12,865	13,343	3.58%	2	2006	NA	NA	NA	2	2012	224 structures	NA	$6,058,000	2					
	Hardin city	3,505	3,829	8.46%																
	Lodge Grass town	428	446	4.04%																
	Balance of Big Horn County	8,932	9,068	1.50%																
2	**Blaine County**	6,491	6,601	1.67%	0	2006	NA	NA	NA	14	2012	NA	NA	NA	14					
	Chinook city	1,203	1,233	2.43%																
	Harlem city	808	823	1.82%																
	Balance of Blaine County	4,480	4,545	1.43%																
3	**Broadwater County**	5,612	5,747	2.35%	0	2004	$50M	50-100	High	3	2009	$25.22M	1 fatality	NA	3	2016				14
	Townsend city	1,878	1,978	5.06%								Moderate-High	Moderate	Moderate-High	3		R=$60,475,754 C=$15,235,768	1,897; <18=421	NA	14
	Balance of Broadwater County	3,734	3,769	0.93%								Moderate-High	Moderate	Moderate-High	3		R=$195,492,573 C=$29,283,416	3,221; <18=715	NA	14
5	**Carbon County**	10,078	10,460	3.65%	8	2006	NA	NA	NA	2	2012	$32.8M	7	$34.14M	2					
	Bearcreek town	79	84	5.95%																
	Bridger town	708	732	3.28%																
	Fromberg town	438	445	1.57%																
	Joliet town	595	640	7.03%																
	Red Lodge city	2,125	2,237	5.01%																
	Balance of Carbon County	6,133	6,322	2.99%																
4	**Carter County**	1,160	1,203	3.57%	1	2005	NA	NA	NA		2012	Low	Low	Low	12					
	Ekalaka town	332	353	5.95%																
	Balance of Carter County	828	850	2.59%																
2	**Cascade County**	81,327	81,755	0.52%	242	2012	NA	NA	NA	14	2017	NA	NA	NA	14					
	Belt city	597	588	-1.53%																
	Cascade town	685	688	0.44%																
	Great Falls city	58,505	59,178	1.14%																
	Neihart town	51	50	-2.00%																
	Balance of Cascade County	21,489	21,251	-1.12%																
2	**Chouteau County**	5,813	5,759	-0.94%	10	2010	NA	NA	NA	5	2017	NA	NA	NA	5					
	Big Sandy town	598	590	-1.36%																
	Fort Benton city	1,464	1,456	-0.55%																
	Geraldine town	261	261	0.00%																
	Balance of Chouteau County	3,490	3,452	-1.10%																
4	**Custer County**	11,699	11,924	1.89%	0	2005	NA	NA	NA	2	2012	1 percent	0	$4.17M	2	2017	NA	NA	NA	14
	Ismay town	19	21	9.52%																
	Miles City city	8,410	8,647	2.74%																
	Balance of Custer County	3,270	3,256	-0.43%																
6	**Daniels County**	1,751	1,755	0.23%	0	2003	NA	NA	NA	14	2008	8 structures	0	$70K	3	2016	NA	NA	NA	8
	Flaxville town	71	71	0.00%								Low-Moderate	Low	Low-Moderate	3					
	Scobey city	1,017	1,032	1.45%								Low-Moderate	Low	Low-Moderate	3					
	Balance of Daniels County	663	652	-1.69%								Low-Moderate	Low	Low-Moderate	3					
4	**Dawson County**	8,966	9,327	3.87%	1	2006	NA	NA	NA	2	2014	NA	NA	NA	9					
	Glendive city	4,935	5,332	7.45%																
	Richey town	177	187	5.35%																
	Balance of Dawson County	3,854	3,808	-1.21%																
1	**Deer Lodge County**	9,298	9,085	-2.34%	17	2005	$3.9K; High	Moderate	High	3	2013	$2.7M; High	Moderate	Moderate	3					
	Anaconda-Deer Lodge County	9,298	9,085	-2.34%																
4	**Fallon County**	2,890	3,120	7.37%	35	2006	NA	NA	NA	12	2012	NA	NA	NA	12					
	Baker city	1,741	1,990	12.51%																
	Plevna town	162	176	7.95%																
	Balance of Fallon County	987	954	-3.46%																
6	**Fergus County**	11,586	11,413	-1.52%	1	2008	NA	NA	NA	3	2014	$1.2M	NA	NA	9					
	Denton town	255	247	-3.24%								Low	Low	Low						
	Grass Range town	110	108	-1.85%								Low	Low	Low						
	Lewistown city	5,901	5,870	-0.53%								Low	Low	Low						
	Moore town	193	198	2.53%								Low	Low	Low						
	Winifred town	208	206	-0.97%								Low	Low	Low						
	Balance of Fergus County	4,919	4,784	-2.82%								Low	Low	Low						
1	**Flathead County**	90,928	98,082	7.29%	316	2009	High	Moderate	NA		2014				14					
	Columbia Falls city	4,688	5,241	10.55%								R=$0; C=$0	0	NA	14					

APPENDIX B-5. LOCAL PLAN EXPOSURE SUMMARY - EARTHQUAKE

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	Kalispell city	19,927	22,761	12.45%								R=$867,153,084 C=$569,165,790	19,264	NA	14					
	Whitefish city	6,357	7,279	12.67%								R=$0; C=$0	0	NA	14					
	Balance of Flathead County	59,956	62,801	4.53%								R=$1,120,775,432 C=$86,384,202	17,390	NA	14					
3	**Gallatin County**	89,513	104,502	14.34%	1,550	2006	High	Moderate	High	6	2012	High	High	Moderate	6					
	Belgrade city	7,389	8,254	10.48%																
	Bozeman city	37,280	45,250	17.61%																
	Manhattan town	1,520	1,691	10.11%																
	Three Forks city	1,869	1,944	3.86%																
	West Yellowstone town	1,271	1,353	6.06%																
	Balance of Gallatin County	40,184	46,010	12.66%																
4	**Garfield County**	1,206	1,310	7.94%	0	2007	NA	NA	NA	3	2014	7 structures	0	Low	9					
	Jordan town	343	399	14.04%																
	Balance of Garfield County	863	911	5.27%																
2	**Glacier County**	13,399	13,694	2.15%	0	2005	NA	NA	NA		2012				14					
	Browning town	1,016	1,031	1.45%								R=$5,854,778 C=$8,321,712	1,016	NA						
	Cut Bank city	2,869	3,012	4.75%								R=$0; C=$0	0	NA						
	Balance of Glacier County	9,514	9,651	1.42%								R=$122,399 C=$0	7	NA						
5	**Golden Valley County**	884	831	-6.38%	NA	2008	NA	NA	NA	14										
	Lavina town	187	173	-8.09%																
	Ryegate town	245	236	-3.81%																
	Balance of Golden Valley County	452	422	-7.11%																
1	**Granite County**	3,079	3,368	8.58%	NA	2006	$950K	882	$80K	3	2013	$700K; Moderate	Low	Moderate	3					
	Drummond town	309	348	11.21%																
	Philipsburg town	820	920	10.87%																
	Balance of Granite County	1,950	2,100	7.14%																
2	**Hill County**	16,096	16,542	2.70%	4	2006	NA	NA	NA	14	2012	NA	NA	NA	14					
	Havre city	9,310	9,846	5.44%																
	Hingham town	118	122	3.28%																
	Balance of Hill County	6,668	6,574	-1.43%																
3	**Jefferson County**	11,406	11,853	3.77%	5	2005	NA	NA	NA	3	2011				14	2017				14
	Boulder town	1,183	1,230	3.82%								R=$24,902,761 C=$7,775,364	1,183	NA			R=$0: C=$0	0	NA	14
	Whitehall town	1,038	1,114	6.82%								R=$31,207,320 C=$8,389,386	1,038	NA			R=$0: C=$0	0	NA	14
	Balance of Jefferson County	9,185	9,509	3.41%								R=$498,105,303 C=$40,429,167	11,231	NA			R=$22,311,876 C=$1,439,888	788; <18=177	NA	14
6	**Judith Basin County**	2,072	1,940	-6.80%	NA	2008	NA	NA	NA	14	2013	NA	NA	NA	14					
	Hobson town	215	218	1.38%																
	Stanford town	401	384	-4.43%																
	Balance of Judith Basin County	1,456	1,338	-8.82%																
1	**Lake County**	28,746	29,758	3.40%	44	2006	$40.55K	1,586	NA		2012				14					
	Polson city	4,488	4,777	6.05%								R=262,630,066 C=$186,321,779	4,471	NA						
	Ronan city	1,871	2,016	7.19%								R=0; C=$0	0	NA						
	St. Ignatius town	842	824	-2.18%								R=0; C=$0	0	NA						
	Balance of Lake County	21,545	22,141	2.69%								R=$623,671,365 C=$40,303,575	8,346	NA						
3	**Lewis and Clark County**	63,395	67,282	5.78%	176	2005	$400M	262	NA		2011				14	2017				14
	East Helena town	1,984	2,074	4.34%								R=$57,693,923 C=$30,011,517	1,984	NA			R=73,916,041 C=$30,793,990	2,832; <18=700	NA	14
	Helena city	28,190	31,169	9.56%								R=$1,055,814,324 C=$973,513,449	28,190	NA			R=$1,193,293,067 C=$919,413,720	30,649; <18=6,243	NA	14
	Balance of Lewis and Clark County	33,221	34,039	2.40%								R=$1,350,996,743 C=$127,364,582	33,440	NA			R=$1,744,823,298 C=$128,218,969	28,380; <18=7,232	NA	14
2	**Liberty County**	2,339	2,409	2.91%	NA	2007	NA	NA	NA	2	2013	NA	NA	NA	2					
	Chester town	847	884	4.19%																
	Balance of Liberty County	1,492	1,525	2.16%																
1	**Lincoln County**	19,687	19,259	-2.22%	8	2005	2	1	NA		2012				14					
	Eureka town	1,037	1,086	4.51%								R=$0; C=$0	0	NA						
	Libby city	2,628	2,678	1.87%								R=$0; C=$0	0	NA						
	Rexford town	105	151	30.46%								R=$0; C=$0	0	NA						
	Troy city	938	890	-5.39%								R=$0; C=$0	0	NA						
	Balance of Lincoln County	14,979	14,454	-3.63%								R=$31,386,736 C=$2,123,057	2,443	NA						

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3	**Madison County**	7,691	7,924	2.94%	7	2004	$4,747,416	NA	NA	3	2010	$36.56M	1 fatality	NA	3	2017				1
	Ennis town	838	890	5.84%								Moderate-High	Moderate	Moderate-High	3		Moderate-High	Moderate	Moderate-High	1
	Sheridan town	642	677	5.17%								Moderate-High	Moderate	Moderate-High	3		Moderate-High	Moderate	Moderate-High	1
	Twin Bridges town	375	395	5.06%								Moderate-High	Moderate	Moderate-High	3		Moderate-High	Moderate	Moderate-High	1
	Virginia City town	190	198	4.04%								Moderate-High	Moderate	Moderate-High	3		Moderate-High	Moderate	Moderate-High	1
	Balance of Madison County	5,646	5,764	2.05%								Moderate-High	Moderate	Moderate-High	3		Moderate-High	Moderate	Moderate-High	1
4	**McCone County**	1,734	1,700	-2.00%	0	2006	NA	NA	NA	4	2014	NA	NA	NA	9					
	Circle town	615	619	0.65%																
	Balance of McCone County	1,119	1,081	-3.52%																
3	**Meagher County**	1,891	1,827	-3.50%	NA															
	White Sulphur Springs city	939	908	-3.41%																
	Balance of Meagher County	952	919	-3.59%																
1	**Mineral County**	4,223	4,184	-0.93%	1	2005	$20-$50K	Low	NA		2012	Low	Low	NA	1					
	Alberton town	420	417	-0.72%																
	Superior town	812	826	1.69%																
	Balance of Mineral County	2,991	2,941	-1.70%																
1	**Missoula County**	109,299	116,130	5.88%	930	2004	$10-$15M	Low	NA	1	2011	$2.32M	NA	NA	1	2017				14
	Missoula city	66,788	72,364	7.71%													R=$0: C=$0	0	NA	14
	Balance of Missoula County	42,511	43,766	2.87%													R=$107,982,938 C=$4,412,830	1,058	NA	14
5	**Musselshell County**	4,538	4,589	1.11%	1	2008	NA	NA	NA	14	2013	NA	NA	NA	14					
	Melstone town	96	107	10.28%																
	Roundup city	1,788	1,840	2.83%																
	Balance of Musselshell County	2,654	2,642	-0.45%																
3	**Park County**	15,636	16,114	2.97%	44	2006	$82.6M	Moderate	High	3	2012	$8.2M	2	NA	3					
	Clyde Park town	288	309	6.80%								Moderate	NA	NA	3					
	Livingston city	7,044	7,401	4.82%								High	NA	NA	3					
	Balance of Park County	8,304	8,404	1.19%								High	NA	NA	3					
6	**Petroleum County**	494	489	-1.02%	NA	2003	NA	NA	NA		2008	2 structures	0	$10K	3					
	Winnett town	182	185	1.62%								Low	Low	Low-Moderate	3					
	Balance of Petroleum County	312	304	-2.63%								Low	Low	Low-Moderate	3					
6	**Phillips County**	4,253	4,133	-2.90%	2	2006	NA	NA	NA	14	2012	NA	NA	NA	14					
	Dodson town	124	124	0.00%																
	Malta city	1,997	1,950	-2.41%																
	Saco town	197	197	0.00%																
	Balance of Phillips County	1,935	1,862	-3.92%																
2	**Pondera County**	6,153	6,084	-1.13%	1	2005	NA	NA	NA		2011	NA	NA	NA	14					
	Conrad city	2,570	2,550	-0.78%																
	Valier town	509	498	-2.21%																
	Balance of Pondera County	3,074	3,036	-1.25%																
4	**Powder River County**	1,743	1,746	0.17%	NA	2007	NA	NA	NA	3	2011	31 structures	Low	$120K	3	2015	NA	NA	NA	9
	Broadus town	468	481	2.70%																
	Balance of Powder River County	1,275	1,265	-0.79%																
1	**Powell County**	7,027	6,858	-2.46%	32	2004	Low	Low	NA		2012	$559M; High	High	$7.1M	10	2017	197 structures	4	$1M	7
	Deer Lodge city	3,111	2,994	-3.91%																
	Balance of Powell County	3,916	3,864	-1.35%																
4	**Prairie County**	1,179	1,182	0.25%	NA	2006	NA	NA	NA		2012	Low	NA	NA	12					
	Terry town	605	609	0.66%																
	Balance of Prairie County	574	573	-0.17%																
1	**Ravalli County**	40,212	42,088	4.46%	20	2005	$1-$2M	Moderate	NA	1	2012				1	2017				14
	Darby town	720	763	5.64%								Very Low	Very Low	NA	1		R=$0: C=$0	0	NA	14
	Hamilton city	4,348	4,674	6.97%								Very Low	Very Low	NA	1		R=$0: C=$0	0	NA	14
	Pinesdale town	917	967	5.17%								Very Low	Very Low	NA	1		NA	NA	NA	14
	Stevensville town	1,809	1,963	7.85%								Very Low	Very Low	NA	1		R=$0: C=$0	0	NA	14
	Balance of Ravalli County	32,418	33,721	3.86%								Very Low	Very Low	NA	1		R=$8,214,775 C=$60.970	315	NA	14
4	**Richland County**	9,746	11,482	15.12%	16	2006	NA	NA	NA	4	2014	NA	NA	NA	9					
	Fairview town	840	922	8.89%																
	Sidney city	5,191	6,566	20.94%																
	Balance of Richland County	3,715	3,994	6.99%																
6	**Roosevelt County**	10,425	11,305	7.78%	1	2004	NA	NA	NA	14	2016				8					
	Bainville town	208	314	33.76%								Low	Low	Low	8					
	Brockton town	255	243	-4.94%								Low	Low	Low	8					
	Culbertson town	714	804	11.19%								Low	Low	Low	8					
	Froid town	185	201	7.96%								Low	Low	Low	8					
	Poplar city	810	854	5.15%								Low	Low	Low	8					
	Wolf Point city	2,621	2,806	6.59%								Low	Low	Low	8					

APPENDIX B-5. LOCAL PLAN EXPOSURE SUMMARY - EARTHQUAKE

DES District	Geography	Census 2010	Census 2016 Estimate	% Change 2010 to 2016	# Building Permits (2016)	Original Local Plan FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan	Estimated Societal Loss/ Exposure from Local Plan	Estimated Economic Loss from Local Plan	Ref	Local Plan Update #1 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #1	Estimated Societal Loss/ Exposure from Local Plan Update #1	Estimated Economic Loss from Local Plan Update #1	Ref	Local Plan Update #2 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #2	Estimated Societal Loss/ Exposure from Local Plan Update #2	Estimated Economic Loss from Local Plan Update #2	Ref
	Balance of Roosevelt County	5,632	6,083	7.41%								Low	Low	Low	8					
5	**Rosebud County**	9,233	9,287	0.58%	1	2007	86 structures	Low	Low	3	2013	68 structures	0	$390,000	2					
	Colstrip city	2,214	2,311	4.20%																
	Forsyth city	1,777	1,869	4.92%																
	Balance of Rosebud County	5,242	1,903	-175.46%																
1	**Sanders County**	11,413	11,534	1.05%	0	2012				14										
	Hot Springs town	544	557	2.33%			R=$15,659,095 C=$7,776,054	544	NA	14										
	Plains town	1,048	1,071	2.15%			R=$28,632,062 C=$24,082,081	1,048	NA	14										
	Thompson Falls city	1,313	1,356	3.17%			R=$43,655,598 C=$21,722,279	1,313	NA	14										
	Balance of Sanders County	8,508	8,550	0.49%			R=$313,552,890 C=$40,004,572	6,507	NA	14										
6	**Sheridan County**	3,384	3,648	7.24%	2	2003	NA	NA	NA	14	2008				3	2016	NA	NA	NA	8
	Medicine Lake town	225	241	6.64%								Low-Moderate	Low	Low-Moderate	3					
	Outlook town	47	52	9.62%								Low-Moderate	Low	Low-Moderate	3					
	Plentywood city	1,734	1,904	8.93%								Low-Moderate	Low	Low-Moderate	3					
	Westby town	168	174	3.45%								Low-Moderate	Low	Low-Moderate	3					
	Balance of Sheridan County	1,210	1,277	5.25%								Low-Moderate	Low	Low-Moderate	3					
1	**Silver Bow County**	34,200	34,553	1.02%	86	2004	$300K	100-300	High	3	2010				14	2016				14
	Butte-Silver Bow (remainder)	33,525	33,853	0.97%								R=$645,113,110	457	NA	14		R=$647,330,256 C=$187,019,599	9,786; <18=2,118	NA	14
	Walkerville town	675	700	3.57%								C=$3,371,707	0	NA	14		R=$0: C=$0	0	NA	14
5	**Stillwater County**	9,117	9,406	3.07%	0	2010	11 structures	2	$5.2M	3	2015	NA	NA	NA	14					
	Columbus town	1,893	2,028	6.66%			Moderate	Moderate	NA	3										
	Balance of Stillwater County	7,224	7,378	2.09%			Moderate	Moderate	NA	3										
3	**Sweet Grass County**	3,651	3,623	-0.77%	1	2005	NA	NA	NA		2010	NA	NA	NA	13					
	Big Timber city	1,641	1,645	0.24%																
	Balance of Sweet Grass County	2,010	1,978	-1.62%																
2	**Teton County**	6,073	6,056	-0.28%	1	2006	NA	NA	NA	NA	2014	$13.69M	0	$2.23M	2					
	Choteau city	1,684	1,686	0.12%																
	Dutton town	316	308	-2.60%																
	Fairfield town	708	922	23.21%																
	Balance of Teton County	3,365	3,140	-7.17%																
2	**Toole County**	5,324	4,977	-6.97%	2	2007	High	High	NA	2	2013	NA	NA	NA	2					
	Kevin town	154	138	-11.59%																
	Shelby city	3,376	3,216	-4.98%																
	Sunburst town	375	338	-10.95%																
	Balance of Toole County	1,419	1,285	-10.43%																
5	**Treasure County**	718	692	-3.76%	0	2007	7 structures	Low	$20K	3										
	Hysham town	312	301	-3.65%																
	Balance of Treasure County	406	391	-3.84%																
6	**Valley County**	7,369	7,539	2.25%	4	2003	NA	NA	NA	14	2008	18 structures	Low	$110K	3	2016	NA	NA	NA	8
	Fort Peck town	233	247	5.67%								Low-Moderate	Low	Low-Moderate	3					
	Glasgow city	3,250	3,364	3.39%								Low-Moderate	Low	Low-Moderate	3					
	Nashua town	290	290	0.00%								Low-Moderate	Low	Low-Moderate	3					
	Opheim town	85	290	70.69%								Low-Moderate	Low	Low-Moderate	3					
	Balance of Valley County	3,511	3,348	-4.87%								Low-Moderate	Low	Low-Moderate	3					
5	**Wheatland County**	2,168	2,117	-2.41%	NA	2007	NA	NA	NA	14	2013	NA	NA	NA	14					
	Harlowton city	997	984	-1.32%																
	Judith Gap city	126	123	-2.44%																
	Balance of Wheatland County	1,045	1,010	-3.47%																
4	**Wibaux County**	1,017	1,093	6.95%	8	2006	NA	NA	NA	2	2014	NA	NA	NA	9					
	Wibaux town	589	649	9.24%																
	Balance of Wibaux County	428	444	3.60%																
5	**Yellowstone County**	147,972	158,437	6.61%	1,198	2005	NA	NA	NA		2012	$0	Low	NA	1					
	Billings city	104,170	110,323	5.58%																
	Broadview town	192	193	0.52%																
	Laurel city	6,718	6,865	2.14%																
	Balance of Yellowstone County	36,892	41,056	10.14%																
2	**Blackfeet Indian Reservation**	10,405				2008	NA	NA	NA	14										
2	**Rocky Boy's Indian Reservation**	3,323				2008	NA	NA	NA		2010	NA	NA	NA	14					
2	**Fort Belknap Indian Reservation**	2,851				2007	NA	NA	NA	14	2013	NA	NA	NA	14					
6	**Fort Peck Indian Reservation**	10,008				2004	NA	NA	NA	14	2012	$409M	14	NA	10					
5	**Crow Indian Reservation**	6,863				2008	NA	NA	NA	4	2015	NA	NA	NA	9					
5	**Northern Cheyenne Indian Res.**	4,789				2008	NA	NA	NA	4										

APPENDIX B-5. LOCAL PLAN EXPOSURE SUMMARY - EARTHQUAKE

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1	**Flathead Indian Reservation**	28,359				2006	$81.4M	3,911	NA	NA	2017	NA	NA	NA	11					

NOTES:
R = Residential
C = Commercial/Agricultural/Industrial
CF = Critical Facilities
AL = Annual Loss
M = Million
K = Thousand
B = Billion
O=Other
NA = Not Analyzed or Not Quantitied

REFERENCES:
1 = Respec (formerly Adkins, PBS&J, Land & Water)
2 = Beck Consulting & AMEC
3 = Big Sky Hazard Management
4 = Cossitt Consulting
5 = Fire Logistics, Inc.
6 = Gallatin County
7 = Great West Engineering and Powell County
8 = Integrated Solutions Consulting
9 = KLJ
10 = Morrison-Maierle
11 = Risks and Rewards Management
12 = Single Tree Consulting
13 = Sweet Grass County
14 = Tetra Tech (formerly Maxim Tech)

APPENDIX B-6

DROUGHT VULNERABILITY ASSESSMENT DOCUMENTATION

APPENDIX B-6. LOCAL PLAN EXPOSURE SUMMARY - DROUGHT

DES District	Geography	Census 2010	Census 2016 Estimate	% Change 2010 to 2016	# Building Permits (2016)	Original Local Plan FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan	Estimated Societal Loss/ Exposure from Local Plan	Estimated Economic Loss from Local Plan	Ref	Local Plan Update #1 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #1	Estimated Societal Loss/ Exposure from Local Plan Update #1	Estimated Economic Loss from Local Plan Update #1	Ref	Local Plan Update #2 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #2	Estimated Societal Loss/ Exposure from Local Plan Update #2	Estimated Economic Loss from Local Plan Update #2	Ref
	Montana	989,415	1,042,520	5.09%	4,781															
3	**Beaverhead County**	9,246	9,401	1.65%	3	2004				3	2010	NA	NA	NA	3	2017				1
	Dillon city	4,134	4,257	2.89%			Low	Low-Moderate	Moderate-High	3							Low	Low-Moderate	Moderate-High	1
	Lima town	221	224	1.34%			Low	Low-Moderate	Moderate-High	3							Low	Low	Moderate	1
	Balance of Beaverhead County	4,891	4,920	0.59%			Low	Low	Moderate	3							Low	Low-Moderate	Moderate-High	1
5	**Big Horn County**	12,865	13,343	3.58%	2	2006	NA	NA	NA	2	2012	NA	NA	$8,240,702	2					
	Hardin city	3,505	3,829	8.46%																
	Lodge Grass town	428	446	4.04%																
	Balance of Big Horn County	8,932	9,068	1.50%																
2	**Blaine County**	6,491	6,601	1.67%	0	2006	NA	NA	NA	14	2012	NA	NA	NA	14					
	Chinook city	1,203	1,233	2.43%																
	Harlem city	808	823	1.82%																
	Balance of Blaine County	4,480	4,545	1.43%																
3	**Broadwater County**	5,612	5,747	2.35%	0	2004	NA	NA	NA	3	2009	NA	NA	NA	3	2016	NA	NA	NA	14
	Townsend city	1,878	1,978	5.06%											3					
	Balance of Broadwater County	3,734	3,769	0.93%											3					
5	**Carbon County**	10,078	10,460	3.65%	8	2006	NA	NA	NA	2	2012	NA	NA	NA	2					
	Bearcreek town	79	84	5.95%																
	Bridger town	708	732	3.28%																
	Fromberg town	438	445	1.57%																
	Joliet town	595	640	7.03%																
	Red Lodge city	2,125	2,237	5.01%																
	Balance of Carbon County	6,133	6,322	2.99%																
4	**Carter County**	1,160	1,203	3.57%	1	2005	NA	NA	NA		2012	High	Moderate	High	12					
	Ekalaka town	332	353	5.95%																
	Balance of Carter County	828	850	2.59%																
2	**Cascade County**	81,327	81,755	0.52%	242	2012	NA	NA	NA	14	2017	NA	NA	NA	14					
	Belt city	597	588	-1.53%																
	Cascade town	685	688	0.44%																
	Great Falls city	58,505	59,178	1.14%																
	Neihart town	51	50	-2.00%																
	Balance of Cascade County	21,489	21,251	-1.12%																
2	**Chouteau County**	5,813	5,759	-0.94%	10	2010	NA	NA	NA	5	2017	NA	NA	NA	5					
	Big Sandy town	598	590	-1.36%																
	Fort Benton city	1,464	1,456	-0.55%																
	Geraldine town	261	261	0.00%																
	Balance of Chouteau County	3,490	3,452	-1.10%																
4	**Custer County**	11,699	11,924	1.89%	0	2005	NA	NA	NA	2	2012	NA	NA	$8.2M	2	2017				14
	Ismay town	19	21	9.52%													R=$461,458 C=$1,071,856	12; <18=5; >65=4	NA	14
	Miles City city	8,410	8,647	2.74%													R=$328,980,853 C=$110,329,122	4,260; <18=1,544; >65=1,379	NA	14
	Balance of Custer County	3,270	3,256	-0.43%													R=$494,808,054 C=$141,163,567	5,985; <18=2,167; >65=1,937	NA	14
6	**Daniels County**	1,751	1,755	0.23%	0	2003	NA	NA	NA	14	2008	$0	0	$27M	3	2016	NA	NA	NA	8
	Flaxville town	71	71	0.00%								Low	Low-Moderate	Moderate-High	3					
	Scobey city	1,017	1,032	1.45%								Low	Low-Moderate	Moderate-High	3					
	Balance of Daniels County	663	652	-1.69%								Low	Low-Moderate	High	3					
4	**Dawson County**	8,966	9,327	3.87%	1	2006	NA	NA	NA	2	2014	NA	NA	$26,201,664	9					
	Glendive city	4,935	5,332	7.45%																
	Richey town	177	187	5.35%																
	Balance of Dawson County	3,854	3,808	-1.21%																
1	**Deer Lodge County**	9,298	9,085	-2.34%	17	2005	$0; Low	0; Low	$800K; High	3	2013	Low	Low	High	3					
	Anaconda-Deer Lodge County	9,298	9,085	-2.34%																
4	**Fallon County**	2,890	3,120	7.37%	35	2006	Moderate	NA	NA	12	2012	NA	NA	NA	12					
	Baker city	1,741	1,990	12.51%																
	Plevna town	162	176	7.95%																
	Balance of Fallon County	987	954	-3.46%																
6	**Fergus County**	11,586	11,413	-1.52%	1	2008	$0	0	$61M	3	2014	NA	NA	$13,905,432	9					
	Denton town	255	247	-3.24%			NA	NA	Moderate-High	3										
	Grass Range town	110	108	-1.85%			NA	NA	Moderate-High	3										
	Lewistown city	5,901	5,870	-0.53%			NA	NA	Moderate-High	3										
	Moore town	193	198	2.53%			NA	NA	Moderate-High	3										
	Winifred town	208	206	-0.97%			NA	NA	Moderate-High	3										
	Balance of Fergus County	4,919	4,784	-2.82%			NA	NA	Moderate-High	3										

APPENDIX B-6. LOCAL PLAN EXPOSURE SUMMARY - DROUGHT

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1	**Flathead County**	90,928	98,082	7.29%	316	2009	NA	NA	NA		2014	NA	NA	NA	14					
	Columbia Falls city	4,688	5,241	10.55%																
	Kalispell city	19,927	22,761	12.45%																
	Whitefish city	6,357	7,279	12.67%																
	Balance of Flathead County	59,956	62,801	4.53%																
3	**Gallatin County**	89,513	104,502	14.34%	1,550	2006	NA	NA	NA	6	2012	Low	High	High	6					
	Belgrade city	7,389	8,254	10.48%																
	Bozeman city	37,280	45,250	17.61%																
	Manhattan town	1,520	1,691	10.11%																
	Three Forks city	1,869	1,944	3.86%																
	West Yellowstone town	1,271	1,353	6.06%																
	Balance of Gallatin County	40,184	46,010	12.66%																
4	**Garfield County**	1,206	1,310	7.94%	0	2007	NA	NA	NA	3	2014	NA	NA	$5,546,394	9					
	Jordan town	343	399	14.04%																
	Balance of Garfield County	863	911	5.27%																
2	**Glacier County**	13,399	13,694	2.15%	0	2005	NA	NA	NA		2012	NA	NA	NA	14					
	Browning town	1,016	1,031	1.45%																
	Cut Bank city	2,869	3,012	4.75%																
	Balance of Glacier County	9,514	9,651	1.42%																
5	**Golden Valley County**	884	831	-6.38%	NA	2008	NA	NA	NA	14										
	Lavina town	187	173	-8.09%																
	Ryegate town	245	236	-3.81%																
	Balance of Golden Valley County	452	422	-7.11%																
1	**Granite County**	3,079	3,368	8.58%	NA	2006	Low	Low	$8M	3	2013	Low	Low	High	3					
	Drummond town	309	348	11.21%																
	Philipsburg town	820	920	10.87%																
	Balance of Granite County	1,950	2,100	7.14%																
2	**Hill County**	16,096	16,542	2.70%	4	2006	NA	NA	NA	14	2012	NA	NA	NA	14					
	Havre city	9,310	9,846	5.44%																
	Hingham town	118	122	3.28%																
	Balance of Hill County	6,668	6,574	-1.43%																
3	**Jefferson County**	11,406	11,853	3.77%	5	2005	NA	NA	NA	3	2011	NA	NA	NA	14	2017	NA	NA	NA	14
	Boulder town	1,183	1,230	3.82%																
	Whitehall town	1,038	1,114	6.82%																
	Balance of Jefferson County	9,185	9,509	3.41%																
6	**Judith Basin County**	2,072	1,940	-6.80%	NA	2008	NA	NA	NA	14	2013	NA	NA	NA	14					
	Hobson town	215	218	1.38%																
	Stanford town	401	384	-4.43%																
	Balance of Judith Basin County	1,456	1,338	-8.82%																
1	**Lake County**	28,746	29,758	3.40%	44	2006	NA	NA	NA		2012	NA	NA	NA	14					
	Polson city	4,488	4,777	6.05%																
	Ronan city	1,871	2,016	7.19%																
	St. Ignatius town	842	824	-2.18%																
	Balance of Lake County	21,545	22,141	2.69%																
3	**Lewis and Clark County**	63,395	67,282	5.78%	176	2005	NA	NA	NA		2011	NA	NA	NA	14	2017				14
	East Helena town	1,984	2,074	4.34%																
	Helena city	28,190	31,169	9.56%																
	Balance of Lewis and Clark County	33,221	34,039	2.40%																
2	**Liberty County**	2,339	2,409	2.91%	NA	2007	Very High	High	NA	2	2013	NA	NA	$2,932,026	2					
	Chester town	847	884	4.19%																
	Balance of Liberty County	1,492	1,525	2.16%																
1	**Lincoln County**	19,687	19,259	-2.22%	8	2005	NA	NA	NA		2012	NA	NA	NA	14					
	Eureka town	1,037	1,086	4.51%																
	Libby city	2,628	2,678	1.87%																
	Rexford town	105	151	30.46%																
	Troy city	938	890	-5.39%																
	Balance of Lincoln County	14,979	14,454	-3.63%																
3	**Madison County**	7,691	7,924	2.94%	7	2004	NA	NA	NA	3	2010	$0	0	$37M	3	2017				1
	Ennis town	838	890	5.84%								Low	Low-Moderate	Moderate-High	3		Low	Low-Moderate	Moderate-High	1
	Sheridan town	642	677	5.17%								Low	Low-Moderate	Moderate-High	3		Low	Low-Moderate	Moderate-High	1
	Twin Bridges town	375	395	5.06%								Low	Low-Moderate	Moderate-High	3		Low	Low-Moderate	Moderate-High	1
	Virginia City town	190	198	4.04%								Low	Low-Moderate	Moderate-High	3		Low	Low-Moderate	Moderate-High	1
	Balance of Madison County	5,646	5,764	2.05%								Low	Low-Moderate	Moderate-High	3		Low	Low-Moderate	Moderate-High	1
4	**McCone County**	1,734	1,700	-2.00%	0	2006	NA	NA	NA	4	2014	NA	NA	$29,946,276	9					
	Circle town	615	619	0.65%																
	Balance of McCone County	1,119	1,081	-3.52%																

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3	**Meagher County**	1,891	1,827	-3.50%	NA															
	White Sulphur Springs city	939	908	-3.41%																
	Balance of Meagher County	952	919	-3.59%																
1	**Mineral County**	4,223	4,184	-0.93%	1	2005	NA	NA	NA		2012	NA	NA	NA	1					
	Alberton town	420	417	-0.72%																
	Superior town	812	826	1.69%																
	Balance of Mineral County	2,991	2,941	-1.70%																
1	**Missoula County**	109,299	116,130	5.88%	930	2004				1	2011	NA	NA	NA	1	2017	NA	NA	NA	14
	Missoula city	66,788	72,364	7.71%																
	Balance of Missoula County	42,511	43,766	2.87%																
5	**Musselshell County**	4,538	4,589	1.11%	1	2008	NA	NA	NA	14	2013	NA	NA	NA	14					
	Melstone town	96	107	10.28%																
	Roundup city	1,788	1,840	2.83%																
	Balance of Musselshell County	2,654	2,642	-0.45%																
3	**Park County**	15,636	16,114	2.97%	44	2006	NA	NA	NA	3	2012				3					
	Clyde Park town	288	309	6.80%								Moderate	NA	NA	3					
	Livingston city	7,044	7,401	4.82%								Low-Moderate	NA	NA	3					
	Balance of Park County	8,304	8,404	1.19%								Low-Moderate	NA	NA	3					
6	**Petroleum County**	494	489	-1.02%	NA	2003	NA	NA	NA		2008	$0	0	$9M	3					
	Winnett town	182	185	1.62%								Low	Low	High	3					
	Balance of Petroleum County	312	304	-2.63%								Low	Low-Moderate	High	3					
6	**Phillips County**	4,253	4,133	-2.90%	2	2006	NA	NA	NA	14	2012	NA	NA	NA	14					
	Dodson town	124	124	0.00%																
	Malta city	1,997	1,950	-2.41%																
	Saco town	197	197	0.00%																
	Balance of Phillips County	1,935	1,862	-3.92%																
2	**Pondera County**	6,153	6,084	-1.13%	1	2005	NA	NA	NA		2011	NA	NA	NA	14					
	Conrad city	2,570	2,550	-0.78%																
	Valier town	509	498	-2.21%																
	Balance of Pondera County	3,074	3,036	-1.25%																
4	**Powder River County**	1,743	1,746	0.17%	NA	2007	NA	NA	NA	3	2011	NA	NA	NA	3	2015	NA	NA	$15,510,000	9
	Broadus town	468	481	2.70%																
	Balance of Powder River County	1,275	1,265	-0.79%																
1	**Powell County**	7,027	6,858	-2.46%	32	2004	NA	NA	NA		2012	NA	NA	NA	10	2017	NA	NA	$7.4M	7
	Deer Lodge city	3,111	2,994	-3.91%																
	Balance of Powell County	3,916	3,864	-1.35%																
4	**Prairie County**	1,179	1,182	0.25%	NA	2006	NA	NA	NA		2012	Low	NA	NA	12					
	Terry town	605	609	0.66%																
	Balance of Prairie County	574	573	-0.17%																
1	**Ravalli County**	40,212	42,088	4.46%	20	2005	NA	NA	NA	1	2012	NA	NA	NA	1	2017	NA	NA	NA	14
	Darby town	720	763	5.64%																
	Hamilton city	4,348	4,674	6.97%																
	Pinesdale town	917	967	5.17%																
	Stevensville town	1,809	1,963	7.85%																
	Balance of Ravalli County	32,418	33,721	3.86%																
4	**Richland County**	9,746	11,482	15.12%	16	2006	NA	NA	NA	4	2014	NA	NA	$28,212,030	9					
	Fairview town	840	922	8.89%																
	Sidney city	5,191	6,566	20.94%																
	Balance of Richland County	3,715	3,994	6.99%																
6	**Roosevelt County**	10,425	11,305	7.78%	1	2004	NA	NA	NA	14	2016	NA	NA	NA	8					
	Bainville town	208	314	33.76%																
	Brockton town	255	243	-4.94%																
	Culbertson town	714	804	11.19%																
	Froid town	185	201	7.96%																
	Poplar city	810	854	5.15%																
	Wolf Point city	2,621	2,806	6.59%																
	Balance of Roosevelt County	5,632	6,083	7.41%																
5	**Rosebud County**	9,233	9,287	0.58%	1	2007	NA	NA	NA	3	2013	NA	NA	$742,689	2					
	Colstrip city	2,214	2,311	4.20%																
	Forsyth city	1,777	1,869	4.92%																
	Balance of Rosebud County	5,242	1,903	-175.46%																
1	**Sanders County**	11,413	11,534	1.05%	0	2012	NA	NA	NA	14										
	Hot Springs town	544	557	2.33%																
	Plains town	1,048	1,071	2.15%																
	Thompson Falls city	1,313	1,356	3.17%																
	Balance of Sanders County	8,508	8,550	0.49%																

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6	**Sheridan County**	3,384	3,648	7.24%	2	2003	NA	NA	NA	14	2008	$0	Low-Moderate	$43M	3	2016	NA	NA	NA	8
	Medicine Lake town	225	241	6.64%								Low	Low-Moderate	Moderate-High	3					
	Outlook town	47	52	9.62%								Low	Low-Moderate	Moderate-High	3					
	Plentywood city	1,734	1,904	8.93%								Low	Low-Moderate	Moderate-High	3					
	Westby town	168	174	3.45%								Low	Low-Moderate	Moderate-High	3					
	Balance of Sheridan County	1,210	1,277	5.25%								Low	Low-Moderate	High	3					
1	**Silver Bow County**	34,200	34,553	1.02%	86	2004	NA	NA	NA	3	2010	NA	NA	NA	14	2016	NA	NA	NA	14
	Butte-Silver Bow (remainder)	33,525	33,853	0.97%																
	Walkerville town	675	700	3.57%																
5	**Stillwater County**	9,117	9,406	3.07%	0	2010	$0	Low	$34.4M	3	2015				14					
	Columbus town	1,893	2,028	6.66%			Low-Moderate	Low-Moderate	NA	3		R=$65,383,045 C=$46,507,380	1,893; <18=492	NA	14					
	Balance of Stillwater County	7,224	7,378	2.09%			Low-Moderate	Low-Moderate	NA	3		R=$430,493,951 C=$33,051,089	7,224; <18=1,496	NA	14					
3	**Sweet Grass County**	3,651	3,623	-0.77%	1	2005	NA	NA	NA		2010	NA	NA	NA	13					
	Big Timber city	1,641	1,645	0.24%																
	Balance of Sweet Grass County	2,010	1,978	-1.62%																
2	**Teton County**	6,073	6,056	-0.28%	1	2006	NA	NA	NA	NA	2014	NA	NA	$8,376,226	2					
	Choteau city	1,684	1,686	0.12%																
	Dutton town	316	308	-2.60%																
	Fairfield town	708	922	23.21%																
	Balance of Teton County	3,365	3,140	-7.17%																
2	**Toole County**	5,324	4,977	-6.97%	2	2007	NA	High	Very High	2	2013	NA	NA	$725,747	2					
	Kevin town	154	138	-11.59%																
	Shelby city	3,376	3,216	-4.98%																
	Sunburst town	375	338	-10.95%																
	Balance of Toole County	1,419	1,285	-10.43%																
5	**Treasure County**	718	692	-3.76%	0	2007	NA	NA	NA	3										
	Hysham town	312	301	-3.65%																
	Balance of Treasure County	406	391	-3.84%																
6	**Valley County**	7,369	7,539	2.25%	4	2003	NA	NA	NA	14	2008	$0	Low-Moderate	$67M	3	2016	NA	NA	NA	8
	Fort Peck town	233	247	5.67%								Low	Low-Moderate	Moderate-High	3					
	Glasgow city	3,250	3,364	3.39%								Low	Low-Moderate	Moderate-High	3					
	Nashua town	290	290	0.00%								Low	Low-Moderate	Moderate-High	3					
	Opheim town	85	290	70.69%								Low	Low-Moderate	Moderate-High	3					
	Balance of Valley County	3,511	3,348	-4.87%								Low	Low-Moderate	High	3					
5	**Wheatland County**	2,168	2,117	-2.41%	NA	2007	NA	NA	NA	14	2013	NA	NA	NA	14					
	Harlowton city	997	984	-1.32%																
	Judith Gap city	126	123	-2.44%																
	Balance of Wheatland County	1,045	1,010	-3.47%																
4	**Wibaux County**	1,017	1,093	6.95%	8	2006	NA	NA	NA	2	2014	NA	NA	$2,765,448	9					
	Wibaux town	589	649	9.24%																
	Balance of Wibaux County	428	444	3.60%																
5	**Yellowstone County**	147,972	158,437	6.61%	1,198	2005	NA	NA	NA		2012	NA	Very Low	NA	1					
	Billings city	104,170	110,323	5.58%																
	Broadview town	192	193	0.52%																
	Laurel city	6,718	6,865	2.14%																
	Balance of Yellowstone County	36,892	41,056	10.14%																
2	**Blackfeet Indian Reservation**	10,405				2008	NA	NA	NA	14										
2	**Rocky Boy's Indian Reservation**	3,323				2008					2010	NA	NA	NA	14					
2	**Fort Belknap Indian Reservation**	2,851				2007	NA	NA	NA	14	2013	NA	NA	NA	14					
6	**Fort Peck Indian Reservation**	10,008				2004	NA	NA	NA	14	2012	NA	NA	Moderate	10					
5	**Crow Indian Reservation**	6,863				2008	NA	NA	NA	4	2015	NA	NA	$7,987,992	9					
5	**Northern Cheyenne Indian Res.**	4,789				2008	NA	NA	NA	4										
1	**Flathead Indian Reservation**	28,359				2006	NA	NA	NA	NA	2017	NA	NA	NA	11					

NOTES:
R = Residential
C = Commercial/Agricultural/Industrial
CF = Critical Facilities
AL = Annual Loss
M = Million
K = Thousand
B = Billion
O = Other
NA = Not Analyzed or Not Quantitied

REFERENCES:
1 = Respec (formerly Adkins, PBS&J, Land & Water)
2 = Beck Consulting & AMEC
3 = Big Sky Hazard Management
4 = Cossitt Consulting
5 = Fire Logistics, Inc.
6 = Gallatin County
7 = Great West Engineering and Powell County
8 = Integrated Solutions Consulting
9 = KLJ
10 = Morrison-Maierle

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11 = Risks and Rewards Management
12 = Single Tree Consulting
13 = Sweet Grass County
14 = Tetra Tech (formerly Maxim Tech)

APPENDIX B-7

SEVERE WEATHER VULNERABILITY ASSESSMENT DOCUMENTATION

APPENDIX B-7. VULNERABILITY ASSESSMENT DOCUMENTATION - SEVERE WEATHER

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Severe Weather sq. miles	Total sq. miles	Percent Severe Weather sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Severe Weather Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Severe Weather Hazard Area	Residential Exposure in Severe Weather Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Severe Weather Hazard Area	CAI Exposure in Severe Weather Hazard Area	Total Population in Hazard Area	<18 in Severe Weather Hazard Area	>65 in Severe Weather Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Montana	85,301	146,923	58.1%	829	$3,596,319,710	752	$3,467,345,113	379,924	$65,567,813,250	322,369	$55,462,416,678	89,351	$31,241,965,630	69,202	$25,742,876,868	1,201,418.5	255,322.3	229,957.1	716,139.1	126	108
3	**Beaverhead County**	366.67	5,572.5	6.6%	21	$120,039,992	20	$120,013,493	3,023	$398,456,637	2,164	$275,622,633	2,017	$477,421,099	781	$187,164,025	4,835.9	826.9	1,140.4	2,868.6	6	2
	Dillon city	1.68	1.7	100.0%	0	$0	19	$114,722,911	1,178	$128,495,669	1,178	$128,495,669	230	$70,904,492	230	$70,904,492	2,716.1	451.7	697.4	1,567.0	2	1
	Lima town	0.55	0.5	100.0%	0	$0	0		135	$8,569,730	135	$8,569,730	11	$1,208,935	11	$1,208,935	290.3	51.4	60.7	178.2	0	0
	Balance of Beaverhead County	364.45	5,570.3		21	$120,039,992	1	$5,290,581	1,710	$261,391,238	851	$138,557,234	1,776	$405,307,672	540	$115,050,598	1,829.6	323.8	382.4	1,123.4	4	0
5	**Big Horn County**	2,354.05	5,013.9	47.0%	1	$64,294	1	$64,294	3,168	$358,629,629	2,576	$294,956,565	872	$190,843,437	637	$132,198,768	9,507.6	3,204.9	1,257.2	5,045.6	5	3
	Hardin city	1.65	1.6	100.0%	0	$0	1	$64,294	905	$97,296,363	905	$97,296,363	134	$32,479,192	134	$32,479,192	3,363.5	1,125.6	465.9	1,772.0	0	0
	Lodge Grass town	0.00	0.3	0.0%	0	$0	0		149	$10,790,706	0		22	$17,123,392	0					0.0	0	0
	Balance of Big Horn County	2,352.41	5,012.0		1	$64,294	0	$0	2,114	$250,542,560	1,671	$197,660,202	716	$141,240,853	503	$99,719,576	6,144.1	2,079.3	791.3	3,273.5	5	0
2	**Blaine County**	857.22	4,235.9	20.2%	1	$51,267	0		1,409	$115,967,606	1,325	$108,630,183	2,309	$361,010,008	1,477	$234,267,120	3,992.6	1,156.2	715.3	2,121.0	0	0
	Chinook city	0.52	0.5	100.0%	0	$0	0		674	$60,190,802	674	$60,190,802	106	$19,309,682	106	$19,309,682	1,965.9	593.7	283.1	1,089.1	0	0
	Harlem city	0.41	0.4	100.0%	0	$0	0		352	$22,108,616	352	$22,108,616	68	$8,956,732	68	$8,956,732	1,089.4	304.2	227.1	558.1	0	0
	Balance of Blaine County	856.28	4,235.0		1	$51,267	0	$0	383	$33,668,188	299	$26,330,765	2,135	$332,743,594	1,303	$206,000,706				0.0	0	0
3	**Broadwater County**	272.86	1,236.8	22.1%	3	$29,038,899	3	$29,038,899	3,442	$520,588,070	1,640	$240,982,127	795	$153,085,694	233	$39,998,683	4,289.7	764.8	952.3	2,572.6	1	0
	Townsend city	0.60	1.5	39.5%	0	$0	0		1,133	$116,996,708	605	$65,964,885	147	$21,344,104	58	$7,434,359	1,811.9	282.1	402.2	1,127.6	0	0
	Balance of Broadwater County	272.26	1,235.3		3	$29,038,899	3	$29,038,899	2,309	$403,591,362	1,035	$175,017,242	648	$131,741,590	175	$32,564,324	2,477.8	482.6	550.1	1,445.1	1	0
5	**Carbon County**	797.11	2,060.7	38.7%	3	$220,339	2	$195,339	4,812	$912,472,742	4,093	$779,188,314	1,434	$312,638,485	1,197	$252,369,554	11,162.1	1,851.2	3,302.1	6,008.8	5	1
	Bearcreek town	0.11	0.1	100.0%	0	$0	0		57	$6,138,654	57	$6,138,654	2	$269,414	2	$269,414	154.4	27.6	37.0	89.7	0	0
	Bridger town	0.29	0.8	38.7%	0	$0	0		322	$30,656,055	6	$454,709	49	$8,990,475	4	$545,596	13.6	2.4	3.3	7.9	0	0
	Fromberg town	0.44	0.4	100.0%	0	$0	0		218	$16,035,910	218	$16,035,910	21	$1,157,410	21	$1,157,410	519.8	93.0	124.8	302.0	0	0
	Joliet town	0.27	0.3	100.0%	0	$0	0		241	$27,420,117	241	$27,420,117	20	$2,267,652	20	$2,267,652	646.9	115.8	155.3	375.9	0	0
	Red Lodge city	2.70	2.7	100.0%	0	$0	1	$31,937	1,366	$249,897,767	1,366	$249,897,767	162	$49,294,962	162	$49,294,962	4,562.7	699.3	1,593.6	2,269.8	1	1
	Balance of Carbon County	793.28	2,056.4		3	$220,339	1	$163,402	2,608	$582,324,239	2,205	$479,241,157	1,180	$250,658,572	988	$198,834,520	5,264.7	913.0	1,388.2	2,963.5	4	0
4	**Carter County**	2,801.32	3,346.4	83.7%	0	$0	0		405	$20,620,826	392	$19,925,640	1,012	$117,527,687	908	$108,036,553	933.0	176.3	238.8	517.8	0	0
	Ekalaka town	1.03	1.0	100.0%	0	$0	0		323	$14,713,910	323	$14,713,910	40	$3,481,214	40	$3,481,214	768.7	145.3	196.8	426.7	0	0
	Balance of Carter County	2,800.29	3,345.4		0	$0	0	$0	82	$5,906,916	69	$5,211,730	972	$114,046,473	868	$104,555,339	164.2	31.0	42.0	91.1	0	0
2	**Cascade County**	2,454.91	2,708.4	90.6%	20	$90,365,664	20	$90,365,664	28,943	$4,349,791,994	28,922	$4,347,249,198	4,285	$2,555,983,982	4,236	$2,545,220,479	84,831.6	18,230.8	18,012.4	48,588.4	14	5
	Belt city	0.32	0.3	100.0%	0	$0	0		98	$8,912,233	98	$8,912,233	16	$5,432,574	16	$5,432,574	230.3	51.6	41.2	137.5	0	0
	Cascade town	0.48	0.5	100.0%	20	$90,365,664	0		267	$28,222,039	267	$28,222,039	61	$9,822,750	61	$9,822,750	627.5	140.5	112.3	374.6	1	1
	Great Falls city	23.04	23.0	100.0%	0	$0	15	$87,655,358	21,838	$3,214,111,195	21,838	$3,214,111,195	1,980	$1,834,875,305	1,980	$1,834,875,305	67,712.5	14,451.3	14,746.1	38,515.2	2	2
	Neihart town	1.60	1.6	98.0%	0	$0	0		57	$5,297,372	57	$5,297,372	14	$2,901,487	14	$2,901,487	134.0	30.0	24.0	80.0	0	0
	Balance of Cascade County	2,429.47	2,682.9		0	0.0	5	$2,710,305	6,683	$1,093,249,155	6,662	$1,090,706,359	2,214	$702,951,866	2,165	$692,188,363	16,127.3	3,557.4	3,088.8	9,481.1	11	0
2	**Chouteau County**	3,331.74	3,992.9	83.4%	0	$0	0		1,880	$212,079,581	1,876	$211,717,611	1,258	$200,554,092	1,102	$177,588,062	7,987.0	1,841.9	1,584.0	4,561.2	4	2
	Big Sandy town	0.48	0.5	100.0%	0	$0	0		324	$26,480,771	324	$26,480,771	42	$4,231,062	42	$4,231,062	1,057.5	246.4	200.9	610.2	0	0
	Fort Benton city	1.54	1.5	100.0%	0	$0	0		795	$106,352,375	795	$106,352,375	111	$15,435,130	111	$15,435,130	4,927.0	1,128.9	1,002.6	2,795.6	0	0
	Geraldine town	0.57	0.6	100.0%	0	$0	0		150	$9,556,033	150	$9,556,033	21	$2,592,594	21	$2,592,594	402.5	93.8	76.5	232.2	0	0
	Balance of Chouteau County	3,329.15	3,990.3		0	$0	0	$0	611	$69,690,402	607	$69,328,432	1,084	$178,295,306	928	$155,329,276	1,600.0	372.8	304.0	923.2	4	0
4	**Custer County**	3,231.89	3,789.3	85.3%	12	$59,923,374	12	$59,923,374	4,678	$531,010,978	4,643	$525,923,384	1,711	$297,665,123	1,599	$281,764,377	12,032.0	2,375.3	3,105.2	6,551.4	0	0
	Ismay town	0.42	0.4	100.0%	0	$0	0		29	$349,883	29	$349,883	10	$1,387,354	10	$1,387,354	69.0	14.8	13.3	40.9	0	0
	Miles City city	3.31	3.3	100.0%	0	$0	2	$7,613,508	3,312	$363,057,565	3,312	$363,057,565	433	$104,957,053	433	$104,957,053	8,678.8	1,689.6	2,328.9	4,660.2	0	0
	Balance of Custer County	3,228.17	3,785.6		12	$59,923,374	10	$52,309,866	1,337	$167,603,530	1,302	$162,515,936	1,268	$191,320,716	1,156	$175,419,970	3,284.2	670.8	763.1	1,850.3	0	0
6	**Daniels County**	1,369.12	1,426.1	96.0%	2	$36,946	2	$36,946	906	$81,170,595	906	$81,170,595	976	$93,098,998	957	$91,498,028	1,992.4	418.4	569.2	1,004.9	0	0
	Flaxville town	0.08	0.1	100.0%	0	$0	0		87	$4,797,361	87	$4,797,361	16	$766,732	16	$766,732	173.1	37.9	44.1	91.1	0	0
	Scobey city	0.74	0.7	100.0%	0	$0	0		675	$64,548,974	675	$64,548,974	128	$10,135,214	128	$10,135,214	1,532.7	317.7	451.9	763.1	0	0
	Balance of Daniels County	1,368.30	1,425.3		2	$36,946	2	$36,946	144	$11,824,260	144	$11,824,260	832	$82,197,052	813	$80,596,082	286.6	62.8	73.1	150.7	0	0
4	**Dawson County**	2,380.65	2,380.7	100.0%	10	$20,985,926	10	$20,985,926	3,163	$409,229,017	3,163	$409,229,017	908	$162,010,623	908	$162,010,623	7,373.7	1,618.0	1,515.3	4,240.4	0	0
	Glendive city	3.48	3.5	100.0%	0	$0	8	$20,750,838	1,604	$225,892,962	1,604	$225,892,962	230	$56,394,894	230	$56,394,894	3,801.8	825.8	811.7	2,164.3	0	0
	Richey town	0.26	0.3	100.0%	0	$0	0		165	$8,909,873	165	$8,909,873	23	$2,890,873	23	$2,890,873	369.6	83.9	65.8	219.9	0	0
	Balance of Dawson County	2,376.91	2,376.9		10	$20,985,926	2	$235,088	1,394	$174,426,182	1,394	$174,426,182	655	$102,724,856	655	$102,724,856	3,202.3	708.3	637.8	1,856.3	0	0
1	**Deer Lodge County**	117.57	740.6	15.9%	30	$71,273,714	26	$70,798,239	4,234	$406,037,841	1,196	$109,667,709	509	$103,961,907	195	$50,955,060	3,330.3	487.2	803.1	2,039.9	3	2
	Anaconda-Deer Lodge County	117.57	740.6	15.9%	30	$71,273,714	26	$70,798,239	4,234	$406,037,841	1,196	$109,667,709	509	$103,961,907	195	$50,955,060	3,330.3	487.2	803.1	2,039.9	3	0
4	**Fallon County**	1,558.68	1,621.2	96.1%	1	$15,822	1	$15,822	1,223	$120,111,206	1,222	$120,021,746	1,285	$157,284,133	1,264	$155,804,391	3,177.4	804.6	664.2	1,708.6	2	1
	Baker city	1.08	1.1	100.0%	0	$0	0		882	$83,620,710	882	$83,620,710	144	$33,873,913	144	$33,873,913	2,337.6	580.4	524.8	1,232.4	0	0
	Plevna town	0.44	0.4	100.0%	0	$0	0		106	$6,148,692	106	$6,148,692	78	$8,870,026	78	$8,870,026	261.8	69.9	43.5	148.5	0	0
	Balance of Fallon County	1,557.16	1,619.6		1	$15,822	1	$15,822	235	$30,341,804	234	$30,252,344	1,063	$114,540,194	1,042	$113,060,452	578.0	154.3	95.9	327.7	2	0
6	**Fergus County**	3,218.32	4,345.2	74.1%	7	$21,432,181	7	$21,432,181	4,690	$556,548,908	4,494	$531,658,390	2,019	$402,403,647	1,779	$362,644,489	16,277.0	3,316.2	4,186.3	8,774.5	4	2
	Denton town	0.71	0.7	100.0%	0	$0	0		152	$13,428,059	152	$13,428,059	29	$4,382,026	29	$4,382,026	366.8	76.7	87.3	202.8	0	0
	Grass Range town	0.14	0.1	100.0%	0	$0	0		82	$4,930,605	82	$4,930,605	14	$1,525,471	14	$1,525,471	184.5	38.6	43.9	102.0	0	0
	Lewistown city	5.21	5.2	100.0%	0	$0	4	$21,190,378	2,796	$320,465,500	2,796	$320,465,500	396	$106,823,714	396	$106,823,714	12,079.8	2,456.1	3,124.9	6,498.7	0	0
	Moore town	0.29	0.3	100.0%	0	$0	0		102	$6,944,815	102	$6,944,815	19	$4,216,005	19	$4,216,005	229.5	48.0	54.6	126.9	0	0
	Winifred town	0.52	0.5	100.0%	0	$0	0		90	$8,768,234	90	$8,768,234	20	$4,365,641	20	$4,365,641	202.5	42.3	48.2	112.0	0	0
	Balance of Fergus County	3,211.45	4,338.3		7	$21,432,181	3	$241,803	1,468	$202,011,695	1,272	$177,121,177	1,541	$281,090,790	1,301	$241,331,632	3,214.0	654.6	827.4	1,732.0	4	0
1	**Flathead County**	729.21	5,252.4	13.9%	20	$38,896,279	16	$38,354,057	41,342	$8,600,413,799	34,301	$6,890,990,199	8,138	$3,832,482,719	6,166	$2,974,180,871	187,883.7	41,089.1	35,987.2	110,807.4	5	1
	Columbia Falls city	1.21	2.1	59.0%	0	$0	2	$16,951,424	1,739	$255,171,515	1,039	$172,475,063	327	$117,184,528	107	$45,418,437	7,648.5	1,672.2	1,466.6	4,509.7	1	1
	Kalispell city	11.80	11.8	100.0%	0	$0	10	$19,802,332	7,553	$1,271,291,249	7,553	$1,271,291,249	1,714	$1,065,757,780	1,714	$1,065,757,780	55,886.2	12,133.4	11,031.0	32,721.8	0	0
	Whitefish city	5.59	11.8	47.2%	0	$0	0		4,029	$1,153,743,638	3,386	$768,178,233	522	$350,353,977	487	$315,690,498	36,761.5	8,070.1	6,928.0	21,763.4	0	0
	Balance of Flathead County	710.62	5,226.8		20	$38,896,279	4	$1,600,301	28,021	$5,920,207,397	22,323	$4,679,045,654	5,575	$2,299,186,434	3,858	$1,547,314,156	87,587.4	19,213.3	16,561.5	51,812.6	4	0
3	**Gallatin County**	639.83	2,632.5	24.3%	207	$963,139,971	201	$961,723,453	40,035	$10,930,545,091	32,056	$8,371,158,648	5,191	$4,169,858,220	3,437	$3,277,077,870	226,513.9	45,516.4	28,977.8	152,019.7	6	3
	Belgrade city	2.58	3.1	83.5%	0	$0	0		2,764	$496,929,312	2,539	$455,406,819	204	$120,870,378	202	$119,926,092	18,403.4	3,619.4	2,695.7	12,088.3	0	0
	Bozeman city	18.45	19.9	92.8%	0	$0	192	$948,662,225	16,722	$4,743,491,928	16,577	$4,673,527,862	1,511	$2,235,363,972	1,453	$2,209,741,252	167,763.9	33,889.6	20,686.3	113,188.0	2	1

APPENDIX B-7. VULNERABILITY ASSESSMENT DOCUMENTATION - SEVERE WEATHER

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Severe Weather sq. miles	Total sq. miles	Percent Severe Weather sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Severe Weather Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Severe Weather Hazard Area	Residential Exposure in Severe Weather Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Severe Weather Hazard Area	CAI Exposure in Severe Weather Hazard Area	Total Population in Hazard Area	<18 in Severe Weather Hazard Area	>65 in Severe Weather Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Manhattan town	1.09	1.7	63.7%	0	$0	0		657	$115,292,092	365	$59,052,751	71	$33,496,346	49	$20,175,458	1,425.2	272.7	241.8	910.7	0	0
	Three Forks city	0.05	1.4	3.4%	0	$0	0		787	$99,273,886	0		104	$26,353,553	0					0.0	0	0
	West Yellowstone town	0.68	0.8	86.7%	0	$0	0		639	$139,663,482	604	$132,157,394	244	$183,049,311	172	$154,952,962	3,021.0	613.3	359.5	2,048.2	0	0
	Balance of Gallatin County	616.99	2,605.7		207	$963,139,971	9	$13,061,227	18,466	$5,335,894,391	11,971	$3,051,013,822	3,057	$1,570,724,660	1,561	$772,282,106	35,900.4	7,121.5	4,994.4	23,784.5	4	0
4	**Garfield County**	4,196.66	4,843.5	86.6%	1	$2,417	1	$2,417	558	$40,352,973	469	$34,125,713	828	$98,380,657	792	$94,725,621	1,200.5	247.2	341.5	611.8	0	0
	Jordan town	0.35	0.3	100.0%	0	$0	0		257	$15,353,948	257	$15,353,948	31	$4,176,477	31	$4,176,477	693.8	135.2	223.9	334.7	0	0
	Balance of Garfield County	4,196.31	4,843.1		1	$2,417	1	$2,417	301	$24,999,025	212	$18,771,765	797	$94,204,180	761	$90,549,144	506.7	112.0	117.5	277.2	0	0
2	**Glacier County**	890.66	3,034.9	29.3%	4	$166,089	3	$144,814	2,176	$173,809,579	1,996	$163,850,946	1,208	$513,342,768	833	$410,781,916	6,589.9	1,928.1	1,126.9	3,534.9	0	0
	Browning town	0.28	0.3	100.0%	0	$0	0		207	$8,297,087	207	$8,297,087	61	$9,037,744	61	$9,037,744	669.3	208.8	77.6	382.8	0	0
	Cut Bank city	1.16	1.2	100.0%	0	$0	1	$32,554	1,122	$90,953,194	1,122	$90,953,194	151	$37,600,597	151	$37,600,597	3,794.0	1,081.4	730.1	1,982.6	0	0
	Balance of Glacier County	889.22	3,033.4		4	$166,089	2	$112,260	847	$74,559,298	667	$64,600,665	996	$466,704,427	621	$364,143,575	2,126.6	637.9	319.2	1,169.5	0	0
5	**Golden Valley County**	997.65	1,174.1	85.0%	0	$0	0		288	$22,545,552	287	$22,335,492	240	$51,388,053	226	$49,548,033	732.8	143.6	198.6	390.6	0	0
	Lavina town	1.01	1.0	100.0%	0	$0	0		91	$7,521,010	91	$7,521,010	15	$1,533,018	15	$1,533,018	284.0	55.7	77.0	151.4	0	0
	Ryegate town	0.75	0.8	100.0%	0	$0	0		141	$10,234,886	141	$10,234,886	15	$1,769,218	15	$1,769,218	322.9	63.3	87.5	172.1	0	0
	Balance of Golden Valley County	995.88	1,172.4		0	$0	0	$0	56	$4,789,656	55	$4,579,596	210	$48,085,817	196	$46,245,797	125.9	24.7	34.1	67.1	0	0
1	**Granite County**	705.33	1,730.9	40.8%	0	$0	0		1,604	$210,828,137	1,059	$139,472,972	530	$156,924,788	376	$126,646,372	3,138.3	505.3	925.8	1,707.2	4	2
	Drummond town	0.51	0.5	92.5%	0	$0	0		144	$11,391,136	133	$10,780,646	48	$5,493,281	48	$5,493,281	508.1	81.8	149.9	276.4	0	0
	Philipsburg town	0.63	0.8	74.0%	0	$0	0		503	$53,845,654	350	$35,731,579	77	$16,673,401	64	$13,861,905	1,272.4	204.9	375.4	692.2	0	0
	Balance of Granite County	704.19	1,729.5		0	$0	0	$0	957	$145,591,347	576	$92,960,747	405	$134,758,106	264	$107,291,186	1,357.8	218.6	400.6	738.6	4	0
2	**Hill County**	1,590.07	2,915.3	54.5%	19	$55,432,027	19	$55,432,027	6,281	$754,306,279	5,033	$624,989,471	2,439	$478,811,374	1,549	$283,812,640	14,776.7	3,995.8	2,352.9	8,428.0	4	2
	Havre city	3.00	3.4	87.1%	0	$0	12	$48,059,107	2,954	$365,822,286	2,648	$342,990,989	390	$113,681,709	197	$47,416,729	8,388.5	2,239.0	1,426.6	4,722.8	0	0
	Hingham town	0.17	0.2	100.0%	0	$0	0		165	$13,864,635	165	$13,864,635	27	$3,866,422	27	$3,866,422	433.9	119.3	62.9	251.7	0	0
	Balance of Hill County	1,586.90	2,911.7		19	$55,432,027	7	$7,372,920	3,162	$374,619,358	2,220	$268,133,847	2,022	$361,263,243	1,325	$232,529,489	5,954.3	1,637.4	863.4	3,453.5	4	0
3	**Jefferson County**	617.09	1,657.8	37.2%	14	$15,148,292	6	$5,612,798	4,016	$744,240,161	3,410	$667,555,762	694	$117,529,005	436	$77,194,130	9,063.7	1,722.9	2,257.8	5,083.0	7	1
	Boulder town	0.75	1.1	67.2%	0	$0	0		356	$36,918,541	306	$30,794,456	47	$6,824,156	47	$6,824,156	847.5	153.9	239.7	454.0	3	1
	Whitehall town	0.32	0.7	45.3%	0	$0	0		325	$32,838,125	141	$13,995,575	47	$9,146,159	21	$5,636,139	353.9	71.1	72.9	209.9	0	0
	Balance of Jefferson County	616.02	1,656.0		14	$15,148,292	6	$5,612,798	3,335	$674,483,495	2,963	$622,765,731	600	$101,558,690	368	$64,733,835	7,862.2	1,497.9	1,945.2	4,419.1	4	0
6	**Judith Basin County**	1,323.94	1,868.3	70.9%	0	$0	0		783	$67,357,916	738	$62,322,345	682	$119,016,564	641	$114,088,541	2,064.5	386.1	495.5	1,182.9	0	0
	Hobson town	0.21	0.2	100.0%	0	$0	0		116	$11,542,201	116	$11,542,201	21	$3,191,010	21	$3,191,010	372.8	69.7	89.5	213.6	0	0
	Stanford town	0.42	0.4	100.0%	0	$0	0		248	$24,191,487	248	$24,191,487	49	$6,993,739	49	$6,993,739	876.4	163.9	210.3	502.2	0	0
	Balance of Judith Basin County	1,323.31	1,867.6		0	$0	0	$0	419	$31,624,228	374	$26,588,657	612	$108,831,815	571	$103,903,792	815.3	152.5	195.7	467.2	0	0
1	**Lake County**	710.92	1,652.1	43.0%	16	$14,144,458	12	$11,391,790	16,679	$3,044,070,013	12,550	$2,226,912,821	4,157	$907,884,902	3,123	$664,661,182	32,659.2	7,657.4	7,639.3	17,362.5	0	0
	Polson city	4.31	4.3	100.0%	0	$0	0		1,550	$239,716,220	1,550	$239,716,220	307	$110,486,890	307	$110,486,890	5,215.0	1,127.8	1,530.0	2,557.2	0	0
	Ronan city	1.14	1.1	100.0%	0	$0	0		498	$51,240,897	498	$51,240,897	188	$43,266,142	188	$43,266,142	1,580.1	344.1	455.7	780.3	0	0
	St. Ignatius town	0.52	0.5	100.0%	0	$0	0		227	$24,362,098	227	$24,362,098	33	$6,506,490	33	$6,506,490	699.5	130.1	274.3	295.1	0	0
	Balance of Lake County	704.95	1,646.2		16	$14,144,458	12	$11,391,790	14,404	$2,728,750,798	10,275	$1,911,593,606	3,629	$747,625,380	2,595	$504,401,660	25,164.6	6,055.4	5,379.2	13,730.0	0	0
3	**Lewis and Clark County**	1,846.00	3,493.5	52.8%	77	$528,411,633	74	$528,327,923	28,356	$4,838,187,380	26,374	$4,556,382,408	2,990	$1,486,292,152	2,779	$1,429,643,862	126,398.1	26,699.8	24,667.0	75,031.3	15	8
	East Helena town	4.08	4.1	100.0%	0	$0	0		778	$95,292,980	778	$95,292,980	55	$16,849,629	55	$16,849,629	4,051.8	857.5	784.7	2,409.7	0	0
	Helena city	16.53	16.5	100.0%	0	$0	51	$505,323,631	10,487	$2,070,264,423	10,487	$2,070,264,423	1,613	$1,127,469,517	1,613	$1,127,469,517	79,876.9	16,952.3	15,285.5	47,639.1	8	4
	Balance of Lewis and Clark County	1,825.39	3,472.8		77	$528,411,633	23	$23,004,292	17,091	$2,672,629,977	15,109	$2,390,825,005	1,322	$341,973,006	1,111	$285,324,716	42,469.3	8,890.0	8,596.8	24,982.5	7	0
2	**Liberty County**	1,128.10	1,446.4	78.0%	3	$203,754	3	$203,754	540	$55,198,775	536	$54,529,022	727	$148,145,426	606	$104,778,328	1,537.4	300.8	434.6	802.1	0	0
	Chester town	0.49	0.5	100.0%	0	$0	0		347	$38,384,265	347	$38,384,265	85	$11,176,620	85	$11,176,620	1,061.1	196.5	340.7	523.9	0	0
	Balance of Liberty County	1,127.60	1,445.9		3	$203,754	3	$203,754	193	$16,814,510	189	$16,144,757	642	$136,968,806	521	$93,601,708	476.3	104.3	93.8	278.1	0	0
1	**Lincoln County**	36.28	3,673.2	1.0%	5	$2,732,131	1	$2,417	14,201	$1,669,255,057	2,099	$285,381,057	4,037	$814,443,340	501	$149,797,213	4,961.7	897.9	1,384.9	2,678.9	0	0
	Eureka town	1.03	1.0	99.7%	0	$0	0		576	$49,995,833	575	$49,856,633	79	$16,254,364	79	$16,254,364	1,520.7	264.7	466.1	789.9	0	0
	Libby city		1.7	0.0%	0	$0	0		1,887	$171,393,838	0		407	$97,831,857	0					0.0	0	0
	Rexford town	0.09	0.1	100.0%	0	$0	0		62	$5,237,363	62	$5,237,363	7	$1,125,453	7	$1,125,453	137.0	25.2	36.6	75.2	0	0
	Troy city	0.00	0.7	0.2%	0	$0	0		543	$42,346,210	0		99	$14,488,626	1	$108,012				0.0	0	0
	Balance of Lincoln County	35.16	3,669.7		5	$2,732,131	1	$2,417	11,133	$1,400,281,813	1,462	$230,287,061	3,445	$684,743,040	414	$132,309,384	3,304.0	607.9	882.2	1,813.9	0	0
3	**Madison County**	208.28	3,602.4	5.8%	3	$270,203	0		4,154	$804,105,665	677	$129,335,014	1,301	$368,696,283	244	$56,382,495	1,589.5	236.7	513.1	839.7	9	1
	Ennis town	0.14	0.6	24.0%	0	$0	0		533	$84,019,269	74	$9,240,889	85	$24,326,354	26	$4,020,895	165.0	25.9	47.2	91.9	0	0
	Sheridan town	0.25	1.0	24.7%	2	$59,996	0		1,971	$206,039,798	60	$7,049,143	54	$8,980,370	2	$401,395	133.8	21.0	38.3	74.5	0	0
	Twin Bridges town	0.11	1.0	10.8%	0	$0	0		232	$25,593,322	1	$100,200	47	$8,125,500	0		2.2	0.4	0.6	1.2	0	0
	Virginia City town	0.19	0.9	19.8%	0	$0	0		167	$26,178,533	13	$2,355,080	30	$5,366,969	0		29.0	4.6	8.3	16.1	1	1
	Balance of Madison County	207.59	3,598.8		1	$210,207	0	$0	1,251	$462,274,743	529	$110,589,702	1,085	$321,897,090	216	$51,960,205	1,259.4	184.9	418.7	655.8	8	0
4	**McCone County**	2,679.21	2,679.2	100.0%	3	$141,360	3	$141,360	532	$44,530,155	532	$44,530,155	679	$82,125,293	679	$82,125,293	1,305.1	268.9	285.8	750.5	3	1
	Circle town	0.77	0.8	100.0%	0	$0	0		335	$27,003,251	335	$27,003,251	66	$14,581,192	66	$14,581,192	850.1	175.1	186.2	488.8	0	0
	Balance of McCone County	2,678.43	2,678.4		3.0	$141,360	3	$141,360	197	$17,526,904	197	$17,526,904	613	$67,544,101	613	$67,544,101	455.1	93.7	99.7	261.7	3	0
3	**Meagher County**	724.10	2,392.1	30.3%	0	$0	0		1,199	$128,110,116	173	$16,029,771	412	$92,624,757	124	$29,375,974	427.3	76.5	117.5	233.3	0	0
	White Sulphur Springs city	0.00	1.0	0.0%	0	$0	0		630	$61,212,327	0		45	$6,869,617	0					0.0	0	0
	Balance of Meagher County	724.10	2,391.1		0	$0	0	$0	569	$66,897,789	173	$16,029,771	367	$85,755,140	124	$29,375,974	427.3	76.5	117.5	233.3	0	0
1	**Mineral County**	64.60	1,222.0	5.3%	0	$0	0		2,023	$203,747,490	596	$52,587,215	404	$84,723,652	111	$27,768,299	2,199.3	374.8	689.7	1,134.9	2	0
	Alberton town	0.13	0.5	24.3%	0	$0	0		197	$14,926,025	54	$3,652,465	20	$2,465,222	1	$209,712	144.2	25.5	41.4	77.3	0	0
	Superior town	0.74	1.1	69.1%	0	$0	0		381	$36,464,606	352	$33,451,470	72	$20,494,160	70	$20,277,008	1,401.0	233.5	460.5	707.0	0	0
	Balance of Mineral County	63.73	1,220.4		0	$0	0	$0	1,445	$152,356,859	190	$15,483,280	312	$61,764,270	40	$7,281,579	654.2	115.8	187.7	350.6	2	0
1	**Missoula County**	1,118.24	2,614.9	42.8%	203	$1,032,240,117	203	$1,032,240,117	16,873	$2,860,469,867	15,553	$2,633,700,173	1,421	$1,152,881,550	1,254	$1,066,369,259	70,073.8	13,065.3	12,261.6	44,746.9	13	5
	Missoula city	29.02	29.0	100.0%	203	$1,032,240,117	190	$1,003,483,589	4,975	$984,652,873	4,975	$984,652,873	470	$595,032,016	470	$595,032,016	38,379.4	7,090.7	7,004.0	24,284.8	8	4
	Balance of Missoula County	1,089.22	2,585.9		0	$0	13	$28,756,528	11,898	$1,875,816,994	10,578	$1,649,047,300	951	$557,849,534	784	$471,337,243	31,694.4	5,974.6	5,257.6	20,462.2	5	0
5	**Musselshell County**	1,843.86	1,869.6	98.6%	2	$45,908	2	$45,908	1,730	$148,155,396	1,730	$148,155,396	734	$146,591,301	731	$146,294,881	4,363.0	839.8	1,134.0	2,389.2	0	0
	Melstone town	0.61	0.6	100.0%	0	$0	0		39	$2,012,685	39	$2,012,685	7	$754,186	7	$754,186	94.8	19.0	21.9	53.9	0	0

APPENDIX B-7. VULNERABILITY ASSESSMENT DOCUMENTATION - SEVERE WEATHER

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Severe Weather sq. miles	Total sq. miles	Percent Severe Weather sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Severe Weather Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Severe Weather Hazard Area	Residential Exposure in Severe Weather Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Severe Weather Hazard Area	CAI Exposure in Severe Weather Hazard Area	Total Population in Hazard Area	<18 in Severe Weather Hazard Area	>65 in Severe Weather Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Roundup city	1.29	1.3	100.0%	0	$0	1	$30,491	837	$63,457,673	837	$63,457,673	129	$18,353,849	129	$18,353,849	2,113.5	406.3	551.3	1,155.9	0	0
	Balance of Musselshell County	1,841.96	1,867.7		2	$45,908	1	$15,417	854	$82,685,038	854	$82,685,038	598	$127,483,266	595	$127,186,846	2,154.8	414.6	560.8	1,179.4	0	0
3	**Park County**	794.64	2,811.7	28.3%	4	$2,414,253	4	$2,414,253	6,087	$1,151,416,662	4,696	$885,003,177	1,680	$821,834,484	1,132	$445,539,633	11,105.5	2,000.1	2,677.4	6,428.0	3	1
	Clyde Park town	0.30	0.4	83.4%	0	$0	0		134	$13,924,845	126	$13,191,012	23	$4,042,499	21	$2,999,889	287.3	53.7	60.9	172.7	0	0
	Livingston city	5.71	5.7	100.0%	0	$0	1	$2,254,253	2,567	$392,434,781	2,567	$392,434,781	537	$198,955,646	537	$198,955,646	6,171.6	1,092.8	1,566.9	3,512.0	0	0
	Balance of Park County	788.63	2,805.6		4	$2,414,253	3	$160,000	3,386	$745,057,036	2,003	$479,377,384	1,120	$618,836,339	574	$243,584,098	4,646.6	853.6	1,049.7	2,743.3	3	0
6	**Petroleum County**	1,568.06	1,672.5	93.8%	0	$0	0		184	$23,127,789	183	$23,060,809	204	$28,781,751	202	$28,710,321	626.0	116.4	147.1	362.5	0	0
	Winnett town	1.02	1.0	100.0%	0	$0	0		148	$19,210,729	148	$19,210,729	21	$2,591,917	21	$2,591,917	545.2	101.4	128.1	315.6	0	0
	Balance of Petroleum County	1,567.04	1,671.5		0	$0	0	$0	36	$3,917,060	35	$3,850,080	183	$26,189,834	181	$26,118,404	80.8	15.0	19.0	46.8	0	0
6	**Phillips County**	4,197.00	5,208.5	80.6%	6	$1,661,730	6	$1,661,730	1,695	$155,044,408	1,620	$152,631,956	1,402	$250,190,823	1,278	$232,853,384	3,975.0	861.4	1,040.3	2,073.3	3	2
	Dodson town	0.00	0.2	0.0%	0	$0	0		70	$2,222,512	0		5	$140,341	0					0.0	0	0
	Malta city	1.03	1.0	100.0%	0	$0	0		996	$103,409,948	996	$103,409,948	144	$29,008,393	144	$29,008,393	2,380.4	530.9	571.6	1,277.9	0	0
	Saco town	0.30	0.3	100.0%	0	$0	0		134	$6,873,752	134	$6,873,752	15	$1,887,736	15	$1,887,736	302.8	70.0	64.5	168.4	0	0
	Balance of Phillips County	4,195.67	5,207.0		6	$1,661,730	6	$1,661,730	495	$42,538,196	490	$42,348,256	1,238	$219,154,353	1,119	$201,957,255	1,291.7	260.5	404.2	627.0	3	0
2	**Pondera County**	1,121.24	1,640.4	68.4%	2	$60,957	2	$60,957	1,815	$200,092,707	1,724	$191,799,464	883	$265,160,665	772	$215,404,816	5,810.0	1,351.8	1,250.5	3,207.7	0	0
	Conrad city	1.20	1.2	100.0%	0	$0	0		1,126	$122,656,189	1,126	$122,656,189	156	$57,675,177	156	$57,675,177	4,025.8	930.7	886.5	2,208.5	0	0
	Valier town	0.86	0.9	100.0%	0	$0	0		295	$29,342,500	295	$29,342,500	47	$8,582,116	47	$8,582,116	965.2	227.8	196.9	540.5	0	0
	Balance of Pondera County	1,119.17	1,638.3		2	$60,957	2	$60,957	394	$48,094,018	303	$39,800,775	680	$198,903,372	569	$149,147,523	819.0	193.3	167.1	458.6	0	0
4	**Powder River County**	2,877.08	3,297.5	87.3%	2	$26,512	2	$26,512	350	$31,752,451	350	$31,752,451	642	$113,734,309	604	$108,491,657	846.3	131.5	271.5	443.3	0	0
	Broadus town	0.36	0.4	100.0%	0	$0	0		218	$19,631,053	218	$19,631,053	71	$8,590,919	71	$8,590,919	557.2	81.7	199.9	275.6	0	0
	Balance of Powder River County	2,876.73	3,297.1		2	$26,512	2	$26,512	132	$12,121,398	132	$12,121,398	571	$105,143,390	0		289.1	49.7	71.7	167.7	0	0
1	**Powell County**	835.11	2,329.6	35.8%	47	$139,753,982	13	$18,224,325	2,509	$325,066,746	2,051	$264,034,583	697	$217,400,046	480	$166,054,463	7,620.5	1,155.8	1,632.9	4,831.8	4	2
	Deer Lodge city	1.37	1.4	96.1%	30	$71,273,714	0		1,455	$118,373,521	1,401	$113,674,117	160	$37,299,244	160	$37,299,244	5,192.8	779.5	1,154.7	3,258.6	2	1
	Balance of Powell County	833.74	2,328.2		17	$68,480,268	13	$18,224,325	1,054	$206,693,225	650	$150,360,466	537	$180,100,802	320	$128,755,219	2,427.8	376.3	478.3	1,573.2	2	0
4	**Prairie County**	1,537.26	1,740.2	88.3%	0	$0	0		527	$28,742,376	527	$28,742,376	525	$56,615,772	511	$54,353,570	1,376.0	258.8	468.9	648.3	4	2
	Terry town	0.77	0.8	100.0%	0	$0	0		382	$21,559,157	382	$21,559,157	43	$3,618,679	43	$3,618,679	1,019.3	187.5	362.2	469.6	0	0
	Balance of Prairie County	1,536.49	1,739.4		0	$0	0	$0	145	$7,183,219	145	$7,183,219	482	$52,997,093	468	$50,734,891	356.7	71.3	106.7	178.7	4	0
1	**Ravalli County**	891.60	2,398.2	37.2%	3	$1,079,777	2	$1,024,961	19,277	$3,692,614,691	18,954	$3,627,538,826	3,023	$930,619,898	2,870	$880,698,025	48,855.6	9,334.6	12,945.9	26,575.1	4	2
	Darby town	0.56	0.6	100.0%	0	$0	0		455	$65,564,435	455	$65,564,435	20	$5,525,704	20	$5,525,704	1,318.9	242.4	386.3	690.2	0	0
	Hamilton city	2.39	2.4	100.0%	0	$0	1	$1,014,737	2,371	$402,402,609	2,371	$402,402,609	207	$138,471,668	207	$138,471,668	7,443.0	1,394.5	2,078.3	3,970.2	0	0
	Pinesdale town	1.16	1.3	89.9%	0	$0	0		163	$30,828,359	160	$30,121,115	42	$6,383,047	42	$6,383,047	388.8	76.2	95.6	217.0	0	0
	Stevensville town	1.02	1.0	100.0%	0	$0	0		956	$165,432,372	956	$165,432,372	64	$20,620,328	64	$20,620,328	2,456.1	465.3	666.0	1,324.8	0	0
	Balance of Ravalli County	886.47	2,392.9		3	$1,079,777	1	$10,224	15,332	$3,028,386,916	15,012	$2,964,018,295	2,690	$759,619,151	2,537	$709,697,278	37,248.8	7,156.1	9,719.6	20,373.0	4	0
4	**Richland County**	2,031.53	2,101.9	96.7%	4	$1,434,990	4	$1,434,990	2,979	$516,039,930	2,681	$486,420,545	1,646	$420,114,426	1,580	$408,674,588	7,492.4	1,869.6	1,209.8	4,413.0	0	0
	Fairview town	0.44	0.8	54.9%	0	$0	0		313	$29,368,800	69	$6,442,220	37	$7,407,985	8	$2,640,482	256.0	66.1	34.1	155.9	0	0
	Sidney city	2.45	2.4	100.0%	0	$0	3	$1,419,573	1,697	$319,755,649	1,697	$319,755,649	342	$108,260,768	342	$108,260,768	4,832.6	1,204.5	784.9	2,843.2	0	0
	Balance of Richland County	2,028.64	2,098.7		4	$1,434,990	1	$15,417	969	$166,915,481	915	$160,222,676	1,267	$304,445,673	1,230	$297,773,338	2,403.8	599.0	390.8	1,413.9	0	0
6	**Roosevelt County**	2,328.98	2,366.6	98.4%	4	$3,703,234	4	$3,703,234	2,085	$172,781,506	2,085	$172,781,506	1,674	$267,647,926	1,650	$263,633,241	9,018.1	2,912.3	1,228.5	4,877.3	2	1
	Bainville town	1.00	1.0	100.0%	0	$0	0		116	$8,253,760	116	$8,253,760	17	$1,186,389	17	$1,186,389	449.6	149.3	50.4	250.0	0	0
	Brockton town	0.17	0.2	100.0%	0	$0	0		21	$718,776	21	$718,776	5	$430,537	5	$430,537	269.0	89.3	30.1	149.6	0	0
	Culbertson town	0.52	0.5	100.0%	0	$0	0		452	$46,606,757	452	$46,606,757	78	$11,849,589	78	$11,849,589	1,600.1	531.2	179.2	889.6	0	0
	Froid town	0.28	0.3	100.0%	0	$0	0		127	$5,583,947	127	$5,583,947	15	$809,020	15	$809,020	449.6	149.3	50.4	250.0	0	0
	Poplar city	0.27	0.3	100.0%	0	$0	0		239	$11,492,367	239	$11,492,367	40	$3,179,375	40	$3,179,375	1,547.0	513.6	173.3	860.1	0	0
	Wolf Point city	0.85	0.8	100.0%	0	$0	1	$1,444,427	746	$61,499,644	746	$61,499,644	105	$12,969,709	105	$12,969,709	2,836.1	914.4	390.5	1,531.3	0	0
	Balance of Roosevelt County	2,325.89	2,363.6		4	$3,703,234	3	$2,258,807	384	$38,626,255	384	$38,626,255	1,414	$237,223,307	1,390	$233,208,622	1,866.7	565.3	354.7	946.7	2	0
5	**Rosebud County**	3,050.69	5,020.4	60.8%	3	$125,417	2	$25,417	2,477	$239,021,461	2,458	$238,516,689	1,810	$213,766,468	1,634	$196,571,674	7,065.4	2,036.0	1,178.3	3,851.1	0	0
	Colstrip city	4.06	4.1	100.0%	0	$0	0		980	$109,503,560	980	$109,503,560	250	$31,692,015	250	$31,692,015	2,753.8	812.4	404.7	1,536.7	0	0
	Forsyth city	1.17	1.2	100.0%	0	$0	0		896	$75,056,501	896	$75,056,501	141	$26,550,423	141	$26,550,423	2,596.9	741.9	451.7	1,403.3	0	0
	Balance of Rosebud County	3,045.46	5,015.1		3	$125,417	2	$25,417	601	$54,461,400	582	$53,956,628	1,419	$155,524,030	1,243	$138,329,236	1,714.6	481.6	322.0	911.0	0	0
1	**Sanders County**	402.73	2,786.9	14.5%	0	$0	0		4,955	$571,408,477	1,418	$157,174,816	1,849	$320,122,376	313	$52,978,805	4,283.2	756.2	1,279.3	2,247.6	0	0
	Hot Springs town	0.03	0.4	9.0%	0	$0	0		343	$29,433,542	44	$3,950,098	53	$9,621,606	15	$2,139,193	121.6	21.9	34.6	65.0	0	0
	Plains town	0.00	0.6	0.0%	0	$0	0		547	$44,751,633	0		88	$17,655,569	0					0.0	0	0
	Thompson Falls city	1.18	1.6	74.6%	0	$0	0		666	$67,891,731	568	$50,061,999	85	$16,866,473	77	$14,151,199	2,015.8	348.1	633.1	1,034.6	0	0
	Balance of Sanders County	401.52	2,784.4		0	$0	0	$0	3,399	$429,331,571	806	$103,162,719	1,623	$275,978,728	221	$36,688,413	2,145.9	386.3	611.6	1,148.1	0	0
6	**Sheridan County**	1,478.06	1,703.6	86.8%	2	$59,996	2	$59,996	1,971	$206,039,798	1,493	$142,370,829	1,503	$172,072,215	1,334	$154,372,243	3,455.8	694.6	868.5	1,892.8	0	0
	Medicine Lake town	0.41	0.4	100.0%	0	$0	0		159	$9,705,581	159	$9,705,581	24	$1,200,353	24	$1,200,353	367.2	77.5	78.6	211.1	0	0
	Outlook town	1.25	1.2	100.0%	0	$0	0		44	$2,946,970	44	$2,946,970	10	$552,096	10	$552,096	95.0	20.1	20.3	54.6	0	0
	Plentywood city	1.34	1.3	100.0%	0	$0	0		785	$88,640,393	785	$88,640,393	136	$18,201,885	136	$18,201,885	1,902.8	366.9	536.1	999.8	0	0
	Westby town	0.35	0.6	62.9%	0	$0	0		102	$4,909,517	52	$2,705,722	15	$1,132,999	13	$927,499	112.3	23.7	24.0	64.6	0	0
	Balance of Sheridan County	1,474.71	1,700.1		2	$59,996	2	$59,996	881	$99,837,337	453	$38,372,163	1,318	$150,984,882	1,151	$133,490,410	978.5	206.5	209.4	562.6	0	0
1	**Silver Bow County**	414.66	718.0	57.8%	26	$227,661,811	26	$227,661,811	13,122	$1,426,148,334	12,951	$1,402,358,807	1,585	$807,024,197	1,508	$786,976,292	32,823.0	6,494.2	6,912.1	19,416.6	5	2
	Walkerville town	1.59	2.2	71.4%	0	$0	0		342	$24,138,167	332	$21,945,753	6	$334,643	6	$334,643	737.0	151.1	134.1	451.8	1	1
	Butte-Silver Bow (remainder)	413.07	715.7		26	$227,661,811	26	$227,661,811	12,780	$1,402,010,167	12,619	$1,380,413,054	1,579	$806,689,554	1,502	$786,641,649	32,085.9	6,343.1	6,778.0	18,964.8	4	0
5	**Stillwater County**	1,417.30	1,804.7	78.5%	2	$100,729	2	$100,729	2,790	$487,586,815	2,669	$457,589,153	943	$192,170,926	892	$179,830,096	6,512.4	1,398.6	1,655.3	3,458.5	0	0
	Columbus town	1.29	1.3	100.0%	0	$0	0		448	$58,806,556	448	$58,806,556	97	$44,373,190	97	$44,373,190	1,093.1	234.0	402.6	456.5	0	0
	Balance of Stillwater County	1,416.00	1,803.4		2	$100,729	2	$100,729	2,342	$428,780,259	2,221	$398,782,597	846	$147,797,736	795	$135,456,906	5,419.2	1,164.6	1,252.7	3,001.9	0	0
3	**Sweet Grass County**	1,465.88	1,860.9	78.8%	1	$100,000	1	$100,000	1,559	$263,525,756	1,499	$250,281,220	1,251	$384,985,550	1,187	$363,732,095	3,958.0	802.3	1,039.4	2,116.3	0	0
	Big Timber city	0.95	1.0	100.0%	0	$0	0		772	$99,628,903	772	$99,628,903	157	$34,833,465	157	$34,833,465	2,104.1	418.6	581.5	1,104.1	0	0
	Balance of Sweet Grass County	1,464.93	1,860.0		1	$100,000	1	$100,000	787	$163,896,853	727	$150,652,317	1,094	$350,152,085	1,030	$328,898,630	1,853.9	383.7	457.9	1,012.2	0	0
2	**Teton County**	1,445.65	2,289.5	63.1%	2	$60,957	2	$60,957	1,834	$226,386,656	1,789	$219,534,779	1,107	$240,507,233	1,047	$213,252,378	5,059.5	1,077.9	1,524.3	2,457.3	1	1

APPENDIX B-7. VULNERABILITY ASSESSMENT DOCUMENTATION - SEVERE WEATHER

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Severe Weather sq. miles	Total sq. miles	Percent Severe Weather sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Severe Weather Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Severe Weather Hazard Area	Residential Exposure in Severe Weather Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Severe Weather Hazard Area	CAI Exposure in Severe Weather Hazard Area	Total Population in Hazard Area	<18 in Severe Weather Hazard Area	>65 in Severe Weather Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Choteau city	1.46	1.5	100.0%	0	$0	1	$2,417	743	$81,363,094	743	$81,363,094	102	$23,811,077	102	$23,811,077	2,334.5	434.8	908.4	991.3	0	0
	Dutton town	0.35	0.4	100.0%	0	$0	0		159	$17,819,673	159	$17,819,673	30	$5,356,644	30	$5,356,644	452.5	106.8	102.3	243.4	0	0
	Fairfield town	0.31	0.3	100.0%	0	$0	0		266	$30,208,145	266	$30,208,145	46	$13,369,957	46	$13,369,957	692.5	163.4	156.5	372.6	0	0
	Balance of Teton County	1,443.53	2,287.4		2	$60,957	1	$58,540	666	$96,995,744	621	$90,143,867	929	$197,969,555	869	$170,714,700	1,580.0	372.9	357.1	850.0	1	0
2	**Toole County**	1,043.28	1,943.9	53.7%	3	$124,825	2	$50,496	1,702	$149,272,962	1,408	$131,153,694	806	$214,874,251	525	$148,547,335	4,662.8	861.2	856.2	2,945.5	2	1
	Kevin town	0.00	0.4	0.0%	0	$0	0		101	$4,284,353	0		9	$317,749	0					0.0	0	0
	Shelby city	5.00	5.9	84.5%	0	$0	2	$50,496	1,175	$110,467,515	1,122	$108,627,531	196	$76,850,372	190	$75,318,160	3,997.5	736.1	743.7	2,517.7	0	0
	Sunburst town	1.31	2.0	64.5%	0	$0	0		208	$12,619,612	183	$10,802,783	25	$3,026,807	21	$2,834,637	434.6	81.7	73.4	279.4	0	0
	Balance of Toole County	1,036.97	1,935.5		3	$124,825	0	$0	218	$21,901,482	103	$11,723,380	576	$134,679,323	314	$70,394,538	230.7	43.4	39.0	148.4	2	0
5	**Treasure County**	946.28	983.5	96.2%	1	$250,000	1	$250,000	194	$12,369,442	193	$12,222,762	362	$46,827,867	359	$46,631,797	443.9	81.7	123.0	239.3	2	1
	Hysham town	0.24	0.2	100.0%	0	$0	0		159	$9,401,270	159	$9,401,270	20	$2,281,485	20	$2,281,485	365.7	67.3	101.3	197.1	0	0
	Balance of Treasure County	946.04	983.2		1	$250,000	1	$250,000	35	$2,968,172	34	$2,821,492	342	$44,546,382	339	$44,350,312	78.2	14.4	21.7	42.1	2	0
6	**Valley County**	3,759.52	5,058.5	74.3%	7	$2,929,498	6	$2,866,994	2,863	$365,588,943	2,863	$365,588,943	1,209	$208,523,811	1,184	$205,811,719	9,240.2	2,042.1	2,197.1	5,001.0	0	0
	Fort Peck town	0.89	0.9	100.0%	0	$0	0		118	$21,485,471	118	$21,485,471	10	$2,092,827	10	$2,092,827	341.3	76.8	76.4	188.0	0	0
	Glasgow city	1.40	1.4	100.0%	0	$0	1	$1,157,021	1,353	$173,782,829	1,353	$173,782,829	217	$55,123,436	217	$55,123,436	5,131.5	1,117.7	1,276.7	2,737.1	0	0
	Nashua town	0.70	0.7	100.0%	0	$0	0		200	$13,107,033	200	$13,107,033	17	$1,596,474	17	$1,596,474	501.7	112.9	112.4	276.4	0	0
	Opheim town	0.21	0.2	100.0%	0	$0	0		76	$3,977,464	76	$3,977,464	14	$1,365,742	14	$1,365,742	296.1	66.6	66.3	163.1	0	0
	Balance of Valley County	3,756.32	5,055.3		7	$2,929,498	5	$1,709,972	1,116	$153,236,146	1,116	$153,236,146	951	$148,345,332	926	$145,633,240	2,969.6	668.2	665.2	1,636.3	0	0
5	**Wheatland County**	1,328.84	1,425.9	93.2%	3	$1,816,266	3	$1,816,266	850	$65,290,360	849	$64,912,400	392	$102,480,647	384	$101,136,247	2,758.9	634.5	689.7	1,434.6	0	0
	Harlowton city	0.61	0.6	100.0%	0	$0	1	$1,758,068	569	$43,661,633	569	$43,661,633	81	$8,532,547	81	$8,532,547	2,052.2	472.0	513.0	1,067.1	0	0
	Judith Gap city	0.32	0.3	100.0%	0	$0	0		89	$5,833,159	89	$5,833,159	10	$1,334,639	10	$1,334,639	259.7	59.7	64.9	135.1	0	0
	Balance of Wheatland County	1,327.91	1,425.0		3	$1,816,266	2	$58,198	192	$15,795,568	191	$15,417,608	301	$92,613,461	293	$91,269,061	446.9	102.8	111.7	232.4	0	0
4	**Wibaux County**	807.62	888.1	90.9%	0	$0	0		318	$24,265,482	318	$24,265,482	518	$58,984,045	482	$54,673,355	914.3	162.1	353.8	398.4	0	0
	Wibaux town	1.07	1.1	100.0%	0	$0	0		290	$20,843,967	290	$20,843,967	54	$4,948,635	54	$4,948,635	854.1	149.1	338.6	366.5	0	0
	Balance of Wibaux County	806.55	887.0		0	$0	0	$0	28	$3,421,515	28	$3,421,515	464	$54,035,410	428	$49,724,720	60.2	13.0	15.2	32.0	0	0
5	**Yellowstone County**	2,395.75	2,646.8	90.5%	19	$148,531,721	19	$148,531,721	58,853	$10,961,976,827	58,824	$10,956,178,247	5,429	$4,499,091,639	5,398	$4,493,061,939	154,350.7	35,270.2	28,578.2	90,502.2	10	5
	Billings city	43.03	43.0	100.0%	0	$0	15	$146,675,677	41,447	$7,866,273,265	41,447	$7,866,273,265	3,014	$3,285,025,446	3,014	$3,285,025,446	109,304.4	24,896.5	20,524.7	63,883.2	4	2
	Broadview town	0.24	0.2	100.0%	0	$0	0		79	$9,621,070	79	$9,621,070	10	$2,904,982	10	$2,904,982	219.6	51.6	35.6	132.4	0	0
	Laurel city	2.14	2.1	100.0%	0	$0	0		2,701	$394,711,073	2,701	$394,711,073	187	$100,223,386	187	$100,223,386	7,526.0	1,691.5	1,494.1	4,340.4	0	0
	Balance of Yellowstone County	2,350.34	2,601.4		19	$148,531,721	4	$1,856,044	14,626	$2,691,371,419	14,597	$2,685,572,839	2,218	$1,110,937,825	2,187	$1,104,908,125	37,300.7	8,630.6	6,523.9	22,146.2	6	0

APPENDIX B-7. CRITICAL FACILITIES IN SEVERE WEATHER HAZARD AREA							
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE							
COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Beaverhead	DILLON	DEPARTMENT OF MILITARY AFFAIRS	Dillon Readiness Center	1070 Highway 41	45.232061	-112.618027	$5,290,581
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM Dillon (WMC)	710 S Atlantic St. WMC Heating Plant	45.208165	-112.641196	$50,000
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Auditorium & Shop	710 S. Atlantic	45.208735	-112.640263	$2,652,247
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Block Hall	710 S. Atlantic	45.208444	-112.638271	$12,221,413
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Centennial Hall	750 E. Cornell	45.208014	-112.637137	$3,485,454
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Clark Hall	750 E. Cornell	45.208100	-112.636476	$4,574,377
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Davis Hall	710 S. Atlantic	45.208283	-112.637181	$3,802,992
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Engineer's Cottage	710 S. Atlantic	45.208782	-112.638613	$67,949
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Family Housing	710 S. Atlantic	45.208952	-112.637152	$1,717,829
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Heating Plant & Garage	710 S. Atlantic	45.209043	-112.638324	$2,001,967
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Jordan Hall	750 E. Cornell	45.208543	-112.637394	$506,946
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Library Administration	710 S. Atlantic	45.208434	-112.639256	$15,267,576
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Main Hall Building	710 S. Atlantic	45.209125	-112.640222	$28,922,882
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Matthews Hall	710 S. Atlantic	45.209545	-112.638745	$11,442,081
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Old Library Building	710 S. Atlantic	45.208777	-112.640683	$2,467,568
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Osborne Residence (Curious Minds)	710 S. Atlantic	45.207289	-112.639562	$111,901
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	PHYSICAL ED BUILDING - DILLON	710 S. Atlantic	45.207380	-112.637863	$15,779,695
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	South Campus Housing	434 E. Poindexter	45.208103	-112.641223	$196,717
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	STUDENT UNION BUILDING - DILLON	710 S. Atlantic	45.208061	-112.639851	$2,540,420
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Swysgood Technology Center (STC)	710 South Atlantic	45.208083	-112.638652	$6,912,898
Big Horn	HARDIN	PUBLIC HEALTH & HUMAN SERVICES	Hardin - UA (Big Horn) OPA	23 8th St W.	45.736392	-107.606388	$64,294
Broadwater	TOSTON	DEPARTMENT OF NATURAL RESOURCES	Toston Dam Power House	Toston Dam Road	46.120486	-111.407744	$25,562,814
Broadwater	TOSTON	DEPARTMENT OF NATURAL RESOURCES	Toston Dam Rubber Dams	Toston Dam Road	46.120029	-111.408265	$1,984,136
Broadwater	TOSTON	DEPARTMENT OF NATURAL RESOURCES	Toston Dam Sub-station	Toston Dam Road	46.120675	-111.407478	$1,491,948
Carbon	COLUMBUS	DEPARTMENT OF JUSTICE	MHP-SHANE RIDGE MICROWAVE TOWER	15 miles SE of Columbus	45.512028	-109.138028	$163,402
Carbon	RED LODGE	PUBLIC HEALTH & HUMAN SERVICES	RED LODGE - Lease #8148 (OPA/CFS/APS)	10 S OAKES AVE	45.186386	-109.248254	$31,937
Cascade	BLACK EAGLE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV TRANSMITTER SITE-BLACK EAGLE	3300 Old Havre Highway	47.535251	-111.282875	$583,371
Cascade	CASCADE	DEPARTMENT OF JUSTICE	MHP - Sullivan A Microwave Tower	15 miles W of Cascade	47.289694	-112.009417	$59,304
Cascade	Cascade	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Sullivan	Mission Road	47.289468	-112.008711	$84,604
Cascade	GREAT FALLS	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	Academic Building	3911 Central Ave.	47.505021	-111.239344	$9,892,973
Cascade	GREAT FALLS	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	Boiler House	3911 Central Ave.	47.506139	-111.240327	$465,497
Cascade	GREAT FALLS	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	Classroom Building	3911 Central Ave.	47.505021	-111.239344	$906,352
Cascade	GREAT FALLS	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	Food Service Building	3911 Central Ave.	47.505454	-111.239507	$975,103
Cascade	GREAT FALLS	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	PE & Therapy Center	3911 Central Ave.	47.505021	-111.239344	$3,963,682
Cascade	GREAT FALLS	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	Residential Cottage II	3911 Central Ave.	47.506154	-111.239482	$4,090,586
Cascade	GREAT FALLS	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	Residential Cottages I	3911 Central Ave.	47.506154	-111.239482	$4,090,586
Cascade	GREAT FALLS	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	Vocational Shop Building	3911 Central Ave.	47.505021	-111.239344	$812,738
Cascade	GREAT FALLS	DEPARTMENT OF AGRICULTURE	Own - Ag Development/Grain Inspection Laboratory	821 17th St N.	47.514749	-111.277814	$969,265
Cascade	GREAT FALLS	DEPARTMENT OF CORRECTIONS	Leased - Gt. Falls YTC	4212 3rd Avenue S.	47.501380	-111.233797	$63,813
Cascade	GREAT FALLS	DEPARTMENT OF FISH, WILDLIFE & PARKS	Regional HQ Building	4600 Giant Springs Rd	47.531125	-111.231327	$2,531,127
Cascade	GREAT FALLS	DEPARTMENT OF JUSTICE	MHP - Flying J Microwave Tower	Great Falls	47.465056	-111.353361	$24,300
Cascade	GREAT FALLS	DEPARTMENT OF JUSTICE	MHP - Gore Hill Microwave Tower	Great Falls	47.458750	-111.389972	$10,970
Cascade	GREAT FALLS	DEPARTMENT OF TRANSPORTATION	Great Falls Office/Shop	104 18th Avenue NE	47.523512	-111.300399	$2,755,689
Cascade	GREAT FALLS	UNIVERSITY SYSTEM, GREAT FALLS COLLEGE MONTANA STATE UNIVERSITY	Main Building	2100 16th Ave S	47.486180	-111.269686	$53,111,131
Cascade	GREAT FALLS	UNIVERSITY SYSTEM, GREAT FALLS COLLEGE MONTANA STATE UNIVERSITY	Trades Building	2100 16th Ave S	47.485415	-111.271021	$4,392,209
Cascade	GREAT FALLS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	BENEFIS HEALTH CARE	400 15th Ave So Suite 101-7 & 201, GREAT FALLS MT 59405	47.488919	-111.300836	$582,363
Custer	MILES CITY	DEPARTMENT OF ADMINISTRATION	Miles City Data Center (SMDC)	114 S Haynes Avenue	46.406863	-105.820622	$10,872,477
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Academic Training Center	4 North Haynes Avenue	46.408523	-105.822635	$3,406,737
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Housing Unit E	4 North Haynes Avenue	46.408838	-105.821712	$1,104,005
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Main Building/PHYCF	4 North Haynes Avenue	46.408838	-105.821712	$14,560,064
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Physical Training Center	4 North Haynes Avenue	46.408523	-105.822635	$4,835,185
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Spirituality Center	4 North Haynes Avenue	46.408523	-105.822635	$2,113,317
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Warehouse/Maintenance	4 North Haynes Avenue	46.408523	-105.822635	$555,482
Custer	MILES CITY	DEPARTMENT OF FISH, WILDLIFE & PARKS	Regional HQ - Building	352 I-94 Business Loop	46.396689	-105.865550	$2,282,995
Custer	MILES CITY	DEPARTMENT OF MILITARY AFFAIRS	Miles City Armory	2500 Main Street	46.408009	-105.828910	$5,214,479
Custer	MILES CITY	DEPARTMENT OF MILITARY AFFAIRS	Miles City Readiness Center	1020 N Haynes Ave.	46.417707	-105.821563	$12,536,969
Custer	MILES CITY	DEPARTMENT OF TRANSPORTATION	Miles City Office/Shop II	217 N. 4th Street	46.407820	-105.855277	$2,399,029
Custer	MILES CITY	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	KYPR Radio Station/Signals to Butte	3.3 miles E/SE	46.389743	-105.756898	$42,635
Daniels	SCOBEY	DEPARTMENT OF JUSTICE	MHP - Scobey Microwave Tower	4 miles E of Scobey	48.801389	-105.348611	$34,529
Daniels	SCOBEY	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Scobey	48 deg - 48' - 25.1" N, 105 deg - 26' - 32.0" W	48.804972	-105.432029	$2,417
Dawson	GLENDIVE	DEPARTMENT OF CORRECTIONS	Eastmont Cottage 1 Office & Ed	700 E Little St.	47.115316	-104.689806	$1,129,527
Dawson	GLENDIVE	DEPARTMENT OF CORRECTIONS	Eastmont Cottage 3 - Long Term Care Facility	700 E. Little St.	47.115316	-104.689806	$3,324,365
Dawson	GLENDIVE	DEPARTMENT OF CORRECTIONS	Eastmont Garage/Shop	700 E. Little St.	47.115316	-104.689806	$162,865
Dawson	GLENDIVE	DEPARTMENT OF CORRECTIONS	Eastmont Multi-Purpose Building & Addition	700 E. Little St.	47.115316	-104.689806	$1,347,689
Dawson	GLENDIVE	DEPARTMENT OF FISH, WILDLIFE & PARKS	Makoshika SP - Building - Visitor Center	1301 Snyder Ave.	47.089373	-104.706600	$1,042,132
Dawson	GLENDIVE	DEPARTMENT OF JUSTICE	MHP - Highway Patrol, Glendive	76 Highway 16	47.117325	-104.734381	$219,671
Dawson	GLENDIVE	DEPARTMENT OF JUSTICE	MHP-BELLE PRARIE MICROWAVE	207 W BELL ST	47.104843	-104.715349	$272,820
Dawson	GLENDIVE	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Glendive	47 deg - 8' - 1.0" N, 104 deg - 48' - 15.0" W	47.136229	-104.807446	$15,417
Dawson	GLENDIVE	DEPARTMENT OF TRANSPORTATION	Glendive Office/Shop	503 N River Avenue	47.109962	-104.714508	$2,929,679
Dawson	GLENDIVE	PUBLIC HEALTH & HUMAN SERVICES, VETERANS' HOME - GLENDIVE	Eastern Montana Veteran's Home	2000 Montana Avenue	47.128488	-104.688705	$10,541,761

APPENDIX B-7. CRITICAL FACILITIES IN SEVERE WEATHER HAZARD AREA							
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE							
COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Deer Lodge	ANACONDA	DEPARTMENT OF MILITARY AFFAIRS	Anaconda Armory	101 N Polk	46.127011	-112.927450	$1,637,856
Deer Lodge	Warm Spring	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Administrative Annex (113)	58 Garnet Way	46.181458	-112.789927	$2,890,253
Deer Lodge	WARM SPRINGS	DEPARTMENT OF ADMINISTRATION	MT State Hospital	300 Garnet Ave	46.180826	-112.789514	$200,000
Deer Lodge	WARM SPRINGS	DEPARTMENT OF CORRECTIONS	Warm Springs Boiler Plant (Mechanics Garage)	Warm Springs	46.180964	-112.792794	$484,520
Deer Lodge	WARM SPRINGS	DEPARTMENT OF CORRECTIONS	WATCH Warm Springs	201 Orofino Way N	46.180598	-112.789568	$15,648,539
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Doctor's Residence No. 41	65 Mystic Way	46.177297	-112.791036	$110,045
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Doctor's Residence No. 42	51 Mystic Way	46.177377	-112.790737	$91,262
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Duplex No. 13	87 Mystic Way	46.176865	-112.792567	$24,359
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Duplex No. 14	117 Mystic Way	46.176979	-112.793277	$24,359
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Duplex No. 17	171 Mystic Way	46.177451	-112.793754	$24,359
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Duplex No. 18	179 Mystic Way	46.177127	-112.793535	$24,359
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Duplex No. 19	5 Hidden Way	46.177315	-112.793122	$269,838
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Johnson House Group Home	137 MYstic Way	46.177047	-112.792573	$118,355
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Maintenance Office	317 Orofino Way	46.182263	-112.794680	$602,019
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	McColllum House Group Home	30 Garrity Way	46.178149	-112.790175	$232,651
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Mickleberry House	389 Trapper Way	46.181302	-112.796081	$128,035
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	MT Haggin Group Home	45 Hidden Way	46.177248	-112.793598	$269,838
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	NEW HEATING PLANT (107)	203 Trapper Way	46.181081	-112.792484	$2,010,694
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	PINTLAR LODGE (546)	290 Oxbow Way	46.182631	-112.791662	$819,687
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Recovery Center	32 Trapper Way	46.183346	-112.789562	$2,849,427
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Residence D	164 Garrity Way	46.176525	-112.789822	$68,557
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Residence E	191 Garrity Way	46.176330	-112.790190	$84,296
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Residence F	205 Garrity Way	46.176245	-112.790312	$84,296
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	SPRATT BUILDING (219)	351 Fleecer Way	46.182147	-112.790717	$3,630,396
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Theraputic Learning Center	156 Garnet Way	46.180918	-112.789356	$3,914,553
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Warm Springs Facility	100 Garnet Way	46.180918	-112.790329	$34,555,687
Fallon	BAKER	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Baker	101 Airport Road	46.353431	-104.274545	$15,822
Fergus	GARNEILL	DEPARTMENT OF JUSTICE	MHP - Garneill (Pinkim Moved) Microwave Tower	2 miles NE Garneill	46.819917	-109.661361	$58,379
Fergus	LEWISTOWN	DEPARTMENT OF JUSTICE	MHP - South Moccasin (Fergus) Microwave Tower	10 miles NW of Lewistown	47.177917	-109.536111	$23,750
Fergus	LEWISTOWN	DEPARTMENT OF MILITARY AFFAIRS	Lewistown Armory	190 Armory Road	47.045889	-109.451125	$1,002,561
Fergus	LEWISTOWN	DEPARTMENT OF TRANSPORTATION	Lewistown Office and Shop	1620 Airport Road	47.054496	-109.440698	$680,149
Fergus	LEWISTOWN	PUBLIC HEALTH & HUMAN SERVICES, MENTAL HEALTH NURSING CARE CENTER	Main Building & Addition	800 Casino Creek Drive	47.056392	-109.425750	$19,408,341
Fergus	LEWISTOWN	PUBLIC HEALTH & HUMAN SERVICES, MENTAL HEALTH NURSING CARE CENTER	Three-Stall Garage	800 Casino Creek Drive	47.056021	-109.425693	$99,327
Fergus	LEWISTOWN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Lewistown Translator/Transmitter	S. Moccasin Mount, 9.5 miles N.N.W. of town	47.177821	-109.535788	$159,674
Flathead	COLUMBIA FALLS	PUBLIC HEALTH & HUMAN SERVICES, VETERANS' HOME - COLUMBIA FALLS	Nursing Home & Dom &Special Care Unit 69-73-84-02	400 Veterans Dr.	48.364518	-114.210002	$16,638,591
Flathead	COLUMBIA FALLS	PUBLIC HEALTH & HUMAN SERVICES, VETERANS' HOME - COLUMBIA FALLS	Superintendent's Cottage	400 Veterans Dr.	48.364518	-114.210002	$312,832
Flathead	KALISPELL	DEPARTMENT OF FISH, WILDLIFE & PARKS	Lone Pine SP - Building - Visitor Center	300 Lone Pine Rd.	48.172641	-114.346822	$1,401,629
Flathead	KALISPELL	DEPARTMENT OF FISH, WILDLIFE & PARKS	Regional HQ Building	490 N Meridian Rd.	48.203784	-114.330341	$3,859,259
Flathead	KALISPELL	DEPARTMENT OF JUSTICE	MHP - Kalispell Dispatch Microwave Tower	3.5 miles NW of Kalispell	48.235810	-114.350030	$34,559
Flathead	KALISPELL	DEPARTMENT OF JUSTICE	MHP - Kalispell Water Tower Microwave Tower	Kalispell	48.212861	-114.321278	$28,274
Flathead	KALISPELL	DEPARTMENT OF MILITARY AFFAIRS	Kalispell AFRC	2989 Hwy 93 North	48.257366	-114.326732	$10,692,875
Flathead	KALISPELL	DEPARTMENT OF MILITARY AFFAIRS	Kalispell AFRC Fire Pump Building	2989 Hwy 93 North	48.257366	-114.326732	$401,231
Flathead	KALISPELL	DEPARTMENT OF NATURAL RESOURCES	NWLO Fire Cache	655 Timberwolf Parkway, Suite 2	48.235846	-114.351104	$1,708,960
Flathead	KALISPELL	DEPARTMENT OF NATURAL RESOURCES	NWLO Helicopter Hanger	A-8 Ryan Lane	48.179522	-114.308240	$182,336
Flathead	KALISPELL	DEPARTMENT OF TRANSPORTATION	Kalispell Office & Shop	85 5th Avenue EN	48.202252	-114.306689	$2,664,291
Flathead	KALISPELL	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KALISPELL REGIONAL MEDICAL CTR	310 SUNNYVIEW LANE	48.215290	-114.322020	$230,546
Flathead	Kalispell	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Line Pine Site	Kookoosint Trail	48.176083	-114.350056	$46,394
Flathead	KALISPELL	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	NWARC RESIDENCE #1	4570 Montana 35, KALISPELL MT 59901	48.189405	-114.133982	$102,279
Flathead	KALISPELL	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM Kalispell	Lone Pine State Park	48.175685	-114.350372	$50,000
Flathead	KALISPELL		Conrad Mansion Museum	300 Woodland Ave	48.197372	-114.302893	$0
Gallatin	BELGRADE	DEPARTMENT OF MILITARY AFFAIRS	Gallatin Readiness Center	350 Airport Road	45.765173	-111.145621	$9,233,463
Gallatin	BOZEMAN	DEPARTMENT OF AGRICULTURE	Leased - Ag Sciences/Bozeman Laboratory	MSU McCall Hall Rm 10	45.665513	-111.052487	$2,453,013
Gallatin	BOZEMAN	DEPARTMENT OF FISH, WILDLIFE & PARKS	Regional HQ Building	1400 South 19th	45.665507	-111.061773	$2,956,315
Gallatin	BOZEMAN	DEPARTMENT OF LIVESTOCK	Diagnostic Laboratory Bozeman Contents	S. 19th & Lincoln	45.664047	-111.064608	$601,384
Gallatin	BOZEMAN	DEPARTMENT OF TRANSPORTATION	Bozeman Office & Shop	907 N. Rouse	45.688886	-111.031981	$1,667,047
Gallatin	Bozeman	University System, Montana State University	FACILITIES HEAT PLANT GENERATOR BLDG	West Grant Street (no official address)	45.664791	-111.046076	$4,170,986
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Bozeman Translator	113 Sourdough Ridge Road	45.645684	-111.021645	$13,563
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1 GLACIER COURT HOUSE	1 GLACIER COURT	45.669284	-111.057314	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	10 GLACIER COURT HOUSE	10 GLACIER COURT	45.669229	-111.056454	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1002 S. 15TH STREET HOUSE	1002 S. 15TH STREET	45.669114	-111.057423	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1004 S. 15TH STREET HOUSE	1004 S. 15TH STREET	45.668988	-111.057421	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1006 S. 15TH STREET HOUSE	1006 S. 15TH STREET	45.668862	-111.057424	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	101 BRANEGAN COURT TOWNHOUSES	101 BRANEGAN COURT	45.667632	-111.061446	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	101 EAST JULIA MARTIN DRIVE APARTMENTS	101 EAST JULIA MARTIN DRIVE	45.667855	-111.058176	$252,689
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	101 GRANT CHAMBERLAIN DRIVE APARTMENTS	101 GRANT CHAMBERLAIN DRIVE	45.669625	-111.057790	$875,560
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	101 MCINTOSH COURT TOWNHOUSES	101 MCINTOSH COURT	45.670635	-111.061212	$251,250
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	101 PAISLEY COURT FLATS	101 PAISLEY COURT	45.666977	-111.058471	$390,682
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	102 BRANEGAN COURT TOWNHOUSES	102 BRANEGAN COURT	45.668034	-111.061533	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	102 EAST JULIA MARTIN DRIVE APARTMENTS	102 EAST JULIA MARTIN DRIVE	45.667970	-111.058024	$127,017
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	102 GRANT CHAMBERLAIN DRIVE APARTMENTS	102 GRANT CHAMBERLAIN DRIVE	45.670422	-111.057965	$860,580

APPENDIX B-7. CRITICAL FACILITIES IN SEVERE WEATHER HAZARD AREA							
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE							
COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	102 MCINTOSH COURT TOWNHOUSES	102 MCINTOSH COURT	45.670503	-111.061186	$273,536
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	102 PAISLEY COURT FLATS	102 PAISLEY COURT	45.666968	-111.059164	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	103 BRANEGAN COURT TOWNHOUSES	103 BRANEGAN COURT	45.667639	-111.061446	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	103 EAST JULIA MARTIN DRIVE APARTMENTS	103 EAST JULIA MARTIN DRIVE	45.668197	-111.057983	$252,689
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	103 GRANT CHAMBERLAIN DRIVE APARTMENTS	103 GRANT CHAMBERLAIN DRIVE	45.670727	-111.058621	$860,580
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	103 MCINTOSH COURT TOWNHOUSES	103 MCINTOSH COURT	45.670633	-111.061213	$234,028
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	103 PAISLEY COURT FLATS	103 PAISLEY COURT	45.667162	-111.059291	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	104 BRANEGAN COURT TOWNHOUSES	104 BRANEGAN COURT	45.668133	-111.061543	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	104 EAST JULIA MARTIN DRIVE APARTMENTS	104 EAST JULIA MARTIN DRIVE	45.668411	-111.058105	$127,017
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	104 GRANT CHAMBERLAIN DRIVE APARTMENTS	104 GRANT CHAMBERLAIN DRIVE	45.670985	-111.059333	$860,580
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	104 MCINTOSH COURT TOWNHOUSES	104 MCINTOSH COURT	45.670632	-111.061213	$234,028
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	104 PAISLEY COURT FLATS	104 PAISLEY COURT	45.667207	-111.058983	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	105 BRANEGAN COURT TOWNHOUSES	105 BRANEGAN COURT	45.667646	-111.061446	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	105 EAST JULIA MARTIN DRIVE APARTMENTS	105 EAST JULIA MARTIN DRIVE	45.668761	-111.058138	$252,689
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	105 GRANT CHAMBERLAIN DRIVE APARTMENTS	105 GRANT CHAMBERLAIN DRIVE	45.670188	-111.060551	$860,580
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	105 MCINTOSH COURT TOWNHOUSES	105 MCINTOSH COURT	45.670475	-111.061153	$234,028
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	105 PAISLEY COURT FLATS	105 PAISLEY COURT	45.667098	-111.060195	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	106 BRANEGAN COURT TOWNHOUSES	106 BRANEGAN COURT	45.668137	-111.061542	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	106 EAST JULIA MARTIN DRIVE APARTMENTS	106 EAST JULIA MARTIN DRIVE	45.668842	-111.058249	$127,017
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	106 GRANT CHAMBERLAIN DRIVE APARTMENTS	106 GRANT CHAMBERLAIN DRIVE	45.670970	-111.059383	$860,580
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	106 MCINTOSH COURT TOWNHOUSES	106 MCINTOSH COURT	45.670631	-111.061213	$234,028
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	106 PAISLEY COURT FLATS	106 PAISLEY COURT	45.666977	-111.060383	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	107 BRANEGAN COURT TOWNHOUSES	107 BRANEGAN COURT	45.667653	-111.061446	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	107 EAST JULIA MARTIN DRIVE APARTMENTS	107 EAST JULIA MARTIN DRIVE	45.668839	-111.058458	$252,689
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	107 MCINTOSH COURT TOWNHOUSES	107 MCINTOSH COURT	45.670601	-111.061203	$273,536
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	107 PAISLEY COURT FLATS	107 PAISLEY COURT	45.666977	-111.061071	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	108 BRANEGAN COURT TOWNHOUSES	108 BRANEGAN COURT	45.667938	-111.061560	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	108 EAST JULIA MARTIN DRIVE APARTMENTS	108 EAST JULIA MARTIN DRIVE	45.668697	-111.058600	$252,689
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	108 MCINTOSH COURT TOWNHOUSES	108 MCINTOSH COURT	45.670472	-111.061155	$273,536
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	108 PAISLEY COURT FLATS	108 PAISLEY COURT	45.667179	-111.061112	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	109 EAST JULIA MARTIN DRIVE APARTMENTS	109 EAST JULIA MARTIN DRIVE	45.668593	-111.058561	$127,017
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	109 MCINTOSH COURT TOWNHOUSES	109 MCINTOSH COURT	45.670628	-111.061213	$234,028
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	109 PAISLEY COURT FLATS	109 PAISLEY COURT	45.667216	-111.060810	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	11 GLACIER COURT HOUSE	11 GLACIER COURT	45.669284	-111.056531	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	110 EAST JULIA MARTIN DRIVE APARTMENTS	110 EAST JULIA MARTIN DRIVE	45.668332	-111.058129	$127,017
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1102 S 6th Avenue	1102 SO 6th	45.668007	-111.045332	$814,928
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	111 EAST JULIA MARTIN DRIVE APARTMENTS	111 EAST JULIA MARTIN DRIVE	45.668480	-111.060040	$127,017
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	112 WEST JULIA MARTIN DRIVE APARTMENTS	112 EAST JULIA MARTIN DRIVE	45.668680	-111.059874	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	113 WEST JULIA MARTIN DRIVE APARTMENTS	113 EAST JULIA MARTIN DRIVE	45.668815	-111.059972	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	114 WEST JULIA MARTIN DRIVE APARTMENTS	114 EAST JULIA MARTIN DRIVE	45.668854	-111.060092	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	115 WEST JULIA MARTIN DRIVE APARTMENTS	115 EAST JULIA MARTIN DRIVE	45.668844	-111.060420	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	116 WEST JULIA MARTIN DRIVE APARTMENTS	116 EAST JULIA MARTIN DRIVE	45.668816	-111.060530	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	117 WEST JULIA MARTIN DRIVE APARTMENTS	117 EAST JULIA MARTIN DRIVE	45.668591	-111.060559	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	118 WEST JULIA MARTIN DRIVE APARTMENTS	118 EAST JULIA MARTIN DRIVE	45.668214	-111.060303	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	119 WEST JULIA MARTIN DRIVE APARTMENTS	119 EAST JULIA MARTIN DRIVE	45.667755	-111.060302	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	12 GLACIER COURT HOUSE	12 GLACIER COURT	45.669226	-111.056292	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1209 FOX STREET HOUSE	1209 FOX STREET	45.668258	-111.055244	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1209 GOPHER STREET HOUSE	1209 GOPHER STREET	45.667779	-111.055834	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1210 FOX STREET HOUSE	1210 FOX STREET	45.668199	-111.055302	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1210 S. 15TH STREET HOUSE	1210 S. 15TH STREET	45.668466	-111.057422	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1211 FOX STREET HOUSE	1211 FOX STREET	45.668256	-111.055410	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1212 FOX STREET HOUSE	1212 FOX STREET	45.668203	-111.055464	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1212 S. 15TH STREET HOUSE	1212 S. 15TH STREET	45.668358	-111.057422	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1213 GOPHER STREET HOUSE	1213 GOPHER STREET	45.667779	-111.055831	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1214 S. 15TH STREET HOUSE	1214 S. 15TH STREET	45.668250	-111.057422	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1223 GOPHER STREET HOUSE	1223 GOPHER STREET	45.667693	-111.055816	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1225 GOPHER STREET HOUSE	1225 GOPHER STREET	45.667691	-111.055816	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	13 GLACIER COURT HOUSE	13 GLACIER COURT	45.669285	-111.056373	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1401 W. GARFIELD STREET HOUSE	1401 W. GARFIELD STREET	45.667583	-111.056333	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1402 FOX STREET HOUSE	1402 FOX STREET	45.668202	-111.055793	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1403 FOX STREET HOUSE	1403 FOX STREET	45.668256	-111.055973	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1403 W. GARFIELD STREET HOUSE	1403 W. GARFIELD STREET	45.667583	-111.057093	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1404 FOX STREET HOUSE	1404 FOX STREET	45.668199	-111.055982	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1405 FOX STREET HOUSE	1405 FOX STREET	45.668255	-111.056130	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1406 FOX STREET HOUSE	1406 FOX STREET	45.668202	-111.056130	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1407 FOX STREET HOUSE	1407 FOX STREET	45.668256	-111.056283	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1408 FOX STREET HOUSE	1408 FOX STREET	45.668200	-111.056283	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1409 FOX STREET HOUSE	1409 FOX STREET	45.668255	-111.056441	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1410 FOX STREET HOUSE	1410 FOX STREET	45.668203	-111.056472	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1412 FOX STREET HOUSE	1412 FOX STREET	45.667916	-111.056682	$28,413

APPENDIX B-7. CRITICAL FACILITIES IN SEVERE WEATHER HAZARD AREA							
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE							
COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1413 FOX STREET HOUSE	1413 FOX STREET	45.668167	-111.056774	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1414 FOX STREET HOUSE	1414 FOX STREET	45.667799	-111.056683	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1415 FOX STREET HOUSE	1415 FOX STREET	45.668154	-111.056774	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1417 FOX STREET HOUSE	1417 FOX STREET	45.668142	-111.056775	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1419 FOX STREET HOUSE	1419 FOX STREET	45.668134	-111.056749	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1421 FOX STREET HOUSE	1421 FOX STREET	45.668026	-111.056762	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	1425 FOX STREET HOUSE	1425 FOX STREET	45.667810	-111.056763	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	18 GLACIER COURT HOUSE	18 GLACIER COURT	45.669226	-111.055770	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	2 GLACIER COURT HOUSE	2 GLACIER COURT	45.669226	-111.057084	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	20 GLACIER COURT HOUSE	20 GLACIER COURT	45.668988	-111.055619	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	21 GLACIER COURT HOUSE	21 GLACIER COURT	45.669284	-111.055743	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	22 GLACIER COURT HOUSE	22 GLACIER COURT	45.668802	-111.055638	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	23 GLACIER COURT HOUSE	23 GLACIER COURT	45.669284	-111.055650	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	25 GLACIER COURT HOUSE	25 GLACIER COURT	45.669206	-111.055541	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	26 GLACIER COURT HOUSE	26 GLACIER COURT	45.668466	-111.055619	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	27 GLACIER COURT HOUSE	27 GLACIER COURT	45.669168	-111.055541	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	29 GLACIER COURT HOUSE	29 GLACIER COURT	45.669042	-111.055544	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	3 GLACIER COURT HOUSE	3 GLACIER COURT	45.669280	-111.057084	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	31 GLACIER COURT HOUSE	31 GLACIER COURT	45.668925	-111.055542	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	33 GLACIER COURT HOUSE	33 GLACIER COURT	45.668790	-111.055544	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	35 GLACIER COURT HOUSE	35 GLACIER COURT	45.668682	-111.055544	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	37 GLACIER COURT HOUSE	37 GLACIER COURT	45.668565	-111.055545	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	39 GLACIER COURT HOUSE	39 GLACIER COURT	45.668457	-111.055543	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	4 GLACIER COURT HOUSE	4 GLACIER COURT	45.669229	-111.056931	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	40 GLACIER COURT HOUSE	40 GLACIER COURT	45.668722	-111.057084	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	41 GLACIER COURT HOUSE	41 GLACIER COURT	45.668771	-111.057084	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	42 GLACIER COURT HOUSE	42 GLACIER COURT	45.668716	-111.056922	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	43 GLACIER COURT HOUSE	43 GLACIER COURT	45.668777	-111.056931	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	44 GLACIER COURT HOUSE	44 GLACIER COURT	45.668722	-111.056760	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	45 GLACIER COURT HOUSE	45 GLACIER COURT	45.668771	-111.056760	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	46 GLACIER COURT HOUSE	46 GLACIER COURT	45.668716	-111.056612	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	47 GLACIER COURT HOUSE	47 GLACIER COURT	45.668777	-111.056612	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	48 GLACIER COURT HOUSE	48 GLACIER COURT	45.668716	-111.056454	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	49 GLACIER COURT HOUSE	49 GLACIER COURT	45.668777	-111.056454	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	5 GLACIER COURT HOUSE	5 GLACIER COURT	45.669284	-111.057003	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	50 GLACIER COURT HOUSE	50 GLACIER COURT	45.668722	-111.056292	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	51 GLACIER COURT HOUSE	51 GLACIER COURT	45.668771	-111.056292	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	52 GLACIER COURT HOUSE	52 GLACIER COURT	45.668716	-111.056121	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	53 GLACIER COURT HOUSE	53 GLACIER COURT	45.668777	-111.056130	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	54 GLACIER COURT HOUSE	54 GLACIER COURT	45.668722	-111.055973	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	55 GLACIER COURT HOUSE	55 GLACIER COURT	45.668771	-111.055973	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	8 GLACIER COURT HOUSE	8 GLACIER COURT	45.669229	-111.056603	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	9 GLACIER COURT HOUSE	9 GLACIER COURT	45.669284	-111.056693	$28,413
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	AJM JOHNSON HALL	Grant Street (no official address)	45.665912	-111.048425	$13,243,722
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	ANIMAL BIOSCIENCE BUILDING	South 11th Avenue (no official address)	45.669306	-111.053338	$15,459,877
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	ATKINSON QUADRANGLE RESIDENCE HALL A	West Cleveland (no official address)	45.669452	-111.046337	$1,216,151
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Atkinson Quadrangle Residence Hall B	West Cleveland (no official address)	45.669618	-111.046291	$1,216,151
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Atkinson Quadrangle Residence Hall C	West Cleveland (no official address)	45.669861	-111.046153	$1,335,133
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Atkinson Quadrangle Residence Hall D	West Cleveland (no official address)	45.669859	-111.045941	$1,335,133
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Atkinson Quadrangle Residence Hall E	West Cleveland (no official address)	45.669613	-111.045813	$1,221,736
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Atkinson Quadrangle Residence Hall F	West Cleveland (no official address)	45.669446	-111.045774	$132,384
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	BRICK BREEDEN FIELDHOUSE	South11th Avenue (no official address)	45.663295	-111.050620	$40,214,704
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	CFT BUILDING #4	2310 UNIVERSITY WAY BUILDING 4	45.656086	-111.047558	$418,311
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	CHEMISTRY BIOCHEMISTRY BLDG	South 11th Avenue (no official address)	45.669071	-111.050102	$40,367,656
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	COBLEIGH HALL	South 7th Avenue (no official address)	45.666561	-111.045997	$35,803,820
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	COOLEY LABORATORY	South 11th Avenue (no official address)	45.667691	-111.051449	$13,700,546
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Facilities Propane Tank System	West Grant Street (no official address)	45.664259	-111.045708	$500,115
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	GAINES HALL	Grant Street (no official address)	45.665550	-111.050494	$33,262,789
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Gallatin Hall	West Garfield (no official address)	45.667135	-111.055227	$7,974,141
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	GIRVIN FARM RESIDENCE	5515 Stucky Road	45.656655	-111.073280	$203,742
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	HAMILTON HALL	South 7th Avenue (no official address)	45.667567	-111.047909	$8,359,251
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	HANNON RESIDENCE HALL	South 7th Avenue (no official address)	45.668524	-111.046023	$15,681,441
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	HAPNER RESIDENCE HALL	West Cleveland (no official address)	45.669677	-111.047333	$17,564,504
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Jefferson Hall	West Garfield (no official address)	45.666465	-111.055877	$3,945,013
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	JOHNSON FAMILY LIVESTOCK (BLS2)	West of South 19th Avenue & Lincoln Street	45.664597	-111.065760	$4,843,284
Gallatin	Bozeman	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Johnstone Center Residence Hall	West Harrison St.	45.670575	-111.049107	$24,657,938
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	JUTILA RESEARCH LAB (BSL3)	West of South 19th & Lincoln Street	45.664772	-111.064626	$3,223,423
Gallatin	Bozeman	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Green Mountain	Stublar Road	45.673151	-110.867386	$1,022,911
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	LANGFORD RESIDENCE HALL	West Harrison Street (no official address)	45.670691	-111.050447	$18,703,223
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	LEON JOHNSON HALL	West Arthur St (northwest of Montana Hall)	45.667700	-111.050174	$44,923,560

APPENDIX B-7. CRITICAL FACILITIES IN SEVERE WEATHER HAZARD AREA
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	LEWIS HALL	West Garfield Street (no official address)	45.667606	-111.050916	$14,917,403
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	LINFIELD HALL	South 11th Avenue (no official address)	45.668506	-111.051427	$14,441,446
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	LOUISE SHUNK DAYCARE AND COMMUNITY CENTER	1295 West Garfield	45.667625	-111.055037	$1,014,542
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Madison Hall	West Garfield (no official address)	45.666235	-111.055247	$3,945,013
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	MARSH LAB MODULAR # 1	1922 WEST LINCOLN STREET	45.664195	-111.065320	$451,157
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	MARSH LAB MODULAR # 2	1922 WEST LINCOLN STREET	45.664457	-111.065263	$623,605
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	MARSH LABORATORY	1911 WEST LINCOLN STREET	45.664332	-111.064539	$15,458,238
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	MCCALL HALL	South11th Avenue (no official address)	45.665578	-111.052481	$3,871,939
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	MILLER DINING HALL	West Grant Street (no official address)	45.666059	-111.054204	$13,041,785
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	MOLECULAR BEAM FACILITY	Kagy Boulevard (no official address)	45.660660	-111.044486	$707,191
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	MONTANA HALL	West Garfield (no official address)	45.667536	-111.049347	$14,931,556
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	MUSEUM OF THE ROCKIES	600 KAGY BOULEVARD	45.658779	-111.045554	$30,640,855
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	NELSON STORY TOWER APARTMENTS	101 Nelson Story	45.667877	-111.058588	$6,852,764
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	NORTH HEDGES RESIDENCE HALL	West Grant Street (no official address)	45.666642	-111.054384	$23,965,828
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	PETER KOCH TOWER APARTMENTS	101 Peter Koch Street	45.667987	-111.059452	$6,852,764
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	PLANT BIOSCIENCE BUILDING	South 11th Avenue (no official address)	45.668912	-111.052580	$17,015,551
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	PLANT GROWTH CENTER	South 11th Avenue (no official address)	45.668254	-111.053250	$25,025,135
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	PLEW BUILDING	West Grant Street (no official address)	45.664961	-111.044873	$3,362,710
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	REID HALL	West Garfield Street (no official address)	45.666785	-111.050012	$29,586,240
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	RENNE LIBRARY	West Garfield Street (no official address)	45.666692	-111.048743	$130,473,324
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	ROBERTS HALL	West Garfield Street (no official address)	45.666868	-111.046069	$21,985,943
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	ROSKIE RESIDENCE HALL	West Grant Street (no official address)	45.665150	-111.054515	$17,225,901
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	SAFETY RISK MGMT NOPPER BLDG LEASED	1160 Research Drive	45.668001	-111.065854	$2,083,472
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	SOUTH HEDGES RESIDENCE HALL	West Grant Street (no official address)	45.665579	-111.053771	$22,912,438
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	STRAND UNION BUILDING	West Grant Street (no official address)	45.666395	-111.047642	$64,518,749
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	SWINGLE HEALTH CENTER	South 7th Avenue (no official address)	45.666473	-111.046987	$7,088,192
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	TAYLOR HALL	South 11th Avenue (no official address)	45.667926	-111.051630	$3,223,748
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	TIETZ HALL	East of South 11th Avenue (no official address)	45.667961	-111.050928	$5,342,243
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	TINSELY HOMESTEAD	600 KAGY BOULEVARD	45.660266	-111.045295	$437,559
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	TRAPHAGEN HALL	West of South 11th Avenue (no official address)	45.666507	-111.050432	$11,816,599
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	VISUAL COMMUNICATIONS BUILDING	West Grant (no official address)	45.665648	-111.051535	$20,305,396
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	WILSON HALL	West Garfield Street (no official address)	45.668251	-111.048383	$28,642,840
Gallatin	Bozeman	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	Yellowstone Hall	South 15th Avenue	45.665616	-111.055956	$4,676,632
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	Lutz Farm Residence	McGuire Creek Road	45.813464	-111.055349	$153,136
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MSU, EXTENSION SERVICE	Cheever Hall	MSU-Bozeman Campus	45.666899	-111.053000	$7,905
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MSU, EXTENSION SERVICE	Romney Gym (5104 owner)	MSU-Bozeman Campus	45.665418	-111.049449	$11,457
Gallatin	WEST YELLOWSTONE	DEPARTMENT OF TRANSPORTATION	Airport CFR Building 1	625 Yellowstone Airport Road	44.687812	-111.114151	$506,619
Gallatin	WEST YELLOWSTONE	DEPARTMENT OF TRANSPORTATION	Airport CFR Building 2	721 Yellowstone Airport Road	44.688084	-111.113856	$0
Gallatin	WEST YELLOWSTONE	DEPARTMENT OF TRANSPORTATION	Airport Terminal, Administration Bldg	721 Yellowstone Airport Road	44.686661	-111.114568	$1,957,658
Gallatin	WEST YELLOWSTONE	DEPARTMENT OF TRANSPORTATION	Airport WYS - NDB shack	721 Yellowstone Airport Road	44.689140	-111.110796	$135,417
Gallatin	WEST YELLOWSTONE	DEPARTMENT OF TRANSPORTATION	Airport WYS Generator Shack	721 Yellowstone Airport Road	44.689220	-111.110781	$38,461
Garfield	JORDAN	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Jordan	47 deg - 20' - 0.0" N, 106 deg - 56' - 15.0" W	47.326386	-106.951887	$2,417
Glacier	CUT BANK	DEPARTMENT OF JUSTICE	MHP - Santa Rita Glacier County Microwave Tower	8 miles N of Santa Rita	48.791450	-112.309961	$102,260
Glacier	CUT BANK	PUBLIC HEALTH & HUMAN SERVICES	Cut Bank - UA (Glacier) CFS	1210 E Main	48.629116	-112.315457	$32,554
Glacier	CUT BANK	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Cut Bank Translator	Tank Hill, 1/2 mile S.E. of Mem. Hospital	48.626647	-112.319637	$10,000
Hill	HAVRE	DEPARTMENT OF JUSTICE	MHP - Hill County Sheriff's Office Microwave Tower	1.5 miles W of Havre	48.552444	-109.706833	$91,086
Hill	HAVRE	DEPARTMENT OF JUSTICE	MHP #1 Mountain Tower	Section 23, Township 30 North, Range 15 Feet	48.339299	-109.743843	$20,000
Hill	HAVRE	DEPARTMENT OF MILITARY AFFAIRS	Havre Armory	1050 2nd St West	48.552845	-109.702729	$1,789,809
Hill	HAVRE	DEPARTMENT OF MILITARY AFFAIRS	Havre Armory Annex	1050 2nd St West	48.552845	-109.702729	$575,843
Hill	HAVRE	DEPARTMENT OF MILITARY AFFAIRS	Havre Readiness Center (add to Havre Armory)	1050 2nd St W	48.553021	-109.702768	$1,702,596
Hill	HAVRE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Havre, MT Translator	800 Wilson Ave	48.548180	-109.703845	$16,031
Hill	HAVRE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	Food Service	MSU-Northern- 1150-B SUB Drive	48.542138	-109.686046	$3,638,477
Hill	HAVRE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	Gymnasium	MSU-Northern 100 College Road West	48.540881	-109.688600	$9,719,306
Hill	HAVRE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	Library Building	MSU-Northern 180 College Road West	48.541476	-109.687683	$11,258,592
Hill	HAVRE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	MacKenzie Hall	1200 Buttrey Drive South	48.541090	-109.683136	$8,199,512
Hill	HAVRE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	Morgan Hall	MSU-Northern - 1110 Buttrey Drive	48.542428	-109.682658	$6,849,812
Hill	HAVRE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	PHYSICAL PLANT BUILDING - HAVRE	MSU-Northern - 300 13th Street West	48.539362	-109.690869	$644,218
Hill	HAVRE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	Student & Family Housing 1210	1210 Bonine Drive	48.541569	-109.679842	$531,374
Hill	HAVRE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	Student & Family Housing 1215	1215 Bonine Drive	48.540916	-109.679947	$624,510
Hill	HAVRE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	Student & Family Housing 1220	1220 Bonine Drive	48.541675	-109.680002	$295,207
Hill	HAVRE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	Student & Family Housing 1225	1225 Bonine Drive	48.541649	-109.679457	$624,510
Hill	HAVRE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	Student & Family Housing 1230	1230 Bonine Drive	48.541559	-109.680666	$898,846
Hill	HAVRE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - NORTHERN	Student Union	MSU-Northern 1150 - A SUB Drive	48.541954	-109.685398	$4,774,744
Hill	HAVRE	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	NARC Residences/Lab (Apt 1-9) & Thackery House	Star Route 36, Box 43	48.498126	-109.795794	$3,177,555
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS	Repair/Fuel/Garage (addition to #44)	2 Riverside Rd.	46.226144	-112.116849	$270,113
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	Administration/Education	2 Riverside Rd.	46.226144	-112.116849	$1,266,829
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	Housing Unit 14	2 Riverside Rd.	46.226144	-112.116849	$1,440,858
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	Industries/Maintenance Building	2 Riverside Rd.	46.226144	-112.116849	$1,306,877
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	Programs Building #15	2 Riverside Rd	46.225334	-112.117584	$1,278,103
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	Pump House South of River	2 Riverside Rd.	46.226144	-112.116849	$50,018

APPENDIX B-7. CRITICAL FACILITIES IN SEVERE WEATHER HAZARD AREA							
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE							
COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Lake	BIG ARM	DEPARTMENT OF JUSTICE	MHP - Jette Lake County Microwave Tower	2 miles SE of Big Arm	47.773469	-114.268865	$58,064
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Elrod Laboratory, Yellowbay	32125 Bio Station Lane	47.876726	-114.032857	$3,349,455
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Fire House	32125 Bio Station Lane	47.876726	-114.033192	$67,836
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Fresh Water Research Lab	32125 Bio Station Lane	47.876648	-114.033802	$1,997,757
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM Polson	Jette Mountain	47.773613	-114.269253	$50,000
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lakeside Laboratory	32125 Bio Station Lane	47.876689	-114.033799	$2,144,229
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lift Station 1	32125 Bio Station Lane	47.876726	-114.033192	$56,153
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lift Station 2	32125 Bio Station Lane	47.876726	-114.033192	$63,261
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Museum	32125 Bio Station Lane	47.876726	-114.033192	$46,343
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Prescott Center Cafeteria	32125 Bio Station Lane	47.876719	-114.034417	$1,557,278
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Prescott Center Dormitory	32125 Bio Station Lane	47.876726	-114.033192	$1,083,335
Lake	POLSON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Waste Water Treatment Plant	32125 Bio Station Lane	47.876726	-114.033192	$918,078
Lewis & Clark	FORT HARRISON	DEPARTMENT OF MILITARY AFFAIRS	DES Mobile Command Post Storage	1956 MT Majo Street	46.617266	-112.097334	$241,190
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Aviation & Support Facility-Office	2800 Airport Rd	46.602472	-111.990780	$3,206,080
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Aviation & Support Facility-Shop	2800 Airport Rd	46.602472	-111.990780	$3,381,386
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Board of Health	1301 Lockey	46.584698	-112.017698	$852,908
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Boiler Plant	120 N Roberts	46.585721	-112.016944	$2,850,805
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Capitol Annex	118 N Roberts	46.585471	-112.017104	$258,219
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Capitol Building	1301 E 6th	46.585765	-112.018171	$145,098,564
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Cogswell Building	1401 Lockey	46.584539	-112.015633	$23,751,374
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Colonial Drive Building	2401 Colonial Drive	46.587782	-111.996723	$255,000
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Comm Political Practices	1205 8th	46.587490	-112.019692	$354,428
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Dianne Bldg.	1218 6th Ave.	46.586960	-112.019359	$1,069,717
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	DPHHS Headquarters Building	111 N Sanders	46.585625	-112.014048	$10,694,849
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	FWP-1420 6TH AVE	1420 E 6th	46.587064	-112.015239	$4,292,590
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Generator Building (ITSD)	125 N Roberts	46.585266	-112.015823	$582,737
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Helena Data Center (SMDC) behind MDT	490 18th Street	46.587000	-111.992000	$22,598,839
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Justice Building	215 N Sanders	46.586202	-112.013979	$26,121,372
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Labor & Industry (Walt Sullivan)	1315 Lockey	46.584727	-112.017053	$11,538,734
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	MDT Helena HQ Building (PBX) ONLY	2701 Prospect Avenue	46.589000	-111.993000	$1,000,000
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Metcalf Building	1520 E 6th	46.587447	-112.013864	$20,468,873
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Mitchell Building	125 N Roberts	46.585439	-112.015487	$32,876,695
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Old Livestock Building	1310 Lockey	46.585181	-112.017117	$1,319,367
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	OPI Building	1227 11th Avenue	46.589415	-112.018798	$4,131,282
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Scott Hart Building	302 N Roberts	46.587114	-112.016886	$16,805,048
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Sec. of State Records Mgmt Bureau Bldg 1	1320 Bozeman	46.600000	-112.017000	$2,382,853
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Sec. of State Records Mgmt Bureau Bldg 2	1320 Bozeman	46.600000	-112.017000	$1,065,908
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Tax Appeal Board (was) - 1209 8TH	1209 8th	46.587511	-112.019465	$407,134
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Teachers Retirement	1500 E 6th	46.587064	-112.014359	$1,337,054
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Veterans & Pioneers Memorial Bldg.	225 N Roberts	46.586335	-112.015826	$19,073,783
Lewis & Clark	HELENA	DEPARTMENT OF AGRICULTURE	Ag/Livestock Bldg.- Helena	302 N Roberts	46.587466	-112.016611	$324,717
Lewis & Clark	HELENA	DEPARTMENT OF AGRICULTURE	Leased - Ag Development/Ag Stats	10 West 15th Street	46.596863	-112.034572	$7,683
Lewis & Clark	HELENA	DEPARTMENT OF COMMERCE	PERD Building, Leased to Justice Legal Services	1712 9th Avenue	46.589049	-112.010593	$1,442,106
Lewis & Clark	HELENA	DEPARTMENT OF FISH, WILDLIFE & PARKS	Hangar No. 5 Helena Regional Airport	Airport Road	46.602518	-111.991730	$124,003
Lewis & Clark	HELENA	DEPARTMENT OF FISH, WILDLIFE & PARKS	Hanger No. 6 Helena Regional Airport	Airport Road	46.602557	-111.991469	$223,204
Lewis & Clark	HELENA	DEPARTMENT OF FISH, WILDLIFE & PARKS	Regional HQ - Building - D of A	1420 East 6th Ave.	46.586827	-112.015611	$1,026,799
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	ITSD - HAFRC DOJ FUSION Center	1956 Mt. Majo St / Fort Harrison	46.621104	-112.095883	$3,032,134
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MHP - Comm Center, Helena	1900 WILLIAMS ST	46.620868	-112.095871	$490,148
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MHP - Fort Harris Microwave Tower	Helena	46.617734	-112.097098	$26,970
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MHP - Hangar, Helena	27 AIRPORT RD (HANGAR B)	46.602493	-111.992801	$206,301
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MHP/GCD Helena	2550 Prospect	46.592021	-111.993495	$1,427,708
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Aspen Cottage	2260 Sierra Rd. East	46.661992	-111.976799	$588,381
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Cafeteria	2260 Sierra Rd. East	46.662438	-111.974988	$647,819
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Clinic Building	2260 Sierra Rd. East	46.660804	-111.974898	$219,692
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Cottonwood Cottage	2260 Sierra Rd. East	46.661897	-111.973486	$690,318
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Gymnasium	2260 Sierra Rd. East	46.662120	-111.974074	$655,664
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Maple Cottage No. 2	2260 Sierra Rd. East	46.662523	-111.973780	$2,190,662
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Pump House	2260 Sierra Rd. East	46.662778	-111.976659	$72,092
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - School Building & Administration	2260 Sierra Rd. East	46.662789	-111.974864	$2,183,940
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Spruce Cottage	2260 Sierra Rd. East	46.661663	-111.977557	$1,781,371
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Water Tank & Tower	2260 Sierra Rd. East	46.662587	-111.976984	$389,651
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA Training Facility	2260 SIERRA ROAD EAST	46.662630	-111.975715	$3,774,231
Lewis & Clark	HELENA	DEPARTMENT OF LABOR & INDUSTRY	BSD Weights & Measures	2801 N. Cooke	46.611985	-112.019309	$597,815
Lewis & Clark	HELENA	DEPARTMENT OF LABOR & INDUSTRY	Helena UI Phone Claims	100 N. Park	46.589846	-112.040727	$382,824
Lewis & Clark	HELENA	DEPARTMENT OF MILITARY AFFAIRS	Helena 1049th Armory	2199 Williams Street	46.630593	-112.094803	$330,083
Lewis & Clark	HELENA	DEPARTMENT OF MILITARY AFFAIRS	Helena OMS	2177 Williams Street	46.617017	-112.097335	$2,093,317
Lewis & Clark	HELENA	DEPARTMENT OF MILITARY AFFAIRS	Womack Armory	Womack Bldg, Ft Harrison	46.618000	-112.097000	$3,145,595
Lewis & Clark	HELENA	DEPARTMENT OF REVENUE	Mitchell Building (includes special equipment)	125 N Roberts	46.585471	-112.016024	$180,430
Lewis & Clark	HELENA	DEPARTMENT OF REVENUE	New Liquor Warehouse	2517 Airport Road	46.602000	-111.998000	$22,073,687
Lewis & Clark	HELENA	DEPARTMENT OF TRANSPORTATION	Aeronautics Helena Operation Building	2630 Airport Road	46.602105	-111.992953	$1,520,713

APPENDIX B-7. CRITICAL FACILITIES IN SEVERE WEATHER HAZARD AREA							
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE							
COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Lewis & Clark	HELENA	DEPARTMENT OF TRANSPORTATION	Aeronautics Shop	2630 Airport Road	46.602387	-111.994023	$362,665
Lewis & Clark	HELENA	DEPARTMENT OF TRANSPORTATION	Helena Hanger Helena Airport	2630 Airport Road	46.602470	-111.992150	$421,607
Lewis & Clark	HELENA	DEPARTMENT OF TRANSPORTATION	Helena HQ Office Complex	2701 Prospect Avenue	46.588447	-111.991967	$37,694,257
Lewis & Clark	HELENA	MONTANA HISTORICAL SOCIETY	Montana Historical Society	225 N Roberts	46.586348	-112.016522	$3,255,358
Lewis & Clark	HELENA	MONTANA STATE LIBRARY	Helena Data Center	490 18th St.	46.589058	-111.988789	$163,567
Lewis & Clark	HELENA	MONTANA STATE LIBRARY	Montana State Library (Justice Building)	1515 E. 6th Avenue	46.586435	-112.014015	$2,007,988
Lewis & Clark	HELENA	PUBLIC EMPLOYEES RETIREMENT DIVISION	IBM Building	100 N. Park, Ste 200	46.588918	-112.040591	$13,578,758
Lewis & Clark	HELENA	SECRETARY OF STATE	Records Management Center Warehouse	1320 Bozeman St	46.600094	-112.017841	$10,000
Lewis & Clark	HELENA	STATE FUND	Montana State Fund Building	855 Front Street	46.596000	-112.035346	$38,102,581
Lewis & Clark	HELENA	UNIVERSITY SYSTEM, HELENA COLLEGE UNIVERSITY OF MONTANA	Donaldson Building	1115 North Roberts	46.595411	-112.015731	$22,399,358
Lewis & Clark	HELENA	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV TRANSMITTER SITE-BELMONT MOUNTAIN	BLOSSBURG ROAD	46.748476	-112.330991	$125,625
Lewis & Clark	Helena	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Helena North Hill	No Creek Ct.	46.769639	-112.024417	$156,278
Lewis & Clark	HELENA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM Helena (N. Hills)	N. Hills Seiban Ranch	46.769741	-112.024019	$50,000
Lewis & Clark	HELENA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Montana Natural Heritage Program	1515 East Sixth Ave.	46.586777	-112.013884	$13,905
Lewis & Clark	WOLF CREEK	DEPARTMENT OF JUSTICE	MHP - Wirth Ranch Microwave Tower	1.5 miles W of Wolf Creek	47.001183	-112.103458	$34,526
Lewis & Clark	Wolf Creek Road	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Wirth	Wirth Drive	47.002350	-112.106964	$84,604
Liberty	CHESTER	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Chester	Liberty County Airport	48.510161	-110.979316	$2,822
Liberty	CHESTER	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Chester MT Translator	Royal Mountain	48.854747	-111.140968	$112,709
Liberty	WHITLASH	DEPARTMENT OF JUSTICE	MHP - Mt Royal (leased by MDT) Microwave Tower	7 miles SE of Whitlash	48.854637	-111.138762	$88,223
Lincoln	EUREKA	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Eureka	48 deg - 58' - 13.9" N, 115 deg - 5' - 3.6" W	48.919218	-115.086543	$2,417
McCone	CIRCLE	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Circle	101 Airport Road	47.421359	-105.561354	$2,417
McCone	FORT PECK	DEPARTMENT OF JUSTICE	MHP - Deadman McCone Cnty Microwave Tower	8 miles NE of Fort Peck	48.030610	-106.314800	$43,943
McCone	Wolf Point	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - Billings	Wolf Point Translator		48.035323	-105.520662	$95,000
Missoula	MISSOULA	DEPARTMENT OF ADMINISTRATION	Palmer Complex PBX only	2681 Palmer St	46.884835	-114.030708	$500,000
Missoula	MISSOULA	DEPARTMENT OF CORRECTIONS	Missoula Assessment and Sanction	2340 Mullan Road	46.881933	-114.027825	$48,364
Missoula	MISSOULA	DEPARTMENT OF FISH, WILDLIFE & PARKS	Missoula Airport Hanger - Building	1 Corporate Way	46.912998	-114.079782	$10,261
Missoula	MISSOULA	DEPARTMENT OF FISH, WILDLIFE & PARKS	Regional HQ - Building	3201 Spurgin Road	46.859646	-114.036892	$2,664,834
Missoula	MISSOULA	DEPARTMENT OF JUSTICE	FSD - Forensics, Missoula	2679 Palmer Street	46.884865	-114.029732	$11,394,653
Missoula	MISSOULA	DEPARTMENT OF MILITARY AFFAIRS	Missoula Armed Forces Reserve Center	9383 Running West Road	46.960808	-114.129939	$15,028,199
Missoula	MISSOULA	DEPARTMENT OF NATURAL RESOURCES	FORESTRY DIVISION HEADQUARTERS BUILDING A	2705 Spurgin Road	46.858906	-114.059335	$2,948,198
Missoula	MISSOULA	DEPARTMENT OF NATURAL RESOURCES	Missoula Helicopter Hanger	3150 Maverick Lane	46.856057	-114.057547	$152,443
Missoula	MISSOULA	DEPARTMENT OF NATURAL RESOURCES	Missoula Unit Fire Cache	3206 Maverick Lane	46.859405	-114.063549	$18,684
Missoula	MISSOULA	DEPARTMENT OF NATURAL RESOURCES	Missoula Unit Office	3206 Maverick Lane	46.856813	-114.058574	$251,954
Missoula	MISSOULA	DEPARTMENT OF TRANSPORTATION	Missoula Headquarters Office & Shop	2100 West Broadway	46.884542	-114.023062	$2,191,725
Missoula	Missoula	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Dean Stone	Larch Camp Road	46.802529	-113.972829	$479,532
Missoula	Missoula	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-TV Mountain	Point 6 Road	47.017111	-114.014598	$26,461
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1000-1006 Yreka Court	1000-1006 Yreka Court	46.848491	-113.989633	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	100-106 Helena Court N	100-106 Helena Court N	46.852410	-113.985074	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1008-1014 Yreka Court	1008-1014 Yreka Court	46.848190	-113.989613	$323,544
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	101-107 Helena Court N	101-107 Helena Court N	46.852530	-113.985068	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1016-1022 Yreka Court	1016-1022 Yreka Court	46.847656	-113.990265	$256,995
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1024-1030 Yreka Court	1024-1030 Yreka Court	46.847909	-113.989681	$323,544
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1032-1042 Yreka Court	1032-1042 Yreka Court	46.847903	-113.989431	$795,995
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1044-1050 Yreka Court	1044-1050 Yreka Court	46.847646	-113.989674	$530,853
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	108-114 Helena Court N	108-114 Helena Court N	46.852273	-113.985074	$263,861
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	109-115 Helena Court N	109-115 Helena Court N	46.852534	-113.984776	$263,861
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1101-1110 Coloma Drive	1101-1110 Coloma Drive	46.848455	-113.991897	$1,242,303
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1111-1115 Coloma Drive	1111-1115 Coloma Drive	46.848343	-113.991651	$645,994
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	116-122 Helena Court N	116-122 Helena Court N	46.852428	-113.984764	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	117-123 Helena Court N	117-123 Helena Court N	46.851794	-113.984773	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1201-1204 Coloma Drive	1201-1204 Coloma Drive	46.847889	-113.991610	$265,445
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1205-1208 Coloma Drive	1205-1208 Coloma Drive	46.848016	-113.991891	$265,445
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1301-1304 Granite Court	1301-1304 Granite Court	46.847893	-113.992225	$461,926
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1305-1309 Granite Court	1305-1309 Granite Court	46.848192	-113.992226	$645,968
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1401-1407 Granite Court	1305-1309 Granite Court	46.847927	-113.992632	$819,367
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1408-1412 Granite Court	1408-1412 Granite Court	46.848304	-113.992646	$645,994
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1501-1504 Cinnabar Drive	1501-1504 Cinnabar Drive	46.847643	-113.992900	$265,445
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1601-1608 Cinnabar Drive	1601-1608 Cinnabar Drive	46.847916	-113.993097	$994,854
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1609-1613 Cinnabar Drive	1609-1613 Cinnabar Drive	46.848192	-113.992887	$645,994
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1701-1704 Cinnabar Drive	1701-1704 Cinnabar Drive	46.847830	-113.992870	$396,144
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1705-1713 Cinnabar Drive	1705-1713 Cinnabar Drive	46.848327	-113.993096	$759,287
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1801-1808 Emigrant Court	1801-1808 Emigrant Court	46.847388	-113.992951	$690,493
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1809-1812 Emigrant Court	1809-1812 Emigrant Court	46.847224	-113.992604	$495,332
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1813-1820 Emigrant Court	1813-1820 Emigrant Court	46.847072	-113.992982	$690,493
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1901-1908 Jardine Court	1901-1908 Jardine Court	46.846839	-113.993038	$652,332
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1909-1912 Jardine Court	1909-1912 Jardine Court	46.846681	-113.992658	$495,200
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	1913-1920 Jardine Court	1913-1920 Jardine Court	46.846494	-113.993040	$652,332
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2001-2008 Laurin Court	2001-2008 Laurin Court	46.846255	-113.993039	$652,332
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	200-206 Helena Court N	200-206 Helena Court N	46.851909	-113.984765	$260,427

APPENDIX B-7. CRITICAL FACILITIES IN SEVERE WEATHER HAZARD AREA							
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE							
COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2009-2012 Laurin Court	2009-2012 Laurin Court	46.846097	-113.992650	$495,200
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	201-207 Helena Court N	201-207 Helena Court N	46.852025	-113.984761	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2013-2020 Laurin Court	2013-2020 Laurin Court	46.845893	-113.993034	$689,436
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	208-214 Helena Court N	208-214 Helena Court N	46.851781	-113.985063	$263,861
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	209-215 Helena Court N	209-215 Helena Court N	46.851913	-113.985086	$263,861
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2101-2108 Pardee Court	2101-2108 Pardee Court	46.845561	-113.993034	$689,436
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2109-2112 Pardee Court	2109-2112 Pardee Court	46.845192	-113.993028	$505,763
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2113-2120 Pardee Court	2113-2120 Pardee Court	46.845390	-113.992660	$689,436
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	216-222 Helena Court N	216-222 Helena Court N	46.852017	-113.985083	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	217-223 Helena Court N	217-223 Helena Court N	46.852273	-113.984763	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2201-2208 Landusky Court	2201-2208 Landusky Court	46.844689	-113.992671	$689,436
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2209-2211 Landusky Court	2209-2211 Landusky Court	46.844851	-113.993030	$505,763
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2213-2220 Landusky Court	2213-2220 Landusky Court	46.844486	-113.993019	$689,436
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2301-2304 Robar Court	2301-2304 Robar Court	46.845600	-113.993641	$505,763
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2305-2307 Robar Court	2305-2307 Robar Court	46.845439	-113.993961	$505,763
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2309-2312 Robar Court	2309-2312 Robar Court	46.845278	-113.993639	$505,763
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	300-306 Bannack Court N	300-306 Bannack Court N	46.850126	-113.986168	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	301-307 Bannack Court N	301-307 Bannack Court N	46.850191	-113.986495	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	308-314 Bannack Court N	308-314 Bannack Court N	46.850481	-113.986319	$263,861
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	309-315 Bannack Court N	309-315 Bannack Court N	46.850881	-113.986222	$263,861
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	316-322 Bannack Court N	316-322 Bannack Court N	46.850885	-113.986505	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	317-323 Bannack Court N	317-323 Bannack Court N	46.850715	-113.986504	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	324-334 Bannack Court N	324-334 Bannack Court N	46.850703	-113.986199	$795,995
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	400-406 Bannack Court N	400-406 Bannack Court N	46.850477	-113.986480	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	401-407 Bannack Court N	401-407 Bannack Court N	46.850996	-113.985649	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	408-414 Bannack Court N	408-414 Bannack Court N	46.849948	-113.986535	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	409-415 Bannack Court N	409-415 Bannack Court N	46.849562	-113.986251	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	417-423 Bannack Court N	417-423 Bannack Court N	46.849531	-113.985975	$327,506
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	424-430 Bannack Court N	424- 430 Bannack Court N	46.849755	-113.985898	$398,688
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	432-438 Bannack Court N	432-438 Bannack Court N	46.849688	-113.986548	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	500-506 Garnet Court	500-506 Garnet Court	46.849372	-113.985979	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	508-514 Garnet Court	508-514 Garnet Court	46.849327	-113.986457	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	509-515 Garnet Court	509-515 Garnet Court	46.849210	-113.985957	$327,506
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	516-526 Garnet Court	516-526 Garnet Court	46.849275	-113.985975	$795,995
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	517-523 Garnet Court	517-523 Garnet Court	46.849118	-113.985977	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	525-531 Garnet Court	525-531 Garnet Court	46.848878	-113.986429	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	600-610 Pioneer Court N	600-610 Pioneer Court N	46.848672	-113.986165	$795,995
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	601 S Fifth E	601 S Fifth E	46.864982	-113.988924	$506,291
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	601 S Sixth E	601 S Sixth E	46.864001	-113.989023	$409,900
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	601-607 Pioneer Court N	601-607 Pioneer Court N	46.848192	-113.986333	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	602 S Sixth E	602 S Sixth E	46.864054	-113.989013	$180,673
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	609 S Sixth E	609 S Sixth E	46.864001	-113.988843	$314,829
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	609-615 Pioneer Court N	609-615 Pioneer Court N	46.848182	-113.986589	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	610 S Sixth E	610 S Sixth E	46.864054	-113.988833	$424,028
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	612-618 Pioneer Court N	612-618 Pioneer Court N	46.848612	-113.986403	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	615 S Fifth E	615 S Fifth E	46.864978	-113.988604	$302,549
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	615 S Sixth E	615 S Sixth E	46.864001	-113.988654	$272,840
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	616 & 616-1/2 S Sixth E	616 S Sixth E	46.864054	-113.988644	$496,916
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	620 S Sixth E	620 S Sixth E	46.864052	-113.988464	$340,907
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	620-626 Pioneer Court N	620-626 Pioneer Court N	46.848051	-113.986296	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	625 S Fifth E	625 S Fifth E	46.864978	-113.988361	$330,673
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	625 S. Sixth East	625 S. Sixth East	46.864001	-113.988442	$402,242
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	626 S Sixth E	626 S Sixth E	46.864052	-113.988284	$389,258
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	630 S Sixth E	630 S Sixth E	46.864063	-113.988041	$254,089
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	633 S Fifth E	633 S Fifth E	46.864978	-113.988122	$419,935
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	636 S Sixth E	636 S Sixth E	46.864063	-113.987771	$214,789
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	638 - 644 S Sixth E	638 S Sixth E	46.864113	-113.988334	$447,532
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	639 S. Fifth East	639 S. Fifth East	46.864967	-113.987911	$103,559
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	645 S Fifth E	645 S Fifth E	46.864967	-113.987731	$297,664
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	645 S. Sixth E.,	645 S. Sixth E	46.864011	-113.987574	$456,876
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	657 & 657-1/2 S Fifth E	657 S Fifth E	46.864972	-113.987394	$318,889
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	659 & 659-1/2 S Fifth E	659 S Fifth E	46.864972	-113.987183	$417,824
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	659 S Sixth E	659 S Sixth E	46.864011	-113.987394	$416,501
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	664 S Sixth East	664 S Sixth East	46.864063	-113.987321	$238,968
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	666 S Sixth E	666 S Sixth E	46.864063	-113.987141	$352,330
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	700-706 Pioneer Court S	700-706 Pioneer Court S	46.847963	-113.986666	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	701-707 Pioneer Court S	701-707 Pioneer Court S	46.847903	-113.986664	$327,506
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	702 Arthur	702 Arthur	46.864908	-113.989187	$209,590
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	708-714 Pioneer Court S	708-714 Pioneer Court S	46.848610	-113.986566	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	716-722 Pioneer Court S	716-722 Pioneer Court S	46.848577	-113.986143	$330,937

APPENDIX B-7. CRITICAL FACILITIES IN SEVERE WEATHER HAZARD AREA							
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE							
COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	724-730 Pioneer Court S	724-730 Pioneer Court S	46.848748	-113.986157	$330,937
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	801-807 Ophir Court	801-807 Ophir Court	46.848594	-113.988122	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	809-815 Ophir Court	809-815 Ophir Court	46.848478	-113.988095	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	817-823 Ophir Court	817-823 Ophir Court	46.848298	-113.988070	$323,544
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	820 Arthur Ave. (Int. Prog. 600/610 Eddy)	820 Arthur Ave.	46.863306	-113.989222	$628,632
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	833-839 Ophir Court	833-839 Ophir Court	46.847662	-113.988051	$795,995
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	900-906 Rimini Court	900-906 Rimini Court	46.848581	-113.989248	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	901-907 Rimini Court	901-907 Rimini Court	46.848472	-113.989225	$323,544
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	908-914 Rimini Court	908-914 Rimini Court	46.848246	-113.989220	$260,427
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	909-915 Rimini Court	909-915 Rimini Court	46.848116	-113.989230	$323,544
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	916-922 Rimini Court	916-922 Rimini Court	46.848590	-113.988473	$323,544
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	917-923 Rimini Court	917-923 Rimini Court	46.848489	-113.988499	$323,544
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	924-930 Rimini Court	924-930 Rimini Court	46.848277	-113.988478	$323,544
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	925-931 Rimini Court	925-931 Rimini Court	46.848148	-113.988472	$323,544
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	932-942 Rimini Court	932-942 Rimini Court	46.847727	-113.989177	$795,995
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	933-951 Rimini Court	933-951 Rimini Court	46.847903	-113.988549	$529,926
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	944-962 Rimini Court	944-962 Rimini Court	46.847715	-113.988596	$529,926
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Aber Hall	844 Connell Avenue	46.861984	-113.982426	$18,235,709
Missoula	Missoula	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Adams Center (Shelter)	800 Van Buren St.	46.863724	-113.983291	$44,476,146
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Administration Building	909 S Ave W.	46.848551	-114.012748	$11,067,248
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Bio Research Building	1310 Maurice Ave.	46.858717	-113.986406	$4,712,821
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Chemistry/Pharmacy	1350 Mansfield Avenue	46.858068	-113.985580	$21,216,250
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Corbin Hall	1025 Maurice Avenue	46.861259	-113.987996	$4,697,681
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Craig Hall	1301 Maurice Avenue	46.859004	-113.987248	$14,868,884
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Craighead Apartments	1900 Maurice Avenue	46.852651	-113.986052	$11,373,322
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Curry Health Center	634 Eddy Avenue	46.863299	-113.987674	$18,291,850
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Davidson Honors College	1235 Madeline Avenue	46.859436	-113.984366	$6,083,716
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Don Anderson Hall	800 Daly Ave	46.861306	-113.984794	$17,134,274
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Duniway Hall	635 McLeod Avenue	46.858762	-113.988016	$5,885,982
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Elrod Hall	640 Keith Avenue	46.858388	-113.987648	$5,696,978
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Emma B. Lommasson Center	625 University Avenue	46.859669	-113.988141	$20,811,705
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Family Medical Residency of Western Montana at PHC	401 W Railroad St. W.	46.877327	-113.996273	$91,512
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Fine Arts (includes 10/97 remodel)	715 Connell Avenue	46.861861	-113.986280	$19,501,042
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Forestry	1310 Madeline Avenue	46.858849	-113.983774	$5,962,125
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Gallagher Building	925 Maurice Avenue	46.862522	-113.987670	$34,249,894
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Health & Business Bldg	909 S Ave W.	46.848561	-114.012417	$6,125,280
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Health Sciences	720 Keith Avenue	46.858370	-113.986238	$20,383,127
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Heating Plant UM	840 Connell Avenue	46.862028	-113.992182	$34,310,088
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	International Center (formerly Linguistics)	700 McLeod Ave.	46.859201	-113.986461	$1,893,043
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	James E. Todd Building	25 Campus Drive	46.860528	-113.982079	$9,599,469
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Jeanette Rankin Hall	815 Daly Avenue	46.860842	-113.984776	$4,412,768
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Jesse Hall	610 Daly Avenue	46.861255	-113.988928	$18,235,709
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Knowles Hall	630 University Avenue	46.860358	-113.987807	$11,676,365
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM Pt. 6 (Top of Snowbowl)	TV Mountain Top of Snowbowl	47.017444	-114.013947	$430,438
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit A	3000 S. Higgins	46.844785	-113.996719	$1,312,846
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit B	3000 S. Higgins	46.844567	-113.996185	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit C	3000 S. Higgins	46.844492	-113.995850	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit D	3000 S Higgins	46.843899	-113.996761	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit E	3000 S Higgins	46.843927	-113.996389	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit F	3000 S. Higgins	46.843928	-113.995810	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit G	3000 S. Higgins	46.843233	-113.996731	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit H	3000 S. Higgins	46.843212	-113.996355	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit I	3000 S. Higgins	46.843159	-113.995803	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit J	3000 S. Higgins	46.842548	-113.995913	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit K	3000 S. Higgins	46.842361	-113.996638	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Liberal Arts	725 Daly Avenue	46.860868	-113.986057	$28,202,243
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Mansfield Center at Palmer Street	2675 Palmer Street Suite E	46.885788	-114.029242	$79,195
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Mansfield Library	910 McLeod Avenue	46.859340	-113.982908	$180,632,424
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Mathematics	1255 Mansfield Avenue	46.859281	-113.985633	$5,977,387
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	McGill Hall	920 Van Buren Street	46.862448	-113.983713	$15,702,590
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Miller Hall	1330 Arthur Avenue	46.858651	-113.988744	$14,302,623
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Music Hall	930 Maurice Avenue	46.862381	-113.986393	$11,881,460
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Native American Center (Payne Family)	1210 Maurice	46.860299	-113.988948	$8,060,335
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Natural Science Annex	1040 Madiline Ave.	46.860917	-113.983761	$1,594,735
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Natural Sciences (Botany Building)	1040 Madeline Avenue	46.861246	-113.983759	$5,479,950
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	North Corbin	1025 Maurice Avenue	46.861574	-113.987994	$2,993,826
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	North Underground Lect. Hall	1340 Mansfield Ave.	46.859289	-113.985202	$2,281,197
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	O'Conner Center for Rocky Mountain West (old NAS)	600 University	46.860323	-113.989009	$491,552
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Pantzer Hall Dormitory	615 Keith Avenue	46.857881	-113.988273	$15,926,748
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Performing Arts & Radio Television	735 S 6th Street East	46.863548	-113.985113	$21,137,982

APPENDIX B-7. CRITICAL FACILITIES IN SEVERE WEATHER HAZARD AREA
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Phyllis J. Washington Education Center	745 Eddy	46.862693	-113.985264	$22,649,692
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	PHYSICAL PLANT BUILDING - MISSOULA	12 Campus Drive	46.863161	-113.979449	$5,598,942
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	SCHREIBER GYM (SHELTER)	950 Keith Avenue	46.858545	-113.982477	$9,462,150
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Science Complex - Charles H. Clapp Bldg.	845 Keith Avenue	46.858119	-113.984145	$36,974,452
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Seismograph Station (Pattee Canyon)	Pattee Canyon Rd.	46.802209	-113.973200	$22,064
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Sisson Apartments	1900 Maurice Avenue	46.851636	-113.986064	$11,373,322
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Skaggs Building	1325 Mansfield Avenue	46.858833	-113.985637	$49,579,462
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Social Science	1010 Mansfield Avenue	46.861743	-113.985157	$25,800,375
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Stone Hall (old Journalism)	825 McLeod Avenue	46.858862	-113.984638	$7,704,587
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Sub Station Switch Gear Building	840 Connell Ave	46.861764	-113.981785	$166,753
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Trade & Technology I	3639 S Ave W.	46.845555	-114.072768	$4,437,141
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Trade & Technology II	3639 S Ave W.	46.845479	-114.071122	$4,177,012
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Trade & Technology III	3639 S Ave W.	46.845726	-114.069174	$774,142
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Turner Hall	1105 Maurice Aveneu	46.860764	-113.987361	$6,014,498
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	University Center	915 Daly Avenue	46.860818	-113.982814	$47,241,148
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	University Hall	900 University Avenue	46.860052	-113.983750	$10,628,518
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Urey Lecture Hall	1340 Mansfield Avenue	46.859003	-113.985178	$2,403,805
Musselshell	ROUNDUP	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Roundup	#1 Roundup Airport Road	46.471418	-108.548646	$15,417
Musselshell	ROUNDUP	PUBLIC HEALTH & HUMAN SERVICES	Roundup - UA (Musselshell) OPA/CFS	26 Main St.	46.441679	-108.541913	$30,491
Park	Emigrant	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - Billings	Paradise Valley Translator	Meyers Ranch, 18 miles NE of Emigrant	45.597575	-110.546513	$150,000
Park	LIVINGSTON	DEPARTMENT OF MILITARY AFFAIRS	Livingston Armory	24 Fleshman Creek Road	45.662401	-110.584516	$2,254,253
Park	LIVINGSTON	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Livingston Translator	Quinn Peak, 10 miles W.N.W. of town	45.695595	-110.769029	$10,000
Park	LIVINGSTON	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KGLT RADIO TRANSLATOR LIVINGSTON	15 MILES S OFLIVINGSTON 45-35-52.0 N,110-32-44 W	45.597268	-110.545159	$0
Phillips	MALTA	DEPARTMENT OF MILITARY AFFAIRS	Malta Armory	HC 72, 1 Mile S. Hwy 191	48.347811	-107.876151	$1,138,101
Phillips	MALTA	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Malta	48 deg - 22' - 43.0" N, 107 deg - 55' - 12.0" W	48.368151	-107.917330	$2,417
Phillips	SACO	DEPARTMENT OF JUSTICE	MHP - Saco Phillips County Microwave Tower	6 miles E of Saco	48.453417	-107.458361	$93,604
Phillips	ZORTMAN	DEPARTMENT OF ENVIRONMENTAL QUALITY	Landusky Mine Backup Generator	Landusky Mine-Landusky Route-Landusky City	47.916149	-108.604011	$179,123
Phillips	ZORTMAN	DEPARTMENT OF ENVIRONMENTAL QUALITY	Zortman Mine Backup Generator	Zortman Mine-POBox 225, 225 Main Street	47.929975	-108.561127	$182,036
Phillips	ZORTMAN	DEPARTMENT OF JUSTICE	MHP - Antonine Phillips Cnty Microwave Tower	17 km W of HWY 191	47.932167	-108.577389	$66,449
Pondera	CONRAD	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Conrad	48 deg - 11' - 18.0" N, 111 deg - 54' - 48.0" W	48.169884	-111.977815	$2,417
Pondera	VALIER	DEPARTMENT OF JUSTICE	MHP - Belgian Hills Pondera Cnty Microwave Tower	10 NE Valier	48.329778	-112.036083	$58,540
Powder River	ASHLAND	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Ashland Translator	Home Creek Butte, 27KM E of Ashland	45.602305	-105.936724	$16,512
Powder River	Broadus	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - Billings	Broadus Translator	Russell Hill, 5 km SE of Broadus	45.410546	-105.358369	$10,000
Powell	DEER LODGE	DEPARTMENT OF ADMINISTRATION	MT State Prison	600 Conley Lake Rd	46.396982	-112.760724	$250,000
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Industrial Complex Furniture Shop	600 Conley Lake Rd	46.396982	-112.760724	$2,516,384
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Industrial Complex Warehouse	600 Conley Lake Rd	46.396982	-112.760724	$1,975,895
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Industries Furniture Shop Addition	600 Conley Lake Rd	46.396982	-112.760724	$1,903,903
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	License Plate Distribution Center	600 Conley Lake Rd	46.396982	-112.760724	$1,880,961
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	MVM Building	600 Conley Lake Rd	46.396982	-112.760724	$3,514,381
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Print & Sign	600 Conley Lake Rd	46.396982	-112.760724	$4,179,127
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Ranch 2 Shop Building	600 Conley Lake Rd	46.396982	-112.760724	$234,769
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Toyota Building (Add'n to MVM)	600 Conley Lake Rd	46.396982	-112.760724	$220,097
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Vocational Education MVM Addition	600 Conley Lake Rd	46.396982	-112.760724	$366,828
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Conley Lake Lodge	400 Conley Lake Rd.	46.396998	-112.756516	$267,567
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	DOC Training Center	442 Gulf Course Rd	46.390529	-112.771374	$838,498
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Fire Truck Garage	400 Conley Lake Rd	46.381886	-112.794737	$75,915
Ravalli	Hamilton	DEPARTMENT OF FISH, WILDLIFE & PARKS	Hamilton Airport Hanger - Building	309 Airport Rd.	46.252292	-114.127114	$10,224
Ravalli	HAMILTON	DEPARTMENT OF MILITARY AFFAIRS	Hamilton Armory	910 West Main	46.246647	-114.168149	$1,014,737
Richland	SIDNEY	DEPARTMENT OF MILITARY AFFAIRS	Sidney Armory	2190 West Holly	47.717695	-104.184646	$1,137,338
Richland	SIDNEY	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Sidney	60 Airport Road	47.710747	-104.184489	$15,417
Richland	SIDNEY	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	EARC Foreman Residence	1 mile N of Sidney, Hwy 200	47.719729	-104.153032	$111,213
Richland	SIDNEY	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	EARC Superintendent Residence	1 mile N of Sidney, Hwy 200	47.719974	-104.153326	$171,022
Roosevelt	CULBERTSON	DEPARTMENT OF JUSTICE	MHP - Culbertson Microwave Tower	3 miles NE of Culbertson	48.200306	-104.532000	$40,871
Roosevelt	CULBERTSON	DEPARTMENT OF MILITARY AFFAIRS	Culbertson Armory	819 6th Avenue East	48.151398	-104.510055	$2,215,519
Roosevelt	WOLF POINT	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Wolf Point	48 deg - 6' - 16.0" N, 105 deg - 36' - 5.0" W	48.096489	-105.574838	$2,417
Roosevelt	WOLF POINT	DEPARTMENT OF TRANSPORTATION	Wolf Point Office & Shop	200 E. HWY 25	48.090119	-105.640554	$1,444,427
Rosebud	FORSYTH	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Forsyth	46 deg - 16' - 15.0" N, 106 deg - 40' - 25.1" W	46.267731	-106.623143	$15,417
Rosebud	FORSYTH	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Forsyth Translator	F. Hill, 46 15' 39	46.263015	-106.669859	$10,000
Sheridan	PLENTYWOOD	DEPARTMENT OF JUSTICE	MHP - Plentywood (Sheridan County) Microwave Tower	7 miles S of Plentywood	48.693583	-104.595028	$57,579
Sheridan	PLENTYWOOD	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Plentywood	48 deg - 47' - 42.0" N, 104 deg - 31' - 36.0" W	48.788668	-104.523624	$2,417
Silver Bow	BUTTE	DEPARTMENT OF JUSTICE	MHP - FLEECER MICROWAVE TOWER	BUTTE SILVERBOW COUNTY	45.838681	-112.757842	$185,000
Silver Bow	BUTTE	DEPARTMENT OF MILITARY AFFAIRS	Butte Armory	600 Gilman St	45.981661	-112.528063	$2,462,831
Silver Bow	BUTTE	DEPARTMENT OF MILITARY AFFAIRS	Butte Armory Annex	600 Gilman St	45.981661	-112.528063	$665,833
Silver Bow	BUTTE	DEPARTMENT OF TRANSPORTATION	Butte Office & Shop	3751 Wynne Avenue	45.968764	-112.516368	$3,001,225
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Centennial Hall (Student Residence-East)	1225 Broadway	46.013127	-112.555638	$5,602,331
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Chemistry - Biology Building (CBB) - H	1300 W. Park Street	46.010758	-112.557428	$13,390,609
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	College of Technology	25 Basin Creek Rd.	45.938000	-112.510000	$23,056,194
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Engineering Hall-H	1300 W. Park Street	46.011639	-112.556827	$3,892,937
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Engineering Laboratory-Classroom Building	1300 W. Park Street	46.013417	-112.559500	$13,455,609
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Family Student Housing - Lexington Apartments	1001 - 1039 Lexington Ave	46.023042	-112.552267	$2,294,578

APPENDIX B-7. CRITICAL FACILITIES IN SEVERE WEATHER HAZARD AREA							
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE							
COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Family Student Housing - Missoula Apartments North	1001 - 1039 Missoula Ave	46.022562	-112.552180	$2,294,578
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Family Student Housing - Missoula Apartments South	1000 - 1038 Missoula Ave	46.022289	-112.552165	$2,294,578
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Health Sciences Building (Former Petroleum Bldg)	1300 W. Park Street	46.011588	-112.557832	$7,799,478
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Health, Physical Education, & Recreation Bldg	1300 W. Park Street	46.011900	-112.562205	$20,882,870
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Heating Plant Building	1300 W. Park Street	46.011173	-112.558383	$1,610,611
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Library Building & Auditorium Building (joined)	1300 W. Park Street	46.012808	-112.559297	$41,825,755
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Main Hall-H	1300 W. Park Street	46.011193	-112.556832	$10,291,503
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Mill Building-H	1300 W. Park Street	46.011266	-112.557426	$3,957,441
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Mining Geology Building (M&G)	1300 W. Park Street	46.012770	-112.558032	$13,504,935
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Museum Building-H	1300 W. Park Street	46.010817	-112.556907	$9,416,756
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Natural Resources Building	1505 W. Park Street	46.013072	-112.562077	$18,862,957
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	PHYSICAL PLANT BUILDING - BUTTE	1300 W. Park Street	46.011264	-112.557910	$385,609
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Prospector Hall (Student Residence-West)-H	1301 W. Park Street	46.013125	-112.556580	$7,491,647
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Science & Engineering Building (S&E)-H	1300 W. Park Street	46.012073	-112.556911	$9,431,901
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	STUDENT UNION BUILDING - BUTTE	1300 W. Park Street	46.012072	-112.557878	$9,604,045
Silver Bow	BUTTE	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Clark Chateau	321 W. Broadway	46.013287	-112.541722	$0
Stillwater	COLUMBUS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Columbus Translator	2 miles W. of town	45.642847	-109.299984	$10,000
Stillwater	Columbus	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Columbus	Lone Tree Road	45.780610	-109.192112	$90,729
Sweet Grass	BIG TIMBER	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Big Timber Transmitter	5.5 Mile South of Big Timber	45.750053	-109.955045	$100,000
Teton	CHOTEAU	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Choteau	103 Airport Road	47.822188	-112.168873	$2,417
Teton	DUTTON	DEPARTMENT OF JUSTICE	MHP - Teton Microwave Tower	2 miles S of Dutton	47.800833	-111.711111	$58,540
Toole	SHELBY	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Shelby	80 Airport Road	48.540716	-111.866669	$15,822
Toole	SHELBY	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Shelby Translator	145 1st Ave SE Shelby - 48 30' 43	48.503844	-111.855048	$34,674
Treasure	HYSHAM	DEPARTMENT OF JUSTICE	MHP Hysham Tower	Section 10, Township 5 North, Range 35 East	46.199334	-107.335213	$250,000
Valley	GLASGOW	DEPARTMENT OF FISH, WILDLIFE & PARKS	Regional HQ - Building	1 Airport Rd	48.210340	-106.641753	$1,157,021
Valley	GLASGOW	DEPARTMENT OF MILITARY AFFAIRS	Glasgow Armory	81 Airport Road	48.207207	-106.629043	$1,076,584
Valley	GLASGOW	DEPARTMENT OF MILITARY AFFAIRS	Glasgow Multi-Purp Indoor Range Facility	81 Airport Road	48.207775	-106.628730	$570,704
Valley	GLASGOW	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Glasgow	100 Airport Road	48.209629	-106.626501	$2,417
Valley	GLASGOW	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Glasgow Translator	1.5 miles W. of city water tanks	48.198586	-106.648048	$10,000
Valley	HINSDALE	DEPARTMENT OF JUSTICE	MHP - Hinsdale/Valley County Microwave Tower	2.5 miles SW of Hinsdale	48.369111	-107.156028	$50,268
Wheatland	HARLOWTON	DEPARTMENT OF JUSTICE	MHP - Cooney Microwave Tower	8.5 miles SE of Harlowtown	46.312862	-109.713547	$55,781
Wheatland	HARLOWTON	DEPARTMENT OF MILITARY AFFAIRS	Harlowton Armory	9895 Highway 12 West	46.437899	-109.851858	$1,758,068
Wheatland	HARLOWTON	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Harlowton	46 deg - 25' - 59.8" N, 109 deg - 40' - 25.1" W	46.446977	-109.855640	$2,417
Yellowstone	BILLINGS	DEPARTMENT OF CORRECTIONS, MONTANA WOMEN'S PRISON	Industries Building	701 27th St., BILLINGS MT 59101	45.774626	-108.496447	$1,019,018
Yellowstone	BILLINGS	DEPARTMENT OF CORRECTIONS, MONTANA WOMEN'S PRISON	Montana Women's Prison Main Building	701 27th St S.	45.774903	-108.495990	$26,005,069
Yellowstone	BILLINGS	DEPARTMENT OF FISH, WILDLIFE & PARKS	Billings Airport Hanger -	Logan Int'l Airport	45.802377	-108.530586	$150,345
Yellowstone	BILLINGS	DEPARTMENT OF FISH, WILDLIFE & PARKS	Regional HQ - Building	2300 Lake Elmo Dr	45.839166	-108.477561	$2,399,499
Yellowstone	BILLINGS	DEPARTMENT OF LABOR & INDUSTRY	Billings UI Phone Claims	624 N 24th St	45.789308	-108.506123	$2,095,660
Yellowstone	BILLINGS	DEPARTMENT OF MILITARY AFFAIRS	Billings AFRC	2915 Gabel Road	45.744583	-108.589398	$22,712,860
Yellowstone	BILLINGS	DEPARTMENT OF TRANSPORTATION	Billings Office & Shop	424 Morey Lane	45.762288	-108.538285	$2,835,741
Yellowstone	BILLINGS	PUBLIC HEALTH & HUMAN SERVICES	Billings - Owned AMDD MH Cntr -Lessee	1245 N 29th	45.794410	-108.519689	$2,099,965
Yellowstone	BILLINGS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	KEMC Radio Station - 406 Marbara Lane	406 Marbara Lane	45.797074	-108.526073	$829,269
Yellowstone	BILLINGS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	KEMC Transmitter Facilities	6544 Keller Road, 6 miles S. of Billings	45.658383	-108.571443	$550,095
Yellowstone	BILLINGS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Petro/Rimrock/SUB Complex	1500 University Drive	45.797654	-108.521796	$51,580,563
Yellowstone	BILLINGS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Phys Plant - 324 N Rim Terr	324 N. Rim Terrrace	45.798880	-108.523936	$2,226,840
Yellowstone	BILLINGS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	PHYSICAL ED BUILDING - BILLINGS	1500 University Drive	45.797471	-108.520738	$16,895,592
Yellowstone	BILLINGS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Rental House/MSUB Daycare - 2630 Normal	2630 Normal	45.796294	-108.525587	$212,680
Yellowstone	BILLINGS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Science Hall	1500 University Drive	45.796230	-108.523136	$15,528,073
Yellowstone	BILLINGS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV TRANSMITTER SITE-KTVQ STUDIOS	3203 3RD AVENUE N.	45.781300	-108.512705	$84,504
Yellowstone	Billings	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Sacrifice Cliff	Coburn Road	45.766667	-108.458194	$901,422
Yellowstone	HUNTLEY	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	SARC RESIDENCE #3	748 RR Hwy.	45.862925	-108.307867	$182,022
Yellowstone	HUNTLEY	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	SARC RESIDENCE #4	748 RR Hwy.	45.862925	-108.307867	$222,505

APPENDIX B-7. COUNTY PERCENT EXPOSURE RANKING - SEVERE WEATHER									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	County	Census 2010	2016 Est	% Population Change	Building Permits	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
1	4	Dawson County	8,966	9,327	3.87%	1	$571,239,640	100.00%	3.87%
1	4	McCone County	1,734	1,700	-2.00%	0	$126,655,448	100.00%	-2.00%
2	5	Yellowstone County	147,972	158,437	6.61%	1,198	$15,449,240,186	99.92%	6.60%
3	5	Musselshell County	4,538	4,589	1.11%	1	$294,450,277	99.90%	1.11%
4	2	Cascade County	81,327	81,755	0.52%	242	$6,892,469,677	99.81%	0.52%
5	6	Petroleum County	494	489	-1.02%	NA	$51,771,130	99.73%	-1.02%
6	6	Valley County	7,369	7,539	2.25%	4	$571,400,662	99.53%	2.24%
7	4	Fallon County	2,890	3,120	7.37%	35	$275,826,137	99.43%	7.33%
8	5	Treasure County	718	692	-3.76%	0	$58,854,559	99.42%	-3.74%
9	6	Roosevelt County	10,425	11,305	7.78%	1	$436,414,747	99.09%	7.71%
10	6	Daniels County	1,751	1,755	0.23%	0	$172,668,623	99.08%	0.23%
11	5	Wheatland County	2,168	2,117	-2.41%	NA	$166,048,647	98.97%	-2.38%
12	1	Silver Bow County	34,200	34,553	1.02%	86	$2,189,335,099	98.04%	1.00%
13	1	Ravalli County	40,212	42,088	4.46%	20	$4,508,236,851	97.51%	4.35%
14	4	Custer County	11,699	11,924	1.89%	0	$807,687,761	97.47%	1.84%
15	4	Prairie County	1,179	1,182	0.25%	NA	$83,095,946	97.35%	0.25%
16	5	Golden Valley County	884	831	-6.38%	NA	$71,883,525	97.23%	-6.20%
17	4	Powder River County	1,743	1,746	0.17%	NA	$140,244,108	96.40%	0.17%
18	5	Rosebud County	9,233	9,287	0.58%	1	$435,088,363	96.09%	0.56%
19	4	Richland County	9,746	11,482	15.12%	16	$895,095,133	95.61%	14.46%
20	6	Phillips County	4,253	4,133	-2.90%	2	$385,485,340	95.13%	-2.76%
21	4	Wibaux County	1,017	1,093	6.95%	8	$78,938,837	94.82%	6.59%
22	3	Sweet Grass County	3,651	3,623	-0.77%	1	$614,013,315	94.68%	-0.73%
23	6	Judith Basin County	2,072	1,940	-6.80%	NA	$176,410,886	94.65%	-6.44%
23	3	Lewis and Clark County	63,395	67,282	5.78%	176	$5,986,026,270	94.65%	5.47%
24	2	Chouteau County	5,813	5,759	-0.94%	10	$389,305,673	94.35%	-0.88%
25	5	Stillwater County	9,117	9,406	3.07%	0	$637,419,249	93.77%	2.88%
26	6	Fergus County	11,586	11,413	-1.52%	1	$894,302,879	93.26%	-1.41%
27	4	Garfield County	1,206	1,310	7.94%	0	$128,851,334	92.88%	7.37%
28	2	Teton County	6,073	6,056	-0.28%	1	$432,787,157	92.69%	-0.26%
29	4	Carter County	1,160	1,203	3.57%	1	$127,962,193	92.63%	3.31%
30	1	Missoula County	109,299	116,130	5.88%	930	$3,700,069,432	92.19%	5.42%
31	2	Pondera County	6,153	6,084	-1.13%	1	$407,204,280	87.52%	-0.99%
32	3	Jefferson County	11,406	11,853	3.77%	5	$744,749,892	86.42%	3.26%
33	5	Carbon County	10,078	10,460	3.65%	8	$1,031,557,868	84.20%	3.08%
34	2	Glacier County	13,399	13,694	2.15%	0	$574,632,862	83.63%	1.80%
35	1	Flathead County	90,928	98,082	7.29%	316	$9,865,171,070	79.35%	5.79%
36	1	Powell County	7,027	6,858	-2.46%	32	$430,089,046	79.28%	-1.95%
37	6	Sheridan County	3,384	3,648	7.24%	2	$296,743,072	78.48%	5.68%
38	2	Liberty County	2,339	2,409	2.91%	NA	$159,307,350	78.34%	2.28%
39	5	Big Horn County	12,865	13,343	3.58%	2	$427,155,333	77.74%	2.78%
40	3	Gallatin County	89,513	104,502	14.34%	1,550	$11,648,236,518	77.14%	11.06%
41	2	Toole County	5,324	4,977	-6.97%	2	$279,701,029	76.81%	-5.36%
42	2	Hill County	16,096	16,542	2.70%	4	$908,802,111	73.70%	1.99%
43	1	Lake County	28,746	29,758	3.40%	44	$2,891,574,003	73.17%	2.49%
44	1	Granite County	3,079	3,368	8.58%	NA	$266,119,344	72.36%	6.21%
45	2	Blaine County	6,491	6,601	1.67%	0	$342,897,303	71.89%	1.20%
46	3	Park County	15,636	16,114	2.97%	44	$1,330,542,810	67.43%	2.00%
47	3	Beaverhead County	9,246	9,401	1.65%	3	$462,786,658	52.84%	0.87%
48	3	Broadwater County	5,612	5,747	2.35%	0	$280,980,810	41.71%	0.98%
49	1	Deer Lodge County	9,298	9,085	-2.34%	17	$160,622,769	31.49%	-0.74%
50	1	Mineral County	4,223	4,184	-0.93%	1	$80,355,514	27.86%	-0.26%
51	1	Sanders County	11,413	11,534	1.05%	0	$210,153,621	23.57%	0.25%
52	3	Meagher County	1,891	1,827	-3.50%	NA	$45,405,745	20.57%	-0.72%
53	1	Lincoln County	19,687	19,259	-2.22%	8	$435,178,270	17.52%	-0.39%
54	3	Madison County	7,691	7,924	2.94%	7	$185,717,509	15.84%	0.47%

APPENDIX B-7. COUNTY PERCENT EXPOSURE X POPULATION CHANGE RANKING - SEVERE WEATHER									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	County	Census 2010	2016 Est	% Population Change	Building Permits	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
1	4	Richland County	9,746	11,482	15.12%	16	$895,095,133	95.61%	14.46%
2	3	Gallatin County	89,513	104,502	14.34%	1,550	$11,648,236,518	77.14%	11.06%
3	6	Roosevelt County	10,425	11,305	7.78%	1	$436,414,747	99.09%	7.71%
4	4	Garfield County	1,206	1,310	7.94%	0	$128,851,334	92.88%	7.37%
5	4	Fallon County	2,890	3,120	7.37%	35	$275,826,137	99.43%	7.33%
6	5	Yellowstone County	147,972	158,437	6.61%	1,198	$15,449,240,186	99.92%	6.60%
7	4	Wibaux County	1,017	1,093	6.95%	8	$78,938,837	94.82%	6.59%
8	1	Granite County	3,079	3,368	8.58%	NA	$266,119,344	72.36%	6.21%
9	1	Flathead County	90,928	98,082	7.29%	316	$9,865,171,070	79.35%	5.79%
10	6	Sheridan County	3,384	3,648	7.24%	2	$296,743,072	78.48%	5.68%
11	3	Lewis and Clark County	63,395	67,282	5.78%	176	$5,986,026,270	94.65%	5.47%
12	1	Missoula County	109,299	116,130	5.88%	930	$3,700,069,432	92.19%	5.42%
13	1	Ravalli County	40,212	42,088	4.46%	20	$4,508,236,851	97.51%	4.35%
14	4	Dawson County	8,966	9,327	3.87%	1	$571,239,640	100.00%	3.87%
15	4	Carter County	1,160	1,203	3.57%	1	$127,962,193	92.63%	3.31%
16	3	Jefferson County	11,406	11,853	3.77%	5	$744,749,892	86.42%	3.26%
17	5	Carbon County	10,078	10,460	3.65%	8	$1,031,557,868	84.20%	3.08%
18	5	Stillwater County	9,117	9,406	3.07%	0	$637,419,249	93.77%	2.88%
19	5	Big Horn County	12,865	13,343	3.58%	2	$427,155,333	77.74%	2.78%
20	1	Lake County	28,746	29,758	3.40%	44	$2,891,574,003	73.17%	2.49%
21	2	Liberty County	2,339	2,409	2.91%	NA	$159,307,350	78.34%	2.28%
22	6	Valley County	7,369	7,539	2.25%	4	$571,400,662	99.53%	2.24%
23	3	Park County	15,636	16,114	2.97%	44	$1,330,542,810	67.43%	2.00%
24	2	Hill County	16,096	16,542	2.70%	4	$908,802,111	73.70%	1.99%
25	4	Custer County	11,699	11,924	1.89%	0	$807,687,761	97.47%	1.84%
26	2	Glacier County	13,399	13,694	2.15%	0	$574,632,862	83.63%	1.80%
27	2	Blaine County	6,491	6,601	1.67%	0	$342,897,303	71.89%	1.20%
28	5	Musselshell County	4,538	4,589	1.11%	1	$294,450,277	99.90%	1.11%
29	1	Silver Bow County	34,200	34,553	1.02%	86	$2,189,335,099	98.04%	1.00%
30	3	Broadwater County	5,612	5,747	2.35%	0	$280,980,810	41.71%	0.98%
31	3	Beaverhead County	9,246	9,401	1.65%	3	$462,786,658	52.84%	0.87%
32	5	Rosebud County	9,233	9,287	0.58%	1	$435,088,363	96.09%	0.56%
33	2	Cascade County	81,327	81,755	0.52%	242	$6,892,469,677	99.81%	0.52%
34	3	Madison County	7,691	7,924	2.94%	7	$185,717,509	15.84%	0.47%
35	1	Sanders County	11,413	11,534	1.05%	0	$210,153,621	23.57%	0.25%
35	4	Prairie County	1,179	1,182	0.25%	NA	$83,095,946	97.35%	0.25%
36	6	Daniels County	1,751	1,755	0.23%	0	$172,668,623	99.08%	0.23%
37	4	Powder River County	1,743	1,746	0.17%	NA	$140,244,108	96.40%	0.17%
38	1	Mineral County	4,223	4,184	-0.93%	1	$80,355,514	27.86%	-0.26%
38	2	Teton County	6,073	6,056	-0.28%	1	$432,787,157	92.69%	-0.26%
39	1	Lincoln County	19,687	19,259	-2.22%	8	$435,178,270	17.52%	-0.39%
40	3	Meagher County	1,891	1,827	-3.50%	NA	$45,405,745	20.57%	-0.72%
41	3	Sweet Grass County	3,651	3,623	-0.77%	1	$614,013,315	94.68%	-0.73%
42	1	Deer Lodge County	9,298	9,085	-2.34%	17	$160,622,769	31.49%	-0.74%
43	2	Chouteau County	5,813	5,759	-0.94%	10	$389,305,673	94.35%	-0.88%
44	2	Pondera County	6,153	6,084	-1.13%	1	$407,204,280	87.52%	-0.99%
45	6	Petroleum County	494	489	-1.02%	NA	$51,771,130	99.73%	-1.02%
46	6	Fergus County	11,586	11,413	-1.52%	1	$894,302,879	93.26%	-1.41%
47	1	Powell County	7,027	6,858	-2.46%	32	$430,089,046	79.28%	-1.95%
48	4	McCone County	1,734	1,700	-2.00%	0	$126,655,448	100.00%	-2.00%
49	5	Wheatland County	2,168	2,117	-2.41%	NA	$166,048,647	98.97%	-2.38%
50	6	Phillips County	4,253	4,133	-2.90%	2	$385,485,340	95.13%	-2.76%
51	5	Treasure County	718	692	-3.76%	0	$58,854,559	99.42%	-3.74%
52	2	Toole County	5,324	4,977	-6.97%	2	$279,701,029	76.81%	-5.36%
53	5	Golden Valley County	884	831	-6.38%	NA	$71,883,525	97.23%	-6.20%
54	6	Judith Basin County	2,072	1,940	-6.80%	NA	$176,410,886	94.65%	-6.44%

APPENDIX B-7. CITY-TOWN PERCENT EXPOSURE RANKING - SEVERE WEATHER									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	City / Town	County	Census 2010	2016 Est	% Population Change	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
	5	Billings city	Yellowstone County	104,170	110,323	5.58%	$11,151,298,711	100.00%	5.58%
	2	Great Falls city	Cascade County	58,505	59,178	1.14%	$5,048,986,500	100.00%	1.14%
	3	Helena city	Lewis and Clark County	28,190	31,169	9.56%	$3,197,733,940	100.00%	9.56%
	1	Kalispell city	Flathead County	19,927	22,761	12.45%	$2,337,049,029	100.00%	12.45%
	1	Missoula city	Missoula County	66,788	72,364	7.71%	$1,579,684,889	100.00%	7.71%
	3	Livingston city	Park County	7,044	7,401	4.82%	$591,390,427	100.00%	4.82%
	1	Hamilton city	Ravalli County	4,348	4,674	6.97%	$540,874,277	100.00%	6.97%
	5	Laurel city	Yellowstone County	6,718	6,865	2.14%	$494,934,459	100.00%	2.14%
	4	Miles City city	Custer County	8,410	8,647	2.74%	$468,014,618	100.00%	2.74%
	4	Sidney city	Richland County	5,191	6,566	20.94%	$428,016,417	100.00%	20.94%
	6	Lewistown city	Fergus County	5,901	5,870	-0.53%	$427,289,214	100.00%	-0.53%
	1	Polson city	Lake County	4,488	4,777	6.05%	$350,203,110	100.00%	6.05%
	5	Red Lodge city	Carbon County	2,125	2,237	5.01%	$299,192,729	100.00%	5.01%
	4	Glendive city	Dawson County	4,935	5,332	7.45%	$282,287,856	100.00%	7.45%
	6	Glasgow city	Valley County	3,250	3,364	3.39%	$228,906,265	100.00%	3.39%
	3	Dillon city	Beaverhead County	4,134	4,257	2.89%	$199,400,161	100.00%	2.89%
	1	Stevensville town	Ravalli County	1,809	1,963	7.85%	$186,052,700	100.00%	7.85%
	2	Conrad city	Pondera County	2,570	2,550	-0.78%	$180,331,366	100.00%	-0.78%
	5	Colstrip city	Rosebud County	2,214	2,311	4.20%	$141,195,575	100.00%	4.20%
	3	Big Timber city	Sweet Grass County	1,641	1,645	0.24%	$134,462,368	100.00%	0.24%
	6	Malta city	Phillips County	1,997	1,950	-2.41%	$132,418,341	100.00%	-2.41%
	5	Hardin city	Big Horn County	3,505	3,829	8.46%	$129,775,555	100.00%	8.46%
	2	Cut Bank city	Glacier County	2,869	3,012	4.75%	$128,553,791	100.00%	4.75%
	2	Fort Benton city	Chouteau County	1,464	1,456	-0.55%	$121,787,505	100.00%	-0.55%
	4	Baker city	Fallon County	1,741	1,990	12.51%	$117,494,623	100.00%	12.51%
	3	East Helena town	Lewis and Clark County	1,984	2,074	4.34%	$112,142,609	100.00%	4.34%
	6	Plentywood city	Sheridan County	1,734	1,904	8.93%	$106,842,278	100.00%	8.93%
	2	Choteau city	Teton County	1,684	1,686	0.12%	$105,174,171	100.00%	0.12%
	5	Columbus town	Stillwater County	1,893	2,028	6.66%	$103,179,746	100.00%	6.66%
	5	Forsyth city	Rosebud County	1,777	1,869	4.92%	$101,606,924	100.00%	4.92%
	1	Ronan city	Lake County	1,871	2,016	7.19%	$94,507,039	100.00%	7.19%
	5	Roundup city	Musselshell County	1,788	1,840	2.83%	$81,811,522	100.00%	2.83%
	2	Chinook city	Blaine County	1,203	1,233	2.43%	$79,500,484	100.00%	2.43%
	6	Scobey city	Daniels County	1,017	1,032	1.45%	$74,684,188	100.00%	1.45%
	6	Wolf Point city	Roosevelt County	2,621	2,806	6.59%	$74,469,353	100.00%	6.59%
	1	Darby town	Ravalli County	720	763	5.64%	$71,090,139	100.00%	5.64%
	6	Culbertson town	Roosevelt County	714	804	11.19%	$58,456,346	100.00%	11.19%
	5	Harlowton city	Wheatland County	997	984	-1.32%	$52,194,180	100.00%	-1.32%
	2	Chester town	Liberty County	847	884	4.19%	$49,560,885	100.00%	4.19%
	2	Fairfield town	Teton County	708	922	23.21%	$43,578,102	100.00%	23.21%
	4	Circle town	McCone County	615	619	0.65%	$41,584,443	100.00%	0.65%
	2	Cascade town	Cascade County	685	688	0.44%	$38,044,789	100.00%	0.44%
	2	Valier town	Pondera County	509	498	-2.21%	$37,924,616	100.00%	-2.21%
	6	Stanford town	Judith Basin County	401	384	-4.43%	$31,185,226	100.00%	-4.43%
	2	Harlem city	Blaine County	808	823	1.82%	$31,065,348	100.00%	1.82%
	1	St. Ignatius town	Lake County	842	824	-2.18%	$30,868,588	100.00%	-2.18%
	2	Big Sandy town	Chouteau County	598	590	-1.36%	$30,711,833	100.00%	-1.36%
	5	Joliet town	Carbon County	595	640	7.03%	$29,687,769	100.00%	7.03%
	4	Broadus town	Powder River County	468	481	2.70%	$28,221,972	100.00%	2.70%
	4	Wibaux town	Wibaux County	589	649	9.24%	$25,792,602	100.00%	9.24%
	4	Terry town	Prairie County	605	609	0.66%	$25,177,836	100.00%	0.66%
	6	Fort Peck town	Valley County	233	247	5.67%	$23,578,298	100.00%	5.67%
	2	Dutton town	Teton County	316	308	-2.60%	$23,176,317	100.00%	-2.60%
	6	Winnett town	Petroleum County	182	185	1.62%	$21,802,646	100.00%	1.62%
	4	Jordan town	Garfield County	343	399	14.04%	$19,530,425	100.00%	14.04%
	4	Ekalaka town	Carter County	332	353	5.95%	$18,195,124	100.00%	5.95%
	6	Denton town	Fergus County	255	247	-3.24%	$17,810,085	100.00%	-3.24%
	2	Hingham town	Hill County	118	122	3.28%	$17,731,057	100.00%	3.28%
	2	Browning town	Glacier County	1,016	1,031	1.45%	$17,334,831	100.00%	1.45%
	5	Fromberg town	Carbon County	438	445	1.57%	$17,193,320	100.00%	1.57%
	4	Plevna town	Fallon County	162	176	7.95%	$15,018,718	100.00%	7.95%
	6	Hobson town	Judith Basin County	215	218	1.38%	$14,733,211	100.00%	1.38%
	6	Nashua town	Valley County	290	290	0.00%	$14,703,507	100.00%	0.00%
	6	Poplar city	Roosevelt County	810	854	5.15%	$14,671,742	100.00%	5.15%
	2	Belt city	Cascade County	597	588	-1.53%	$14,344,807	100.00%	-1.53%
	6	Winifred town	Fergus County	208	206	-0.97%	$13,133,875	100.00%	-0.97%
	5	Broadview town	Yellowstone County	192	193	0.52%	$12,526,052	100.00%	0.52%
	2	Geraldine town	Chouteau County	261	261	0.00%	$12,148,627	100.00%	0.00%
	5	Ryegate town	Golden Valley County	245	236	-3.81%	$12,004,104	100.00%	-3.81%
	4	Richey town	Dawson County	177	187	5.35%	$11,800,746	100.00%	5.35%
	5	Hysham town	Treasure County	312	301	-3.65%	$11,682,755	100.00%	-3.65%
	6	Moore town	Fergus County	193	198	2.53%	$11,160,820	100.00%	2.53%
	6	Medicine Lake town	Sheridan County	225	241	6.64%	$10,905,934	100.00%	6.64%
	3	Lima town	Beaverhead County	221	224	1.34%	$9,778,665	100.00%	1.34%
	6	Bainville town	Roosevelt County	208	314	33.76%	$9,440,149	100.00%	33.76%
	5	Lavina town	Golden Valley County	187	173	-8.09%	$9,054,028	100.00%	-8.09%
	6	Saco town	Phillips County	197	197	0.00%	$8,761,488	100.00%	0.00%
	2	Neihart town	Cascade County	51	50	-2.00%	$8,198,859	100.00%	-2.00%
	5	Judith Gap city	Wheatland County	126	123	-2.44%	$7,167,798	100.00%	-2.44%
	6	Grass Range town	Fergus County	110	108	-1.85%	$6,456,076	100.00%	-1.85%
	5	Bearcreek town	Carbon County	79	84	5.95%	$6,408,068	100.00%	5.95%
	6	Froid town	Roosevelt County	185	201	7.96%	$6,392,967	100.00%	7.96%

APPENDIX B-7. CITY-TOWN PERCENT EXPOSURE RANKING - SEVERE WEATHER									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	**DES District**	**City / Town**	**County**	**Census 2010**	**2016 Est**	**% Population Change**	**Total Exposure (Residential + Other)**	**% Hazard Exposure / Total Exposure**	**Vulnerability Factor (% Exposure x % Population Change)**
	1	Rexford town	Lincoln County	105	151	30.46%	$6,362,816	100.00%	30.46%
	6	Flaxville town	Daniels County	71	71	0.00%	$5,564,093	100.00%	0.00%
	6	Opheim town	Valley County	85	290	70.69%	$5,343,206	100.00%	70.69%
	6	Outlook town	Sheridan County	47	52	9.62%	$3,499,066	100.00%	9.62%
	5	Melstone town	Musselshell County	96	107	10.28%	$2,766,871	100.00%	10.28%
	4	Ismay town	Custer County	19	21	9.52%	$1,737,237	100.00%	9.52%
	6	Brockton town	Roosevelt County	255	243	-4.94%	$1,149,313	100.00%	-4.94%
	1	Eureka town	Lincoln County	1,037	1,086	4.51%	$66,110,997	99.79%	4.50%
	3	Bozeman city	Gallatin County	37,280	45,250	17.61%	$6,883,269,114	98.63%	17.37%
	2	Shelby city	Toole County	3,376	3,216	-4.98%	$183,945,691	98.20%	-4.89%
	1	Walkerville town	Silver Bow County	675	700	3.57%	$2,167,054,703	98.11%	3.50%
	1	Pinesdale town	Ravalli County	917	967	5.17%	$36,504,162	98.10%	5.07%
	1	Deer Lodge city	Powell County	3,111	2,994	-3.91%	$150,973,361	96.98%	-3.79%
	1	Drummond town	Granite County	309	348	11.21%	$16,273,927	96.38%	10.80%
	1	Superior town	Mineral County	812	826	1.69%	$53,728,478	94.33%	1.60%
	3	Belgrade city	Gallatin County	7,389	8,254	10.48%	$575,332,911	93.13%	9.76%
	3	Clyde Park town	Park County	288	309	6.80%	$16,190,901	90.11%	6.12%
	3	West Yellowstone town	Gallatin County	1,271	1,353	6.06%	$287,110,356	88.97%	5.39%
	2	Sunburst town	Toole County	375	338	-10.95%	$13,637,420	87.16%	-9.54%
	3	Boulder town	Jefferson County	1,183	1,230	3.82%	$37,618,612	86.00%	3.29%
	2	Havre city	Hill County	9,310	9,846	5.44%	$390,407,718	81.42%	4.43%
	1	Thompson Falls city	Sanders County	1,313	1,356	3.17%	$64,213,198	75.76%	2.40%
	1	Whitefish city	Flathead County	6,357	7,279	12.67%	$1,083,868,731	72.06%	9.13%
	1	Philipsburg town	Granite County	820	920	10.87%	$49,593,484	70.33%	7.64%
	6	Westby town	Sheridan County	168	174	3.45%	$3,633,221	60.13%	2.07%
	1	Columbia Falls city	Flathead County	4,688	5,241	10.55%	$217,893,500	58.52%	6.17%
	3	Manhattan town	Gallatin County	1,520	1,691	10.11%	$79,228,209	53.25%	5.38%
	3	Townsend city	Broadwater County	1,878	1,978	5.06%	$73,399,244	53.06%	2.68%
	3	Whitehall town	Jefferson County	1,038	1,114	6.82%	$19,631,714	46.76%	3.19%
	4	Fairview town	Richland County	840	922	8.89%	$9,082,702	24.70%	2.20%
	1	Alberton town	Mineral County	420	417	-0.72%	$3,862,177	22.21%	-0.16%
	1	Hot Springs town	Sanders County	544	557	2.33%	$6,089,291	15.59%	0.36%
	3	Ennis town	Madison County	838	890	5.84%	$13,261,784	12.24%	0.72%
	3	Virginia City town	Madison County	190	198	4.04%	$2,355,080	7.47%	0.30%
	3	Sheridan town	Madison County	642	677	5.17%	$7,450,538	3.47%	0.18%
	5	Bridger town	Carbon County	708	732	3.28%	$1,000,305	2.52%	0.08%
	3	Twin Bridges town	Madison County	375	395	5.06%	$100,200	0.30%	0.02%
	1	Troy city	Lincoln County	938	890	-5.39%	$108,012	0.19%	-0.01%
	5	Lodge Grass town	Big Horn County	428	446	4.04%	$0	0.00%	0.00%
	3	Three Forks city	Gallatin County	1,869	1,944	3.86%	$0	0.00%	0.00%
	1	Plains town	Sanders County	1,048	1,071	2.15%	$0	0.00%	0.00%
	1	Libby city	Lincoln County	2,628	2,678	1.87%	$0	0.00%	0.00%
	6	Dodson town	Phillips County	124	124	0.00%	$0	0.00%	0.00%
	3	White Sulphur Springs city	Meagher County	939	908	-3.41%	$0	0.00%	0.00%
	2	Kevin town	Toole County	154	138	-11.59%	$0	0.00%	0.00%

APPENDIX B-7. CITY-TOWN PERCENT EXPOSURE X POPULATION CHANGE RANKING - SEVERE WEATHER									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	City / Town	County	Census 2010	2016 Est	% Population Change	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
1	6	Opheim town	Valley County	85	290	70.69%	$5,343,206	100.00%	70.69%
2	6	Bainville town	Roosevelt County	208	314	33.76%	$9,440,149	100.00%	33.76%
3	1	Rexford town	Lincoln County	105	151	30.46%	$6,362,816	100.00%	30.46%
4	2	Fairfield town	Teton County	708	922	23.21%	$43,578,102	100.00%	23.21%
5	4	Sidney city	Richland County	5,191	6,566	20.94%	$428,016,417	100.00%	20.94%
6	3	Bozeman city	Gallatin County	37,280	45,250	17.61%	$6,883,269,114	98.63%	17.37%
7	4	Jordan town	Garfield County	343	399	14.04%	$19,530,425	100.00%	14.04%
8	4	Baker city	Fallon County	1,741	1,990	12.51%	$117,494,623	100.00%	12.51%
9	1	Kalispell city	Flathead County	19,927	22,761	12.45%	$2,337,049,029	100.00%	12.45%
10	6	Culbertson town	Roosevelt County	714	804	11.19%	$58,456,346	100.00%	11.19%
11	1	Drummond town	Granite County	309	348	11.21%	$16,273,927	96.38%	10.80%
12	5	Melstone town	Musselshell County	96	107	10.28%	$2,766,871	100.00%	10.28%
13	3	Belgrade city	Gallatin County	7,389	8,254	10.48%	$575,332,911	93.13%	9.76%
14	6	Outlook town	Sheridan County	47	52	9.62%	$3,499,066	100.00%	9.62%
15	3	Helena city	Lewis and Clark County	28,190	31,169	9.56%	$3,197,733,940	100.00%	9.56%
16	4	Ismay town	Custer County	19	21	9.52%	$1,737,237	100.00%	9.52%
17	4	Wibaux town	Wibaux County	589	649	9.24%	$25,792,602	100.00%	9.24%
18	1	Whitefish city	Flathead County	6,357	7,279	12.67%	$1,083,868,731	72.06%	9.13%
19	6	Plentywood city	Sheridan County	1,734	1,904	8.93%	$106,842,278	100.00%	8.93%
20	5	Hardin city	Big Horn County	3,505	3,829	8.46%	$129,775,555	100.00%	8.46%
21	6	Froid town	Roosevelt County	185	201	7.96%	$6,392,967	100.00%	7.96%
22	4	Plevna town	Fallon County	162	176	7.95%	$15,018,718	100.00%	7.95%
23	1	Stevensville town	Ravalli County	1,809	1,963	7.85%	$186,052,700	100.00%	7.85%
24	1	Missoula city	Missoula County	66,788	72,364	7.71%	$1,579,684,889	100.00%	7.71%
25	1	Philipsburg town	Granite County	820	920	10.87%	$49,593,484	70.33%	7.64%
26	4	Glendive city	Dawson County	4,935	5,332	7.45%	$282,287,856	100.00%	7.45%
27	1	Ronan city	Lake County	1,871	2,016	7.19%	$94,507,039	100.00%	7.19%
28	5	Joliet town	Carbon County	595	640	7.03%	$29,687,769	100.00%	7.03%
29	1	Hamilton city	Ravalli County	4,348	4,674	6.97%	$540,874,277	100.00%	6.97%
30	5	Columbus town	Stillwater County	1,893	2,028	6.66%	$103,179,746	100.00%	6.66%
31	6	Medicine Lake town	Sheridan County	225	241	6.64%	$10,905,934	100.00%	6.64%
32	6	Wolf Point city	Roosevelt County	2,621	2,806	6.59%	$74,469,353	100.00%	6.59%
33	1	Columbia Falls city	Flathead County	4,688	5,241	10.55%	$217,893,500	58.52%	6.17%
34	3	Clyde Park town	Park County	288	309	6.80%	$16,190,901	90.11%	6.12%
35	1	Polson city	Lake County	4,488	4,777	6.05%	$350,203,110	100.00%	6.05%
36	5	Bearcreek town	Carbon County	79	84	5.95%	$6,408,068	100.00%	5.95%
36	4	Ekalaka town	Carter County	332	353	5.95%	$18,195,124	100.00%	5.95%
37	6	Fort Peck town	Valley County	233	247	5.67%	$23,578,298	100.00%	5.67%
38	1	Darby town	Ravalli County	720	763	5.64%	$71,090,139	100.00%	5.64%
39	5	Billings city	Yellowstone County	104,170	110,323	5.58%	$11,151,298,711	100.00%	5.58%
40	3	West Yellowstone town	Gallatin County	1,271	1,353	6.06%	$287,110,356	88.97%	5.39%
41	3	Manhattan town	Gallatin County	1,520	1,691	10.11%	$79,228,209	53.25%	5.38%
42	4	Richey town	Dawson County	177	187	5.35%	$11,800,746	100.00%	5.35%
43	6	Poplar city	Roosevelt County	810	854	5.15%	$14,671,742	100.00%	5.15%
44	1	Pinesdale town	Ravalli County	917	967	5.17%	$36,504,162	98.10%	5.07%
45	5	Red Lodge city	Carbon County	2,125	2,237	5.01%	$299,192,729	100.00%	5.01%
46	5	Forsyth city	Rosebud County	1,777	1,869	4.92%	$101,606,924	100.00%	4.92%
47	3	Livingston city	Park County	7,044	7,401	4.82%	$591,390,427	100.00%	4.82%
48	2	Cut Bank city	Glacier County	2,869	3,012	4.75%	$128,553,791	100.00%	4.75%
49	1	Eureka town	Lincoln County	1,037	1,086	4.51%	$66,110,997	99.79%	4.50%
50	2	Havre city	Hill County	9,310	9,846	5.44%	$390,407,718	81.42%	4.43%
51	3	East Helena town	Lewis and Clark County	1,984	2,074	4.34%	$112,142,609	100.00%	4.34%
52	5	Colstrip city	Rosebud County	2,214	2,311	4.20%	$141,195,575	100.00%	4.20%
53	2	Chester town	Liberty County	847	884	4.19%	$49,560,885	100.00%	4.19%
54	1	Walkerville town	Silver Bow County	675	700	3.57%	$2,167,054,703	98.11%	3.50%
55	6	Glasgow city	Valley County	3,250	3,364	3.39%	$228,906,265	100.00%	3.39%
56	3	Boulder town	Jefferson County	1,183	1,230	3.82%	$37,618,612	86.00%	3.29%
57	2	Hingham town	Hill County	118	122	3.28%	$17,731,057	100.00%	3.28%
58	3	Whitehall town	Jefferson County	1,038	1,114	6.82%	$19,631,714	46.76%	3.19%
59	3	Dillon city	Beaverhead County	4,134	4,257	2.89%	$199,400,161	100.00%	2.89%
60	5	Roundup city	Musselshell County	1,788	1,840	2.83%	$81,811,522	100.00%	2.83%
61	4	Miles City city	Custer County	8,410	8,647	2.74%	$468,014,618	100.00%	2.74%
62	4	Broadus town	Powder River County	468	481	2.70%	$28,221,972	100.00%	2.70%
63	3	Townsend city	Broadwater County	1,878	1,978	5.06%	$73,399,244	53.06%	2.68%
64	6	Moore town	Fergus County	193	198	2.53%	$11,160,820	100.00%	2.53%
65	2	Chinook city	Blaine County	1,203	1,233	2.43%	$79,500,484	100.00%	2.43%
66	1	Thompson Falls city	Sanders County	1,313	1,356	3.17%	$64,213,198	75.76%	2.40%
67	4	Fairview town	Richland County	840	922	8.89%	$9,082,702	24.70%	2.20%
68	5	Laurel city	Yellowstone County	6,718	6,865	2.14%	$494,934,459	100.00%	2.14%
69	6	Westby town	Sheridan County	168	174	3.45%	$3,633,221	60.13%	2.07%
70	2	Harlem city	Blaine County	808	823	1.82%	$31,065,348	100.00%	1.82%
71	6	Winnett town	Petroleum County	182	185	1.62%	$21,802,646	100.00%	1.62%
72	1	Superior town	Mineral County	812	826	1.69%	$53,728,478	94.33%	1.60%
73	5	Fromberg town	Carbon County	438	445	1.57%	$17,193,320	100.00%	1.57%
74	2	Browning town	Glacier County	1,016	1,031	1.45%	$17,334,831	100.00%	1.45%
74	6	Scobey city	Daniels County	1,017	1,032	1.45%	$74,684,188	100.00%	1.45%
75	6	Hobson town	Judith Basin County	215	218	1.38%	$14,733,211	100.00%	1.38%
76	3	Lima town	Beaverhead County	221	224	1.34%	$9,778,665	100.00%	1.34%
77	2	Great Falls city	Cascade County	58,505	59,178	1.14%	$5,048,986,500	100.00%	1.14%
78	3	Ennis town	Madison County	838	890	5.84%	$13,261,784	12.24%	0.72%
79	4	Terry town	Prairie County	605	609	0.66%	$25,177,836	100.00%	0.66%
80	4	Circle town	McCone County	615	619	0.65%	$41,584,443	100.00%	0.65%

APPENDIX B-7. CITY-TOWN PERCENT EXPOSURE X POPULATION CHANGE RANKING - SEVERE WEATHER									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	City / Town	County	Census 2010	2016 Est	% Population Change	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
81	5	Broadview town	Yellowstone County	192	193	0.52%	$12,526,052	100.00%	0.52%
82	2	Cascade town	Cascade County	685	688	0.44%	$38,044,789	100.00%	0.44%
83	1	Hot Springs town	Sanders County	544	557	2.33%	$6,089,291	15.59%	0.36%
84	3	Virginia City town	Madison County	190	198	4.04%	$2,355,080	7.47%	0.30%
85	3	Big Timber city	Sweet Grass County	1,641	1,645	0.24%	$134,462,368	100.00%	0.24%
86	3	Sheridan town	Madison County	642	677	5.17%	$7,450,538	3.47%	0.18%
87	2	Choteau city	Teton County	1,684	1,686	0.12%	$105,174,171	100.00%	0.12%
88	5	Bridger town	Carbon County	708	732	3.28%	$1,000,305	2.52%	0.08%
89	3	Twin Bridges town	Madison County	375	395	5.06%	$100,200	0.30%	0.02%
90	6	Dodson town	Phillips County	124	124	0.00%	$0	0.00%	0.00%
90	6	Flaxville town	Daniels County	71	71	0.00%	$5,564,093	100.00%	0.00%
90	2	Geraldine town	Chouteau County	261	261	0.00%	$12,148,627	100.00%	0.00%
90	2	Kevin town	Toole County	154	138	-11.59%	$0	0.00%	0.00%
90	1	Libby city	Lincoln County	2,628	2,678	1.87%	$0	0.00%	0.00%
90	5	Lodge Grass town	Big Horn County	428	446	4.04%	$0	0.00%	0.00%
90	6	Nashua town	Valley County	290	290	0.00%	$14,703,507	100.00%	0.00%
90	1	Plains town	Sanders County	1,048	1,071	2.15%	$0	0.00%	0.00%
90	6	Saco town	Phillips County	197	197	0.00%	$8,761,488	100.00%	0.00%
90	3	Three Forks city	Gallatin County	1,869	1,944	3.86%	$0	0.00%	0.00%
90	3	White Sulphur Springs city	Meagher County	939	908	-3.41%	$0	0.00%	0.00%
91	1	Troy city	Lincoln County	938	890	-5.39%	$108,012	0.19%	-0.01%
92	1	Alberton town	Mineral County	420	417	-0.72%	$3,862,177	22.21%	-0.16%
93	6	Lewistown city	Fergus County	5,901	5,870	-0.53%	$427,289,214	100.00%	-0.53%
94	2	Fort Benton city	Chouteau County	1,464	1,456	-0.55%	$121,787,505	100.00%	-0.55%
95	2	Conrad city	Pondera County	2,570	2,550	-0.78%	$180,331,366	100.00%	-0.78%
96	6	Winifred town	Fergus County	208	206	-0.97%	$13,133,875	100.00%	-0.97%
97	5	Harlowton city	Wheatland County	997	984	-1.32%	$52,194,180	100.00%	-1.32%
98	2	Big Sandy town	Chouteau County	598	590	-1.36%	$30,711,833	100.00%	-1.36%
99	2	Belt city	Cascade County	597	588	-1.53%	$14,344,807	100.00%	-1.53%
100	6	Grass Range town	Fergus County	110	108	-1.85%	$6,456,076	100.00%	-1.85%
101	2	Neihart town	Cascade County	51	50	-2.00%	$8,198,859	100.00%	-2.00%
102	1	St. Ignatius town	Lake County	842	824	-2.18%	$30,868,588	100.00%	-2.18%
103	2	Valier town	Pondera County	509	498	-2.21%	$37,924,616	100.00%	-2.21%
104	6	Malta city	Phillips County	1,997	1,950	-2.41%	$132,418,341	100.00%	-2.41%
105	5	Judith Gap city	Wheatland County	126	123	-2.44%	$7,167,798	100.00%	-2.44%
106	2	Dutton town	Teton County	316	308	-2.60%	$23,176,317	100.00%	-2.60%
107	6	Denton town	Fergus County	255	247	-3.24%	$17,810,085	100.00%	-3.24%
108	5	Hysham town	Treasure County	312	301	-3.65%	$11,682,755	100.00%	-3.65%
109	1	Deer Lodge city	Powell County	3,111	2,994	-3.91%	$150,973,361	96.98%	-3.79%
110	5	Ryegate town	Golden Valley County	245	236	-3.81%	$12,004,104	100.00%	-3.81%
111	6	Stanford town	Judith Basin County	401	384	-4.43%	$31,185,226	100.00%	-4.43%
112	2	Shelby city	Toole County	3,376	3,216	-4.98%	$183,945,691	98.20%	-4.89%
113	6	Brockton town	Roosevelt County	255	243	-4.94%	$1,149,313	100.00%	-4.94%
114	5	Lavina town	Golden Valley County	187	173	-8.09%	$9,054,028	100.00%	-8.09%
115	2	Sunburst town	Toole County	375	338	-10.95%	$13,637,420	87.16%	-9.54%

APPENDIX B-7							
ANNUAL LOSS SUMMARY FOR SEVERE WEATHER							
County	Period of Record (Yrs)	No. of Events	Frequency	Property Damage	Exposure	Magnitude	Annual Loss
Beaverhead County	57	100	1.75439	$4,304,921	$875,877,736	0.00491%	$75,525
Big Horn County	57	143	2.50877	$12,838,204	$549,473,066	0.01634%	$225,232
Blaine County	57	108	1.89474	$9,901,854	$476,977,614	0.01922%	$173,717
Broadwater County	57	111	1.94737	$2,684,179	$673,673,764	0.00359%	$47,091
Carbon County	57	126	2.21053	$19,282,213	$1,225,309,919	0.01249%	$338,284
Carter County	57	89	1.56140	$6,208,442	$138,148,513	0.05049%	$108,920
Cascade County	57	208	3.64912	$20,211,255	$6,905,747,586	0.00141%	$354,583
Chouteau County	57	144	2.52632	$24,419,283	$412,662,063	0.04109%	$428,408
Custer County	57	141	2.47368	$21,188,780	$828,676,101	0.01813%	$371,733
Daniels County	57	117	2.05263	$14,536,812	$174,269,593	0.07130%	$255,032
Dawson County	57	157	2.75439	$24,932,717	$571,239,640	0.02780%	$437,416
Deer Lodge County	57	126	2.21053	$1,597,786	$509,999,748	0.00249%	$28,031
Fallon County	57	93	1.63158	$10,168,069	$277,395,339	0.03941%	$178,387
Fergus County	57	169	2.96491	$18,224,670	$958,952,555	0.01125%	$319,731
Flathead County	57	176	3.08772	$9,767,916	$12,432,896,518	0.00045%	$171,367
Gallatin County	57	137	2.40351	$70,587,306	$15,100,403,311	0.00341%	$1,238,374
Garfield County	57	124	2.17544	$14,222,028	$138,733,630	0.08267%	$249,509
Glacier County	57	176	3.08772	$12,163,373	$687,152,347	0.01006%	$213,393
Golden Valley County	57	85	1.49123	$2,814,850	$73,933,605	0.04479%	$49,383
Granite County	57	99	1.73684	$4,655,130	$367,752,925	0.01279%	$81,669
Hill County	57	142	2.49123	$11,960,534	$1,233,117,653	0.00683%	$209,834
Jefferson County	57	104	1.82456	$2,234,495	$861,769,166	0.00249%	$39,202
Judith Basin County	57	128	2.24561	$4,649,425	$186,374,480	0.01949%	$81,569
Lake County	57	146	2.56140	$6,321,062	$3,951,481,193	0.00110%	$110,896
Lewis & Clark County	57	201	3.52632	$23,136,674	$6,324,479,532	0.00182%	$405,907
Liberty County	57	120	2.10526	$8,315,053	$203,344,201	0.03408%	$145,878
Lincoln County	57	112	1.96491	$6,828,328	$2,483,698,397	0.00245%	$119,795
Madison County	57	105	1.84211	$1,445,841	$1,172,801,948	0.00117%	$25,366
McCone County	57	145	2.54386	$19,471,188	$126,655,448	0.10602%	$341,600
Meagher County	57	125	2.19298	$6,886,168	$220,734,873	0.02496%	$120,810
Mineral County	57	76	1.33333	$4,021,389	$288,471,142	0.01834%	$70,551
Missoula County	57	154	2.70175	$9,553,414	$4,013,825,139	0.00155%	$167,604
Musselshell County	57	105	1.84211	$4,422,441	$294,746,697	0.01429%	$77,587
Park County	57	129	2.26316	$38,873,107	$571,625,780	0.05272%	$681,984
Petroleum County	57	98	1.71930	$5,404,406	$51,909,540	0.10624%	$94,814
Phillips County	57	158	2.77193	$12,751,136	$405,235,231	0.01992%	$223,704
Pondera County	57	179	3.14035	$7,701,549	$465,198,012	0.00925%	$135,115
Powder River County	57	105	1.84211	$15,481,079	$145,486,760	0.10134%	$271,598
Powell County	57	104	1.82456	$4,917,672	$542,466,792	0.00872%	$86,275
Prairie County	57	126	2.21053	$9,072,110	$85,358,148	0.08435%	$159,160
Ravalli County	57	123	2.15789	$7,730,699	$4,623,234,589	0.00136%	$135,626
Richland County	57	172	3.01754	$29,667,566	$936,154,356	0.01842%	$520,484
Roosevelt County	57	171	3.00000	$25,610,672	$440,589,317	0.03399%	$449,310
Rosebud County	57	130	2.28070	$11,850,896	$452,787,929	0.02013%	$207,910
Sanders County	57	114	2.00000	$4,578,165	$891,530,853	0.00450%	$80,319
Sheridan County	57	136	2.38596	$16,332,786	$317,298,128	0.03785%	$286,540
Silver Bow County	57	147	2.57895	$2,365,799	$2,233,172,531	0.00072%	$41,505
Stillwater County	57	104	1.82456	$2,426,642	$82,367,417	0.02833%	$42,573
Sweet Grass County	57	108	1.89474	$1,594,533	$648,159,722	0.00228%	$27,974
Teton County	57	192	3.36842	$11,531,647	$466,949,249	0.01286%	$202,310
Toole County	57	171	3.00000	$22,189,696	$364,529,503	0.03560%	$389,293
Treasure County	57	81	1.42105	$8,127,621	$59,197,309	0.16950%	$142,590
Valley County	57	213	3.73684	$68,119,722	$574,112,754	0.05571%	$1,195,083
Wheatland County	57	102	1.78947	$3,454,275	$167,771,007	0.02019%	$60,601
Wibaux County	57	125	2.19298	$10,274,776	$83,631,463	0.09829%	$180,259
Yellowstone County	57	181	3.17544	$75,374,507	$15,460,869,774	0.00269%	$1,322,360

APPENDIX B-7. VULNERABILITY ASSESSMENT DOCUMENTATION - SEVERE WEATHER

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Severe Weather sq. miles	Total sq. miles	Percent Severe Weather sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Severe Weather Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Severe Weather Hazard Area	Residential Exposure in Severe Weather Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Severe Weather Hazard Area	CAI Exposure in Severe Weather Hazard Area	Total Population in Hazard Area	<18 in Severe Weather Hazard Area	>65 in Severe Weather Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Montana	85,301	146,923	58.1%	829	$3,596,319,710	752	$3,467,345,113	379,924	$65,567,813,250	322,369	$55,462,416,678	89,351	$31,241,965,630	69,202	$25,742,876,868	1,201,418.5	255,322.3	229,957.1	716,139.1	126	108
3	**Beaverhead County**	366.67	5,572.5	6.6%	21	$120,039,992	20	$120,013,493	3,023	$398,456,637	2,164	$275,622,633	2,017	$477,421,099	781	$187,164,025	4,835.9	826.9	1,140.4	2,868.6	6	2
	Dillon city	1.68	1.7	100.0%	0	$0	19	$114,722,911	1,178	$128,495,669	1,178	$128,495,669	230	$70,904,492	230	$70,904,492	2,716.1	451.7	697.4	1,567.0	2	1
	Lima town	0.55	0.5	100.0%	0	$0	0		135	$8,569,730	135	$8,569,730	11	$1,208,935	11	$1,208,935	290.3	51.4	60.7	178.2	0	0
	Balance of Beaverhead County	364.45	5,570.3		21	$120,039,992	1	$5,290,581	1,710	$261,391,238	851	$138,557,234	1,776	$405,307,672	540	$115,050,598	1,829.6	323.8	382.4	1,123.4	4	0
5	**Big Horn County**	2,354.05	5,013.9	47.0%	1	$64,294	1	$64,294	3,168	$358,629,629	2,576	$294,956,565	872	$190,843,437	637	$132,198,768	9,507.6	3,204.9	1,257.2	5,045.6	5	3
	Hardin city	1.65	1.6	100.0%	0	$0	1	$64,294	905	$97,296,363	905	$97,296,363	134	$32,479,192	134	$32,479,192	3,363.5	1,125.6	465.9	1,772.0	0	0
	Lodge Grass town	0.00	0.3	0.0%	0	$0	0		149	$10,790,706	0		22	$17,123,392	0					0.0	0	0
	Balance of Big Horn County	2,352.41	5,012.0		1	$64,294	0	$0	2,114	$250,542,560	1,671	$197,660,202	716	$141,240,853	503	$99,719,576	6,144.1	2,079.3	791.3	3,273.5	5	0
2	**Blaine County**	857.22	4,235.9	20.2%	1	$51,267	0		1,409	$115,967,606	1,325	$108,630,183	2,309	$361,010,008	1,477	$234,267,120	3,992.6	1,156.2	715.3	2,121.0	0	0
	Chinook city	0.52	0.5	100.0%	0	$0	0		674	$60,190,802	674	$60,190,802	106	$19,309,682	106	$19,309,682	1,965.9	593.7	283.1	1,089.1	0	0
	Harlem city	0.41	0.4	100.0%	0	$0	0		352	$22,108,616	352	$22,108,616	68	$8,956,732	68	$8,956,732	1,089.4	304.2	227.1	558.1	0	0
	Balance of Blaine County	856.28	4,235.0		1	$51,267	0	$0	383	$33,668,188	299	$26,330,765	2,135	$332,743,594	1,303	$206,000,706				0.0	0	0
3	**Broadwater County**	272.86	1,236.8	22.1%	3	$29,038,899	3	$29,038,899	3,442	$520,588,070	1,640	$240,982,127	795	$153,085,694	233	$39,998,683	4,289.7	764.8	952.3	2,572.6	1	0
	Townsend city	0.60	1.5	39.5%	0	$0	0		1,133	$116,996,708	605	$65,964,885	147	$21,344,104	58	$7,434,359	1,811.9	282.1	402.2	1,127.6	0	0
	Balance of Broadwater County	272.26	1,235.3		3	$29,038,899	3	$29,038,899	2,309	$403,591,362	1,035	$175,017,242	648	$131,741,590	175	$32,564,324	2,477.8	482.6	550.1	1,445.1	1	0
5	**Carbon County**	797.11	2,060.7	38.7%	3	$220,339	2	$195,339	4,812	$912,472,742	4,093	$779,188,314	1,434	$312,638,485	1,197	$252,369,554	11,162.1	1,851.2	3,302.1	6,008.8	5	1
	Bearcreek town	0.11	0.1	100.0%	0	$0	0		57	$6,138,654	57	$6,138,654	2	$269,414	2	$269,414	154.4	27.6	37.0	89.7	0	0
	Bridger town	0.29	0.8	38.7%	0	$0	0		322	$30,656,055	6	$454,709	49	$8,990,475	4	$545,596	13.6	2.4	3.3	7.9	0	0
	Fromberg town	0.44	0.4	100.0%	0	$0	0		218	$16,035,910	218	$16,035,910	21	$1,157,410	21	$1,157,410	519.8	93.0	124.8	302.0	0	0
	Joliet town	0.27	0.3	100.0%	0	$0	0		241	$27,420,117	241	$27,420,117	20	$2,267,652	20	$2,267,652	646.9	115.8	155.3	375.9	0	0
	Red Lodge city	2.70	2.7	100.0%	0	$0	1	$31,937	1,366	$249,897,767	1,366	$249,897,767	162	$49,294,962	162	$49,294,962	4,562.7	699.3	1,593.6	2,269.8	1	1
	Balance of Carbon County	793.28	2,056.4		3	$220,339	1	$163,402	2,608	$582,324,239	2,205	$479,241,157	1,180	$250,658,572	988	$198,834,520	5,264.7	913.0	1,388.2	2,963.5	4	0
4	**Carter County**	2,801.32	3,346.4	83.7%	0	$0	0		405	$20,620,826	392	$19,925,640	1,012	$117,527,687	908	$108,036,553	933.0	176.3	238.8	517.8	0	0
	Ekalaka town	1.03	1.0	100.0%	0	$0	0		323	$14,713,910	323	$14,713,910	40	$3,481,214	40	$3,481,214	768.7	145.3	196.8	426.7	0	0
	Balance of Carter County	2,800.29	3,345.4		0	$0	0	$0	82	$5,906,916	69	$5,211,730	972	$114,046,473	868	$104,555,339	164.2	31.0	42.0	91.1	0	0
2	**Cascade County**	2,454.91	2,708.4	90.6%	20	$90,365,664	20	$90,365,664	28,943	$4,349,791,994	28,922	$4,347,249,198	4,285	$2,555,983,982	4,236	$2,545,220,479	84,831.6	18,230.8	18,012.4	48,588.4	14	5
	Belt city	0.32	0.3	100.0%	0	$0	0		98	$8,912,233	98	$8,912,233	16	$5,432,574	16	$5,432,574	230.3	51.6	41.2	137.5	0	0
	Cascade town	0.48	0.5	100.0%	20	$90,365,664	0		267	$28,222,039	267	$28,222,039	61	$9,822,750	61	$9,822,750	627.5	140.5	112.3	374.6	1	1
	Great Falls city	23.04	23.0	100.0%	0	$0	15	$87,655,358	21,838	$3,214,111,195	21,838	$3,214,111,195	1,980	$1,834,875,305	1,980	$1,834,875,305	67,712.5	14,451.3	14,746.1	38,515.2	2	2
	Neihart town	1.60	1.6	98.0%	0	$0	0		57	$5,297,372	57	$5,297,372	14	$2,901,487	14	$2,901,487	134.0	30.0	24.0	80.0	0	0
	Balance of Cascade County	2,429.47	2,682.9		0	0.0	5	$2,710,305	6,683	$1,093,249,155	6,662	$1,090,706,359	2,214	$702,951,866	2,165	$692,188,363	16,127.3	3,557.4	3,088.8	9,481.1	11	0
2	**Chouteau County**	3,331.74	3,992.9	83.4%	0	$0	0		1,880	$212,079,581	1,876	$211,717,611	1,258	$200,554,092	1,102	$177,588,062	7,987.0	1,841.9	1,584.0	4,561.2	4	2
	Big Sandy town	0.48	0.5	100.0%	0	$0	0		324	$26,480,771	324	$26,480,771	42	$4,231,062	42	$4,231,062	1,057.5	246.4	200.9	610.2	0	0
	Fort Benton city	1.54	1.5	100.0%	0	$0	0		795	$106,352,375	795	$106,352,375	111	$15,435,130	111	$15,435,130	4,927.0	1,128.9	1,002.6	2,795.6	0	0
	Geraldine town	0.57	0.6	100.0%	0	$0	0		150	$9,556,033	150	$9,556,033	21	$2,592,594	21	$2,592,594	402.5	93.8	76.5	232.2	0	0
	Balance of Chouteau County	3,329.15	3,990.3		0	$0	0	$0	611	$69,690,402	607	$69,328,432	1,084	$178,295,306	928	$155,329,276	1,600.0	372.8	304.0	923.2	4	0
4	**Custer County**	3,231.89	3,789.3	85.3%	12	$59,923,374	12	$59,923,374	4,678	$531,010,978	4,643	$525,923,384	1,711	$297,665,123	1,599	$281,764,377	12,032.0	2,375.3	3,105.2	6,551.4	0	0
	Ismay town	0.42	0.4	100.0%	0	$0	0		29	$349,883	29	$349,883	10	$1,387,354	10	$1,387,354	69.0	14.8	13.3	40.9	0	0
	Miles City city	3.31	3.3	100.0%	0	$0	2	$7,613,508	3,312	$363,057,565	3,312	$363,057,565	433	$104,957,053	433	$104,957,053	8,678.8	1,689.6	2,328.9	4,660.2	0	0
	Balance of Custer County	3,228.17	3,785.6		12	$59,923,374	10	$52,309,866	1,337	$167,603,530	1,302	$162,515,936	1,268	$191,320,716	1,156	$175,419,970	3,284.2	670.8	763.1	1,850.3	0	0
6	**Daniels County**	1,369.12	1,426.1	96.0%	2	$36,946	2	$36,946	906	$81,170,595	906	$81,170,595	976	$93,098,998	957	$91,498,028	1,992.4	418.4	569.2	1,004.9	0	0
	Flaxville town	0.08	0.1	100.0%	0	$0	0		87	$4,797,361	87	$4,797,361	16	$766,732	16	$766,732	173.1	37.9	44.1	91.1	0	0
	Scobey city	0.74	0.7	100.0%	0	$0	0		675	$64,548,974	675	$64,548,974	128	$10,135,214	128	$10,135,214	1,532.7	317.7	451.9	763.1	0	0
	Balance of Daniels County	1,368.30	1,425.3		2	$36,946	2	$36,946	144	$11,824,260	144	$11,824,260	832	$82,197,052	813	$80,596,082	286.6	62.8	73.1	150.7	0	0
4	**Dawson County**	2,380.65	2,380.7	100.0%	10	$20,985,926	10	$20,985,926	3,163	$409,229,017	3,163	$409,229,017	908	$162,010,623	908	$162,010,623	7,373.7	1,618.0	1,515.3	4,240.4	0	0
	Glendive city	3.48	3.5	100.0%	0	$0	8	$20,750,838	1,604	$225,892,962	1,604	$225,892,962	230	$56,394,894	230	$56,394,894	3,801.8	825.8	811.7	2,164.3	0	0
	Richey town	0.26	0.3	100.0%	0	$0	0		165	$8,909,873	165	$8,909,873	23	$2,890,873	23	$2,890,873	369.6	83.9	65.8	219.9	0	0
	Balance of Dawson County	2,376.91	2,376.9		10	$20,985,926	2	$235,088	1,394	$174,426,182	1,394	$174,426,182	655	$102,724,856	655	$102,724,856	3,202.3	708.3	637.8	1,856.3	0	0
1	**Deer Lodge County**	117.57	740.6	15.9%	30	$71,273,714	26	$70,798,239	4,234	$406,037,841	1,196	$109,667,709	509	$103,961,907	195	$50,955,060	3,330.3	487.2	803.1	2,039.9	3	2
	Anaconda-Deer Lodge County	117.57	740.6	15.9%	30	$71,273,714	26	$70,798,239	4,234	$406,037,841	1,196	$109,667,709	509	$103,961,907	195	$50,955,060	3,330.3	487.2	803.1	2,039.9	3	0
4	**Fallon County**	1,558.68	1,621.2	96.1%	1	$15,822	1	$15,822	1,223	$120,111,206	1,222	$120,021,746	1,285	$157,284,133	1,264	$155,804,391	3,177.4	804.6	664.2	1,708.6	2	1
	Baker city	1.08	1.1	100.0%	0	$0	0		882	$83,620,710	882	$83,620,710	144	$33,873,913	144	$33,873,913	2,337.6	580.4	524.8	1,232.4	0	0
	Plevna town	0.44	0.4	100.0%	0	$0	0		106	$6,148,692	106	$6,148,692	78	$8,870,026	78	$8,870,026	261.8	69.9	43.5	148.5	0	0
	Balance of Fallon County	1,557.16	1,619.6		1	$15,822	1	$15,822	235	$30,341,804	234	$30,252,344	1,063	$114,540,194	1,042	$113,060,452	578.0	154.3	95.9	327.7	2	0
6	**Fergus County**	3,218.32	4,345.2	74.1%	7	$21,432,181	7	$21,432,181	4,690	$556,548,908	4,494	$531,658,390	2,019	$402,403,647	1,779	$362,644,489	16,277.0	3,316.2	4,186.3	8,774.5	4	2
	Denton town	0.71	0.7	100.0%	0	$0	0		152	$13,428,059	152	$13,428,059	29	$4,382,026	29	$4,382,026	366.8	76.7	87.3	202.8	0	0
	Grass Range town	0.14	0.1	100.0%	0	$0	0		82	$4,930,605	82	$4,930,605	14	$1,525,471	14	$1,525,471	184.5	38.6	43.9	102.0	0	0
	Lewistown city	5.21	5.2	100.0%	0	$0	4	$21,190,378	2,796	$320,465,500	2,796	$320,465,500	396	$106,823,714	396	$106,823,714	12,079.8	2,456.1	3,124.9	6,498.7	0	0
	Moore town	0.29	0.3	100.0%	0	$0	0		102	$6,944,815	102	$6,944,815	19	$4,216,005	19	$4,216,005	229.5	48.0	54.6	126.9	0	0
	Winifred town	0.52	0.5	100.0%	0	$0	0		90	$8,768,234	90	$8,768,234	20	$4,365,641	20	$4,365,641	202.5	42.3	48.2	112.0	0	0
	Balance of Fergus County	3,211.45	4,338.3		7	$21,432,181	3	$241,803	1,468	$202,011,695	1,272	$177,121,177	1,541	$281,090,790	1,301	$241,331,632	3,214.0	654.6	827.4	1,732.0	4	0
1	**Flathead County**	729.21	5,252.4	13.9%	20	$38,896,279	16	$38,354,057	41,342	$8,600,413,799	34,301	$6,890,990,199	8,138	$3,832,482,719	6,166	$2,974,180,871	187,883.7	41,089.1	35,987.2	110,807.4	5	1
	Columbia Falls city	1.21	2.1	59.0%	0	$0	2	$16,951,424	1,739	$255,171,515	1,039	$172,475,063	327	$117,184,528	107	$45,418,437	7,648.5	1,672.2	1,466.6	4,509.7	1	1
	Kalispell city	11.80	11.8	100.0%	0	$0	10	$19,802,332	7,553	$1,271,291,249	7,553	$1,271,291,249	1,714	$1,065,757,780	1,714	$1,065,757,780	55,886.2	12,133.4	11,031.0	32,721.8	0	0
	Whitefish city	5.59	11.8	47.2%	0	$0	0		4,029	$1,153,743,638	3,386	$768,178,233	522	$350,353,977	487	$315,690,498	36,761.5	8,070.1	6,928.0	21,763.4	0	0
	Balance of Flathead County	710.62	5,226.8		20	$38,896,279	4	$1,600,301	28,021	$5,920,207,397	22,323	$4,679,045,654	5,575	$2,299,186,434	3,858	$1,547,314,156	87,587.4	19,213.3	16,561.5	51,812.6	4	0
3	**Gallatin County**	639.83	2,632.5	24.3%	207	$963,139,971	201	$961,723,453	40,035	$10,930,545,091	32,056	$8,371,158,648	5,191	$4,169,858,220	3,437	$3,277,077,870	226,513.9	45,516.4	28,977.8	152,019.7	6	3
	Belgrade city	2.58	3.1	83.5%	0	$0	0		2,764	$496,929,312	2,539	$455,406,819	204	$120,870,378	202	$119,926,092	18,403.4	3,619.4	2,695.7	12,088.3	0	0

APPENDIX B-7. VULNERABILITY ASSESSMENT DOCUMENTATION - SEVERE WEATHER
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Severe Weather sq. miles	Total sq. miles	Percent Severe Weather sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Severe Weather Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Severe Weather Hazard Area	Residential Exposure in Severe Weather Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Severe Weather Hazard Area	CAI Exposure in Severe Weather Hazard Area	Total Population in Hazard Area	<18 in Severe Weather Hazard Area	>65 in Severe Weather Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Bozeman city	18.45	19.9	92.8%	0	$0	192	$948,662,225	16,722	$4,743,491,928	16,577	$4,673,527,862	1,511	$2,235,363,972	1,453	$2,209,741,252	167,763.9	33,889.6	20,686.3	113,188.0	2	1
	Manhattan town	1.09	1.7	63.7%	0	$0	0		657	$115,292,092	365	$59,052,751	71	$33,496,346	49	$20,175,458	1,425.2	272.7	241.8	910.7	0	0
	Three Forks city	0.05	1.4	3.4%	0	$0	0		787	$99,273,886	0		104	$26,353,553	0					0.0	0	0
	West Yellowstone town	0.68	0.8	86.7%	0	$0	0		639	$139,663,482	604	$132,157,394	244	$183,049,311	172	$154,952,962	3,021.0	613.3	359.5	2,048.2	0	0
	Balance of Gallatin County	616.99	2,605.7		207	$963,139,971	9	$13,061,227	18,466	$5,335,894,391	11,971	$3,051,013,822	3,057	$1,570,724,660	1,561	$772,282,106	35,900.4	7,121.5	4,994.4	23,784.5	4	0
4	**Garfield County**	4,196.66	4,843.5	86.6%	1	$2,417	1	$2,417	558	$40,352,973	469	$34,125,713	828	$98,380,657	792	$94,725,621	1,200.5	247.2	341.5	611.8	0	0
	Jordan town	0.35	0.3	100.0%	0	$0	0		257	$15,353,948	257	$15,353,948	31	$4,176,477	31	$4,176,477	693.8	135.2	223.9	334.7	0	0
	Balance of Garfield County	4,196.31	4,843.1		1	$2,417	1	$2,417	301	$24,999,025	212	$18,771,765	797	$94,204,180	761	$90,549,144	506.7	112.0	117.5	277.2	0	0
2	**Glacier County**	890.66	3,034.9	29.3%	4	$166,089	3	$144,814	2,176	$173,809,579	1,996	$163,850,946	1,208	$513,342,768	833	$410,781,916	6,589.9	1,928.1	1,126.9	3,534.9	0	0
	Browning town	0.28	0.3	100.0%	0	$0	0		207	$8,297,087	207	$8,297,087	61	$9,037,744	61	$9,037,744	669.3	208.8	77.6	382.8	0	0
	Cut Bank city	1.16	1.2	100.0%	0	$0	1	$32,554	1,122	$90,953,194	1,122	$90,953,194	151	$37,600,597	151	$37,600,597	3,794.0	1,081.4	730.1	1,982.6	0	0
	Balance of Glacier County	889.22	3,033.4		4	$166,089	2	$112,260	847	$74,559,298	667	$64,600,665	996	$466,704,427	621	$364,143,575	2,126.6	637.9	319.2	1,169.5	0	0
5	**Golden Valley County**	997.65	1,174.1	85.0%	0	$0	0		288	$22,545,552	287	$22,335,492	240	$51,388,053	226	$49,548,033	732.8	143.6	198.6	390.6	0	0
	Lavina town	1.01	1.0	100.0%	0	$0	0		91	$7,521,010	91	$7,521,010	15	$1,533,018	15	$1,533,018	284.0	55.7	77.0	151.4	0	0
	Ryegate town	0.75	0.8	100.0%	0	$0	0		141	$10,234,886	141	$10,234,886	15	$1,769,218	15	$1,769,218	322.9	63.3	87.5	172.1	0	0
	Balance of Golden Valley County	995.88	1,172.4		0	$0	0	$0	56	$4,789,656	55	$4,579,596	210	$48,085,817	196	$46,245,797	125.9	24.7	34.1	67.1	0	0
1	**Granite County**	705.33	1,730.9	40.8%	0	$0	0		1,604	$210,828,137	1,059	$139,472,972	530	$156,924,788	376	$126,646,372	3,138.3	505.3	925.8	1,707.2	4	2
	Drummond town	0.51	0.5	92.5%	0	$0	0		144	$11,391,136	133	$10,780,646	48	$5,493,281	48	$5,493,281	508.1	81.8	149.9	276.4	0	0
	Philipsburg town	0.63	0.8	74.0%	0	$0	0		503	$53,845,654	350	$35,731,579	77	$16,673,401	64	$13,861,905	1,272.4	204.9	375.4	692.2	0	0
	Balance of Granite County	704.19	1,729.5		0	$0	0	$0	957	$145,591,347	576	$92,960,747	405	$134,758,106	264	$107,291,186	1,357.8	218.6	400.6	738.6	4	0
2	**Hill County**	1,590.07	2,915.3	54.5%	19	$55,432,027	19	$55,432,027	6,281	$754,306,279	5,033	$624,989,471	2,439	$478,811,374	1,549	$283,812,640	14,776.7	3,995.8	2,352.9	8,428.0	4	2
	Havre city	3.00	3.4	87.1%	0	$0	12	$48,059,107	2,954	$365,822,286	2,648	$342,990,989	390	$113,681,709	197	$47,416,729	8,388.5	2,239.0	1,426.6	4,722.8	0	0
	Hingham town	0.17	0.2	100.0%	0	$0	0		165	$13,864,635	165	$13,864,635	27	$3,866,422	27	$3,866,422	433.9	119.3	62.9	251.7	0	0
	Balance of Hill County	1,586.90	2,911.7		19	$55,432,027	7	$7,372,920	3,162	$374,619,358	2,220	$268,133,847	2,022	$361,263,243	1,325	$232,529,489	5,954.3	1,637.4	863.4	3,453.5	4	0
3	**Jefferson County**	617.09	1,657.8	37.2%	14	$15,148,292	6	$5,612,798	4,016	$744,240,161	3,410	$667,555,762	694	$117,529,005	436	$77,194,130	9,063.7	1,722.9	2,257.8	5,083.0	7	1
	Boulder town	0.75	1.1	67.2%	0	$0	0		356	$36,918,541	306	$30,794,456	47	$6,824,156	47	$6,824,156	847.5	153.9	239.7	454.0	3	1
	Whitehall town	0.32	0.7	45.3%	0	$0	0		325	$32,838,125	141	$13,995,575	47	$9,146,159	21	$5,636,139	353.9	71.1	72.9	209.9	0	0
	Balance of Jefferson County	616.02	1,656.0		14	$15,148,292	6	$5,612,798	3,335	$674,483,495	2,963	$622,765,731	600	$101,558,690	368	$64,733,835	7,862.2	1,497.9	1,945.2	4,419.1	4	0
6	**Judith Basin County**	1,323.94	1,868.3	70.9%	0	$0	0		783	$67,357,916	738	$62,322,345	682	$119,016,564	641	$114,088,541	2,064.5	386.1	495.5	1,182.9	0	0
	Hobson town	0.21	0.2	100.0%	0	$0	0		116	$11,542,201	116	$11,542,201	21	$3,191,010	21	$3,191,010	372.8	69.7	89.5	213.6	0	0
	Stanford town	0.42	0.4	100.0%	0	$0	0		248	$24,191,487	248	$24,191,487	49	$6,993,739	49	$6,993,739	876.4	163.9	210.3	502.2	0	0
	Balance of Judith Basin County	1,323.31	1,867.6		0	$0	0	$0	419	$31,624,228	374	$26,588,657	612	$108,831,815	571	$103,903,792	815.3	152.5	195.7	467.2	0	0
1	**Lake County**	710.92	1,652.1	43.0%	16	$14,144,458	12	$11,391,790	16,679	$3,044,070,013	12,550	$2,226,912,821	4,157	$907,884,902	3,123	$664,661,182	32,659.2	7,657.4	7,639.3	17,362.5	0	0
	Polson city	4.31	4.3	100.0%	0	$0	0		1,550	$239,716,220	1,550	$239,716,220	307	$110,486,890	307	$110,486,890	5,215.0	1,127.8	1,530.0	2,557.2	0	0
	Ronan city	1.14	1.1	100.0%	0	$0	0		498	$51,240,897	498	$51,240,897	188	$43,266,142	188	$43,266,142	1,580.1	344.1	455.7	780.3	0	0
	St. Ignatius town	0.52	0.5	100.0%	0	$0	0		227	$24,362,098	227	$24,362,098	33	$6,506,490	33	$6,506,490	699.5	130.1	274.3	295.1	0	0
	Balance of Lake County	704.95	1,646.2		16	$14,144,458	12	$11,391,790	14,404	$2,728,750,798	10,275	$1,911,593,606	3,629	$747,625,380	2,595	$504,401,660	25,164.6	6,055.4	5,379.2	13,730.0	0	0
3	**Lewis and Clark County**	1,846.00	3,493.5	52.8%	77	$528,411,633	74	$528,327,923	28,356	$4,838,187,380	26,374	$4,556,382,408	2,990	$1,486,292,152	2,779	$1,429,643,862	126,398.1	26,699.8	24,667.0	75,031.3	15	8
	East Helena town	4.08	4.1	100.0%	0	$0	0		778	$95,292,980	778	$95,292,980	55	$16,849,629	55	$16,849,629	4,051.8	857.5	784.7	2,409.7	0	0
	Helena city	16.53	16.5	100.0%	0	$0	51	$505,323,631	10,487	$2,070,264,423	10,487	$2,070,264,423	1,613	$1,127,469,517	1,613	$1,127,469,517	79,876.9	16,952.3	15,285.5	47,639.1	8	4
	Balance of Lewis and Clark County	1,825.39	3,472.8		77	$528,411,633	23	$23,004,292	17,091	$2,672,629,977	15,109	$2,390,825,005	1,322	$341,973,006	1,111	$285,324,716	42,469.3	8,890.0	8,596.8	24,982.5	7	0
2	**Liberty County**	1,128.10	1,446.4	78.0%	3	$203,754	3	$203,754	540	$55,198,775	536	$54,529,022	727	$148,145,426	606	$104,778,328	1,537.4	300.8	434.6	802.1	0	0
	Chester town	0.49	0.5	100.0%	0	$0	0		347	$38,384,265	347	$38,384,265	85	$11,176,620	85	$11,176,620	1,061.1	196.5	340.7	523.9	0	0
	Balance of Liberty County	1,127.60	1,445.9		3	$203,754	3	$203,754	193	$16,814,510	189	$16,144,757	642	$136,968,806	521	$93,601,708	476.3	104.3	93.8	278.1	0	0
1	**Lincoln County**	36.28	3,673.2	1.0%	5	$2,732,131	1	$2,417	14,201	$1,669,255,057	2,099	$285,381,057	4,037	$814,443,340	501	$149,797,213	4,961.7	897.9	1,384.9	2,678.9	0	0
	Eureka town	1.03	1.0	99.7%	0	$0	0		576	$49,995,833	575	$49,856,633	79	$16,254,364	79	$16,254,364	1,520.7	264.7	466.1	789.9	0	0
	Libby city		1.7	0.0%	0	$0	0		1,887	$171,393,838	0		407	$97,831,857	0					0.0	0	0
	Rexford town	0.09	0.1	100.0%	0	$0	0		62	$5,237,363	62	$5,237,363	7	$1,125,453	7	$1,125,453	137.0	25.2	36.6	75.2	0	0
	Troy city	0.00	0.7	0.2%	0	$0	0		543	$42,346,210	0		99	$14,488,626	1	$108,012				0.0	0	0
	Balance of Lincoln County	35.16	3,669.7		5	$2,732,131	1	$2,417	11,133	$1,400,281,813	1,462	$230,287,061	3,445	$684,743,040	414	$132,309,384	3,304.0	607.9	882.2	1,813.9	0	0
3	**Madison County**	208.28	3,602.4	5.8%	3	$270,203	0		4,154	$804,105,665	677	$129,335,014	1,301	$368,696,283	244	$56,382,495	1,589.5	236.7	513.1	839.7	9	1
	Ennis town	0.14	0.6	24.0%	0	$0	0		533	$84,019,269	74	$9,240,889	85	$24,326,354	26	$4,020,895	165.0	25.9	47.2	91.9	0	0
	Sheridan town	0.25	1.0	24.7%	2	$59,996	0		1,971	$206,039,798	60	$7,049,143	54	$8,980,370	2	$401,395	133.8	21.0	38.3	74.5	0	0
	Twin Bridges town	0.11	1.0	10.8%	0	$0	0		232	$25,593,322	1	$100,200	47	$8,125,500	0		2.2	0.4	0.6	1.2	0	0
	Virginia City town	0.19	0.9	19.8%	0	$0	0		167	$26,178,533	13	$2,355,080	30	$5,366,969	0		29.0	4.6	8.3	16.1	1	1
	Balance of Madison County	207.59	3,598.8		1	$210,207	0	$0	1,251	$462,274,743	529	$110,589,702	1,085	$321,897,090	216	$51,960,205	1,259.4	184.9	418.7	655.8	8	0
4	**McCone County**	2,679.21	2,679.2	100.0%	3	$141,360	3	$141,360	532	$44,530,155	532	$44,530,155	679	$82,125,293	679	$82,125,293	1,305.1	268.9	285.8	750.5	3	1
	Circle town	0.77	0.8	100.0%	0	$0	0		335	$27,003,251	335	$27,003,251	66	$14,581,192	66	$14,581,192	850.1	175.1	186.2	488.8	0	0
	Balance of McCone County	2,678.43	2,678.4		3.0	$141,360	3	$141,360	197	$17,526,904	197	$17,526,904	613	$67,544,101	613	$67,544,101	455.1	93.7	99.7	261.7	3	0
3	**Meagher County**	724.10	2,392.1	30.3%	0	$0	0		1,199	$128,110,116	173	$16,029,771	412	$92,624,757	124	$29,375,974	427.3	76.5	117.5	233.3	0	0
	White Sulphur Springs city	0.00	1.0	0.0%	0	$0	0		630	$61,212,327	0		45	$6,869,617	0					0.0	0	0
	Balance of Meagher County	724.10	2,391.1		0	$0	0	$0	569	$66,897,789	173	$16,029,771	367	$85,755,140	124	$29,375,974	427.3	76.5	117.5	233.3	0	0
1	**Mineral County**	64.60	1,222.0	5.3%	0	$0	0		2,023	$203,747,490	596	$52,587,215	404	$84,723,652	111	$27,768,299	2,199.3	374.8	689.7	1,134.9	2	0
	Alberton town	0.13	0.5	24.3%	0	$0	0		197	$14,926,025	54	$3,652,465	20	$2,465,222	1	$209,712	144.2	25.5	41.4	77.3	0	0
	Superior town	0.74	1.1	69.1%	0	$0	0		381	$36,464,606	352	$33,451,470	72	$20,494,160	70	$20,277,008	1,401.0	233.5	460.5	707.0	0	0
	Balance of Mineral County	63.73	1,220.4		0	$0	0	$0	1,445	$152,356,859	190	$15,483,280	312	$61,764,270	40	$7,281,579	654.2	115.8	187.7	350.6	2	0
1	**Missoula County**	1,118.24	2,614.9	42.8%	203	$1,032,240,117	203	$1,032,240,117	16,873	$2,860,469,867	15,553	$2,633,700,173	1,421	$1,152,881,550	1,254	$1,066,369,259	70,073.8	13,065.3	12,261.6	44,746.9	13	5
	Missoula city	29.02	29.0	100.0%	203	$1,032,240,117	190	$1,003,483,589	4,975	$984,652,873	4,975	$984,652,873	470	$595,032,016	470	$595,032,016	38,379.4	7,090.7	7,004.0	24,284.8	8	4
	Balance of Missoula County	1,089.22	2,585.9		0	$0	13	$28,756,528	11,898	$1,875,816,994	10,578	$1,649,047,300	951	$557,849,534	784	$471,337,243	31,694.4	5,974.6	5,257.6	20,462.2	5	0

APPENDIX B-7. VULNERABILITY ASSESSMENT DOCUMENTATION - SEVERE WEATHER
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Severe Weather sq. miles	Total sq. miles	Percent Severe Weather sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Severe Weather Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Severe Weather Hazard Area	Residential Exposure in Severe Weather Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Severe Weather Hazard Area	CAI Exposure in Severe Weather Hazard Area	Total Population in Hazard Area	<18 in Severe Weather Hazard Area	>65 in Severe Weather Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
5	**Musselshell County**	1,843.86	1,869.6	98.6%	2	$45,908	2	$45,908	1,730	$148,155,396	1,730	$148,155,396	734	$146,591,301	731	$146,294,881	4,363.0	839.8	1,134.0	2,389.2	0	0
	Melstone town	0.61	0.6	100.0%	0	$0	0		39	$2,012,685	39	$2,012,685	7	$754,186	7	$754,186	94.8	19.0	21.9	53.9	0	0
	Roundup city	1.29	1.3	100.0%	0	$0	1	$30,491	837	$63,457,673	837	$63,457,673	129	$18,353,849	129	$18,353,849	2,113.5	406.3	551.3	1,155.9	0	0
	Balance of Musselshell County	1,841.96	1,867.7		2	$45,908	1	$15,417	854	$82,685,038	854	$82,685,038	598	$127,483,266	595	$127,186,846	2,154.8	414.6	560.8	1,179.4	0	0
3	**Park County**	794.64	2,811.7	28.3%	4	$2,414,253	4	$2,414,253	6,087	$1,151,416,662	4,696	$885,003,177	1,680	$821,834,484	1,132	$445,539,633	11,105.5	2,000.1	2,677.4	6,428.0	3	1
	Clyde Park town	0.30	0.4	83.4%	0	$0	0		134	$13,924,845	126	$13,191,012	23	$4,042,499	21	$2,999,889	287.3	53.7	60.9	172.7	0	0
	Livingston city	5.71	5.7	100.0%	0	$0	1	$2,254,253	2,567	$392,434,781	2,567	$392,434,781	537	$198,955,646	537	$198,955,646	6,171.6	1,092.8	1,566.9	3,512.0	0	0
	Balance of Park County	788.63	2,805.6		4	$2,414,253	3	$160,000	3,386	$745,057,036	2,003	$479,377,384	1,120	$618,836,339	574	$243,584,098	4,646.6	853.6	1,049.7	2,743.3	3	0
6	**Petroleum County**	1,568.06	1,672.5	93.8%	0	$0	0		184	$23,127,789	183	$23,060,809	204	$28,781,751	202	$28,710,321	626.0	116.4	147.1	362.5	0	0
	Winnett town	1.02	1.0	100.0%	0	$0	0		148	$19,210,729	148	$19,210,729	21	$2,591,917	21	$2,591,917	545.2	101.4	128.1	315.6	0	0
	Balance of Petroleum County	1,567.04	1,671.5		0	$0	0	$0	36	$3,917,060	35	$3,850,080	183	$26,189,834	181	$26,118,404	80.8	15.0	19.0	46.8	0	0
6	**Phillips County**	4,197.00	5,208.5	80.6%	6	$1,661,730	6	$1,661,730	1,695	$155,044,408	1,620	$152,631,956	1,402	$250,190,823	1,278	$232,853,384	3,975.0	861.4	1,040.3	2,073.3	3	2
	Dodson town	0.00	0.2	0.0%	0	$0	0		70	$2,222,512	0		5	$140,341	0					0.0	0	0
	Malta city	1.03	1.0	100.0%	0	$0	0		996	$103,409,948	996	$103,409,948	144	$29,008,393	144	$29,008,393	2,380.4	530.9	571.6	1,277.9	0	0
	Saco town	0.30	0.3	100.0%	0	$0	0		134	$6,873,752	134	$6,873,752	15	$1,887,736	15	$1,887,736	302.8	70.0	64.5	168.4	0	0
	Balance of Phillips County	4,195.67	5,207.0		6	$1,661,730	6	$1,661,730	495	$42,538,196	490	$42,348,256	1,238	$219,154,353	1,119	$201,957,255	1,291.7	260.5	404.2	627.0	3	0
2	**Pondera County**	1,121.24	1,640.4	68.4%	2	$60,957	2	$60,957	1,815	$200,092,707	1,724	$191,799,464	883	$265,160,665	772	$215,404,816	5,810.0	1,351.8	1,250.5	3,207.7	0	0
	Conrad city	1.20	1.2	100.0%	0	$0	0		1,126	$122,656,189	1,126	$122,656,189	156	$57,675,177	156	$57,675,177	4,025.8	930.7	886.5	2,208.5	0	0
	Valier town	0.86	0.9	100.0%	0	$0	0		295	$29,342,500	295	$29,342,500	47	$8,582,116	47	$8,582,116	965.2	227.8	196.9	540.5	0	0
	Balance of Pondera County	1,119.17	1,638.3		2	$60,957	2	$60,957	394	$48,094,018	303	$39,800,775	680	$198,903,372	569	$149,147,523	819.0	193.3	167.1	458.6	0	0
4	**Powder River County**	2,877.08	3,297.5	87.3%	2	$26,512	2	$26,512	350	$31,752,451	350	$31,752,451	642	$113,734,309	604	$108,491,657	846.3	131.5	271.5	443.3	0	0
	Broadus town	0.36	0.4	100.0%	0	$0	0		218	$19,631,053	218	$19,631,053	71	$8,590,919	71	$8,590,919	557.2	81.7	199.9	275.6	0	0
	Balance of Powder River County	2,876.73	3,297.1		2	$26,512	2	$26,512	132	$12,121,398	132	$12,121,398	571	$105,143,390	0		289.1	49.7	71.7	167.7	0	0
1	**Powell County**	835.11	2,329.6	35.8%	47	$139,753,982	13	$18,224,325	2,509	$325,066,746	2,051	$264,034,583	697	$217,400,046	480	$166,054,463	7,620.5	1,155.8	1,632.9	4,831.8	4	2
	Deer Lodge city	1.37	1.4	96.1%	30	$71,273,714	0		1,455	$118,373,521	1,401	$113,674,117	160	$37,299,244	160	$37,299,244	5,192.8	779.5	1,154.7	3,258.6	2	1
	Balance of Powell County	833.74	2,328.2		17	$68,480,268	13	$18,224,325	1,054	$206,693,225	650	$150,360,466	537	$180,100,802	320	$128,755,219	2,427.8	376.3	478.3	1,573.2	2	0
4	**Prairie County**	1,537.26	1,740.2	88.3%	0	$0	0		527	$28,742,376	527	$28,742,376	525	$56,615,772	511	$54,353,570	1,376.0	258.8	468.9	648.3	4	2
	Terry town	0.77	0.8	100.0%	0	$0	0		382	$21,559,157	382	$21,559,157	43	$3,618,679	43	$3,618,679	1,019.3	187.5	362.2	469.6	0	0
	Balance of Prairie County	1,536.49	1,739.4		0	$0	0	$0	145	$7,183,219	145	$7,183,219	482	$52,997,093	468	$50,734,891	356.7	71.3	106.7	178.7	4	0
1	**Ravalli County**	891.60	2,398.2	37.2%	3	$1,079,777	2	$1,024,961	19,277	$3,692,614,691	18,954	$3,627,538,826	3,023	$930,619,898	2,870	$880,698,025	48,855.6	9,334.6	12,945.9	26,575.1	4	2
	Darby town	0.56	0.6	100.0%	0	$0	0		455	$65,564,435	455	$65,564,435	20	$5,525,704	20	$5,525,704	1,318.9	242.4	386.3	690.2	0	0
	Hamilton city	2.39	2.4	100.0%	0	$0	1	$1,014,737	2,371	$402,402,609	2,371	$402,402,609	207	$138,471,668	207	$138,471,668	7,443.0	1,394.5	2,078.3	3,970.2	0	0
	Pinesdale town	1.16	1.3	89.9%	0	$0	0		163	$30,828,359	160	$30,121,115	42	$6,383,047	42	$6,383,047	388.8	76.2	95.6	217.0	0	0
	Stevensville town	1.02	1.0	100.0%	0	$0	0		956	$165,432,372	956	$165,432,372	64	$20,620,328	64	$20,620,328	2,456.1	465.3	666.0	1,324.8	0	0
	Balance of Ravalli County	886.47	2,392.9		3	$1,079,777	1	$10,224	15,332	$3,028,386,916	15,012	$2,964,018,295	2,690	$759,619,151	2,537	$709,697,278	37,248.8	7,156.1	9,719.6	20,373.0	4	0
4	**Richland County**	2,031.53	2,101.9	96.7%	4	$1,434,990	4	$1,434,990	2,979	$516,039,930	2,681	$486,420,545	1,646	$420,114,426	1,580	$408,674,588	7,492.4	1,869.6	1,209.8	4,413.0	0	0
	Fairview town	0.44	0.8	54.9%	0	$0	0		313	$29,368,800	69	$6,442,220	37	$7,407,985	8	$2,640,482	256.0	66.1	34.1	155.9	0	0
	Sidney city	2.45	2.4	100.0%	0	$0	3	$1,419,573	1,697	$319,755,649	1,697	$319,755,649	342	$108,260,768	342	$108,260,768	4,832.6	1,204.5	784.9	2,843.2	0	0
	Balance of Richland County	2,028.64	2,098.7		4	$1,434,990	1	$15,417	969	$166,915,481	915	$160,222,676	1,267	$304,445,673	1,230	$297,773,338	2,403.8	599.0	390.8	1,413.9	0	0
6	**Roosevelt County**	2,328.98	2,366.6	98.4%	4	$3,703,234	4	$3,703,234	2,085	$172,781,506	2,085	$172,781,506	1,674	$267,647,926	1,650	$263,633,241	9,018.1	2,912.3	1,228.5	4,877.3	2	1
	Bainville town	1.00	1.0	100.0%	0	$0	0		116	$8,253,760	116	$8,253,760	17	$1,186,389	17	$1,186,389	449.6	149.3	50.4	250.0	0	0
	Brockton town	0.17	0.2	100.0%	0	$0	0		21	$718,776	21	$718,776	5	$430,537	5	$430,537	269.0	89.3	30.1	149.6	0	0
	Culbertson town	0.52	0.5	100.0%	0	$0	0		452	$46,606,757	452	$46,606,757	78	$11,849,589	78	$11,849,589	1,600.1	531.2	179.2	889.6	0	0
	Froid town	0.28	0.3	100.0%	0	$0	0		127	$5,583,947	127	$5,583,947	15	$809,020	15	$809,020	449.6	149.3	50.4	250.0	0	0
	Poplar city	0.27	0.3	100.0%	0	$0	0		239	$11,492,367	239	$11,492,367	40	$3,179,375	40	$3,179,375	1,547.0	513.6	173.3	860.1	0	0
	Wolf Point city	0.85	0.8	100.0%	0	$0	1	$1,444,427	746	$61,499,644	746	$61,499,644	105	$12,969,709	105	$12,969,709	2,836.1	914.4	390.5	1,531.3	0	0
	Balance of Roosevelt County	2,325.89	2,363.6		4	$3,703,234	3	$2,258,807	384	$38,626,255	384	$38,626,255	1,414	$237,223,307	1,390	$233,208,622	1,866.7	565.3	354.7	946.7	2	0
5	**Rosebud County**	3,050.69	5,020.4	60.8%	3	$125,417	2	$25,417	2,477	$239,021,461	2,458	$238,516,689	1,810	$213,766,468	1,634	$196,571,674	7,065.4	2,036.0	1,178.3	3,851.1	0	0
	Colstrip city	4.06	4.1	100.0%	0	$0	0		980	$109,503,560	980	$109,503,560	250	$31,692,015	250	$31,692,015	2,753.8	812.4	404.7	1,536.7	0	0
	Forsyth city	1.17	1.2	100.0%	0	$0	0		896	$75,056,501	896	$75,056,501	141	$26,550,423	141	$26,550,423	2,596.9	741.9	451.7	1,403.3	0	0
	Balance of Rosebud County	3,045.46	5,015.1		3	$125,417	2	$25,417	601	$54,461,400	582	$53,956,628	1,419	$155,524,030	1,243	$138,329,236	1,714.6	481.6	322.0	911.0	0	0
1	**Sanders County**	402.73	2,786.9	14.5%	0	$0	0		4,955	$571,408,477	1,418	$157,174,816	1,849	$320,122,376	313	$52,978,805	4,283.2	756.2	1,279.3	2,247.6	0	0
	Hot Springs town	0.03	0.4	9.0%	0	$0	0		343	$29,433,542	44	$3,950,098	53	$9,621,606	15	$2,139,193	121.6	21.9	34.6	65.0	0	0
	Plains town	0.00	0.6	0.0%	0	$0	0		547	$44,751,633	0		88	$17,655,569	0					0.0	0	0
	Thompson Falls city	1.18	1.6	74.6%	0	$0	0		666	$67,891,731	568	$50,061,999	85	$16,866,473	77	$14,151,199	2,015.8	348.1	633.1	1,034.6	0	0
	Balance of Sanders County	401.52	2,784.4		0	$0	0	$0	3,399	$429,331,571	806	$103,162,719	1,623	$275,978,728	221	$36,688,413	2,145.9	386.3	611.6	1,148.1	0	0
6	**Sheridan County**	1,478.06	1,703.6	86.8%	2	$59,996	2	$59,996	1,971	$206,039,798	1,493	$142,370,829	1,503	$172,072,215	1,334	$154,372,243	3,455.8	694.6	868.5	1,892.8	0	0
	Medicine Lake town	0.41	0.4	100.0%	0	$0	0		159	$9,705,581	159	$9,705,581	24	$1,200,353	24	$1,200,353	367.2	77.5	78.6	211.1	0	0
	Outlook town	1.25	1.2	100.0%	0	$0	0		44	$2,946,970	44	$2,946,970	10	$552,096	10	$552,096	95.0	20.1	20.3	54.6	0	0
	Plentywood city	1.34	1.3	100.0%	0	$0	0		785	$88,640,393	785	$88,640,393	136	$18,201,885	136	$18,201,885	1,902.8	366.9	536.1	999.8	0	0
	Westby town	0.35	0.6	62.9%	0	$0	0		102	$4,909,517	52	$2,705,722	15	$1,132,999	13	$927,499	112.3	23.7	24.0	64.6	0	0
	Balance of Sheridan County	1,474.71	1,700.1		2	$59,996	2	$59,996	881	$99,837,337	453	$38,372,163	1,318	$150,984,882	1,151	$133,490,410	978.5	206.5	209.4	562.6	0	0
1	**Silver Bow County**	414.66	718.0	57.8%	26	$227,661,811	26	$227,661,811	13,122	$1,426,148,334	12,951	$1,402,358,807	1,585	$807,024,197	1,508	$786,976,292	32,823.0	6,494.2	6,912.1	19,416.6	5	2
	Walkerville town	1.59	2.2	71.4%	0	$0	0		342	$24,138,167	332	$21,945,753	6	$334,643	6	$334,643	737.0	151.1	134.1	451.8	1	1
	Butte-Silver Bow (remainder)	413.07	715.7		26	$227,661,811	26	$227,661,811	12,780	$1,402,010,167	12,619	$1,380,413,054	1,579	$806,689,554	1,502	$786,641,649	32,085.9	6,343.1	6,778.0	18,964.8	4	0
5	**Stillwater County**	1,417.30	1,804.7	78.5%	2	$100,729	2	$100,729	2,790	$487,586,815	2,669	$457,589,153	943	$192,170,926	892	$179,830,096	6,512.4	1,398.6	1,655.3	3,458.5	0	0
	Columbus town	1.29	1.3	100.0%	0	$0	0		448	$58,806,556	448	$58,806,556	97	$44,373,190	97	$44,373,190	1,093.1	234.0	402.6	456.5	0	0
	Balance of Stillwater County	1,416.00	1,803.4		2	$100,729	2	$100,729	2,342	$428,780,259	2,221	$398,782,597	846	$147,797,736	795	$135,456,906	5,419.2	1,164.6	1,252.7	3,001.9	0	0
3	**Sweet Grass County**	1,465.88	1,860.9	78.8%	1	$100,000	1	$100,000	1,559	$263,525,756	1,499	$250,281,220	1,251	$384,985,550	1,187	$363,732,095	3,958.0	802.3	1,039.4	2,116.3	0	0

APPENDIX B-7. VULNERABILITY ASSESSMENT DOCUMENTATION - SEVERE WEATHER
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Severe Weather sq. miles	Total sq. miles	Percent Severe Weather sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Severe Weather Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Severe Weather Hazard Area	Residential Exposure in Severe Weather Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Severe Weather Hazard Area	CAI Exposure in Severe Weather Hazard Area	Total Population in Hazard Area	<18 in Severe Weather Hazard Area	>65 in Severe Weather Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Big Timber city	0.95	1.0	100.0%	0	$0	0		772	$99,628,903	772	$99,628,903	157	$34,833,465	157	$34,833,465	2,104.1	418.6	581.5	1,104.1	0	0
	Balance of Sweet Grass County	1,464.93	1,860.0		1	$100,000	1	$100,000	787	$163,896,853	727	$150,652,317	1,094	$350,152,085	1,030	$328,898,630	1,853.9	383.7	457.9	1,012.2	0	0
2	**Teton County**	1,445.65	2,289.5	63.1%	2	$60,957	2	$60,957	1,834	$226,386,656	1,789	$219,534,779	1,107	$240,507,233	1,047	$213,252,378	5,059.5	1,077.9	1,524.3	2,457.3	1	1
	Choteau city	1.46	1.5	100.0%	0	$0	1	$2,417	743	$81,363,094	743	$81,363,094	102	$23,811,077	102	$23,811,077	2,334.5	434.8	908.4	991.3	0	0
	Dutton town	0.35	0.4	100.0%	0	$0	0		159	$17,819,673	159	$17,819,673	30	$5,356,644	30	$5,356,644	452.5	106.8	102.3	243.4	0	0
	Fairfield town	0.31	0.3	100.0%	0	$0	0		266	$30,208,145	266	$30,208,145	46	$13,369,957	46	$13,369,957	692.5	163.4	156.5	372.6	0	0
	Balance of Teton County	1,443.53	2,287.4		2	$60,957	1	$58,540	666	$96,995,744	621	$90,143,867	929	$197,969,555	869	$170,714,700	1,580.0	372.9	357.1	850.0	1	0
2	**Toole County**	1,043.28	1,943.9	53.7%	3	$124,825	2	$50,496	1,702	$149,272,962	1,408	$131,153,694	806	$214,874,251	525	$148,547,335	4,662.8	861.2	856.2	2,945.5	2	1
	Kevin town	0.00	0.4	0.0%	0	$0	0		101	$4,284,353	0		9	$317,749	0					0.0	0	0
	Shelby city	5.00	5.9	84.5%	0	$0	2	$50,496	1,175	$110,467,515	1,122	$108,627,531	196	$76,850,372	190	$75,318,160	3,997.5	736.1	743.7	2,517.7	0	0
	Sunburst town	1.31	2.0	64.5%	0	$0	0		208	$12,619,612	183	$10,802,783	25	$3,026,807	21	$2,834,637	434.6	81.7	73.4	279.4	0	0
	Balance of Toole County	1,036.97	1,935.5		3	$124,825	0	$0	218	$21,901,482	103	$11,723,380	576	$134,679,323	314	$70,394,538	230.7	43.4	39.0	148.4	2	0
5	**Treasure County**	946.28	983.5	96.2%	1	$250,000	1	$250,000	194	$12,369,442	193	$12,222,762	362	$46,827,867	359	$46,631,797	443.9	81.7	123.0	239.3	2	1
	Hysham town	0.24	0.2	100.0%	0	$0	0		159	$9,401,270	159	$9,401,270	20	$2,281,485	20	$2,281,485	365.7	67.3	101.3	197.1	0	0
	Balance of Treasure County	946.04	983.2		1	$250,000	1	$250,000	35	$2,968,172	34	$2,821,492	342	$44,546,382	339	$44,350,312	78.2	14.4	21.7	42.1	2	0
6	**Valley County**	3,759.52	5,058.5	74.3%	7	$2,929,498	6	$2,866,994	2,863	$365,588,943	2,863	$365,588,943	1,209	$208,523,811	1,184	$205,811,719	9,240.2	2,042.1	2,197.1	5,001.0	0	0
	Fort Peck town	0.89	0.9	100.0%	0	$0	0		118	$21,485,471	118	$21,485,471	10	$2,092,827	10	$2,092,827	341.3	76.8	76.4	188.0	0	0
	Glasgow city	1.40	1.4	100.0%	0	$0	1	$1,157,021	1,353	$173,782,829	1,353	$173,782,829	217	$55,123,436	217	$55,123,436	5,131.5	1,117.7	1,276.7	2,737.1	0	0
	Nashua town	0.70	0.7	100.0%	0	$0	0		200	$13,107,033	200	$13,107,033	17	$1,596,474	17	$1,596,474	501.7	112.9	112.4	276.4	0	0
	Opheim town	0.21	0.2	100.0%	0	$0	0		76	$3,977,464	76	$3,977,464	14	$1,365,742	14	$1,365,742	296.1	66.6	66.3	163.1	0	0
	Balance of Valley County	3,756.32	5,055.3		7	$2,929,498	5	$1,709,972	1,116	$153,236,146	1,116	$153,236,146	951	$148,345,332	926	$145,633,240	2,969.6	668.2	665.2	1,636.3	0	0
5	**Wheatland County**	1,328.84	1,425.9	93.2%	3	$1,816,266	3	$1,816,266	850	$65,290,360	849	$64,912,400	392	$102,480,647	384	$101,136,247	2,758.9	634.5	689.7	1,434.6	0	0
	Harlowton city	0.61	0.6	100.0%	0	$0	1	$1,758,068	569	$43,661,633	569	$43,661,633	81	$8,532,547	81	$8,532,547	2,052.2	472.0	513.0	1,067.1	0	0
	Judith Gap city	0.32	0.3	100.0%	0	$0	0		89	$5,833,159	89	$5,833,159	10	$1,334,639	10	$1,334,639	259.7	59.7	64.9	135.1	0	0
	Balance of Wheatland County	1,327.91	1,425.0		3	$1,816,266	2	$58,198	192	$15,795,568	191	$15,417,608	301	$92,613,461	293	$91,269,061	446.9	102.8	111.7	232.4	0	0
4	**Wibaux County**	807.62	888.1	90.9%	0	$0	0		318	$24,265,482	318	$24,265,482	518	$58,984,045	482	$54,673,355	914.3	162.1	353.8	398.4	0	0
	Wibaux town	1.07	1.1	100.0%	0	$0	0		290	$20,843,967	290	$20,843,967	54	$4,948,635	54	$4,948,635	854.1	149.1	338.6	366.5	0	0
	Balance of Wibaux County	806.55	887.0		0	$0	0	$0	28	$3,421,515	28	$3,421,515	464	$54,035,410	428	$49,724,720	60.2	13.0	15.2	32.0	0	0
5	**Yellowstone County**	2,395.75	2,646.8	90.5%	19	$148,531,721	19	$148,531,721	58,853	$10,961,976,827	58,824	$10,956,178,247	5,429	$4,499,091,639	5,398	$4,493,061,939	154,350.7	35,270.2	28,578.2	90,502.2	10	5
	Billings city	43.03	43.0	100.0%	0	$0	15	$146,675,677	41,447	$7,866,273,265	41,447	$7,866,273,265	3,014	$3,285,025,446	3,014	$3,285,025,446	109,304.4	24,896.5	20,524.7	63,883.2	4	2
	Broadview town	0.24	0.2	100.0%	0	$0	0		79	$9,621,070	79	$9,621,070	10	$2,904,982	10	$2,904,982	219.6	51.6	35.6	132.4	0	0
	Laurel city	2.14	2.1	100.0%	0	$0	0		2,701	$394,711,073	2,701	$394,711,073	187	$100,223,386	187	$100,223,386	7,526.0	1,691.5	1,494.1	4,340.4	0	0
	Balance of Yellowstone County	2,350.34	2,601.4		19	$148,531,721	4	$1,856,044	14,626	$2,691,371,419	14,597	$2,685,572,839	2,218	$1,110,937,825	2,187	$1,104,908,125	37,300.7	8,630.6	6,523.9	22,146.2	6	0

APPENDIX B-8

HAZ-MAT & TRANSPORTATION ACCIDENT VULNERABILITY ASSESSMENT DOCUMENTATION

APPENDIX B-8 VULNERABILITY ASSESSMENT DOCUMENTATION - HAZARDOUS MATERIALS INCIDENT

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Haz Mat sq. miles	Total sq. miles	Percent Haz Mat sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Haz Mat Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Haz Mat Hazard Area	Residential Exposure in HazMat Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Haz Mat Hazard Area	CAI Exposure in Haz Mat Hazard Area	Total Population in Hazard Area	<18 in Haz Mat Hazard Area	>65 in Haz Mat Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Montana	4,805	146,923	3.3%	829	$3,596,319,710	300	$1,207,560,176	379,924	$65,567,813,250	153,828	$21,674,148,811	89,351	$31,241,965,630	36,187	$16,175,134,000	562,216.1	118,093.3	114,080.1	330,042.6	126	80
3	**Beaverhead County**	139.59	5,572.5	2.5%	21	$120,039,992	19	$115,439,116	3,023	$398,456,637	1,421	$154,319,110	2,017	$477,421,099	712.00	$183,157,825	3,078.8	544.9	643.5	1,890.4	6	2
	Dillon city	1.29	1.7	77.2%	0	$0	18	$110,148,535	1,178	$128,495,669	765	$80,461,481	230	$70,904,492	206.00	$68,200,765	1,668.4	295.3	348.7	1,024.4	2	1
	Lima town	0.50	0.5	92.2%	0	$0	0		135	$8,569,730	135	$8,569,730	11	$1,208,935	11.00	$1,208,935	290.3	51.4	60.7	178.2	0	0
	Balance of Beaverhead County	137.80	5,570.3		21	$120,039,992	1	$5,290,581	1,710	$261,391,238	521	$65,287,899	1,776	$405,307,672	495.00	$113,748,125	1,120.2	198.3	234.1	687.8	4	0
5	**Big Horn County**	193.06	5,013.9	3.9%	1	$64,294	1	$64,294	3,168	$358,629,629	1,908	$210,556,127	872	$190,843,437	357.00	$75,444,436	7,082.8	2,373.1	973.5	3,736.1	5	1
	Hardin city	1.27	1.6	77.4%	0	$0	1	$64,294	905	$97,296,363	666	$73,063,266	134	$32,479,192	130.00	$31,882,352	2,496.0	828.0	364.4	1,303.5	0	0
	Lodge Grass town	0.22	0.3	82.9%	0	$0	0		149	$10,790,706	146	$10,433,514	22	$17,123,392	21.00	$2,838,012	530.0	181.8	62.0	286.2	0	0
	Balance of Big Horn County	191.57	5,012.0		1	$64,294	0	$0	2,114	$250,542,560	1,096	$127,059,347	716	$141,240,853	206.00	$40,724,072	4,056.9	1,363.4	547.1	2,146.4	5	0
2	**Blaine County**	83.15	4,235.9	2.0%	1	$51,267	0		1,409	$115,967,606	628	$45,084,289	2,309	$361,010,008	609.00	$88,132,231	1,992.2	552.1	427.3	1,012.8	0	0
	Chinook city	0.22	0.5	41.8%	0	$0	0		674	$60,190,802	131	$11,022,046	106	$19,309,682	91.00	$17,875,132	407.5	123.1	58.7	225.8	0	0
	Harlem city	0.41	0.4	98.2%	0	$0	0		352	$22,108,616	342	$21,584,736	68	$8,956,732	68.00	$8,956,732	1,060.7	295.6	222.9	542.2	0	0
	Balance of Blaine County	82.52	4,235.0		1	$51,267	0	$0	383	$33,668,188	155	$12,477,507	2,135	$332,743,594	450.00	$61,300,367	524.0	133.5	145.6	244.9	0	0
3	**Broadwater County**	50.65	1,236.8	4.1%	3	$29,038,899	3	$29,038,899	3,442	$520,588,070	1,384	$174,233,166	795	$153,085,694	265.00	$52,467,676	3,778.6	644.5	966.4	2,167.7	1	1
	Townsend city	0.89	1.5	58.7%	0	$0	0		1,133	$116,996,708	762	$79,205,744	147	$21,344,104	136.00	$19,580,483	2,179.3	354.9	547.6	1,276.8	0	0
	Balance of Broadwater County	49.76	1,235.3		3	$29,038,899	3	$29,038,899	2,309	$403,591,362	622	$95,027,422	648	$131,741,590	129.00	$32,887,193	1,599.3	289.6	418.9	890.8	1	0
5	**Carbon County**	84.34	2,060.7	4.1%	3	$220,339	1	$31,937	4,812	$912,472,742	2,646	$417,123,785	1,434	$312,638,485	576.00	$126,363,074	7,747.8	1,254.7	2,420.3	4,072.7	5	1
	Bearcreek town	0.11	0.1	100.0%	0	$0	0		57	$6,138,654	57	$6,138,654	2	$269,414	2.00	$269,414	154.4	27.6	37.0	89.7	0	0
	Bridger town	0.22	0.8	29.3%	0	$0	0		322	$30,656,055	192	$17,368,861	49	$8,990,475	38.00	$5,245,039	460.8	82.5	110.6	267.7	0	0
	Fromberg town	0.24	0.4	53.3%	0	$0	0		218	$16,035,910	137	$9,433,224	21	$1,157,410	20.00	$1,104,660	336.0	60.1	80.6	195.2	0	0
	Joliet town	0.24	0.3	88.0%	0	$0	0		241	$27,420,117	234	$26,356,382	20	$2,267,652	20.00	$2,267,652	631.1	113.0	151.5	366.6	0	0
	Red Lodge city	1.51	2.7	55.7%	0	$0	1	$31,937	1,366	$249,897,767	977	$173,404,637	162	$49,294,962	157.00	$48,490,326	3,550.0	532.7	1,288.2	1,729.0	1	1
	Balance of Carbon County	82.02	2,056.4		3	$220,339	0	$0	2,608	$582,324,239	1,049	$184,422,027	1,180	$250,658,572	339.00	$68,985,983	2,615.6	438.8	752.4	1,424.4	4	0
4	**Carter County**	17.82	3,346.4	0.5%	0	$0	0		405	$20,620,826	14	$724,306	1,012	$117,527,687	39.00	$3,696,816	33.3	6.3	8.5	18.5	0	0
	Ekalaka town	0.00	1.0	0.0%	0	$0	0		323	$14,713,910	0		40	$3,481,214	0.00						0	0
	Balance of Carter County	17.82	3,345.4		0	$0	0	$0	82	$5,906,916	14	$724,306	972	$114,046,473	39.00	$3,696,816	33.3	6.3	8.5	18.5	0	0
2	**Cascade County**	148.23	2,708.4	5.5%	20	$90,365,664	13	$32,047,940	28,943	$4,349,791,994	14,592	$2,005,614,207	4,285	$2,555,983,982	2,538.00	$1,805,775,343	46,611.9	10,073.7	9,690.0	26,848.3	14	4
	Belt city	0.26	0.3	80.5%	0	$0	0		98	$8,912,233	72	$6,634,273	16	$5,432,574	11.00	$3,084,936	169.2	37.9	30.3	101.0	0	0
	Cascade town	0.48	0.5	100.0%	20	$90,365,664	0		267	$28,222,039	267	$28,222,039	61	$9,822,750	61.00	$9,822,750	627.5	140.5	112.3	374.6	1	1
	Great Falls city	12.90	23.0	56.0%	0	$0	11	$29,505,843	21,838	$3,214,111,195	12,031	$1,657,367,040	1,980	$1,834,875,305	1,815.00	$1,575,077,799	40,384.7	8,697.2	8,508.0	23,179.5	2	2
	Neihart town	1.08	1.6	66.1%	0	$0	0		57	$5,297,372	53	$5,026,352	14	$2,901,487	14.00	$2,901,487	124.6	27.9	22.3	74.4	0	0
	Balance of Cascade County	133.52	2,682.9		0	$0	2	$2,542,097	6,683	$1,093,249,155	2,169	$308,364,503	2,214	$702,951,866	637.00	$214,888,371	5,306.0	1,170.2	1,017.1	3,118.8	11	0
2	**Chouteau County**	73.71	3,992.9	1.8%	0	$0	0		1,880	$212,079,581	923	$94,244,177	1,258	$200,554,092	234.00	$49,324,384	3,624.5	825.4	755.1	2,044.0	4	0
	Big Sandy town	0.37	0.5	77.1%	0	$0	0		324	$26,480,771	214	$17,427,091	42	$4,231,062	41.00	$4,145,902	782.5	182.3	148.7	451.5	0	0
	Fort Benton city	0.92	1.5	60.1%	0	$0	0		795	$106,352,375	440	$55,545,925	111	$15,435,130	81.00	$12,254,893	2,142.0	480.0	473.4	1,188.6	0	0
	Geraldine town	0.42	0.6	74.4%	0	$0	0		150	$9,556,033	104	$6,514,115	21	$2,592,594	20.00	$2,433,276	287.5	67.0	54.6	165.9	0	0
	Balance of Chouteau County	71.99	3,990.3		0	$0	0	$0	611	$69,690,402	165	$14,757,046	1,084	$178,295,306	92.00	$30,490,313	412.5	96.1	78.4	238.0	4	0
4	**Custer County**	94.26	3,789.3	2.5%	12	$59,923,374	11	$59,880,740	4,678	$531,010,978	2,067	$221,745,537	1,711	$297,665,123	726.00	$153,557,722	5,662.2	1,058.7	1,683.5	2,920.1	0	0
	Ismay town	0.31	0.4	73.3%	0	$0	0		29	$349,883	29	$349,883	10	$1,387,354	10.00	$1,387,354	69.0	14.8	13.3	40.9	0	0
	Miles City city	1.91	3.3	57.8%	0	$0	2	$7,613,508	3,312	$363,057,565	1,656	$170,894,061	433	$104,957,053	388.00	$89,159,048	4,578.2	843.3	1,409.1	2,325.9	0	0
	Balance of Custer County	92.05	3,785.6		12	$59,923,374	9	$52,267,232	1,337	$167,603,530	382	$50,501,593	1,268	$191,320,716	328.00	$63,011,320	1,015.0	200.6	261.1	553.2	0	0
6	**Daniels County**	57.13	1,426.1	4.0%	2	$36,946	1	$34,529	906	$81,170,595	581	$48,315,059	976	$93,098,998	318.00	$32,249,663	1,323.8	271.9	398.6	653.2	0	0
	Flaxville town	0.08	0.1	100.0%	0	$0	0		87	$4,797,361	87	$4,797,361	16	$766,732	16.00	$766,732	173.1	37.9	44.1	91.1	0	0
	Scobey city	0.47	0.7	63.7%	0	$0	0		675	$64,548,974	418	$36,745,706	128	$10,135,214	116.00	$9,502,282	999.4	200.9	315.9	482.5	0	0
	Balance of Daniels County	56.59	1,425.3		2	$36,946	1	$34,529	144	$11,824,260	76	$6,771,992	832	$82,197,052	186.00	$21,980,649	151.2	33.1	38.6	79.6	0	0
4	**Dawson County**	105.20	2,380.7	4.4%	10	$20,985,926	3	$3,422,169	3,163	$409,229,017	2,010	$239,307,338	908	$162,010,623	403.00	$100,106,345	4,711.2	1,032.2	973.9	2,705.1	0	0
	Glendive city	2.08	3.5	59.6%	0	$0	2	$3,202,499	1,604	$225,892,962	939	$125,254,750	230	$56,394,894	218.00	$54,177,893	2,232.4	488.1	465.0	1,279.3	0	0
	Richey town	0.15	0.3	58.2%	0	$0	0		165	$8,909,873	95	$4,609,050	23	$2,890,873	6.00	$458,462	212.8	48.3	37.9	126.6	0	0
	Balance of Dawson County	102.97	2,376.9		10	$20,985,926	1	$219,671	1,394	$174,426,182	976	$109,443,538	655	$102,724,856	179.00	$45,469,990	2,266.0	495.8	471.1	1,299.2	0	0
1	**Deer Lodge County**	50.16	740.6	6.8%	30	$71,273,714	27	$70,346,037	4,234	$406,037,841	2,845	$258,068,558	509	$103,961,907	366.00	$67,290,237	8,295.3	1,232.0	1,905.3	5,157.9	3	1
	Anaconda-Deer Lodge County	50.16	740.6	6.8%	30	$71,273,714	30	$71,273,714	4,234	$406,037,841	0		509	$103,961,907	366.00	$67,290,237	8,295.3	1,232.0	1,905.3	5,157.9	3	0
4	**Fallon County**	43.75	1,621.2	2.7%	1	$15,822	0		1,223	$120,111,206	571	$41,804,077	1,285	$157,284,133	316.00	$53,569,191	1,569.4	375.2	397.3	796.9	2	0
	Baker city	0.60	1.1	56.1%	0	$0	0		882	$83,620,710	378	$29,206,907	144	$33,873,913	127.00	$32,298,010	1,092.7	248.0	318.2	526.6	0	0
	Plevna town	0.29	0.4	65.6%	0	$0	0		106	$6,148,692	104	$5,958,882	78	$8,870,026	78.00	$8,870,026	256.9	68.6	42.6	145.7	0	0
	Balance of Fallon County	42.86	1,619.6		1	$15,822	0	$0	235	$30,341,804	89	$6,638,288	1,063	$114,540,194	111.00	$12,401,155	219.8	58.7	36.5	124.6	2	0
6	**Fergus County**	130.81	4,345.2	3.0%	7	$21,432,181	3	$20,187,817	4,690	$556,548,908	3,017	$330,511,920	2,019	$402,403,647	691.00	$154,635,402	12,676.0	2,580.7	3,266.8	6,828.4	4	1
	Denton town	0.47	0.7	65.4%	0	$0	0		152	$13,428,059	147	$13,006,799	29	$4,382,026	28.00	$4,182,718	355.5	74.3	84.6	196.6	0	0
	Grass Range town	0.05	0.1	37.3%	0	$0	0		82	$4,930,605	20	$1,239,945	14	$1,525,471	3.00	$316,746	45.0	9.4	10.7	24.9	0	0
	Lewistown city	2.37	5.2	45.5%	0	$0	3	$20,187,817	2,796	$320,465,500	2,380	$269,517,530	396	$106,823,714	372.00	$95,970,205	11,039.3	2,255.8	2,814.8	5,968.7	0	0
	Moore town	0.20	0.3	68.8%	0	$0	0		102	$6,944,815	79	$5,663,865	19	$4,216,005	16.00	$3,925,777	177.8	37.1	42.3	98.3	0	0
	Winifred town	0.00	0.5	0.0%	0	$0	0		90	$8,768,234	0		20	$4,365,641	0.00						0	0
	Balance of Fergus County	127.73	4,338.3		7	$21,432,181	0	$0	1,468	$202,011,695	391	$41,083,781	1,541	$281,090,790	272.00	$50,239,956	1,058.5	204.1	314.4	540.0	4	0
1	**Flathead County**	145.54	5,252.4	2.8%	20	$38,896,279	5	$23,577,252	41,342	$8,600,413,799	12,081	$1,907,399,774	8,138	$3,832,482,719	3,471.00	$1,813,256,741	74,860.9	16,309.6	14,568.6	43,982.7	5	2
	Columbia Falls city	1.32	2.1	64.5%	0	$0	2	$16,951,424	1,739	$255,171,515	1,087	$138,900,150	327	$117,184,528	290.00	$107,201,396	6,621.8	1,445.4	1,278.5	3,897.8	1	1
	Kalispell city	3.55	11.8	30.1%	0	$0	2	$6,523,550	7,553	$1,271,291,249	1,922	$277,230,258	1,714	$1,065,757,780	1,143.00	$740,874,759	7,673.9	1,605.3	1,739.3	4,329.3	0	0
	Whitefish city	3.30	11.8	27.9%	0	$0	0		4,029	$1,153,743,638	1,742	$333,784,312	522	$350,353,977	383.00	$203,672,328	21,831.6	4,806.7	4,062.1	12,962.8	0	0
	Balance of Flathead County	137.37	5,226.8		20	$38,896,279	1	$102,279	28,021	$5,920,207,397	7,330	$1,157,485,054	5,575	$2,299,186,434	1,655.00	$761,508,258	38,733.6	8,452.2	7,488.7	22,792.8	4	0
3	**Gallatin County**	141.66	2,632.5	5.4%	207	$963,139,971	51	$51,310,171	40,035	$10,930,545,091	11,927	$2,598,648,325	5,191	$4,169,858,220	3,063.00	$2,282,472,076	76,945.0	15,320.3	10,456.8	51,168.0	6	1
	Belgrade city	1.49	3.1	48.1%	0	$0	0		2,764	$496,929,312	1,740	$318,673,940	204	$120,870,378	184.00	$110,302,384	13,810.7	2,720.3	2,004.7	9,085.7	0	0
	Bozeman city	7.19	19.9	36.2%	0	$0	47	$50,633,171	16,722	$4,743,491,928	3,613	$927,334,478	1,511	$2,235,363,972	1,238.00	$1,244,595,242	41,631.2	8,401.2	5,170.8	28,059.2	2	0

APPENDIX B-8 VULNERABILITY ASSESSMENT DOCUMENTATION - HAZARDOUS MATERIALS INCIDENT

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Haz Mat sq. miles	Total sq. miles	Percent Haz Mat sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Haz Mat Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Haz Mat Hazard Area	Residential Exposure in HazMat Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Haz Mat Hazard Area	CAI Exposure in Haz Mat Hazard Area	Total Population in Hazard Area	<18 in Haz Mat Hazard Area	>65 in Haz Mat Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Manhattan town	0.97	1.7	56.3%	0	$0	0		657	$115,292,092	598	$104,106,290	71	$33,496,346	68.00	$32,483,356	2,429.0	476.4	361.3	1,591.3	0	0
	Three Forks city	0.91	1.4	67.2%	0	$0	1	$251,183	787	$99,273,886	554	$71,504,466	104	$26,353,553	101.00	$25,061,434	1,852.1	326.0	437.1	1,088.9	0	0
	West Yellowstone town	0.46	0.8	58.1%	0	$0	0		639	$139,663,482	451	$89,445,183	244	$183,049,311	218.00	$134,982,727	1,971.8	400.3	234.6	1,336.8	0	0
	Balance of Gallatin County	130.65	2,605.7		207	$963,139,971	3	$425,817	18,466	$5,335,894,391	4,971	$1,087,583,968	3,057	$1,570,724,660	1,254.00	$735,046,933	15,250.2	2,996.0	2,248.2	10,006.1	4	0
4	**Garfield County**	61.39	4,843.5	1.3%	1	$2,417	0		558	$40,352,973	214	$14,609,340	828	$98,380,657	116.00	$15,354,022	591.1	112.5	200.1	278.5	0	0
	Jordan town	0.24	0.3	68.8%	0	$0	0		257	$15,353,948	167	$11,133,169	31	$4,176,477	29.00	$3,980,247	478.7	87.7	174.0	217.0	0	0
	Balance of Garfield County	61.15	4,843.1		1	$2,417	0	$0	301	$24,999,025	47	$3,476,171	797	$94,204,180	87.00	$11,373,775	112.3	24.8	26.1	61.4	0	0
2	**Glacier County**	154.00	3,034.9	5.1%	4	$166,089	2	$42,554	2,176	$173,809,579	1,280	$86,009,918	1,208	$513,342,768	560.00	$325,343,989	4,155.0	1,245.2	627.0	2,282.9	0	0
	Browning town	0.27	0.3	95.5%	0	$0	0		207	$8,297,087	190	$7,695,885	61	$9,037,744	57.00	$7,772,378	617.1	192.5	71.6	353.0	0	0
	Cut Bank city	0.85	1.2	72.8%	0	$0	1	$32,554	1,122	$90,953,194	634	$39,369,373	151	$37,600,597	138.00	$34,835,872	2,138.0	615.9	393.0	1,129.1	0	0
	Balance of Glacier County	152.88	3,033.4		4	$166,089	1	$10,000	847	$74,559,298	456	$38,944,660	996	$466,704,427	365.00	$282,735,739	1,399.9	436.8	162.4	800.8	0	0
5	**Golden Valley County**	36.65	1,174.1	3.1%	0	$0	0		288	$22,545,552	223	$16,472,027	240	$51,388,053	52.00	$6,830,517	586.2	114.9	158.9	312.5	0	0
	Lavina town	0.30	1.0	30.1%	0	$0	0		91	$7,521,010	77	$6,399,109	15	$1,533,018	9.00	$946,678	251.9	49.4	68.3	134.3	0	0
	Ryegate town	0.43	0.8	56.7%	0	$0	0		141	$10,234,886	133	$9,168,170	15	$1,769,218	15.00	$1,769,218	304.6	59.7	82.5	162.3	0	0
	Balance of Golden Valley County	35.92	1,172.4		0	$0	0	$0	56	$4,789,656	13	$904,748	210	$48,085,817	28.00	$4,114,621	29.8	5.8	8.1	15.9	0	0
1	**Granite County**	34.12	1,730.9	2.0%	0	$0	0		1,604	$210,828,137	623	$65,835,015	530	$156,924,788	172.00	$27,110,402	1,918.4	308.9	565.9	1,043.6	4	0
	Drummond town	0.53	0.5	96.9%	0	$0	0		144	$11,391,136	142	$11,356,176	48	$5,493,281	48.00	$5,493,281	527.8	85.0	155.7	287.1	0	0
	Philipsburg town	0.46	0.8	54.6%	0	$0	0		503	$53,845,654	259	$25,223,117	77	$16,673,401	16.00	$3,224,342	784.0	126.2	231.3	426.5	0	0
	Balance of Granite County	33.13	1,729.5		0	$0	0	$0	957	$145,591,347	222	$29,255,722	405	$134,758,106	108.00	$18,392,779	606.6	97.7	179.0	330.0	4	0
2	**Hill County**	81.60	2,915.3	2.8%	19	$55,432,027	3	$4,068,248	6,281	$754,306,279	2,379	$238,591,009	2,439	$478,811,374	857.00	$236,429,966	6,596.5	1,791.5	1,026.6	3,778.4	4	2
	Havre city	0.70	3.4	20.3%	0	$0	0		2,954	$365,822,286	479	$37,952,237	390	$113,681,709	258.00	$86,667,377	1,541.7	401.4	293.6	846.6	0	0
	Hingham town	0.17	0.2	100.0%	0	$0	0		165	$13,864,635	165	$13,864,635	27	$3,866,422	27.00	$3,866,422	433.9	119.3	62.9	251.7	0	0
	Balance of Hill County	80.73	2,911.7		19	$55,432,027	3	$4,068,248	3,162	$374,619,358	1,735	$186,774,137	2,022	$361,263,243	572.00	$145,896,167	4,620.9	1,270.8	670.0	2,680.1	4	0
3	**Jefferson County**	96.03	1,657.8	5.8%	14	$15,148,292	9	$12,961,097	4,016	$744,240,161	1,406	$202,965,178	694	$117,529,005	331.00	$57,484,176	3,954.1	712.4	1,140.1	2,101.7	7	2
	Boulder town	0.52	1.1	46.7%	0	$0	3	$7,348,299	356	$36,918,541	189	$19,963,105	47	$6,824,156	38.00	$6,082,567	474.4	95.4	97.7	281.3	3	2
	Whitehall town	0.69	0.7	98.0%	0	$0	0		325	$32,838,125	322	$32,480,446	47	$9,146,159	47.00	$9,146,159	808.2	162.5	166.5	479.3	0	0
	Balance of Jefferson County	94.81	1,656.0		14	$15,148,292	6	$5,612,798	3,335	$674,483,495	895	$150,521,627	600	$101,558,690	246.00	$42,255,450	2,671.5	454.6	875.9	1,341.1	4	0
6	**Judith Basin County**	89.60	1,868.3	4.8%	0	$0	0		783	$67,357,916	536	$48,417,894	682	$119,016,564	203.00	$38,619,089	1,624.1	303.7	389.8	930.6	0	0
	Hobson town	0.18	0.2	87.7%	0	$0	0		116	$11,542,201	105	$10,693,985	21	$3,191,010	21.00	$3,191,010	348.8	65.2	83.7	199.9	0	0
	Stanford town	0.42	0.4	99.5%	0	$0	0		248	$24,191,487	248	$24,191,487	49	$6,993,739	49.00	$6,993,739	876.4	163.9	210.3	502.2	0	0
	Balance of Judith Basin County	89.00	1,867.6		0	$0	0	$0	419	$31,624,228	183	$13,532,422	612	$108,831,815	133.00	$28,434,340	398.9	74.6	95.7	228.6	0	0
1	**Lake County**	76.43	1,652.1	4.6%	16	$14,144,458	4	$2,752,668	16,679	$3,044,070,013	5,434	$910,581,583	4,157	$907,884,902	1,366.00	$351,999,449	13,639.8	3,314.6	2,809.8	7,515.4	0	0
	Polson city	1.22	4.3	28.3%	0	$0	0		1,550	$239,716,220	358	$50,556,340	307	$110,486,890	200.00	$91,134,989	1,323.3	321.6	272.6	729.1	0	0
	Ronan city	0.55	1.1	47.8%	0	$0	0		498	$51,240,897	149	$13,922,038	188	$43,266,142	135.00	$36,356,081	407.0	98.9	83.8	224.2	0	0
	St. Ignatius town	0.09	0.5	17.2%	0	$0	0		227	$24,362,098	31	$3,671,999	33	$6,506,490	10.00	$2,272,756	73.8	17.9	15.2	40.7	0	0
	Balance of Lake County	74.58	1,646.2		16	$14,144,458	4	$2,752,668	14,404	$2,728,750,798	4,896	$842,431,206	3,629	$747,625,380	1,021.00	$222,235,623	11,835.7	2,876.2	2,438.1	6,521.4	0	0
3	**Lewis and Clark County**	134.42	3,493.5	3.8%	77	$528,411,633	36	$216,842,348	28,356	$4,838,187,380	9,128	$1,503,833,761	2,990	$1,486,292,152	1,551.00	$879,716,208	51,265.4	10,913.9	9,681.3	30,670.1	15	5
	East Helena town	1.46	4.1	35.9%	0	$0	0		778	$95,292,980	452	$47,781,936	55	$16,849,629	53.00	$16,155,518	1,835.0	396.4	324.8	1,113.8	0	0
	Helena city	6.87	16.5	41.5%	0	$0	28	$207,438,363	10,487	$2,070,264,423	5,246	$947,518,931	1,613	$1,127,469,517	1,180.00	$760,861,501	38,882.5	8,274.6	7,354.6	23,253.2	8	4
	Balance of Lewis and Clark County	126.09	3,472.8		77	$528,411,633	8	$9,403,985	17,091	$2,672,629,977	3,430	$508,532,894	1,322	$341,973,006	318.00	$102,699,189	10,547.9	2,242.9	2,002.0	6,303.1	7	0
2	**Liberty County**	25.36	1,446.4	1.8%	3	$203,754	1	$2,822	540	$55,198,775	384	$35,893,361	727	$148,145,426	170.00	$27,090,722	1,047.2	211.4	272.1	563.7	0	0
	Chester town	0.37	0.5	76.0%	0	$0	0		347	$38,384,265	270	$28,876,160	85	$11,176,620	80.00	$10,557,062	759.9	148.5	215.5	395.9	0	0
	Balance of Liberty County	24.99	1,445.9		3	$203,754	1	$2,822	193	$16,814,510	114	$7,017,201	642	$136,968,806	90.00	$16,533,660	287.3	62.9	56.6	167.8	0	0
1	**Lincoln County**	195.04	3,673.2	5.3%	5	$2,732,131	0		14,201	$1,669,255,057	6,450	$669,902,980	4,037	$814,443,340	1,592.00	$321,953,000	14,841.1	2,670.7	4,203.0	7,967.3	0	0
	Eureka town	0.81	1.0	78.5%	0	$0	0		576	$49,995,833	372	$33,052,324	79	$16,254,364	69.00	$15,178,664	1,072.1	182.2	346.4	543.6	0	0
	Libby city	0.90	1.7	53.7%	0	$0	0		1,887	$171,393,838	1,146	$103,781,960	407	$97,831,857	327.00	$81,000,677	2,765.2	478.6	858.5	1,428.0	0	0
	Rexford town	0.06	0.1	66.2%	0	$0	0		62	$5,237,363	37	$2,894,239	7	$1,125,453	7.00	$1,125,453	81.8	15.0	21.8	44.9	0	0
	Troy city	0.66	0.7	96.0%	0	$0	0		543	$42,346,210	531	$41,296,342	99	$14,488,626	99.00	$14,488,626	1,253.3	215.5	394.7	643.0	0	0
	Balance of Lincoln County	192.61	3,669.7		5	$2,732,131	0	$0	11,133	$1,400,281,813	4,364	$488,878,115	3,445	$684,743,040	1,090.00	$210,159,580	9,668.7	1,779.4	2,581.5	5,307.8	0	0
3	**Madison County**	95.35	3,602.4	2.6%	3	$270,203	1	$236,979	4,154	$804,105,665	1,669	$254,652,413	1,301	$368,696,283	511.00	$121,970,279	3,905.9	587.5	1,234.2	2,084.3	9	4
	Ennis town	0.34	0.6	58.0%	0	$0	0		533	$84,019,269	324	$46,816,735	85	$24,326,354	83.00	$23,616,654	747.1	117.3	213.7	416.1	0	0
	Sheridan town	0.54	1.0	53.1%	2	$59,996	0		1,971	$206,039,798	274	$39,543,121	54	$8,980,370	52.00	$8,469,010	690.8	95.6	256.1	339.1	0	0
	Twin Bridges town	0.79	1.0	78.1%	0	$0	0		232	$25,593,322	232	$25,593,322	47	$8,125,500	47.00	$8,125,500	517.4	81.2	148.0	288.2	0	0
	Virginia City town	0.71	0.9	75.2%	0	$0	1	$236,979	167	$26,178,533	154	$23,803,988	30	$5,366,969	30.00	$5,366,969	343.4	53.9	98.2	191.3	1	1
	Balance of Madison County	92.97	3,598.8		1	$210,207	0	$0	1,251	$462,274,743	685	$118,895,247	1,085	$321,897,090	299.00	$76,392,146	1,607.3	239.5	518.2	849.6	8	0
4	**McCone County**	59.34	2,679.2	2.2%	3	$141,360	2	$97,417	532	$44,530,155	288	$22,177,684	679	$82,125,293	133.00	$21,972,102	690.7	142.3	151.3	397.1	3	1
	Circle town	0.48	0.8	61.9%	0	$0	0		335	$27,003,251	242	$18,095,909	66	$14,581,192	62.00	$14,273,682	584.4	120.4	128.0	336.0	0	0
	Balance of McCone County	58.86	2,678.4		3.0	$141,360	2	$97,417	197	$17,526,904	46	$4,081,775	613	$67,544,101	71.00	$7,698,420	106.3	21.9	23.3	61.1	3	0
3	**Meagher County**	56.02	2,392.1	2.3%	0	$0	0		1,199	$128,110,116	687	$70,560,349	412	$92,624,757	74.00	$13,519,894	1,832.7	328.1	504.0	1,000.7	0	0
	White Sulphur Springs city	0.51	1.0	50.8%	0	$0	0		630	$61,212,327	476	$46,310,392	45	$6,869,617	39.00	$6,204,510	1,311.6	234.8	360.7	716.1	0	0
	Balance of Meagher County	55.51	2,391.1		0	$0	0	$0	569	$66,897,789	211	$24,249,957	367	$85,755,140	35.00	$7,315,384	521.2	93.3	143.3	284.6	0	0
1	**Mineral County**	63.86	1,222.0	5.2%	0	$0	0		2,023	$203,747,490	1,418	$139,894,113	404	$84,723,652	220.00	$48,187,016	4,679.0	799.1	1,459.8	2,420.0	2	1
	Alberton town	0.41	0.5	77.0%	0	$0	0		197	$14,926,025	162	$12,617,704	20	$2,465,222	20.00	$2,465,222	550.0	97.4	157.9	294.8	0	0
	Superior town	0.73	1.1	68.3%	0	$0	0		381	$36,464,606	311	$28,476,907	72	$20,494,160	46.00	$17,416,143	1,174.0	193.3	395.4	585.3	0	0
	Balance of Mineral County	62.71	1,220.4		0	$0	0	$0	1,445	$152,356,859	945	$98,799,502	312	$61,764,270	154.00	$28,305,651	2,954.9	508.5	906.5	1,539.9	2	0
1	**Missoula County**	120.83	2,614.9	4.6%	203	$1,032,240,117	63	$354,089,504	16,873	$2,860,469,867	7,912	$1,131,933,383	1,421	$1,152,881,550	916.00	$905,817,532	38,519.3	7,196.8	6,674.2	24,648.2	13	4
	Missoula city	11.95	29.0	41.2%	203	$1,032,240,117	62	$339,061,305	4,975	$984,652,873	3,117	$576,029,380	470	$595,032,016	434.00	$561,320,184	24,206.2	4,513.5	4,234.4	15,458.3	8	3
	Balance of Missoula County	108.88	2,585.9		0	$0	1	$15,028,199	11,898	$1,875,816,994	4,795	$555,904,003	951	$557,849,534	482.00	$344,497,348	14,313.1	2,683.3	2,439.9	9,190.0	5	0
5	**Musselshell County**	42.30	1,869.6	2.3%	2	$45,908	1	$30,491	1,730	$148,155,396	864	$65,564,248	734	$146,591,301	213.00	$31,945,615	2,179.1	419.4	566.4	1,193.2	0	0
	Melstone town	0.46	0.6	74.1%	0	$0	0		39	$2,012,685	33	$1,806,848	7	$754,186	6.00	$554,471	80.2	16.0	18.5	45.6	0	0

APPENDIX B-8 VULNERABILITY ASSESSMENT DOCUMENTATION - HAZARDOUS MATERIALS INCIDENT
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Haz Mat sq. miles	Total sq. miles	Percent Haz Mat sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Haz Mat Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Haz Mat Hazard Area	Residential Exposure in HazMat Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Haz Mat Hazard Area	CAI Exposure in Haz Mat Hazard Area	Total Population in Hazard Area	<18 in Haz Mat Hazard Area	>65 in Haz Mat Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Roundup city	0.87	1.3	67.3%	0	$0	1	$30,491	837	$63,457,673	662	$48,062,897	129	$18,353,849	120.00	$16,842,523	1,688.2	321.3	453.0	913.9	0	0
	Balance of Musselshell County	40.98	1,867.7		2	$45,908	0	$0	854	$82,685,038	169	$15,694,503	598	$127,483,266	87.00	$14,548,621	410.7	82.1	94.9	233.7	0	0
3	**Park County**	78.78	2,811.7	2.8%	4	$2,414,253	0		6,087	$1,151,416,662	2,410	$397,480,303	1,680	$821,834,484	907.00	$346,960,529	5,734.0	1,026.4	1,409.3	3,298.2	3	2
	Clyde Park town	0.17	0.4	46.7%	0	$0	0		134	$13,924,845	83	$7,885,713	23	$4,042,499	20.00	$2,873,009	189.2	35.4	40.1	113.7	0	0
	Livingston city	2.81	5.7	49.3%	0	$0	0		2,567	$392,434,781	1,309	$197,477,544	537	$198,955,646	428.00	$172,994,456	3,223.7	556.8	877.3	1,789.6	0	0
	Balance of Park County	75.79	2,805.6		4	$2,414,253	0	$0	3,386	$745,057,036	1,018	$192,117,046	1,120	$618,836,339	459.00	$171,093,064	2,321.0	434.2	491.9	1,394.9	3	0
6	**Petroleum County**	28.04	1,672.5	1.7%	0	$0	0		184	$23,127,789	123	$16,600,794	204	$28,781,751	31.00	$3,234,311	487.4	90.7	114.5	282.2	0	0
	Winnett town	0.45	1.0	44.7%	0	$0	0		148	$19,210,729	115	$15,611,274	21	$2,591,917	19.00	$2,352,591	468.9	87.2	110.2	271.5	0	0
	Balance of Petroleum County	27.59	1,671.5		0	$0	0	$0	36	$3,917,060	8	$989,520	183	$26,189,834	12.00	$881,720	18.5	3.4	4.3	10.7	0	0
6	**Phillips County**	102.35	5,208.5	2.0%	6	$1,661,730	2	$1,140,518	1,695	$155,044,408	903	$79,370,378	1,402	$250,190,823	341.00	$69,658,969	2,280.0	469.9	679.2	1,130.9	3	2
	Dodson town	0.14	0.2	83.0%	0	$0	0		70	$2,222,512	53	$1,728,192	5	$140,341	5.00	$140,341	119.8	27.7	25.5	66.6	0	0
	Malta city	0.60	1.0	58.4%	0	$0	0		996	$103,409,948	584	$57,358,718	144	$29,008,393	121.00	$23,291,320	1,399.6	304.4	362.6	732.6	0	0
	Saco town	0.24	0.3	80.1%	0	$0	0		134	$6,873,752	104	$5,143,020	15	$1,887,736	15.00	$1,887,736	235.0	54.3	50.1	130.7	0	0
	Balance of Phillips County	101.37	5,207.0		6	$1,661,730	2	$1,140,518	495	$42,538,196	162	$15,140,448	1,238	$219,154,353	200.00	$44,339,572	525.6	83.5	241.0	201.0	3	0
2	**Pondera County**	97.86	1,640.4	6.0%	2	$60,957	0		1,815	$200,092,707	936	$85,924,433	883	$265,160,665	357.00	$115,932,530	3,273.5	772.5	667.8	1,833.1	0	0
	Conrad city	0.67	1.2	56.1%	0	$0	0		1,126	$122,656,189	548	$47,350,544	156	$57,675,177	144.00	$47,786,301	2,046.2	482.9	417.4	1,145.9	0	0
	Valier town	0.42	0.9	48.5%	0	$0	0		295	$29,342,500	160	$14,917,598	47	$8,582,116	45.00	$7,980,288	541.8	127.9	110.5	303.4	0	0
	Balance of Pondera County	96.77	1,638.3		2	$60,957	0	$0	394	$48,094,018	228	$23,656,291	680	$198,903,372	168.00	$60,165,941	685.4	161.8	139.8	383.8	0	0
4	**Powder River County**	51.32	3,297.5	1.6%	2	$26,512	0		350	$31,752,451	260	$22,018,591	642	$113,734,309	136.00	$16,496,440	569.4	97.9	141.2	330.3	0	0
	Broadus town	0.27	0.4	74.7%	0	$0	0		218	$19,631,053	170	$13,324,891	71	$8,590,919	68.00	$8,328,789	372.3	64.0	92.3	215.9	0	0
	Balance of Powder River County	51.05	3,297.1		2	$26,512	0	$0	132	$12,121,398	90	$8,693,700	571	$105,143,390	68.00	$8,167,651	197.1	33.9	48.9	114.3	0	0
1	**Powell County**	69.57	2,329.6	3.0%	47	$139,753,982	0		2,509	$325,066,746	1,008	$102,687,230	697	$217,400,046	313.00	$90,213,270	3,665.0	542.7	853.7	2,268.6	4	1
	Deer Lodge city	0.77	1.4	53.9%	30	$71,273,714	0		1,455	$118,373,521	600	$47,861,387	160	$37,299,244	151.00	$34,675,376	2,499.5	362.0	624.1	1,513.4	2	1
	Balance of Powell County	68.80	2,328.2		17	$68,480,268	0	$0	1,054	$206,693,225	408	$54,825,843	537	$180,100,802	162.00	$55,537,894	1,165.5	180.7	229.6	755.2	2	0
4	**Prairie County**	37.01	1,740.2	2.1%	0	$0	0		527	$28,742,376	307	$14,553,606	525	$56,615,772	102.00	$9,099,638	834.8	150.6	307.1	377.1	4	2
	Terry town	0.53	0.8	68.8%	0	$0	0		382	$21,559,157	202	$10,050,283	43	$3,618,679	38.00	$3,346,607	576.5	98.9	229.8	247.7	0	0
	Balance of Prairie County	36.47	1,739.4		0	$0	0	$0	145	$7,183,219	105	$4,503,323	482	$52,997,093	64.00	$5,753,031	258.3	51.7	77.2	129.4	4	0
1	**Ravalli County**	57.44	2,398.2	2.4%	3	$1,079,777	1	$1,014,737	19,277	$3,692,614,691	6,575	$1,096,107,362	3,023	$930,619,898	746.00	$296,975,705	16,830.8	3,250.6	4,325.8	9,254.3	4	1
	Darby town	0.37	0.6	66.0%	0	$0	0		455	$65,564,435	338	$45,508,365	20	$5,525,704	20.00	$5,525,704	821.3	161.0	202.0	458.3	0	0
	Hamilton city	1.52	2.4	63.7%	0	$0	1	$1,014,737	2,371	$402,402,609	1,508	$246,173,450	207	$138,471,668	201.00	$134,977,220	4,332.1	833.0	1,127.5	2,371.5	0	0
	Pinesdale town		1.3	0.0%	0	$0	0		163	$30,828,359	0		42	$6,383,047	0.00					0.0	0	0
	Stevensville town	0.61	1.0	59.6%	0	$0	0		956	$165,432,372	689	$120,077,640	64	$20,620,328	62.00	$19,985,191	1,753.8	327.7	493.3	932.9	0	0
	Balance of Ravalli County	54.94	2,392.9		3	$1,079,777	0	$0	15,332	$3,028,386,916	4,040	$684,347,907	2,690	$759,619,151	463.00	$136,487,590	9,923.5	1,928.9	2,503.0	5,491.6	4	0
4	**Richland County**	76.16	2,101.9	3.6%	4	$1,434,990	3	$1,419,573	2,979	$516,039,930	1,791	$294,815,783	1,646	$420,114,426	771.00	$261,848,458	5,092.8	1,250.5	890.6	2,951.7	0	0
	Fairview town	0.70	0.8	88.1%	0	$0	0		313	$29,368,800	285	$26,971,134	37	$7,407,985	34.00	$6,013,753	825.8	213.1	109.8	502.9	0	0
	Sidney city	1.38	2.4	56.2%	0	$0	3	$1,419,573	1,697	$319,755,649	954	$176,569,493	342	$108,260,768	313.00	$104,391,794	2,774.4	673.5	511.2	1,589.7	0	0
	Balance of Richland County	74.07	2,098.7		4	$1,434,990	0	$0	969	$166,915,481	552	$91,275,156	1,267	$304,445,673	424.00	$151,442,911	1,492.6	363.9	269.6	859.1	0	0
6	**Roosevelt County**	128.01	2,366.6	5.4%	4	$3,703,234	3	$3,662,363	2,085	$172,781,506	1,459	$116,570,592	1,674	$267,647,926	594.00	$108,526,484	6,412.1	2,074.4	863.8	3,473.9	2	1
	Bainville town	0.54	1.0	53.6%	0	$0	0		116	$8,253,760	56	$3,406,614	17	$1,186,389	16.00	$1,126,939	198.2	65.8	22.2	110.2	0	0
	Brockton town	0.17	0.2	99.9%	0	$0	0		21	$718,776	21	$718,776	5	$430,537	5.00	$430,537	269.0	89.3	30.1	149.6	0	0
	Culbertson town	0.52	0.5	100.0%	0	$0	0		452	$46,606,757	452	$46,606,757	78	$11,849,589	78.00	$11,849,589	1,600.1	531.2	179.2	889.6	0	0
	Froid town	0.23	0.3	81.1%	0	$0	0		127	$5,583,947	93	$3,888,957	15	$809,020	15.00	$809,020	329.2	109.3	36.9	183.0	0	0
	Poplar city	0.27	0.3	100.0%	0	$0	0		239	$11,492,367	239	$11,492,367	40	$3,179,375	40.00	$3,179,375	1,547.0	513.6	173.3	860.1	0	0
	Wolf Point city	0.47	0.8	55.3%	0	$0	1	$1,444,427	746	$61,499,644	386	$28,519,647	105	$12,969,709	98.00	$12,399,264	1,366.4	453.7	153.0	759.7	0	0
	Balance of Roosevelt County	125.81	2,363.6		4	$3,703,234	2	$2,217,936	384	$38,626,255	212	$21,937,474	1,414	$237,223,307	342.00	$78,731,760	1,102.1	311.4	269.1	521.6	2	0
5	**Rosebud County**	141.99	5,020.4	2.8%	3	$125,417	2	$25,417	2,477	$239,021,461	1,459	$135,063,423	1,810	$213,766,468	643.00	$81,933,608	4,258.2	1,207.8	765.7	2,284.6	0	0
	Colstrip city	1.88	4.1	46.2%	0	$0	0		980	$109,503,560	487	$52,798,136	250	$31,692,015	183.00	$22,294,608	1,368.5	403.8	201.0	763.7	0	0
	Forsyth city	0.98	1.2	83.7%	0	$0	0		896	$75,056,501	688	$54,916,897	141	$26,550,423	139.00	$26,376,653	2,012.5	569.5	365.8	1,077.2	0	0
	Balance of Rosebud County	139.14	5,015.1		3	$125,417	2	$25,417	601	$54,461,400	284	$27,348,390	1,419	$155,524,030	321.00	$33,262,347	877.2	234.6	198.9	443.7	0	0
1	**Sanders County**	134.24	2,786.9	4.8%	0	$0	0		4,955	$571,408,477	2,408	$261,710,023	1,849	$320,122,376	739.00	$138,680,889	8,016.4	1,398.7	2,460.6	4,157.1	0	0
	Hot Springs town		0.4	0.0%	0	$0	0		343	$29,433,542	0		53	$9,621,606	0.00					0.0	0	0
	Plains town	0.46	0.6	75.7%	0	$0	0		547	$44,751,633	382	$31,083,557	88	$17,655,569	87.00	$17,557,139	1,507.5	256.6	488.3	762.6	0	0
	Thompson Falls city	0.78	1.6	49.5%	0	$0	0		666	$67,891,731	427	$47,518,018	85	$16,866,473	82.00	$16,563,768	2,214.7	383.9	689.8	1,141.0	0	0
	Balance of Sanders County	133.00	2,784.4		0	$0	0	$0	3,399	$429,331,571	1,599	$183,108,448	1,623	$275,978,728	570.00	$104,559,982	4,294.3	758.2	1,282.5	2,253.6	0	0
6	**Sheridan County**	110.98	1,703.6	6.5%	2	$59,996	0		1,971	$206,039,798	1,185	$105,005,172	1,503	$172,072,215	463.00	$57,699,837	2,790.6	554.2	726.1	1,510.3	0	0
	Medicine Lake town	0.37	0.4	90.5%	0	$0	0		159	$9,705,581	135	$8,240,358	24	$1,200,353	24.00	$1,200,353	315.4	66.5	67.5	181.3	0	0
	Outlook town	0.62	1.2	50.0%	0	$0	0		44	$2,946,970	40	$2,579,710	10	$552,096	6.00	$296,456	86.4	18.2	18.5	49.7	0	0
	Plentywood city	0.95	1.3	71.1%	0	$0	0		785	$88,640,393	629	$71,637,110	136	$18,201,885	128.00	$16,847,010	1,565.8	295.8	464.0	806.1	0	0
	Westby town	0.43	0.6	76.3%	0	$0	0		102	$4,909,517	100	$4,894,387	15	$1,132,999	15.00	$1,132,999	216.0	45.6	46.2	124.2	0	0
	Balance of Sheridan County	108.60	1,700.1		2	$59,996	0	$0	881	$99,837,337	281	$17,653,607	1,318	$150,984,882	290.00	$38,223,019	607.0	128.1	129.9	349.0	0	0
1	**Silver Bow County**	59.01	718.0	8.2%	26	$227,661,811	7	$33,068,593	13,122	$1,426,148,334	6,924	$621,097,842	1,585	$807,024,197	1,169.00	$595,140,305	16,076.3	3,178.4	3,395.1	9,502.8	5	2
	Walkerville town	0.44	2.2	19.8%	0	$0	0		342	$24,138,167	278	$16,995,012	6	$334,643	6.00	$334,643	617.2	126.5	112.3	378.3	1	1
	Butte-Silver Bow (remainder)	58.57	715.7		26	$227,661,811	7	$33,068,593	12,780	$1,402,010,167	6,646	$604,102,830	1,579	$806,689,554	1,163.00	$594,805,662	15,459.1	3,051.9	3,282.7	9,124.5	4	0
5	**Stillwater County**	41.95	1,804.7	2.3%	2	$100,729	1	$10,000	2,790	$487,586,815	1,043	$132,488,956	943	$192,170,926	279.00	$78,203,819	2,544.9	546.1	719.1	1,279.8	0	0
	Columbus town	0.85	1.3	65.6%	0	$0	0		448	$58,806,556	308	$36,965,613	97	$44,373,190	96.00	$44,245,018	751.5	161.1	248.0	342.4	0	0
	Balance of Stillwater County	41.11	1,803.4		2	$100,729	1	$10,000	2,342	$428,780,259	735	$95,523,343	846	$147,797,736	183.00	$33,958,801	1,793.4	385.1	471.0	937.3	0	0
3	**Sweet Grass County**	37.19	1,860.9	2.0%	1	$100,000	0		1,559	$263,525,756	821	$118,666,366	1,251	$384,985,550	312.00	$81,980,931	2,229.1	444.4	612.3	1,172.3	0	0
	Big Timber city	0.80	1.0	84.1%	0	$0	0		772	$99,628,903	595	$77,644,209	157	$34,833,465	150.00	$32,541,321	1,652.8	325.2	470.0	857.7	0	0
	Balance of Sweet Grass County	36.39	1,860.0		1	$100,000	0	$0	787	$163,896,853	226	$41,022,157	1,094	$350,152,085	162.00	$49,439,610	576.3	119.3	142.3	314.7	0	0
2	**Teton County**	104.44	2,289.5	4.6%	2	$60,957	0		1,834	$226,386,656	1,276	$137,786,378	1,107	$240,507,233	399.00	$78,959,592	3,431.5	771.1	902.5	1,757.9	1	1

APPENDIX B-8 VULNERABILITY ASSESSMENT DOCUMENTATION - HAZARDOUS MATERIALS INCIDENT
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Haz Mat sq. miles	Total sq. miles	Percent Haz Mat sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Haz Mat Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Haz Mat Hazard Area	Residential Exposure in HazMat Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Haz Mat Hazard Area	CAI Exposure in Haz Mat Hazard Area	Total Population in Hazard Area	<18 in Haz Mat Hazard Area	>65 in Haz Mat Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Choteau city	1.01	1.5	69.6%	0	$0	0		743	$81,363,094	643	$62,977,013	102	$23,811,077	94.00	$16,556,632	1,766.5	378.2	526.2	862.1	0	0
	Dutton town	0.32	0.4	89.0%	0	$0	0		159	$17,819,673	151	$17,258,293	30	$5,356,644	30.00	$5,356,644	432.5	102.1	97.7	232.7	0	0
	Fairfield town	0.23	0.3	75.4%	0	$0	0		266	$30,208,145	185	$19,862,126	46	$13,369,957	43.00	$12,975,534	462.5	109.2	104.5	248.8	0	0
	Balance of Teton County	102.88	2,287.4		2	$60,957	0	$0	666	$96,995,744	297	$37,688,946	929	$197,969,555	232.00	$44,070,782	770.0	181.7	174.0	414.3	1	0
2	**Toole County**	79.20	1,943.9	4.1%	3	$124,825	2	$109,002	1,702	$149,272,962	1,335	$116,712,371	806	$214,874,251	310.00	$89,040,305	4,523.9	835.1	832.7	2,856.2	2	1
	Kevin town	0.35	0.4	89.6%	0	$0	0		101	$4,284,353	74	$3,071,336	9	$317,749	9.00	$317,749	190.4	35.8	32.2	122.4	0	0
	Shelby city	2.79	5.9	47.2%	0	$0	1	$34,674	1,175	$110,467,515	1,057	$100,281,269	196	$76,850,372	187.00	$48,095,550	3,827.3	704.1	715.0	2,408.2	0	0
	Sunburst town	1.21	2.0	60.0%	0	$0	0		208	$12,619,612	111	$6,254,626	25	$3,026,807	23.00	$2,911,507	273.3	51.4	46.2	175.7	0	0
	Balance of Toole County	74.84	1,935.5		3	$124,825	1	$74,329	218	$21,901,482	93	$7,105,140	576	$134,679,323	91.00	$37,715,499	233.0	43.8	39.4	149.8	2	0
5	**Treasure County**	45.11	983.5	4.6%	1	$250,000	0		194	$12,369,442	79	$4,370,021	362	$46,827,867	96.00	$11,568,304	181.7	33.4	50.3	97.9	2	0
	Hysham town	0.13	0.2	56.4%	0	$0	0		159	$9,401,270	64	$3,250,671	20	$2,281,485	17.00	$2,007,050	147.2	27.1	40.8	79.3	0	0
	Balance of Treasure County	44.97	983.2		1	$250,000	0	$0	35	$2,968,172	15	$1,119,350	342	$44,546,382	79.00	$9,561,254	34.5	6.3	9.6	18.6	2	0
6	**Valley County**	101.83	5,058.5	2.0%	7	$2,929,498	2	$1,167,021	2,863	$365,588,943	1,534	$168,751,055	1,209	$208,523,811	437.00	$102,708,886	5,231.9	1,177.2	1,171.9	2,882.8	0	0
	Fort Peck town	0.62	0.9	69.7%	0	$0	0		118	$21,485,471	82	$15,484,685	10	$2,092,827	7.00	$1,616,905	210.2	47.3	47.1	115.8	0	0
	Glasgow city	0.77	1.4	55.4%	0	$0	1	$1,157,021	1,353	$173,782,829	709	$79,676,268	217	$55,123,436	213.00	$49,006,604	2,944.8	662.6	659.6	1,622.6	0	0
	Nashua town	0.65	0.7	92.5%	0	$0	0		200	$13,107,033	200	$13,107,033	17	$1,596,474	17.00	$1,596,474	501.7	112.9	112.4	276.4	0	0
	Opheim town	0.17	0.2	81.4%	0	$0	0		76	$3,977,464	50	$2,722,235	14	$1,365,742	14.00	$1,365,742	237.3	53.4	53.2	130.8	0	0
	Balance of Valley County	99.62	5,055.3		7	$2,929,498	1	$10,000	1,116	$153,236,146	493	$57,760,834	951	$148,345,332	186.00	$49,123,161	1,337.9	301.0	299.7	737.2	0	0
5	**Wheatland County**	47.26	1,425.9	3.3%	3	$1,816,266	1	$1,758,068	850	$65,290,360	594	$46,581,410	392	$102,480,647	126.00	$30,223,561	2,110.7	485.5	527.7	1,097.6	0	0
	Harlowton city	0.49	0.6	80.2%	0	$0	1	$1,758,068	569	$43,661,633	432	$34,993,543	81	$8,532,547	76.00	$8,121,497	1,680.1	386.4	420.0	873.7	0	0
	Judith Gap city	0.26	0.3	82.9%	0	$0	0		89	$5,833,159	89	$5,833,159	10	$1,334,639	10.00	$1,334,639	259.7	59.7	64.9	135.1	0	0
	Balance of Wheatland County	46.51	1,425.0		3	$1,816,266	0	$0	192	$15,795,568	73	$5,754,708	301	$92,613,461	40.00	$20,767,425	170.8	39.3	42.7	88.8	0	0
4	**Wibaux County**	21.29	888.1	2.4%	0	$0	0		318	$24,265,482	274	$20,541,790	518	$58,984,045	105.00	$10,313,707	796.1	136.5	323.9	335.6	0	0
	Wibaux town	0.88	1.1	81.9%	0	$0	0		290	$20,843,967	264	$19,109,054	54	$4,948,635	52.00	$4,941,835	774.6	131.9	318.5	324.2	0	0
	Balance of Wibaux County	20.41	887.0		0	$0	0	$0	28	$3,421,515	10	$1,432,736	464	$54,035,410	53.00	$5,371,872	21.5	4.6	5.4	11.4	0	0
5	**Yellowstone County**	167.88	2,646.8	6.3%	19	$148,531,721	14	$144,276,178	58,853	$10,961,976,827	19,606	$3,353,155,947	5,429	$4,499,091,639	3,087.00	$3,026,636,552	52,808.6	11,966.7	10,135.6	30,706.3	10	4
	Billings city	17.00	43.0	39.5%	0	$0	14	$144,276,178	41,447	$7,866,273,265	13,193	$2,470,677,891	3,014	$3,285,025,446	1,988.00	$2,160,078,128	35,476.9	8,028.7	6,846.7	20,601.4	4	2
	Broadview town	0.23	0.2	94.3%	0	$0	0		79	$9,621,070	78	$9,525,010	10	$2,904,982	10.00	$2,904,982	217.2	51.0	35.2	130.9	0	0
	Laurel city	1.35	2.1	63.0%	0	$0	0		2,701	$394,711,073	1,554	$179,436,600	187	$100,223,386	186.00	$100,000,970	4,326.6	978.2	838.3	2,510.1	0	0
	Balance of Yellowstone County	149.30	2,601.4		19	$148,531,721	0	$0	14,626	$2,691,371,419	4,781	$693,516,446	2,218	$1,110,937,825	903.00	$763,652,472	12,788.0	2,908.7	2,415.4	7,463.9	6	0

APPENDIX B-8. CRITICAL FACILITIES IN HAZARDOUS MATERIAL INCIDENT HAZARD AREA

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Beaverhead	DILLON	DEPARTMENT OF MILITARY AFFAIRS	Dillon Readiness Center	1070 Highway 41	45.232061	-112.618027	$5,290,581
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM Dillon (WMC)	710 S Atlantic St. WMC Heating Plant	45.208165	-112.641196	$50,000
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Auditorium & Shop	710 S. Atlantic	45.208735	-112.640263	$2,652,247
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Block Hall	710 S. Atlantic	45.208444	-112.638271	$12,221,413
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Centennial Hall	750 E. Cornell	45.208014	-112.637137	$3,485,454
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Davis Hall	710 S. Atlantic	45.208283	-112.637181	$3,802,992
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Engineer's Cottage	710 S. Atlantic	45.208782	-112.638613	$67,949
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Family Housing	710 S. Atlantic	45.208952	-112.637152	$1,717,829
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Heating Plant & Garage	710 S. Atlantic	45.209043	-112.638324	$2,001,967
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Jordan Hall	750 E. Cornell	45.208543	-112.637394	$506,946
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Library Administration	710 S. Atlantic	45.208434	-112.639256	$15,267,576
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Main Hall Building	710 S. Atlantic	45.209125	-112.640222	$28,922,882
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Matthews Hall	710 S. Atlantic	45.209545	-112.638745	$11,442,081
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Old Library Building	710 S. Atlantic	45.208777	-112.640683	$2,467,568
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Osborne Residence (Curious Minds)	710 S. Atlantic	45.207289	-112.639562	$111,901
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	PHYSICAL ED BUILDING - DILLON	710 S. Atlantic	45.207380	-112.637863	$15,779,695
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	South Campus Housing	434 E. Poindexter	45.208103	-112.641223	$196,717
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	STUDENT UNION BUILDING - DILLON	710 S. Atlantic	45.208061	-112.639851	$2,540,420
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Swysgood Technology Center (STC)	710 South Atlantic	45.208083	-112.638652	$6,912,898
Big Horn	HARDIN	PUBLIC HEALTH & HUMAN SERVICES	Hardin - UA (Big Horn) OPA	23 8th St W.	45.736392	-107.606388	$64,294
Broadwater	TOSTON	DEPARTMENT OF NATURAL RESOURCES	Toston Dam Power House	Toston Dam Road	46.120486	-111.407744	$25,562,814
Broadwater	TOSTON	DEPARTMENT OF NATURAL RESOURCES	Toston Dam Rubber Dams	Toston Dam Road	46.120029	-111.408265	$1,984,136
Broadwater	TOSTON	DEPARTMENT OF NATURAL RESOURCES	Toston Dam Sub-station	Toston Dam Road	46.120675	-111.407478	$1,491,948
Carbon	RED LODGE	PUBLIC HEALTH & HUMAN SERVICES	RED LODGE - Lease #8148 (OPA/CFS/APS)	10 S OAKES AVE	45.186386	-109.248254	$31,937
Cascade	BLACK EAGLE	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV TRANSMITTER SITE-BLACK EAGLE	3300 Old Havre Highway	47.535251	-111.282875	$583,371
Cascade	GREAT FALLS	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	Academic Building	3911 Central Ave.	47.505021	-111.239344	$9,892,973
Cascade	GREAT FALLS	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	Boiler House	3911 Central Ave.	47.506139	-111.240327	$465,497
Cascade	GREAT FALLS	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	Classroom Building	3911 Central Ave.	47.505021	-111.239344	$906,352
Cascade	GREAT FALLS	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	Food Service Building	3911 Central Ave.	47.505454	-111.239507	$975,103
Cascade	GREAT FALLS	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	PE & Therapy Center	3911 Central Ave.	47.505021	-111.239344	$3,963,682
Cascade	GREAT FALLS	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	Residential Cottage II	3911 Central Ave.	47.506154	-111.239482	$4,090,586
Cascade	GREAT FALLS	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	Residential Cottages I	3911 Central Ave.	47.506154	-111.239482	$4,090,586
Cascade	GREAT FALLS	BOARD OF PUBLIC EDUCATION, SCHOOL FOR THE DEAF & BLIND	Vocational Shop Building	3911 Central Ave.	47.505021	-111.239344	$812,738
Cascade	GREAT FALLS	DEPARTMENT OF AGRICULTURE	Own - Ag Development/Grain Inspection Laboratory	821 17th St N.	47.514749	-111.277814	$969,265
Cascade	GREAT FALLS	DEPARTMENT OF FISH, WILDLIFE & PARKS	Regional HQ Building	4600 Giant Springs Rd	47.531125	-111.231327	$2,531,127
Cascade	GREAT FALLS	DEPARTMENT OF JUSTICE	MHP - Gore Hill Microwave Tower	Great Falls	47.458750	-111.389972	$10,970
Cascade	GREAT FALLS	DEPARTMENT OF TRANSPORTATION	Great Falls Office/Shop	104 18th Avenue NE	47.523512	-111.300399	$2,755,689
Custer	MILES CITY	DEPARTMENT OF ADMINISTRATION	Miles City Data Center (SMDC)	114 S Haynes Avenue	46.406863	-105.820622	$10,872,477
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Academic Training Center	4 North Haynes Avenue	46.408523	-105.822635	$3,406,737
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Housing Unit E	4 North Haynes Avenue	46.408838	-105.821712	$1,104,005
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Main Building/PHYCF	4 North Haynes Avenue	46.408838	-105.821712	$14,560,064
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Physical Training Center	4 North Haynes Avenue	46.408523	-105.822635	$4,835,185
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Spirituality Center	4 North Haynes Avenue	46.408523	-105.822635	$2,113,317
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Warehouse/Maintenance	4 North Haynes Avenue	46.408523	-105.822635	$555,482
Custer	MILES CITY	DEPARTMENT OF FISH, WILDLIFE & PARKS	Regional HQ - Building	352 I-94 Business Loop	46.396689	-105.865550	$2,282,995
Custer	MILES CITY	DEPARTMENT OF MILITARY AFFAIRS	Miles City Armory	2500 Main Street	46.408009	-105.828910	$5,214,479
Custer	MILES CITY	DEPARTMENT OF MILITARY AFFAIRS	Miles City Readiness Center	1020 N Haynes Ave.	46.417707	-105.821563	$12,536,969
Custer	MILES CITY	DEPARTMENT OF TRANSPORTATION	Miles City Office/Shop II	217 N. 4th Street	46.407820	-105.855277	$2,399,029
Daniels	SCOBEY	DEPARTMENT OF JUSTICE	MHP - Scobey Microwave Tower	4 miles E of Scobey	48.801389	-105.348611	$34,529
Dawson	GLENDIVE	DEPARTMENT OF JUSTICE	MHP - Highway Patrol, Glendive	76 Highway 16	47.117325	-104.734381	$219,671
Dawson	GLENDIVE	DEPARTMENT OF JUSTICE	MHP-BELLE PRARIE MICROWAVE	207 W BELL ST	47.104843	-104.715349	$272,820
Dawson	GLENDIVE	DEPARTMENT OF TRANSPORTATION	Glendive Office/Shop	503 N River Avenue	47.109962	-104.714508	$2,929,679
Deer Lodge	ANACONDA	DEPARTMENT OF FISH, WILDLIFE & PARKS	Washoe Park Hatchery - Building - Creek Water Intake	600 West Pennsylvania St.	46.133154	-112.956521	$52,023
Deer Lodge	ANACONDA	DEPARTMENT OF MILITARY AFFAIRS	Anaconda Armory	101 N Polk	46.127011	-112.927450	$1,637,856
Deer Lodge	Warm Spring	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Administrative Annex (113)	58 Garnet Way	46.181458	-112.789927	$2,890,253
Deer Lodge	WARM SPRINGS	DEPARTMENT OF ADMINISTRATION	MT State Hospital	300 Garnet Ave	46.180826	-112.789514	$200,000
Deer Lodge	WARM SPRINGS	DEPARTMENT OF CORRECTIONS	Warm Springs Boiler Plant (Mechanics Garage)	Warm Springs	46.180964	-112.792794	$484,520
Deer Lodge	WARM SPRINGS	DEPARTMENT OF CORRECTIONS	WATCH Warm Springs	201 Orofino Way N	46.180598	-112.789568	$15,648,539
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Doctor's Residence No. 41	65 Mystic Way	46.177297	-112.791036	$110,045
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Doctor's Residence No. 42	51 Mystic Way	46.177377	-112.790737	$91,262
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Duplex No. 13	87 Mystic Way	46.176865	-112.792567	$24,359
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Duplex No. 14	117 Mystic Way	46.176979	-112.793277	$24,359
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Duplex No. 17	171 Mystic Way	46.177451	-112.793754	$24,359
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Duplex No. 18	179 Mystic Way	46.177127	-112.793535	$24,359
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Duplex No. 19	5 Hidden Way	46.177315	-112.793122	$269,838
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Johnson House Group Home	137 MYstic Way	46.177047	-112.792573	$118,355
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	McColllum House Group Home	30 Garrity Way	46.178149	-112.790175	$232,651
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	MT Haggin Group Home	45 Hidden Way	46.177248	-112.793598	$269,838
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	NEW HEATING PLANT (107)	203 Trapper Way	46.181081	-112.792484	$2,010,694

APPENDIX B-8. CRITICAL FACILITIES IN HAZARDOUS MATERIAL INCIDENT HAZARD AREA

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	PINTLAR LODGE (546)	290 Oxbow Way	46.182631	-112.791662	$819,687
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Recovery Center	32 Trapper Way	46.183346	-112.789562	$2,849,427
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Residence D	164 Garrity Way	46.176525	-112.789822	$68,557
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Residence E	191 Garrity Way	46.176330	-112.790190	$84,296
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Residence F	205 Garrity Way	46.176245	-112.790312	$84,296
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Residence G	100 Mt Evans Way	46.179754	-112.785922	$126,690
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Residence H	102 Mt Evans Way	46.179503	-112.785889	$99,139
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	SPRATT BUILDING (219)	351 Fleecer Way	46.182147	-112.790717	$3,630,396
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Theraputic Learning Center	156 Garnet Way	46.180918	-112.789356	$3,914,553
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Warm Springs Facility	100 Garnet Way	46.180918	-112.790329	$34,555,687
Fergus	LEWISTOWN	DEPARTMENT OF TRANSPORTATION	Lewistown Office and Shop	1620 Airport Road	47.054496	-109.440698	$680,149
Fergus	LEWISTOWN	PUBLIC HEALTH & HUMAN SERVICES, MENTAL HEALTH NURSING CARE CENTER	Main Building & Addition	800 Casino Creek Drive	47.056392	-109.425750	$19,408,341
Fergus	LEWISTOWN	PUBLIC HEALTH & HUMAN SERVICES, MENTAL HEALTH NURSING CARE CENTER	Three-Stall Garage	800 Casino Creek Drive	47.056021	-109.425693	$99,327
Flathead	COLUMBIA FALLS	PUBLIC HEALTH & HUMAN SERVICES, VETERANS' HOME - COLUMBIA FALLS	Nursing Home & Dom &Special Care Unit 69-73-84-02	400 Veterans Dr.	48.364518	-114.210002	$16,638,591
Flathead	COLUMBIA FALLS	PUBLIC HEALTH & HUMAN SERVICES, VETERANS' HOME - COLUMBIA FALLS	Superintendent's Cottage	400 Veterans Dr.	48.364518	-114.210002	$312,832
Flathead	KALISPELL	DEPARTMENT OF FISH, WILDLIFE & PARKS	Regional HQ Building	490 N Meridian Rd.	48.203784	-114.330341	$3,859,259
Flathead	KALISPELL	DEPARTMENT OF TRANSPORTATION	Kalispell Office & Shop	85 5th Avenue EN	48.202252	-114.306689	$2,664,291
Flathead	KALISPELL	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	NWARC RESIDENCE #1	4570 Montana 35, KALISPELL MT 59901	48.189405	-114.133982	$102,279
Gallatin	BOZEMAN	DEPARTMENT OF FISH, WILDLIFE & PARKS	Regional HQ Building	1400 South 19th	45.665507	-111.061773	$2,956,315
Gallatin	BOZEMAN	DEPARTMENT OF LIVESTOCK	Diagnostic Laboratory Bozeman Contents	S. 19th & Lincoln	45.664047	-111.064608	$601,384
Gallatin	BOZEMAN	DEPARTMENT OF TRANSPORTATION	Bozeman Office & Shop	907 N. Rouse	45.688886	-111.031981	$1,667,047
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	101 BRANEGAN COURT TOWNHOUSES	101 BRANEGAN COURT	45.667632	-111.061446	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	101 MCINTOSH COURT TOWNHOUSES	101 MCINTOSH COURT	45.670635	-111.061212	$251,250
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	102 BRANEGAN COURT TOWNHOUSES	102 BRANEGAN COURT	45.668034	-111.061533	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	102 MCINTOSH COURT TOWNHOUSES	102 MCINTOSH COURT	45.670503	-111.061186	$273,536
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	102 PAISLEY COURT FLATS	102 PAISLEY COURT	45.666968	-111.059164	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	103 BRANEGAN COURT TOWNHOUSES	103 BRANEGAN COURT	45.667639	-111.061446	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	103 MCINTOSH COURT TOWNHOUSES	103 MCINTOSH COURT	45.670633	-111.061213	$234,028
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	103 PAISLEY COURT FLATS	103 PAISLEY COURT	45.667162	-111.059291	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	104 BRANEGAN COURT TOWNHOUSES	104 BRANEGAN COURT	45.668133	-111.061543	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	104 GRANT CHAMBERLAIN DRIVE APARTMENTS	104 GRANT CHAMBERLAIN DRIVE	45.670985	-111.059333	$860,580
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	104 MCINTOSH COURT TOWNHOUSES	104 MCINTOSH COURT	45.670632	-111.061213	$234,028
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	105 BRANEGAN COURT TOWNHOUSES	105 BRANEGAN COURT	45.667646	-111.061446	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	105 GRANT CHAMBERLAIN DRIVE APARTMENTS	105 GRANT CHAMBERLAIN DRIVE	45.670188	-111.060551	$860,580
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	105 MCINTOSH COURT TOWNHOUSES	105 MCINTOSH COURT	45.670475	-111.061153	$234,028
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	105 PAISLEY COURT FLATS	105 PAISLEY COURT	45.667098	-111.060195	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	106 BRANEGAN COURT TOWNHOUSES	106 BRANEGAN COURT	45.668137	-111.061542	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	106 GRANT CHAMBERLAIN DRIVE APARTMENTS	106 GRANT CHAMBERLAIN DRIVE	45.670970	-111.059383	$860,580
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	106 MCINTOSH COURT TOWNHOUSES	106 MCINTOSH COURT	45.670631	-111.061213	$234,028
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	106 PAISLEY COURT FLATS	106 PAISLEY COURT	45.666977	-111.060383	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	107 BRANEGAN COURT TOWNHOUSES	107 BRANEGAN COURT	45.667653	-111.061446	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	107 MCINTOSH COURT TOWNHOUSES	107 MCINTOSH COURT	45.670601	-111.061203	$273,536
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	107 PAISLEY COURT FLATS	107 PAISLEY COURT	45.666977	-111.061071	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	108 BRANEGAN COURT TOWNHOUSES	108 BRANEGAN COURT	45.667938	-111.061560	$222,889
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	108 MCINTOSH COURT TOWNHOUSES	108 MCINTOSH COURT	45.670472	-111.061155	$273,536
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	108 PAISLEY COURT FLATS	108 PAISLEY COURT	45.667179	-111.061112	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	109 MCINTOSH COURT TOWNHOUSES	109 MCINTOSH COURT	45.670628	-111.061213	$234,028
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	109 PAISLEY COURT FLATS	109 PAISLEY COURT	45.667216	-111.060810	$375,461
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	111 EAST JULIA MARTIN DRIVE APARTMENTS	111 EAST JULIA MARTIN DRIVE	45.668480	-111.060040	$127,017
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	112 WEST JULIA MARTIN DRIVE APARTMENTS	112 EAST JULIA MARTIN DRIVE	45.668680	-111.059874	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	113 WEST JULIA MARTIN DRIVE APARTMENTS	113 EAST JULIA MARTIN DRIVE	45.668815	-111.059972	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	114 WEST JULIA MARTIN DRIVE APARTMENTS	114 EAST JULIA MARTIN DRIVE	45.668854	-111.060092	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	115 WEST JULIA MARTIN DRIVE APARTMENTS	115 EAST JULIA MARTIN DRIVE	45.668844	-111.060420	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	116 WEST JULIA MARTIN DRIVE APARTMENTS	116 EAST JULIA MARTIN DRIVE	45.668816	-111.060530	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	117 WEST JULIA MARTIN DRIVE APARTMENTS	117 EAST JULIA MARTIN DRIVE	45.668591	-111.060559	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	118 WEST JULIA MARTIN DRIVE APARTMENTS	118 EAST JULIA MARTIN DRIVE	45.668214	-111.060303	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	119 WEST JULIA MARTIN DRIVE APARTMENTS	119 EAST JULIA MARTIN DRIVE	45.667755	-111.060302	$288,331
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	GIRVIN FARM RESIDENCE	5515 Stucky Road	45.656655	-111.073280	$203,742
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	JOHNSON FAMILY LIVESTOCK (BLS2)	West of South 19th Avenue & Lincoln Street	45.664597	-111.065760	$4,843,284
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	JUTILA RESEARCH LAB (BSL3)	West of South 19th & Lincoln Street	45.664772	-111.064626	$3,223,423
Gallatin	Bozeman	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-Bozeman Pass	Quinn Creek Road	45.665157	-110.795921	$96,252
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	MARSH LAB MODULAR # 1	1922 WEST LINCOLN STREET	45.664195	-111.065320	$451,157
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	MARSH LAB MODULAR # 2	1922 WEST LINCOLN STREET	45.664457	-111.065263	$623,605
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	MARSH LABORATORY	1911 WEST LINCOLN STREET	45.664332	-111.064539	$15,458,238
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	PETER KOCH TOWER APARTMENTS	101 Peter Koch Street	45.667987	-111.059452	$6,852,764
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	SAFETY RISK MGMT NOPPER BLDG LEASED	1160 Research Drive	45.668001	-111.065854	$2,083,472
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	FT. ELLIS RESIDENCE	33336 Frontage Road	45.668034	-110.973766	$217,114
Gallatin	BOZEMAN	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	FT. ELLIS SECOND HOUSE	33336 Frontage Road	45.668034	-110.973766	$112,450
Gallatin	THREE FORKS	DEPARTMENT OF FISH, WILDLIFE & PARKS	Lewis & Clark Caverns SP - Building - Visitor Center w/Restroom	19 miles W of Three Forks on MT 2	45.892190	-111.549275	$251,183

APPENDIX B-8. CRITICAL FACILITIES IN HAZARDOUS MATERIAL INCIDENT HAZARD AREA
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Glacier	CUT BANK	PUBLIC HEALTH & HUMAN SERVICES	Cut Bank - UA (Glacier) CFS	1210 E Main	48.629116	-112.315457	$32,554
Glacier	CUT BANK	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Cut Bank Translator	Tank Hill, 1/2 mile S.E. of Mem. Hospital	48.626647	-112.319637	$10,000
Hill	HAVRE	DEPARTMENT OF MILITARY AFFAIRS	Havre Armory	1050 2nd St West	48.552845	-109.702729	$1,789,809
Hill	HAVRE	DEPARTMENT OF MILITARY AFFAIRS	Havre Armory Annex	1050 2nd St West	48.552845	-109.702729	$575,843
Hill	HAVRE	DEPARTMENT OF MILITARY AFFAIRS	Havre Readiness Center (add to Havre Armory)	1050 2nd St W	48.553021	-109.702768	$1,702,596
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS	Repair/Fuel/Garage (addition to #44)	2 Riverside Rd.	46.226144	-112.116849	$270,113
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	Administration/Education	2 Riverside Rd.	46.226144	-112.116849	$1,266,829
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	Housing Unit 14	2 Riverside Rd.	46.226144	-112.116849	$1,440,858
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	Industries/Maintenance Building	2 Riverside Rd.	46.226144	-112.116849	$1,306,877
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	Programs Building #15	2 Riverside Rd	46.225334	-112.117584	$1,278,103
Jefferson	BOULDER	DEPARTMENT OF CORRECTIONS, RIVERSIDE YOUTH CORRECTIONAL FACILITY	Pump House South of River	2 Riverside Rd.	46.226144	-112.116849	$50,018
Jefferson	BOULDER	PUBLIC HEALTH & HUMAN SERVICES, MONTANA DEVELOPMENTAL CENTER	Industries/Heating bldg 9	310 4th Avenue	46.233528	-112.116919	$1,485,764
Jefferson	BOULDER	PUBLIC HEALTH & HUMAN SERVICES, MONTANA DEVELOPMENTAL CENTER	Recreation 102	310 4th Avenue	46.233528	-112.116919	$3,363,771
Jefferson	BOULDER	PUBLIC HEALTH & HUMAN SERVICES, MONTANA DEVELOPMENTAL CENTER	Treatment BLDG 8	310 4th Avenue	46.233528	-112.116919	$2,498,763
Lake	BIGFORK	DEPARTMENT OF NATURAL RESOURCES	Swan Lake Light Plant	34925 MT Hwy 83	47.750051	-113.823712	$47,295
Lake	BIGFORK	DEPARTMENT OF NATURAL RESOURCES, SWAN RIVER FOREST CAMP	Swan Youth Center Dining Hall	34925 MT Hwy 83	47.750051	-113.823712	$440,184
Lake	BIGFORK	DEPARTMENT OF NATURAL RESOURCES, SWAN RIVER FOREST CAMP	Swan Youth Center Generator House	34925 MT Hwy 83	47.750051	-113.823712	$4,277
Lake	BIGFORK	DEPARTMENT OF NATURAL RESOURCES, SWAN RIVER FOREST CAMP	Swan Youth Center Lodge, Dormitory & Addition	34925 MT Hwy 83	47.750051	-113.823712	$2,260,912
Lewis & Clark	FORT HARRISON	DEPARTMENT OF MILITARY AFFAIRS	DES Mobile Command Post Storage	1956 MT Majo Street	46.617266	-112.097334	$241,190
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Colonial Drive Building	2401 Colonial Drive	46.587782	-111.996723	$255,000
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Comm Political Practices	1205 8th	46.587490	-112.019692	$354,428
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Dianne Bldg.	1218 6th Ave.	46.586960	-112.019359	$1,069,717
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	FWP-1420 6TH AVE	1420 E 6th	46.587064	-112.015239	$4,292,590
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Helena Data Center (SMDC) behind MDT	490 18th Street	46.587000	-111.992000	$22,598,839
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Justice Building	215 N Sanders	46.586202	-112.013979	$26,121,372
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	MDT Helena HQ Building (PBX) ONLY	2701 Prospect Avenue	46.589000	-111.993000	$1,000,000
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Metcalf Building	1520 E 6th	46.587447	-112.013864	$20,468,873
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	OPI Building	1227 11th Avenue	46.589415	-112.018798	$4,131,282
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Scott Hart Building	302 N Roberts	46.587114	-112.016886	$16,805,048
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Sec. of State Records Mgmt Bureau Bldg 1	1320 Bozeman	46.600000	-112.017000	$2,382,853
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Sec. of State Records Mgmt Bureau Bldg 2	1320 Bozeman	46.600000	-112.017000	$1,065,908
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Tax Appeal Board (was) - 1209 8TH	1209 8th	46.587511	-112.019465	$407,134
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Teachers Retirement	1500 E 6th	46.587064	-112.014359	$1,337,054
Lewis & Clark	HELENA	DEPARTMENT OF ADMINISTRATION	Veterans & Pioneers Memorial Bldg.	225 N Roberts	46.586335	-112.015826	$19,073,783
Lewis & Clark	HELENA	DEPARTMENT OF AGRICULTURE	Ag/Livestock Bldg.- Helena	302 N Roberts	46.587466	-112.016611	$324,717
Lewis & Clark	HELENA	DEPARTMENT OF AGRICULTURE	Leased - Ag Development/Ag Stats	10 West 15th Street	46.596863	-112.034572	$7,683
Lewis & Clark	HELENA	DEPARTMENT OF COMMERCE	PERD Building, Leased to Justice Legal Services	1712 9th Avenue	46.589049	-112.010593	$1,442,106
Lewis & Clark	HELENA	DEPARTMENT OF FISH, WILDLIFE & PARKS	Regional HQ - Building - D of A	1420 East 6th Ave.	46.586827	-112.015611	$1,026,799
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	ITSD - HAFRC DOJ FUSION Center	1956 Mt. Majo St / Fort Harrison	46.621104	-112.095883	$3,032,134
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MHP - Comm Center, Helena	1900 WILLIAMS ST	46.620868	-112.095871	$490,148
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MHP - Fort Harris Microwave Tower	Helena	46.617734	-112.097098	$26,970
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MHP/GCD Helena	2550 Prospect	46.592021	-111.993495	$1,427,708
Lewis & Clark	HELENA	DEPARTMENT OF LABOR & INDUSTRY	BSD Weights & Measures	2801 N. Cooke	46.611985	-112.019309	$597,815
Lewis & Clark	HELENA	DEPARTMENT OF MILITARY AFFAIRS	Helena 1049th Armory	2199 Williams Street	46.630593	-112.094803	$330,083
Lewis & Clark	HELENA	DEPARTMENT OF MILITARY AFFAIRS	Helena OMS	2177 Williams Street	46.617017	-112.097335	$2,093,317
Lewis & Clark	HELENA	DEPARTMENT OF MILITARY AFFAIRS	Womack Armory	Womack Bldg, Ft Harrison	46.618000	-112.097000	$3,145,595
Lewis & Clark	HELENA	DEPARTMENT OF TRANSPORTATION	Helena HQ Office Complex	2701 Prospect Avenue	46.588447	-111.991967	$37,694,257
Lewis & Clark	HELENA	MONTANA HISTORICAL SOCIETY	Montana Historical Society	225 N Roberts	46.586348	-112.016522	$3,255,358
Lewis & Clark	HELENA	MONTANA STATE LIBRARY	Helena Data Center	490 18th St.	46.589058	-111.988789	$163,567
Lewis & Clark	HELENA	MONTANA STATE LIBRARY	Montana State Library (Justice Building)	1515 E. 6th Avenue	46.586435	-112.014015	$2,007,988
Lewis & Clark	HELENA	SECRETARY OF STATE	Records Management Center Warehouse	1320 Bozeman St	46.600094	-112.017841	$10,000
Lewis & Clark	HELENA	STATE FUND	Montana State Fund Building	855 Front Street	46.596000	-112.035346	$38,102,581
Lewis & Clark	HELENA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Montana Natural Heritage Program	1515 East Sixth Ave.	46.586777	-112.013884	$13,905
Lewis & Clark	LINCOLN	DEPARTMENT OF TRANSPORTATION	Aeronautics Lincoln Electrical Building	1842 South Airport Road	46.958110	-112.647421	$44,547
Liberty	CHESTER	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Chester	Liberty County Airport	48.510161	-110.979316	$2,822
Madison	VIRGINIA CITY	MONTANA HERITAGE COMMISSION	McFarland Curatorial Center	Curatorial Addition to Townsite	45.295334	-111.952874	$236,979
McCone	CIRCLE	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Circle	101 Airport Road	47.421359	-105.561354	$2,417
McCone	Wolf Point	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - Billings	Wolf Point Translator	6.5 miles NW of Wolf Point	48.035323	-105.520662	$95,000
Missoula	MISSOULA	DEPARTMENT OF ADMINISTRATION	Palmer Complex PBX only	2681 Palmer St	46.884835	-114.030708	$500,000
Missoula	MISSOULA	DEPARTMENT OF CORRECTIONS	Missoula Assessment and Sanction	2340 Mullan Road	46.881933	-114.027825	$48,364
Missoula	MISSOULA	DEPARTMENT OF FISH, WILDLIFE & PARKS	Regional HQ - Building	3201 Spurgin Road	46.859646	-114.036892	$2,664,834
Missoula	MISSOULA	DEPARTMENT OF JUSTICE	FSD - Forensics, Missoula	2679 Palmer Street	46.884865	-114.029732	$11,394,653
Missoula	MISSOULA	DEPARTMENT OF MILITARY AFFAIRS	Missoula Armed Forces Reserve Center	9383 Running West Road	46.960808	-114.129939	$15,028,199
Missoula	MISSOULA	DEPARTMENT OF TRANSPORTATION	Missoula Headquarters Office & Shop	2100 West Broadway	46.884542	-114.023062	$2,191,725
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	2305-2307 Robar Court	2305-2307 Robar Court	46.845439	-113.993961	$505,763
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	601 S Fifth E	601 S Fifth E	46.864982	-113.988924	$506,291
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	601 S Sixth E	601 S Sixth E	46.864001	-113.989023	$409,900
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	602 S Sixth E	602 S Sixth E	46.864054	-113.989013	$180,673

APPENDIX B-8. CRITICAL FACILITIES IN HAZARDOUS MATERIAL INCIDENT HAZARD AREA

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	609 S Sixth E	609 S Sixth E	46.864001	-113.988843	$314,829
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	610 S Sixth E	610 S Sixth E	46.864054	-113.988833	$424,028
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	615 S Fifth E	615 S Fifth E	46.864978	-113.988604	$302,549
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	615 S Sixth E	615 S Sixth E	46.864001	-113.988654	$272,840
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	616 & 616-1/2 S Sixth E	616 S Sixth E	46.864054	-113.988644	$496,916
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	620 S Sixth E	620 S Sixth E	46.864052	-113.988464	$340,907
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	625 S Fifth E	625 S Fifth E	46.864978	-113.988361	$330,673
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	625 S. Sixth East	625 S. Sixth East	46.864001	-113.988442	$402,242
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	626 S Sixth E	626 S Sixth E	46.864052	-113.988284	$389,258
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	630 S Sixth E	630 S Sixth E	46.864063	-113.988041	$254,089
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	633 S Fifth E	633 S Fifth E	46.864978	-113.988122	$419,935
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	636 S Sixth E	636 S Sixth E	46.864063	-113.987771	$214,789
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	638 - 644 S Sixth E	638 S Sixth E	46.864113	-113.988334	$447,532
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	639 S. Fifth East	639 S. Fifth East	46.864967	-113.987911	$103,559
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	645 S Fifth E	645 S Fifth E	46.864967	-113.987731	$297,664
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	645 S. Sixth E.,	645 S. Sixth E	46.864011	-113.987574	$456,876
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	657 & 657-1/2 S Fifth E	657 S Fifth E	46.864972	-113.987394	$318,889
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	659 & 659-1/2 S Fifth E	659 S Fifth E	46.864972	-113.987183	$417,824
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	659 S Sixth E	659 S Sixth E	46.864011	-113.987394	$416,501
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	664 S Sixth East	664 S Sixth East	46.864063	-113.987321	$238,968
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	666 S Sixth E	666 S Sixth E	46.864063	-113.987141	$352,330
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	702 Arthur	702 Arthur	46.864908	-113.989187	$209,590
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	820 Arthur Ave. (Int. Prog. 600/610 Eddy)	820 Arthur Ave.	46.863306	-113.989222	$628,632
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Administration Building	909 S Ave W.	46.848551	-114.012748	$11,067,248
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Corbin Hall	1025 Maurice Avenue	46.861259	-113.987996	$4,697,681
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Curry Health Center	634 Eddy Avenue	46.863299	-113.987674	$18,291,850
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Don Anderson Hall	800 Daly Ave	46.861306	-113.984794	$17,134,274
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Family Medical Residency of Western Montana at PHC	401 W Railroad St. W.	46.877327	-113.996273	$91,512
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Fine Arts (includes 10/97 remodel)	715 Connell Avenue	46.861861	-113.986280	$19,501,042
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Gallagher Building	925 Maurice Avenue	46.862522	-113.987670	$34,249,894
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Health & Business Bldg	909 S Ave W.	46.848561	-114.012417	$6,125,280
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Heating Plant UM	840 Connell Avenue	46.862028	-113.992182	$34,310,088
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Jesse Hall	610 Daly Avenue	46.861255	-113.988928	$18,235,709
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit A	3000 S. Higgins	46.844785	-113.996719	$1,312,846
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit B	3000 S. Higgins	46.844567	-113.996185	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit C	3000 S. Higgins	46.844492	-113.995850	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit D	3000 S Higgins	46.843899	-113.996761	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit E	3000 S Higgins	46.843927	-113.996389	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit F	3000 S. Higgins	46.843928	-113.995810	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit G	3000 S. Higgins	46.843233	-113.996731	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit H	3000 S. Higgins	46.843212	-113.996355	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit I	3000 S. Higgins	46.843159	-113.995803	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit J	3000 S. Higgins	46.842548	-113.995913	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Lewis and Clark Villages Unit K	3000 S. Higgins	46.842361	-113.996638	$1,312,839
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Liberal Arts	725 Daly Avenue	46.860868	-113.986057	$28,202,243
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Mansfield Center at Palmer Street	2675 Palmer Street Suite E	46.885788	-114.029242	$79,195
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	McGill Hall	920 Van Buren Street	46.862448	-113.983713	$15,702,590
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Music Hall	930 Maurice Avenue	46.862381	-113.986393	$11,881,460
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	North Corbin	1025 Maurice Avenue	46.861574	-113.987994	$2,993,826
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Performing Arts & Radio Television	735 S 6th Street East	46.863548	-113.985113	$21,137,982
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Phyllis J. Washington Education Center	745 Eddy	46.862693	-113.985264	$22,649,692
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Social Science	1010 Mansfield Avenue	46.861743	-113.985157	$25,800,375
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Turner Hall	1105 Maurice Aveneu	46.860764	-113.987361	$6,014,498
Musselshell	ROUNDUP	PUBLIC HEALTH & HUMAN SERVICES	Roundup - UA (Musselshell) OPA/CFS	26 Main St.	46.441679	-108.541913	$30,491
Phillips	MALTA	DEPARTMENT OF MILITARY AFFAIRS	Malta Armory	HC 72, 1 Mile S. Hwy 191	48.347811	-107.876151	$1,138,101
Phillips	MALTA	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Malta	48 deg - 22' - 43.0" N, 107 deg - 55' - 12.0" W	48.368151	-107.917330	$2,417
Ravalli	HAMILTON	DEPARTMENT OF MILITARY AFFAIRS	Hamilton Armory	910 West Main	46.246647	-114.168149	$1,014,737
Richland	SIDNEY	DEPARTMENT OF MILITARY AFFAIRS	Sidney Armory	2190 West Holly	47.717695	-104.184646	$1,137,338
Richland	SIDNEY	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	EARC Foreman Residence	1 mile N of Sidney, Hwy 200	47.719729	-104.153032	$111,213
Richland	SIDNEY	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	EARC Superintendent Residence	1 mile N of Sidney, Hwy 200	47.719974	-104.153326	$171,022
Roosevelt	CULBERTSON	DEPARTMENT OF MILITARY AFFAIRS	Culbertson Armory	819 6th Avenue East	48.151398	-104.510055	$2,215,519
Roosevelt	WOLF POINT	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Wolf Point	48 deg - 6' - 16.0" N, 105 deg - 36' - 5.0" W	48.096489	-105.574838	$2,417
Roosevelt	WOLF POINT	DEPARTMENT OF TRANSPORTATION	Wolf Point Office & Shop	200 E. HWY 25	48.090119	-105.640554	$1,444,427
Rosebud	FORSYTH	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Forsyth	46 deg - 16' - 15.0" N, 106 deg - 40' - 25.1" W	46.267731	-106.623143	$15,417
Rosebud	FORSYTH	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Forsyth Translator	F. Hill, 46 15' 39	46.263015	-106.669859	$10,000
Silver Bow	BUTTE	DEPARTMENT OF MILITARY AFFAIRS	Butte Armory	600 Gilman St	45.981661	-112.528063	$2,462,831
Silver Bow	BUTTE	DEPARTMENT OF MILITARY AFFAIRS	Butte Armory Annex	600 Gilman St	45.981661	-112.528063	$665,833
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	College of Technology	25 Basin Creek Rd.	45.938000	-112.510000	$23,056,194
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Family Student Housing - Lexington Apartments	1001 - 1039 Lexington Ave	46.023042	-112.552267	$2,294,578

APPENDIX B-8. CRITICAL FACILITIES IN HAZARDOUS MATERIAL INCIDENT HAZARD AREA

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Family Student Housing - Missoula Apartments North	1001 - 1039 Missoula Ave	46.022562	-112.552180	$2,294,578
Silver Bow	BUTTE	UNIVERSITY SYSTEM, MONTANA TECH OF THE UM	Family Student Housing - Missoula Apartments South	1000 - 1038 Missoula Ave	46.022289	-112.552165	$2,294,578
Silver Bow	BUTTE	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Clark Chateau	321 W. Broadway	46.013287	-112.541722	$0
Stillwater	COLUMBUS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Columbus Translator	2 miles W. of town	45.642847	-109.299984	$10,000
Toole	SHELBY	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Shelby Translator	145 1st Ave SE Shelby - 48 30' 43	48.503844	-111.855048	$34,674
Toole	Sweet Grass	DEPARTMENT OF TRANSPORTATION	Coutts/Sweetgrass Vehicle Inspection Station	I-15 Canadian Border	48.997849	-111.960343	$74,329
Valley	GLASGOW	DEPARTMENT OF FISH, WILDLIFE & PARKS	Regional HQ - Building	1 Airport Rd	48.210340	-106.641753	$1,157,021
Valley	GLASGOW	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Glasgow Translator	1.5 miles W. of city water tanks	48.198586	-106.648048	$10,000
Wheatland	HARLOWTON	DEPARTMENT OF MILITARY AFFAIRS	Harlowton Armory	9895 Highway 12 West	46.437899	-109.851858	$1,758,068
Yellowstone	BILLINGS	DEPARTMENT OF CORRECTIONS, MONTANA WOMEN'S PRISON	Industries Building	701 27th St., BILLINGS MT 59101	45.774626	-108.496447	$1,019,018
Yellowstone	BILLINGS	DEPARTMENT OF CORRECTIONS, MONTANA WOMEN'S PRISON	Montana Women's Prison Main Building	701 27th St S.	45.774903	-108.495990	$26,005,069
Yellowstone	BILLINGS	DEPARTMENT OF FISH, WILDLIFE & PARKS	Billings Airport Hanger -	Logan Int'l Airport	45.802377	-108.530586	$150,345
Yellowstone	BILLINGS	DEPARTMENT OF LABOR & INDUSTRY	Billings UI Phone Claims	624 N 24th St	45.789308	-108.506123	$2,095,660
Yellowstone	BILLINGS	DEPARTMENT OF MILITARY AFFAIRS	Billings AFRC	2915 Gabel Road	45.744583	-108.589398	$22,712,860
Yellowstone	BILLINGS	DEPARTMENT OF TRANSPORTATION	Billings Office & Shop	424 Morey Lane	45.762288	-108.538285	$2,835,741
Yellowstone	BILLINGS	PUBLIC HEALTH & HUMAN SERVICES	Billings - Owned AMDD MH Cntr -Lessee	1245 N 29th	45.794410	-108.519689	$2,099,965
Yellowstone	BILLINGS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	KEMC Radio Station - 406 Marbara Lane	406 Marbara Lane	45.797074	-108.526073	$829,269
Yellowstone	BILLINGS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Petro/Rimrock/SUB Complex	1500 University Drive	45.797654	-108.521796	$51,580,563
Yellowstone	BILLINGS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Phys Plant - 324 N Rim Terr	324 N. Rim Terrrace	45.798880	-108.523936	$2,226,840
Yellowstone	BILLINGS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	PHYSICAL ED BUILDING - BILLINGS	1500 University Drive	45.797471	-108.520738	$16,895,592
Yellowstone	BILLINGS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Rental House/MSUB Daycare - 2630 Normal	2630 Normal	45.796294	-108.525587	$212,680
Yellowstone	BILLINGS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Science Hall	1500 University Drive	45.796230	-108.523136	$15,528,073
Yellowstone	BILLINGS	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV TRANSMITTER SITE-KTVQ STUDIOS	3203 3RD AVENUE N.	45.781300	-108.512705	$84,504

APPENDIX B-8. COUNTY PERCENT EXPOSURE RANKING - HAZARDOUS MATERIAL INCIDENTS									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	County	Census 2010	2016 Est	% Population Change	Building Permits	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
1	1	Mineral County	4,223	4,184	-0.93%	1	$188,081,129	65.20%	-0.61%
2	1	Deer Lodge County	9,298	9,085	-2.34%	17	$325,358,795	63.80%	-1.50%
3	2	Glacier County	13,399	13,694	2.15%	0	$411,353,907	59.86%	1.29%
4	4	Richland County	9,746	11,482	15.12%	16	$556,664,241	59.46%	8.99%
5	4	Dawson County	8,966	9,327	3.87%	1	$339,413,683	59.42%	2.30%
6	2	Toole County	5,324	4,977	-6.97%	2	$205,752,676	56.50%	-3.94%
7	2	Cascade County	81,327	81,755	0.52%	242	$3,811,389,550	55.19%	0.29%
8	1	Silver Bow County	34,200	34,553	1.02%	86	$1,216,238,147	54.46%	0.56%
9	5	Big Horn County	12,865	13,343	3.58%	2	$286,000,563	52.05%	1.86%
0	6	Roosevelt County	10,425	11,305	7.78%	1	$225,097,076	51.11%	3.98%
11	1	Missoula County	109,299	116,130	5.88%	930	$2,037,750,915	50.77%	2.99%
12	6	Fergus County	11,586	11,413	-1.52%	1	$485,147,322	50.59%	-0.77%
13	5	Rosebud County	9,233	9,287	0.58%	1	$216,997,031	47.92%	0.28%
14	6	Valley County	7,369	7,539	2.25%	4	$271,459,941	47.28%	1.07%
15	6	Judith Basin County	2,072	1,940	-6.80%	NA	$87,036,983	46.70%	-3.18%
16	2	Teton County	6,073	6,056	-0.28%	1	$216,745,970	46.42%	-0.13%
17	6	Daniels County	1,751	1,755	0.23%	0	$80,564,722	46.23%	0.11%
18	5	Wheatland County	2,168	2,117	-2.41%	NA	$76,804,971	45.78%	-1.10%
19	4	Custer County	11,699	11,924	1.89%	0	$375,303,259	45.29%	0.85%
20	1	Sanders County	11,413	11,534	1.05%	0	$400,390,912	44.91%	0.47%
21	5	Carbon County	10,078	10,460	3.65%	8	$543,486,859	44.36%	1.62%
22	2	Pondera County	6,153	6,084	-1.13%	1	$201,856,963	43.39%	-0.49%
23	6	Sheridan County	3,384	3,648	7.24%	2	$162,705,009	43.03%	3.11%
24	5	Yellowstone County	147,972	158,437	6.61%	1,198	$6,379,792,499	41.26%	2.73%
25	1	Lincoln County	19,687	19,259	-2.22%	8	$991,855,980	39.93%	-0.89%
26	3	Beaverhead County	9,246	9,401	1.65%	3	$337,476,935	38.53%	0.64%
27	2	Hill County	16,096	16,542	2.70%	4	$475,020,975	38.52%	1.04%
28	6	Petroleum County	494	489	-1.02%	NA	$19,835,105	38.21%	-0.39%
29	3	Meagher County	1,891	1,827	-3.50%	NA	$84,080,243	38.09%	-1.33%
30	3	Park County	15,636	16,114	2.97%	44	$744,440,832	37.73%	1.12%
31	3	Lewis and Clark County	63,395	67,282	5.78%	176	$2,383,549,969	37.69%	2.18%
32	4	Wibaux County	1,017	1,093	6.95%	8	$30,855,497	37.06%	2.58%
33	6	Phillips County	4,253	4,133	-2.90%	2	$149,029,347	36.78%	-1.07%
34	1	Powell County	7,027	6,858	-2.46%	32	$192,900,500	35.56%	-0.88%
35	4	McCone County	1,734	1,700	-2.00%	0	$44,149,786	34.86%	-0.70%
36	2	Chouteau County	5,813	5,759	-0.94%	10	$143,568,561	34.79%	-0.33%
37	4	Fallon County	2,890	3,120	7.37%	35	$95,373,268	34.38%	2.53%
38	3	Broadwater County	5,612	5,747	2.35%	0	$226,700,842	33.65%	0.79%
39	5	Musselshell County	4,538	4,589	1.11%	1	$97,509,863	33.08%	0.37%
40	3	Gallatin County	89,513	104,502	14.34%	1,550	$4,881,120,401	32.32%	4.64%
41	3	Madison County	7,691	7,924	2.94%	7	$376,622,692	32.11%	0.94%
42	1	Lake County	28,746	29,758	3.40%	44	$1,262,581,032	31.95%	1.09%
43	5	Golden Valley County	884	831	-6.38%	NA	$23,302,544	31.52%	-2.01%
44	5	Stillwater County	9,117	9,406	3.07%	0	$210,692,775	31.00%	0.95%
45	2	Liberty County	2,339	2,409	2.91%	NA	$62,984,083	30.97%	0.90%
46	3	Sweet Grass County	3,651	3,623	-0.77%	1	$200,647,297	30.94%	-0.24%
47	3	Jefferson County	11,406	11,853	3.77%	5	$260,449,354	30.22%	1.14%
48	1	Ravalli County	40,212	42,088	4.46%	20	$1,393,083,067	30.13%	1.34%
49	1	Flathead County	90,928	98,082	7.29%	316	$3,720,656,515	29.93%	2.18%
50	2	Blaine County	6,491	6,601	1.67%	0	$133,216,520	27.93%	0.47%
51	4	Prairie County	1,179	1,182	0.25%	NA	$23,653,244	27.71%	0.07%
52	5	Treasure County	718	692	-3.76%	0	$15,938,325	26.92%	-1.01%
53	4	Powder River County	1,743	1,746	0.17%	NA	$38,515,031	26.47%	0.05%
54	1	Granite County	3,079	3,368	8.58%	NA	$92,945,417	25.27%	2.17%
55	4	Garfield County	1,206	1,310	7.94%	0	$29,963,362	21.60%	1.71%
56	4	Carter County	1,160	1,203	3.57%	1	$4,421,122	3.20%	0.11%

APPENDIX B-8. COUNTY PERCENT EXPOSURE X POPULATION CHANGE RANKING - HAZMAT									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	County	Census 2010	2016 Est	% Population Change	Building Permits	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
1	4	Richland County	9,746	11,482	15.12%	16	$556,664,241	59.46%	8.99%
2	3	Gallatin County	89,513	104,502	14.34%	1,550	$4,881,120,401	32.32%	4.64%
3	6	Roosevelt County	10,425	11,305	7.78%	1	$225,097,076	51.11%	3.98%
4	6	Sheridan County	3,384	3,648	7.24%	2	$162,705,009	43.03%	3.11%
5	1	Missoula County	109,299	116,130	5.88%	930	$2,037,750,915	50.77%	2.99%
6	5	Yellowstone County	147,972	158,437	6.61%	1,198	$6,379,792,499	41.26%	2.73%
7	4	Wibaux County	1,017	1,093	6.95%	8	$30,855,497	37.06%	2.58%
8	4	Fallon County	2,890	3,120	7.37%	35	$95,373,268	34.38%	2.53%
9	4	Dawson County	8,966	9,327	3.87%	1	$339,413,683	59.42%	2.30%
10	1	Flathead County	90,928	98,082	7.29%	316	$3,720,656,515	29.93%	2.18%
10	3	Lewis and Clark County	63,395	67,282	5.78%	176	$2,383,549,969	37.69%	2.18%
11	1	Granite County	3,079	3,368	8.58%	NA	$92,945,417	25.27%	2.17%
12	5	Big Horn County	12,865	13,343	3.58%	2	$286,000,563	52.05%	1.86%
13	4	Garfield County	1,206	1,310	7.94%	0	$29,963,362	21.60%	1.71%
14	5	Carbon County	10,078	10,460	3.65%	8	$543,486,859	44.36%	1.62%
15	1	Ravalli County	40,212	42,088	4.46%	20	$1,393,083,067	30.13%	1.34%
16	2	Glacier County	13,399	13,694	2.15%	0	$411,353,907	59.86%	1.29%
17	3	Jefferson County	11,406	11,853	3.77%	5	$260,449,354	30.22%	1.14%
18	3	Park County	15,636	16,114	2.97%	44	$744,440,832	37.73%	1.12%
19	1	Lake County	28,746	29,758	3.40%	44	$1,262,581,032	31.95%	1.09%
20	6	Valley County	7,369	7,539	2.25%	4	$271,459,941	47.28%	1.07%
21	2	Hill County	16,096	16,542	2.70%	4	$475,020,975	38.52%	1.04%
22	5	Stillwater County	9,117	9,406	3.07%	0	$210,692,775	31.00%	0.95%
23	3	Madison County	7,691	7,924	2.94%	7	$376,622,692	32.11%	0.94%
24	2	Liberty County	2,339	2,409	2.91%	NA	$62,984,083	30.97%	0.90%
25	4	Custer County	11,699	11,924	1.89%	0	$375,303,259	45.29%	0.85%
26	3	Broadwater County	5,612	5,747	2.35%	0	$226,700,842	33.65%	0.79%
27	3	Beaverhead County	9,246	9,401	1.65%	3	$337,476,935	38.53%	0.64%
28	1	Silver Bow County	34,200	34,553	1.02%	86	$1,216,238,147	54.46%	0.56%
29	1	Sanders County	11,413	11,534	1.05%	0	$400,390,912	44.91%	0.47%
29	2	Blaine County	6,491	6,601	1.67%	0	$133,216,520	27.93%	0.47%
30	5	Musselshell County	4,538	4,589	1.11%	1	$97,509,863	33.08%	0.37%
31	2	Cascade County	81,327	81,755	0.52%	242	$3,811,389,550	55.19%	0.29%
32	5	Rosebud County	9,233	9,287	0.58%	1	$216,997,031	47.92%	0.28%
33	4	Carter County	1,160	1,203	3.57%	1	$4,421,122	3.20%	0.11%
33	6	Daniels County	1,751	1,755	0.23%	0	$80,564,722	46.23%	0.11%
34	4	Prairie County	1,179	1,182	0.25%	NA	$23,653,244	27.71%	0.07%
35	4	Powder River County	1,743	1,746	0.17%	NA	$38,515,031	26.47%	0.05%
36	2	Teton County	6,073	6,056	-0.28%	1	$216,745,970	46.42%	-0.13%
37	3	Sweet Grass County	3,651	3,623	-0.77%	1	$200,647,297	30.94%	-0.24%
38	2	Chouteau County	5,813	5,759	-0.94%	10	$143,568,561	34.79%	-0.33%
39	6	Petroleum County	494	489	-1.02%	NA	$19,835,105	38.21%	-0.39%
40	2	Pondera County	6,153	6,084	-1.13%	1	$201,856,963	43.39%	-0.49%
41	1	Mineral County	4,223	4,184	-0.93%	1	$188,081,129	65.20%	-0.61%
42	4	McCone County	1,734	1,700	-2.00%	0	$44,149,786	34.86%	-0.70%
43	6	Fergus County	11,586	11,413	-1.52%	1	$485,147,322	50.59%	-0.77%
44	1	Powell County	7,027	6,858	-2.46%	32	$192,900,500	35.56%	-0.88%
45	1	Lincoln County	19,687	19,259	-2.22%	8	$991,855,980	39.93%	-0.89%
46	5	Treasure County	718	692	-3.76%	0	$15,938,325	26.92%	-1.01%
47	6	Phillips County	4,253	4,133	-2.90%	2	$149,029,347	36.78%	-1.07%
48	5	Wheatland County	2,168	2,117	-2.41%	NA	$76,804,971	45.78%	-1.10%
49	3	Meagher County	1,891	1,827	-3.50%	NA	$84,080,243	38.09%	-1.33%
50	1	Deer Lodge County	9,298	9,085	-2.34%	17	$325,358,795	63.80%	-1.50%
51	5	Golden Valley County	884	831	-6.38%	NA	$23,302,544	31.52%	-2.01%
52	6	Judith Basin County	2,072	1,940	-6.80%	NA	$87,036,983	46.70%	-3.18%
53	2	Toole County	5,324	4,977	-6.97%	2	$205,752,676	56.50%	-3.94%

APPENDIX B-8. CITY-TOWN PERCENT EXPOSURE RANKING - HAZARDOUS MATERIAL INCIDENTS									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	City / Town	County	Census 2010	2016 Est	% Population Change	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
1	6	Culbertson town	Roosevelt County	714	804	11.19%	$58,456,346	100.00%	11.19%
1	2	Cascade town	Cascade County	685	688	0.44%	$38,044,789	100.00%	0.44%
1	3	Twin Bridges town	Madison County	375	395	5.06%	$33,718,822	100.00%	5.06%
1	6	Stanford town	Judith Basin County	401	384	-4.43%	$31,185,226	100.00%	-4.43%
1	2	Hingham town	Hill County	118	122	3.28%	$17,731,057	100.00%	3.28%
1	6	Nashua town	Valley County	290	290	0.00%	$14,703,507	100.00%	0.00%
1	6	Poplar city	Roosevelt County	810	854	5.15%	$14,671,742	100.00%	5.15%
1	3	Lima town	Beaverhead County	221	224	1.34%	$9,778,665	100.00%	1.34%
1	5	Judith Gap city	Wheatland County	126	123	-2.44%	$7,167,798	100.00%	-2.44%
1	5	Bearcreek town	Carbon County	79	84	5.95%	$6,408,068	100.00%	5.95%
1	6	Flaxville town	Daniels County	71	71	0.00%	$5,564,093	100.00%	0.00%
1	4	Ismay town	Custer County	19	21	9.52%	$1,737,237	100.00%	9.52%
1	6	Brockton town	Roosevelt County	255	243	-4.94%	$1,149,313	100.00%	-4.94%
2	1	Drummond town	Granite County	309	348	11.21%	$16,849,457	99.79%	11.18%
3	6	Westby town	Sheridan County	168	174	3.45%	$6,027,386	99.75%	3.44%
4	5	Broadview town	Yellowstone County	192	193	0.52%	$12,429,992	99.23%	0.51%
5	3	Whitehall town	Jefferson County	1,038	1,114	6.82%	$41,626,605	99.15%	6.76%
6	4	Plevna town	Fallon County	162	176	7.95%	$14,828,908	98.74%	7.85%
7	2	Harlem city	Blaine County	808	823	1.82%	$30,541,468	98.31%	1.79%
8	1	Troy city	Lincoln County	938	890	-5.39%	$55,784,968	98.15%	-5.29%
9	2	Dutton town	Teton County	316	308	-2.60%	$22,614,937	97.58%	-2.53%
10	2	Neihart town	Cascade County	51	50	-2.00%	$7,927,839	96.69%	-1.93%
11	6	Denton town	Fergus County	255	247	-3.24%	$17,189,517	96.52%	-3.13%
12	5	Joliet town	Carbon County	595	640	7.03%	$28,624,034	96.42%	6.78%
13	6	Hobson town	Judith Basin County	215	218	1.38%	$13,884,995	94.24%	1.30%
14	4	Wibaux town	Wibaux County	589	649	9.24%	$24,050,889	93.25%	8.62%
15	3	Virginia City town	Madison County	190	198	4.04%	$29,170,957	92.47%	3.74%
16	3	Manhattan town	Gallatin County	1,520	1,691	10.11%	$136,589,646	91.80%	9.28%
17	5	Ryegate town	Golden Valley County	245	236	-3.81%	$10,937,388	91.11%	-3.47%
18	4	Fairview town	Richland County	840	922	8.89%	$32,984,887	89.69%	7.98%
19	2	Browning town	Glacier County	1,016	1,031	1.45%	$15,468,263	89.23%	1.30%
20	1	Alberton town	Mineral County	420	417	-0.72%	$15,082,926	86.73%	-0.62%
21	6	Medicine Lake town	Sheridan County	225	241	6.64%	$9,440,711	86.56%	5.75%
22	6	Moore town	Fergus County	193	198	2.53%	$9,589,642	85.92%	2.17%
23	6	Lewistown city	Fergus County	5,901	5,870	-0.53%	$365,487,735	85.54%	-0.45%
24	5	Melstone town	Musselshell County	96	107	10.28%	$2,361,319	85.34%	8.77%
25	6	Plentywood city	Sheridan County	1,734	1,904	8.93%	$88,484,120	82.82%	7.39%
26	5	Harlowton city	Wheatland County	997	984	-1.32%	$43,115,040	82.61%	-1.09%
27	6	Winnett town		182	185	1.62%	$17,963,865	82.39%	1.34%
28	6	Outlook town	Sheridan County	47	52	9.62%	$2,876,166	82.20%	7.90%
29	3	Big Timber city	Sweet Grass County	1,641	1,645	0.24%	$110,185,530	81.95%	0.20%
30	5	Lavina town	Golden Valley County	187	173	-8.09%	$7,345,787	81.13%	-6.57%
31	5	Hardin city	Big Horn County	3,505	3,829	8.46%	$104,945,618	80.87%	6.84%
32	1	Superior town	Mineral County	812	826	1.69%	$45,893,050	80.57%	1.37%
33	6	Saco town	Phillips County	197	197	0.00%	$7,030,756	80.25%	0.00%
34	5	Forsyth city	Rosebud County	1,777	1,869	4.92%	$81,293,550	80.01%	3.94%
35	2	Chester town	Liberty County	847	884	4.19%	$39,433,222	79.57%	3.33%
36	5	Roundup city	Musselshell County	1,788	1,840	2.83%	$64,905,420	79.34%	2.24%
37	2	Shelby city	Toole County	3,376	3,216	-4.98%	$148,376,819	79.21%	-3.94%
38	6	Dodson town	Phillips County	124	124	0.00%	$1,868,533	79.08%	0.00%
39	5	Columbus town	Stillwater County	1,893	2,028	6.66%	$81,210,631	78.71%	5.24%
40	1	Plains town	Sanders County	1,048	1,071	2.15%	$48,640,696	77.94%	1.67%
41	4	Circle town	McCone County	615	619	0.65%	$32,369,591	77.84%	0.50%
42	4	Jordan town	Garfield County	343	399	14.04%	$15,113,416	77.38%	10.86%
43	3	White Sulphur Springs city	McCone County	939	908	-3.41%	$52,514,902	77.13%	-2.63%
44	3	Three Forks city	Gallatin County	1,869	1,944	3.86%	$96,565,900	76.87%	2.97%
45	4	Broadus town	Powder River County	468	481	2.70%	$21,653,680	76.73%	2.07%
46	6	Opheim town	Valley County	85	290	70.69%	$4,087,977	76.51%	54.08%
47	2	Choteau city	Teton County	1,684	1,686	0.12%	$79,533,645	75.62%	0.09%
48	1	Thompson Falls city	Sanders County	1,313	1,356	3.17%	$64,081,786	75.61%	2.40%
49	2	Fairfield town	Teton County	708	922	23.21%	$32,837,660	75.35%	17.49%
50	1	Stevensville town	Ravalli County	1,809	1,963	7.85%	$140,062,831	75.28%	5.91%
51	3	Dillon city	Beaverhead County	4,134	4,257	2.89%	$148,662,246	74.55%	2.15%
52	5	Red Lodge city	Carbon County	2,125	2,237	5.01%	$221,894,963	74.16%	3.71%
53	2	Geraldine town	Chouteau County	261	261	0.00%	$8,947,391	73.65%	0.00%

APPENDIX B-8. CITY-TOWN PERCENT EXPOSURE RANKING - HAZARDOUS MATERIAL INCIDENTS									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	City / Town	County	Census 2010	2016 Est	% Population Change	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
54	2	Kevin town	Toole County	154	138	-11.59%	$3,389,085	73.64%	-8.54%
55	6	Froid town	Roosevelt County	185	201	7.96%	$4,697,977	73.49%	5.85%
56	1	Eureka town	Lincoln County	1,037	1,086	4.51%	$48,230,988	72.80%	3.28%
57	6	Fort Peck town	Valley County	233	247	5.67%	$17,101,590	72.53%	4.11%
58	1	Missoula city	Missoula County	66,788	72,364	7.71%	$1,137,349,564	72.00%	5.55%
59	1	Darby town	Ravalli County	720	763	5.64%	$51,034,069	71.79%	4.05%
60	3	Townsend city	Broadwater County	1,878	1,978	5.06%	$98,786,227	71.41%	3.61%
61	1	Hamilton city	Ravalli County	4,348	4,674	6.97%	$381,150,670	70.47%	4.92%
62	2	Big Sandy town	Chouteau County	598	590	-1.36%	$21,572,993	70.24%	-0.95%
63	3	West Yellowstone town	Gallatin County	1,271	1,353	6.06%	$224,427,910	69.54%	4.21%
64	3	Belgrade city	Gallatin County	7,389	8,254	10.48%	$428,976,324	69.44%	7.28%
65	1	Libby city	Lincoln County	2,628	2,678	1.87%	$184,782,637	68.63%	1.28%
66	2	Belt city	Cascade County	597	588	-1.53%	$9,719,209	67.75%	-1.04%
67	1	Columbia Falls city	Flathead County	4,688	5,241	10.55%	$246,101,546	66.09%	6.97%
68	4	Sidney city	Richland County	5,191	6,566	20.94%	$280,961,287	65.64%	13.75%
69	3	Ennis town	Madison County	838	890	5.84%	$70,433,389	65.01%	3.80%
70	2	Great Falls city	Cascade County	58,505	59,178	1.14%	$3,232,444,839	64.02%	0.73%
71	4	Glendive city	Dawson County	4,935	5,332	7.45%	$179,432,643	63.56%	4.73%
72	1	Rexford town	Lincoln County	105	151	30.46%	$4,019,692	63.17%	19.25%
73	3	Livingston city	Park County	7,044	7,401	4.82%	$370,472,000	62.64%	3.02%
74	6	Scobey city	Daniels County	1,017	1,032	1.45%	$46,247,988	61.92%	0.90%
75	5	Fromberg town	Carbon County	438	445	1.57%	$10,537,884	61.29%	0.96%
76	6	Malta city	Phillips County	1,997	1,950	-2.41%	$80,650,038	60.91%	-1.47%
77	2	Valier town	Pondera County	509	498	-2.21%	$22,897,886	60.38%	-1.33%
78	3	Clyde Park town	Park County	288	309	6.80%	$10,758,722	59.88%	4.07%
79	3	Boulder town	Jefferson County	1,183	1,230	3.82%	$26,045,672	59.54%	2.28%
80	2	Sunburst town	Toole County	375	338	-10.95%	$9,166,133	58.58%	-6.41%
81	2	Cut Bank city	Glacier County	2,869	3,012	4.75%	$74,205,245	57.72%	2.74%
82	5	Bridger town	Carbon County	708	732	3.28%	$22,613,900	57.04%	1.87%
83	3	East Helena town	Lewis and Clark County	1,984	2,074	4.34%	$63,937,454	57.01%	2.47%
84	5	Laurel city	Yellowstone County	6,718	6,865	2.14%	$279,437,570	56.46%	1.21%
85	6	Glasgow city	Valley County	3,250	3,364	3.39%	$128,682,872	56.22%	1.91%
86	2	Fort Benton city	Chouteau County	1,464	1,456	-0.55%	$67,800,818	55.67%	-0.31%
87	4	Miles City city	Custer County	8,410	8,647	2.74%	$260,053,109	55.57%	1.52%
88	6	Wolf Point city	Roosevelt County	2,621	2,806	6.59%	$40,918,911	54.95%	3.62%
89	5	Walkerville town	Stillwater County	675	700	3.57%	$1,198,908,492	54.28%	1.94%
90	3	Helena city	Lewis and Clark County	28,190	31,169	9.56%	$1,708,380,432	53.42%	5.11%
91	4	Terry town	Prairie County	605	609	0.66%	$13,396,890	53.21%	0.35%
92	1	Ronan city	Lake County	1,871	2,016	7.19%	$50,278,119	53.20%	3.83%
93	5	Colstrip city	Rosebud County	2,214	2,311	4.20%	$75,092,744	53.18%	2.23%
94	1	Deer Lodge city	Powell County	3,111	2,994	-3.91%	$82,536,763	53.02%	-2.07%
95	2	Conrad city	Pondera County	2,570	2,550	-0.78%	$95,136,845	52.76%	-0.41%
96	4	Baker city	Fallon County	1,741	1,990	12.51%	$61,504,917	52.35%	6.55%
97	6	Bainville town	Roosevelt County	208	314	33.76%	$4,533,553	48.02%	16.21%
98	5	Lodge Grass town	Big Horn County	428	446	4.04%	$13,271,526	47.54%	1.92%
99	5	Hysham town	Treasure County	312	301	-3.65%	$5,257,721	45.00%	-1.64%
100	1	Kalispell city	Flathead County	19,927	22,761	12.45%	$1,018,105,017	43.56%	5.42%
101	4	Richey town	Dawson County	177	187	5.35%	$5,067,512	42.94%	2.30%
102	5	Billings city	Yellowstone County	104,170	110,323	5.58%	$4,630,756,019	41.53%	2.32%
103	1	Polson city	Lake County	4,488	4,777	6.05%	$141,691,329	40.46%	2.45%
104	1	Philipsburg town	Granite County	820	920	10.87%	$28,447,459	40.34%	4.38%
105	2	Chinook city	Blaine County	1,203	1,233	2.43%	$28,897,178	36.35%	0.88%
106	1	Whitefish city	Flathead County	6,357	7,279	12.67%	$537,456,640	35.73%	4.53%
107	4	Fallon County	Fallon County	2,890	3,120	7.37%	$95,373,268	34.38%	2.53%
108	3	Bozeman city	Gallatin County	37,280	45,250	17.61%	$2,171,929,720	31.12%	5.48%
109	2	Havre city	Hill County	9,310	9,846	5.44%	$124,619,614	25.99%	1.41%
110	6	Grass Range town	Fergus County	110	108	-1.85%	$1,556,691	24.11%	-0.45%
111	3	Sheridan town	Madison County	642	677	5.17%	$48,012,131	22.33%	1.15%
112	1	St. Ignatius town	Lake County	842	824	-2.18%	$5,944,755	19.26%	-0.42%
113	4	Ekalaka town	Carter County	332	353	5.95%	$0	0.00%	0.00%
113	1	Hot Springs town	Sanders County	544	557	2.33%	$0	0.00%	0.00%
113	1	Pinesdale town	Ravalli County	917	967	5.17%	$0	0.00%	0.00%
113	6	Winifred town	Fergus County	208	206	-0.97%	$0	0.00%	0.00%

APPENDIX B-8. CITY-TOWN PERCENT EXPOSURE x POPULATION RANKING - HAZARDOUS MATERIAL INCIDENTS									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	City / Town	County	Census 2010	2016 Est	% Population Change	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
1	6	Opheim town	Valley County	85	290	70.69%	$4,087,977	76.51%	54.08%
2	1	Rexford town	Lincoln County	105	151	30.46%	$4,019,692	63.17%	19.25%
3	2	Fairfield town	Teton County	708	922	23.21%	$32,837,660	75.35%	17.49%
4	6	Bainville town	Roosevelt County	208	314	33.76%	$4,533,553	48.02%	16.21%
5	4	Sidney city	Richland County	5,191	6,566	20.94%	$280,961,287	65.64%	13.75%
6	6	Culbertson town	Roosevelt County	714	804	11.19%	$58,456,346	100.00%	11.19%
7	1	Drummond town	Granite County	309	348	11.21%	$16,849,457	99.79%	11.18%
8	4	Jordan town	Garfield County	343	399	14.04%	$15,113,416	77.38%	10.86%
9	4	Ismay town	Custer County	19	21	9.52%	$1,737,237	100.00%	9.52%
10	3	Manhattan town	Gallatin County	1,520	1,691	10.11%	$136,589,646	91.80%	9.28%
11	5	Melstone town	Musselshell County	96	107	10.28%	$2,361,319	85.34%	8.77%
12	4	Wibaux town	Wibaux County	589	649	9.24%	$24,050,889	93.25%	8.62%
13	4	Fairview town	Richland County	840	922	8.89%	$32,984,887	89.69%	7.98%
14	6	Outlook town	Sheridan County	47	52	9.62%	$2,876,166	82.20%	7.90%
15	4	Plevna town	Fallon County	162	176	7.95%	$14,828,908	98.74%	7.85%
16	6	Plentywood city	Sheridan County	1,734	1,904	8.93%	$88,484,120	82.82%	7.39%
17	3	Belgrade city	Gallatin County	7,389	8,254	10.48%	$428,976,324	69.44%	7.28%
18	1	Columbia Falls city	Flathead County	4,688	5,241	10.55%	$246,101,546	66.09%	6.97%
19	5	Hardin city	Big Horn County	3,505	3,829	8.46%	$104,945,618	80.87%	6.84%
20	5	Joliet town	Carbon County	595	640	7.03%	$28,624,034	96.42%	6.78%
21	3	Whitehall town	Jefferson County	1,038	1,114	6.82%	$41,626,605	99.15%	6.76%
22	4	Baker city	Fallon County	1,741	1,990	12.51%	$61,504,917	52.35%	6.55%
23	5	Bearcreek town	Carbon County	79	84	5.95%	$6,408,068	100.00%	5.95%
24	1	Stevensville town	Ravalli County	1,809	1,963	7.85%	$140,062,831	75.28%	5.91%
25	6	Froid town	Roosevelt County	185	201	7.96%	$4,697,977	73.49%	5.85%
26	6	Medicine Lake town	Sheridan County	225	241	6.64%	$9,440,711	86.56%	5.75%
27	1	Missoula city	Missoula County	66,788	72,364	7.71%	$1,137,349,564	72.00%	5.55%
28	3	Bozeman city	Gallatin County	37,280	45,250	17.61%	$2,171,929,720	31.12%	5.48%
29	1	Kalispell city	Flathead County	19,927	22,761	12.45%	$1,018,105,017	43.56%	5.42%
30	5	Columbus town	Stillwater County	1,893	2,028	6.66%	$81,210,631	78.71%	5.24%
31	6	Poplar city	Roosevelt County	810	854	5.15%	$14,671,742	100.00%	5.15%
32	3	Helena city	Lewis and Clark County	28,190	31,169	9.56%	$1,708,380,432	53.42%	5.11%
33	3	Twin Bridges town	Madison County	375	395	5.06%	$33,718,822	100.00%	5.06%
34	1	Hamilton city	Ravalli County	4,348	4,674	6.97%	$381,150,670	70.47%	4.92%
35	4	Glendive city	Dawson County	4,935	5,332	7.45%	$179,432,643	63.56%	4.73%
36	1	Whitefish city	Flathead County	6,357	7,279	12.67%	$537,456,640	35.73%	4.53%
37	1	Philipsburg town	Granite County	820	920	10.87%	$28,447,459	40.34%	4.38%
38	3	West Yellowstone town	Gallatin County	1,271	1,353	6.06%	$224,427,910	69.54%	4.21%
39	6	Fort Peck town	Valley County	233	247	5.67%	$17,101,590	72.53%	4.11%
40	3	Clyde Park town	Park County	288	309	6.80%	$10,758,722	59.88%	4.07%
41	1	Darby town	Ravalli County	720	763	5.64%	$51,034,069	71.79%	4.05%
42	5	Forsyth city	Rosebud County	1,777	1,869	4.92%	$81,293,550	80.01%	3.94%
43	1	Ronan city	Lake County	1,871	2,016	7.19%	$50,278,119	53.20%	3.83%
44	3	Ennis town	Madison County	838	890	5.84%	$70,433,389	65.01%	3.80%
45	3	Virginia City town	Madison County	190	198	4.04%	$29,170,957	92.47%	3.74%
46	5	Red Lodge city	Carbon County	2,125	2,237	5.01%	$221,894,963	74.16%	3.71%
47	6	Wolf Point city	Roosevelt County	2,621	2,806	6.59%	$40,918,911	54.95%	3.62%
48	3	Townsend city	Broadwater County	1,878	1,978	5.06%	$98,786,227	71.41%	3.61%
49	6	Westby town	Sheridan County	168	174	3.45%	$6,027,386	99.75%	3.44%
50	2	Chester town	Liberty County	847	884	4.19%	$39,433,222	79.57%	3.33%
51	1	Eureka town	Lincoln County	1,037	1,086	4.51%	$48,230,988	72.80%	3.28%
52	2	Hingham town	Hill County	118	122	3.28%	$17,731,057	100.00%	3.28%
53	3	Livingston city	Park County	7,044	7,401	4.82%	$370,472,000	62.64%	3.02%
54	3	Three Forks city	Gallatin County	1,869	1,944	3.86%	$96,565,900	76.87%	2.97%
55	2	Cut Bank city	Glacier County	2,869	3,012	4.75%	$74,205,245	57.72%	2.74%
56	4	Fallon County	Fallon County	2,890	3,120	7.37%	$95,373,268	34.38%	2.53%
57	3	East Helena town	Lewis and Clark County	1,984	2,074	4.34%	$63,937,454	57.01%	2.47%
58	1	Polson city	Lake County	4,488	4,777	6.05%	$141,691,329	40.46%	2.45%
59	1	Thompson Falls city	Sanders County	1,313	1,356	3.17%	$64,081,786	75.61%	2.40%
60	5	Billings city	Yellowstone County	104,170	110,323	5.58%	$4,630,756,019	41.53%	2.32%
61	4	Richey town	Dawson County	177	187	5.35%	$5,067,512	42.94%	2.30%
62	3	Boulder town	Jefferson County	1,183	1,230	3.82%	$26,045,672	59.54%	2.28%
63	5	Roundup city	Musselshell County	1,788	1,840	2.83%	$64,905,420	79.34%	2.24%
64	5	Colstrip city	Rosebud County	2,214	2,311	4.20%	$75,092,744	53.18%	2.23%
65	6	Moore town	Fergus County	193	198	2.53%	$9,589,642	85.92%	2.17%

APPENDIX B-8. CITY-TOWN PERCENT EXPOSURE x POPULATION RANKING - HAZARDOUS MATERIAL INCIDENTS									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	City / Town	County	Census 2010	2016 Est	% Population Change	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
66	3	Dillon city	Beaverhead County	4,134	4,257	2.89%	$148,662,246	74.55%	2.15%
67	4	Broadus town	Powder River County	468	481	2.70%	$21,653,680	76.73%	2.07%
68	5	Walkerville town	Stillwater County	675	700	3.57%	$1,198,908,492	54.28%	1.94%
69	5	Lodge Grass town	Big Horn County	428	446	4.04%	$13,271,526	47.54%	1.92%
70	6	Glasgow city	Valley County	3,250	3,364	3.39%	$128,682,872	56.22%	1.91%
71	5	Bridger town	Carbon County	708	732	3.28%	$22,613,900	57.04%	1.87%
72	2	Harlem city	Blaine County	808	823	1.82%	$30,541,468	98.31%	1.79%
73	1	Plains town	Sanders County	1,048	1,071	2.15%	$48,640,696	77.94%	1.67%
74	4	Miles City city	Custer County	8,410	8,647	2.74%	$260,053,109	55.57%	1.52%
74	2	Havre city	Hill County	9,310	9,846	5.44%	$124,619,614	25.99%	1.41%
75	1	Superior town	Mineral County	812	826	1.69%	$45,893,050	80.57%	1.37%
75	3	Lima town	Beaverhead County	221	224	1.34%	$9,778,665	100.00%	1.34%
76	6	Winnett town		182	185	1.62%	$17,963,865	82.39%	1.34%
77	2	Browning town	Glacier County	1,016	1,031	1.45%	$15,468,263	89.23%	1.30%
77	6	Hobson town	Judith Basin County	215	218	1.38%	$13,884,995	94.24%	1.30%
78	1	Libby city	Lincoln County	2,628	2,678	1.87%	$184,782,637	68.63%	1.28%
79	5	Laurel city	Yellowstone County	6,718	6,865	2.14%	$279,437,570	56.46%	1.21%
80	3	Sheridan town	Madison County	642	677	5.17%	$48,012,131	22.33%	1.15%
81	5	Fromberg town	Carbon County	438	445	1.57%	$10,537,884	61.29%	0.96%
82	6	Scobey city	Daniels County	1,017	1,032	1.45%	$46,247,988	61.92%	0.90%
83	2	Chinook city	Blaine County	1,203	1,233	2.43%	$28,897,178	36.35%	0.88%
84	2	Great Falls city	Cascade County	58,505	59,178	1.14%	$3,232,444,839	64.02%	0.73%
85	5	Broadview town	Yellowstone County	192	193	0.52%	$12,429,992	99.23%	0.51%
86	4	Circle town	McCone County	615	619	0.65%	$32,369,591	77.84%	0.50%
87	2	Cascade town	Cascade County	685	688	0.44%	$38,044,789	100.00%	0.44%
88	4	Terry town	Prairie County	605	609	0.66%	$13,396,890	53.21%	0.35%
89	3	Big Timber city	Sweet Grass County	1,641	1,645	0.24%	$110,185,530	81.95%	0.20%
90	2	Choteau city	Teton County	1,684	1,686	0.12%	$79,533,645	75.62%	0.09%
91	6	Dodson town	Phillips County	124	124	0.00%	$1,868,533	79.08%	0.00%
91	4	Ekalaka town	Carter County	332	353	5.95%	$0	0.00%	0.00%
91	6	Flaxville town	Daniels County	71	71	0.00%	$5,564,093	100.00%	0.00%
91	2	Geraldine town	Chouteau County	261	261	0.00%	$8,947,391	73.65%	0.00%
91	1	Hot Springs town	Sanders County	544	557	2.33%	$0	0.00%	0.00%
91	6	Nashua town	Valley County	290	290	0.00%	$14,703,507	100.00%	0.00%
91	1	Pinesdale town	Ravalli County	917	967	5.17%	$0	0.00%	0.00%
91	6	Saco town	Phillips County	197	197	0.00%	$7,030,756	80.25%	0.00%
91	6	Winifred town	Fergus County	208	206	-0.97%	$0	0.00%	0.00%
92	2	Fort Benton city	Chouteau County	1,464	1,456	-0.55%	$67,800,818	55.67%	-0.31%
93	2	Conrad city	Pondera County	2,570	2,550	-0.78%	$95,136,845	52.76%	-0.41%
94	1	St. Ignatius town	Lake County	842	824	-2.18%	$5,944,755	19.26%	-0.42%
95	6	Grass Range town	Fergus County	110	108	-1.85%	$1,556,691	24.11%	-0.45%
95	6	Lewistown city	Fergus County	5,901	5,870	-0.53%	$365,487,735	85.54%	-0.45%
96	1	Alberton town	Mineral County	420	417	-0.72%	$15,082,926	86.73%	-0.62%
97	2	Big Sandy town	Chouteau County	598	590	-1.36%	$21,572,993	70.24%	-0.95%
98	2	Belt city	Cascade County	597	588	-1.53%	$9,719,209	67.75%	-1.04%
99	5	Harlowton city	Wheatland County	997	984	-1.32%	$43,115,040	82.61%	-1.09%
100	2	Valier town	Pondera County	509	498	-2.21%	$22,897,886	60.38%	-1.33%
101	6	Malta city	Phillips County	1,997	1,950	-2.41%	$80,650,038	60.91%	-1.47%
102	5	Hysham town	Treasure County	312	301	-3.65%	$5,257,721	45.00%	-1.64%
103	2	Neihart town	Cascade County	51	50	-2.00%	$7,927,839	96.69%	-1.93%
104	1	Deer Lodge city	Powell County	3,111	2,994	-3.91%	$82,536,763	53.02%	-2.07%
105	5	Judith Gap city	Wheatland County	126	123	-2.44%	$7,167,798	100.00%	-2.44%
106	2	Dutton town	Teton County	316	308	-2.60%	$22,614,937	97.58%	-2.53%
107	3	White Sulphur Springs city	McCone County	939	908	-3.41%	$52,514,902	77.13%	-2.63%
108	6	Denton town	Fergus County	255	247	-3.24%	$17,189,517	96.52%	-3.13%
109	5	Ryegate town	Golden Valley County	245	236	-3.81%	$10,937,388	91.11%	-3.47%
110	2	Shelby city	Toole County	3,376	3,216	-4.98%	$148,376,819	79.21%	-3.94%
111	6	Stanford town	Judith Basin County	401	384	-4.43%	$31,185,226	100.00%	-4.43%
112	6	Brockton town	Roosevelt County	255	243	-4.94%	$1,149,313	100.00%	-4.94%
113	1	Troy city	Lincoln County	938	890	-5.39%	$55,784,968	98.15%	-5.29%
114	2	Sunburst town	Toole County	375	338	-10.95%	$9,166,133	58.58%	-6.41%
115	5	Lavina town	Golden Valley County	187	173	-8.09%	$7,345,787	81.13%	-6.57%
116	2	Kevin town	Toole County	154	138	-11.59%	$3,389,085	73.64%	-8.54%

APPENDIX B-8. LOCAL PLAN EXPOSURE SUMMARY - HAZARDOUS MATERIAL INCIDENTS & TRANSPORTATION ACCIDENTS

DES District	Geography	Census 2010	Census 2016 Estimate	% Change 2010 to 2016	# Building Permits (2016)	Original Local Plan FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan	Estimated Societal Loss/ Exposure from Local Plan	Estimated Economic Loss from Local Plan	Ref	Local Plan Update #1 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #1	Estimated Societal Loss/ Exposure from Local Plan Update #1	Estimated Economic Loss from Local Plan Update #1	Ref	Local Plan Update #2 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #2	Estimated Societal Loss/ Exposure from Local Plan Update #2	Estimated Economic Loss from Local Plan Update #2	Ref
	Montana	989,415	1,042,520	5.09%	4,781															
3	**Beaverhead County**	9,246	9,401	1.65%	3	2004	NA	NA	NA	3	2010	17,121 structures	39,378	NA	3	2017				1
	Dillon city	4,134	4,257	2.89%								Low-Moderate	High	Moderate			Low-Moderate	High	Moderate	1
	Lima town	221	224	1.34%								Low-Moderate	High	Moderate			Low-Moderate	High	Moderate	1
	Balance of Beaverhead County	4,891	4,920	0.59%								Low-Moderate	Moderate-High	Low-Moderate			Low-Moderate	Moderate-High	Low-Moderate	1
5	**Big Horn County**	12,865	13,343	3.58%	2	2006	NA	NA	NA	2	2012	NA	NA	$6,000,000	2					
	Hardin city	3,505	3,829	8.46%																
	Lodge Grass town	428	446	4.04%																
	Balance of Big Horn County	8,932	9,068	1.50%																
2	**Blaine County**	6,491	6,601	1.67%	0	2006	NA	NA	NA	14	2012				14					
	Chinook city	1,203	1,233	2.43%								R=$25,007,789 C =$15,979,372	925	NA	14					
	Harlem city	808	823	1.82%								R=$11,123,951 C=$8,691,175	808	NA	14					
	Balance of Blaine County	4,480	4,545	1.43%								R=$23,747,210 C=$5,835,021	2,843	NA	14					
3	**Broadwater County**	5,612	5,747	2.35%	0	2004	$15M	High	High	3	2009	2,226 structures	3,673	NA	3	2016				14
	Townsend city	1,878	1,978	5.06%								Low-Moderate	High	Moderate	3		R=$22,773,715 C=$11,679,499	1,377; <18=305	NA	14
	Balance of Broadwater County	3,734	3,769	0.93%								Low-Moderate	Moderate	Low-Moderate	3		R=$66,353,020 C=$14,831,835	2,212; <18=492	NA	14
5	**Carbon County**	10,078	10,460	3.65%	8	2006	$53K	NA	NA	2	2012	NA	NA	NA	2					
	Bearcreek town	79	84	5.95%																
	Bridger town	708	732	3.28%																
	Fromberg town	438	445	1.57%																
	Joliet town	595	640	7.03%																
	Red Lodge city	2,125	2,237	5.01%																
	Balance of Carbon County	6,133	6,322	2.99%																
4	**Carter County**	1,160	1,203	3.57%	1	2005	Low	Moderate	Low		2012	NA	NA	NA	12					
	Ekalaka town	332	353	5.95%																
	Balance of Carter County	828	850	2.59%																
2	**Cascade County**	81,327	81,755	0.52%	242	2012				14	2017				14					
	Belt city	597	588	-1.53%			R=$9,695,700 C=$4,249,098	515	NA	14		R=$7,205,917 C=$1,564,756	188; <18=43; >65=28	NA	14					
	Cascade town	685	688	0.44%			R=$22,517,751 C=$10,051,395	685	NA	14		R=$25,278,675 C=$6,731,463	613; <18=140; >65=91	NA	14					
	Great Falls city	58,505	59,178	1.14%			R=$1,152,783,373 C=$2,640,876,194	35,602	NA	14		R=$4,691,105,943 C=$1,395,432,061	25,230; <18=5,778; >65=3,759	NA	14					
	Neihart town	51	50	-2.00%			R=$12,270,437 C=$1,380,023	51	NA	14		R=$5,234,388 C=$1,871,664	143; <18=33; >65 =21	NA	14					
	Balance of Cascade County	21,489	21,251	-1.12%			R=$420,082,605 C=$122,729,395	14,176	NA	14		R=$402,495,883 C=$133,811,952	6,898; <18=1,579; >65=1,029	NA	14					
2	**Chouteau County**	5,813	5,759	-0.94%	10	2010	>$1M	NA	NA	5	2017				5					
	Big Sandy town	598	590	-1.36%								8 structures	NA	NA	5					
	Fort Benton city	1,464	1,456	-0.55%								10 structures	NA	NA	5					
	Geraldine town	261	261	0.00%								8 structures	NA	NA	5					
	Balance of Chouteau County	3,490	3,452	-1.10%								NA	NA	NA	5					
4	**Custer County**	11,699	11,924	1.89%	0	2005	NA	NA	NA	2	2012	NA	NA	NA	2	2017				14
	Ismay town	19	21	9.52%													R=$461,458 C=$1,071,856	12; <18=5; >65=4	NA	14
	Miles City city	8,410	8,647	2.74%													R=$181,182,862 C=$97,089,110	2,526; <18=916; >65=818	NA	14
	Balance of Custer County	3,270	3,256	-0.43%													R=$55,657,322 C=$19,321,979	572; <18=207; >65=185	NA	14
6	**Daniels County**	1,751	1,755	0.23%	0	2003	NA	NA	NA	14	2008	802 structures	1,043	NA	3	2016				8
	Flaxville town	71	71	0.00%								Low	Moderate-High	Moderate	3		Moderate	Moderate	Moderate	8
	Scobey city	1,017	1,032	1.45%								Low	Moderate-High	Moderate	3		Moderate	Moderate	Moderate	8
	Balance of Daniels County	663	652	-1.69%								Low	Moderate	Moderate	3		Moderate	Moderate	Moderate	8
4	**Dawson County**	8,966	9,327	3.87%	1	2006	NA	NA	NA	2	2014				9					
	Glendive city	4,935	5,332	7.45%								$163,794,435	NA	NA	9					
	Richey town	177	187	5.35%								$4,956,232	NA	NA	9					
	Balance of Dawson County	3,854	3,808	-1.21%								$121,195,743	NA	NA	9					
1	**Deer Lodge County**	9,298	9,085	-2.34%	17	2005	Low	5,022; Moderate	Moderate	3	2013	Low-Moderate	Moderate-High	Moderate	3					
	Anaconda-Deer Lodge County	9,298	9,085	-2.34%																
4	**Fallon County**	2,890	3,120	7.37%	35	2006	Low	NA	NA	12	2012	NA	NA	NA	12					

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	Baker city	1,741	1,990	12.51%																
	Plevna town	162	176	7.95%																
	Balance of Fallon County	987	954	-3.46%																
6	**Fergus County**	11,586	11,413	-1.52%	1	2008	211 structures	317	Low	3	2014				9					
	Denton town	255	247	-3.24%								R=$7,726,494 O=$1,502,934	251	NA	9					
	Grass Range town	110	108	-1.85%								R=$2,332,747 O=$528,288	110	NA	9					
	Lewistown city	5,901	5,870	-0.53%								R=$152,447,947 O=$61,834,701	5,447	NA	9					
	Moore town	193	198	2.53%								R=$1,945,740 O=$1,265,506	83	NA	9					
	Winifred town	208	206	-0.97%								R=$4,378,037 O=$4,042,284	208	NA	9					
	Balance of Fergus County	4,919	4,784	-2.82%								R=$4,378,037 O=$4,042,284	1,347	NA	9					
1	**Flathead County**	90,928	98,082	7.29%	316	2009	Low	Moderate	NA		2014				14					
	Columbia Falls city	4,688	5,241	10.55%								R=$114,285,660 C=$77,728,978	4,091	NA	14					
	Kalispell city	19,927	22,761	12.45%								R=$332,546,329 C=$597,474,699	12,134	NA	14					
	Whitefish city	6,357	7,279	12.67%								R=181,732,393 C=$172,331,252	4,377	NA	14					
	Balance of Flathead County	59,956	62,801	4.53%								R=$651,207,367 C=$274,131,246	21,424	NA	14					
3	**Gallatin County**	89,513	104,502	14.34%	1,550	2006	Low	High	High	6	2012	Moderate	Moderate	Moderate	6					
	Belgrade city	7,389	8,254	10.48%																
	Bozeman city	37,280	45,250	17.61%																
	Manhattan town	1,520	1,691	10.11%																
	Three Forks city	1,869	1,944	3.86%																
	West Yellowstone town	1,271	1,353	6.06%																
	Balance of Gallatin County	40,184	46,010	12.66%																
4	**Garfield County**	1,206	1,310	7.94%	0	2007	273 structures; Moderate	519; Moderate-High	Moderate-High	3	2014				9					
	Jordan town	343	399	14.04%								R=$6,406,146 O=$4,013,150	338	NA	9					
	Balance of Garfield County	863	911	5.27%								R=$8,258,643 O=$916,409	417	NA	9					
2	**Glacier County**	13,399	13,694	2.15%	0	2005					2012				14					
	Browning town	1,016	1,031	1.45%								R=$5,815,237 C=$8,321,209	1,016	NA	14					
	Cut Bank city	2,869	3,012	4.75%								R=$35,099,904 C=$29,971,011	2,072	NA	14					
	Balance of Glacier County	9,514	9,651	1.42%								R=$21,514,392 C=$11,623,740	907	NA	14					
5	**Golden Valley County**	884	831	-6.38%	NA	2008				14										
	Lavina town	187	173	-8.09%			$7M	154	NA	14										
	Ryegate town	245	236	-3.81%			$11.5M	245	NA	14										
	Balance of Golden Valley County	452	422	-7.11%			$55.8M	1,042	NA	14										
1	**Granite County**	3,079	3,368	8.58%	NA	2006	Low	High	Moderate	3	2013				3					
	Drummond town	309	348	11.21%								Low-Moderate	High	Moderate	3					
	Philipsburg town	820	920	10.87%								Low	Moderate	Moderate	3					
	Balance of Granite County	1,950	2,100	7.14%								Low	Moderate	Moderate	3					
2	**Hill County**	16,096	16,542	2.70%	4	2006	NA	NA	NA	14	2012				14					
	Havre city	9,310	9,846	5.44%								R=$141,359,099 C=$83,501,796	6,560	NA	14					
	Hingham town	118	122	3.28%								R=$4,028,150 C=$1,503,363	118	NA	14					
	Balance of Hill County	6,668	6,574	-1.43%								R=$126,503,742 C=$97,033,913	6,571	NA	14					
3	**Jefferson County**	11,406	11,853	3.77%	5	2005	NA	NA	NA	3	2011				14	2017				14
	Boulder town	1,183	1,230	3.82%								R=$13,344,037 C=$7,775,364	1,183	NA	14		R=$23,944,791 C=$6,514,816	1,249; <18=244	NA	14
	Whitehall town	1,038	1,114	6.82%								R=$30,556,557 C=$8,389,386	1,038	NA	14		R=$33,406,706 C=$12,099,667	1,387; <18=302	NA	14
	Balance of Jefferson County	9,185	9,509	3.41%								R=$171,315,989 C=$28,704,113	8,429	NA	14		R=$200,277,621 C=$36,380,369	6,193; <18=1,438	NA	14
6	**Judith Basin County**	2,072	1,940	-6.80%	NA	2008				14	2013				14					
	Hobson town	215	218	1.38%			$6.9M	122	NA	14		R=$5,490,995 C=$1,147,579	199; <18=43	NA	14					

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	Stanford town	401	384	-4.43%			$29M	454	NA	14		R=$12,580,413; C=$3,397,313	401; <18=78	NA	14					
	Balance of Judith Basin County	1,456	1,338	-8.82%			$54.3M	928	NA	14		R=$20,366,158 C=$12,703,865	772; <18=147	NA	14					
1	**Lake County**	28,746	29,758	3.40%	44	2006	$25,934M	2002	NA		2012				14					
	Polson city	4,488	4,777	6.05%								R=$90,923,471 C=$149,850,759	2,721	NA						
	Ronan city	1,871	2,016	7.19%								R=$50,690,419 C=110,298,707	1,617	NA						
	St. Ignatius town	842	824	-2.18%								R=$11,038,483 C=$4,050,397	315	NA						
	Balance of Lake County	21,545	22,141	2.69%								R=$852,497,082 C=$349,089,825	17,342	NA						
3	**Lewis and Clark County**	63,395	67,282	5.78%	176	2005	NA	NA	NA		2011				14	2017				14
	East Helena town	1,984	2,074	4.34%								R=$48,846,778 C=$27,446,236	1,679	NA	14		R=$59,167,269 C=$26,112,283	1,944; <18=437	NA	14
	Helena city	28,190	31,169	9.56%								R=$503,214,546 C=$794,464,719	17,195	NA	14		R=$399,147,965 C=$635,063,500	17,129; <18=3,483	NA	14
	Balance of Lewis and Clark County	33,221	34,039	2.40%								R=$509,274,350 C=$100,052,387	20,276	NA	14		R=$424,570,932 C=$67,895,216	12,244; <18=2,942	NA	14
2	**Liberty County**	2,339	2,409	2.91%	NA	2007	High	Low-Medium	NA	2	2013	NA	NA	NA	2					
	Chester town	847	884	4.19%																
	Balance of Liberty County	1,492	1,525	2.16%																
1	**Lincoln County**	19,687	19,259	-2.22%	8	2005	NA	NA	NA		2012				14					
	Eureka town	1,037	1,086	4.51%								R=$23,598,999 C=$13,946,904	871	NA	14					
	Libby city	2,628	2,678	1.87%								R=$58,307,517 C=$66,182,237	2,210	NA	14					
	Rexford town	105	151	30.46%								R=$2,018,852 C=$1,119,491	105	NA	14					
	Troy city	938	890	-5.39%								R=$22,091,420 C=$11,945,412	938	NA	14					
	Balance of Lincoln County	14,979	14,454	-3.63%								R=$291,706,234 C=$70,259,123	9,605	NA	14					
3	**Madison County**	7,691	7,924	2.94%	7	2004	NA	NA	NA	3	2010	3,667 structures	3,859	NA	3	2017				1
	Ennis town	838	890	5.84%								Low-Moderate	High	Moderate-High	3		Low-Moderate	High	Moderate-High	1
	Sheridan town	642	677	5.17%								Low-Moderate	Moderate-High	Moderate	3		Low-Moderate	Moderate-High	Moderate	1
	Twin Bridges town	375	395	5.06%								Low-Moderate	High	Moderate-High	3		Low-Moderate	High	Moderate-High	1
	Virginia City town	190	198	4.04%								Low-Moderate	Moderate-High	Moderate	3		Low-Moderate	Moderate-High	Moderate	1
	Balance of Madison County	5,646	5,764	2.05%								Low-Moderate	Moderate-High	Moderate	3		Low-Moderate	Moderate-High	Moderate	1
4	**McCone County**	1,734	1,700	-2.00%	0	2006	NA	NA	NA	4	2014	$40,566,444	815	NA	9					
	Circle town	615	619	0.65%																
	Balance of McCone County	1,119	1,081	-3.52%																
3	**Meagher County**	1,891	1,827	-3.50%	NA															
	White Sulphur Springs city	939	908	-3.41%																
	Balance of Meagher County	952	919	-3.59%																
1	**Mineral County**	4,223	4,184	-0.93%	1	2005	NA	NA	NA		2012				1					
	Alberton town	420	417	-0.72%								Low	Moderate	NA	1					
	Superior town	812	826	1.69%								Low	Moderate	NA	1					
	Balance of Mineral County	2,991	2,941	-1.70%								Low	Moderate	NA	1					
1	**Missoula County**	109,299	116,130	5.88%	930	2004	NA	NA	NA	1	2011	NA	NA	NA	1	2017				14
	Missoula city	66,788	72,364	7.71%													R=$919,654,514 C=$1,433,041,603	43,480	NA	14
	Balance of Missoula County	42,511	43,766	2.87%													R=$738,180,278 C=$345,246,995	22,597	NA	14
5	**Musselshell County**	4,538	4,589	1.11%	1	2008				14	2013				14					
	Melstone town	96	107	10.28%			$7.1M	123	NA	14		R=$2,167,211 C=$574,369	91; <18=20	NA	14					
	Roundup city	1,788	1,840	2.83%			$102.6M	1,743	NA	14		R=$34,693,136 C=$13,746,626	1,637; <18=380	NA	14					
	Balance of Musselshell County	2,654	2,642	-0.45%			$130.7K	2,237	NA	14		R=$25,577,292 C=$3,348,980	1,546; <18=293	NA	14					
3	**Park County**	15,636	16,114	2.97%	44	2006	NA	NA	NA	3	2012	$500K; Low-Moderate	High	Moderate-High	3					
	Clyde Park town	288	309	6.80%								Moderate-High	NA	NA	3					
	Livingston city	7,044	7,401	4.82%								Moderate-High	NA	NA	3					
	Balance of Park County	8,304	8,404	1.19%								Moderate-High	NA	NA	3					
6	**Petroleum County**	494	489	-1.02%	NA	2003	NA	NA	NA		2008	80 structures	112	NA	3					
	Winnett town	182	185	1.62%								Low	Moderate	Moderate	3					
	Balance of Petroleum County	312	304	-2.63%								Low	Moderate	Moderate	3					

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6	**Phillips County**	4,253	4,133	-2.90%	2	2006	NA	NA	NA	14	2012				14					
	Dodson town	124	124	0.00%								R=$1,584,670 C=$348,513	124	NA	14					
	Malta city	1,997	1,950	-2.41%								R=$38,523,266 C=$44,037,100	1,564	NA	14					
	Saco town	197	197	0.00%								R=$5,080,890 C=$2,392,372	197	NA	14					
	Balance of Phillips County	1,935	1,862	-3.92%								R=$23,017,518 C=$11,214,577	1,372	NA	14					
2	**Pondera County**	6,153	6,084	-1.13%	1	2005	NA	NA	NA		2011				14					
	Conrad city	2,570	2,550	-0.78%								R=$70,620,311 C=$34,482,683	2,292	NA	14					
	Valier town	509	498	-2.21%								R=$8,788,653 C=$4,936,196	353	NA	14					
	Balance of Pondera County	3,074	3,036	-1.25%								R=$56,968,039 C=$21,807,744	2,575	NA	14					
4	**Powder River County**	1,743	1,746	0.17%	NA	2007	NA	NA	NA	3	2011	436 structures	960	Moderate-High	3	2015				9
	Broadus town	468	481	2.70%													R=$8,583,771 O=$6,005,481	474	NA	9
	Balance of Powder River County	1,275	1,265	-0.79%													R=$7,165,743 O=$11,179,745	338	NA	9
1	**Powell County**	7,027	6,858	-2.46%	32	2004	NA	NA	NA		2012	NA	NA	NA	10	2017	R=$30M	840		7
	Deer Lodge city	3,111	2,994	-3.91%																
	Balance of Powell County	3,916	3,864	-1.35%																
4	**Prairie County**	1,179	1,182	0.25%	NA	2006	NA	NA	NA		2012	Low	NA	NA	12					
	Terry town	605	609	0.66%																
	Balance of Prairie County	574	573	-0.17%																
1	**Ravalli County**	40,212	42,088	4.46%	20	2005	NA	NA	NA	1	2012	NA	NA	NA	1	2017				14
	Darby town	720	763	5.64%													R=$16,606,595 C=$11,549,738	722	NA	14
	Hamilton city	4,348	4,674	6.97%													R=$64,181,139 C=$135,586,540	2,863	NA	14
	Pinesdale town	917	967	5.17%													NA	NA	NA	14
	Stevensville town	1,809	1,963	7.85%													R=$42,291,688 C=$34,076,746	1,824	NA	14
	Balance of Ravalli County	32,418	33,721	3.86%													R=$398,357,474 C=$135,646,188	12,697	NA	14
4	**Richland County**	9,746	11,482	15.12%	16	2006	NA	NA	NA	4	2014		5,100		9					
	Fairview town	840	922	8.89%								$19,586,255	NA	NA	9					
	Sidney city	5,191	6,566	20.94%								$204,048,050	NA	NA	9					
	Balance of Richland County	3,715	3,994	6.99%								$125,062,651	NA	NA	9					
6	**Roosevelt County**	10,425	11,305	7.78%	1	2004				14	2016				8					
	Bainville town	208	314	33.76%			$3.6M	75	NA	14		Moderate	Moderate	Moderate	8					
	Brockton town	255	243	-4.94%			$11.1M	293	NA	14		Moderate	Moderate	Moderate	8					
	Culbertson town	714	804	11.19%			$33M	683	NA	14		Low	Low	Low	8					
	Froid town	185	201	7.96%			$5.7M	114	NA	14		Low	Low	Low	8					
	Poplar city	810	854	5.15%			$57.4M	1,734	NA	14		Moderate	Moderate	Moderate	8					
	Wolf Point city	2,621	2,806	6.59%			$93.5M	30	NA	14		Moderate	Moderate	Moderate	8					
	Balance of Roosevelt County	5,632	6,083	7.41%			$292.4M	7,895	NA	14		Low	Low	Low	8					
5	**Rosebud County**	9,233	9,287	0.58%	1	2007	1,036 structures	2,694	Moderate-High	3	2013	793 structures	2,2,05	NA	2					
	Colstrip city	2,214	2,311	4.20%																
	Forsyth city	1,777	1,869	4.92%																
	Balance of Rosebud County	5,242	1,903	-175.46%																
1	**Sanders County**	11,413	11,534	1.05%	0	2012				14										
	Hot Springs town	544	557	2.33%			R=$8,110,906 C=$6,331,756	342	NA	14										
	Plains town	1,048	1,071	2.15%			R=$22,733,636 C=$21,853,597	893	NA	14										
	Thompson Falls city	1,313	1,356	3.17%			R=$27,709,971 C=$21,053,688	935	NA	14										
	Balance of Sanders County	8,508	8,550	0.49%			R=$263,989,581 C=$52,501,858	7,008	NA	14										
6	**Sheridan County**	3,384	3,648	7.24%	2	2003				14	2008	1,515 structures	2,879	Moderate	3	2016				8
	Medicine Lake town	225	241	6.64%								Low-Moderate	Moderate	Moderate	3		Moderate	Moderate	Moderate	8
	Outlook town	47	52	9.62%								Low	Moderate	Moderate	3		Low	Low	Low	8
	Plentywood city	1,734	1,904	8.93%								Low-Moderate	Moderate	Moderate	3		Low	Low	Low	8
	Westby town	168	174	3.45%								Low-Moderate	Moderate	Moderate	3		Moderate	Moderate	Moderate	8
	Balance of Sheridan County	1,210	1,277	5.25%								Low-Moderate	Moderate	Moderate	3		Moderate	Moderate	Moderate	8
1	**Silver Bow County**	34,200	34,553	1.02%	86	2004	Low	100-1,000	Low	3	2010				14	2016				14

APPENDIX B-8. LOCAL PLAN EXPOSURE SUMMARY - HAZARDOUS MATERIAL INCIDENTS & TRANSPORTATION ACCIDENTS

DES District	Geography	Census 2010	Census 2016 Estimate	% Change 2010 to 2016	# Building Permits (2016)	Original Local Plan FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan	Estimated Societal Loss/ Exposure from Local Plan	Estimated Economic Loss from Local Plan	Ref	Local Plan Update #1 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #1	Estimated Societal Loss/ Exposure from Local Plan Update #1	Estimated Economic Loss from Local Plan Update #1	Ref	Local Plan Update #2 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #2	Estimated Societal Loss/ Exposure from Local Plan Update #2	Estimated Economic Loss from Local Plan Update #2	Ref
	Butte-Silver Bow (remainder)	33,525	33,853	0.97%								$2,179,750,275	<18=3,970 <65=2,806 <Poverty=2,875		14		R=$847,912,576 C=$540,025,426	26,451; <18=5,477	NA	14
	Walkerville town	675	700	3.57%								$1,377,453	<18=1 <65=18 <Poverty=9		14		R=$20,505,141 C=$2,022,719	812; <18=191	NA	14
5	**Stillwater County**	9,117	9,406	3.07%	0	2010	951 structures	1,702	NA	3	2015				14					
	Columbus town	1,893	2,028	6.66%			Moderate	Moderate	NA	3		R=$43,665,248 C=$34,506,202	1,491; <18=392	NA	14					
	Balance of Stillwater County	7,224	7,378	2.09%			Moderate	Moderate	NA	3		R=$100,147,052 C=$21,548,455	4,144; <18=929	NA	14					
3	**Sweet Grass County**	3,651	3,623	-0.77%	1	2005	NA	NA	NA		2010	NA	NA	NA	13					
	Big Timber city	1,641	1,645	0.24%																
	Balance of Sweet Grass County	2,010	1,978	-1.62%																
2	**Teton County**	6,073	6,056	-0.28%	1	2006	NA	NA	NA	NA	2014	$29,245,119	30>65; 72 <18; 38< poverty	NA	2					
	Choteau city	1,684	1,686	0.12%																
	Dutton town	316	308	-2.60%																
	Fairfield town	708	922	23.21%																
	Balance of Teton County	3,365	3,140	-7.17%																
2	**Toole County**	5,324	4,977	-6.97%	2	2007	High	High	NA	2	2013	NA	NA	NA	2					
	Kevin town	154	138	-11.59%																
	Shelby city	3,376	3,216	-4.98%																
	Sunburst town	375	338	-10.95%																
	Balance of Toole County	1,419	1,285	-10.43%																
5	**Treasure County**	718	692	-3.76%	0	2007	14 structures	40	Moderate-High	3										
	Hysham town	312	301	-3.65%																
	Balance of Treasure County	406	391	-3.84%																
6	**Valley County**	7,369	7,539	2.25%	4	2003	NA	NA	NA	14	2008	3,550 structures	5,694	Moderate	3	2016				8
	Fort Peck town	233	247	5.67%								Low	Moderate	Moderate	3		Moderate	Moderate	Moderate	8
	Glasgow city	3,250	3,364	3.39%								Low-Moderate	Moderate-High	Moderate	3		Moderate	Moderate	Moderate	8
	Nashua town	290	290	0.00%								Low-Moderate	Moderate-High	Moderate	3		Moderate	Moderate	Moderate	8
	Opheim town	85	290	70.69%								Low	Moderate	Moderate	3		Moderate	Moderate	Moderate	8
	Balance of Valley County	3,511	3,348	-4.87%								Low-Moderate	Moderate-High	Moderate	3		Moderate	Moderate	Moderate	8
5	**Wheatland County**	2,168	2,117	-2.41%	NA	2007				14	2013				14					
	Harlowton city	997	984	-1.32%			$50.6K	829	NA	14		R=$25,652,171 C=$6,245,371	982; <18=189	NA	14					
	Judith Gap city	126	123	-2.44%			$8M	161	NA	14		R=$2,299,410 C=$752,870	126; <18=13	NA	14					
	Balance of Wheatland County	1,045	1,010	-3.47%			$84K	1,184	NA	14		R=$19,405,059 C=$4,765,808	799; <18=236	NA	14					
4	**Wibaux County**	1,017	1,093	6.95%	8	2006	NA	NA	NA	2	2014	$19,149,646	820	NA	9					
	Wibaux town	589	649	9.24%																
	Balance of Wibaux County	428	444	3.60%																
5	**Yellowstone County**	147,972	158,437	6.61%	1,198	2005	NA	NA	NA		2012	N	N	N	1					
	Billings city	104,170	110,323	5.58%																
	Broadview town	192	193	0.52%																
	Laurel city	6,718	6,865	2.14%																
	Balance of Yellowstone County	36,892	41,056	10.14%																
2	**Blackfeet Indian Reservation**	10,405				2008	$212K	5	NA	14										
2	**Rocky Boy's Indian Reservation**	3,323				2008	NA	NA	NA		2010	R=$52,134,707 CF=$29,082,176	<16=523; >64=65; <Poverty=294	NA	14					
2	**Fort Belknap Indian Reservation**	2,851				2007	$6.9k	<1	NA	14	2013	$45,936,000	1,683	NA	14					
6	**Fort Peck Indian Reservation**	10,008				2004				14	2012	NA	NA	NA	10					
5	**Crow Indian Reservation**	6,863				2008	NA	NA	NA	4	2015	R=$21,622,182 O=$2,732,804	2,854	NA	9					
5	**Northern Cheyenne Indian Res.**	4,789				2008	NA	NA	NA	4										
1	**Flathead Indian Reservation**	28,359				2006	$104M	4,597	NA	NA	2017	NA	NA	NA	11					

NOTES:
R = Residential
C = Commercial/Agricultural/Industrial
CF = Critical Facilities
AL = Annual Loss
M = Million
K = Thousand
B = Billion
O = Other

REFERENCES:
1 = Respec (formerly Adkins, PBS&J, Land & Water)
2 = Beck Consulting & AMEC
3 = Big Sky Hazard Management
4 = Cossitt Consulting
5 = Fire Logistics, Inc.
6 = Gallatin County
7 = Great West Engineering and Powell County
8 = Integrated Solutions Consulting

APPENDIX B-8. LOCAL PLAN EXPOSURE SUMMARY - HAZARDOUS MATERIAL INCIDENTS & TRANSPORTATION ACCIDENTS

DES District	Geography	Census 2010	Census 2016 Estimate	% Change 2010 to 2016	# Building Permits (2016)	Original Local Plan FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan	Estimated Societal Loss/ Exposure from Local Plan	Estimated Economic Loss from Local Plan	Ref	Local Plan Update #1 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #1	Estimated Societal Loss/ Exposure from Local Plan Update #1	Estimated Economic Loss from Local Plan Update #1	Ref	Local Plan Update #2 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #2	Estimated Societal Loss/ Exposure from Local Plan Update #2	Estimated Economic Loss from Local Plan Update #2	Ref

NA = Not Analyzed or Not Quantitied

9 = KLJ
10 = Morrison-Maierle
11 = Risks and Rewards Management
12 = Single Tree Consulting
13 = Sweet Grass County
14 = Tetra Tech (formerly Maxim Tech)

APPENDIX B-9

DISEASE VULNERABILITY ASSESSMENT DOCUMENTATION

APPENDIX B-9. LOCAL PLAN EXPOSURE SUMMARY - DISEASE

DES District	Geography	Census 2010	Census 2016 Estimate	% Change 2010 to 2016	# Building Permits (2016)	Original Local Plan FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan	Estimated Societal Loss/ Exposure from Local Plan	Estimated Economic Loss from Local Plan	Ref	Local Plan Update #1 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #1	Estimated Societal Loss/ Exposure from Local Plan Update #1	Estimated Economic Loss from Local Plan Update #1	Ref	Local Plan Update #2 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #2	Estimated Societal Loss/ Exposure from Local Plan Update #2	Estimated Economic Loss from Local Plan Update #2	Ref
	Montana	989,415	1,042,520	5.09%	4,781															
3	**Beaverhead County**	9,246	9,401	1.65%	3	2004				3	2010				3	2017				1
	Dillon city	4,134	4,257	2.89%			Low	High	Moderate-High								Low	High	Moderate-High	1
	Lima town	221	224	1.34%			Low	High	Moderate-High								Low	High	Moderate-High	1
	Balance of Beaverhead County	4,891	4,920	0.59%			Low	High	Moderate-High								Low	High	Moderate-High	1
5	**Big Horn County**	12,865	13,343	3.58%	2	2006	NA	NA	NA	2	2012				2					
	Hardin city	3,505	3,829	8.46%																
	Lodge Grass town	428	446	4.04%																
	Balance of Big Horn County	8,932	9,068	1.50%																
2	**Blaine County**	6,491	6,601	1.67%	0	2006	NA	NA	NA	14	2012	NA	NA	NA	14					
	Chinook city	1,203	1,233	2.43%																
	Harlem city	808	823	1.82%																
	Balance of Blaine County	4,480	4,545	1.43%																
3	**Broadwater County**	5,612	5,747	2.35%	0	2004	0	4,590	$19M	3	2009				3	2016				14
	Townsend city	1,878	1,978	5.06%			Low	High	Moderate-High	3					3		R=$60,475,754 C=$15,235,768	1,897; <18=421	NA	14
	Balance of Broadwater County	3,734	3,769	0.93%			Low	High	Moderate-High	3					3		R=$241,002,251 C=$32,343,197	4,105; <18=887	NA	14
5	**Carbon County**	10,078	10,460	3.65%	8	2006				2	2012	NA	NA	NA	2					
	Bearcreek town	79	84	5.95%																
	Bridger town	708	732	3.28%																
	Fromberg town	438	445	1.57%																
	Joliet town	595	640	7.03%																
	Red Lodge city	2,125	2,237	5.01%																
	Balance of Carbon County	6,133	6,322	2.99%																
4	**Carter County**	1,160	1,203	3.57%	1	2005					2012	Low	Moderate	Moderate	12					
	Ekalaka town	332	353	5.95%																
	Balance of Carter County	828	850	2.59%																
2	**Cascade County**	81,327	81,755	0.52%	242	2012	NA	NA	NA	14	2017				14					
	Belt city	597	588	-1.53%								R=$8,663,740 C=$4,223,279	230; <18=53; >65=32	NA	14					
	Cascade town	685	688	0.44%								R=$25,278,675 C=$6,731,463	613; <18=140; >65=91	NA	14					
	Great Falls city	58,505	59,178	1.14%								R=$7,613,796,311 C=$21,615,129,340	51,669; <18=11,832; >65=7,699	NA	14					
	Neihart town	51	50	-2.00%								R=$5,425,218 C=$1,871,664	148; <18=34; >65=22	NA	14					
	Balance of Cascade County	21,489	21,251	-1.12%								R=$1,404,040,740 C=$192,425,601	17,629; <18=4,037; >65=2,627	NA	14					
2	**Chouteau County**	5,813	5,759	-0.94%	10	2010	$0	High	Minor to Significant	5	2017	NA	5,738	NA	5					
	Big Sandy town	598	590	-1.36%																
	Fort Benton city	1,464	1,456	-0.55%																
	Geraldine town	261	261	0.00%																
	Balance of Chouteau County	3,490	3,452	-1.10%																
4	**Custer County**	11,699	11,924	1.89%	0	2005				2	2012	NA	NA	NA	2	2017				14
	Ismay town	19	21	9.52%													R=$461,458 C=$1,071,856	12; <18=5; >65=4	NA	14
	Miles City city	8,410	8,647	2.74%													R=$328,980,853 C=$110,329,122	4,260; <18=1,544; >65=1,379	NA	14
	Balance of Custer County	3,270	3,256	-0.43%													R=$494,808,054 C=$141,163,567	5,985; <18=2,167; >65=1,937	NA	14
6	**Daniels County**	1,751	1,755	0.23%	0	2003	NA	NA	NA	14	2008	$0	2,017	$27M	3	2016				8
	Flaxville town	71	71	0.00%								Low	High	Moderate-High	3		Moderate	Moderate	Moderate	8
	Scobey city	1,017	1,032	1.45%								Low	High	NA	3		Moderate	Moderate	Moderate	8
	Balance of Daniels County	663	652	-1.69%								Low	High	NA	3		Moderate	Moderate	Moderate	8
4	**Dawson County**	8,966	9,327	3.87%	1	2006	NA	NA	NA	2	2014				9					
	Glendive city	4,935	5,332	7.45%								NA	Moderate	Low	9					
	Richey town	177	187	5.35%								NA	Moderate	Low	9					
	Balance of Dawson County	3,854	3,808	-1.21%								NA	Moderate	Low	9					
1	**Deer Lodge County**	9,298	9,085	-2.34%	17	2005	Low	High	High	3	2013	NA; Low	High	Moderate-High	3					
	Anaconda-Deer Lodge County	9,298	9,085	-2.34%																
4	**Fallon County**	2,890	3,120	7.37%	35	2006				12	2012	NA	NA	NA	12					
	Baker city	1,741	1,990	12.51%																
	Plevna town	162	176	7.95%																
	Balance of Fallon County	987	954	-3.46%																
6	**Fergus County**	11,586	11,413	-1.52%	1	2008	$0	4,024	$61M	3	2014	NA	Low	NA	9					
	Denton town	255	247	-3.24%			Moderate-High	NA	NA	3										
	Grass Range town	110	108	-1.85%			Moderate-High	NA	NA	3										

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	Lewistown city	5,901	5,870	-0.53%			Moderate-High	NA	NA	3										
	Moore town	193	198	2.53%			Moderate-High	NA	NA	3										
	Winifred town	208	206	-0.97%			Moderate-High	NA	NA	3										
	Balance of Fergus County	4,919	4,784	-2.82%			Moderate-High	NA	NA	3										
1	**Flathead County**	90,928	98,082	7.29%	316	2009	High	Moderate	NA		2014	NA	NA	NA	14					
	Columbia Falls city	4,688	5,241	10.55%																
	Kalispell city	19,927	22,761	12.45%																
	Whitefish city	6,357	7,279	12.67%																
	Balance of Flathead County	59,956	62,801	4.53%																
3	**Gallatin County**	89,513	104,502	14.34%	1,550	2006	NA	NA	NA	6	2012	Low	High	High	6					
	Belgrade city	7,389	8,254	10.48%																
	Bozeman city	37,280	45,250	17.61%																
	Manhattan town	1,520	1,691	10.11%																
	Three Forks city	1,869	1,944	3.86%																
	West Yellowstone town	1,271	1,353	6.06%																
	Balance of Gallatin County	40,184	46,010	12.66%																
4	**Garfield County**	1,206	1,310	7.94%	0	2007	Low-Moderate	1,279; High	$32M; High	3	2014	NA	Moderate	NA	9					
	Jordan town	343	399	14.04%																
	Balance of Garfield County	863	911	5.27%																
2	**Glacier County**	13,399	13,694	2.15%	0	2005	NA	NA	NA		2012	NA	NA	NA	14					
	Browning town	1,016	1,031	1.45%																
	Cut Bank city	2,869	3,012	4.75%																
	Balance of Glacier County	9,514	9,651	1.42%																
5	**Golden Valley County**	884	831	-6.38%	NA	2008	NA	NA	NA	14										
	Lavina town	187	173	-8.09%																
	Ryegate town	245	236	-3.81%																
	Balance of Golden Valley County	452	422	-7.11%																
1	**Granite County**	3,079	3,368	8.58%	NA	2006	Low	2,830	High	3	2013	Low		Moderate-High	3					
	Drummond town	309	348	11.21%									309; Moderate		3					
	Philipsburg town	820	920	10.87%									820; Moderate		3					
	Balance of Granite County	1,950	2,100	7.14%									1,950; Moderate		3					
2	**Hill County**	16,096	16,542	2.70%	4	2006	NA	NA	NA	14	2012	NA	NA	NA	14					
	Havre city	9,310	9,846	5.44%																
	Hingham town	118	122	3.28%																
	Balance of Hill County	6,668	6,574	-1.43%																
3	**Jefferson County**	11,406	11,853	3.77%	5	2005	NA	NA	NA	3	2011	NA	NA	NA	14	2017				14
	Boulder town	1,183	1,230	3.82%													R=$32,662,686 C=$7,588,581	1,249; <18=244	NA	14
	Whitehall town	1,038	1,114	6.82%													R=$33,969,396 C=$12,099,667	1,387; <18=302	NA	14
	Balance of Jefferson County	9,185	9,509	3.41%													R=$678,719,136 C=$50,484,719	9,966; <18=2,337	NA	14
6	**Judith Basin County**	2,072	1,940	-6.80%	NA	2008	NA	NA	NA	14	2013	NA	NA	NA	14					
	Hobson town	215	218	1.38%																
	Stanford town	401	384	-4.43%																
	Balance of Judith Basin County	1,456	1,338	-8.82%																
1	**Lake County**	28,746	29,758	3.40%	44	2006	NA	NA	NA		2012	NA	NA	NA	14					
	Polson city	4,488	4,777	6.05%																
	Ronan city	1,871	2,016	7.19%																
	St. Ignatius town	842	824	-2.18%																
	Balance of Lake County	21,545	22,141	2.69%																
3	**Lewis and Clark County**	63,395	67,282	5.78%	176	2005	NA	NA	NA		2011	NA	NA	NA	14	2017				14
	East Helena town	1,984	2,074	4.34%													R=73,916,041 C=$30,793,990	2,832; <18=700	NA	14
	Helena city	28,190	31,169	9.56%													R=$1,193,293,067 C=$919,413,720	30,649; <18=6,243	NA	14
	Balance of Lewis and Clark County	33,221	34,039	2.40%													R=$1,744,823,298 C=$128,218,969	28,380; <18=7,232	NA	14
2	**Liberty County**	2,339	2,409	2.91%	NA	2007	NA	NA	NA	2	2013	NA	NA	NA	2					
	Chester town	847	884	4.19%																
	Balance of Liberty County	1,492	1,525	2.16%																
1	**Lincoln County**	19,687	19,259	-2.22%	8	2005	NA	NA	NA		2012	NA	NA	NA	14					
	Eureka town	1,037	1,086	4.51%																
	Libby city	2,628	2,678	1.87%																
	Rexford town	105	151	30.46%																
	Troy city	938	890	-5.39%																
	Balance of Lincoln County	14,979	14,454	-3.63%																
3	**Madison County**	7,691	7,924	2.94%	7	2004	NA	NA	NA	3	2010	$0	7,426	$37M	3	2017				1
	Ennis town	838	890	5.84%								Low	High	Moderate-High	3		Low	High	Moderate-High	1
	Sheridan town	642	677	5.17%								Low	High	Moderate-High	3		Low	High	Moderate-High	1
	Twin Bridges town	375	395	5.06%								Low	High	Moderate-High	3		Low	High	Moderate-High	1

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	Virginia City town	190	198	4.04%								Low	High	Moderate-High	3		Low	High	Moderate-High	1
	Balance of Madison County	5,646	5,764	2.05%								Low	High	Moderate-High	3		Low	High	Moderate-High	1
4	**McCone County**	1,734	1,700	-2.00%	0	2006	NA	NA	NA	4	2014	NA	Moderate	NA	9					
	Circle town	615	619	0.65%																
	Balance of McCone County	1,119	1,081	-3.52%																
3	**Meagher County**	1,891	1,827	-3.50%	NA															
	White Sulphur Springs city	939	908	-3.41%																
	Balance of Meagher County	952	919	-3.59%																
1	**Mineral County**	4,223	4,184	-0.93%	1	2005	NA	NA	NA		2012	NA	NA	NA	1					
	Alberton town	420	417	-0.72%																
	Superior town	812	826	1.69%																
	Balance of Mineral County	2,991	2,941	-1.70%																
1	**Missoula County**	109,299	116,130	5.88%	930	2004	NA	NA	NA	1	2011	NA	NA	NA	1	2017			NA	14
	Missoula city	66,788	72,364	7.71%													R=$2,992,188,468 C=$1,749,9191,848	74,386	NA	14
	Balance of Missoula County	42,511	43,766	2.87%													R=$2,617,552,181 C=$430,557,507	14,333	NA	14
5	**Musselshell County**	4,538	4,589	1.11%	1	2008	NA	NA	NA	14	2013	NA	NA	NA	14					
	Melstone town	96	107	10.28%																
	Roundup city	1,788	1,840	2.83%																
	Balance of Musselshell County	2,654	2,642	-0.45%																
3	**Park County**	15,636	16,114	2.97%	44	2006	NA	NA	NA	3	2012				3					
	Clyde Park town	288	309	6.80%								Moderate	NA	NA	3					
	Livingston city	7,044	7,401	4.82%								Moderate	NA	NA	3					
	Balance of Park County	8,304	8,404	1.19%								Moderate	NA	NA	3					
6	**Petroleum County**	494	489	-1.02%	NA	2003	NA	NA	NA		2008	$0	493	$9M	3					
	Winnett town	182	185	1.62%								Low	High	Moderate-High	3					
	Balance of Petroleum County	312	304	-2.63%								Low	High	Moderate-High	3					
6	**Phillips County**	4,253	4,133	-2.90%	2	2006	NA	NA	NA	14	2012	NA	NA	NA	14					
	Dodson town	124	124	0.00%																
	Malta city	1,997	1,950	-2.41%																
	Saco town	197	197	0.00%																
	Balance of Phillips County	1,935	1,862	-3.92%																
2	**Pondera County**	6,153	6,084	-1.13%	1	2005	NA	NA	NA		2011	NA	NA	NA	14					
	Conrad city	2,570	2,550	-0.78%																
	Valier town	509	498	-2.21%																
	Balance of Pondera County	3,074	3,036	-1.25%																
4	**Powder River County**	1,743	1,746	0.17%	NA	2007	NA	NA	NA	3	2011	$0	1,858	$30M	3	2015	NA	Moderate	NA	9
	Broadus town	468	481	2.70%																
	Balance of Powder River County	1,275	1,265	-0.79%																
1	**Powell County**	7,027	6,858	-2.46%	32	2004	NA	NA	NA		2012	NA	NA	NA	10	2017	NA	NA	NA	7
	Deer Lodge city	3,111	2,994	-3.91%																
	Balance of Powell County	3,916	3,864	-1.35%																
4	**Prairie County**	1,179	1,182	0.25%	NA	2006	NA	NA	NA		2012	Moderate	NA	NA	12					
	Terry town	605	609	0.66%																
	Balance of Prairie County	574	573	-0.17%																
1	**Ravalli County**	40,212	42,088	4.46%	20	2005	NA	NA	NA	1	2012	NA	NA	NA	1	2017				14
	Darby town	720	763	5.64%													R=$22,450,507 C=$12,705,568	1,085	NA	14
	Hamilton city	4,348	4,674	6.97%													R=$147,192,900 C=$166,750,961	5,179	NA	14
	Pinesdale town	917	967	5.17%													NA	NA	NA	14
	Stevensville town	1,809	1,963	7.85%													R=$70,734,408 C=$35,871,224	2,056	NA	14
	Balance of Ravalli County	32,418	33,721	3.86%													R=2,563,926,864 C=$241,253,182	32,438	NA	14
4	**Richland County**	9,746	11,482	15.12%	16	2006	NA	NA	NA	4	2014	NA	Moderate	NA	9					
	Fairview town	840	922	8.89%																
	Sidney city	5,191	6,566	20.94%																
	Balance of Richland County	3,715	3,994	6.99%																
6	**Roosevelt County**	10,425	11,305	7.78%	1	2004	NA	NA	NA	14	2016				8					
	Bainville town	208	314	33.76%								Moderate	Moderate	Moderate	8					
	Brockton town	255	243	-4.94%								Moderate	Moderate	Moderate	8					
	Culbertson town	714	804	11.19%								Moderate	Moderate	Moderate	8					
	Froid town	185	201	7.96%								Moderate	Moderate	Moderate	8					
	Poplar city	810	854	5.15%								Moderate	Moderate	Moderate	8					
	Wolf Point city	2,621	2,806	6.59%								Moderate	Moderate	Moderate	8					
	Balance of Roosevelt County	5,632	6,083	7.41%								Moderate	Moderate	Moderate	8					
5	**Rosebud County**	9,233	9,287	0.58%	1	2007	$0	9,383	$42M	3	2013	NA	NA	NA	2					
	Colstrip city	2,214	2,311	4.20%																
	Forsyth city	1,777	1,869	4.92%																

APPENDIX B-9. LOCAL PLAN EXPOSURE SUMMARY - DISEASE

DES District	Geography	Census 2010	Census 2016 Estimate	% Change 2010 to 2016	# Building Permits (2016)	Original Local Plan FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan	Estimated Societal Loss/ Exposure from Local Plan	Estimated Economic Loss from Local Plan	Ref	Local Plan Update #1 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #1	Estimated Societal Loss/ Exposure from Local Plan Update #1	Estimated Economic Loss from Local Plan Update #1	Ref	Local Plan Update #2 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #2	Estimated Societal Loss/ Exposure from Local Plan Update #2	Estimated Economic Loss from Local Plan Update #2	Ref
	Balance of Rosebud County	5,242	1,903	-175.46%																
1	**Sanders County**	11,413	11,534	1.05%	0	2012	NA	NA	NA	14										
	Hot Springs town	544	557	2.33%																
	Plains town	1,048	1,071	2.15%																
	Thompson Falls city	1,313	1,356	3.17%																
	Balance of Sanders County	8,508	8,550	0.49%																
6	**Sheridan County**	3,384	3,648	7.24%	2	2003	NA	NA	NA	14	2008	$0	4,105	$43M	3	2016				8
	Medicine Lake town	225	241	6.64%								Low	High	Moderate-High	3		Moderate	Moderate	Moderate	8
	Outlook town	47	52	9.62%								Low	High	Moderate-High	3		Moderate	Moderate	Moderate	8
	Plentywood city	1,734	1,904	8.93%								Low	High	Moderate-High	3		Moderate	Moderate	Moderate	8
	Westby town	168	174	3.45%								Low	High	Moderate-High	3		Moderate	Moderate	Moderate	8
	Balance of Sheridan County	1,210	1,277	5.25%								Low	High	Moderate-High	3		Moderate	Moderate	Moderate	8
1	**Silver Bow County**	34,200	34,553	1.02%	86	2004	NA	NA	NA	3	2010	NA	NA	NA	14	2016				14
	Butte-Silver Bow (remainder)	33,525	33,853	0.97%													R=$1,550,525,438 C=$674,083,208	34,501; <18=7,239	NA	14
	Walkerville town	675	700	3.57%													R=$26,148,532 C=$4,408,020	844; <18=195	NA	14
5	**Stillwater County**	9,117	9,406	3.07%	0	2010	$0	8,687	$34.4M	3	2015				14					
	Columbus town	1,893	2,028	6.66%			Moderate	Moderate	NA	3		R=$65,383,045 C=$46,507,380	1,893; <18=492	NA	14					
	Balance of Stillwater County	7,224	7,378	2.09%			Moderate	Moderate	NA	3		R=$430,493,951 C=$33,051,089	7,224; <18=1,496	NA	14					
3	**Sweet Grass County**	3,651	3,623	-0.77%	1	2005	NA	NA	NA		2010	NA	NA	NA	13					
	Big Timber city	1,641	1,645	0.24%																
	Balance of Sweet Grass County	2,010	1,978	-1.62%																
2	**Teton County**	6,073	6,056	-0.28%	1	2006	NA	NA	NA	NA	2014	NA	NA	NA	2					
	Choteau city	1,684	1,686	0.12%																
	Dutton town	316	308	-2.60%																
	Fairfield town	708	922	23.21%																
	Balance of Teton County	3,365	3,140	-7.17%																
2	**Toole County**	5,324	4,977	-6.97%	2	2007	NA	NA	NA	2	2013	NA	NA	NA	2					
	Kevin town	154	138	-11.59%																
	Shelby city	3,376	3,216	-4.98%																
	Sunburst town	375	338	-10.95%																
	Balance of Toole County	1,419	1,285	-10.43%																
5	**Treasure County**	718	692	-3.76%	0	2007	$0	861	$20M	3										
	Hysham town	312	301	-3.65%																
	Balance of Treasure County	406	391	-3.84%																
6	**Valley County**	7,369	7,539	2.25%	4	2003	NA	NA	NA	14	2008	$0	7,675	$67M	3	2016				8
	Fort Peck town	233	247	5.67%								Low	High	Moderate-High	3		Low	Low	Low	8
	Glasgow city	3,250	3,364	3.39%								Low	High	Moderate-High	3		Low	Low	Low	8
	Nashua town	290	290	0.00%								Low	High	Moderate-High	3		Low	Low	Low	8
	Opheim town	85	290	70.69%								Low	High	Moderate-High	3		Low	Low	Low	8
	Balance of Valley County	3,511	3,348	-4.87%								Low	High	Moderate-High	3		Low	Low	Low	8
5	**Wheatland County**	2,168	2,117	-2.41%	NA	2007	NA	NA	NA	14	2013	NA	NA	NA	14					
	Harlowton city	997	984	-1.32%																
	Judith Gap city	126	123	-2.44%																
	Balance of Wheatland County	1,045	1,010	-3.47%																
4	**Wibaux County**	1,017	1,093	6.95%	8	2006	NA	NA	NA	2	2014	NA	Moderate	Moderate	9					
	Wibaux town	589	649	9.24%																
	Balance of Wibaux County	428	444	3.60%																
5	**Yellowstone County**	147,972	158,437	6.61%	1,198	2005	NA	NA	NA		2012	NA	NA	NA	1					
	Billings city	104,170	110,323	5.58%																
	Broadview town	192	193	0.52%																
	Laurel city	6,718	6,865	2.14%																
	Balance of Yellowstone County	36,892	41,056	10.14%																
2	**Blackfeet Indian Reservation**	10,405				2008	NA	NA	NA	14										
2	**Rocky Boy's Indian Reservation**	3,323				2008					2010	NA	NA	NA	14					
2	**Fort Belknap Indian Reservation**	2,851				2007	NA	NA	NA	14	2013	$111,528,000	2,890	NA	14					
6	**Fort Peck Indian Reservation**	10,008				2004	NA	NA	NA	14	2012	NA	NA	NA	10					
5	**Crow Indian Reservation**	6,863				2008	NA	NA	NA	4	2015	NA	Low	Low	9					
5	**Northern Cheyenne Indian Res.**	4,789				2008	NA	NA	NA	4										
1	**Flathead Indian Reservation**	28,359				2006	NA	NA	NA	NA	2017	NA	NA	NA	11					

NOTES:
R = Residential
C = Commercial/Agricultural/Industrial
CF = Critical Facilities
AL = Annual Loss
M = Million
K = Thousand

REFERENCES:
1 = Respec (formerly Adkins, PBS&J, Land & Water)
2 = Beck Consulting & AMEC
3 = Big Sky Hazard Management
4 = Cossitt Consulting
5 = Fire Logistics, Inc.
6 = Gallatin County

APPENDIX B-9. LOCAL PLAN EXPOSURE SUMMARY - DISEASE

DES District	Geography	Census 2010	Census 2016 Estimate	% Change 2010 to 2016	# Building Permits (2016)	Original Local Plan FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan	Estimated Societal Loss/ Exposure from Local Plan	Estimated Economic Loss from Local Plan	Ref	Local Plan Update #1 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #1	Estimated Societal Loss/ Exposure from Local Plan Update #1	Estimated Economic Loss from Local Plan Update #1	Ref	Local Plan Update #2 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #2	Estimated Societal Loss/ Exposure from Local Plan Update #2	Estimated Economic Loss from Local Plan Update #2	Ref
	B = Billion O = Other NA = Not Analyzed or Not Quantitied					7 = Great West Engineering and Powell County 8 = Integrated Solutions Consulting 9 = KLJ 10 = Morrison-Maierle 11 = Risks and Rewards Management 12 = Single Tree Consulting 13 = Sweet Grass County 14 = Tetra Tech (formerly Maxim Tech)														

APPENDIX B-10

LANDSLIDE & AVALANCHE VULNERABILITY ASSESSMENT DOCUMENTATION

APPENDIX B-10. VULNERABILITY ASSESSMENT DOCUMENTATION - LANDSLIDE

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Landslide sq. miles	Total sq. miles	Percent Landslide sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Landslide Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Landslide Hazard Area	Residential Exposure in Landslide Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Landslide Hazard Area	CAI Exposure in Landslide Hazard Area	Total Population in Hazard Area	<18 in Landslide Hazard Area	>65 in Landslide Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Montana	3,390	146,923	2.3%	829	$3,596,319,710	4	$508,963	379,924	$65,567,813,250	1,510	$394,797,203	89,351	$31,241,965,630	141	$82,736,172	3,731.2	802.4	721.1	2,207.7	126	8
3	**Beaverhead County**	179.23	5,572.5	3.2%	21	$120,039,992	0		3,023	$398,456,637	7	$1,156,670	2,017	$477,421,099	6	$3,243,190	15.1	2.7	3.1	9.2	6	1
	Dillon city	0.00	1.7	0.0%	0	$0	0		1,178	$128,495,669	0		230	$70,904,492	0						2	0
	Lima town	0.00	0.5	0.0%	0	$0	0		135	$8,569,730	0		11	$1,208,935	0						0	0
	Balance of Beaverhead County	179.23	5,570.3		21	$120,039,992	0	$0	1,710	$261,391,238	7	$1,156,670	1,776	$405,307,672	6	$3,243,190	15.1	2.7	3.1	9.2	4	0
5	**Big Horn County**	93.40	5,013.9	1.9%	1	$64,294	0		3,168	$358,629,629	0		872	$190,843,437	1	$218,857					5	0
	Hardin city	0.00	1.6	0.0%	0	$0	0		905	$97,296,363	0		134	$32,479,192	0						0	0
	Lodge Grass town	0.00	0.3	0.0%	0	$0	0		149	$10,790,706	0		22	$17,123,392	0						0	0
	Balance of Big Horn County	93.40	5,012.0		1	$64,294	0	$0	2,114	$250,542,560	0	$0	716	$141,240,853	1	$218,857	0.0	0.0	0.0	0.0	5	0
2	**Blaine County**	4.36	4,235.9	0.1%	1	$51,267	0		1,409	$115,967,606	0		2,309	$361,010,008	0						0	0
	Chinook city	0.00	0.5	0.0%	0	$0	0		674	$60,190,802	0		106	$19,309,682	0						0	0
	Harlem city	0.00	0.4	0.0%	0	$0	0		352	$22,108,616	0		68	$8,956,732	0						0	0
	Balance of Blaine County	4.36	4,235.0		1	$51,267	0	$0	383	$33,668,188	0	$0	2,135	$332,743,594	0	$0	0.0	0.0	0.0	0.0	0	0
3	**Broadwater County**	9.68	1,236.8	0.8%	3	$29,038,899	0		3,442	$520,588,070	0		795	$153,085,694	0						1	0
	Townsend city	0.00	1.5	0.0%	0	$0	0		1,133	$116,996,708	0		147	$21,344,104	0						0	0
	Balance of Broadwater County	9.68	1,235.3		3	$29,038,899	0	$0	2,309	$403,591,362	0	$0	648	$131,741,590	0	$0	0.0	0.0	0.0	0.0	1	0
5	**Carbon County**	63.20	2,060.7	3.1%	3	$220,339	0		4,812	$912,472,742	0		1,434	$312,638,485	0						5	1
	Bearcreek town	0.00	0.1	0.0%	0	$0	0		57	$6,138,654	0		2	$269,414	0						0	0
	Bridger town	0.00	0.8	0.0%	0	$0	0		322	$30,656,055	0		49	$8,990,475	0						0	0
	Fromberg town	0.00	0.4	0.0%	0	$0	0		218	$16,035,910	0		21	$1,157,410	0						0	0
	Joliet town	0.00	0.3	0.0%	0	$0	0		241	$27,420,117	0		20	$2,267,652	0						0	0
	Red Lodge city	0.00	2.7	0.0%	0	$0	0		1,366	$249,897,767	0		162	$49,294,962	0						1	0
	Balance of Carbon County	63.20	2,056.4		3	$220,339	0	$0	2,608	$582,324,239	0	$0	1,180	$250,658,572	0	$0	0.0	0.0	0.0	0.0	4	0
4	**Carter County**	25.58	3,346.4	0.8%	0	$0	0		405	$20,620,826	0		1,012	$117,527,687	4	$335,344					0	0
	Ekalaka town	0.00	1.0	0.0%	0	$0	0		323	$14,713,910	0		40	$3,481,214	0						0	0
	Balance of Carter County	25.58	3,345.4		0	$0	0	$0	82	$5,906,916	0	$0	972	$114,046,473	4	$335,344	0.0	0.0	0.0	0.0	0	0
2	**Cascade County**	79.59	2,708.4	2.9%	20	$90,365,664	0		28,943	$4,349,791,994	23	$5,105,477	4,285	$2,555,983,982	9	$1,893,579	54.1	12.1	9.7	32.3	14	2
	Belt city	0.00	0.3	0.0%	0	$0	0		98	$8,912,233	0		16	$5,432,574	0						0	0
	Cascade town	0.00	0.5	0.0%	20	$90,365,664	0		267	$28,222,039	0		61	$9,822,750	0						1	0
	Great Falls city	0.02	23.0	0.1%	0	$0	0		21,838	$3,214,111,195	0		1,980	$1,834,875,305	0						2	0
	Neihart town	0.05	1.6	3.1%	0	$0	0		57	$5,297,372	0		14	$2,901,487	0						0	0
	Balance of Cascade County	79.57	2,682.9		0	0.0	0	$0	6,683	$1,093,249,155	23	$5,105,477	2,214	$702,951,866	9	$1,893,579	54.1	12.1	9.7	32.3	11	0
2	**Chouteau County**	26.83	3,992.9	0.7%	0	$0	0		1,880	$212,079,581	0		1,258	$200,554,092	3	$393,326					4	0
	Big Sandy town	0.00	0.5	0.0%	0	$0	0		324	$26,480,771	0		42	$4,231,062	0						0	0
	Fort Benton city	0.00	1.5	0.0%	0	$0	0		795	$106,352,375	0		111	$15,435,130	0						0	0
	Geraldine town	0.00	0.6	0.0%	0	$0	0		150	$9,556,033	0		21	$2,592,594	0						0	0
	Balance of Chouteau County	26.83	3,990.3		0	$0	0	$0	611	$69,690,402	0	$0	1,084	$178,295,306	3	$393,326	0.0	0.0	0.0	0.0	4	0
4	**Custer County**	0.17	3,789.3	0.0%	12	$59,923,374	0		4,678	$531,010,978	0		1,711	$297,665,123	0						0	0
	Ismay town	0.00	0.4	0.0%	0	$0	0		29	$349,883	0		10	$1,387,354	0						0	0
	Miles City city	0.00	3.3	0.0%	0	$0	0		3,312	$363,057,565	0		433	$104,957,053	0						0	0
	Balance of Custer County	0.17	3,785.6		12	$59,923,374	0	$0	1,337	$167,603,530	0	$0	1,268	$191,320,716	0	$0	0.0	0.0	0.0	0.0	0	0
6	**Daniels County**	0.00	1,426.1	0.0%	2	$36,946	0		906	$81,170,595	0		976	$93,098,998	0						0	0
	Flaxville town	0.00	0.1	0.0%	0	$0	0		87	$4,797,361	0		16	$766,732	0						0	0
	Scobey city	0.00	0.7	0.0%	0	$0	0		675	$64,548,974	0		128	$10,135,214	0						0	0
	Balance of Daniels County	0.00	1,425.3		2	$36,946	0	$0	144	$11,824,260	0	$0	832	$82,197,052	0	$0	0.0	0.0	0.0	0.0	0	0
4	**Dawson County**	0.00	2,380.7	0.0%	10	$20,985,926	0		3,163	$409,229,017	0		908	$162,010,623	0						0	0
	Glendive city	0.00	3.5	0.0%	0	$0	0		1,604	$225,892,962	0		230	$56,394,894	0						0	0
	Richey town	0.00	0.3	0.0%	0	$0	0		165	$8,909,873	0		23	$2,890,873	0						0	0
	Balance of Dawson County	0.00	2,376.9		10	$20,985,926	0	$0	1,394	$174,426,182	0	$0	655	$102,724,856	0	$0	0.0	0.0	0.0	0.0	0	0
1	**Deer Lodge County**	25.81	740.6	3.5%	30	$71,273,714	0	$0	4,234	$406,037,841	2	$423,260	509	$103,961,907	0		4.3	0.6	0.9	2.7	3	0
	Anaconda-Deer Lodge County	25.81	740.6	3.5%	30	$71,273,714	0	$0	4,234	$406,037,841	0	$0	509	$103,961,907	0	$0	4.3	0.6	0.9	2.7	3	0
4	**Fallon County**	0.43	1,621.2	0.0%	1	$15,822	0		1,223	$120,111,206	0		1,285	$157,284,133	1	$72,250					2	0
	Baker city	0.00	1.1	0.0%	0	$0	0		882	$83,620,710	0		144	$33,873,913	0						0	0
	Plevna town	0.00	0.4	0.0%	0	$0	0		106	$6,148,692	0		78	$8,870,026	0						0	0
	Balance of Fallon County	0.43	1,619.6		1	$15,822	0	$0	235	$30,341,804	0	$0	1,063	$114,540,194	1	$72,250	0.0	0.0	0.0	0.0	2	0
6	**Fergus County**	86.35	4,345.2	2.0%	7	$21,432,181	0		4,690	$556,548,908	31	$2,785,040	2,019	$402,403,647	24	$3,575,038	69.8	14.6	16.6	38.6	4	1
	Denton town	0.00	0.7	0.0%	0	$0	0		152	$13,428,059	0		29	$4,382,026	0						0	0
	Grass Range town	0.00	0.1	0.0%	0	$0	0		82	$4,930,605	0		14	$1,525,471	0						0	0
	Lewistown city	0.00	5.2	0.0%	0	$0	0		2,796	$320,465,500	0		996	$106,823,714	0						0	0
	Moore town	0.00	0.3	0.0%	0	$0	0		102	$6,944,815	0		19	$4,216,005	0						0	0
	Winifred town	0.00	0.5	0.0%	0	$0	0		90	$8,768,234	0		20	$4,365,641	0						0	0
	Balance of Fergus County	86.35	4,338.3		7	$21,432,181	0	$0	1,468	$202,011,695	31	$2,785,040	1,541	$281,090,790	24	$3,575,038	69.8	14.6	16.6	38.6	4	0
1	**Flathead County**	471.30	5,252.4	9.0%	20	$38,896,279	0		41,342	$8,600,413,799	3	$455,690	8,138	$3,832,482,719	2	$697,452	7.4	1.6	1.4	4.4	5	0
	Columbia Falls city	0.00	2.1	0.0%	0	$0	0		1,739	$255,171,515	0		327	$117,184,528	0						1	0
	Kalispell city	0.00	11.8	0.0%	0	$0	0		7,553	$1,271,291,249	0		1,714	$1,065,757,780	0						0	0
	Whitefish city	0.00	11.8	0.0%	0	$0	0		4,029	$1,153,743,638	0		522	$350,353,977	0						0	0
	Balance of Flathead County	471.30	5,226.8		20	$38,896,279	0	$0	28,021	$5,920,207,397	3	$455,690	5,575	$2,299,186,434	2	$697,452	7.4	1.6	1.4	4.4	4	0
3	**Gallatin County**	145.74	2,632.5	5.5%	207	$963,139,971	0		40,035	$10,930,545,091	343	$166,110,340	5,191	$4,169,858,220	18	$45,047,969	819.8	166.4	97.6	555.8	6	0
	Belgrade city	0.00	3.1	0.0%	0	$0	0		2,764	$496,929,312	0		204	$120,870,378	0						0	0
	Bozeman city	0.03	19.9	0.2%	0	$0	0		16,722	$4,743,491,928	0		1,511	$2,235,363,972	0						2	0

APPENDIX B-10. VULNERABILITY ASSESSMENT DOCUMENTATION - LANDSLIDE

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Landslide sq. miles	Total sq. miles	Percent Landslide sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Landslide Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Landslide Hazard Area	Residential Exposure in Landslide Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Landslide Hazard Area	CAI Exposure in Landslide Hazard Area	Total Population in Hazard Area	<18 in Landslide Hazard Area	>65 in Landslide Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Manhattan town	0.00	1.7	0.0%	0	$0	0		657	$115,292,092	0		71	$33,496,346	0						0	0
	Three Forks city	0.00	1.4	0.0%	0	$0	0		787	$99,273,886	0		104	$26,353,553	0						0	0
	West Yellowstone town	0.00	0.8	0.0%	0	$0	0		639	$139,663,482	0		244	$183,049,311	0						0	0
	Balance of Gallatin County	145.71	2,605.7		207	$963,139,971	0	$0	18,466	$5,335,894,391	343	$166,110,340	3,057	$1,570,724,660	18	$45,047,969	819.8	166.4	97.6	555.8	4	0
4	**Garfield County**	149.39	4,843.5	3.1%	1	$2,417	0		558	$40,352,973	157	$12,419,280	828	$98,380,657	2	$126,760	375.2	82.9	87.1	205.3	0	0
	Jordan town	0.00	0.3	0.0%	0	$0	0		257	$15,353,948	0		31	$4,176,477	0						0	0
	Balance of Garfield County	149.39	4,843.1		1	$2,417	0	$0	301	$24,999,025	157	$12,419,280	797	$94,204,180	2	$126,760	375.2	82.9	87.1	205.3	0	0
2	**Glacier County**	156.50	3,034.9	5.2%	4	$166,089	0		2,176	$173,809,579	0		1,208	$513,342,768	0						0	0
	Browning town	0.00	0.3	0.0%	0	$0	0		207	$8,297,087	0		61	$9,037,744	0						0	0
	Cut Bank city	0.00	1.2	0.0%	0	$0	0		1,122	$90,953,194	0		151	$37,600,597	0						0	0
	Balance of Glacier County	156.50	3,033.4		4	$166,089	0	$0	847	$74,559,298	0	$0	996	$466,704,427	0	$0	0.0	0.0	0.0	0.0	0	0
5	**Golden Valley County**	7.78	1,174.1	0.7%	0	$0	0		288	$22,545,552	0		240	$51,388,053	0						0	0
	Lavina town	0.00	1.0	0.0%	0	$0	0		91	$7,521,010	0		15	$1,533,018	0						0	0
	Ryegate town	0.00	0.8	0.0%	0	$0	0		141	$10,234,886	0		15	$1,769,218	0						0	0
	Balance of Golden Valley County	7.78	1,172.4		0	$0	0	$0	56	$4,789,656	0	$0	210	$48,085,817	0	$0	0.0	0.0	0.0	0.0	0	0
1	**Granite County**	66.87	1,730.9	3.9%	0	$0	0		1,604	$210,828,137	1	$107,984	530	$156,924,788	1	$628,910	2.2	0.4	0.6	1.2	4	0
	Drummond town	0.00	0.5	0.0%	0	$0	0		144	$11,391,136	0		48	$5,493,281	0						0	0
	Philipsburg town	0.00	0.8	0.0%	0	$0	0		503	$53,845,654	0		77	$16,673,401	0						0	0
	Balance of Granite County	66.87	1,729.5		0	$0	0	$0	957	$145,591,347	1	$107,984	405	$134,758,106	1	$628,910	2.2	0.4	0.6	1.2	4	0
2	**Hill County**	1.12	2,915.3	0.0%	19	$55,432,027	0		6,281	$754,306,279	0		2,439	$478,811,374	2	$548,110					4	1
	Havre city	0.03	3.4	1.0%	0	$0	0		2,954	$365,822,286	0		390	$113,681,709	0						0	0
	Hingham town	0.00	0.2	0.0%	0	$0	0		165	$13,864,635	0		27	$3,866,422	0						0	0
	Balance of Hill County	1.08	2,911.7		19	$55,432,027	0	$0	3,162	$374,619,358	0	$0	2,022	$361,263,243	2	$548,110	0.0	0.0	0.0	0.0	4	0
3	**Jefferson County**	5.78	1,657.8	0.3%	14	$15,148,292	0		4,016	$744,240,161	2	$117,445	694	$117,529,005	1	$153,990	5.0	1.0	1.0	3.0	7	0
	Boulder town	0.00	1.1	0.0%	0	$0	0		356	$36,918,541	0		47	$6,824,156	0						3	0
	Whitehall town	0.00	0.7	0.0%	0	$0	0		325	$32,838,125	0		47	$9,146,159	0						0	0
	Balance of Jefferson County	5.78	1,656.0		14	$15,148,292	0	$0	3,335	$674,483,495	2	$117,445	600	$101,558,690	1	$153,990	5.0	1.0	1.0	3.0	4	0
6	**Judith Basin County**	46.47	1,868.3	2.5%	0	$0	0		783	$67,357,916	0		682	$119,016,564	4	$613,098					0	0
	Hobson town	0.00	0.2	0.0%	0	$0	0		116	$11,542,201	0		21	$3,191,010	0						0	0
	Stanford town	0.00	0.4	0.0%	0	$0	0		248	$24,191,487	0		49	$6,993,739	0						0	0
	Balance of Judith Basin County	46.47	1,867.6		0	$0	0	$0	419	$31,624,228	0	$0	612	$108,831,815	4	$613,098	0.0	0.0	0.0	0.0	0	0
1	**Lake County**	68.09	1,652.1	4.1%	16	$14,144,458	0		16,679	$3,044,070,013	0		4,157	$907,884,902	0						0	0
	Polson city	0.00	4.3	0.0%	0	$0	0		1,550	$239,716,220	0		307	$110,486,890	0						0	0
	Ronan city	0.00	1.1	0.0%	0	$0	0		498	$51,240,897	0		188	$43,266,142	0						0	0
	St. Ignatius town	0.00	0.5	0.0%	0	$0	0		227	$24,362,098	0		33	$6,506,490	0						0	0
	Balance of Lake County	68.09	1,646.2		16	$14,144,458	0	$0	14,404	$2,728,750,798	0	$0	3,629	$747,625,380	0	$0	0.0	0.0	0.0	0.0	0	0
3	**Lewis and Clark County**	111.94	3,493.5	3.2%	77	$528,411,633	0		28,356	$4,838,187,380	6	$732,576	2,990	$1,486,292,152	4	$672,268	14.3	3.1	2.5	8.7	15	0
	East Helena town	0.00	4.1	0.0%	0	$0	0		778	$95,292,980	0		55	$16,849,629	0						0	0
	Helena city	0.00	16.5	0.0%	0	$0	0		10,487	$2,070,264,423	0		1,613	$1,127,469,517	0						8	0
	Balance of Lewis and Clark County	111.94	3,472.8		77	$528,411,633	0	$0	17,091	$2,672,629,977	6	$732,576	1,322	$341,973,006	4	$672,268	14.3	3.1	2.5	8.7	7	0
2	**Liberty County**	1.27	1,446.4	0.1%	3	$203,754	0		540	$55,198,775	0		727	$148,145,426	0						0	0
	Chester town	0.00	0.5	0.0%	0	$0	0		347	$38,384,265	0		85	$11,176,620	0						0	0
	Balance of Liberty County	1.27	1,445.9		3	$203,754	0	$0	193	$16,814,510	0	$0	642	$136,968,806	0	$0	0.0	0.0	0.0	0.0	0	0
1	**Lincoln County**	129.49	3,673.2	3.5%	5	$2,732,131	0		14,201	$1,669,255,057	11	$1,356,454	4,037	$814,443,340	15	$3,603,394	24.3	4.5	6.5	13.3	0	0
	Eureka town	0.00	1.0	0.0%	0	$0	0		576	$49,995,833	0		79	$16,254,364	0						0	0
	Libby city	0.00	1.7	0.0%	0	$0	0		1,887	$171,393,838	0		407	$97,831,857	0						0	0
	Rexford town	0.00	0.1	0.0%	0	$0	0		62	$5,237,363	0		7	$1,125,453	0						0	0
	Troy city	0.00	0.7	0.0%	0	$0	0		543	$42,346,210	0		99	$14,488,626	0						0	0
	Balance of Lincoln County	129.49	3,669.7		5	$2,732,131	0	$0	11,133	$1,400,281,813	11	$1,356,454	3,445	$684,743,040	15	$3,603,394	24.3	4.5	6.5	13.3	0	0
3	**Madison County**	231.92	3,602.4	6.4%	3	$270,203	1	$30,000	4,154	$804,105,665	28	$15,031,627	1,301	$368,696,283	6	$2,853,634	62.4	9.8	17.9	34.8	9	0
	Ennis town	0.00	0.6	0.0%	0	$0	0		533	$84,019,269	0		85	$24,326,354	0						0	0
	Sheridan town	0.00	1.0	0.0%	2	$59,996	0		1,971	$206,039,798	0		54	$8,980,370	0						0	0
	Twin Bridges town	0.00	1.0	0.0%	0	$0	0		232	$25,593,322	0		47	$8,125,500	0						0	0
	Virginia City town	0.00	0.9	0.0%	0	$0	0		167	$26,178,533	0		30	$5,366,969	0						1	0
	Balance of Madison County	231.92	3,598.8		1	$210,207	1	$30,000	1,251	$462,274,743	28	$15,031,627	1,085	$321,897,090	6	$2,853,634	62.4	9.8	17.9	34.8	8	0
4	**McCone County**	16.49	2,679.2	0.6%	3	$141,360	0		532	$44,530,155	34	$3,268,400	679	$82,125,293	0		78.5	16.2	17.2	45.2	3	0
	Circle town	0.00	0.8	0.0%	0	$0	0		335	$27,003,251	0		66	$14,581,192	0						0	0
	Balance of McCone County	16.49	2,678.4		3.0	$141,360	0	$0	197	$17,526,904	34	$3,268,400	613	$67,544,101	0	$0	78.5	16.2	17.2	45.2	3	0
3	**Meagher County**	14.98	2,392.1	0.6%	0	$0	0		1,199	$128,110,116	0		412	$92,624,757	0						0	0
	White Sulphur Springs city	0.00	1.0	0.0%	0	$0	0		630	$61,212,327	0		45	$6,869,617	0						0	0
	Balance of Meagher County	14.98	2,391.1		0	$0	0	$0	569	$66,897,789	0	$0	367	$85,755,140	0	$0	0.0	0.0	0.0	0.0	0	0
1	**Mineral County**	79.72	1,222.0	6.5%	0	$0	0		2,023	$203,747,490	2	$152,870	404	$84,723,652	1	$2,234,220	5.3	0.9	1.5	2.9	2	0
	Alberton town	0.01	0.5	1.4%	0	$0	0		197	$14,926,025	0		20	$2,465,222	0						0	0
	Superior town	0.00	1.1	0.3%	0	$0	0		381	$36,464,606	0		72	$20,494,160	0						0	0
	Balance of Mineral County	79.71	1,220.4		0	$0	0	$0	1,445	$152,356,859	2	$152,870	312	$61,764,270	1	$2,234,220	5.3	0.9	1.5	2.9	2	0
1	**Missoula County**	103.02	2,614.9	3.9%	203	$1,032,240,117	3	$478,963	16,873	$2,860,469,867	25	$10,431,716	1,421	$1,152,881,550	0		58.3	11.2	8.5	38.5	13	1
	Missoula city	0.29	29.0	1.0%	203	$1,032,240,117	0		4,975	$984,652,873	0		470	$595,032,016	0						8	1
	Balance of Missoula County	102.73	2,585.9		0	$0	3	$478,963	11,898	$1,875,816,994	25	$10,431,716	951	$557,849,534	0	$0	58.3	11.2	8.5	38.5	5	0
5	**Musselshell County**	0.23	1,869.6	0.0%	2	$45,908	0		1,730	$148,155,396	0		734	$146,591,301	0						0	0
	Melstone town	0.00	0.6	0.0%	0	$0	0		39	$2,012,685	0		7	$754,186	0						0	0

APPENDIX B-10. VULNERABILITY ASSESSMENT DOCUMENTATION - LANDSLIDE

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Landslide sq. miles	Total sq. miles	Percent Landslide sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Landslide Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Landslide Hazard Area	Residential Exposure in Landslide Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Landslide Hazard Area	CAI Exposure in Landslide Hazard Area	Total Population in Hazard Area	<18 in Landslide Hazard Area	>65 in Landslide Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Roundup city	0.00	1.3	0.0%	0	$0	0		837	$63,457,673	0		129	$18,353,849	0						0	0
	Balance of Musselshell County	0.23	1,867.7		2	$45,908	0	$0	854	$82,685,038	0	$0	598	$127,483,266	0	$0	0.0	0.0	0.0	0.0	0	0
3	**Park County**	175.46	2,811.7	6.2%	4	$2,414,253	0		6,087	$1,151,416,662	4	$245,330	1,680	$821,834,484	7	$2,536,040	9.1	1.7	1.9	5.5	3	0
	Clyde Park town	0.00	0.4	0.0%	0	$0	0		134	$13,924,845	0		23	$4,042,499	0						0	0
	Livingston city	0.00	5.7	0.0%	0	$0	0		2,567	$392,434,781	0		537	$198,955,646	0						0	0
	Balance of Park County	175.46	2,805.6		4	$2,414,253	0	$0	3,386	$745,057,036	4	$245,330	1,120	$618,836,339	7	$2,536,040	9.1	1.7	1.9	5.5	3	0
6	**Petroleum County**	3.58	1,672.5	0.2%	0	$0	0		184	$23,127,789	0		204	$28,781,751	0						0	0
	Winnett town	0.00	1.0	0.0%	0	$0	0		148	$19,210,729	0		21	$2,591,917	0						0	0
	Balance of Petroleum County	3.58	1,671.5		0	$0	0	$0	36	$3,917,060	0	$0	183	$26,189,834	0	$0	0.0	0.0	0.0	0.0	0	0
6	**Phillips County**	81.71	5,208.5	1.6%	6	$1,661,730	0		1,695	$155,044,408	0		1,402	$250,190,823	2	$164,840					3	0
	Dodson town	0.00	0.2	0.0%	0	$0	0		70	$2,222,512	0		5	$140,341	0						0	0
	Malta city	0.00	1.0	0.0%	0	$0	0		996	$103,409,948	0		144	$29,008,393	0						0	0
	Saco town	0.00	0.3	0.0%	0	$0	0		134	$6,873,752	0		15	$1,887,736	0						0	0
	Balance of Phillips County	81.71	5,207.0		6	$1,661,730	0	$0	495	$42,538,196	0	$0	1,238	$219,154,353	2	$164,840	0.0	0.0	0.0	0.0	3	0
2	**Pondera County**	16.64	1,640.4	1.0%	2	$60,957	0		1,815	$200,092,707	0		883	$265,160,665	0						0	0
	Conrad city	0.00	1.2	0.0%	0	$0	0		1,126	$122,656,189	0		156	$37,675,177	0						0	0
	Valier town	0.00	0.9	0.0%	0	$0	0		295	$29,342,500	0		47	$8,582,116	0						0	0
	Balance of Pondera County	16.64	1,638.3		2	$60,957	0	$0	394	$48,094,018	0	$0	680	$198,903,372	0	$0	0.0	0.0	0.0	0.0	0	0
4	**Powder River County**	0.03	3,297.5	0.0%	2	$26,512	0		350	$31,752,451	0		642	$113,734,309	0						0	0
	Broadus town	0.00	0.4	0.0%	0	$0	0		218	$19,631,053	0		71	$8,590,919	0						0	0
	Balance of Powder River County	0.00	3,297.1		2	$26,512	0	$0	132	$12,121,398	0	$0	571	$105,143,390	0	$0	0.0	0.0	0.0	0.0	0	0
1	**Powell County**	77.92	2,329.6	3.3%	47	$139,753,982	0		2,509	$325,066,746	0		697	$217,400,046	0						4	0
	Deer Lodge city	0.00	1.4	0.0%	30	$71,273,714	0		1,455	$118,373,521	0		160	$37,299,244	0						2	0
	Balance of Powell County	77.92	2,328.2		17	$68,480,268	0	$0	1,054	$206,693,225	0	$0	537	$180,100,802	0	$0	0.0	0.0	0.0	0.0	2	0
4	**Prairie County**	0.64	1,740.2	0.0%	0	$0	0		527	$28,742,376	0		525	$56,615,772	0						4	0
	Terry town	0.00	0.8	0.0%	0	$0	0		382	$21,559,157	0		43	$3,618,679	0						0	0
	Balance of Prairie County	0.64	1,739.4		0	$0	0	$0	145	$7,183,219	0	$0	482	$52,997,093	0	$0	0.0	0.0	0.0		4	0
1	**Ravalli County**	158.34	2,398.2	6.6%	3	$1,079,777	0		19,277	$3,692,614,691	22	$3,285,657	3,023	$930,619,898	4	$680,110	53.5	10.5	13.2	29.8	4	0
	Darby town	0.00	0.6	0.0%	0	$0	0		455	$65,564,435	0		20	$5,525,704	0						0	0
	Hamilton city	0.00	2.4	0.0%	0	$0	0		2,371	$402,402,609	0		207	$138,471,668	0						0	0
	Pinesdale town	0.00	1.3	0.0%	0	$0	0		163	$30,828,359	0		42	$6,383,047	0						0	0
	Stevensville town	0.00	1.0	0.0%	0	$0	0		956	$165,432,372	0		64	$20,620,328	0						0	0
	Balance of Ravalli County	158.34	2,392.9		3	$1,079,777	0	$0	15,332	$3,028,386,916	22	$3,285,657	2,690	$759,619,151	4	$680,110	53.5	10.5	13.2	29.8	4	0
4	**Richland County**	0.00	2,101.9	0.0%	4	$1,434,990	0		2,979	$516,039,930	0		1,646	$420,114,426	0						0	0
	Fairview town	0.00	0.8	0.0%	0	$0	0		313	$29,368,800	0		37	$7,407,985	0						0	0
	Sidney city	0.00	2.4	0.0%	0	$0	0		1,697	$319,755,649	0		342	$108,260,768	0						0	0
	Balance of Richland County	0.00	2,098.7		4	$1,434,990	0	$0	969	$166,915,481	0	$0	1,267	$304,445,673	0	$0	0.0	0.0	0.0	0.0	0	0
6	**Roosevelt County**	0.00	2,366.6	0.0%	4	$3,703,234	0		2,085	$172,781,506	0		1,674	$267,647,926	0						2	0
	Bainville town	0.00	1.0	0.0%	0	$0	0		116	$8,253,760	0		17	$1,186,389	0						0	0
	Brockton town	0.00	0.2	0.0%	0	$0	0		21	$718,776	0		5	$430,537	0						0	0
	Culbertson town	0.00	0.5	0.0%	0	$0	0		452	$46,606,757	0		78	$11,849,589	0						0	0
	Froid town	0.00	0.3	0.0%	0	$0	0		127	$5,583,947	0		15	$809,020	0						0	0
	Poplar city	0.00	0.3	0.0%	0	$0	0		239	$11,492,367	0		40	$3,179,375	0						0	0
	Wolf Point city	0.00	0.8	0.0%	0	$0	0		746	$61,499,644	0		105	$12,969,709	0						0	0
	Balance of Roosevelt County	0.00	2,363.6		4	$3,703,234	0	$0	384	$38,626,255	0	$0	1,414	$237,223,307	0	$0	0.0	0.0	0.0	0.0	2	0
5	**Rosebud County**	0.16	5,020.4	0.0%	3	$125,417	0		2,477	$239,021,461	0		1,810	$213,766,468	0						0	0
	Colstrip city	0.00	4.1	0.0%	0	$0	0		980	$109,503,560	0		250	$31,692,015	0						0	0
	Forsyth city	0.00	1.2	0.0%	0	$0	0		896	$75,056,501	0		141	$26,550,423	0						0	0
	Balance of Rosebud County	0.16	5,015.1		3	$125,417	0	$0	601	$54,461,400	0	$0	1,419	$155,524,030	0	$0	0.0	0.0	0.0	0.0	0	0
1	**Sanders County**	142.03	2,786.9	5.1%	0	$0	0		4,955	$571,408,477	10	$1,962,440	1,849	$320,122,376	2	$912,350	22.1	4.0	6.3	11.8	0	0
	Hot Springs town	0.00	0.4	0.0%	0	$0	0		343	$29,433,542	0		53	$9,621,606	0						0	0
	Plains town	0.00	0.6	0.0%	0	$0	0		547	$44,751,633	0		88	$17,655,569	0						0	0
	Thompson Falls city	0.00	1.6	0.0%	0	$0	0		666	$67,891,731	0		85	$16,866,473	0						0	0
	Balance of Sanders County	142.03	2,784.4		0	$0	0	$0	3,399	$429,331,571	10	$1,962,440	1,623	$275,978,728	2	$912,350	22.1	4.0	6.3	11.8	0	0
6	**Sheridan County**	0.00	1,703.6	0.0%	2	$59,996	0		1,971	$206,039,798	0		1,503	$172,072,215	0						0	0
	Medicine Lake town	0.00	0.4	0.0%	0	$0	0		159	$9,705,581	0		24	$1,200,353	0						0	0
	Outlook town	0.00	1.2	0.0%	0	$0	0		44	$2,946,970	0		10	$552,096	0						0	0
	Plentywood city	0.00	1.3	0.0%	0	$0	0		785	$88,640,393	0		136	$18,201,885	0						0	0
	Westby town	0.00	0.6	0.0%	0	$0	0		102	$4,909,517	0		15	$1,132,999	0						0	0
	Balance of Sheridan County	0.00	1,700.1		2	$59,996	0	$0	881	$99,837,337	0	$0	1,318	$150,984,882	0	$0	0.0	0.0	0.0	0.0	0	0
1	**Silver Bow County**	9.49	718.0	1.3%	26	$227,661,811	0		13,122	$1,426,148,334	0		1,585	$807,024,197	1	$509,163					5	0
	Walkerville town	0.00	2.2	0.0%	0	$0	0		342	$24,138,167	0		6	$334,643	0						1	0
	Butte-Silver Bow (remainder)	9.49	715.7		26	$227,661,811	0	$0	12,780	$1,402,010,167	0	$0	1,579	$806,689,554	1	$509,163				0.0	4	0
5	**Stillwater County**	49.10	1,804.7	2.7%	2	$100,729	0		2,790	$487,586,815	0		943	$192,170,926	3	$334,906					0	0
	Columbus town	0.00	1.3	0.0%	0	$0	0		448	$58,806,556	0		97	$44,373,190	0						0	0
	Balance of Stillwater County	49.10	1,803.4		2	$100,729	0	$0	2,342	$428,780,259	0	$0	846	$147,797,736	3	$334,906	0.0	0.0	0.0	0.0	0	0
3	**Sweet Grass County**	53.30	1,860.9	2.9%	1	$100,000	0		1,559	$263,525,756	4	$1,416,540	1,251	$384,985,550	4	$2,005,242	10.2	2.1	2.5	5.6	0	0
	Big Timber city	0.00	1.0	0.0%	0	$0	0		772	$99,628,903	0		157	$34,833,465	0						0	0
	Balance of Sweet Grass County	53.30	1,860.0		1	$100,000	0	$0	787	$163,896,853	4	$1,416,540	1,094	$350,152,085	4	$2,005,242	10.2	2.1	2.5	5.6	0	0
2	**Teton County**	55.87	2,289.5	2.4%	2	$60,957	0		1,834	$226,386,656	2	$583,040	1,107	$240,507,233	0		5.0	1.2	1.1	2.7	1	0

APPENDIX B-10. VULNERABILITY ASSESSMENT DOCUMENTATION - LANDSLIDE

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Landslide sq. miles	Total sq. miles	Percent Landslide sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Landslide Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Landslide Hazard Area	Residential Exposure in Landslide Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Landslide Hazard Area	CAI Exposure in Landslide Hazard Area	Total Population in Hazard Area	<18 in Landslide Hazard Area	>65 in Landslide Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Choteau city	0.00	1.5	0.0%	0	$0	0		743	$81,363,094	0		102	$23,811,077	0						0	0
	Dutton town	0.00	0.4	0.0%	0	$0	0		159	$17,819,673	0		30	$5,356,644	0						0	0
	Fairfield town	0.00	0.3	0.0%	0	$0	0		266	$30,208,145	0		46	$13,369,957	0						0	0
	Balance of Teton County	55.87	2,287.4		2	$60,957	0	$0	666	$96,995,744	2	$583,040	929	$197,969,555	0	$0	5.0	1.2	1.1	2.7	1	0
2	**Toole County**	4.10	1,943.9	0.2%	3	$124,825	0		1,702	$149,272,962	0		806	$214,874,251	1	$96,040					2	0
	Kevin town	0.00	0.4	0.0%	0	$0	0		101	$4,284,353	0		9	$317,749	0						0	0
	Shelby city	0.00	5.9	0.0%	0	$0	0		1,175	$110,467,515	0		196	$76,850,372	0						0	0
	Sunburst town	0.00	2.0	0.0%	0	$0	0		208	$12,619,612	0		25	$3,026,807	0						0	0
	Balance of Toole County	4.10	1,935.5		3	$124,825	0	$0	218	$21,901,482	0	$0	576	$134,679,323	1	$96,040	0.0	0.0	0.0	0.0	2	0
5	**Treasure County**	0.00	983.5	0.0%	1	$250,000	0		194	$12,369,442	0		362	$46,827,867	0						2	0
	Hysham town	0.00	0.2	0.0%	0	$0	0		159	$9,401,270	0		20	$2,281,485	0						0	0
	Balance of Treasure County	0.00	983.2		1	$250,000	0	$0	35	$2,968,172	0	$0	342	$44,546,382	0	$0	0.0	0.0	0.0	0.0	2	0
6	**Valley County**	140.58	5,058.5	2.8%	7	$2,929,498	0		2,863	$365,588,943	182	$30,995,659	1,209	$208,523,811	6	$891,657	411.3	92.5	92.1	226.6	0	0
	Fort Peck town	0.00	0.9	0.0%	0	$0	0		118	$21,485,471	0		10	$2,092,827	0						0	0
	Glasgow city	0.00	1.4	0.0%	0	$0	0		1,353	$173,782,829	0		217	$55,123,436	0						0	0
	Nashua town	0.00	0.7	0.0%	0	$0	0		200	$13,107,033	0		17	$1,596,474	0						0	0
	Opheim town	0.00	0.2	0.0%	0	$0	0		76	$3,977,464	0		14	$1,365,742	0						0	0
	Balance of Valley County	140.58	5,055.3		7	$2,929,498	0	$0	1,116	$153,236,146	182	$30,995,659	951	$148,345,332	6	$891,657	411.3	92.5	92.1	226.6	0	0
5	**Wheatland County**	4.90	1,425.9	0.3%	3	$1,816,266	0		850	$65,290,360	0		392	$102,480,647	0						0	0
	Harlowton city	0.00	0.6	0.0%	0	$0	0		569	$43,661,633	0		81	$8,532,547	0						0	0
	Judith Gap city	0.00	0.3	0.0%	0	$0	0		89	$5,833,159	0		10	$1,334,639	0						0	0
	Balance of Wheatland County	4.90	1,425.0		3	$1,816,266	0	$0	192	$15,795,568	0	$0	301	$92,613,461	0	$0	0.0	0.0	0.0	0.0	0	0
4	**Wibaux County**	0.00	888.1	0.0%	0	$0	0		318	$24,265,482	0		518	$58,984,045	0						0	0
	Wibaux town	0.00	1.1	0.0%	0	$0	0		290	$20,843,967	0		54	$4,948,635	0						0	0
	Balance of Wibaux County	0.00	887.0		0	$0	0	$0	28	$3,421,515	0	$0	464	$54,035,410	0	$0	0.0	0.0	0.0	0.0	0	0
5	**Yellowstone County**	1.40	2,646.8	0.1%	19	$148,531,721	0		58,853	$10,961,976,827	611	$136,653,708	5,429	$4,499,091,639	7	$7,694,435	1624.1	362.4	331.8	929.9	10	0
	Billings city	0.43	43.0	1.0%	0	$0	0		41,447	$7,866,273,265	609	$135,568,568	3,014	$3,285,025,446	7	$7,694,435	1619.2	361.2	331.0	926.9	4	0
	Broadview town	0.00	0.2	0.0%	0	$0	0		79	$9,621,070	0		10	$2,904,982	0						0	0
	Laurel city	0.00	2.1	0.0%	0	$0	0		2,701	$394,711,073	0		187	$100,223,386	0						0	0
	Balance of Yellowstone County	0.98	2,601.4		19	$148,531,721	0	$0	14,626	$2,691,371,419	2	$1,085,140	2,218	$1,110,937,825	0	$0	4.9	1.1	0.8	2.9	6	0

APPENDIX B-10. CRITICAL FACILITIES IN LANDSLIDE HAZARD AREA
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Madison	BIG SKY	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Big Sky Translator	Andesite Peak - 45 16' 25	45.278042	-111.450095	$30,000
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM Pt. 6 (Top of Snowbowl)	TV Mountain Top of Snowbowl	47.017444	-114.013947	$430,438
Missoula	Missoula	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BOZEMAN	KUSM TV Transmitter Site-TV Mountain	Point 6 Road	47.017111	-114.014598	$26,461
Missoula	MISSOULA	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	Seismograph Station (Pattee Canyon)	Pattee Canyon Rd.	46.802209	-113.973200	$22,064

APPENDIX B-10. COUNTY PERCENT EXPOSURE RANKING - LANDSLIDE									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	County	Census 2010	2016 Est	% Population Change	Building Permits	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
1	4	Garfield County	1,206	1,310	7.94%	0	$12,546,040	9.04%	0.72%
2	6	Valley County	7,369	7,539	2.25%	4	$31,887,316	5.55%	0.13%
3	4	McCone County	1,734	1,700	-2.00%	0	$3,268,400	2.58%	-0.05%
4	3	Madison County	7,691	7,924	2.94%	7	$17,885,261	1.53%	0.04%
5	3	Gallatin County	89,513	104,502	14.34%	1,550	$211,158,309	1.40%	0.20%
6	5	Yellowstone County	147,972	158,437	6.61%	1,198	$144,348,143	0.93%	0.06%
7	1	Mineral County	4,223	4,184	-0.93%	1	$2,387,090	0.83%	-0.01%
8	6	Fergus County	11,586	11,413	-1.52%	1	$6,360,078	0.66%	-0.01%
9	3	Sweet Grass County	3,651	3,623	-0.77%	1	$3,421,782	0.53%	0.00%
10	3	Beaverhead County	9,246	9,401	1.65%	3	$4,399,860	0.50%	0.01%
11	6	Judith Basin County	2,072	1,940	-6.80%	NA	$613,098	0.33%	-0.02%
12	1	Sanders County	11,413	11,534	1.05%	0	$2,874,790	0.32%	0.00%
13	1	Missoula County	109,299	116,130	5.88%	930	$10,431,716	0.26%	0.02%
14	4	Carter County	1,160	1,203	3.57%	1	$335,344	0.24%	0.01%
15	1	Granite County	3,079	3,368	8.58%	NA	$736,894	0.20%	0.02%
15	1	Lincoln County	19,687	19,259	-2.22%	8	$4,959,848	0.20%	0.00%
16	3	Park County	15,636	16,114	2.97%	44	$2,781,370	0.14%	0.00%
17	2	Teton County	6,073	6,056	-0.28%	1	$583,040	0.12%	0.00%
18	2	Cascade County	81,327	81,755	0.52%	242	$6,999,056	0.10%	0.00%
18	2	Chouteau County	5,813	5,759	-0.94%	10	$393,326	0.10%	0.00%
19	1	Ravalli County	40,212	42,088	4.46%	20	$3,965,767	0.09%	0.00%
20	1	Deer Lodge County	9,298	9,085	-2.34%	17	$423,260	0.08%	0.00%
21	5	Stillwater County	9,117	9,406	3.07%	0	$334,906	0.05%	0.00%
22	2	Hill County	16,096	16,542	2.70%	4	$548,110	0.04%	0.00%
22	6	Phillips County	4,253	4,133	-2.90%	2	$164,840	0.04%	0.00%
22	5	Big Horn County	12,865	13,343	3.58%	2	$218,857	0.04%	0.00%
22	3	Jefferson County	11,406	11,853	3.77%	5	$271,435	0.03%	0.00%
23	2	Toole County	5,324	4,977	-6.97%	2	$96,040	0.03%	0.00%
23	4	Fallon County	2,890	3,120	7.37%	35	$72,250	0.03%	0.00%
24	1	Silver Bow County	34,200	34,553	1.02%	86	$509,163	0.02%	0.00%
24	3	Lewis and Clark County	63,395	67,282	5.78%	176	$1,404,844	0.02%	0.00%
25	1	Flathead County	90,928	98,082	7.29%	316	$1,153,142	0.01%	0.00%
26	2	Blaine County	6,491	6,601	1.67%	0	$0	0.00%	0.00%
26	3	Broadwater County	5,612	5,747	2.35%	0	$0	0.00%	0.00%
26	5	Carbon County	10,078	10,460	3.65%	8	$0	0.00%	0.00%
26	4	Custer County	11,699	11,924	1.89%	0	$0	0.00%	0.00%
26	6	Daniels County	1,751	1,755	0.23%	0	$0	0.00%	0.00%
26	4	Dawson County	8,966	9,327	3.87%	1	$0	0.00%	0.00%
26	2	Glacier County	13,399	13,694	2.15%	0	$0	0.00%	0.00%
26	5	Golden Valley County	884	831	-6.38%	NA	$0	0.00%	0.00%
26	1	Lake County	28,746	29,758	3.40%	44	$0	0.00%	0.00%
26	2	Liberty County	2,339	2,409	2.91%	NA	$0	0.00%	0.00%
26	3	Meagher County	1,891	1,827	-3.50%	NA	$0	0.00%	0.00%
26	5	Musselshell County	4,538	4,589	1.11%	1	$0	0.00%	0.00%
26	6	Petroleum County	494	489	-1.02%	NA	$0	0.00%	0.00%
26	2	Pondera County	6,153	6,084	-1.13%	1	$0	0.00%	0.00%
26	4	Powder River County	1,743	1,746	0.17%	NA	$0	0.00%	0.00%
26	1	Powell County	7,027	6,858	-2.46%	32	$0	0.00%	0.00%
26	4	Prairie County	1,179	1,182	0.25%	NA	$0	0.00%	0.00%
26	4	Richland County	9,746	11,482	15.12%	16	$0	0.00%	0.00%
26	6	Roosevelt County	10,425	11,305	7.78%	1	$0	0.00%	0.00%
26	5	Rosebud County	9,233	9,287	0.58%	1	$0	0.00%	0.00%
26	6	Sheridan County	3,384	3,648	7.24%	2	$0	0.00%	0.00%
26	5	Treasure County	718	692	-3.76%	0	$0	0.00%	0.00%
26	5	Wheatland County	2,168	2,117	-2.41%	NA	$0	0.00%	0.00%
26	4	Wibaux County	1,017	1,093	6.95%	8	$0	0.00%	0.00%

APPENDIX B-10. COUNTY PERCENT EXPOSURE X POPULATION CHANGE RANKING - LANDSLIDE									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	County	Census 2010	2016 Est	% Population Change	Building Permits	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
1	4	Garfield County	1,206	1,310	7.94%	0	$12,546,040	9.04%	0.72%
2	3	Gallatin County	89,513	104,502	14.34%	1,550	$211,158,309	1.40%	0.20%
3	6	Valley County	7,369	7,539	2.25%	4	$31,887,316	5.55%	0.13%
4	5	Yellowstone County	147,972	158,437	6.61%	1,198	$144,348,143	0.93%	0.06%
5	3	Madison County	7,691	7,924	2.94%	7	$17,885,261	1.53%	0.04%
6	1	Granite County	3,079	3,368	8.58%	NA	$736,894	0.20%	0.02%
6	1	Missoula County	109,299	116,130	5.88%	930	$10,431,716	0.26%	0.02%
7	4	Carter County	1,160	1,203	3.57%	1	$335,344	0.24%	0.01%
7	3	Beaverhead County	9,246	9,401	1.65%	3	$4,399,860	0.50%	0.01%
8	3	Park County	15,636	16,114	2.97%	44	$2,781,370	0.14%	0.00%
8	1	Ravalli County	40,212	42,088	4.46%	20	$3,965,767	0.09%	0.00%
8	1	Sanders County	11,413	11,534	1.05%	0	$2,874,790	0.32%	0.00%
8	4	Fallon County	2,890	3,120	7.37%	35	$72,250	0.03%	0.00%
8	5	Stillwater County	9,117	9,406	3.07%	0	$334,906	0.05%	0.00%
8	5	Big Horn County	12,865	13,343	3.58%	2	$218,857	0.04%	0.00%
8	3	Lewis and Clark County	63,395	67,282	5.78%	176	$1,404,844	0.02%	0.00%
8	2	Hill County	16,096	16,542	2.70%	4	$548,110	0.04%	0.00%
8	3	Jefferson County	11,406	11,853	3.77%	5	$271,435	0.03%	0.00%
8	1	Flathead County	90,928	98,082	7.29%	316	$1,153,142	0.01%	0.00%
8	2	Cascade County	81,327	81,755	0.52%	242	$6,999,056	0.10%	0.00%
8	1	Silver Bow County	34,200	34,553	1.02%	86	$509,163	0.02%	0.00%
8	2	Blaine County	6,491	6,601	1.67%	0	$0	0.00%	0.00%
8	3	Broadwater County	5,612	5,747	2.35%	0	$0	0.00%	0.00%
8	5	Carbon County	10,078	10,460	3.65%	8	$0	0.00%	0.00%
8	4	Custer County	11,699	11,924	1.89%	0	$0	0.00%	0.00%
8	6	Daniels County	1,751	1,755	0.23%	0	$0	0.00%	0.00%
8	4	Dawson County	8,966	9,327	3.87%	1	$0	0.00%	0.00%
8	2	Glacier County	13,399	13,694	2.15%	0	$0	0.00%	0.00%
8	5	Golden Valley County	884	831	-6.38%	NA	$0	0.00%	0.00%
8	1	Lake County	28,746	29,758	3.40%	44	$0	0.00%	0.00%
8	2	Liberty County	2,339	2,409	2.91%	NA	$0	0.00%	0.00%
8	3	Meagher County	1,891	1,827	-3.50%	NA	$0	0.00%	0.00%
8	5	Musselshell County	4,538	4,589	1.11%	1	$0	0.00%	0.00%
8	6	Petroleum County	494	489	-1.02%	NA	$0	0.00%	0.00%
8	2	Pondera County	6,153	6,084	-1.13%	1	$0	0.00%	0.00%
8	4	Powder River County	1,743	1,746	0.17%	NA	$0	0.00%	0.00%
8	1	Powell County	7,027	6,858	-2.46%	32	$0	0.00%	0.00%
8	4	Prairie County	1,179	1,182	0.25%	NA	$0	0.00%	0.00%
8	4	Richland County	9,746	11,482	15.12%	16	$0	0.00%	0.00%
8	6	Roosevelt County	10,425	11,305	7.78%	1	$0	0.00%	0.00%
8	5	Rosebud County	9,233	9,287	0.58%	1	$0	0.00%	0.00%
8	6	Sheridan County	3,384	3,648	7.24%	2	$0	0.00%	0.00%
8	5	Treasure County	718	692	-3.76%	0	$0	0.00%	0.00%
8	5	Wheatland County	2,168	2,117	-2.41%	NA	$0	0.00%	0.00%
8	4	Wibaux County	1,017	1,093	6.95%	8	$0	0.00%	0.00%
8	2	Teton County	6,073	6,056	-0.28%	1	$583,040	0.12%	0.00%
8	2	Chouteau County	5,813	5,759	-0.94%	10	$393,326	0.10%	0.00%
8	6	Phillips County	4,253	4,133	-2.90%	2	$164,840	0.04%	0.00%
8	2	Toole County	5,324	4,977	-6.97%	2	$96,040	0.03%	0.00%
8	1	Deer Lodge County	9,298	9,085	-2.34%	17	$423,260	0.08%	0.00%
8	3	Sweet Grass County	3,651	3,623	-0.77%	1	$3,421,782	0.53%	0.00%
8	1	Lincoln County	19,687	19,259	-2.22%	8	$4,959,848	0.20%	0.00%
9	1	Mineral County	4,223	4,184	-0.93%	1	$2,387,090	0.83%	-0.01%
9	6	Fergus County	11,586	11,413	-1.52%	1	$6,360,078	0.66%	-0.01%
10	6	Judith Basin County	2,072	1,940	-6.80%	NA	$613,098	0.33%	-0.02%
11	4	McCone County	1,734	1,700	-2.00%	0	$3,268,400	2.58%	-0.05%

APPENDIX B-10. CITY-TOWN PERCENT EXPOSURE RANKING - LANDSLIDE									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	City / Town	County	Census 2010	2016 Est	% Population Change	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
1	5	Billings city	Yellowstone County	104,170	110,323	5.58%	$143,263,003	1.28%	0.07%
2	1	Walkerville town	Silver Bow County	675	700	3.57%	$509,163	0.02%	0.00%
3	1	Alberton town	Mineral County	420	417	-0.72%	$0	0.00%	0.00%
3	6	Bainville town	Roosevelt County	208	314	33.76%	$0	0.00%	0.00%
3	4	Baker city	Fallon County	1,741	1,990	12.51%	$0	0.00%	0.00%
3	5	Bearcreek town	Carbon County	79	84	5.95%	$0	0.00%	0.00%
3	3	Belgrade city	Gallatin County	7,389	8,254	10.48%	$0	0.00%	0.00%
3	2	Belt city	Cascade County	597	588	-1.53%	$0	0.00%	0.00%
3	2	Big Sandy town	Chouteau County	598	590	-1.36%	$0	0.00%	0.00%
3	3	Big Timber city	Sweet Grass County	1,641	1,645	0.24%	$0	0.00%	0.00%
3	3	Boulder town	Jefferson County	1,183	1,230	3.82%	$0	0.00%	0.00%
3	3	Bozeman city	Gallatin County	37,280	45,250	17.61%	$0	0.00%	0.00%
3	5	Bridger town	Carbon County	708	732	3.28%	$0	0.00%	0.00%
3	4	Broadus town	Powder River County	468	481	2.70%	$0	0.00%	0.00%
3	5	Broadview town	Yellowstone County	192	193	0.52%	$0	0.00%	0.00%
3	6	Brockton town	Roosevelt County	255	243	-4.94%	$0	0.00%	0.00%
3	2	Browning town	Glacier County	1,016	1,031	1.45%	$0	0.00%	0.00%
3	2	Cascade town	Cascade County	685	688	0.44%	$0	0.00%	0.00%
3	2	Chester town	Liberty County	847	884	4.19%	$0	0.00%	0.00%
3	2	Chinook city	Blaine County	1,203	1,233	2.43%	$0	0.00%	0.00%
3	2	Choteau city	Teton County	1,684	1,686	0.12%	$0	0.00%	0.00%
3	4	Circle town	McCone County	615	619	0.65%	$0	0.00%	0.00%
3	3	Clyde Park town	Park County	288	309	6.80%	$0	0.00%	0.00%
3	5	Colstrip city	Rosebud County	2,214	2,311	4.20%	$0	0.00%	0.00%
3	1	Columbia Falls city	Flathead County	4,688	5,241	10.55%	$0	0.00%	0.00%
3	5	Columbus town	Stillwater County	1,893	2,028	6.66%	$0	0.00%	0.00%
3	2	Conrad city	Pondera County	2,570	2,550	-0.78%	$0	0.00%	0.00%
3	6	Culbertson town	Roosevelt County	714	804	11.19%	$0	0.00%	0.00%
3	2	Cut Bank city	Glacier County	2,869	3,012	4.75%	$0	0.00%	0.00%
3	1	Darby town	Ravalli County	720	763	5.64%	$0	0.00%	0.00%
3	1	Deer Lodge city	Powell County	3,111	2,994	-3.91%	$0	0.00%	0.00%
3	6	Denton town	Fergus County	255	247	-3.24%	$0	0.00%	0.00%
3	3	Dillon city	Beaverhead County	4,134	4,257	2.89%	$0	0.00%	0.00%
3	6	Dodson town	Phillips County	124	124	0.00%	$0	0.00%	0.00%
3	1	Drummond town	Granite County	309	348	11.21%	$0	0.00%	0.00%
3	2	Dutton town	Teton County	316	308	-2.60%	$0	0.00%	0.00%
3	3	East Helena town	Lewis and Clark County	1,984	2,074	4.34%	$0	0.00%	0.00%
3	4	Ekalaka town	Carter County	332	353	5.95%	$0	0.00%	0.00%
3	3	Ennis town	Madison County	838	890	5.84%	$0	0.00%	0.00%
3	1	Eureka town	Lincoln County	1,037	1,086	4.51%	$0	0.00%	0.00%
3	2	Fairfield town	Teton County	708	922	23.21%	$0	0.00%	0.00%
3	4	Fairview town	Richland County	840	922	8.89%	$0	0.00%	0.00%
3	6	Flaxville town	Daniels County	71	71	0.00%	$0	0.00%	0.00%
3	5	Forsyth city	Rosebud County	1,777	1,869	4.92%	$0	0.00%	0.00%
3	2	Fort Benton city	Chouteau County	1,464	1,456	-0.55%	$0	0.00%	0.00%
3	6	Fort Peck town	Valley County	233	247	5.67%	$0	0.00%	0.00%
3	6	Froid town	Roosevelt County	185	201	7.96%	$0	0.00%	0.00%
3	5	Fromberg town	Carbon County	438	445	1.57%	$0	0.00%	0.00%
3	2	Geraldine town	Chouteau County	261	261	0.00%	$0	0.00%	0.00%
3	6	Glasgow city	Valley County	3,250	3,364	3.39%	$0	0.00%	0.00%
3	4	Glendive city	Dawson County	4,935	5,332	7.45%	$0	0.00%	0.00%
3	6	Grass Range town	Fergus County	110	108	-1.85%	$0	0.00%	0.00%
3	2	Great Falls city	Cascade County	58,505	59,178	1.14%	$0	0.00%	0.00%
3	1	Hamilton city	Ravalli County	4,348	4,674	6.97%	$0	0.00%	0.00%
3	5	Hardin city	Big Horn County	3,505	3,829	8.46%	$0	0.00%	0.00%
3	2	Harlem city	Blaine County	808	823	1.82%	$0	0.00%	0.00%
3	5	Harlowton city	Wheatland County	997	984	-1.32%	$0	0.00%	0.00%
3	2	Havre city	Hill County	9,310	9,846	5.44%	$0	0.00%	0.00%
3	3	Helena city	Lewis and Clark County	28,190	31,169	9.56%	$0	0.00%	0.00%
3	2	Hingham town	Hill County	118	122	3.28%	$0	0.00%	0.00%
3	6	Hobson town	Judith Basin County	215	218	1.38%	$0	0.00%	0.00%
3	1	Hot Springs town	Sanders County	544	557	2.33%	$0	0.00%	0.00%
3	5	Hysham town	Treasure County	312	301	-3.65%	$0	0.00%	0.00%
3	4	Ismay town	Custer County	19	21	9.52%	$0	0.00%	0.00%
3	5	Joliet town	Carbon County	595	640	7.03%	$0	0.00%	0.00%
3	4	Jordan town	Garfield County	343	399	14.04%	$0	0.00%	0.00%
3	5	Judith Gap city	Wheatland County	126	123	-2.44%	$0	0.00%	0.00%
3	1	Kalispell city	Flathead County	19,927	22,761	12.45%	$0	0.00%	0.00%
3	2	Kevin town	Toole County	154	138	-11.59%	$0	0.00%	0.00%
3	5	Laurel city	Yellowstone County	6,718	6,865	2.14%	$0	0.00%	0.00%
3	5	Lavina town	Golden Valley County	187	173	-8.09%	$0	0.00%	0.00%
3	6	Lewistown city	Fergus County	5,901	5,870	-0.53%	$0	0.00%	0.00%
3	1	Libby city	Lincoln County	2,628	2,678	1.87%	$0	0.00%	0.00%
3	3	Lima town	Beaverhead County	221	224	1.34%	$0	0.00%	0.00%
3	3	Livingston city	Park County	7,044	7,401	4.82%	$0	0.00%	0.00%
3	5	Lodge Grass town	Big Horn County	428	446	4.04%	$0	0.00%	0.00%
3	6	Malta city	Phillips County	1,997	1,950	-2.41%	$0	0.00%	0.00%
3	3	Manhattan town	Gallatin County	1,520	1,691	10.11%	$0	0.00%	0.00%
3	6	Medicine Lake town	Sheridan County	225	241	6.64%	$0	0.00%	0.00%
3	5	Melstone town	Musselshell County	96	107	10.28%	$0	0.00%	0.00%
3	4	Miles City city	Custer County	8,410	8,647	2.74%	$0	0.00%	0.00%

APPENDIX B-10. CITY-TOWN PERCENT EXPOSURE RANKING - LANDSLIDE									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	**DES District**	**City / Town**	**County**	**Census 2010**	**2016 Est**	**% Population Change**	**Total Exposure (Residential + Other)**	**% Hazard Exposure / Total Exposure**	**Vulnerability Factor (% Exposure x % Population Change)**
3	1	Missoula city	Missoula County	66,788	72,364	7.71%	$0	0.00%	0.00%
3	6	Moore town	Fergus County	193	198	2.53%	$0	0.00%	0.00%
3	6	Nashua town	Valley County	290	290	0.00%	$0	0.00%	0.00%
3	2	Neihart town	Cascade County	51	50	-2.00%	$0	0.00%	0.00%
3	6	Opheim town	Valley County	85	290	70.69%	$0	0.00%	0.00%
3	6	Outlook town	Sheridan County	47	52	9.62%	$0	0.00%	0.00%
3	1	Philipsburg town	Granite County	820	920	10.87%	$0	0.00%	0.00%
3	1	Pinesdale town	Ravalli County	917	967	5.17%	$0	0.00%	0.00%
3	1	Plains town	Sanders County	1,048	1,071	2.15%	$0	0.00%	0.00%
3	6	Plentywood city	Sheridan County	1,734	1,904	8.93%	$0	0.00%	0.00%
3	4	Plevna town	Fallon County	162	176	7.95%	$0	0.00%	0.00%
3	1	Polson city	Lake County	4,488	4,777	6.05%	$0	0.00%	0.00%
3	6	Poplar city	Roosevelt County	810	854	5.15%	$0	0.00%	0.00%
3	5	Red Lodge city	Carbon County	2,125	2,237	5.01%	$0	0.00%	0.00%
3	1	Rexford town	Lincoln County	105	151	30.46%	$0	0.00%	0.00%
3	4	Richey town	Dawson County	177	187	5.35%	$0	0.00%	0.00%
3	1	Ronan city	Lake County	1,871	2,016	7.19%	$0	0.00%	0.00%
3	5	Roundup city	Musselshell County	1,788	1,840	2.83%	$0	0.00%	0.00%
3	5	Ryegate town	Golden Valley County	245	236	-3.81%	$0	0.00%	0.00%
3	6	Saco town	Phillips County	197	197	0.00%	$0	0.00%	0.00%
3	6	Scobey city	Daniels County	1,017	1,032	1.45%	$0	0.00%	0.00%
3	2	Shelby city	Toole County	3,376	3,216	-4.98%	$0	0.00%	0.00%
3	3	Sheridan town	Madison County	642	677	5.17%	$0	0.00%	0.00%
3	4	Sidney city	Richland County	5,191	6,566	20.94%	$0	0.00%	0.00%
3	1	St. Ignatius town	Lake County	842	824	-2.18%	$0	0.00%	0.00%
3	6	Stanford town	Judith Basin County	401	384	-4.43%	$0	0.00%	0.00%
3	1	Stevensville town	Ravalli County	1,809	1,963	7.85%	$0	0.00%	0.00%
3	2	Sunburst town	Toole County	375	338	-10.95%	$0	0.00%	0.00%
3	1	Superior town	Mineral County	812	826	1.69%	$0	0.00%	0.00%
3	4	Terry town	Prairie County	605	609	0.66%	$0	0.00%	0.00%
3	1	Thompson Falls city	Sanders County	1,313	1,356	3.17%	$0	0.00%	0.00%
3	3	Three Forks city	Gallatin County	1,869	1,944	3.86%	$0	0.00%	0.00%
3	3	Townsend city	Broadwater County	1,878	1,978	5.06%	$0	0.00%	0.00%
3	1	Troy city	Lincoln County	938	890	-5.39%	$0	0.00%	0.00%
3	3	Twin Bridges town	Madison County	375	395	5.06%	$0	0.00%	0.00%
3	2	Valier town	Pondera County	509	498	-2.21%	$0	0.00%	0.00%
3	3	Virginia City town	Madison County	190	198	4.04%	$0	0.00%	0.00%
3	3	West Yellowstone town	Gallatin County	1,271	1,353	6.06%	$0	0.00%	0.00%
3	6	Westby town	Sheridan County	168	174	3.45%	$0	0.00%	0.00%
3	3	White Sulphur Springs city	Meagher County	939	908	-3.41%	$0	0.00%	0.00%
3	1	Whitefish city	Flathead County	6,357	7,279	12.67%	$0	0.00%	0.00%
3	3	Whitehall town	Jefferson County	1,038	1,114	6.82%	$0	0.00%	0.00%
3	4	Wibaux town	Wibaux County	589	649	9.24%	$0	0.00%	0.00%
3	6	Winifred town	Fergus County	208	206	-0.97%	$0	0.00%	0.00%
3	6	Winnett town	Petroleum County	182	185	1.62%	$0	0.00%	0.00%
3	6	Wolf Point city	Roosevelt County	2,621	2,806	6.59%	$0	0.00%	0.00%

APPENDIX B-10. CITY-TOWN PERCENT EXPOSURE X POPULATION CHANGE RANKING - LANDSLIDE									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	City / Town	County	Census 2010	2016 Est	% Population Change	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
1	5	Billings city	Yellowstone County	104,170	110,323	5.58%	$143,263,003	1.28%	0.07%
2	1	Walkerville town	Silver Bow County	675	700	3.57%	$509,163	0.02%	0.00%
2	1	Alberton town	Mineral County	420	417	-0.72%	$0	0.00%	0.00%
2	6	Bainville town	Roosevelt County	208	314	33.76%	$0	0.00%	0.00%
2	4	Baker city	Fallon County	1,741	1,990	12.51%	$0	0.00%	0.00%
2	5	Bearcreek town	Carbon County	79	84	5.95%	$0	0.00%	0.00%
2	3	Belgrade city	Gallatin County	7,389	8,254	10.48%	$0	0.00%	0.00%
2	2	Belt city	Cascade County	597	588	-1.53%	$0	0.00%	0.00%
2	2	Big Sandy town	Chouteau County	598	590	-1.36%	$0	0.00%	0.00%
2	3	Big Timber city	Sweet Grass County	1,641	1,645	0.24%	$0	0.00%	0.00%
2	3	Boulder town	Jefferson County	1,183	1,230	3.82%	$0	0.00%	0.00%
2	3	Bozeman city	Gallatin County	37,280	45,250	17.61%	$0	0.00%	0.00%
2	5	Bridger town	Carbon County	708	732	3.28%	$0	0.00%	0.00%
2	4	Broadus town	Powder River County	468	481	2.70%	$0	0.00%	0.00%
2	5	Broadview town	Yellowstone County	192	193	0.52%	$0	0.00%	0.00%
2	6	Brockton town	Roosevelt County	255	243	-4.94%	$0	0.00%	0.00%
2	2	Browning town	Glacier County	1,016	1,031	1.45%	$0	0.00%	0.00%
2	2	Cascade town	Cascade County	685	688	0.44%	$0	0.00%	0.00%
2	2	Chester town	Liberty County	847	884	4.19%	$0	0.00%	0.00%
2	2	Chinook city	Blaine County	1,203	1,233	2.43%	$0	0.00%	0.00%
2	2	Choteau city	Teton County	1,684	1,686	0.12%	$0	0.00%	0.00%
2	4	Circle town	McCone County	615	619	0.65%	$0	0.00%	0.00%
2	3	Clyde Park town	Park County	288	309	6.80%	$0	0.00%	0.00%
2	5	Colstrip city	Rosebud County	2,214	2,311	4.20%	$0	0.00%	0.00%
2	1	Columbia Falls city	Flathead County	4,688	5,241	10.55%	$0	0.00%	0.00%
2	5	Columbus town	Stillwater County	1,893	2,028	6.66%	$0	0.00%	0.00%
2	2	Conrad city	Pondera County	2,570	2,550	-0.78%	$0	0.00%	0.00%
2	6	Culbertson town	Roosevelt County	714	804	11.19%	$0	0.00%	0.00%
2	2	Cut Bank city	Glacier County	2,869	3,012	4.75%	$0	0.00%	0.00%
2	1	Darby town	Ravalli County	720	763	5.64%	$0	0.00%	0.00%
2	1	Deer Lodge city	Powell County	3,111	2,994	-3.91%	$0	0.00%	0.00%
2	6	Denton town	Fergus County	255	247	-3.24%	$0	0.00%	0.00%
2	3	Dillon city	Beaverhead County	4,134	4,257	2.89%	$0	0.00%	0.00%
2	6	Dodson town	Phillips County	124	124	0.00%	$0	0.00%	0.00%
2	1	Drummond town	Granite County	309	348	11.21%	$0	0.00%	0.00%
2	2	Dutton town	Teton County	316	308	-2.60%	$0	0.00%	0.00%
2	3	East Helena town	Lewis and Clark County	1,984	2,074	4.34%	$0	0.00%	0.00%
2	4	Ekalaka town	Carter County	332	353	5.95%	$0	0.00%	0.00%
2	3	Ennis town	Madison County	838	890	5.84%	$0	0.00%	0.00%
2	1	Eureka town	Lincoln County	1,037	1,086	4.51%	$0	0.00%	0.00%
2	2	Fairfield town	Teton County	708	922	23.21%	$0	0.00%	0.00%
2	4	Fairview town	Richland County	840	922	8.89%	$0	0.00%	0.00%
2	6	Flaxville town	Daniels County	71	71	0.00%	$0	0.00%	0.00%
2	5	Forsyth city	Rosebud County	1,777	1,869	4.92%	$0	0.00%	0.00%
2	2	Fort Benton city	Chouteau County	1,464	1,456	-0.55%	$0	0.00%	0.00%
2	6	Fort Peck town	Valley County	233	247	5.67%	$0	0.00%	0.00%
2	6	Froid town	Roosevelt County	185	201	7.96%	$0	0.00%	0.00%
2	5	Fromberg town	Carbon County	438	445	1.57%	$0	0.00%	0.00%
2	2	Geraldine town	Chouteau County	261	261	0.00%	$0	0.00%	0.00%
2	6	Glasgow city	Valley County	3,250	3,364	3.39%	$0	0.00%	0.00%
2	4	Glendive city	Dawson County	4,935	5,332	7.45%	$0	0.00%	0.00%
2	6	Grass Range town	Fergus County	110	108	-1.85%	$0	0.00%	0.00%
2	2	Great Falls city	Cascade County	58,505	59,178	1.14%	$0	0.00%	0.00%
2	1	Hamilton city	Ravalli County	4,348	4,674	6.97%	$0	0.00%	0.00%
2	5	Hardin city	Big Horn County	3,505	3,829	8.46%	$0	0.00%	0.00%
2	2	Harlem city	Blaine County	808	823	1.82%	$0	0.00%	0.00%
2	5	Harlowton city	Wheatland County	997	984	-1.32%	$0	0.00%	0.00%
2	2	Havre city	Hill County	9,310	9,846	5.44%	$0	0.00%	0.00%
2	3	Helena city	Lewis and Clark County	28,190	31,169	9.56%	$0	0.00%	0.00%
2	2	Hingham town	Hill County	118	122	3.28%	$0	0.00%	0.00%
2	6	Hobson town	Judith Basin County	215	218	1.38%	$0	0.00%	0.00%
2	1	Hot Springs town	Sanders County	544	557	2.33%	$0	0.00%	0.00%
2	5	Hysham town	Treasure County	312	301	-3.65%	$0	0.00%	0.00%
2	4	Ismay town	Custer County	19	21	9.52%	$0	0.00%	0.00%
2	5	Joliet town	Carbon County	595	640	7.03%	$0	0.00%	0.00%
2	4	Jordan town	Garfield County	343	399	14.04%	$0	0.00%	0.00%
2	5	Judith Gap city	Wheatland County	126	123	-2.44%	$0	0.00%	0.00%
2	1	Kalispell city	Flathead County	19,927	22,761	12.45%	$0	0.00%	0.00%
2	2	Kevin town	Toole County	154	138	-11.59%	$0	0.00%	0.00%
2	5	Laurel city	Yellowstone County	6,718	6,865	2.14%	$0	0.00%	0.00%
2	5	Lavina town	Golden Valley County	187	173	-8.09%	$0	0.00%	0.00%
2	6	Lewistown city	Fergus County	5,901	5,870	-0.53%	$0	0.00%	0.00%
2	1	Libby city	Lincoln County	2,628	2,678	1.87%	$0	0.00%	0.00%
2	3	Lima town	Beaverhead County	221	224	1.34%	$0	0.00%	0.00%
2	3	Livingston city	Park County	7,044	7,401	4.82%	$0	0.00%	0.00%
2	5	Lodge Grass town	Big Horn County	428	446	4.04%	$0	0.00%	0.00%
2	6	Malta city	Phillips County	1,997	1,950	-2.41%	$0	0.00%	0.00%
2	3	Manhattan town	Gallatin County	1,520	1,691	10.11%	$0	0.00%	0.00%
2	6	Medicine Lake town	Sheridan County	225	241	6.64%	$0	0.00%	0.00%
2	5	Melstone town	Musselshell County	96	107	10.28%	$0	0.00%	0.00%
2	4	Miles City city	Custer County	8,410	8,647	2.74%	$0	0.00%	0.00%
2	1	Missoula city	Missoula County	66,788	72,364	7.71%	$0	0.00%	0.00%
2	6	Moore town	Fergus County	193	198	2.53%	$0	0.00%	0.00%

APPENDIX B-10. CITY-TOWN PERCENT EXPOSURE X POPULATION CHANGE RANKING - LANDSLIDE									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	City / Town	County	Census 2010	2016 Est	% Population Change	Total Exposure (Residential + Other)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
2	6	Nashua town	Valley County	290	290	0.00%	$0	0.00%	0.00%
2	2	Neihart town	Cascade County	51	50	-2.00%	$0	0.00%	0.00%
2	6	Opheim town	Valley County	85	290	70.69%	$0	0.00%	0.00%
2	6	Outlook town	Sheridan County	47	52	9.62%	$0	0.00%	0.00%
2	1	Philipsburg town	Granite County	820	920	10.87%	$0	0.00%	0.00%
2	1	Pinesdale town	Ravalli County	917	967	5.17%	$0	0.00%	0.00%
2	1	Plains town	Sanders County	1,048	1,071	2.15%	$0	0.00%	0.00%
2	6	Plentywood city	Sheridan County	1,734	1,904	8.93%	$0	0.00%	0.00%
2	4	Plevna town	Fallon County	162	176	7.95%	$0	0.00%	0.00%
2	1	Polson city	Lake County	4,488	4,777	6.05%	$0	0.00%	0.00%
2	6	Poplar city	Roosevelt County	810	854	5.15%	$0	0.00%	0.00%
2	5	Red Lodge city	Carbon County	2,125	2,237	5.01%	$0	0.00%	0.00%
2	1	Rexford town	Lincoln County	105	151	30.46%	$0	0.00%	0.00%
2	4	Richey town	Dawson County	177	187	5.35%	$0	0.00%	0.00%
2	1	Ronan city	Lake County	1,871	2,016	7.19%	$0	0.00%	0.00%
2	5	Roundup city	Musselshell County	1,788	1,840	2.83%	$0	0.00%	0.00%
2	5	Ryegate town	Golden Valley County	245	236	-3.81%	$0	0.00%	0.00%
2	6	Saco town	Phillips County	197	197	0.00%	$0	0.00%	0.00%
2	6	Scobey city	Daniels County	1,017	1,032	1.45%	$0	0.00%	0.00%
2	2	Shelby city	Toole County	3,376	3,216	-4.98%	$0	0.00%	0.00%
2	3	Sheridan town	Madison County	642	677	5.17%	$0	0.00%	0.00%
2	4	Sidney city	Richland County	5,191	6,566	20.94%	$0	0.00%	0.00%
2	1	St. Ignatius town	Lake County	842	824	-2.18%	$0	0.00%	0.00%
2	6	Stanford town	Judith Basin County	401	384	-4.43%	$0	0.00%	0.00%
2	1	Stevensville town	Ravalli County	1,809	1,963	7.85%	$0	0.00%	0.00%
2	2	Sunburst town	Toole County	375	338	-10.95%	$0	0.00%	0.00%
2	1	Superior town	Mineral County	812	826	1.69%	$0	0.00%	0.00%
2	4	Terry town	Prairie County	605	609	0.66%	$0	0.00%	0.00%
2	1	Thompson Falls city	Sanders County	1,313	1,356	3.17%	$0	0.00%	0.00%
2	3	Three Forks city	Gallatin County	1,869	1,944	3.86%	$0	0.00%	0.00%
2	3	Townsend city	Broadwater County	1,878	1,978	5.06%	$0	0.00%	0.00%
2	1	Troy city	Lincoln County	938	890	-5.39%	$0	0.00%	0.00%
2	3	Twin Bridges town	Madison County	375	395	5.06%	$0	0.00%	0.00%
2	2	Valier town	Pondera County	509	498	-2.21%	$0	0.00%	0.00%
2	3	Virginia City town	Madison County	190	198	4.04%	$0	0.00%	0.00%
2	3	West Yellowstone town	Gallatin County	1,271	1,353	6.06%	$0	0.00%	0.00%
2	6	Westby town	Sheridan County	168	174	3.45%	$0	0.00%	0.00%
2	3	White Sulphur Springs city	Meagher County	939	908	-3.41%	$0	0.00%	0.00%
2	1	Whitefish city	Flathead County	6,357	7,279	12.67%	$0	0.00%	0.00%
2	3	Whitehall town	Jefferson County	1,038	1,114	6.82%	$0	0.00%	0.00%
2	4	Wibaux town	Wibaux County	589	649	9.24%	$0	0.00%	0.00%
2	6	Winifred town	Fergus County	208	206	-0.97%	$0	0.00%	0.00%
2	6	Winnett town	Petroleum County	182	185	1.62%	$0	0.00%	0.00%
2	6	Wolf Point city	Roosevelt County	2,621	2,806	6.59%	$0	0.00%	0.00%

APPENDIX B-10. LOCAL PLAN EXPOSURE SUMMARY - LANDSLIDE & AVALANCHE

DES District	Geography	Census 2010	Census 2016 Estimate	% Change 2010 to 2016	# Building Permits (2016)	Original Local Plan FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan	Estimated Societal Loss/ Exposure from Local Plan	Estimated Economic Loss from Local Plan	Ref	Local Plan Update #1 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #1	Estimated Societal Loss/ Exposure from Local Plan Update #1	Estimated Economic Loss from Local Plan Update #1	Ref	Local Plan Update #2 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #2	Estimated Societal Loss/ Exposure from Local Plan Update #2	Estimated Economic Loss from Local Plan Update #2	Ref
	Montana	989,415	1,042,520	5.09%	4,781															
3	**Beaverhead County**	9,246	9,401	1.65%	3	2004	NA	NA	NA	3	2010				3					
	Dillon city	4,134	4,257	2.89%																
	Lima town	221	224	1.34%																
	Balance of Beaverhead County	4,891	4,920	0.59%																
5	**Big Horn County**	12,865	13,343	3.58%	2	2006	NA	NA	NA	2	2012	NA	NA	NA	2					
	Hardin city	3,505	3,829	8.46%																
	Lodge Grass town	428	446	4.04%																
	Balance of Big Horn County	8,932	9,068	1.50%																
2	**Blaine County**	6,491	6,601	1.67%	0	2006				14	2012	NA	NA	NA	14					
	Chinook city	1,203	1,233	2.43%																
	Harlem city	808	823	1.82%																
	Balance of Blaine County	4,480	4,545	1.43%																
3	**Broadwater County**	5,612	5,747	2.35%	0	2004				3	2009				3	2016				14
	Townsend city	1,878	1,978	5.06%								Low	Low	Low	3		R=$0; C=$0	0	NA	14
	Balance of Broadwater County	3,734	3,769	0.93%								Low	Moderate-Low	Low	3		R=$7,739,156 C=$2,973,848	295; <18=63	NA	14
5	**Carbon County**	10,078	10,460	3.65%	8	2006	$20M	NA	High	2	2012	NA	NA	NA	2					
	Bearcreek town	79	84	5.95%																
	Bridger town	708	732	3.28%																
	Fromberg town	438	445	1.57%																
	Joliet town	595	640	7.03%																
	Red Lodge city	2,125	2,237	5.01%																
	Balance of Carbon County	6,133	6,322	2.99%																
4	**Carter County**	1,160	1,203	3.57%	1	2005					2012	Low	Low	Low	12					
	Ekalaka town	332	353	5.95%																
	Balance of Carter County	828	850	2.59%																
2	**Cascade County**	81,327	81,755	0.52%	242	2012	NA	NA	NA	14	2017				14					
	Belt city	597	588	-1.53%																
	Cascade town	685	688	0.44%																
	Great Falls city	58,505	59,178	1.14%																
	Neihart town	51	50	-2.00%																
	Balance of Cascade County	21,489	21,251	-1.12%																
2	**Chouteau County**	5,813	5,759	-0.94%	10	2010	NA	NA	NA	5	2017				5					
	Big Sandy town	598	590	-1.36%																
	Fort Benton city	1,464	1,456	-0.55%																
	Geraldine town	261	261	0.00%																
	Balance of Chouteau County	3,490	3,452	-1.10%																
4	**Custer County**	11,699	11,924	1.89%	0	2005				2	2012	NA	NA	NA	2	2017				14
	Ismay town	19	21	9.52%																
	Miles City city	8,410	8,647	2.74%																
	Balance of Custer County	3,270	3,256	-0.43%																
6	**Daniels County**	1,751	1,755	0.23%	0	2003				14	2008	NA	NA	NA	3	2016				8
	Flaxville town	71	71	0.00%											3					
	Scobey city	1,017	1,032	1.45%											3					
	Balance of Daniels County	663	652	-1.69%											3					
4	**Dawson County**	8,966	9,327	3.87%	1	2006	NA	NA	NA	2	2014				9					
	Glendive city	4,935	5,332	7.45%								NA	NA	NA	9					
	Richey town	177	187	5.35%								NA	NA	NA	9					
	Balance of Dawson County	3,854	3,808	-1.21%								$11,525,617	350	NA	9					
1	**Deer Lodge County**	9,298	9,085	-2.34%	17	2005	Low	Low	Low	3	2013	$317K; Low-Moderate	Moderate	Low-Moderate	3					
	Anaconda-Deer Lodge County	9,298	9,085	-2.34%																
4	**Fallon County**	2,890	3,120	7.37%	35	2006				12	2012	NA	NA	NA	12					
	Baker city	1,741	1,990	12.51%																
	Plevna town	162	176	7.95%																
	Balance of Fallon County	987	954	-3.46%																
6	**Fergus County**	11,586	11,413	-1.52%	1	2008	NA	NA	NA	3	2014				9					
	Denton town	255	247	-3.24%								Low	Low	NA	9					
	Grass Range town	110	108	-1.85%								Moderate	Moderate	NA	9					
	Lewistown city	5,901	5,870	-0.53%								Moderate	Moderate	NA	9					
	Moore town	193	198	2.53%								Low	Low	NA	9					
	Winifred town	208	206	-0.97%								Moderate	Moderate	NA	9					

APPENDIX B-10. LOCAL PLAN EXPOSURE SUMMARY - LANDSLIDE & AVALANCHE

DES District	Geography	Census 2010	Census 2016 Estimate	% Change 2010 to 2016	# Building Permits (2016)	Original Local Plan FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan	Estimated Societal Loss/ Exposure from Local Plan	Estimated Economic Loss from Local Plan	Ref	Local Plan Update #1 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #1	Estimated Societal Loss/ Exposure from Local Plan Update #1	Estimated Economic Loss from Local Plan Update #1	Ref	Local Plan Update #2 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #2	Estimated Societal Loss/ Exposure from Local Plan Update #2	Estimated Economic Loss from Local Plan Update #2	Ref
	Balance of Fergus County	4,919	4,784	-2.82%								R=$62,314,610 O=$6,862,227	1,500	NA	9					
1	**Flathead County**	90,928	98,082	7.29%	316	2009	NA	NA	NA		2014				14					
	Columbia Falls city	4,688	5,241	10.55%								R=$4,874,419; C=$0	211							
	Kalispell city	19,927	22,761	12.45%								R=$1,728,589 C=$298,500	211	NA	14					
	Whitefish city	6,357	7,279	12.67%								R=$3,247,627; C=$0	101	NA	14					
	Balance of Flathead County	59,956	62,801	4.53%								R=$171,411,736 C=$25,356,337	11,031	NA	14					
3	**Gallatin County**	89,513	104,502	14.34%	1,550	2006	Low	Low	Low	6	2012	Low	Moderate	Moderate	6					
	Belgrade city	7,389	8,254	10.48%																
	Bozeman city	37,280	45,250	17.61%																
	Manhattan town	1,520	1,691	10.11%																
	Three Forks city	1,869	1,944	3.86%																
	West Yellowstone town	1,271	1,353	6.06%																
	Balance of Gallatin County	40,184	46,010	12.66%																
4	**Garfield County**	1,206	1,310	7.94%	0	2007	NA	NA	NA	3	2014	R=$1,376,739 O=$85,280	233	NA	9					
	Jordan town	343	399	14.04%																
	Balance of Garfield County	863	911	5.27%																
2	**Glacier County**	13,399	13,694	2.15%	0	2005	NA	NA	NA		2012				14					
	Browning town	1,016	1,031	1.45%																
	Cut Bank city	2,869	3,012	4.75%																
	Balance of Glacier County	9,514	9,651	1.42%																
5	**Golden Valley County**	884	831	-6.38%	NA	2008	NA	NA	NA	14										
	Lavina town	187	173	-8.09%																
	Ryegate town	245	236	-3.81%																
	Balance of Golden Valley County	452	422	-7.11%																
1	**Granite County**	3,079	3,368	8.58%	NA	2006	Low	Low	Low	3	2013	Low-Moderate	Moderate	Low-Moderate	3					
	Drummond town	309	348	11.21%																
	Philipsburg town	820	920	10.87%																
	Balance of Granite County	1,950	2,100	7.14%																
2	**Hill County**	16,096	16,542	2.70%	4	2006				14	2012				14					
	Havre city	9,310	9,846	5.44%								R=$0; C=$0	0	NA						
	Hingham town	118	122	3.28%								R=$0; C=$0	0	NA						
	Balance of Hill County	6,668	6,574	-1.43%								R=$90,538 C=$10,314,672	608	NA						
3	**Jefferson County**	11,406	11,853	3.77%	5	2005				3	2011				14	2017				14
	Boulder town	1,183	1,230	3.82%								R=$0; C=$0	0	NA						
	Whitehall town	1,038	1,114	6.82%								R=$0; C=$0	0	NA						
	Balance of Jefferson County	9,185	9,509	3.41%								R=$898,348 C=$637,332	1,117	NA						
6	**Judith Basin County**	2,072	1,940	-6.80%	NA	2008	NA	NA	NA	14	2013				14					
	Hobson town	215	218	1.38%																
	Stanford town	401	384	-4.43%																
	Balance of Judith Basin County	1,456	1,338	-8.82%																
1	**Lake County**	28,746	29,758	3.40%	44	2006	NA	NA	NA		2012				14					
	Polson city	4,488	4,777	6.05%								R=$0; C=$0	0	NA						
	Ronan city	1,871	2,016	7.19%								R=$0; C=$0	0	NA						
	St. Ignatius town	842	824	-2.18%								R=$0; C=$0	0	NA						
	Balance of Lake County	21,545	22,141	2.69%								R=$65,526,956 C=$10,389,748	2,266	NA						
3	**Lewis and Clark County**	63,395	67,282	5.78%	176	2005	NA	NA	NA		2011				14	2017				14
	East Helena town	1,984	2,074	4.34%																
	Helena city	28,190	31,169	9.56%																
	Balance of Lewis and Clark County	33,221	34,039	2.40%																
2	**Liberty County**	2,339	2,409	2.91%	NA	2007	NA	NA	NA	2	2013				2					
	Chester town	847	884	4.19%																
	Balance of Liberty County	1,492	1,525	2.16%																
1	**Lincoln County**	19,687	19,259	-2.22%	8	2005	1	1	NA		2012				14					
	Eureka town	1,037	1,086	4.51%								R=$0; C=$0	0	NA						

APPENDIX B-10. LOCAL PLAN EXPOSURE SUMMARY - LANDSLIDE & AVALANCHE

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	Libby city	2,628	2,678	1.87%								R=$0; C=$0	0	NA						
	Rexford town	105	151	30.46%								R=$0; C=$0	0	NA						
	Troy city	938	890	-5.39%								R=$0; C=$0	0	NA						
	Balance of Lincoln County	14,979	14,454	-3.63%								R=$16,386,123 C=$1,493,890	2,443	NA						
3	**Madison County**	7,691	7,924	2.94%	7	2004	NA	NA	NA	3	2010				3	2017				1
	Ennis town	838	890	5.84%								Low	Low	Low	3		Low	Low	Low	1
	Sheridan town	642	677	5.17%								Low	Low	Low	3		Low	Low	Low	1
	Twin Bridges town	375	395	5.06%								Low	Low	Low	3		Low	Low	Low	1
	Virginia City town	190	198	4.04%								Low	Low-Moderate	Low	3		Low	Low-Moderate	Low	1
	Balance of Madison County	5,646	5,764	2.05%								Low	Low-Moderate	Low	3		Low	Low-Moderate	Low	1
4	**McCone County**	1,734	1,700	-2.00%	0	2006	NA	NA	NA	4	2014	$3,409,567	210	NA	9					
	Circle town	615	619	0.65%																
	Balance of McCone County	1,119	1,081	-3.52%																
3	**Meagher County**	1,891	1,827	-3.50%	NA															
	White Sulphur Springs city	939	908	-3.41%																
	Balance of Meagher County	952	919	-3.59%																
1	**Mineral County**	4,223	4,184	-0.93%	1	2005	$500K-$1M	Low	NA		2012				1					
	Alberton town	420	417	-0.72%								Low	Very Low	NA						
	Superior town	812	826	1.69%								Low	Very Low	NA						
	Balance of Mineral County	2,991	2,941	-1.70%								Low	Very Low	NA						
1	**Missoula County**	109,299	116,130	5.88%	930	2004	$500K-$1M	Low	NA	1	2011	$500K; AL=$20K	Low	NA	1	2017	NA	NA	NA	14
	Missoula city	66,788	72,364	7.71%																
	Balance of Missoula County	42,511	43,766	2.87%																
5	**Musselshell County**	4,538	4,589	1.11%	1	2008	NA	NA	NA	14	2013	NA	NA	NA	14					
	Melstone town	96	107	10.28%																
	Roundup city	1,788	1,840	2.83%																
	Balance of Musselshell County	2,654	2,642	-0.45%																
3	**Park County**	15,636	16,114	2.97%	44	2006	NA	NA	NA	3	2012				3					
	Clyde Park town	288	309	6.80%								NA	NA	NA	3					
	Livingston city	7,044	7,401	4.82%								NA	NA	NA	3					
	Balance of Park County	8,304	8,404	1.19%								Low	NA	NA	3					
6	**Petroleum County**	494	489	-1.02%	NA	2003	NA	NA	NA		2008	NA	NA	NA	3					
	Winnett town	182	185	1.62%											3					
	Balance of Petroleum County	312	304	-2.63%											3					
6	**Phillips County**	4,253	4,133	-2.90%	2	2006	NA	NA	NA	14	2012	NA	NA	NA	14					
	Dodson town	124	124	0.00%																
	Malta city	1,997	1,950	-2.41%																
	Saco town	197	197	0.00%																
	Balance of Phillips County	1,935	1,862	-3.92%																
2	**Pondera County**	6,153	6,084	-1.13%	1	2005	NA	NA	NA		2011	NA	NA	NA	14					
	Conrad city	2,570	2,550	-0.78%																
	Valier town	509	498	-2.21%																
	Balance of Pondera County	3,074	3,036	-1.25%																
4	**Powder River County**	1,743	1,746	0.17%	NA	2007	NA	NA	NA	3	2011	NA	NA	NA	3	2015				9
	Broadus town	468	481	2.70%																
	Balance of Powder River County	1,275	1,265	-0.79%																
1	**Powell County**	7,027	6,858	-2.46%	32	2004	Low	Low	NA		2012	NA	NA	NA	10	2017	$38M	NA	NA	7
	Deer Lodge city	3,111	2,994	-3.91%																
	Balance of Powell County	3,916	3,864	-1.35%																
4	**Prairie County**	1,179	1,182	0.25%	NA	2006	NA	NA	NA		2012	NA	NA	NA	12					
	Terry town	605	609	0.66%																
	Balance of Prairie County	574	573	-0.17%																
1	**Ravalli County**	40,212	42,088	4.46%	20	2005	$500K-$1M	Low	NA	1	2012	$0	Very Low	NA	1	2017	NA	NA	NA	14
	Darby town	720	763	5.64%								Low	Very Low	NA	1					
	Hamilton city	4,348	4,674	6.97%								Low	Very Low	NA	1					
	Pinesdale town	917	967	5.17%								Low	Very Low	NA	1					
	Stevensville town	1,809	1,963	7.85%								Low	Very Low	NA	1					
	Balance of Ravalli County	32,418	33,721	3.86%								Low	Very Low	NA	1					
4	**Richland County**	9,746	11,482	15.12%	16	2006	NA	NA	NA	4	2014	$3,409,567	110	NA	9					
	Fairview town	840	922	8.89%																
	Sidney city	5,191	6,566	20.94%																

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	Balance of Richland County	3,715	3,994	6.99%																
6	**Roosevelt County**	10,425	11,305	7.78%	1	2004	NA	NA	NA	14	2016	NA	NA	NA	8					
	Bainville town	208	314	33.76%																
	Brockton town	255	243	-4.94%																
	Culbertson town	714	804	11.19%																
	Froid town	185	201	7.96%																
	Poplar city	810	854	5.15%																
	Wolf Point city	2,621	2,806	6.59%																
	Balance of Roosevelt County	5,632	6,083	7.41%																
5	**Rosebud County**	9,233	9,287	0.58%	1	2007	NA	NA	NA	3	2013	NA	NA	NA	2					
	Colstrip city	2,214	2,311	4.20%																
	Forsyth city	1,777	1,869	4.92%																
	Balance of Rosebud County	5,242	1,903	-175.46%																
1	**Sanders County**	11,413	11,534	1.05%	0	2012				14										
	Hot Springs town	544	557	2.33%			R=$0; C=$0	0	NA	14										
	Plains town	1,048	1,071	2.15%			R=$0; C=$0	0	NA	14										
	Thompson Falls city	1,313	1,356	3.17%			R=$0; C=$0	0	NA	14										
	Balance of Sanders County	8,508	8,550	0.49%			R=$17,799,744 C=$4,184,608	2,288	NA	14										
6	**Sheridan County**	3,384	3,648	7.24%	2	2003	NA	NA	NA	14	2008	NA	NA	NA	3	2016	NA	NA	NA	8
	Medicine Lake town	225	241	6.64%											3					
	Outlook town	47	52	9.62%											3					
	Plentywood city	1,734	1,904	8.93%											3					
	Westby town	168	174	3.45%											3					
	Balance of Sheridan County	1,210	1,277	5.25%											3					
1	**Silver Bow County**	34,200	34,553	1.02%	86	2004	Low	Low	Low	3	2010				14	2016	NA	NA	NA	14
	Butte-Silver Bow (remainder)	33,525	33,853	0.97%								$8,030,857	<18=15 >65=6 <Poverty=4		14					
	Walkerville town	675	700	3.57%								$147,735	<18=7 >65=2 <Poverty=1		14					
5	**Stillwater County**	9,117	9,406	3.07%	0	2010	Low-Moderate	Low-Moderate	NA	3	2015				14					
	Columbus town	1,893	2,028	6.66%			NA	NA	NA	3		R=$65,383,045 C=$46,507,380	1,893; <18=492	NA	14					
	Balance of Stillwater County	7,224	7,378	2.09%			Low	Low	NA	3		R=$202,032,243 C=$11,503,970	3,416; <18=798	NA	14					
3	**Sweet Grass County**	3,651	3,623	-0.77%	1	2005	NA	NA	NA		2010	NA	NA	NA	13					
	Big Timber city	1,641	1,645	0.24%																
	Balance of Sweet Grass County	2,010	1,978	-1.62%																
2	**Teton County**	6,073	6,056	-0.28%	1	2006	NA	NA	NA	NA	2014	$282,554	NA	NA	2					
	Choteau city	1,684	1,686	0.12%																
	Dutton town	316	308	-2.60%																
	Fairfield town	708	922	23.21%																
	Balance of Teton County	3,365	3,140	-7.17%																
2	**Toole County**	5,324	4,977	-6.97%	2	2007	NA	NA	NA	2	2013	NA	NA	NA	2					
	Kevin town	154	138	-11.59%																
	Shelby city	3,376	3,216	-4.98%																
	Sunburst town	375	338	-10.95%																
	Balance of Toole County	1,419	1,285	-10.43%																
5	**Treasure County**	718	692	-3.76%	0	2007	Moderate	Moderate	Low-Moderate	3										
	Hysham town	312	301	-3.65%																
	Balance of Treasure County	406	391	-3.84%																
6	**Valley County**	7,369	7,539	2.25%	4	2003	NA	NA	NA	14	2008	NA	NA	NA	3	2016	NA	NA	NA	8
	Fort Peck town	233	247	5.67%											3					
	Glasgow city	3,250	3,364	3.39%											3					
	Nashua town	290	290	0.00%											3					
	Opheim town	85	290	70.69%											3					
	Balance of Valley County	3,511	3,348	-4.87%											3					
5	**Wheatland County**	2,168	2,117	-2.41%	NA	2007	NA	NA	NA	14	2013	NA	NA	NA	14					
	Harlowton city	997	984	-1.32%																
	Judith Gap city	126	123	-2.44%																
	Balance of Wheatland County	1,045	1,010	-3.47%																

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4	**Wibaux County**	1,017	1,093	6.95%	8	2006	NA	NA	NA	2	2014	NA	NA	NA	9					
	Wibaux town	589	649	9.24%																
	Balance of Wibaux County	428	444	3.60%																
5	**Yellowstone County**	147,972	158,437	6.61%	1,198	2005	NA	NA	NA		2012	$50K	Low	NA	1					
	Billings city	104,170	110,323	5.58%																
	Broadview town	192	193	0.52%																
	Laurel city	6,718	6,865	2.14%																
	Balance of Yellowstone County	36,892	41,056	10.14%																
2	**Blackfeet Indian Reservation**	10,405				2008	NA	NA	NA	14										
2	**Rocky Boy's Indian Reservation**	3,323				2008					2010	R=$83,643 CF=$0	<16=0; >64=0; <Poverty=0	NA	14					
2	**Fort Belknap Indian Reservation**	2,851				2007	NA	NA	NA	14	2013	NA	NA	NA	14					
6	**Fort Peck Indian Reservation**	10,008				2004	NA	NA	NA	14	2012	NA	NA	NA	10					
5	**Crow Indian Reservation**	6,863				2008	NA	NA	NA	4	2015	$2,222,392	250	NA	9					
5	**Northern Cheyenne Indian Res.**	4,789				2008	NA	NA	NA	4										
1	**Flathead Indian Reservation**	28,359				2006	NA	NA	NA	NA	2017	NA	NA	NA	11					

NOTES:
R = Residential
C = Commercial/Agricultural/Industrial
CF = Critical Facilities
AL = Annual Loss
M = Million
K = Thousand
B = Billion
O = Other
NA = Not Analyzed or Not Quantitied

REFERENCES:
1 = Respec (formerly Adkins, PBS&J, Land & Water)
2 = Beck Consulting & AMEC
3 = Big Sky Hazard Management
4 = Cossitt Consulting
5 = Fire Logistics, Inc.
6 = Gallatin County
7 = Great West Engineering and Powell County
8 = Integrated Solutions Consulting
9 = KLJ
10 = Morrison-Maierle
11 = Risks and Rewards Management
12 = Single Tree Consulting
13 = Sweet Grass County
14 = Tetra Tech (formerly Maxim Tech)

APPENDIX B-11

DAM FAILURE VULNERABILITY ASSESSMENT DOCUMENTATION

APPENDIX B-11. INDEX OF HIGH HAZARD DAMS

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Dam Map ID	National ID	Dam Name	Owner	Owner Name	Dam Type	Latitude	Longitude	Dam Height	Normal Storage	Maximum Storage	River or Stream
1	1	MT01025	COSTICH DAM	LOCAL GOVERNMENT	GLEN LAKE IRRIGATION DISTRICT	EARTH	48.891364	-115.023163	29	470	570	TR-TOBACCO RIVER OFFSTREAM
1	2	MT03756	GLEN LAKE	LOCAL GOVERNMENT	GLEN LAKE IRRIGATION DISTRICT	EARTH	48.864559	-114.958031	14	2,660	3,580	LICK CREEK
1	3	MT03845	SMITH LAKE DAM	STATE	STATE OF MONTANA, D.N.R.C., T.L.M.I	EARTH	48.493723	-114.420193	12	95	131	SMITH CREEK
1	4	MT01470	KOOTENAI DVLPMNT IMPOUNDMENT DAM	PRIVATE	KOOTENAI DEVELOPMENT CO.	EARTH	48.442360	-115.425853	135	1,013	1,302	RAINY CREEK
1	5	MT00221	LAKE CREEK	PRIVATE	NORTHERN LIGHTS, INC.	GRAVITY	48.438804	-115.871400	35	79	80	LAKE CREEK
1	6	MT00652	LIBBY	FEDERAL	U.S. ARMY C.O.E., SEATTLE DISTRICT	GRAVITY	48.410393	-115.314335	0	5,809,000	6,027,000	KOOTENAI RIVER
1	7	MT01455	CEDAR CREEK	LOCAL GOVERNMENT	CITY OF COLUMBIA FALLS	EARTH	48.401600	-114.135700	86	1,990	2,720	CEDAR CREEK
1	8	MT00566	LION LAKE SOUTH DIKE	FEDERAL	U.S. D.A. F.S.	ROCKFILL	48.368986	-114.032070	23	583	800	WHELP CREEK
1	9	MT01458	FLOWER CREEK DAM	LOCAL GOVERNMENT	CITY OF LIBBY	CONCRETE, EARTH	48.344812	-115.580233	59	221	285	FLOWER CREEK
1	10	MT00565	HUNGRY HORSE	FEDERAL	U.S. D.O.I. B.R., PACIFIC NORTHWEST	CONCRETE ARCH	48.341209	-114.012645	564	3,468,000	3,588,000	SOUTH FORK FLATHEAD RIVER
1	11	MT03425	JESSUP MILL POND DAM	FEDERAL	U.S. D.O.I. F.W.S.	EARTH	48.198474	-114.115440	26	204	330	MILL CREEK
1	12	MT00598	LITTLE BITTERROOT	FEDERAL	CONFEDERATED SALISH & KOOTENA	EARTH	48.092582	-114.698249	0	26,400	0	LITTLE BITTERROOT RIVER
1	13	MT00223	NOXON RAPIDS	PUBLIC UTILITY	WASHINGTON WATER AND POWER C	GRAVITY	47.961600	-115.733000	185	495,000	495,000	CLARK FORK
1	14	MT00599	HUBBART	FEDERAL	CONFEDERATED SALISH & KOOTENA	CONCRETE	47.928400	-114.732200	0	12,000	0	LITTLE BITTERROOT RIVER
1	15	MT00600	Upper Dry Fork	FEDERAL	CONFEDERATED SALISH & KOOTENA	EARTH	47.748200	-114.682300	0	2,815	0	CAMAS CANAL
1	16	MT00601	LOWER DRY FORK	FEDERAL	CONFEDERATED SALISH & KOOTENA	EARTH	47.699619	-114.668305	0	3,860	0	DRY FORK CREEK
1	17	MT00226	SELIS KSANKA QLISPE	PUBLIC UTILITY	ENERGY KEEPERS, INC	CONCRETE ARCH GRAVITY	47.677578	-114.233785	186	1,220,000	1,960,000	FLATHEAD RIVER
1	18	MT00592	PABLO DAM	FEDERAL	CONFEDERATED SALISH & KOOTENA	EARTH	47.640290	-114.143881	0	27,500	0	OFFSTREAM CANAL
1	19	MT00224	THOMPSON FALLS	PUBLIC UTILITY	NORTHWESTERN ENERGY	GRAVITY	47.591672	-115.351236	54	14,970	24,800	CLARK FORK
1	20	MT00593	CROW	FEDERAL	CONFEDERATED SALISH & KOOTENA	EARTH	47.502103	-114.227482	0	10,350	0	CROW CREEK
1	21	MT00591	NINEPIPE	FEDERAL	CONFEDERATED SALISH & KOOTENA	EARTH	47.455100	-114.137400	0	15,150	0	DUBLIN GULCH
1	22	MT00594	KICKING HORSE	FEDERAL	CONFEDERATED SALISH & KOOTENA	EARTH	47.454044	-114.077620	0	9,200	0	OFF STREAM CANAL
1	23	MT00590	MCDONALD (LAKE)	FEDERAL	CONFEDERATED SALISH & KOOTENA	EARTH	47.425243	-113.992368	0	8,225	0	POST CREEK
1	24	MT00589	MISSION (LAKE)	FEDERAL	CONFEDERATED SALISH & KOOTENA	EARTH	47.314507	-114.021785	0	7,000	0	MISSION CREEK
1	25	MT00588	TABOR	FEDERAL	CONFEDERATED SALISH & KOOTENA	EARTH	47.266217	-113.936578	0	23,090	0	DRY CREEK
1	26	MT00602	JOCKO	FEDERAL	CONFEDERATED SALISH & KOOTENA	EARTH	47.204000	-113.762100	0	8,869	0	MIDDLE FORK JOCKO RIVER
1	27	MT00587	BLACK LAKE	FEDERAL	CONFEDERATED SALISH & KOOTENA	EARTH	47.201350	-113.732490	0	5,200	0	MIDDLE FORK JOCKO RIVER
1	28	MT01364	ISSAC CREEK	PRIVATE	GERHARD/URSULA VON DER RUHR	EARTH	47.074470	-114.391336	32	125	125	ISSAC CREEK
1	29	MT01386	DONEY LAKE #2 (POWELL)	PRIVATE	GORDON MURPHY	EARTH	47.044700	-113.038400	14	405	405	TR-WARREN CREEK
1	30	MT01161	BLIXIT CREEK	PRIVATE	SHEEHY, HUGH AND BARB	EARTH	46.856862	-113.638415	30	92	82	BLIXIT CREEK
1	31	MT03856	SPARTAN/PLAYFAIR PARK RETENTION BASINS	LOCAL GOVERNMENT	CITY OF MISSOULA	EARTH	46.838333	-114.010508	8	116	150	OFFSTREAM
1	32	MT00017	NEVADA CREEK DAM	STATE	STATE WATER PROJECTS	EARTH	46.802400	-112.810700	105	11,152	15,903	NEVADA CREEK
1	33	MT01222	MCKAY CREEK	PRIVATE	PRICE TRUST	EARTH	46.715000	-112.605200	33	131	156	TR-SIXMILE CREEK
1	34	MT01378	DAVIS CREEK DAM	PRIVATE	JOSEPH EVE & MELEANIE VANKOTEN	EARTH	46.713900	-112.730300	38	79	91	DAVIS CREEK
1	35	MT03826	SHARP RESERVOIR	PRIVATE	SIMMERMAN, ERICA	EARTH	46.637800	-114.008600	22	80	105	OFFSTREAM OF EIGHTMILE CREEK
1	36	MT01176	BASS LAKE	PRIVATE	BASS LAKE RESERVOIR CO.	EARTH	46.592700	-114.283400	43	3,600	3,900	BASS CREEK
1	37	MT01155	LOWER WILLOW CREEK DAM	LOCAL GOVERNMENT	LOWER WILLOW CREEK DRAINAGE I	EARTH	46.559200	-113.314000	85	4,930	6,230	LOWER WILLOW CREEK
1	38	MT01137	TAYLOR, UPPER	STATE	STATE OF MONTANA, D.O.C.	EARTH	46.408600	-112.836900	43	296	372	TAYLOR CREEK
1	39	MT01393	KERNS LAKE (POWELL)	STATE	STATE OF MONTANA, D.O.C.	EARTH	46.400700	-112.844100	26	92	122	TR-TIN CUP JOE CREEK
1	40	MT01387	TIN CUP LAKE (POWELL)	STATE	STATE OF MONTANA, D.O.C.	EARTH	46.388600	-112.854600	19	114	229	TIN CUP JOE CREEK
1	41	MT03674	MUD LAKE	STATE	STATE OF MONTANA, D.O.C.	EARTH	46.386600	-112.843300	25	58	58	TR-TIN CUP JOE CREEK
1	42	MT00763	FRED BURR RESERVOIR DAM	STATE	STATE WATER PROJECTS	EARTH	46.357600	-114.316400	50	410	690	FRED BURR CREEK
1	43	MT00043	POWELL	STATE	STATE OF MONTANA, D.O.C.	EARTH	46.354400	-112.849400	52	230	250	UT POWELL CREEK
1	44	MT03744	FRED BURR LAKE (GRANITE)	LOCAL GOVERNMENT	TOWN OF PHILIPSBURG	EARTH, MASONRY	46.314213	-113.179278	21	1,730	1,900	FRED BURR CREEK
1	45	MT01168	BURNT FORK DAM	LOCAL GOVERNMENT	SUNSET IRRIGATION DIST.	EARTH	46.304100	-113.837900	40	1,200	1,320	BURNT FORK CREEK
1	46	MT01173	CANYON LAKE	LOCAL GOVERNMENT	CANYON CREEK IRR DIST	EARTH	46.244700	-114.328300	25	163	307	CANYON CREEK
1	47	MT00225	FLINT CREEK DAM	LOCAL GOVERNMENT	GRANITE COUNTY	EARTH	46.214861	-113.280508	45	31,040	50,000	FLINT CREEK
1	48	MT01400	WARM SPRINGS TAILING DAM #1	PRIVATE	ATLANTIC RICHFIELD CO	EARTH	46.176900	-112.767200	15	50	1,950	SILVER BOW CREEK
1	49	MT01402	WARM SPRINGS TAILING DAM #2	PRIVATE	ATLANTIC RICHFIELD CO	EARTH	46.170700	-112.773500	21	600	1,650	SILVER BOW CREEK
1	50	MT03753	SILVER LAKE WEST DAM	LOCAL GOVERNMENT	BUTTE-SILVER BOW	EARTH	46.168612	-113.238013	17	17,570	17,920	TR-GEORGETOWN LAKE
1	51	MT01401	WARM SPRINGS TAILING DAM #3	PRIVATE	ATLANTIC RICHFIELD CO	EARTH	46.156400	-112.777200	35	1,350	6,200	SILVER BOW CREEK

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STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

DES District	Dam Map ID	National ID	Dam Name	Owner	Owner Name	Dam Type	Latitude	Longitude	Dam Height	Normal Storage	Maximum Storage	River or Stream
1	52	MT00015	EAST FORK, ROCK CREEK DAM	STATE	STATE WATER PROJECTS	EARTH	46.130600	-113.381400	105	16,040	19,850	EAST FORK ROCK CREEK
1	53	MT03858	LITTLE SLEEPING CHILD CREEK DAM	PRIVATE	WAYNE KELLY	EARTH	46.109400	-114.106400	35	59	73	LITTLE SLEEPING CHILD CREEK
1	54	MT01357	STORM LAKE DAM	LOCAL GOVERNMENT	BUTTE-SILVER BOW	EARTH	46.074502	-113.267746	29	1,890	2,150	STORM LAKE CREEK
1	55	MT00564	COMO	LOCAL GOVERNMENT	BITTER ROOT IRRIGATION DISTRICT	EARTH	46.065400	-114.236200	70	36,900	40,700	ROCK CREEK
1	56	MT01425	YANKEE DOODLE TAILINGS DAM	PRIVATE	MONTANA RESOURCES	ROCKFILL	46.019700	-112.515000	570	0	7,200	YANKEE DOODLE & SILVER BOW CR
1	57	MT00850	TIN CUP LAKE	LOCAL GOVERNMENT	TIN CUP COUNTY WATER AND SEWE	ROCKFILL	45.947300	-114.392600	23	775	2,800	TIN CUP CREEK
1	58	MT00857	TAMARACK LAKE	PRIVATE	TPR, LLC	EARTH	45.943600	-114.323300	15	103	201	CHAFFIN
1	59	MT00374	BASIN CREEK DAM #1	LOCAL GOVERNMENT	BUTTE-SILVER BOW	CONCRETE, MASONRY, ARCH	45.854600	-112.546000	101	1,115	1,170	BASIN CREEK
1	60	MT00868	BASIN CREEK DAM #2	LOCAL GOVERNMENT	BUTTE-SILVER BOW	ROCKFILL, TIMBER CRIB, EARTH	45.839300	-112.526100	49	196	290	BASIN CREEK
1	61	MT00019	WEST FORK BITTERROOT (Painted Rocks)	STATE	STATE WATER PROJECTS	EARTH	45.717400	-114.281400	143	31,706	45,100	WEST FORK OF BITTERROOT
2	62	MT03952	ANITA DAM	FEDERAL	U.S. D.O.I. B.L.M.	EARTH	48.926180	-109.282000	0	0	1,210	BATTLE CREEK
2	63	MT00572	LAKE SHERBURNE	FEDERAL	U.S. D.O.I. B.R., GREAT PLAINS REGION	EARTH	48.828250	-113.521355	109	67,854	110,679	SWIFTCURRENT CREEK
2	64	MT00570	FRESNO	FEDERAL	U.S. D.O.I. B.R., GREAT PLAINS REGION	EARTH	48.599100	-109.946900	111	129,062	229,288	MILK RIVER
2	65	MT00024	BULLHOOK LOWER DIVERSION	LOCAL GOVERNMENT	CITY OF HAVRE	EARTH	48.557700	-109.633400	77	430	785	BULLHOOK BELOW SPILLWAY CH
2	66	MT00023	BULLHOOK DAM	LOCAL GOVERNMENT	CITY OF HAVRE	EARTH	48.526100	-109.665500	87	5,150	10,280	BULLHOOK CREEK
2	67	MT02004	SULLIVAN DAM	LOCAL GOVERNMENT	CITY OF SHELBY	EARTH	48.524200	-111.854100	49	360	1,470	TR-MARIAS
2	68	MT00103	SCOTT COULEE DAM	LOCAL GOVERNMENT	CITY OF HAVRE	EARTH	48.523200	-109.738000	58	1,330	3,570	SCOTT COULEE
2	69	MT03203	COWPATH DAM	LOCAL GOVERNMENT	CITY OF SHELBY	EARTH	48.520600	-111.854600	49	190	940	TR-MARIAS RIVER
2	70	MT00573	LOWER TWO MEDICINE	FEDERAL	U.S. D.O.I. B.I.A. (BLACKFEET RESERV	EARTH	48.492216	-113.263339	0	13,500	0	TWO MEDICINE CREEK
2	71	MT00510	BEAVER CREEK RESERVOIR DAM	LOCAL GOVERNMENT	HILL COUNTY	EARTH	48.416300	-109.732300	108	6,270	8,700	BEAVER CREEK
2	72	MT82901	Agency Dam	Federal	US Bureau of Indian Affairs	CNVA	48.333300	-107.917000	-9	-9	0	Box Elder Creek
2	73	MT00115	BEARPAW LAKE DAM	STATE	STATE OF MONTANA, D.F.W.P.	EARTH	48.328000	-109.658700	64	616	1,005	BEAVER CREEK
2	74	MT00579	TIBER	FEDERAL	U.S. D.O.I. B.R., GREAT PLAINS REGION	EARTH	48.322300	-111.096400	203	954,902	1,424,478	MARIAS RIVER
2	75	MT00578	TIBER DIKE	FEDERAL	U.S. D.O.I. B.R., GREAT PLAINS REGION	EARTH	48.314500	-111.112500	48	954,902	1,424,478	MARIAS RIVER OFFSTREAM
2	76	MT01484	LAKE FRANCES NORTH DAM	PRIVATE	PONDERA CANAL & RES. CO.	EARTH	48.300000	-112.283900	22	67,000	95,000	BIRCH CREEK OFFSTREAM
2	77	MT01054	Bonneau	FEDERAL	U.S. D.O.I. B.I.A. (ROCKY BOY RESERV	EARTH	48.298900	-109.860900	0	4,000	0	BOX ELDER CREEK
2	78	MT01125	LAKE FRANCES EAST DAM	PRIVATE	PONDERA CANAL & RES. CO.	EARTH	48.262900	-112.207400	64	105,000	133,000	TR-DRY FORK MARIAS RIVER
2	79	MT01335	EASTFORK	FEDERAL	U.S. D.O.I. B.I.A. (ROCKY BOY RESERV	EARTH	48.174900	-109.638300	0	667	0	BEAVER CREEK
2	80	MT00581	SWIFT (PONDERA)	PRIVATE	PONDERA CANAL & RES. CO.	ARCH	48.157000	-112.874200	205	30,000	34,000	BIRCH CREEK
2	81	MT00580	SWIFT DIKE (PONDERA)	PRIVATE	PONDERA CANAL & RES. CO.	EARTH	48.150900	-112.873200	53	30,000	34,000	BIRCH CREEK OFFSTREAM
2	82	MT01356	BYNUM RESERVOIR DAM	PRIVATE	TETON COOPERATIVE RESERVOIR CO	EARTH	47.964800	-112.416000	60	87,000	107,000	MILLER CREEK
2	83	MT01342	EUREKA RESERVOIR WEST DIKE	PRIVATE	TETON COOP. CANAL CO	EARTH	47.880400	-112.323900	12	2,000	2,700	TETON RIVER OFFSTREAM
2	84	MT01354	EUREKA RESERVOIR DAM	PRIVATE	TETON COOP. CANAL CO	EARTH	47.878400	-112.317800	31	5,500	6,200	TETON RIVER OFFSTREAM
2	85	MT00571	GIBSON	FEDERAL	U.S. D.O.I. B.R., GREAT PLAINS REGION	CONCRETE ARCH	47.601400	-112.761700	199	99,059	121,981	SUN RIVER
2	86	MT00563	MORONY	PUBLIC UTILITY	NORTHWESTERN ENERGY	GRAVITY	47.581500	-111.060100	121	7,800	13,000	MISSOURI RIVER
2	87	MT00555	RYAN (CASCADE)	PUBLIC UTILITY	NORTHWESTERN ENERGY	GRAVITY	47.569300	-111.125700	137	3,023	3,037	MISSOURI RIVER
2	88	MT00556	COCHRANE (CASCADE)	PUBLIC UTILITY	NORTHWESTERN ENERGY	GRAVITY	47.553000	-111.149200	137	8,720	9,900	MISSOURI RIVER
2	89	MT00557	RAINBOW	PUBLIC UTILITY	NORTHWESTERN ENERGY	GRAVITY	47.534400	-111.205600	42	1,055	1,064	MISSOURI RIVER
2	90	MT00558	BLACK EAGLE	PUBLIC UTILITY	NORTHWESTERN ENERGY	GRAVITY	47.519700	-111.263200	31	1,440	3,160	MISSOURI RIVER
3	91	MT00749	WILLOW CREEK DIKE 5 (LEW & CL)	FEDERAL	U.S. D.O.I. B.R., GREAT PLAINS REGION	EARTH	47.552800	-112.422600	17	32,300	39,800	WILLOW CREEK
3	92	MT00577	WILLOW CREEK (LEW & CL)	FEDERAL	U.S. D.O.I. B.R., GREAT PLAINS REGION	EARTH	47.547000	-112.429300	74	32,300	39,800	WILLOW CREEK
3	93	MT03206	NILAN NORTH DAM	STATE	STATE WATER PROJECTS	EARTH	47.486900	-112.538900	51	10,092	15,600	TR-WILLOW CREEK
3	94	MT00014	NILAN EAST DAM	STATE	STATE WATER PROJECTS	EARTH	47.472900	-112.517900	51	10,092	15,600	TR-ELK CREEK
3	95	MT00559	HOLTER	PUBLIC UTILITY	NORTHWESTERN ENERGY	GRAVITY	46.991400	-112.004800	135	245,000	265,000	MISSOURI RIVER
3	96	MT03949	HINMAN DAM	PRIVATE	ROGER HINMAN	EARTH	46.877635	-112.000001	34	21	21	BEARTOOTH CREEK
3	97	MT00560	HAUSER DAM	PUBLIC UTILITY	NORTHWESTERN ENERGY	GRAVITY	46.765100	-111.886900	130	56,140	109,470	MISSOURI RIVER
3	98	MT00865	THREE MILE RESERVOIR (L.&C.)	PRIVATE	HARDIE RANCH CORPORATION	EARTH	46.696700	-112.182200	70	180	300	THREE MILE CREEK
3	99	MT00860	DOGGETT RESERVOIR	PRIVATE	CAMAS CREEK CATTLE & SHEEP CO	EARTH	46.670500	-111.227200	50	400	540	TR-ELK CREEK
3	100	MT00568	CANYON FERRY	FEDERAL	U.S. D.O.I. B.R., GREAT PLAINS REGION	CONCRETE GRAVITY	46.648400	-111.727900	225	1,947,000	2,051,000	MISSOURI RIVER
3	101	MT00743	HELENA VALLEY	FEDERAL	U.S. D.O.I. B.R., GREAT PLAINS REGION	EARTH	46.640900	-111.882900	73	10,451	10,702	MISSOURI RIVER OFFSTREAM
3	102	MT01596	NEWLAN CREEK DAM	LOCAL GOVERNMENT	NEWLAN CREEK WATER DISTRICT	EARTH	46.636300	-110.937600	112	12,230	15,600	NEWLAN CREEK

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DES District	Dam Map ID	National ID	Dam Name	Owner	Owner Name	Dam Type	Latitude	Longitude	Dam Height	Normal Storage	Maximum Storage	River or Stream
3	103	MT00009	NORTH FORK OF SMITH RIVER DAM	STATE	STATE WATER PROJECTS	EARTH	46.621300	-110.746900	91	11,500	14,200	NORTH FORK SMITH RIVER
3	104	MT00006	BAIR	STATE	STATE WATER PROJECTS	EARTH	46.579000	-110.558600	106	7,300	12,475	NORTH FORK MUSSELSHELL RI
3	105	MT00858	NORTHERN PACIFIC RESERVOIR DAM	PRIVATE	ASH GROVE CEMENT	GRAVITY	46.554069	-111.905460	35	150	173	MCCLELLAN CREEK
3	106	MT00053	JACKSON LAKE DAM	PRIVATE	SCOTT JACKSON	EARTH	46.498800	-111.082900	32	372	490	NORTH FORK WOODS GULCH CREEK
3	107	MT01562	CHESSMAN SADDLE DAM	LOCAL GOVERNMENT	CITY OF HELENA	EARTH	46.474200	-112.179400	27	1,400	1,870	BUFFALO CREEK
3	108	MT01090	CHESSMAN MAIN DAM	LOCAL GOVERNMENT	CITY OF HELENA	EARTH	46.471500	-112.192700	57	1,630	2,370	BEAVER CREEK
3	109	MT03842	PARK LAKE DAM	FEDERAL	U.S. D.A. F.S.	EARTH	46.448703	-112.170104	22	225	423	TR-LUMP GULCH
3	110	MT00866	SCOTT RESERVOIR	LOCAL GOVERNMENT	CITY OF HELENA	EARTH	46.431900	-112.261100	32	288	288	RUBY CREEK
3	111	MT01590	VOLDSETH EAST DAM	PRIVATE	NORMAN M VOLDSETH	EARTH	46.387300	-110.499200	24	1,574	1,925	TR-SOUTH FORK MUSSELSHEEL RI.
3	112	MT01153	VOLDSETH WEST DAM	PRIVATE	NORMAN M VOLDSETH	EARTH	46.385700	-110.509000	35	1,188	1,925	TR-COMB CREEK
3	113	MT00054	OLSON, OSCAR (MEAGHER)	PRIVATE	JIM KUSEK, HANK BREWER	EARTH	46.368800	-110.732400	40	256	291	TR-SOUTH FORK SMITH RIVER
3	114	MT03985	MT TUNNELS TAILINGS DAM	PRIVATE	MONTANA TUNNELS MINING INC		46.362143	-112.112989	0	0	0	
3	115	MT00016	TOSTON	STATE	STATE WATER PROJECTS	GRAVITY	46.120100	-111.408000	56	3,000	3,000	MISSOURI RIVER
3	116	MT00334	JORDAN DAM	PRIVATE	ARTHUN BROS.	EARTH	46.098809	-110.642727	38	640	1,260	TR-ANTELOPE CREEK
3	117	MT00118	WHITETAIL DAM	PRIVATE	WHITETAIL WATER USERS ASSN	EARTH	46.072889	-112.261729	29	4,900	21,400	WHITETAIL CREEK
3	118	MT03267	UPPER GLASSTON NORTH DAM	PRIVATE	SWEETGRASS CANAL & RES CO	EARTH	46.039003	-109.826254	20	924	1,805	SWEETGRASS CANAL
3	119	MT00021	COTTONWOOD DAM (PARK)	STATE	STATE WATER PROJECTS	EARTH	46.034254	-110.682230	39	1,905	3,670	COTTONWOOD CREEK
3	120	MT00380	UPPER GLASSTON WEST DAM	PRIVATE	SWEETGRASS CANAL & RES CO	EARTH	46.033673	-109.830672	22	6,236	6,236	SWEETGRASS CANAL
3	121	MT00378	LOWER GLASSTON DAM	PRIVATE	SWEETGRASS CANAL & RES CO	EARTH	46.004897	-109.840180	30	7,317	7,317	SWEETGRASS CANAL
3	122	MT00117	DELMOE LAKE DAM	PRIVATE	PIPESTONE WATER USERS	EARTH	45.984843	-112.341586	60	6,585	9,900	BIG PIPESTONE CREEK
3	123	MT03724	CRAZY MOUNTAIN RANCH	PRIVATE	PHILLIP MORRIS USA	EARTH	45.917148	-110.443499	36	270	270	HAMMOND CREEK
3	124	MT03987	GOLDEN SUNLIGHT #2 TAILINGS DAM	PRIVATE	BARRICK		45.885777	-111.990058	0	0	0	
3	125	MT00022	WILLOW CREEK DAM	STATE	STATE WATER PROJECTS	EARTH	45.713800	-111.699700	105	18,000	26,600	WILLOW CREEK
3	126	MT00005	CATARACT CREEK DAM	PRIVATE	CATARACT CREEK WATER USERS AS	EARTH	45.643400	-111.937400	80	1,478	1,800	CATARACT CREEK
3	127	MT03968	TWIN BRIDGES WASTEWATER LAGOON DAM	LOCAL GOVERNMENT	CITY OF TWIN BRIDGES		45.554536	-112.324959	13	96	111	BIG HOLE RIVER
3	128	MT00899	HILL RESERVOIR DAM	FEDERAL	U.S. D.A. F.S.	EARTH	45.539340	-112.040250	19	45	60	TR-NORTH FORK INDIAN CREEK
3	129	MT00834	BELL LAKE DAM	PRIVATE	FARRELL & RICE	EARTH	45.535600	-112.002100	20	450	590	TR-SOUTH WILLOW CREEK
3	130	MT01273	JACKSON (MADISON)	PRIVATE	M W JACKSON	EARTH	45.534100	-111.666000	34	56	87	BRADLEY CREEK
3	131	MT03774	UPPER BRANHAM	FEDERAL	U.S. D.A. F.S.	EARTH	45.516200	-111.991800	10	88	147	NORTH FORK MILL CREEK
3	132	MT00817	AGNES LAKE	PRIVATE	BURK RANCHES INC	EARTH	45.515786	-112.836959	13	1,420	1,860	AGNES CREEK
3	133	MT03989	EAST BOULDER TAILINGS DAM	PRIVATE	STILLWATER MINING CO		45.505696	-110.085347	0	0	0	
3	134	MT03804	GREEN HOLLOW CREEK DAM	PRIVATE	TURNER ENTERPRISES, INC.	EARTH	45.501658	-111.351104	45	174	300	GREEN HOLLOW CREEK
3	135	MT00018	MIDDLE CREEK DAM	STATE	STATE WATER PROJECTS	ROCKFILL	45.487552	-110.978417	110	7,780	10,230	HYALITE CREEK (MIDDLE CR.)
3	136	MT00561	MADISON	PUBLIC UTILITY	NORTHWESTERN ENERGY	GRAVITY	45.469900	-111.638300	53	37,000	60,000	MADISON RIVER
3	137	MT03718	BEAVER DAM	PRIVATE	BEAVER DAM RANCH PARTNERS	EARTH	45.463400	-111.844600	15	36	69	LEONARD CREEK
3	138	MT00527	SOUTH MEADOW CREEK DAM	PRIVATE	SOUTH MEADOW CREEK DAM INC	EARTH	45.454900	-111.920800	22	625	1,130	SOUTH MEADOW CREEK
3	139	MT00823	BOOT LAKE DAM	PRIVATE	BEAVERHEAD WATER CO	EARTH	45.433600	-112.972700	27	980	1,150	BIRCH CREEK
3	140	MT00820	PEAR LAKE DAM	PRIVATE	BEAVERHEAD WATER CO	EARTH	45.425178	-112.991124	19	356	481	BIRCH CREEK
3	141	MT00822	TUB LAKE DAM	PRIVATE	BEAVERHEAD WATER CO	EARTH	45.418257	-112.997365	12	172	208	BIRCH CREEK
3	142	MT00824	ESTLER LAKE DAM	PRIVATE	RATTLESNAKE RESERVOIR CO	EARTH	45.372138	-112.972259	35	470	620	ESTLER CREEK
3	143	MT01563	KELLY DAM	PRIVATE	RATTLESNAKE RESERVOIR CO	EARTH	45.327660	-112.943895	26	614	850	RATTLESNAKE CREEK
3	144	MT01395	BIG SKY DAM	PRIVATE	BIG SKY OF MONTANA INC	EARTH	45.287600	-111.394400	52	113	225	MIDDLE FK WEST FK GALLATIN RI
3	145	MT03831	BIG SKY COUNTY WASTEWATER POND3	PUBLIC UTILITY	BIG SKY COUNTY WATER AND SEWE	EARTH	45.269100	-111.287800	22	60	60	OFFSTREAM
3	146	MT03827	BIG SKY COUNTY WASTEWATER POND1	PUBLIC UTILITY	BIG SKY COUNTY WATER AND SEWE	EARTH	45.268300	-111.287900	24	185	185	OFFSTREAM
3	147	MT00004	RUBY DAM	STATE	STATE WATER PROJECTS	EARTH	45.239400	-112.110500	111	37,611	56,355	RUBY RIVER
3	148	MT00569	CLARK CANYON	FEDERAL	U.S. D.O.I. B.R., GREAT PLAINS REGION	EARTH	45.000300	-112.858400	148	178,062	328,979	BEAVERHEAD RIVER
3	149	MT00134	HEBGEN DAM	PUBLIC UTILITY	NORTHWESTERN ENERGY	EARTH	44.864227	-111.334919	120	273,000	525,000	MADISON RIVER
3	150	MT00905	LIMA	LOCAL GOVERNMENT	BEAVERHEAD COUNTY RED ROCK RI	EARTH	44.656900	-112.369200	56	75,180	133,000	RED ROCK RIVER
4	151	MT00025	FORT PECK DAM	FEDERAL	U.S. ARMY C.O.E., OMAHA DISTRICT	EARTH	48.001900	-106.418200	0	15,400,000	19,100,000	MISSOURI RIVER
4	152	MT00349	GARTSIDE	STATE	STATE OF MONTANA, D.F.W.P.	EARTH	47.585300	-104.271000	31	326	872	CRANE CREEK
4	153	MT00842	CRISAFULLI LAKE	PRIVATE	COTTONWOOD COUNTRY CLUB	EARTH	47.130900	-104.745900	22	133	133	TR-YELLOWSTONE RIVER
4	154	MT01617	STILES #1	PRIVATE	FLF YELLOWSTONE, LLC	EARTH	46.533300	-105.746800	24	206	0	TREE CREEK

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4	155	MT01263	LOWER BAKER DAM	LOCAL GOVERNMENT	FALLON COUNTY	EARTH	46.367400	-104.273900	23	320	1,250	SANDSTONE CREEK
4	156	MT01564	UPPER BAKER DAM	LOCAL GOVERNMENT	CITY OF BAKER	EARTH	46.356600	-104.259400	20	1,460	3,000	TR SANSTONE CREEK
5	157	MT00020	MARTINSDALE, NORTH DAM	STATE	STATE WATER PROJECTS	EARTH	46.452000	-110.268100	91	23,348	38,958	TR-MUSSELSHELL RIVER
5	158	MT00070	JAWBONE DAM #1	LOCAL GOVERNMENT	CITY OF HARLOWTON	EARTH	46.445057	-109.839568	31	0	1,933	JAWBONE CREEK
5	159	MT00007	MARTINSDALE, EAST DAM	STATE	STATE WATER PROJECTS	EARTH	46.442600	-110.259700	49	32,348	38,958	TR-MUSSELSHELL RIVER
5	160	MT00785	JAWBONE DIKE #1	LOCAL GOVERNMENT	CITY OF HARLOWTON	EARTH	46.442315	-109.840592	13	0	1,933	JAWBONE CREEK
5	161	MT00071	JAWBONE DAM #2	LOCAL GOVERNMENT	CITY OF HARLOWTON	EARTH	46.441113	-109.833205	31	0	113	JAWBONE CREEK
5	162	MT00011	DEADMANS BASIN DAM	STATE	STATE WATER PROJECTS	EARTH	46.339644	-109.408479	60	72,218	100,000	TR-MUSSELSHELL RIVER
5	163	MT00522	DEADMANS BASIN DIKE	STATE	STATE WATER PROJECTS	EARTH	46.338666	-109.408958	23	10,800	34,000	TR-MUSSELSHELL RIVER
5	164	MT00653	LEBO #2 NE DAM	PRIVATE	LAKE LEBO IRRIGATION CO	EARTH	46.318800	-110.027800	15	3,105	4,735	TR-BIG ELK CREEK
5	165	MT00072	LEBO #1, NW DAM	PRIVATE	LAKE LEBO IRRIGATION CO	EARTH	46.318500	-110.035000	8	1,205	2,835	TR-BIG ELK CREEK
5	166	MT00073	LEBO #3,EAST DAM	PRIVATE	LAKE LEBO IRRIGATION CO	EARTH	46.307500	-110.026500	27	3,105	4,735	TR-LEBO CREEK
5	167	MT00567	ANITA	FEDERAL	U.S. D.O.I. B.R., GREAT PLAINS REGION	EARTH	45.932100	-107.999600	42	400	570	TR-FLY CREEK
5	168	MT03211	COLSTRIP EVAPORATION POND DAM	PUBLIC UTILITY	PP & L MONTANA LLC	EARTH	45.907600	-106.647100	88	2,360	3,834	TR-EAST FORK ARMELLS CREEK
5	169	MT03213	COLSTRIP DIVERSION DAM	PUBLIC UTILITY	PP & L MONTANA LLC	EARTH	45.905300	-106.652200	44	15	260	TR-EAST FORK ARMMELLS CREEK
5	170	MT01982	CASTLE ROCK RESERVOIR DAM	PUBLIC UTILITY	PP & L MONTANA LLC	EARTH	45.895000	-106.636400	67	2,930	3,540	TR-EAST FORK ARMELLS CREEK
5	171	MT03146	CASTLE ROCK SADDLE DAM	PUBLIC UTILITY	PP & L MONTANA LLC	EARTH	45.889300	-106.636000	20	1,830	2,280	TR-EAST FORK ARMELLS CREEK
5	172	MT03984	LAKESIDE	PRIVATE	LAKESIDE HOME OWNERS ASSOC	EARTH	45.748632	-108.733899	22	93	133	OFF STREAM (HIGH DITCH)
5	173	MT02073	Crow #3	FEDERAL	U.S. D.O.I. B.I.A. (CROW RESERVATION	EARTH	45.501900	-107.102100	0	40	0	TR-NORTH FORK DAVIS CREEK
5	174	MT03991	STILLWATER HERTZLER TAILINGS DAM	PRIVATE	STILLWATER MINING CO		45.450609	-109.787579	0	0	0	
5	175	MT00001	COONEY	STATE	STATE WATER PROJECTS	EARTH	45.449900	-109.201400	102	28,140	28,230	RED LODGE CREEK
5	176	MT03990	STILLWATER NYE TAILINGS DAM	PRIVATE	STILLWATER MINING CO		45.386436	-109.875555	0	0	0	
5	177	MT00582	YELLOWTAIL AFTERBAY	FEDERAL	U.S. D.O.I. B.R., GREAT PLAINS REGION	CONCRETE GRAVITY	45.316700	-107.921600	59	3,141	3,141	BIGHORN RIVER
5	178	MT00576	YELLOWTAIL	FEDERAL	U.S. D.O.I. B.R., GREAT PLAINS REGION	CONCRETE ARCH	45.307000	-107.957700	491	1,116,000	1,427,340	BIGHORN RIVER
5	179	MT00562	MYSTIC LAKE	PUBLIC UTILITY	NORTHWESTERN ENERGY	ARCH	45.223500	-109.763300	49	20,800	21,400	WEST ROSEBUD CREEK
5	180	MT00606	DEPRESSION DETENTION	FEDERAL	U.S. D.O.I. B.L.M.	EARTH	45.193200	-108.812900	39	84	122	SOUTH FORK BRIDGER CREEK
5	181	MT00002	TONGUE RIVER DAM	STATE	STATE WATER PROJECTS	EARTH	45.132497	-106.769625	93	79,071	127,655	TONGUE RIVER
5	182	MT03852	CARBONE FLOOD CONTROL DAM	PRIVATE	CLOUD PEAK ENERGY RESOURCES LL	EARTH	45.113435	-106.951006	32	327	1,050	NORTH FORK SPRING CREEK
5	183	MT82914	Willow Creek Dike 1 and 2 Dam	Federal	US Bureau of Indian Affairs	RE	45.072200	-107.501000	-9	-9	0	Willow Creek
5	184	MT00963	WILLOW CREEK	FEDERAL	U.S. D.O.I. B.I.A. (CROW RESERVATION	EARTH	45.068200	-107.599900	0	23,000	0	LODGE GRASS CREEK
5	185	MT00068	GLACIER LAKE NORTH DAM	STATE	STATE WATER PROJECTS	ROCKFILL	45.005451	-109.532835	57	4,200	4,980	ROCK CREEK
5	186	MT01446	GLACIER LAKE SOUTH DAM	STATE	STATE WATER PROJECTS	ROCKFILL	45.004460	-109.532953	20	1,345	2,850	ROCK
6	187	MT00934	BOX ELDER CREEK DAM	LOCAL GOVERNMENT	CITY OF PLENTYWOOD	EARTH	48.786378	-104.554649	60	1,220	6,620	BOX ELDER CREEK
6	188	MT00574	NELSON DIKES A,B,C, AND DA	FEDERAL	U.S. D.O.I. B.R., GREAT PLAINS REGION	EARTH	48.527300	-107.519400	21	79,224	79,224	TR-MILK RIVER
6	189	MT00603	LITTLE PORCUPINE	FEDERAL	U.S. D.O.I. B.I.A. (FORT PECK RESERVA	EARTH	48.053600	-106.031600	0	3,600	4,000	TR-LITTLE PORCUPINE CREEK
6	190	MT00808	DRY BLOOD CREEK	FEDERAL	U.S. D.O.I. B.L.M.	EARTH	47.227700	-108.376500	41	0	706	DRY BLOOD CREEK
6	191	MT01268	WILSON (JUDITH BASIN)	PRIVATE	SURPRISE CREEK COLONY RANCH	EARTH	47.155151	-110.359342	29	134	148	SURPRISE CREEK
6	192	MT01569	BIG CASINO CREEK DAM	LOCAL GOVERNMENT	CITY OF LEWISTOWN	EARTH	47.036800	-109.430100	68	1,446	2,063	BIG CASINO CREEK
6	193	MT01568	PIKE CREEK DAM	LOCAL GOVERNMENT	CITY OF LEWISTOWN	EARTH	47.036300	-109.351400	57	477	780	PIKE CREEK
6	194	MT01570	HANSON CREEK DAM	LOCAL GOVERNMENT	CITY OF LEWISTOWN	EARTH	46.999000	-109.336200	61	180	860	HANSON CREEK
6	195	MT01567	EAST FORK DAM	LOCAL GOVERNMENT	CITY OF LEWISTOWN	EARTH	46.983300	-109.280300	62	1,700	7,150	EAST FORK BIG SPRING CREEK
6	196	MT00010	ACKLEY LAKE DAM	STATE	STATE WATER PROJECTS	EARTH	46.958565	-109.932896	55	5,970	8,315	TR-HAUCK COULEE
6	197	MT00008	PETROLIA	LOCAL GOVERNMENT	PETROLIA IRRIGATION DISTRICT	EARTH	46.941000	-108.235900	76	9,192	14,170	SOUTH FORK FLATWILLOW CREEK
6	198	MT03205	YELLOW WATER DIKE	STATE	STATE WATER PROJECTS	ROCKFILL	46.907200	-108.483600	11	1,500	5,100	YELLOW WATER CREEK
6	199	MT00012	YELLOW WATER MAIN DAM	STATE	STATE WATER PROJECTS	ROCKFILL	46.902300	-108.471200	37	3,835	6,695	YELLOW WATER CREEK

APPENDIX B-11. VULNERABILITY ASSESSMENT DOCUMENTATION - DAM FAILURE

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Dam Failure sq. miles	Total sq. miles	Percent Dam Failure sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Dam Failure Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Dam Failure Hazard Area	Residential Exposure in Dam Failure Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Dam Failure Hazard Area	CAI Exposure in Dam Failure Hazard Area	Total Population in Hazard Area	<18 in Dam Failure Hazard Area	>65 in Dam Failure Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Montana	2,989	146,923	2.0%	829	$3,596,319,710	100	$365,491,796	379,924	$65,567,813,250	69,146	$9,335,837,673	89,351	$31,241,965,630	14,268	$4,671,482,370	223,869.2	48,324.0	47,638.0	127,907.2	126	43
3	**Beaverhead County**	87.54	5,572.5	1.6%	21	$120,039,992	20	$120,013,493	3,023	$398,456,637	1,787	$219,065,789	2,017	$477,421,099	663	$176,635,033	4,025.4	683.5	971.0	2,370.9	6	2
	Dillon city	1.63	1.7	97.5%	0	$0	19	$114,722,911	1,178	$128,495,669	1,171	$126,501,631	230	$70,904,492	230	$70,904,492	2,701.0	449.0	694.2	1,557.7	2	1
	Lima town	0.00	0.5	0.0%	0	$0	0		135	$8,569,730	0		11	$1,208,935	0						0	0
	Balance of Beaverhead County	85.91	5,570.3		21	$120,039,992	1	$5,290,581	1,710	$261,391,238	616	$92,564,158	1,776	$405,307,672	433	$105,730,541	1,324.4	234.4	276.8	813.2	4	0
5	**Big Horn County**	180.71	5,013.9	3.6%	1	$64,294	1	$64,294	3,168	$358,629,629	1,784	$198,769,080	872	$190,843,437	447	$85,469,294	6,554.3	2,220.0	839.3	3,495.0	5	1
	Hardin city	1.65	1.6	100.0%	0	$0	1	$64,294	905	$97,296,363	905	$97,296,363	134	$32,479,192	134	$32,479,192	3,363.5	1,125.6	465.9	1,772.0	0	0
	Lodge Grass town	0.12	0.3	44.4%	0	$0	0		149	$10,790,706	81	$6,088,389	22	$17,123,392	21	$2,838,012	294.0	100.9	34.4	158.8	0	0
	Balance of Big Horn County	178.95	5,012.0		1	$64,294	0	$0	2,114	$250,542,560	798	$95,384,328	716	$141,240,853	292	$50,152,090	2,896.7	993.6	338.9	1,564.2	5	0
2	**Blaine County**	56.76	4,235.9	1.3%	1	$51,267	0		1,409	$115,967,606	478	$41,280,588	2,309	$361,010,008	261	$29,536,108	1,451.0	413.4	279.1	758.4	0	0
	Chinook city	0.30	0.5	57.6%	0	$0	0		674	$60,190,802	356	$29,588,589	106	$19,309,682	23	$2,691,823	1,021.7	308.6	147.1	566.0	0	0
	Harlem city	0.00	0.4	0.0%	0	$0	0		352	$22,108,616	0		68	$8,956,732	0						0	0
	Balance of Blaine County	56.46	4,235.0		1	$51,267	0	$0	383	$33,668,188	122	$11,691,999	2,135	$332,743,594	238	$26,844,285	429.3	104.9	132.0	192.4	0	0
3	**Broadwater County**	34.66	1,236.8	2.8%	3	$29,038,899	3	$29,038,899	3,442	$520,588,070	1,284	$141,154,832	795	$153,085,694	206	$32,492,714	3,747.6	598.3	895.8	2,253.5	1	1
	Townsend city	1.49	1.5	98.5%	0	$0	0		1,133	$116,996,708	1,133	$116,996,708	147	$21,344,104	146	$21,238,184	3,397.3	527.9	818.0	2,051.4	0	0
	Balance of Broadwater County	33.17	1,235.3		3	$29,038,899	3	$29,038,899	2,309	$403,591,362	151	$24,158,124	648	$131,741,590	60	$11,254,530	350.3	70.4	77.8	202.1	1	0
5	**Carbon County**	32.84	2,060.7	1.6%	3	$220,339	0		4,812	$912,472,742	1,099	$188,063,285	1,434	$312,638,485	197	$45,790,118	3,213.2	516.4	1,020.4	1,676.3	5	1
	Bearcreek town	0.00	0.1	0.0%	0	$0	0		57	$6,138,654	0		2	$269,414	0						0	0
	Bridger town	0.00	0.8	0.0%	0	$0	0		322	$30,656,055	0		49	$8,990,475	0						0	0
	Fromberg town	0.00	0.4	0.0%	0	$0	0		218	$16,035,910	0		21	$1,157,410	0						0	0
	Joliet town	0.24	0.3	86.3%	0	$0	0		241	$27,420,117	232	$26,106,035	20	$2,267,652	20	$2,267,652	601.5	107.7	144.4	349.5	0	0
	Red Lodge city	0.50	2.7	18.5%	0	$0	0		1,366	$249,897,767	420	$63,549,371	162	$49,294,962	24	$6,039,808	1,517.2	227.5	551.1	738.6	1	1
	Balance of Carbon County	32.10	2,056.4		3	$220,339	0	$0	2,608	$582,324,239	447	$98,407,879	1,180	$250,658,572	153	$37,482,658	1,094.4	181.2	325.0	588.2	4	0
4	**Carter County**	0.00	3,346.4	0.0%	0	$0	0		405	$20,620,826	0		1,012	$117,527,687	0						0	0
	Ekalaka town	0.00	1.0	0.0%	0	$0	0		323	$14,713,910	0		40	$3,481,214	0						0	0
	Balance of Carter County	0.00	3,345.4		0	$0	0	$0	82	$5,906,916	0	$0	972	$114,046,473	0	$0	0.0	0.0	0.0	0.0	0	0
2	**Cascade County**	137.08	2,708.4	5.1%	20	$90,365,664	0		28,943	$4,349,791,994	6,356	$905,765,171	4,285	$2,555,983,982	1211	$675,548,391	17,842.3	3,904.8	3,530.4	10,407.1	14	4
	Belt city	0.00	0.3	0.0%	0	$0	0		98	$8,912,233	0		16	$5,432,574	0						0	0
	Cascade town	0.22	0.5	45.3%	20	$90,365,664	0		267	$28,222,039	131	$12,877,914	61	$9,822,750	50	$6,383,864	307.9	69.0	55.1	183.8	1	1
	Great Falls city	5.51	23.0	23.9%	0	$0	0	$0	21,838	$3,214,111,195	3,871	$519,742,230	1,980	$1,834,875,305	718	$543,857,157	11,845.4	2,579.9	2,389.6	6,875.9	2	2
	Neihart town	0.00	1.6	0.0%	0	$0	0		57	$5,297,372	0		14	$2,901,487	0						0	0
	Balance of Cascade County	131.36	2,684.5		0	0.0	0	$0	6,683	$1,093,249,155	2,354	$373,145,027	2,214	$702,951,866	443	$125,307,370	5,689.1	1,256.0	1,085.7	3,347.4	11	0
2	**Chouteau County**	68.95	3,992.9	1.7%	0	$0	0		1,880	$212,079,581	832	$108,382,278	1,258	$200,554,092	166	$21,408,945	4,992.0	1,144.0	1,014.9	2,833.1	4	1
	Big Sandy town	0.00	0.5	0.0%	0	$0	0		324	$26,480,771	0		42	$4,231,062	0						0	0
	Fort Benton city	0.99	1.5	64.5%	0	$0	0		795	$106,352,375	755	$102,524,491	111	$15,435,130	100	$13,905,806	4,799.5	1,099.2	978.3	2,722.0	0	0
	Geraldine town	0.00	0.6	0.0%	0	$0	0		150	$9,556,033	0		21	$2,592,594	0						0	0
	Balance of Chouteau County	67.96	3,990.3		0	$0	0	$0	611	$69,690,402	77	$5,857,787	1,084	$178,295,306	66	$7,503,139	192.5	44.9	36.6	111.1	4	0
4	**Custer County**	124.58	3,789.3	3.3%	12	$59,923,374	11	$59,880,740	4,678	$531,010,978	4,042	$448,172,165	1,711	$297,665,123	856	$169,851,704	10,601.6	2,067.8	2,830.6	5,703.2	0	0
	Ismay town	0.00	0.4	0.0%	0	$0	0		29	$349,883	0		10	$1,387,354	0						0	0
	Miles City city	2.98	3.3	90.2%	0	$0	2	$7,613,508	3,312	$363,057,565	3,171	$345,279,725	433	$104,957,053	427	$101,164,049	8,343.2	1,617.5	2,264.5	4,461.2	0	0
	Balance of Custer County	121.60	3,785.6		12	$59,923,374	9	$52,267,232	1,337	$167,603,530	871	$102,892,440	1,268	$191,320,716	429	$68,687,655	2,258.4	450.3	566.1	1,242.0	0	0
6	**Daniels County**	0.00	1,426.1	0.0%	2	$36,946	0		906	$81,170,595	0		976	$93,098,998	0						0	0
	Flaxville town	0.00	0.1	0.0%	0	$0	0		87	$4,797,361	0		16	$766,732	0						0	0
	Scobey city	0.00	0.7	0.0%	0	$0	0		675	$64,548,974	0		128	$10,135,214	0						0	0
	Balance of Daniels County	0.00	1,425.3		2	$36,946	0	$0	144	$11,824,260	0	$0	832	$82,197,052	0	$0	0.0	0.0	0.0	0.0	0	0
4	**Dawson County**	54.62	2,380.7	2.3%	10	$20,985,926	2	$3,202,499	3,163	$409,229,017	1,215	$145,226,576	908	$162,010,623	277	$57,341,563	2,746.2	623.4	489.1	1,633.8	0	0
	Glendive city	1.97	3.5	56.4%	0	$0	2	$3,202,499	1,604	$225,892,962	1,033	$122,801,209	230	$56,394,894	215	$45,088,065	2,338.6	530.9	416.5	1,391.2	0	0
	Richey town	0.00	0.3	0.0%	0	$0	0		165	$8,909,873	0		23	$2,890,873	0						0	0
	Balance of Dawson County	52.66	2,376.9		10	$20,985,926	0	$0	1,394	$174,426,182	182	$22,425,367	655	$102,724,856	62	$12,253,498	407.7	92.5	72.6	242.6	0	0
1	**Deer Lodge County**	21.13	740.6	2.9%	30	$71,273,714	28	$69,438,235	4,234	$406,037,841	242	$20,909,519	509	$103,961,907	26	$22,870,923	609.2	91.4	135.2	382.6	3	0
	Anaconda-Deer Lodge County	21.13	740.6	2.9%	30	$71,273,714	28	$69,438,235	4,234	$406,037,841	242	$20,909,519	509	$103,961,907	0		609.2	91.4	135.2	382.6	3	0
4	**Fallon County**	1.54	1,621.2	0.1%	1	$15,822	0		1,223	$120,111,206	151	$14,566,952	1,285	$157,284,133	56	$20,306,590	532.0	98.3	225.1	208.7	2	0
	Baker city	0.34	1.1	31.3%	0	$0	0		882	$83,620,710	148	$14,426,762	144	$33,873,913	53	$19,994,222	524.6	96.3	223.9	204.5	0	0
	Plevna town	0.00	0.4	0.0%	0	$0	0		106	$6,148,692	0		78	$8,870,026	0						0	0
	Balance of Fallon County	1.21	1,619.6		1	$15,822	0	$0	235	$30,341,804	3	$140,190	1,063	$114,540,194	3	$312,368	7.4	2.0	1.2	4.2	2	0
6	**Fergus County**	27.70	4,345.2	0.6%	7	$21,432,181	0		4,690	$556,548,908	1,203	$119,816,379	2,019	$402,403,647	273	$72,649,792	6,270.8	1,310.6	1,492.4	3,467.7	4	2
	Denton town	0.00	0.7	0.0%	0	$0	0		152	$13,428,059	0		29	$4,382,026	0						0	0
	Grass Range town	0.00	0.1	0.0%	0	$0	0		82	$4,930,605	0		14	$1,525,471	0						0	0
	Lewistown city	0.69	5.2	13.3%	0	$0	0		2,796	$320,465,500	1,118	$107,980,871	396	$106,823,714	216	$61,990,229	6,054.8	1,265.4	1,441.0	3,348.3	0	0
	Moore town	0.00	0.3	0.0%	0	$0	0		102	$6,944,815	0		19	$4,216,005	0						0	0
	Winifred town	0.00	0.5	0.0%	0	$0	0		90	$8,768,234	0		20	$4,365,641	0						0	0
	Balance of Fergus County	27.01	4,338.3		7	$21,432,181	0	$0	1,468	$202,011,695	85	$11,835,508	1,541	$281,090,790	57	$10,659,563	216.0	45.1	51.4	119.4	4	0
1	**Flathead County**	194.17	5,252.4	3.7%	20	$38,896,279	4	$19,717,993	41,342	$8,600,413,799	10,859	$1,796,830,916	8,138	$3,832,482,719	1871	$736,587,020	54,255.6	11,918.9	10,195.0	32,141.7	5	1
	Columbia Falls city	2.01	2.1	98.0%	0	$0	2	$16,951,424	1,739	$255,171,515	1,739	$255,171,515	327	$117,184,528	327	$117,184,528	10,091.4	2,194.1	1,980.5	5,916.9	1	1
	Kalispell city	1.08	11.8	9.1%	0	$0	1	$2,664,291	7,553	$1,271,291,249	732	$137,372,563	1,714	$1,065,757,780	46	$24,780,535	7,107.7	1,570.8	1,300.7	4,236.2	0	0
	Whitefish city	0.00	11.8	0.0%	0	$0	0		4,029	$1,153,743,638	0		522	$350,353,977	0						0	0
	Balance of Flathead County	191.07	5,226.8		20	$38,896,279	1	$102,279	28,021	$5,920,207,397	8,388	$1,404,286,838	5,575	$2,299,186,434	1498	$594,621,957	37,056.5	8,154.0	6,913.8	21,988.7	4	0
3	**Gallatin County**	132.44	2,632.5	5.0%	207	$963,139,971	1	$251,183	40,035	$10,930,545,091	3,390	$713,394,720	5,191	$4,169,858,220	843	$371,053,249	9,234.8	1,824.8	1,315.6	6,094.4	6	1
	Belgrade city	0.21	3.1	6.9%	0	$0	0		2,764	$496,929,312	23	$3,686,297	204	$120,870,378	1	$141,000	55.0	11.2	6.5	37.3	0	0
	Bozeman city	0.00	19.9	0.0%	0	$0	0		16,722	$4,743,491,928	0		1,511	$2,235,363,972	0						2	0
	Manhattan town	0.03	1.7	1.7%	0	$0	0		657	$115,292,092	0		71	$33,496,346	0						0	0
	Three Forks city	1.35	1.4	99.9%	0	$0	1	$251,183	787	$99,273,886	787	$99,273,886	104	$26,353,553	104	$26,353,553	2,461.5	449.8	509.6	1,502.1	0	0
	West Yellowstone town	0.00	0.8	0.0%	0	$0	0		639	$139,663,482	0		244	$183,049,311	0						0	0

APPENDIX B-11. VULNERABILITY ASSESSMENT DOCUMENTATION - DAM FAILURE

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Dam Failure sq. miles	Total sq. miles	Percent Dam Failure sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Dam Failure Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Dam Failure Hazard Area	Residential Exposure in Dam Failure Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Dam Failure Hazard Area	CAI Exposure in Dam Failure Hazard Area	Total Population in Hazard Area	<18 in Dam Failure Hazard Area	>65 in Dam Failure Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
	Balance of Gallatin County	130.84	2,605.7		207	$963,139,971	0	$0	18,466	$5,335,894,391	2,580	$610,434,537	3,057	$1,570,724,660	738	$344,558,696	6,718.3	1,363.9	799.4	4,555.0	4	0
4	**Garfield County**	1.13	4,843.5	0.0%	1	$2,417	0		558	$40,352,973	0		828	$98,380,657	0						0	0
	Jordan town	0.00	0.3	0.0%	0	$0	0		257	$15,353,948	0		31	$4,176,477	0						0	0
	Balance of Garfield County	1.13	4,843.1		1	$2,417	0	$0	301	$24,999,025	0	$0	797	$94,204,180	0	$0	0.0	0.0	0.0	0.0	0	0
2	**Glacier County**	23.13	3,034.9	0.8%	4	$166,089	0		2,176	$173,809,579	0		1,208	$513,342,768	22	$3,476,714					0	0
	Browning town	0.00	0.3	0.0%	0	$0	0		207	$8,297,087	0		61	$9,037,744	0						0	0
	Cut Bank city	0.00	1.2	0.0%	0	$0	0		1,122	$90,953,194	0		151	$37,600,597	0						0	0
	Balance of Glacier County	23.13	3,033.4		4	$166,089	0	$0	847	$74,559,298	0	$0	996	$466,704,427	22	$3,476,714	0.0	0.0	0.0	0.0	0	0
5	**Golden Valley County**	17.18	1,174.1	1.5%	0	$0	0		288	$22,545,552	203	$15,068,659	240	$51,388,053	61	$10,800,490	540.4	105.9	146.5	288.1	0	0
	Lavina town	0.71	1.0	70.5%	0	$0	0		91	$7,521,010	90	$7,416,627	15	$1,533,018	13	$1,479,948	281.7	55.2	76.3	150.1	0	0
	Ryegate town	0.44	0.8	57.7%	0	$0	0		141	$10,234,886	106	$7,009,972	15	$1,769,218	15	$1,769,218	242.7	47.6	65.8	129.4	0	0
	Balance of Golden Valley County	16.03	1,172.4		0	$0	0	$0	56	$4,789,656	7	$642,060	210	$48,085,817	33	$7,551,324	16.0	3.1	4.3	8.5	0	0
1	**Granite County**	48.99	1,730.9	2.8%	0	$0	0		1,604	$210,828,137	292	$35,901,589	530	$156,924,788	145	$56,186,385	808.1	130.1	238.4	439.6	4	0
	Drummond town	0.34	0.5	61.6%	0	$0	0		144	$11,391,136	41	$3,079,182	48	$5,493,281	12	$1,703,928	186.2	30.0	54.9	101.3	0	0
	Philipsburg town	0.00	0.8	0.0%	0	$0	0		503	$53,845,654	0		77	$16,673,401	0						0	0
	Balance of Granite County	48.65	1,729.5		0	$0	0	$0	957	$145,591,347	251	$32,822,407	405	$134,758,106	133	$54,482,457	622.0	100.1	183.5	338.3	4	0
2	**Hill County**	35.78	2,915.3	1.2%	19	$55,432,027	0		6,281	$754,306,279	2,496	$265,273,192	2,439	$478,811,374	465	$129,383,611	7,417.5	1,994.7	1,215.8	4,207.1	4	2
	Havre city	1.44	3.4	41.9%	0	$0	0		2,954	$365,822,286	1,597	$172,212,178	390	$113,681,709	325	$95,301,526	5,053.2	1,344.5	872.9	2,835.8	0	0
	Hingham town	0.00	0.2	0.0%	0	$0	0		165	$13,864,635	0		27	$3,866,422	0						0	0
	Balance of Hill County	34.33	2,911.7		19	$55,432,027	0	$0	3,162	$374,619,358	899	$93,061,014	2,022	$361,263,243	140	$34,082,085	2,364.4	650.2	342.8	1,371.3	4	0
3	**Jefferson County**	41.70	1,657.8	2.5%	14	$15,148,292	0		4,016	$744,240,161	468	$53,857,871	694	$117,529,005	129	$21,885,594	1,202.3	241.7	247.7	713.0	7	0
	Boulder town	0.00	1.1	0.0%	0	$0	0		356	$36,918,541	0		47	$6,824,156	0						3	0
	Whitehall town	0.52	0.7	73.9%	0	$0	0		325	$32,838,125	248	$23,285,043	47	$9,146,159	43	$6,806,547	622.5	125.1	128.2	369.1	0	0
	Balance of Jefferson County	41.18	1,656.0		14	$15,148,292	0	$0	3,335	$674,483,495	220		600	$101,558,690	86	$15,079,047	579.8	116.5	119.4	343.8	4	0
6	**Judith Basin County**	4.51	1,868.3	0.2%	0	$0	0		783	$67,357,916	2	$252,530	682	$119,016,564	2	$339,970	4.4	0.8	1.0	2.5	0	0
	Hobson town	0.00	0.2	0.0%	0	$0	0		116	$11,542,201	0		21	$3,191,010	0						0	0
	Stanford town	0.00	0.4	0.0%	0	$0	0		248	$24,191,487	0		49	$6,993,739	0						0	0
	Balance of Judith Basin County	4.51	1,867.6		0	$0	0	$0	419	$31,624,228	2	$252,530	612	$108,831,815	2	$339,970	4.4	0.8	1.0	2.5	0	0
1	**Lake County**	187.21	1,652.1	11.3%	16	$14,144,458	0		16,679	$3,044,070,013	2,488	$447,852,310	4,157	$907,884,902	311	$77,585,859	6,078.5	1,477.2	1,252.2	3,349.2	0	0
	Polson city	0.45	4.3	10.4%	0	$0	0		1,550	$239,716,220	74	$13,231,126	307	$110,486,890	28	$15,907,089	202.3	49.2	41.7	111.5	0	0
	Ronan city	0.00	1.1	0.0%	0	$0	0		498	$51,240,897	0		188	$43,266,142	0						0	0
	St. Ignatius town	0.11	0.5	20.2%	0	$0	0		227	$24,362,098	18	$1,973,106	33	$6,506,490	1	$51,293	42.8	10.4	8.8	23.6	0	0
	Balance of Lake County	186.66	1,646.2		16	$14,144,458	0	$0	14,404	$2,728,750,798	2,396	$432,648,078	3,629	$747,625,380	282	$61,627,477	5,833.4	1,417.6	1,201.7	3,214.1	0	0
3	**Lewis and Clark County**	76.02	3,493.5	2.2%	77	$528,411,633	9	$10,824,069	28,356	$4,838,187,380	2,888	$389,481,396	2,990	$1,486,292,152	197	$45,608,508	8,894.7	1,832.7	1,911.8	5,150.2	15	2
	East Helena town	0.61	4.1	14.9%	0	$0	0		778	$95,292,980	187	$25,207,944	55	$16,849,629	23	$3,216,700	1,467.2	299.2	327.2	840.8	0	0
	Helena city	0.01	16.5	0.0%	0	$0	0		10,487	$2,070,264,423	0		1,613	$1,127,469,517	0						8	0
	Balance of Lewis and Clark County	75.40	3,472.8		77	$528,411,633	9	$10,824,069	17,091	$2,672,629,977	2,701	$364,273,452	1,322	$341,973,006	174	$42,391,808	7,427.5	1,533.5	1,584.6	4,309.4	7	0
2	**Liberty County**	1.84	1,446.4	0.1%	3	$203,754	0		540	$55,198,775	1	$118,124	727	$148,145,426	0		2.5	0.6	0.5	1.5	0	0
	Chester town	0.00	0.5	0.0%	0	$0	0		347	$38,384,265	0		85	$11,176,620	0						0	0
	Balance of Liberty County	1.84	1,445.9		3	$203,754	0	$0	193	$16,814,510	1	$118,124	642	$136,968,806	0	$0	2.5	0.6	0.5	1.5	0	0
1	**Lincoln County**	32.17	3,673.2	0.9%	5	$2,732,131	2	$2,659,481	14,201	$1,669,255,057	5,285	$515,672,232	4,037	$814,443,340	903	$206,805,351	12,016.5	2,166.1	3,388.7	6,461.6	0	0
	Eureka town	0.19	1.0	18.4%	0	$0	0		576	$49,995,833	11	$1,132,739	79	$16,254,364	4	$2,646,100	24.3	4.5	6.5	13.3	0	0
	Libby city	1.33	1.7	79.3%	0	$0	2	$2,659,481	1,887	$171,393,838	1,775	$157,652,156	407	$97,831,857	359	$87,232,012	4,155.3	734.4	1,229.7	2,191.2	0	0
	Rexford town	0.00	0.1	0.0%	0	$0	0		62	$5,237,363	0		7	$1,125,453	0						0	0
	Troy city	0.66	0.7	95.7%	0	$0	0		543	$42,346,210	543	$42,346,210	99	$14,488,626	99	$14,488,626	1,279.8	220.4	401.8	657.6	0	0
	Balance of Lincoln County	30.00	3,669.7		5	$2,732,131	0	$0	11,133	$1,400,281,813	2,956	$314,541,127	3,445	$684,743,040	441	$102,438,613	6,557.1	1,206.8	1,750.7	3,599.5	0	0
3	**Madison County**	158.08	3,602.4	4.4%	3	$270,203	0		4,154	$804,105,665	1,134	$189,984,734	1,301	$368,696,283	364	$95,267,638	2,553.4	400.9	730.3	1,422.2	9	1
	Ennis town	0.23	0.6	39.6%	0	$0	0		533	$84,019,269	273	$45,407,402	85	$24,326,354	52	$18,985,957	633.3	99.4	181.1	352.8	0	0
	Sheridan town	0.00	1.0	0.0%	2	$59,996	0		1,971	$206,039,798	0		54	$8,980,370	0						0	0
	Twin Bridges town	1.01	1.0	100.0%	0	$0	0		232	$25,593,322	232	$25,593,322	47	$8,125,500	47	$8,125,500	517.4	81.2	148.0	288.2	0	0
	Virginia City town	0.00	0.9	0.0%	0	$0	0		167	$26,178,533	0		30	$5,366,969	0						1	0
	Balance of Madison County	156.84	3,598.8		1	$210,207	0	$0	1,251	$462,274,743	629	$118,984,010	1,085	$321,897,090	265	$68,156,181	1,402.7	220.2	401.2	781.3	8	0
4	**McCone County**	34.14	2,679.2	1.3%	3	$141,360	0		532	$44,530,155	14	$1,099,131	679	$82,125,293	38	$3,093,580	32.3	6.7	7.1	18.6	3	0
	Circle town	0.00	0.8	0.0%	0	$0	0		335	$27,003,251	0		66	$14,581,192	0						0	0
	Balance of McCone County	34.14	2,678.4		3.0	$141,360	0	$0	197	$17,526,904	14	$1,099,131	613	$67,544,101	38	$3,093,580	32.3	6.7	7.1	18.6	3	0
3	**Meagher County**	38.53	2,392.1	1.6%	0	$0	0		1,199	$128,110,116	273	$28,053,344	412	$92,624,757	85	$16,581,846	674.3	120.7	185.4	368.2	0	0
	White Sulphur Springs city	0.45	1.0	44.8%	0	$0	0		630	$61,212,327	199	$17,801,545	45	$6,869,617	22	$4,240,732	491.5	88.0	135.2	268.4	0	0
	Balance of Meagher County	38.08	2,391.1		0	$0	0	$0	569	$66,897,789	74	$10,251,799	367	$85,755,140	63	$12,341,114	182.8	32.7	50.3	99.8	0	0
1	**Mineral County**	0.00	1,222.0	0.0%	0	$0	0		2,023	$203,747,490	0		404	$84,723,652	0						2	0
	Alberton town	0.00	0.5	0.0%	0	$0	0		197	$14,926,025	0		20	$2,465,222	0						0	0
	Superior town	0.00	1.1	0.0%	0	$0	0		381	$36,464,606	0		72	$20,494,160	0						0	0
	Balance of Mineral County	0.00	1,220.4		0	$0	0	$0	1,445	$152,356,859	0	$0	312	$61,764,270	0	$0	0.0	0.0	0.0	0.0	2	0
1	**Missoula County**	51.16	2,614.9	2.0%	203	$1,032,240,117	0		16,873	$2,860,469,867	1,236	$231,560,070	1,421	$1,152,881,550	121	$113,377,553	4,038.8	747.8	729.7	2,561.2	13	1
	Missoula city	1.25	29.0	4.3%	203	$1,032,240,117	0		4,975	$984,652,873	109	$40,407,196	470	$595,032,016	20	$71,923,359	1,153.8	206.9	238.5	708.5	8	1
	Balance of Missoula County	49.91	2,585.9		0	$0	0	$0	11,898	$1,875,816,994	1,127	$191,152,874	951	$557,849,534	101	$41,454,194	2,885.0	541.0	491.2	1,852.8	5	0
5	**Musselshell County**	15.33	1,869.6	0.8%	2	$45,908	0		1,730	$148,155,396	156	$8,450,920	734	$146,591,301	45	$7,516,290	379.1	75.8	87.6	215.7	0	0
	Melstone town	0.00	0.6	0.0%	0	$0	0		39	$2,012,685	0		7	$754,186	0						0	0
	Roundup city	0.33	1.3	25.7%	0	$0	0		837	$63,457,673	116	$5,828,697	129	$18,353,849	20	$2,616,085	281.9	56.4	65.1	160.4	0	0
	Balance of Musselshell County	15.00	1,867.7		2	$45,908	0	$0	854	$82,685,038	40	$2,622,223	598	$127,483,266	25	$4,900,205	97.2	19.4	22.5	55.3	0	0
3	**Park County**	9.10	2,811.7	0.3%	4	$2,414,253	0		6,087	$1,151,416,662	40	$11,108,719	1,680	$821,834,484	21	$6,902,385	91.2	17.1	19.3	54.8	3	0
	Clyde Park town	0.01	0.4	1.8%	0	$0	0		134	$13,924,845	1	$225,266	23	$4,042,499	0		2.3	0.4	0.5	1.4	0	0
	Livingston city	0.00	5.7	0.0%	0	$0	0		2,567	$392,434,781	0		537	$198,955,646	0						0	0
	Balance of Park County	9.10	2,805.6		4	$2,414,253	0	$0	3,386	$745,057,036	39	$10,883,453	1,120	$618,836,339	21	$6,902,385	88.9	16.6	18.9	53.4	3	0

APPENDIX B-11. VULNERABILITY ASSESSMENT DOCUMENTATION - DAM FAILURE

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Dam Failure sq. miles	Total sq. miles	Percent Dam Failure sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Dam Failure Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Dam Failure Hazard Area	Residential Exposure in Dam Failure Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Dam Failure Hazard Area	CAI Exposure in Dam Failure Hazard Area	Total Population in Hazard Area	<18 in Dam Failure Hazard Area	>65 in Dam Failure Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
6	**Petroleum County**	18.77	1,672.5	1.1%	0	$0	0		184	$23,127,789	0		204	$28,781,751	11	$1,929,290					0	0
	Winnett town	0.00	1.0	0.0%	0	$0	0		148	$19,210,729	0		21	$2,591,917	0						0	0
	Balance of Petroleum County	18.77	1,671.5		0	$0	0	$0	36	$3,917,060	0	$0	183	$26,189,834	11	$1,929,290	0.0	0.0	0.0	0.0	0	0
6	**Phillips County**	39.22	5,208.5	0.8%	6	$1,661,730	0		1,695	$155,044,408	141	$7,992,257	1,402	$250,190,823	69	$8,637,850	318.7	73.6	67.9	177.2	3	1
	Dodson town	0.00	0.2	0.0%	0	$0	0		70	$2,222,512	0		5	$140,341	0						0	0
	Malta city	0.00	1.0	0.0%	0	$0	0		996	$103,409,948	0		144	$29,008,393	0						0	0
	Saco town	0.30	0.3	100.0%	0	$0	0		134	$6,873,752	134	$6,873,752	15	$1,887,736	15	$1,887,736	302.8	70.0	64.5	168.4	0	0
	Balance of Phillips County	38.92	5,207.0		6	$1,661,730	0	$0	495	$42,538,196	7	$1,118,505	1,238	$219,154,353	54	$6,750,114	15.8	3.7	3.4	8.8	3	0
2	**Pondera County**	63.67	1,640.4	3.9%	2	$60,957	0		1,815	$200,092,707	30	$3,654,496	883	$265,160,665	34	$4,937,190	75.6	17.8	15.4	42.3	0	0
	Conrad city	0.00	1.2	0.0%	0	$0	0		1,126	$122,656,189	0		156	$57,675,177	0						0	0
	Valier town	0.00	0.9	0.0%	0	$0	0		295	$29,342,500	0		47	$8,582,116	0						0	0
	Balance of Pondera County	63.67	1,638.3		2	$60,957	0	$0	394	$48,094,018	30	$3,654,496	680	$198,903,372	34	$4,937,190	75.6	17.8	15.4	42.3	0	0
4	**Powder River County**	0.00	3,297.5	0.0%	2	$26,512	0		350	$31,752,451	0		642	$113,734,309	0						0	0
	Broadus town	0.00	0.4	0.0%	0	$0	0		218	$19,631,053	0		71	$8,590,919	0						0	0
	Balance of Powder River County	0.00	3,297.1		2	$26,512	0	$0	132	$12,121,398	0	$0	571	$105,143,390	0	$0	0.0	0.0	0.0	0.0	0	0
1	**Powell County**	31.66	2,329.6	1.4%	47	$139,753,982	11	$17,309,912	2,509	$325,066,746	171	$14,646,453	697	$217,400,046	66	$32,981,579	508.5	78.8	100.2	329.5	4	1
	Deer Lodge city	0.34	1.4	24.1%	30	$71,273,714	0		1,455	$118,373,521	142	$9,457,478	160	$37,299,244	25	$4,856,359	443.3	68.7	87.3	287.2	2	1
	Balance of Powell County	31.32	2,328.2		17	$68,480,268	11	$17,309,912	1,054	$206,693,225	29	$5,188,975	537	$180,100,802	41	$28,125,220	65.3	10.1	12.9	42.3	2	0
4	**Prairie County**	54.65	1,740.2	3.1%	0	$0	0		527	$28,742,376	171	$7,909,714	525	$56,615,772	105	$10,495,183	500.2	83.6	207.0	209.5	4	2
	Terry town	0.40	0.8	51.8%	0	$0	0		382	$21,559,157	69	$2,940,741	43	$3,618,679	32	$2,969,738	249.3	33.5	132.0	83.8	0	0
	Balance of Prairie County	54.25	1,739.4		0	$0	0	$0	145	$7,183,219	102	$4,968,973	482	$52,997,093	73	$7,525,445	250.9	50.2	75.0	125.7	4	0
1	**Ravalli County**	78.73	2,398.2	3.3%	3	$1,079,777	1	$1,014,737	19,277	$3,692,614,691	4,402	$733,681,647	3,023	$930,619,898	610	$269,538,995	12,591.0	2,371.4	3,468.3	6,751.2	4	1
	Darby town	0.50	0.6	89.0%	0	$0	0		455	$65,564,435	405	$59,560,994	20	$5,525,704	20	$5,525,704	1,117.8	219.1	275.0	623.7	0	0
	Hamilton city	2.06	2.4	86.2%	0	$0	1	$1,014,737	2,371	$402,402,609	2,088	$342,224,990	207	$138,471,668	203	$135,800,340	6,648.4	1,238.8	1,882.8	3,526.8	0	0
	Pinesdale town	0.00	1.3	0.0%	0	$0	0		163	$30,828,359	0		42	$6,383,047	0						0	0
	Stevensville town	0.04	1.0	3.6%	0	$0	0		956	$165,432,372	3	$899,146	64	$20,620,328	1	$433,580	7.3	1.4	1.8	4.1	0	0
	Balance of Ravalli County	76.13	2,392.9		3	$1,079,777	0	$0	15,332	$3,028,386,916	1,906	$330,996,517	2,690	$759,619,151	386	$127,779,371	4,817.5	912.1	1,308.7	2,596.6	4	0
4	**Richland County**	28.43	2,101.9	1.4%	4	$1,434,990	0		2,979	$516,039,930	67	$6,713,275	1,646	$420,114,426	49	$8,019,433	195.8	50.5	26.0	119.2	0	0
	Fairview town	0.13	0.8	15.7%	0	$0	0		313	$29,368,800	50	$3,396,285	37	$7,407,985	18	$3,417,883	153.1	39.5	20.4	93.2	0	0
	Sidney city	0.00	2.4	0.0%	0	$0	0		1,697	$319,755,649	0		342	$108,260,768	0						0	0
	Balance of Richland County	28.31	2,098.7		4	$1,434,990	0	$0	969	$166,915,481	17	$3,316,990	1,267	$304,445,673	31	$4,601,550	42.7	11.0	5.7	26.0	0	0
6	**Roosevelt County**	94.96	2,366.6	4.0%	4	$3,703,234	3	$3,662,363	2,085	$172,781,506	1,364	$107,213,485	1,674	$267,647,926	423	$59,566,339	6,192.6	2,001.5	839.2	3,351.9	2	0
	Bainville town	0.00	1.0	0.0%	0	$0	0		116	$8,253,760	0		17	$1,186,389	0						0	0
	Brockton town	0.16	0.2	93.5%	0	$0	0		21	$718,776	16	$542,260	5	$430,537	5	$430,537	212.4	70.5	23.8	118.1	0	0
	Culbertson town	0.51	0.5	98.2%	0	$0	0		452	$46,606,757	452	$46,606,757	78	$11,849,589	77	$11,568,519	1,600.1	531.2	179.2	889.6	0	0
	Froid town	0.00	0.3	0.0%	0	$0	0		127	$5,583,947	0		15	$809,020	0						0	0
	Poplar city	0.27	0.3	100.0%	0	$0	0		239	$11,492,367	239	$11,492,367	40	$3,179,375	40	$3,179,375	1,547.0	513.6	173.3	860.1	0	0
	Wolf Point city	0.62	0.8	72.8%	0	$0	1	$1,444,427	746	$61,499,644	445	$28,136,339	105	$12,969,709	101	$12,677,749	1,692.1	561.8	189.5	940.8	0	0
	Balance of Roosevelt County	93.41	2,363.6		4	$3,703,234	2	$2,217,936	384	$38,626,255	212	$20,435,762	1,414	$237,223,307	200	$31,710,159	1,141.0	324.4	273.4	543.2	2	0
5	**Rosebud County**	147.19	5,020.4	2.9%	3	$125,417	0		2,477	$239,021,461	1,190	$91,254,984	1,810	$213,766,468	648	$76,118,635	3,423.1	985.6	573.1	1,864.3	0	0
	Colstrip city	0.00	4.1	0.0%	0	$0	0		980	$109,503,560	0		250	$31,692,015	0						0	0
	Forsyth city	1.12	1.2	96.2%	0	$0	0		896	$75,056,501	896	$75,056,501	141	$26,550,423	141	$26,550,423	2,596.9	741.9	451.7	1,403.3	0	0
	Balance of Rosebud County	146.07	5,015.1		3	$125,417	0	$0	601	$54,461,400	294	$16,198,483	1,419	$155,524,030	507	$49,568,212	826.1	243.7	121.4	461.0	0	0
1	**Sanders County**	93.96	2,786.9	3.4%	0	$0	0		4,955	$571,408,477	1,558	$175,167,997	1,849	$320,122,376	301	$57,141,026	4,908.6	868.8	1,457.6	2,582.3	0	0
	Hot Springs town	0.00	0.4	0.0%	0	$0	0		343	$29,433,542	0		53	$9,621,606	0						0	0
	Plains town	0.59	0.6	96.8%	0	$0	0		547	$44,751,633	547	$44,751,633	88	$17,655,569	88	$17,655,569	2,212.4	383.5	689.2	1,139.8	0	0
	Thompson Falls city	0.03	1.6	1.7%	0	$0	0		666	$67,891,731	18	$2,650,497	85	$16,866,473	5	$664,266	88.4	15.9	25.2	47.3	0	0
	Balance of Sanders County	93.35	2,784.4		0	$0	0	$0	3,399	$429,331,571	993	$127,765,867	1,623	$275,978,728	208	$38,821,191	2,607.8	469.4	743.2	1,395.2	0	0
6	**Sheridan County**	15.41	1,703.6	0.9%	2	$59,996	0		1,971	$206,039,798	783	$86,912,897	1,503	$172,072,215	167	$21,119,864	1,898.5	366.0	535.2	997.3	0	0
	Medicine Lake town	0.00	0.4	0.0%	0	$0	0		159	$9,705,581	0		24	$1,200,353	0						0	0
	Outlook town	0.00	1.2	0.0%	0	$0	0		44	$2,946,970	0		10	$552,096	0						0	0
	Plentywood city	1.03	1.3	77.0%	0	$0	0		785	$88,640,393	748	$84,092,862	136	$18,201,885	133	$17,168,515	1,822.9	350.0	519.0	953.9	0	0
	Westby town	0.00	0.6	0.0%	0	$0	0		102	$4,909,517	0		15	$1,132,999	0						0	0
	Balance of Sheridan County	14.38	1,700.1		2	$59,996	0	$0	881	$99,837,337	35	$2,820,035	1,318	$150,984,882	34	$3,951,349	75.6	16.0	16.2	43.5	0	0
1	**Silver Bow County**	12.24	718.0	1.7%	26	$227,661,811	0		13,122	$1,426,148,334	2,719	$330,308,980	1,585	$807,024,197	274	$227,506,940	8,461.9	1,650.7	1,875.4	4,935.8	5	2
	Walkerville town	0.00	2.2	0.0%	0	$0	0		342	$24,138,167	0		6	$334,643	-240	-$223,555,591					1	0
	Butte-Silver Bow (remainder)	12.24	715.7		26	$227,661,811	0	$0	12,780	$1,402,010,167	2,719	$330,308,980	1,579	$806,689,554	514	$451,062,531	8,461.9	1,650.7	1,875.4	4,935.8	4	0
5	**Stillwater County**	9.94	1,804.7	0.6%	2	$100,729	0		2,790	$487,586,815	432	$56,035,660	943	$192,170,926	71	$11,540,902	1,054.1	226.1	307.1	520.9	0	0
	Columbus town	0.01	1.3	0.7%	0	$0	0		448	$58,806,556	0		97	$44,373,190	0						0	0
	Balance of Stillwater County	9.93	1,803.4		2	$100,729	0	$0	2,342	$428,780,259	432	$56,035,660	846	$147,797,736	71	$11,540,902	1,054.1	226.1	307.1	520.9	0	0
3	**Sweet Grass County**	2.07	1,860.9	0.1%	1	$100,000	0		1,559	$263,525,756	0		1,251	$384,985,550	5	$1,006,490					0	0
	Big Timber city	0.00	1.0	0.0%	0	$0	0		772	$99,628,903	0		157	$34,833,465	0						0	0
	Balance of Sweet Grass County	2.07	1,860.0		1	$100,000	0	$0	787	$163,896,853	0	$0	1,094	$350,152,085	5	$1,006,490	0.0	0.0	0.0	0.0	0	0
2	**Teton County**	111.21	2,289.5	4.9%	2	$60,957	0		1,834	$226,386,656	101	$12,122,301	1,107	$240,507,233	97	$13,210,460	252.5	59.6	57.1	135.8	1	0
	Choteau city	0.16	1.5	11.0%	0	$0	0		743	$81,363,094	38	$3,600,088	102	$23,811,077	7	$674,740	95.0	22.4	21.5	51.1	0	0
	Dutton town	0.00	0.4	0.0%	0	$0	0		159	$17,819,673	0		30	$5,356,644	0						0	0
	Fairfield town	0.00	0.3	0.0%	0	$0	0		266	$30,208,145	0		46	$13,369,957	0						0	0
	Balance of Teton County	111.04	2,287.4		2	$60,957	0	$0	666	$96,995,744	63	$8,522,213	929	$197,969,555	90	$12,535,720	157.5	37.2	35.6	84.7	1	0
2	**Toole County**	21.76	1,943.9	1.1%	3	$124,825	0		1,702	$149,272,962	458	$38,080,155	806	$214,874,251	51	$8,501,914	1,543.4	290.2	260.8	992.4	2	1
	Kevin town	0.00	0.4	0.0%	0	$0	0		101	$4,284,353	0		9	$317,749	0						0	0
	Shelby city	1.17	5.9	19.8%	0	$0	0		1,175	$110,467,515	453	$37,152,919	196	$76,850,372	41	$6,667,444	1,532.2	288.0	258.9	985.2	0	0
	Sunburst town	0.00	2.0	0.0%	0	$0	0		208	$12,619,612	0		25	$3,026,807	0						0	0
	Balance of Toole County	20.59	1,935.5		3	$124,825	0	$0	218	$21,901,482	5	$927,236	576	$134,679,323	10	$1,834,470	11.2	2.1	1.9	7.2	2	0

APPENDIX B-11. VULNERABILITY ASSESSMENT DOCUMENTATION - DAM FAILURE
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

		HAZARD AREA			CRITICAL FACILITY EXPOSURE				RESIDENTIAL BUILDING STOCK EXPOSURE				COMMERCIAL/AG/INDUSTRIAL (CAI) BUILDING EXPOSURE				SOCIETAL EXPOSURE				CULTURAL RESOURCES	
DES District	Geography	Dam Failure sq. miles	Total sq. miles	Percent Dam Failure sq. miles	Total # Critical Facilities	Total Critical Facility Exposure	# Critical Facilities in Hazard Area	Exposure in Dam Failure Hazard Area	Total # Residential Buildings	Total Residential Exposure	# Residential Buidlings in Dam Failure Hazard Area	Residential Exposure in Dam Failure Hazard Area	Total # CAI Buildings	Total CAI Exposure	# CAI Buidlings in Dam Failure Hazard Area	CAI Exposure in Dam Failure Hazard Area	Total Population in Hazard Area	<18 in Dam Failure Hazard Area	>65 in Dam Failure Hazard Area	Balance County Population	Total # Cultural Resources	Total Cultural Resource Exposure
5	**Treasure County**	81.31	983.5	8.3%	1	$250,000	0		194	$12,369,442	183	$11,393,948	362	$46,827,867	192	$25,230,261	420.9	77.4	116.6	226.9	2	1
	Hysham town	0.24	0.2	100.0%	0	$0	0		159	$9,401,270	159	$9,401,270	20	$2,281,485	20	$2,281,485	365.7	67.3	101.3	197.1	0	0
	Balance of Treasure County	81.07	983.2		1	$250,000	0	$0	35	$2,968,172	24	$1,992,678	342	$44,546,382	172	$22,948,776	55.2	10.2	15.3	29.8	2	0
6	**Valley County**	64.47	5,058.5	1.3%	7	$2,929,498	1	$10,000	2,863	$365,588,943	859	$81,941,460	1,209	$208,523,811	260	$45,656,570	2,990.6	654.4	733.5	1,602.6	0	0
	Fort Peck town	0.00	0.9	0.0%	0	$0	0		118	$21,485,471	0		10	$2,092,827	0						0	0
	Glasgow city	0.45	1.4	31.9%	0	$0	0		1,353	$173,782,829	428	$43,840,460	217	$55,123,436	143	$28,397,966	1,867.4	401.7	481.9	983.8	0	0
	Nashua town	0.58	0.7	82.3%	0	$0	0		200	$13,107,033	195	$12,556,395	17	$1,596,474	16	$1,441,903	490.4	110.3	109.9	270.2	0	0
	Opheim town	0.00	0.2	0.0%	0	$0	0		76	$3,977,464	0		14	$1,365,742	0						0	0
	Balance of Valley County	63.44	5,055.3		7	$2,929,498	1	$10,000	1,116	$153,236,146	236	$25,544,605	951	$148,345,332	101	$15,816,701	632.8	142.4	141.7	348.7	0	0
5	**Wheatland County**	38.82	1,425.9	2.7%	3	$1,816,266	0		850	$65,290,360	281	$18,969,142	392	$102,480,647	93	$27,073,010	863.5	198.6	215.9	449.0	0	0
	Harlowton city	0.24	0.6	39.6%	0	$0	0		569	$43,661,633	194	$12,939,721	81	$8,532,547	18	$1,931,407	659.9	151.8	165.0	343.1	0	0
	Judith Gap city	0.00	0.3	0.0%	0	$0	0		89	$5,833,159	0		10	$1,334,639	0						0	0
	Balance of Wheatland County	38.58	1,425.0		3	$1,816,266	0	$0	192	$15,795,568	87	$6,029,421	301	$92,613,461	75	$25,141,603	203.6	46.8	50.9	105.9	0	0
4	**Wibaux County**	0.00	888.1	0.0%	0	$0	0		318	$24,265,482	0		518	$58,984,045	0						0	0
	Wibaux town	0.00	1.1	0.0%	0	$0	0		290	$20,843,967	0		54	$4,948,635	0						0	0
	Balance of Wibaux County	0.00	887.0		0	$0	0	$0	28	$3,421,515	0	$0	464	$54,035,410	0	$0	0.0	0.0	0.0	0.0	0	0
5	**Yellowstone County**	50.07	2,646.8	1.9%	19	$148,531,721	2	$27,024,088	58,853	$10,961,976,827	2,538	$296,705,751	5,429	$4,499,091,639	480	$448,917,221	6,859.9	1,535.0	1,386.2	3,938.7	10	1
	Billings city	2.09	43.0	4.9%	0	$0	2	$27,024,088	41,447	$7,866,273,265	1,252	$158,666,157	3,014	$3,285,025,446	229	$236,715,361	3,508.3	766.6	774.5	1,967.2	4	0
	Broadview town	0.00	0.2	0.0%	0	$0	0		79	$9,621,070	0		10	$2,904,982	0						0	0
	Laurel city	0.05	2.1	2.1%	0	$0	0		2,701	$394,711,073	1	$179,900	187	$100,223,386	1	$828,714	2.4	0.6	0.4	1.5	0	0
	Balance of Yellowstone County	47.93	2,601.4		19	$148,531,721	0	$0	14,626	$2,691,371,419	1,285	$137,859,694	2,218	$1,110,937,825	250	$211,373,146	3,349.2	767.8	611.3	1,970.1	6	0

APPENDIX B-11. CRITICAL FACILITIES IN DAM FAILURE HAZARD AREA
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Beaverhead	DILLON	DEPARTMENT OF MILITARY AFFAIRS	Dillon Readiness Center	1070 Highway 41	45.232061	-112.618027	$5,290,581
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - MISSOULA	KUFM Dillon (WMC)	710 S Atlantic St. WMC Heating Plant	45.208165	-112.641196	$50,000
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Auditorium & Shop	710 S. Atlantic	45.208735	-112.640263	$2,652,247
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Block Hall	710 S. Atlantic	45.208444	-112.638271	$12,221,413
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Centennial Hall	750 E. Cornell	45.208014	-112.637137	$3,485,454
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Clark Hall	750 E. Cornell	45.208100	-112.636476	$4,574,377
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Davis Hall	710 S. Atlantic	45.208283	-112.637181	$3,802,992
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Engineer's Cottage	710 S. Atlantic	45.208782	-112.638613	$67,949
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Family Housing	710 S. Atlantic	45.208952	-112.637152	$1,717,829
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Heating Plant & Garage	710 S. Atlantic	45.209043	-112.638324	$2,001,967
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Jordan Hall	750 E. Cornell	45.208543	-112.637394	$506,946
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Library Administration	710 S. Atlantic	45.208434	-112.639256	$15,267,576
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Main Hall Building	710 S. Atlantic	45.209125	-112.640222	$28,922,882
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Matthews Hall	710 S. Atlantic	45.209545	-112.638745	$11,442,081
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Old Library Building	710 S. Atlantic	45.208777	-112.640683	$2,467,568
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Osborne Residence (Curious Minds)	710 S. Atlantic	45.207289	-112.639562	$111,901
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	PHYSICAL ED BUILDING - DILLON	710 S. Atlantic	45.207380	-112.637863	$15,779,695
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	South Campus Housing	434 E. Poindexter	45.208103	-112.641223	$196,717
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	STUDENT UNION BUILDING - DILLON	710 S. Atlantic	45.208061	-112.639851	$2,540,420
Beaverhead	DILLON	UNIVERSITY SYSTEM, UNIVERSITY OF MONTANA - WESTERN	Swysgood Technology Center (STC)	710 South Atlantic	45.208083	-112.638652	$6,912,898
Big Horn	HARDIN	PUBLIC HEALTH & HUMAN SERVICES	Hardin - UA (Big Horn) OPA	23 8th St W.	45.736392	-107.606388	$64,294
Broadwater	TOSTON	DEPARTMENT OF NATURAL RESOURCES	Toston Dam Power House	Toston Dam Road	46.120486	-111.407744	$25,562,814
Broadwater	TOSTON	DEPARTMENT OF NATURAL RESOURCES	Toston Dam Rubber Dams	Toston Dam Road	46.120029	-111.408265	$1,984,136
Broadwater	TOSTON	DEPARTMENT OF NATURAL RESOURCES	Toston Dam Sub-station	Toston Dam Road	46.120675	-111.407478	$1,491,948
Custer	MILES CITY	DEPARTMENT OF ADMINISTRATION	Miles City Data Center (SMDC)	114 S Haynes Avenue	46.406863	-105.820622	$10,872,477
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Academic Training Center	4 North Haynes Avenue	46.408523	-105.822635	$3,406,737
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Housing Unit E	4 North Haynes Avenue	46.408838	-105.821712	$1,104,005
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Main Building/PHYCF	4 North Haynes Avenue	46.408838	-105.821712	$14,560,064
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Physical Training Center	4 North Haynes Avenue	46.408523	-105.822635	$4,835,185
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Spirituality Center	4 North Haynes Avenue	46.408523	-105.822635	$2,113,317
Custer	MILES CITY	DEPARTMENT OF CORRECTIONS, PINE HILLS YOUTH CORRECTIONAL FACILITY	Warehouse/Maintenance	4 North Haynes Avenue	46.408523	-105.822635	$555,482
Custer	MILES CITY	DEPARTMENT OF FISH, WILDLIFE & PARKS	Regional HQ - Building	352 I-94 Business Loop	46.396689	-105.865550	$2,282,995
Custer	MILES CITY	DEPARTMENT OF MILITARY AFFAIRS	Miles City Armory	2500 Main Street	46.408009	-105.828910	$5,214,479
Custer	MILES CITY	DEPARTMENT OF MILITARY AFFAIRS	Miles City Readiness Center	1020 N Haynes Ave.	46.417707	-105.821563	$12,536,969
Custer	MILES CITY	DEPARTMENT OF TRANSPORTATION	Miles City Office/Shop II	217 N. 4th Street	46.407820	-105.855277	$2,399,029
Dawson	GLENDIVE	DEPARTMENT OF JUSTICE	MHP-BELLE PRARIE MICROWAVE	207 W BELL ST	47.104843	-104.715349	$272,820
Dawson	GLENDIVE	DEPARTMENT OF TRANSPORTATION	Glendive Office/Shop	503 N River Avenue	47.109962	-104.714508	$2,929,679
Deer Lodge	ANACONDA	DEPARTMENT OF FISH, WILDLIFE & PARKS	Washoe Park Hatchery - Building - Creek Water Intake	600 West Pennsylvania St.	46.133154	-112.956521	$52,023
Deer Lodge	Warm Spring	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Administrative Annex (113)	58 Garnet Way	46.181458	-112.789927	$2,890,253
Deer Lodge	WARM SPRINGS	DEPARTMENT OF ADMINISTRATION	MT State Hospital	300 Garnet Ave.	46.180826	-112.789514	$200,000
Deer Lodge	WARM SPRINGS	DEPARTMENT OF CORRECTIONS	Warm Springs Boiler Plant (Mechanics Garage)	Warm Springs	46.180964	-112.792794	$484,520
Deer Lodge	WARM SPRINGS	DEPARTMENT OF CORRECTIONS	WATCH Warm Springs	201 Orofino Way N	46.180598	-112.789568	$15,648,539
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Doctor's Residence No. 41	65 Mystic Way	46.177297	-112.791036	$110,045
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Doctor's Residence No. 42	51 Mystic Way	46.177377	-112.790737	$91,262
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Duplex No. 13	87 Mystic Way	46.176865	-112.792567	$24,359
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Duplex No. 14	117 Mystic Way	46.176979	-112.793277	$24,359
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Duplex No. 17	171 Mystic Way	46.177451	-112.793754	$24,359
Deer Lodge	Warm Springs	PUBLIC HEALTH & HUMAN SERVICES	Duplex No. 18	179 Mystic Way	46.177127	-112.793535	$24,359
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Duplex No. 19	5 Hidden Way	46.177315	-112.793122	$269,838
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Johnson House Group Home	137 Mystic Way	46.177047	-112.792573	$118,355
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Maintenance Office	317 Orofino Way	46.182263	-112.794680	$602,019
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	McColllum House Group Home	30 Garrity Way	46.178149	-112.790175	$232,651
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Mickleberry House	389 Trapper Way	46.181302	-112.796081	$128,035
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	MT Haggin Group Home	45 Hidden Way	46.177248	-112.793598	$269,838
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	NEW HEATING PLANT (107)	203 Trapper Way	46.181081	-112.792484	$2,010,694
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	PINTLAR LODGE (546)	290 Oxbow Way	46.182631	-112.791662	$819,687
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Recovery Center	32 Trapper Way	46.183346	-112.789562	$2,849,427
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Residence D	164 Garrity Way	46.176525	-112.789822	$68,557
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Residence E	191 Garrity Way	46.176330	-112.790190	$84,296
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Residence F	205 Garrity Way	46.176245	-112.790312	$84,296
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Residence G	100 Mt Evans Way	46.179754	-112.785922	$126,690
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Residence H	102 Mt Evans Way	46.179503	-112.785889	$99,139
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	SPRATT BUILDING (219)	351 Fleecer Way	46.182147	-112.790717	$3,630,396
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Theraputic Learning Center	156 Garnet Way	46.180918	-112.789356	$3,914,553
Deer Lodge	WARM SPRINGS	PUBLIC HEALTH & HUMAN SERVICES, STATE HOSPITAL	Warm Springs Facility	100 Garnet Way	46.180918	-112.790329	$34,555,687
Flathead	COLUMBIA FALLS	PUBLIC HEALTH & HUMAN SERVICES, VETERANS' HOME - COLUMBIA FALLS	Nursing Home & Dom &Special Care Unit 69-73-84-02	400 Veterans Dr.	48.364518	-114.210002	$16,638,591
Flathead	COLUMBIA FALLS	PUBLIC HEALTH & HUMAN SERVICES, VETERANS' HOME - COLUMBIA FALLS	Superintendent's Cottage	400 Veterans Dr.	48.364518	-114.210002	$312,832
Flathead	KALISPELL	DEPARTMENT OF TRANSPORTATION	Kalispell Office & Shop	85 5th Avenue	48.202252	-114.306689	$2,664,291
Flathead	KALISPELL	UNIVERSITY SYSTEM, MSU, AGRICULTURAL EXPERIMENT STATION	NWARC RESIDENCE #1	4570 Montana 35	48.189405	-114.133982	$102,279

APPENDIX B-11. CRITICAL FACILITIES IN DAM FAILURE HAZARD AREA
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

COUNTY	CITY/TOWN	AGENCY	NAME	ADDRESS	LAT	LONG	VALUE
Gallatin	THREE FORKS	DEPARTMENT OF FISH, WILDLIFE & PARKS	Lewis & Clark Caverns SP - Building - Visitor Center w/Restroom	19 miles W of Three Forks on MT 2	45.892190	-111.549275	$251,183
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Cafeteria	2260 Sierra Rd. East	46.662438	-111.974988	$647,819
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Clinic Building	2260 Sierra Rd. East	46.660804	-111.974898	$219,692
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Cottonwood Cottage	2260 Sierra Rd. East	46.661897	-111.973486	$690,318
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Gymnasium	2260 Sierra Rd. East	46.662120	-111.974074	$655,664
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Maple Cottage No. 2	2260 Sierra Rd. East	46.662523	-111.973780	$2,190,662
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Pump House	2260 Sierra Rd. East	46.662778	-111.976659	$72,092
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - School Building & Administration	2260 Sierra Rd. East	46.662789	-111.974864	$2,183,940
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA - Water Tank & Tower	2260 Sierra Rd. East	46.662587	-111.976984	$389,651
Lewis & Clark	HELENA	DEPARTMENT OF JUSTICE	MLEA Training Facility	2260 SIERRA ROAD EAST	46.662630	-111.975715	$3,774,231
Lincoln	LIBBY	DEPARTMENT OF JUSTICE	MHP - Highway Patrol, Libby	952 East Spruce, Suite 203	48.384973	-115.543353	$4,099
Lincoln	LIBBY	DEPARTMENT OF MILITARY AFFAIRS	Libby Armory	1004 Treasure Ave.	48.388861	-115.566141	$2,655,382
Powell	DEER LODGE	DEPARTMENT OF ADMINISTRATION	MT State Prison	600 Conley Lake Rd.	46.396982	-112.760724	$250,000
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Industrial Complex Furniture Shop	600 Conley Lake Rd.	46.396982	-112.760724	$2,516,384
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Industrial Complex Warehouse	600 Conley Lake Rd.	46.396982	-112.760724	$1,975,895
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Industries Furniture Shop Addition	600 Conley Lake Rd.	46.396982	-112.760724	$1,903,903
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	License Plate Distribution Center	600 Conley Lake Rd.	46.396982	-112.760724	$1,880,961
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	MVM Building	600 Conley Lake Rd.	46.396982	-112.760724	$3,514,381
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Print & Sign	600 Conley Lake Rd.	46.396982	-112.760724	$4,179,127
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Ranch 2 Shop Building	600 Conley Lake Rd.	46.396982	-112.760724	$234,769
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Toyota Building (Add'n to MVM)	600 Conley Lake Rd.	46.396982	-112.760724	$220,097
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, PRISON INDUSTRIES	Vocational Education MVM Addition	600 Conley Lake Rd.	46.396982	-112.760724	$366,828
Powell	DEER LODGE	DEPARTMENT OF CORRECTIONS, STATE PRISON	Conley Lake Lodge	400 Conley Lake Rd.	46.396998	-112.756516	$267,567
Ravalli	HAMILTON	DEPARTMENT OF MILITARY AFFAIRS	Hamilton Armory	910 West Main	46.246647	-114.168149	$1,014,737
Roosevelt	CULBERTSON	DEPARTMENT OF MILITARY AFFAIRS	Culbertson Armory	819 6th Avenue East	48.151398	-104.510055	$2,215,519
Roosevelt	WOLF POINT	DEPARTMENT OF TRANSPORTATION	Aeronautics NDB - Wolf Point	48 deg - 6' - 16.0" N, 105 deg - 36' - 5.0" W	48.096489	-105.574838	$2,417
Roosevelt	WOLF POINT	DEPARTMENT OF TRANSPORTATION	Wolf Point Office & Shop	200 E. HWY 25	48.090119	-105.640554	$1,444,427
Valley	GLASGOW	UNIVERSITY SYSTEM, MONTANA STATE UNIVERSITY - BILLINGS	Glasgow Translator	1.5 miles W. of city water tanks	48.198586	-106.648048	$10,000
Yellowstone	BILLINGS	DEPARTMENT OF CORRECTIONS, MONTANA WOMEN'S PRISON	Industries Building	701 27th St., BILLINGS MT	45.774626	-108.496447	$1,019,018
Yellowstone	BILLINGS	DEPARTMENT OF CORRECTIONS, MONTANA WOMEN'S PRISON	Montana Women's Prison Main Building	701 27th St S.	45.774903	-108.495990	$26,005,069

APPENDIX B-11. COUNTY PERCENT EXPOSURE RANKING - DAM FAILURE

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE

Rank	DES District	County	Census 2010	2016 Est	% Population Change	Building Permits	Total Exposure (Residential + Commercial)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
1	4	Custer County	11,699	11,924	1.89%	0	$618,023,869	74.58%	1.41%
2	5	Treasure County	718	692	-3.76%	0	$36,624,209	61.87%	-2.32%
3	5	Big Horn County	12,865	13,343	3.58%	2	$284,238,374	51.73%	1.85%
4	3	Beaverhead County	9,246	9,401	1.65%	3	$395,700,822	45.18%	0.74%
5	6	Roosevelt County	10,425	11,305	7.78%	1	$166,779,824	37.87%	2.95%
6	5	Rosebud County	9,233	9,287	0.58%	1	$167,373,619	36.97%	0.21%
7	4	Dawson County	8,966	9,327	3.87%	1	$202,568,139	35.46%	1.37%
7	5	Golden Valley County	884	831	-6.38%	NA	$25,869,149	34.99%	-2.23%
8	2	Hill County	16,096	16,542	2.70%	4	$394,656,803	32.00%	0.86%
9	2	Chouteau County	5,813	5,759	-0.94%	10	$129,791,223	31.45%	-0.29%
10	1	Lincoln County	19,687	19,259	-2.22%	8	$722,477,583	29.09%	-0.65%
10	6	Sheridan County	3,384	3,648	7.24%	2	$108,032,761	28.57%	2.07%
11	5	Wheatland County	2,168	2,117	-2.41%	NA	$46,042,152	27.44%	-0.66%
12	1	Sanders County	11,413	11,534	1.05%	0	$232,309,023	26.06%	0.27%
12	3	Broadwater County	5,612	5,747	2.35%	0	$173,647,546	25.78%	0.61%
13	1	Granite County	3,079	3,368	8.58%	NA	$92,087,974	25.04%	2.15%
13	1	Silver Bow County	34,200	34,553	1.02%	86	$557,815,920	24.98%	0.26%
14	3	Madison County	7,691	7,924	2.94%	7	$285,252,372	24.32%	0.72%
15	2	Cascade County	81,327	81,755	0.52%	242	$1,581,313,562	22.90%	0.12%
16	6	Valley County	7,369	7,539	2.25%	4	$127,598,030	22.23%	0.50%
16	1	Ravalli County	40,212	42,088	4.46%	20	$1,003,220,642	21.70%	0.97%
16	4	Prairie County	1,179	1,182	0.25%	NA	$18,404,897	21.56%	0.05%
17	1	Flathead County	90,928	98,082	7.29%	316	$2,533,417,936	20.38%	1.49%
17	3	Meagher County	1,891	1,827	-3.50%	NA	$44,635,190	20.22%	-0.71%
17	6	Fergus County	11,586	11,413	-1.52%	1	$192,466,171	20.07%	-0.30%
18	5	Carbon County	10,078	10,460	3.65%	8	$233,853,403	19.09%	0.70%
19	2	Blaine County	6,491	6,601	1.67%	0	$70,816,696	14.85%	0.25%
20	1	Lake County	28,746	29,758	3.40%	44	$525,438,169	13.30%	0.45%
20	2	Toole County	5,324	4,977	-6.97%	2	$46,582,069	12.79%	-0.89%
20	4	Fallon County	2,890	3,120	7.37%	35	$34,873,542	12.57%	0.93%
21	5	Stillwater County	9,117	9,406	3.07%	0	$67,576,562	9.94%	0.31%
22	3	Jefferson County	11,406	11,853	3.77%	5	$75,743,465	8.79%	0.33%
22	1	Powell County	7,027	6,858	-2.46%	32	$47,628,032	8.78%	-0.22%
22	1	Missoula County	109,299	116,130	5.88%	930	$344,937,623	8.59%	0.51%
22	1	Deer Lodge County	9,298	9,085	-2.34%	17	$43,780,442	8.58%	-0.20%
23	3	Gallatin County	89,513	104,502	14.34%	1,550	$1,084,447,969	7.18%	1.03%
23	3	Lewis and Clark County	63,395	67,282	5.78%	176	$435,089,904	6.88%	0.40%
24	2	Teton County	6,073	6,056	-0.28%	1	$25,332,761	5.43%	-0.02%
24	5	Musselshell County	4,538	4,589	1.11%	1	$15,967,210	5.42%	0.06%
24	5	Yellowstone County	147,972	158,437	6.61%	1,198	$745,622,972	4.82%	0.32%
25	6	Phillips County	4,253	4,133	-2.90%	2	$16,630,107	4.10%	-0.12%
25	6	Petroleum County	494	489	-1.02%	NA	$1,929,290	3.72%	-0.04%
26	4	McCone County	1,734	1,700	-2.00%	0	$4,192,711	3.31%	-0.07%
27	2	Pondera County	6,153	6,084	-1.13%	1	$8,591,686	1.85%	-0.02%
27	4	Richland County	9,746	11,482	15.12%	16	$14,732,708	1.57%	0.24%
28	3	Park County	15,636	16,114	2.97%	44	$18,011,104	0.91%	0.03%
28	2	Glacier County	13,399	13,694	2.15%	0	$3,476,714	0.51%	0.01%
29	6	Judith Basin County	2,072	1,940	-6.80%	NA	$592,500	0.32%	-0.02%
29	3	Sweet Grass County	3,651	3,623	-0.77%	1	$1,006,490	0.16%	0.00%
29	2	Liberty County	2,339	2,409	2.91%	NA	$118,124	0.06%	0.00%
29	4	Carter County	1,160	1,203	3.57%	1	$0	0.00%	0.00%
29	6	Daniels County	1,751	1,755	0.23%	0	$0	0.00%	0.00%
29	4	Garfield County	1,206	1,310	7.94%	0	$0	0.00%	0.00%
29	1	Mineral County	4,223	4,184	-0.93%	1	$0	0.00%	0.00%
29	4	Powder River County	1,743	1,746	0.17%	NA	$0	0.00%	0.00%
29	4	Wibaux County	1,017	1,093	6.95%	8	$0	0.00%	0.00%

APPENDIX B-11. COUNTY PERCENT EXPOSURE X POPULATION CHANGE RANKING - DAM FAILURE									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	County	Census 2010	2016 Est	% Population Change	Building Permits	Total Exposure (Residential + Commercial)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
1	6	Roosevelt County	10,425	11,305	7.78%	1	$166,779,824	37.87%	2.95%
2	1	Granite County	3,079	3,368	8.58%	NA	$92,087,974	25.04%	2.15%
3	6	Sheridan County	3,384	3,648	7.24%	2	$108,032,761	28.57%	2.07%
4	5	Big Horn County	12,865	13,343	3.58%	2	$284,238,374	51.73%	1.85%
5	1	Flathead County	90,928	98,082	7.29%	316	$2,533,417,936	20.38%	1.49%
6	4	Custer County	11,699	11,924	1.89%	0	$618,023,869	74.58%	1.41%
7	4	Dawson County	8,966	9,327	3.87%	1	$202,568,139	35.46%	1.37%
8	3	Gallatin County	89,513	104,502	14.34%	1,550	$1,084,447,969	7.18%	1.03%
9	1	Ravalli County	40,212	42,088	4.46%	20	$1,003,220,642	21.70%	0.97%
0	4	Fallon County	2,890	3,120	7.37%	35	$34,873,542	12.57%	0.93%
11	2	Hill County	16,096	16,542	2.70%	4	$394,656,803	32.00%	0.86%
12	3	Beaverhead County	9,246	9,401	1.65%	3	$395,700,822	45.18%	0.74%
13	3	Madison County	7,691	7,924	2.94%	7	$285,252,372	24.32%	0.72%
14	5	Carbon County	10,078	10,460	3.65%	8	$233,853,403	19.09%	0.70%
15	3	Broadwater County	5,612	5,747	2.35%	0	$173,647,546	25.78%	0.61%
16	1	Missoula County	109,299	116,130	5.88%	930	$344,937,623	8.59%	0.51%
17	6	Valley County	7,369	7,539	2.25%	4	$127,598,030	22.23%	0.50%
18	1	Lake County	28,746	29,758	3.40%	44	$525,438,169	13.30%	0.45%
19	3	Lewis and Clark County	63,395	67,282	5.78%	176	$435,089,904	6.88%	0.40%
20	3	Jefferson County	11,406	11,853	3.77%	5	$75,743,465	8.79%	0.33%
21	5	Yellowstone County	147,972	158,437	6.61%	1,198	$745,622,972	4.82%	0.32%
22	5	Stillwater County	9,117	9,406	3.07%	0	$67,576,562	9.94%	0.31%
23	1	Sanders County	11,413	11,534	1.05%	0	$232,309,023	26.06%	0.27%
24	1	Silver Bow County	34,200	34,553	1.02%	86	$557,815,920	24.98%	0.26%
25	2	Blaine County	6,491	6,601	1.67%	0	$70,816,696	14.85%	0.25%
26	4	Richland County	9,746	11,482	15.12%	16	$14,732,708	1.57%	0.24%
27	5	Rosebud County	9,233	9,287	0.58%	1	$167,373,619	36.97%	0.21%
28	2	Cascade County	81,327	81,755	0.52%	242	$1,581,313,562	22.90%	0.12%
29	5	Musselshell County	4,538	4,589	1.11%	1	$15,967,210	5.42%	0.06%
30	4	Prairie County	1,179	1,182	0.25%	NA	$18,404,897	21.56%	0.05%
31	3	Park County	15,636	16,114	2.97%	44	$18,011,104	0.91%	0.03%
32	2	Glacier County	13,399	13,694	2.15%	0	$3,476,714	0.51%	0.01%
33	2	Liberty County	2,339	2,409	2.91%	NA	$118,124	0.06%	0.00%
33	4	Carter County	1,160	1,203	3.57%	1	$0	0.00%	0.00%
33	6	Daniels County	1,751	1,755	0.23%	0	$0	0.00%	0.00%
33	4	Garfield County	1,206	1,310	7.94%	0	$0	0.00%	0.00%
33	1	Mineral County	4,223	4,184	-0.93%	1	$0	0.00%	0.00%
33	4	Powder River County	1,743	1,746	0.17%	NA	$0	0.00%	0.00%
33	4	Wibaux County	1,017	1,093	6.95%	8	$0	0.00%	0.00%
33	3	Sweet Grass County	3,651	3,623	-0.77%	1	$1,006,490	0.16%	0.00%
34	2	Teton County	6,073	6,056	-0.28%	1	$25,332,761	5.43%	-0.02%
34	2	Pondera County	6,153	6,084	-1.13%	1	$8,591,686	1.85%	-0.02%
34	6	Judith Basin County	2,072	1,940	-6.80%	NA	$592,500	0.32%	-0.02%
35	6	Petroleum County	494	489	-1.02%	NA	$1,929,290	3.72%	-0.04%
36	4	McCone County	1,734	1,700	-2.00%	0	$4,192,711	3.31%	-0.07%
37	6	Phillips County	4,253	4,133	-2.90%	2	$16,630,107	4.10%	-0.12%
38	1	Deer Lodge County	9,298	9,085	-2.34%	17	$43,780,442	8.58%	-0.20%
39	1	Powell County	7,027	6,858	-2.46%	32	$47,628,032	8.78%	-0.22%
40	2	Chouteau County	5,813	5,759	-0.94%	10	$129,791,223	31.45%	-0.29%
41	6	Fergus County	11,586	11,413	-1.52%	1	$192,466,171	20.07%	-0.30%
42	1	Lincoln County	19,687	19,259	-2.22%	8	$722,477,583	29.09%	-0.65%
43	5	Wheatland County	2,168	2,117	-2.41%	NA	$46,042,152	27.44%	-0.66%
44	3	Meagher County	1,891	1,827	-3.50%	NA	$44,635,190	20.22%	-0.71%
45	2	Toole County	5,324	4,977	-6.97%	2	$46,582,069	12.79%	-0.89%
46	5	Golden Valley County	884	831	-6.38%	NA	$25,869,149	34.99%	-2.23%
46	5	Treasure County	718	692	-3.76%	0	$36,624,209	61.87%	-2.32%

APPENDIX B-11. CITY-TOWN PERCENT EXPOSURE RANKING - DAM FAILURE									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	**DES District**	**City/Town**	**County**	**Census 2010**	**2016 Est**	**% Population Change**	**Total Exposure (Residential + Commercial)**	**% Hazard Exposure / Total Exposure**	**Vulnerability Factor (% Exposure x % Population Change)**
1	1	Columbia Falls city	Flathead County	4,688	5,241	10.55%	$372,356,043	100.00%	10.55%
1	5	Forsyth city	Rosebud County	1,777	1,869	4.92%	$101,606,924	100.00%	4.92%
1	5	Hardin city	Big Horn County	3,505	3,829	8.46%	$129,775,555	100.00%	8.46%
1	5	Hysham town	Treasure County	312	301	-3.65%	$11,682,755	100.00%	-3.65%
1	1	Plains town	Sanders County	1,048	1,071	2.15%	$62,407,202	100.00%	2.15%
1	6	Poplar city	Roosevelt County	810	854	5.15%	$14,671,742	100.00%	5.15%
1	6	Saco town	Phillips County	197	197	0.00%	$8,761,488	100.00%	0.00%
1	3	Three Forks city	Gallatin County	1,869	1,944	3.86%	$125,627,439	100.00%	3.86%
1	1	Troy city	Lincoln County	938	890	-5.39%	$56,834,836	100.00%	-5.39%
1	3	Twin Bridges town	Madison County	375	395	5.06%	$33,718,822	100.00%	5.06%
1	3	Townsend city	Broadwater County	1,878	1,978	5.06%	$138,234,892	99.92%	5.05%
2	6	Culbertson town	Roosevelt County	714	804	11.19%	$58,175,276	99.52%	11.14%
3	3	Dillon city	Beaverhead County	4,134	4,257	2.89%	$197,406,123	99.00%	2.86%
4	5	Lavina town	Golden Valley County	187	173	-8.09%	$8,896,575	98.26%	-7.95%
5	2	Fort Benton city	Chouteau County	1,464	1,456	-0.55%	$116,430,297	95.60%	-0.53%
6	5	Joliet town	Carbon County	595	640	7.03%	$28,373,687	95.57%	6.72%
7	4	Miles City city	Custer County	8,410	8,647	2.74%	$446,443,774	95.39%	2.61%
8	6	Nashua town	Valley County	290	290	0.00%	$13,998,298	95.20%	0.00%
9	6	Plentywood city	Sheridan County	1,734	1,904	8.93%	$101,261,377	94.78%	8.46%
10	1	Darby town	Ravalli County	720	763	5.64%	$65,086,698	91.56%	5.16%
11	1	Libby city	Lincoln County	2,628	2,678	1.87%	$244,884,168	90.96%	1.70%
12	1	Hamilton city	Ravalli County	4,348	4,674	6.97%	$478,025,330	88.38%	6.16%
13	6	Brockton town	Roosevelt County	255	243	-4.94%	$972,797	84.64%	-4.18%
14	5	Ryegate town	Golden Valley County	245	236	-3.81%	$8,779,190	73.13%	-2.79%
15	3	Whitehall town	Jefferson County	1,038	1,114	6.82%	$30,091,590	71.67%	4.89%
16	4	Glendive city	Dawson County	4,935	5,332	7.45%	$167,889,274	59.47%	4.43%
17	3	Ennis town	Madison County	838	890	5.84%	$64,393,359	59.43%	3.47%
18	2	Havre city	Hill County	9,310	9,846	5.44%	$267,513,704	55.79%	3.04%
19	6	Wolf Point city	Roosevelt County	2,621	2,806	6.59%	$40,814,088	54.81%	3.61%
20	2	Cascade town	Cascade County	685	688	0.44%	$19,261,778	50.63%	0.22%
21	2	Chinook city	Blaine County	1,203	1,233	2.43%	$32,280,412	40.60%	0.99%
22	6	Lewistown city	Fergus County	5,901	5,870	-0.53%	$169,971,100	39.78%	-0.21%
23	1	Walkerville town	Silver Bow County	675	700	3.57%	$781,371,511	35.38%	1.26%
24	3	White Sulphur Springs city	Meagher County	939	908	-3.41%	$22,042,277	32.38%	-1.11%
25	5	Lodge Grass town	Big Horn County	428	446	4.04%	$8,926,401	31.98%	1.29%
26	6	Glasgow city	Valley County	3,250	3,364	3.39%	$72,238,426	31.56%	1.07%
27	4	Baker city	Fallon County	1,741	1,990	12.51%	$34,420,984	29.30%	3.67%
28	5	Harlowton city	Wheatland County	997	984	-1.32%	$14,871,128	28.49%	-0.38%
29	1	Drummond town	Granite County	309	348	11.21%	$4,783,110	28.33%	3.17%
30	3	East Helena town	Lewis and Clark County	1,984	2,074	4.34%	$28,424,644	25.35%	1.10%
31	4	Terry town	Prairie County	605	609	0.66%	$5,910,479	23.47%	0.15%
32	2	Shelby city	Toole County	3,376	3,216	-4.98%	$43,820,363	23.39%	-1.16%
33	5	Red Lodge city	Carbon County	2,125	2,237	5.01%	$69,589,179	23.26%	1.16%
34	2	Great Falls city	Cascade County	58,505	59,178	1.14%	$1,063,599,387	21.07%	0.24%
35	4	Fairview town	Richland County	840	922	8.89%	$6,814,168	18.53%	1.65%
36	5	Roundup city	Musselshell County	1,788	1,840	2.83%	$8,444,782	10.32%	0.29%
37	1	Deer Lodge city	Powell County	3,111	2,994	-3.91%	$14,313,837	9.19%	-0.36%
38	1	Polson city	Lake County	4,488	4,777	6.05%	$29,138,215	8.32%	0.50%
39	1	Missoula city	Missoula County	66,788	72,364	7.71%	$112,330,555	7.11%	0.55%
40	1	Kalispell city	Flathead County	19,927	22,761	12.45%	$162,153,098	6.94%	0.86%
41	1	St. Ignatius town	Lake County	842	824	-2.18%	$2,024,399	6.56%	-0.14%
42	1	Eureka town	Lincoln County	1,037	1,086	4.51%	$3,778,839	5.70%	0.26%
43	2	Choteau city	Teton County	1,684	1,686	0.12%	$4,274,828	4.06%	0.00%
44	1	Thompson Falls city	Sanders County	1,313	1,356	3.17%	$3,314,763	3.91%	0.12%
45	5	Billings city	Yellowstone County	104,170	110,323	5.58%	$395,381,518	3.55%	0.20%
46	3	Clyde Park town	Park County	288	309	6.80%	$225,266	1.25%	0.09%
47	1	Stevensville town	Ravalli County	1,809	1,963	7.85%	$1,332,726	0.72%	0.06%
48	3	Belgrade city	Gallatin County	7,389	8,254	10.48%	$3,827,297	0.62%	0.06%
49	5	Laurel city	Yellowstone County	6,718	6,865	2.14%	$1,008,614	0.20%	0.00%
50	1	Alberton town	Mineral County	420	417	-0.72%	$0	0.00%	0.00%
50	6	Bainville town	Roosevelt County	208	314	33.76%	$0	0.00%	0.00%
50	5	Bearcreek town	Carbon County	79	84	5.95%	$0	0.00%	0.00%
50	2	Belt city	Cascade County	597	588	-1.53%	$0	0.00%	0.00%
50	2	Big Sandy town	Chouteau County	598	590	-1.36%	$0	0.00%	0.00%
50	3	Big Timber city	Sweet Grass County	1,641	1,645	0.24%	$0	0.00%	0.00%
50	3	Boulder town	Jefferson County	1,183	1,230	3.82%	$0	0.00%	0.00%
50	3	Bozeman city	Gallatin County	37,280	45,250	17.61%	$0	0.00%	0.00%
50	5	Bridger town	Carbon County	708	732	3.28%	$0	0.00%	0.00%
50	4	Broadus town	Powder River County	468	481	2.70%	$0	0.00%	0.00%
50	5	Broadview town	Yellowstone County	192	193	0.52%	$0	0.00%	0.00%
50	2	Browning town	Glacier County	1,016	1,031	1.45%	$0	0.00%	0.00%
50	2	Chester town	Liberty County	847	884	4.19%	$0	0.00%	0.00%
50	4	Circle town	McCone County	615	619	0.65%	$0	0.00%	0.00%
50	5	Colstrip city	Rosebud County	2,214	2,311	4.20%	$0	0.00%	0.00%
50	5	Columbus town	Stillwater County	1,893	2,028	6.66%	$0	0.00%	0.00%
50	2	Conrad city	Pondera County	2,570	2,550	-0.78%	$0	0.00%	0.00%
50	2	Cut Bank city	Glacier County	2,869	3,012	4.75%	$0	0.00%	0.00%
50	6	Denton town	Fergus County	255	247	-3.24%	$0	0.00%	0.00%
50	6	Dodson town	Phillips County	124	124	0.00%	$0	0.00%	0.00%
50	2	Dutton town	Teton County	316	308	-2.60%	$0	0.00%	0.00%
50	4	Ekalaka town	Carter County	332	353	5.95%	$0	0.00%	0.00%
50	2	Fairfield town	Teton County	708	922	23.21%	$0	0.00%	0.00%

APPENDIX B-11. CITY-TOWN PERCENT EXPOSURE RANKING - DAM FAILURE									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	**DES District**	**City/Town**	**County**	**Census 2010**	**2016 Est**	**% Population Change**	**Total Exposure (Residential + Commercial)**	**% Hazard Exposure / Total Exposure**	**Vulnerability Factor (% Exposure x % Population Change)**
50	6	Flaxville town	Daniels County	71	71	0.00%	$0	0.00%	0.00%
50	6	Fort Peck town	Valley County	233	247	5.67%	$0	0.00%	0.00%
50	6	Froid town	Roosevelt County	185	201	7.96%	$0	0.00%	0.00%
50	5	Fromberg town	Carbon County	438	445	1.57%	$0	0.00%	0.00%
50	2	Geraldine town	Chouteau County	261	261	0.00%	$0	0.00%	0.00%
50	6	Grass Range town	Fergus County	110	108	-1.85%	$0	0.00%	0.00%
50	2	Harlem city	Blaine County	808	823	1.82%	$0	0.00%	0.00%
50	3	Helena city	Lewis and Clark County	28,190	31,169	9.56%	$0	0.00%	0.00%
50	2	Hingham town	Hill County	118	122	3.28%	$0	0.00%	0.00%
50	6	Hobson town	Judith Basin County	215	218	1.38%	$0	0.00%	0.00%
50	1	Hot Springs town	Sanders County	544	557	2.33%	$0	0.00%	0.00%
50	4	Ismay town	Custer County	19	21	9.52%	$0	0.00%	0.00%
50	4	Jordan town	Garfield County	343	399	14.04%	$0	0.00%	0.00%
50	5	Judith Gap city	Wheatland County	126	123	-2.44%	$0	0.00%	0.00%
50	2	Kevin town	Toole County	154	138	-11.59%	$0	0.00%	0.00%
50	3	Lima town	Beaverhead County	221	224	1.34%	$0	0.00%	0.00%
50	3	Livingston city	Park County	7,044	7,401	4.82%	$0	0.00%	0.00%
50	6	Malta city	Phillips County	1,997	1,950	-2.41%	$0	0.00%	0.00%
50	3	Manhattan town	Gallatin County	1,520	1,691	10.11%	$0	0.00%	0.00%
50	6	Medicine Lake town	Sheridan County	225	241	6.64%	$0	0.00%	0.00%
50	5	Melstone town	Musselshell County	96	107	10.28%	$0	0.00%	0.00%
50	6	Moore town	Fergus County	193	198	2.53%	$0	0.00%	0.00%
50	2	Neihart town	Cascade County	51	50	-2.00%	$0	0.00%	0.00%
50	6	Opheim town	Valley County	85	290	70.69%	$0	0.00%	0.00%
50	6	Outlook town	Sheridan County	47	52	9.62%	$0	0.00%	0.00%
50	1	Philipsburg town	Granite County	820	920	10.87%	$0	0.00%	0.00%
50	1	Pinesdale town	Ravalli County	917	967	5.17%	$0	0.00%	0.00%
50	4	Plevna town	Fallon County	162	176	7.95%	$0	0.00%	0.00%
50	1	Rexford town	Lincoln County	105	151	30.46%	$0	0.00%	0.00%
50	4	Richey town	Dawson County	177	187	5.35%	$0	0.00%	0.00%
50	1	Ronan city	Lake County	1,871	2,016	7.19%	$0	0.00%	0.00%
50	6	Scobey city	Daniels County	1,017	1,032	1.45%	$0	0.00%	0.00%
50	3	Sheridan town	Madison County	642	677	5.17%	$0	0.00%	0.00%
50	4	Sidney city	Richland County	5,191	6,566	20.94%	$0	0.00%	0.00%
50	6	Stanford town	Judith Basin County	401	384	-4.43%	$0	0.00%	0.00%
50	2	Sunburst town	Toole County	375	338	-10.95%	$0	0.00%	0.00%
50	1	Superior town	Mineral County	812	826	1.69%	$0	0.00%	0.00%
50	2	Valier town	Pondera County	509	498	-2.21%	$0	0.00%	0.00%
50	3	Virginia City town	Madison County	190	198	4.04%	$0	0.00%	0.00%
50	3	West Yellowstone town	Gallatin County	1,271	1,353	6.06%	$0	0.00%	0.00%
50	6	Westby town	Sheridan County	168	174	3.45%	$0	0.00%	0.00%
50	1	Whitefish city	Flathead County	6,357	7,279	12.67%	$0	0.00%	0.00%
50	4	Wibaux town	Wibaux County	589	649	9.24%	$0	0.00%	0.00%
50	6	Winifred town	Fergus County	208	206	-0.97%	$0	0.00%	0.00%
50	6	Winnet town	Petroleum County	182	185	1.62%	$0	0.00%	0.00%

APPENDIX B-11. CITY-TOWN PERCENT EXPOSURE X POPULATION CHANGE RANKING - DAM FAILURE									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	**DES District**	**City/Town**	**County**	**Census 2010**	**2016 Est**	**% Population Change**	**Total Exposure (Residential + Commercial)**	**% Hazard Exposure / Total Exposure**	**Vulnerability Factor (% Exposure x % Population Change)**
1	6	Culbertson town	Roosevelt County	714	804	11.19%	$58,175,276	99.52%	11.14%
2	1	Columbia Falls city	Flathead County	4,688	5,241	10.55%	$372,356,043	100.00%	10.55%
3	6	Plentywood city	Sheridan County	1,734	1,904	8.93%	$101,261,377	94.78%	8.46%
4	5	Hardin city	Big Horn County	3,505	3,829	8.46%	$129,775,555	100.00%	8.46%
5	5	Joliet town	Carbon County	595	640	7.03%	$28,373,687	95.57%	6.72%
6	1	Hamilton city	Ravalli County	4,348	4,674	6.97%	$478,025,330	88.38%	6.16%
7	1	Darby town	Ravalli County	720	763	5.64%	$65,086,698	91.56%	5.16%
8	6	Poplar city	Roosevelt County	810	854	5.15%	$14,671,742	100.00%	5.15%
9	3	Twin Bridges town	Madison County	375	395	5.06%	$33,718,822	100.00%	5.06%
10	3	Townsend city	Broadwater County	1,878	1,978	5.06%	$138,234,892	99.92%	5.05%
11	5	Forsyth city	Rosebud County	1,777	1,869	4.92%	$101,606,924	100.00%	4.92%
12	3	Whitehall town	Jefferson County	1,038	1,114	6.82%	$30,091,590	71.67%	4.89%
13	4	Glendive city	Dawson County	4,935	5,332	7.45%	$167,889,274	59.47%	4.43%
14	3	Three Forks city	Gallatin County	1,869	1,944	3.86%	$125,627,439	100.00%	3.86%
15	4	Baker city	Fallon County	1,741	1,990	12.51%	$34,420,984	29.30%	3.67%
16	6	Wolf Point city	Roosevelt County	2,621	2,806	6.59%	$40,814,088	54.81%	3.61%
17	3	Ennis town	Madison County	838	890	5.84%	$64,393,359	59.43%	3.47%
18	1	Drummond town	Granite County	309	348	11.21%	$4,783,110	28.33%	3.17%
19	2	Havre city	Hill County	9,310	9,846	5.44%	$267,513,704	55.79%	3.04%
20	3	Dillon city	Beaverhead County	4,134	4,257	2.89%	$197,406,123	99.00%	2.86%
21	4	Miles City city	Custer County	8,410	8,647	2.74%	$446,443,774	95.39%	2.61%
22	1	Plains town	Sanders County	1,048	1,071	2.15%	$62,407,202	100.00%	2.15%
23	1	Libby city	Lincoln County	2,628	2,678	1.87%	$244,884,168	90.96%	1.70%
24	4	Fairview town	Richland County	840	922	8.89%	$6,814,168	18.53%	1.65%
25	5	Lodge Grass town	Big Horn County	428	446	4.04%	$8,926,401	31.98%	1.29%
26	1	Walkerville town	Silver Bow County	675	700	3.57%	$781,371,511	35.38%	1.26%
26	5	Red Lodge city	Carbon County	2,125	2,237	5.01%	$69,589,179	23.26%	1.16%
27	3	East Helena town	Lewis and Clark County	1,984	2,074	4.34%	$28,424,644	25.35%	1.10%
28	6	Glasgow city	Valley County	3,250	3,364	3.39%	$72,238,426	31.56%	1.07%
29	2	Chinook city	Blaine County	1,203	1,233	2.43%	$32,280,412	40.60%	0.99%
30	1	Kalispell city	Flathead County	19,927	22,761	12.45%	$162,153,098	6.94%	0.86%
31	1	Missoula city	Missoula County	66,788	72,364	7.71%	$112,330,555	7.11%	0.55%
32	1	Polson city	Lake County	4,488	4,777	6.05%	$29,138,215	8.32%	0.50%
33	5	Roundup city	Musselshell County	1,788	1,840	2.83%	$8,444,782	10.32%	0.29%
34	1	Eureka town	Lincoln County	1,037	1,086	4.51%	$3,778,839	5.70%	0.26%
35	2	Great Falls city	Cascade County	58,505	59,178	1.14%	$1,063,599,387	21.07%	0.24%
36	2	Cascade town	Cascade County	685	688	0.44%	$19,261,778	50.63%	0.22%
37	5	Billings city	Yellowstone County	104,170	110,323	5.58%	$395,381,518	3.55%	0.20%
37	4	Terry town	Prairie County	605	609	0.66%	$5,910,479	23.47%	0.15%
38	1	Thompson Falls city	Sanders County	1,313	1,356	3.17%	$3,314,763	3.91%	0.12%
39	3	Clyde Park town	Park County	288	309	6.80%	$225,266	1.25%	0.09%
40	3	Belgrade city	Gallatin County	7,389	8,254	10.48%	$3,827,297	0.62%	0.06%
40	1	Stevensville town	Ravalli County	1,809	1,963	7.85%	$1,332,726	0.72%	0.06%
40	2	Choteau city	Teton County	1,684	1,686	0.12%	$4,274,828	4.06%	0.00%
40	5	Laurel city	Yellowstone County	6,718	6,865	2.14%	$1,008,614	0.20%	0.00%
40	1	Alberton town	Mineral County	420	417	-0.72%	$0	0.00%	0.00%
40	6	Bainville town	Roosevelt County	208	314	33.76%	$0	0.00%	0.00%
40	5	Bearcreek town	Carbon County	79	84	5.95%	$0	0.00%	0.00%
40	2	Belt city	Cascade County	597	588	-1.53%	$0	0.00%	0.00%
40	2	Big Sandy town	Chouteau County	598	590	-1.36%	$0	0.00%	0.00%
40	3	Big Timber city	Sweet Grass County	1,641	1,645	0.24%	$0	0.00%	0.00%
40	3	Boulder town	Jefferson County	1,183	1,230	3.82%	$0	0.00%	0.00%
40	3	Bozeman city	Gallatin County	37,280	45,250	17.61%	$0	0.00%	0.00%
40	5	Bridger town	Carbon County	708	732	3.28%	$0	0.00%	0.00%
40	4	Broadus town	Powder River County	468	481	2.70%	$0	0.00%	0.00%
40	5	Broadview town	Yellowstone County	192	193	0.52%	$0	0.00%	0.00%
40	2	Browning town	Glacier County	1,016	1,031	1.45%	$0	0.00%	0.00%
40	2	Chester town	Liberty County	847	884	4.19%	$0	0.00%	0.00%
40	4	Circle town	McCone County	615	619	0.65%	$0	0.00%	0.00%
40	5	Colstrip city	Rosebud County	2,214	2,311	4.20%	$0	0.00%	0.00%
40	5	Columbus town	Stillwater County	1,893	2,028	6.66%	$0	0.00%	0.00%
40	2	Conrad city	Pondera County	2,570	2,550	-0.78%	$0	0.00%	0.00%
40	2	Cut Bank city	Glacier County	2,869	3,012	4.75%	$0	0.00%	0.00%
40	6	Denton town	Fergus County	255	247	-3.24%	$0	0.00%	0.00%
40	6	Dodson town	Phillips County	124	124	0.00%	$0	0.00%	0.00%
40	2	Dutton town	Teton County	316	308	-2.60%	$0	0.00%	0.00%
40	4	Ekalaka town	Carter County	332	353	5.95%	$0	0.00%	0.00%
40	2	Fairfield town	Teton County	708	922	23.21%	$0	0.00%	0.00%
40	6	Flaxville town	Daniels County	71	71	0.00%	$0	0.00%	0.00%
40	6	Fort Peck town	Valley County	233	247	5.67%	$0	0.00%	0.00%
40	6	Froid town	Roosevelt County	185	201	7.96%	$0	0.00%	0.00%
40	5	Fromberg town	Carbon County	438	445	1.57%	$0	0.00%	0.00%
40	2	Geraldine town	Chouteau County	261	261	0.00%	$0	0.00%	0.00%
40	6	Grass Range town	Fergus County	110	108	-1.85%	$0	0.00%	0.00%
40	2	Harlem city	Blaine County	808	823	1.82%	$0	0.00%	0.00%
40	3	Helena city	Lewis and Clark County	28,190	31,169	9.56%	$0	0.00%	0.00%
40	2	Hingham town	Hill County	118	122	3.28%	$0	0.00%	0.00%
40	6	Hobson town	Judith Basin County	215	218	1.38%	$0	0.00%	0.00%
40	1	Hot Springs town	Sanders County	544	557	2.33%	$0	0.00%	0.00%
40	4	Ismay town	Custer County	19	21	9.52%	$0	0.00%	0.00%
40	4	Jordan town	Garfield County	343	399	14.04%	$0	0.00%	0.00%
40	5	Judith Gap city	Wheatland County	126	123	-2.44%	$0	0.00%	0.00%

APPENDIX B-11. CITY-TOWN PERCENT EXPOSURE X POPULATION CHANGE RANKING - DAM FAILURE									
STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE									
Rank	DES District	City/Town	County	Census 2010	2016 Est	% Population Change	Total Exposure (Residential + Commercial)	% Hazard Exposure / Total Exposure	Vulnerability Factor (% Exposure x % Population Change)
40	2	Kevin town	Toole County	154	138	-11.59%	$0	0.00%	0.00%
40	3	Lima town	Beaverhead County	221	224	1.34%	$0	0.00%	0.00%
40	3	Livingston city	Park County	7,044	7,401	4.82%	$0	0.00%	0.00%
40	6	Malta city	Phillips County	1,997	1,950	-2.41%	$0	0.00%	0.00%
40	3	Manhattan town	Gallatin County	1,520	1,691	10.11%	$0	0.00%	0.00%
40	6	Medicine Lake town	Sheridan County	225	241	6.64%	$0	0.00%	0.00%
40	5	Melstone town	Musselshell County	96	107	10.28%	$0	0.00%	0.00%
40	6	Moore town	Fergus County	193	198	2.53%	$0	0.00%	0.00%
40	6	Nashua town	Valley County	290	290	0.00%	$13,998,298	95.20%	0.00%
40	2	Neihart town	Cascade County	51	50	-2.00%	$0	0.00%	0.00%
40	6	Opheim town	Valley County	85	290	70.69%	$0	0.00%	0.00%
40	6	Outlook town	Sheridan County	47	52	9.62%	$0	0.00%	0.00%
40	1	Philipsburg town	Granite County	820	920	10.87%	$0	0.00%	0.00%
40	1	Pinesdale town	Ravalli County	917	967	5.17%	$0	0.00%	0.00%
40	4	Plevna town	Fallon County	162	176	7.95%	$0	0.00%	0.00%
40	1	Rexford town	Lincoln County	105	151	30.46%	$0	0.00%	0.00%
40	4	Richey town	Dawson County	177	187	5.35%	$0	0.00%	0.00%
40	1	Ronan city	Lake County	1,871	2,016	7.19%	$0	0.00%	0.00%
40	6	Saco town	Phillips County	197	197	0.00%	$8,761,488	100.00%	0.00%
40	6	Scobey city	Daniels County	1,017	1,032	1.45%	$0	0.00%	0.00%
40	3	Sheridan town	Madison County	642	677	5.17%	$0	0.00%	0.00%
40	4	Sidney city	Richland County	5,191	6,566	20.94%	$0	0.00%	0.00%
40	6	Stanford town	Judith Basin County	401	384	-4.43%	$0	0.00%	0.00%
40	2	Sunburst town	Toole County	375	338	-10.95%	$0	0.00%	0.00%
40	1	Superior town	Mineral County	812	826	1.69%	$0	0.00%	0.00%
40	2	Valier town	Pondera County	509	498	-2.21%	$0	0.00%	0.00%
40	3	Virginia City town	Madison County	190	198	4.04%	$0	0.00%	0.00%
40	3	West Yellowstone town	Gallatin County	1,271	1,353	6.06%	$0	0.00%	0.00%
40	6	Westby town	Sheridan County	168	174	3.45%	$0	0.00%	0.00%
40	1	Whitefish city	Flathead County	6,357	7,279	12.67%	$0	0.00%	0.00%
40	4	Wibaux town	Wibaux County	589	649	9.24%	$0	0.00%	0.00%
40	6	Winifred town	Fergus County	208	206	-0.97%	$0	0.00%	0.00%
40	6	Winnett town	Petroleum County	182	185	1.62%	$0	0.00%	0.00%
41	1	St. Ignatius town	Lake County	842	824	-2.18%	$2,024,399	6.56%	-0.14%
42	6	Lewistown city	Fergus County	5,901	5,870	-0.53%	$169,971,100	39.78%	-0.21%
43	1	Deer Lodge city	Powell County	3,111	2,994	-3.91%	$14,313,837	9.19%	-0.36%
44	5	Harlowton city	Wheatland County	997	984	-1.32%	$14,871,128	28.49%	-0.38%
45	2	Fort Benton city	Chouteau County	1,464	1,456	-0.55%	$116,430,297	95.60%	-0.53%
46	3	White Sulphur Springs city	Meagher County	939	908	-3.41%	$22,042,277	32.38%	-1.11%
47	2	Shelby city	Toole County	3,376	3,216	-4.98%	$43,820,363	23.39%	-1.16%
48	5	Ryegate town	Golden Valley County	245	236	-3.81%	$8,779,190	73.13%	-2.79%
49	5	Hysham town	Treasure County	312	301	-3.65%	$11,682,755	100.00%	-3.65%
50	6	Brockton town	Roosevelt County	255	243	-4.94%	$972,797	84.64%	-4.18%
51	1	Troy city	Lincoln County	938	890	-5.39%	$56,834,836	100.00%	-5.39%
52	5	Lavina town	Golden Valley County	187	173	-8.09%	$8,896,575	98.26%	-7.95%

APPENDIX B-11. LOCAL PLAN EXPOSURE SUMMARY - DAM FAILURE

DES District	Geography	Census 2010	Census 2016 Estimate	% Change 2010 to 2016	# Building Permits (2016)	Original Local Plan FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan	Estimated Societal Loss/ Exposure from Local Plan	Estimated Economic Loss from Local Plan	Ref	Local Plan Update #1 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #1	Estimated Societal Loss/ Exposure from Local Plan Update #1	Estimated Economic Loss from Local Plan Update #1	Ref	Local Plan Update #2 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #2	Estimated Societal Loss/ Exposure from Local Plan Update #2	Estimated Economic Loss from Local Plan Update #2	Ref
	Montana	989,415	1,042,520	5.09%	4,781															
3	**Beaverhead County**	9,246	9,401	1.65%	3	2004	NA	NA	NA	3	2010	NA	NA	NA	3	2017	NA	NA	NA	1
	Dillon city	4,134	4,257	2.89%																
	Lima town	221	224	1.34%																
	Balance of Beaverhead County	4,891	4,920	0.59%																
5	**Big Horn County**	12,865	13,343	3.58%	2	2006	NA	NA	NA	2	2012	NA	NA	NA	2					
	Hardin city	3,505	3,829	8.46%																
	Lodge Grass town	428	446	4.04%																
	Balance of Big Horn County	8,932	9,068	1.50%																
2	**Blaine County**	6,491	6,601	1.67%	0	2006	NA	NA	NA	14	2012				14					
	Chinook city	1,203	1,233	2.43%								R=$34,265,641 C=$16,856,623	1,203	NA	14					
	Harlem city	808	823	1.82%								R=$0; C=$0	0	NA	14					
	Balance of Blaine County	4,480	4,545	1.43%								R=$16,011,716 C=$3,559,705	911	NA	14					
3	**Broadwater County**	5,612	5,747	2.35%	0	2004	$30M	Moderate	Moderate	3	2009	$50.5M	Moderate	Moderate	3	2016				14
	Townsend city	1,878	1,978	5.06%											3		R=$51,784,962 C=$15,235,768	1,897; <18=421	NA	14
	Balance of Broadwater County	3,734	3,769	0.93%											3		R=$20,223,874 C=$3,387,479	854; <18=195	NA	14
5	**Carbon County**	10,078	10,460	3.65%	8	2006	NA	NA	NA	2	2012	$47.4M	NA	NA	2					
	Bearcreek town	79	84	5.95%																
	Bridger town	708	732	3.28%																
	Fromberg town	438	445	1.57%																
	Joliet town	595	640	7.03%																
	Red Lodge city	2,125	2,237	5.01%																
	Balance of Carbon County	6,133	6,322	2.99%																
4	**Carter County**	1,160	1,203	3.57%	1	2005	NA	NA	NA		2012	Moderate	Low	Moderate	12					
	Ekalaka town	332	353	5.95%																
	Balance of Carter County	828	850	2.59%																
2	**Cascade County**	81,327	81,755	0.52%	242	2012				14	2017				14					
	Belt city	597	588	-1.53%			R=$0; C=$0	0	NA	14		R=$0; C=$0	0	NA	14					
	Cascade town	685	688	0.44%			R=$11,876,609 C=$3,979,380	685	NA	14		R=$11,484,952 C=5,075,744	298; <18=68; >65=44	NA	14					
	Great Falls city	58,505	59,178	1.14%			R=$429,570,429 C=$991,632,500	12,786	NA	14		R=$931,597,349; C=$527,304,977	8,954; <18=2,050; >65=1,334	NA	14					
	Neihart town	51	50	-2.00%			R=$0; C=$0	0	NA	14		R=$0; C=$0	0	NA	14					
	Balance of Cascade County	21,489	21,251	-1.12%			R=$421,269,022 C=$48,043,905	8,679	NA	14		R=$433,839,391 C=$39,896,496	5,906; <18=1,353; >65=881	NA	14					
2	**Chouteau County**	5,813	5,759	-0.94%	10	2010	NA	NA	NA	5	2017	NA	NA		5					
	Big Sandy town	598	590	-1.36%																
	Fort Benton city	1,464	1,456	-0.55%																
	Geraldine town	261	261	0.00%																
	Balance of Chouteau County	3,490	3,452	-1.10%																
4	**Custer County**	11,699	11,924	1.89%	0	2005	NA	NA	NA	2	2012	NA	NA	NA	2	2017				14
	Ismay town	19	21	9.52%													R=$0; C=$0	0	NA	14
	Miles City city	8,410	8,647	2.74%													R=$312,096,253 C=$99,298,209	4,097; <18=1,485; >65=1,327	NA	14
	Balance of Custer County	3,270	3,256	-0.43%													R=$91,499,218 C=$18,208,198	1,009; <18=366; >65=327	NA	14
6	**Daniels County**	1,751	1,755	0.23%	0	2003	NA	NA	NA	14	2008	NA	NA	NA	3	2016				8
	Flaxville town	71	71	0.00%													Low	Low	Low	8
	Scobey city	1,017	1,032	1.45%													Moderate	Moderate	Moderate	8
	Balance of Daniels County	663	652	-1.69%													Moderate	Moderate	Moderate	8
4	**Dawson County**	8,966	9,327	3.87%	1	2006	NA	NA	NA	2	2014	NA	NA	NA	9					
	Glendive city	4,935	5,332	7.45%																
	Richey town	177	187	5.35%																
	Balance of Dawson County	3,854	3,808	-1.21%																
1	**Deer Lodge County**	9,298	9,085	-2.34%	17	2005	$3M	448	Moderate	3	2013	$23M; Moderate	450; Moderate	NA	3					
	Anaconda-Deer Lodge County	9,298	9,085	-2.34%																
4	**Fallon County**	2,890	3,120	7.37%	35	2006	NA	NA	NA	12	2012	NA	NA	NA	12					
	Baker city	1,741	1,990	12.51%																
	Plevna town	162	176	7.95%																
	Balance of Fallon County	987	954	-3.46%																

APPENDIX B-11. LOCAL PLAN EXPOSURE SUMMARY - DAM FAILURE

DES District	Geography	Census 2010	Census 2016 Estimate	% Change 2010 to 2016	# Building Permits (2016)	Original Local Plan FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan	Estimated Societal Loss/ Exposure from Local Plan	Estimated Economic Loss from Local Plan	Ref	Local Plan Update #1 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #1	Estimated Societal Loss/ Exposure from Local Plan Update #1	Estimated Economic Loss from Local Plan Update #1	Ref	Local Plan Update #2 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #2	Estimated Societal Loss/ Exposure from Local Plan Update #2	Estimated Economic Loss from Local Plan Update #2	Ref
6	**Fergus County**	11,586	11,413	-1.52%	1	2008	NA	NA	NA	3	2014				9					
	Denton town	255	247	-3.24%								Low	Low	NA	9					
	Grass Range town	110	108	-1.85%								Low	Low	NA	9					
	Lewistown city	5,901	5,870	-0.53%								R=38,659,968 O=$34,698,764	2,044	NA	9					
	Moore town	193	198	2.53%								Low	Low	NA	9					
	Winifred town	208	206	-0.97%								Low	Low	NA	9					
	Balance of Fergus County	4,919	4,784	-2.82%								R=$10,781,743 O=$536,474	2,110	NA	9					
1	**Flathead County**	90,928	98,082	7.29%	316	2009	Very High	High	NA		2014				14					
	Columbia Falls city	4,688	5,241	10.55%								R=$149,291,591 C=$74,172,265	4,263	NA	14					
	Kalispell city	19,927	22,761	12.45%								R=$103,738,390 C=$77,217,046	3,160	NA	14					
	Whitefish city	6,357	7,279	12.67%								R=$0; C=$0	0	NA	14					
	Balance of Flathead County	59,956	62,801	4.53%								R=$553,997,969 C=$171,024,704	15,721	NA	14					
3	**Gallatin County**	89,513	104,502	14.34%	1,550	2006	NA	NA	NA	6	2012	Moderate	Moderate	Moderate	6					
	Belgrade city	7,389	8,254	10.48%																
	Bozeman city	37,280	45,250	17.61%																
	Manha13an town	1,520	1,691	10.11%																
	Three Forks city	1,869	1,944	3.86%																
	West Yellowstone town	1,271	1,353	6.06%																
	Balance of Gallatin County	40,184	46,010	12.66%																
4	**Garfield County**	1,206	1,310	7.94%	0	2007	NA	NA	NA	3	2014	NA	NA	NA	9					
	Jordan town	343	399	14.04%																
	Balance of Garfield County	863	911	5.27%																
2	**Glacier County**	13,399	13,694	2.15%	0	2005	NA	NA	NA		2012				14					
	Browning town	1,016	1,031	1.45%								R=$0; C=$0	0	NA						
	Cut Bank city	2,869	3,012	4.75%								R=$0; C=$0	0	NA						
	Balance of Glacier County	9,514	9,651	1.42%								R=$229,983 C=$2,509	30	NA						
5	**Golden Valley County**	884	831	-6.38%	NA	2008	NA	NA	NA	14										
	Lavina town	187	173	-8.09%																
	Ryegate town	245	236	-3.81%																
	Balance of Golden Valley County	452	422	-7.11%																
1	**Granite County**	3,079	3,368	8.58%	NA	2006	$11.3M	724	Moderate	3	2013				3					
	Drummond town	309	348	11.21%								Low	Low	Low	3					
	Philipsburg town	820	920	10.87%								Low	Low	Low	3					
	Balance of Granite County	1,950	2,100	7.14%								$12M; Moderate	484; Moderate	Low-Moderate	3					
2	**Hill County**	16,096	16,542	2.70%	4	2006	NA	NA	NA	14	2012				14					
	Havre city	9,310	9,846	5.44%								R=$126,761,511 C=$77,733,647	6,113	NA	14					
	Hingham town	118	122	3.28%								R=$0; C=$0	0	NA	14					
	Balance of Hill County	6,668	6,574	-1.43%								R=$18,372,673 C=$17,756,167	1,426	NA	14					
3	**Jefferson County**	11,406	11,853	3.77%	5	2005	NA	NA	NA	3	2011				14	2017				14
	Boulder town	1,183	1,230	3.82%								R=$0; C=$0	0	NA	14		R=$0; C=$0	0	NA	14
	Whitehall town	1,038	1,114	6.82%								R=$16,920,906 C=$6,152,428	961	NA	14		R=$24,011,824 C=$9,700.044	1,169; <18=270	NA	14
	Balance of Jefferson County	9,185	9,509	3.41%								R=$41,209,943 C=$12,678,157	3,550	NA	14		R=$56,842,529 C=$15,423,324	2,812; <18=625	NA	14
6	**Judith Basin County**	2,072	1,940	-6.80%	NA	2008	NA	NA	NA	14	2013	NA	NA	NA	14					
	Hobson town	215	218	1.38%																
	Stanford town	401	384	-4.43%																
	Balance of Judith Basin County	1,456	1,338	-8.82%																
1	**Lake County**	28,746	29,758	3.40%	44	2006	NA	NA	NA		2012				14					
	Polson city	4,488	4,777	6.05%								R=$27,392,343 C=$31,785,452	543	NA	14					
	Ronan city	1,871	2,016	7.19%								R=$0; C=$0	0	NA	14					
	St. Ignatius town	842	824	-2.18%								R=$4,577,891 C=$480,338	149	NA	14					
	Balance of Lake County	21,545	22,141	2.69%								R=$603,058,548 C=$58,782,990	7,422	NA	14					
3	**Lewis and Clark County**	63,395	67,282	5.78%	176	2005	NA	NA	NA		2011				14	2017				14

APPENDIX B-11. LOCAL PLAN EXPOSURE SUMMARY - DAM FAILURE

DES District	Geography	Census 2010	Census 2016 Estimate	% Change 2010 to 2016	# Building Permits (2016)	Original Local Plan FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan	Estimated Societal Loss/ Exposure from Local Plan	Estimated Economic Loss from Local Plan	Ref	Local Plan Update #1 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #1	Estimated Societal Loss/ Exposure from Local Plan Update #1	Estimated Economic Loss from Local Plan Update #1	Ref	Local Plan Update #2 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #2	Estimated Societal Loss/ Exposure from Local Plan Update #2	Estimated Economic Loss from Local Plan Update #2	Ref
	East Helena town	1,984	2,074	4.34%								R=$13,751,775 C=$8,113,311	671	NA	14		R=$15,672,394 C=$6,415,676	818; <18=194	NA	14
	Helena city	28,190	31,169	9.56%								R=$0; C=$0	0	NA	14		R=$88,931 C=$130,300	101; <18=23	NA	14
	Balance of Lewis and Clark County	33,221	34,039	2.40%								R=$113,428,353 C=$174,436,839	6,791	NA	14		R=$350,598,142 C=$48,709,143	12,243; ;<18=2,714	NA	14
2	**Liberty County**	2,339	2,409	2.91%	NA	2007	NA	NA	NA	2	2013	NA	NA	NA	2					
	Chester town	847	884	4.19%																
	Balance of Liberty County	1,492	1,525	2.16%																
1	**Lincoln County**	19,687	19,259	-2.22%	8	2005	NA	NA	NA		2012				14					
	Eureka town	1,037	1,086	4.51%								R=$1,630,629 C=$2,368,872	173	NA	14					
	Libby city	2,628	2,678	1.87%								R=$80,355,061 C=$65,113,936	2,550	NA	14					
	Rexford town	105	151	30.46%								R=$0; C=$0	0	NA	14					
	Troy city	938	890	-5.39%								R=$22,091,420 C=$11,945,412	938	NA	14					
	Balance of Lincoln County	14,979	14,454	-3.63%								R=$182,781,250 C=104,503,782	6,330	NA	14					
3	**Madison County**	7,691	7,924	2.94%	7	2004	NA	NA	NA	3	2010	$1.2B	NA	NA	3	2017	NA	NA	NA	1
	Ennis town	838	890	5.84%																
	Sheridan town	642	677	5.17%																
	Twin Bridges town	375	395	5.06%																
	Virginia City town	190	198	4.04%																
	Balance of Madison County	5,646	5,764	2.05%																
4	**McCone County**	1,734	1,700	-2.00%	0	2006	NA	NA	NA	4	2014	Moderate	Moderate	Moderate	9					
	Circle town	615	619	0.65%																
	Balance of McCone County	1,119	1,081	-3.52%																
3	**Meagher County**	1,891	1,827	-3.50%	NA															
	White Sulphur Springs city	939	908	-3.41%																
	Balance of Meagher County	952	919	-3.59%																
1	**Mineral County**	4,223	4,184	-0.93%	1	2005	NA	NA	NA		2012	NA	NA	NA	1					
	Alberton town	420	417	-0.72%																
	Superior town	812	826	1.69%																
	Balance of Mineral County	2,991	2,941	-1.70%																
1	**Missoula County**	109,299	116,130	5.88%	930	2004	$5M-$10M	Moderate	NA	1	2011	$5M; AL=$10K	Low	NA	1	2017				14
	Missoula city	66,788	72,364	7.71%													R=$175,032,807 C=$101,488,843	7,902	NA	14
	Balance of Missoula County	42,511	43,766	2.87%													R=$307,569,247 C=$37,131,330	10,313	NA	14
5	**Musselshell County**	4,538	4,589	1.11%	1	2008	NA	NA	NA	14	2013				14					
	Melstone town	96	107	10.28%								R=$0; C=$0	0	NA	14					
	Roundup city	1,788	1,840	2.83%								R=$1,240,967 C=$984,897	153; <18=46	NA	14					
	Balance of Musselshell County	2,654	2,642	-0.45%								R=$37,477,379 C=$3,200,179	1,750; <18=329	NA	14					
3	**Park County**	15,636	16,114	2.97%	44	2006	NA	NA	NA	3	2012	$792,750	25 residences	NA	3					
	Clyde Park town	288	309	6.80%								Moderate	NA	NA	3					
	Livingston city	7,044	7,401	4.82%								NA	NA	NA	3					
	Balance of Park County	8,304	8,404	1.19%								Moderate	NA	NA	3					
6	**Petroleum County**	494	489	-1.02%	NA	2003	NA	NA	NA		2008	$709K	NA	NA	3					
	Winne13 town	182	185	1.62%											3					
	Balance of Petroleum County	312	304	-2.63%											3					
6	**Phillips County**	4,253	4,133	-2.90%	2	2006	NA	NA	NA	14	2012				14					
	Dodson town	124	124	0.00%								R=$0; C=$0	0	NA	14					
	Malta city	1,997	1,950	-2.41%								R=$0; C=$0	0	NA	14					
	Saco town	197	197	0.00%								R=$5,163,951 C=$2,392,372	197	NA	14					
	Balance of Phillips County	1,935	1,862	-3.92%								R=$4,030,952 C=$519,248	138	NA	14					
2	**Pondera County**	6,153	6,084	-1.13%	1	2005	NA	NA	NA		2011				14					
	Conrad city	2,570	2,550	-0.78%								R=$0; C=$0	0	NA	14					
	Valier town	509	498	-2.21%								R=$0; C=$0	0	NA	14					
	Balance of Pondera County	3,074	3,036	-1.25%								R=$5,212,653 C=$1,757,441	660	NA	14					
4	**Powder River County**	1,743	1,746	0.17%	NA	2007	NA	NA	NA	3	2011	NA	NA	NA	3	2015				9

APPENDIX B-11. LOCAL PLAN EXPOSURE SUMMARY - DAM FAILURE

DES District	Geography	Census 2010	Census 2016 Estimate	% Change 2010 to 2016	# Building Permits (2016)	Original Local Plan FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan	Estimated Societal Loss/ Exposure from Local Plan	Estimated Economic Loss from Local Plan	Ref	Local Plan Update #1 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #1	Estimated Societal Loss/ Exposure from Local Plan Update #1	Estimated Economic Loss from Local Plan Update #1	Ref	Local Plan Update #2 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #2	Estimated Societal Loss/ Exposure from Local Plan Update #2	Estimated Economic Loss from Local Plan Update #2	Ref
	Broadus town	468	481	2.70%																
	Balance of Powder River County	1,275	1,265	-0.79%																
1	**Powell County**	7,027	6,858	-2.46%	32	2004	NA	NA	NA		2012	NA	NA	NA	10	2017	$18,010,801	NA	NA	7
	Deer Lodge city	3,111	2,994	-3.91%																
	Balance of Powell County	3,916	3,864	-1.35%																
4	**Prairie County**	1,179	1,182	0.25%	NA	2006	NA	NA	NA		2012	Low	NA	NA	12					
	Terry town	605	609	0.66%																
	Balance of Prairie County	574	573	-0.17%																
1	**Ravalli County**	40,212	42,088	4.46%	20	2005	$500M-$1B	Very High	NA	1	2012	$2M		NA	1	2017				14
	Darby town	720	763	5.64%								Very High	High	NA	1		R=$18,446,507 C=$12,704,778	747	NA	14
	Hamilton city	4,348	4,674	6.97%								Very High	High	NA	1		R=$129,762,361 C=$155,108,530	4,764	NA	14
	Pinesdale town	917	967	5.17%								Low	Low	NA	1		NA	NA	NA	14
	Stevensville town	1,809	1,963	7.85%								Very High	High	NA	1		R=$2,874,518 C=$0	203	NA	14
	Balance of Ravalli County	32,418	33,721	3.86%								NA	NA	NA	1		R=$407,827,589 C=$128,338,892	10,574	NA	14
4	**Richland County**	9,746	11,482	15.12%	16	2006	NA	NA	NA	4	2014	Moderate	Moderate	Moderate	9					
	Fairview town	840	922	8.89%																
	Sidney city	5,191	6,566	20.94%																
	Balance of Richland County	3,715	3,994	6.99%																
6	**Roosevelt County**	10,425	11,305	7.78%	1	2004	NA	NA	NA	14	2016				8					
	Bainville town	208	314	33.76%								Low	Low	Low	8					
	Brockton town	255	243	-4.94%								Low	Low	Low	8					
	Culbertson town	714	804	11.19%								Low	Low	Low	8					
	Froid town	185	201	7.96%								Moderate	Moderate	Moderate	8					
	Poplar city	810	854	5.15%								Low	Low	Low	8					
	Wolf Point city	2,621	2,806	6.59%								Moderate	Moderate	Moderate	8					
	Balance of Roosevelt County	5,632	6,083	7.41%								Low	Low	Low	8					
5	**Rosebud County**	9,233	9,287	0.58%	1	2007	NA	NA	NA	3	2013	331 structures	NA	$6,893,070	2					
	Colstrip city	2,214	2,311	4.20%																
	Forsyth city	1,777	1,869	4.92%																
	Balance of Rosebud County	5,242	1,903	-175.46%																
1	**Sanders County**	11,413	11,534	1.05%	0	2012				14										
	Hot Springs town	544	557	2.33%			R=$0; C=$0	0	NA	14										
	Plains town	1,048	1,071	2.15%			R=$28,632,062 C=$24,082,081	1,048	NA	14										
	Thompson Falls city	1,313	1,356	3.17%			R=$2,120,145 C=$1,192,540	107	NA	14										
	Balance of Sanders County	8,508	8,550	0.49%			R=$156,106,384 C=$21,153,224	4,652	NA	14										
6	**Sheridan County**	3,384	3,648	7.24%	2	2003	NA	NA	NA	14	2008	1,000 structures	NA	NA	3	2016				8
	Medicine Lake town	225	241	6.64%											3		High	High	High	8
	Outlook town	47	52	9.62%											3		Moderate	Moderate	Moderate	8
	Plentywood city	1,734	1,904	8.93%											3		High	High	High	8
	Westby town	168	174	3.45%											3		Moderate	Moderate	Moderate	8
	Balance of Sheridan County	1,210	1,277	5.25%											3		Moderate	Moderate	Moderate	8
1	**Silver Bow County**	34,200	34,553	1.02%	86	2004	$9M	Moderate	Moderate	3	2010				14	2016				14
	Butte-Silver Bow (remainder)	33,525	33,853	0.97%								$732,145,971	<18=620 >65=1,199 <Poverty=1,473	NA	14		R=$399,193,315 C=$230,765,677	9,853; <18=2,272	NA	14
	Walkerville town	675	700	3.57%								$229,341	<18=1 >65=2 <Poverty=3	NA	14		R=$0; C=$0	0	NA	14
5	**Stillwater County**	9,117	9,406	3.07%	0	2010	$34M	1,190	NA	3	2015				14					
	Columbus town	1,893	2,028	6.66%			Low-Moderate	Low-Moderate	NA	3		R=$719,297 C=$3,708,643	44; <18=7	NA	14					
	Balance of Stillwater County	7,224	7,378	2.09%			High	High	NA	3		R=$69,450,846 C=$12,704,117	1,878; <18=$400	NA	14					
3	**Sweet Grass County**	3,651	3,623	-0.77%	1	2005	NA	NA	NA		2010	NA	NA	NA	13					
	Big Timber city	1,641	1,645	0.24%																
	Balance of Sweet Grass County	2,010	1,978	-1.62%																
2	**Teton County**	6,073	6,056	-0.28%	1	2006	NA	NA	NA	NA	2014	NA	NA	NA	2					
	Choteau city	1,684	1,686	0.12%																
	Du13on town	316	308	-2.60%																

APPENDIX B-11. LOCAL PLAN EXPOSURE SUMMARY - DAM FAILURE

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	Fairfield town	708	922	23.21%																
	Balance of Teton County	3,365	3,140	-7.17%																
2	**Toole County**	5,324	4,977	-6.97%	2	2007	NA	NA	NA	2	2013	NA	NA	NA	2					
	Kevin town	154	138	-11.59%																
	Shelby city	3,376	3,216	-4.98%																
	Sunburst town	375	338	-10.95%																
	Balance of Toole County	1,419	1,285	-10.43%																
5	**Treasure County**	718	692	-3.76%	0	2007	NA	NA	NA	3										
	Hysham town	312	301	-3.65%																
	Balance of Treasure County	406	391	-3.84%																
6	**Valley County**	7,369	7,539	2.25%	4	2003	NA	NA	NA	14	2008	NA	NA	NA	3	2016				8
	Fort Peck town	233	247	5.67%													Moderate	Moderate	Moderate	8
	Glasgow city	3,250	3,364	3.39%													High	High	High	8
	Nashua town	290	290	0.00%													Moderate	Moderate	Moderate	8
	Opheim town	85	290	70.69%													Low	Low	Low	8
	Balance of Valley County	3,511	3,348	-4.87%													High	High	High	8
5	**Wheatland County**	2,168	2,117	-2.41%	NA	2007	combined w/ flooding	combined w/ flooding	combined w/ flooding	14	2013				14					
	Harlowton city	997	984	-1.32%								R=$9,790,734 C=$1,567,660	483; <18=106	NA	14					
	Judith Gap city	126	123	-2.44%								R=$0; C=$0	0	NA	14					
	Balance of Wheatland County	1,045	1,010	-3.47%								R=$17,971,486 C=$2,123,168	604; <18=184	NA	14					
4	**Wibaux County**	1,017	1,093	6.95%	8	2006	NA	NA	NA	2	2014	NA	NA	NA	9					
	Wibaux town	589	649	9.24%																
	Balance of Wibaux County	428	444	3.60%																
5	**Yellowstone County**	147,972	158,437	6.61%	1,198	2005	NA	NA	NA		2012	<$250K	Moderate	NA	1					
	Billings city	104,170	110,323	5.58%																
	Broadview town	192	193	0.52%																
	Laurel city	6,718	6,865	2.14%																
	Balance of Yellowstone County	36,892	41,056	10.14%																
2	**Blackfeet Indian Reservation**	10,405				2008	NA	NA	NA	14										
2	**Rocky Boy's Indian Reservation**	3,323				2008	NA	NA	NA		2010	R=$9,222,388 CF=$16,610+	<16=98 ; >64=12; <Poverty=98	NA	14					
2	**Fort Belknap Indian Reservation**	2,851				2007	NA	NA	NA	14	2013	NA	NA	NA	14					
6	**Fort Peck Indian Reservation**	10,008				2004	NA	NA	NA	14	2012	High	High	NA	10					
5	**Crow Indian Reservation**	6,863				2008	NA	NA	NA	4	2015	High	High	High	9					
5	**Northern Cheyenne Indian Res.**	4,789				2008	NA	NA	NA	4										
1	**Flathead Indian Reservation**	28,359				2006	NA	NA	NA	NA	2017	NA	NA	NA	11					

NOTES:
R = Residential
C = Commercial/Agricultural/Industrial
CF = Critical Facilities
AL = Annual Loss
M = Million
K = Thousand
B = Billion
O = Other
NA = Not Analyzed or Not Quantitied

REFERENCES:
1 = Respec (formerly Adkins, PBS&J, Land & Water)
2 = Beck Consulting & AMEC
3 = Big Sky Hazard Management
4 = Cossitt Consulting
5 = Fire Logistics, Inc.
6 = Gallatin County
7 = Great West Engineering and Powell County
8 = Integrated Solutions Consulting
9 = KLJ
10 = Morrison-Maierle
11 = Risks and Rewards Management
12 = Single Tree Consulting
13 = Sweet Grass County
14 = Tetra Tech (formerly Maxim Tech)

APPENDIX B-12

TERRORISM, VIOLENCE, CIVIL UNREST & CYBER SECURITY VULNERABILITY ASSESSMENT DOCUMENTATION

APPENDIX B-12. LOCAL PLAN EXPOSURE SUMMARY - TERRORISM, VIOLENCE, CIVIL UNREST, CYBER SECURITY

DES District	Geography	Census 2010	Census 2016 Estimate	% Change 2010 to 2016	# Building Permits (2016)	Original Local Plan FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan	Estimated Societal Loss/ Exposure from Local Plan	Estimated Economic Loss from Local Plan	Ref	Local Plan Update #1 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #1	Estimated Societal Loss/ Exposure from Local Plan Update #1	Estimated Economic Loss from Local Plan Update #1	Ref	Local Plan Update #2 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #2	Estimated Societal Loss/ Exposure from Local Plan Update #2	Estimated Economic Loss from Local Plan Update #2	Ref
	Montana	989,415	1,042,520	5.09%	4,781															
3	**Beaverhead County**	9,246	9,401	1.65%	3	2004	NA	NA	NA	3	2010	NA	NA	NA	3	2017				1
	Dillon city	4,134	4,257	2.89%													Low	Moderate-High	Moderate	1
	Lima town	221	224	1.34%													Low	Moderate-High	Moderate	1
	Balance of Beaverhead County	4,891	4,920	0.59%													Low	Moderate-High	Moderate	1
5	**Big Horn County**	12,865	13,343	3.58%	2	2006	NA	NA	NA	2	2012	NA	NA	NA	2					
	Hardin city	3,505	3,829	8.46%																
	Lodge Grass town	428	446	4.04%																
	Balance of Big Horn County	8,932	9,068	1.50%																
2	**Blaine County**	6,491	6,601	1.67%	0	2006	NA	NA	NA	14	2012	NA	NA	NA	14					
	Chinook city	1,203	1,233	2.43%																
	Harlem city	808	823	1.82%																
	Balance of Blaine County	4,480	4,545	1.43%																
3	**Broadwater County**	5,612	5,747	2.35%	0	2004	NA	NA	NA	3	2009				3	2016				14
	Townsend city	1,878	1,978	5.06%								Low	Moderate-High	Moderate	3		R=$60,475,754 C=$15,235,768	1,897; <18=421	NA	14
	Balance of Broadwater County	3,734	3,769	0.93%								Low	Moderate-High	Moderate	3		R=$241,002,251 C=$32,343,197	4,105; <18=887	NA	14
5	**Carbon County**	10,078	10,460	3.65%	8	2006	NA	NA	NA	2	2012	NA	NA	NA	2					
	Bearcreek town	79	84	5.95%																
	Bridger town	708	732	3.28%																
	Fromberg town	438	445	1.57%																
	Joliet town	595	640	7.03%																
	Red Lodge city	2,125	2,237	5.01%																
	Balance of Carbon County	6,133	6,322	2.99%																
*	**Carter County**	1,160	1,203	3.57%	1	2005	NA	NA	NA		2012	Low	Low	Low	12					
	Ekalaka town	332	353	5.95%																
	Balance of Carter County	828	850	2.59%																
2	**Cascade County**	81,327	81,755	0.52%	242	2012	NA	NA	NA	14	2017				14					
	Belt city	597	588	-1.53%								R=$8,663,740 C=$4,223,279	230; <18=53; >65=32	NA	14					
	Cascade town	685	688	0.44%								R=$25,278,675 C=$6,731,463	613; <18=140; >65=91	NA	14					
	Great Falls city	58,505	59,178	1.14%								R=$7,613,796,311 C=$21,615,129,340	51,669; <18=11,832; >65=7,699	NA	14					
	Neihart town	51	50	-2.00%								R=$5,425,218 C=$1,871,664	148; <18=34; >65=22	NA	14					
	Balance of Cascade County	21,489	21,251	-1.12%								R=$1,404,040,740 C=$192,425,601	17,629; <18=4,037; >65=2,627	NA	14					
2	**Chouteau County**	5,813	5,759	-0.94%	10	2010	NA	NA	NA	5	2017	NA	NA	NA	5					
	Big Sandy town	598	590	-1.36%																
	Fort Benton city	1,464	1,456	-0.55%																
	Geraldine town	261	261	0.00%																
	Balance of Chouteau County	3,490	3,452	-1.10%																
4	**Custer County**	11,699	11,924	1.89%	0	2005	NA	NA	NA	2	2012	NA	NA	NA	2	2017				14
	Ismay town	19	21	9.52%													R=$461,458 C=$1,071,856	12; <18=5; >65=4	NA	14
	Miles City city	8,410	8,647	2.74%													R=$328,980,853 C=$110,329,122	4,260; <18=1,544; >65=1,379	NA	14
	Balance of Custer County	3,270	3,256	-0.43%													R=$494,808,054 C=$141,163,567	5,985; <18=2,167; >65=1,937	NA	14
6	**Daniels County**	1,751	1,755	0.23%	0	2003	NA	NA	NA	14	2008				3	2016				8
	Flaxville town	71	71	0.00%								Low	Moderate	Low-Moderate	3					
	Scobey city	1,017	1,032	1.45%								Low	Moderate	Low-Moderate	3					
	Balance of Daniels County	663	652	-1.69%								Low	Moderate	Low-Moderate	3					
4	**Dawson County**	8,966	9,327	3.87%	1	2006	NA	NA	NA	2	2014	Low	Low	Low	9					
	Glendive city	4,935	5,332	7.45%																
	Richey town	177	187	5.35%																
	Balance of Dawson County	3,854	3,808	-1.21%																
1	**Deer Lodge County**	9,298	9,085	-2.34%	17	2005	Low	High	Moderate	3	2013	Low-Moderate	High	Moderate-High	3					
	Anaconda-Deer Lodge County	9,298	9,085	-2.34%																

APPENDIX B-12. LOCAL PLAN EXPOSURE SUMMARY - TERRORISM, VIOLENCE, CIVIL UNREST, CYBER SECURITY

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4	**Fallon County**	2,890	3,120	7.37%	35	2006	NA	NA	NA	12	2012	NA	NA	NA	12					
	Baker city	1,741	1,990	12.51%																
	Plevna town	162	176	7.95%																
	Balance of Fallon County	987	954	-3.46%																
6	**Fergus County**	11,586	11,413	-1.52%	1	2008	Low	Low to High	Low-Moderate	3	2014				9					
	Denton town	255	247	-3.24%								Low	Low	NA	9					
	Grass Range town	110	108	-1.85%								Low	Low	NA	9					
	Lewistown city	5,901	5,870	-0.53%								Low	Low	NA	9					
	Moore town	193	198	2.53%								Low	Low	NA	9					
	Winifred town	208	206	-0.97%								Low	Low	NA	9					
	Balance of Fergus County	4,919	4,784	-2.82%								Low	Low	NA	9					
1	**Flathead County**	90,928	98,082	7.29%	316	2009	Low	Low	NA		2014	NA	NA	NA	14					
	Columbia Falls city	4,688	5,241	10.55%																
	Kalispell city	19,927	22,761	12.45%																
	Whitefish city	6,357	7,279	12.67%																
	Balance of Flathead County	59,956	62,801	4.53%																
3	**Gallatin County**	89,513	104,502	14.34%	1,550	2006	NA	NA	NA	6	2012	Moderate	Moderate	Moderate	6					
	Belgrade city	7,389	8,254	10.48%																
	Bozeman city	37,280	45,250	17.61%																
	Manhattan town	1,520	1,691	10.11%																
	Three Forks city	1,869	1,944	3.86%																
	West Yellowstone town	1,271	1,353	6.06%																
	Balance of Gallatin County	40,184	46,010	12.66%																
4	**Garfield County**	1,206	1,310	7.94%	0	2007	Moderate-High	Moderate-High	High	3	2014	Low	Low	NA	9					
	Jordan town	343	399	14.04%																
	Balance of Garfield County	863	911	5.27%																
2	**Glacier County**	13,399	13,694	2.15%	0	2005	NA	NA	NA		2012	NA	NA	NA	14					
	Browning town	1,016	1,031	1.45%																
	Cut Bank city	2,869	3,012	4.75%																
	Balance of Glacier County	9,514	9,651	1.42%																
5	**Golden Valley County**	884	831	-6.38%	NA	2008	NA	NA	NA	14										
	Lavina town	187	173	-8.09%																
	Ryegate town	245	236	-3.81%																
	Balance of Golden Valley County	452	422	-7.11%																
1	**Granite County**	3,079	3,368	8.58%	NA	2006	Low	High	Moderate	3	2013	Low-Moderate	High	Moderate-High	3					
	Drummond town	309	348	11.21%																
	Philipsburg town	820	920	10.87%																
	Balance of Granite County	1,950	2,100	7.14%																
2	**Hill County**	16,096	16,542	2.70%	4	2006	NA	NA	NA	14	2012	NA	NA	NA	14					
	Havre city	9,310	9,846	5.44%																
	Hingham town	118	122	3.28%																
	Balance of Hill County	6,668	6,574	-1.43%																
3	**Jefferson County**	11,406	11,853	3.77%	5	2005	NA	NA	NA	3	2011	NA	NA	NA	14	2017				14
	Boulder town	1,183	1,230	3.82%													R=$32,662,686 C=$7,588,581	1,249; <18=244	NA	14
	Whitehall town	1,038	1,114	6.82%													R=$33,969,396 C=$12,099,667	1,387; <18=302	NA	14
	Balance of Jefferson County	9,185	9,509	3.41%													R=$678,719,136 C=$50,484,719	9,966; <18=2,337	NA	14
6	**Judith Basin County**	2,072	1,940	-6.80%	NA	2008	NA	NA	NA	14	2013	NA	NA	NA	14					
	Hobson town	215	218	1.38%																
	Stanford town	401	384	-4.43%																
	Balance of Judith Basin County	1,456	1,338	-8.82%																
1	**Lake County**	28,746	29,758	3.40%	44	2006	NA	NA	NA		2012	NA	NA	NA	14					
	Polson city	4,488	4,777	6.05%																
	Ronan city	1,871	2,016	7.19%																
	St. Ignatius town	842	824	-2.18%																
	Balance of Lake County	21,545	22,141	2.69%																
3	**Lewis and Clark County**	63,395	67,282	5.78%	176	2005	NA	NA	NA		2011	NA	NA	NA	14	2017				14
	East Helena town	1,984	2,074	4.34%													R=73,916,041 C=$30,793,990	2,832; <18=700	NA	14
	Helena city	28,190	31,169	9.56%													R=$1,193,293,067 C=$919,413,720	30,649; <18=6,243	NA	14

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	Balance of Lewis and Clark County	33,221	34,039	2.40%													R=$1,744,823,298 C=$128,218,969	28,380; <18=7,232	NA	14
2	**Liberty County**	2,339	2,409	2.91%	NA	2007	NA	NA	NA	2	2013	NA	NA	NA	2					
	Chester town	847	884	4.19%																
	Balance of Liberty County	1,492	1,525	2.16%																
1	**Lincoln County**	19,687	19,259	-2.22%	8	2005	NA	NA	NA		2012	NA	NA	NA	14					
	Eureka town	1,037	1,086	4.51%																
	Libby city	2,628	2,678	1.87%																
	Rexford town	105	151	30.46%																
	Troy city	938	890	-5.39%																
	Balance of Lincoln County	14,979	14,454	-3.63%																
3	**Madison County**	7,691	7,924	2.94%	7	2004	NA	NA	NA	3	2010				3	2017				1
	Ennis town	838	890	5.84%								Low	Moderate-High	Moderate	3		Low	Moderate-High	Moderate	1
	Sheridan town	642	677	5.17%								Low	Moderate-High	Moderate	3		Low	Moderate-High	Moderate	1
	Twin Bridges town	375	395	5.06%								Low	Moderate-High	Moderate	3		Low	Moderate-High	Moderate	1
	Virginia City town	190	198	4.04%								Low	Moderate-High	Moderate	3		Low	Moderate-High	Moderate	1
	Balance of Madison County	5,646	5,764	2.05%								Low	Moderate-High	Moderate	3		Low	Moderate-High	Moderate	1
4	**McCone County**	1,734	1,700	-2.00%	0	2006	NA	NA	NA	4	2014	Low	Low	NA	9					
	Circle town	615	619	0.65%																
	Balance of McCone County	1,119	1,081	-3.52%																
3	**Meagher County**	1,891	1,827	-3.50%	NA															
	White Sulphur Springs city	939	908	-3.41%																
	Balance of Meagher County	952	919	-3.59%																
1	**Mineral County**	4,223	4,184	-0.93%	1	2005	NA	NA	NA		2012	NA	NA	NA	1					
	Alberton town	420	417	-0.72%																
	Superior town	812	826	1.69%																
	Balance of Mineral County	2,991	2,941	-1.70%																
1	**Missoula County**	109,299	116,130	5.88%	930	2004	NA	NA	NA	1	2011	NA	NA	NA	1	2017	NA	NA	NA	14
	Missoula city	66,788	72,364	7.71%																
	Balance of Missoula County	42,511	43,766	2.87%																
5	**Musselshell County**	4,538	4,589	1.11%	1	2008	NA	NA	NA	14	2013	NA	NA	NA	14					
	Melstone town	96	107	10.28%																
	Roundup city	1,788	1,840	2.83%																
	Balance of Musselshell County	2,654	2,642	-0.45%																
3	**Park County**	15,636	16,114	2.97%	44	2006	NA	NA	NA	3	2012				3					
	Clyde Park town	288	309	6.80%								Low	NA	NA	3					
	Livingston city	7,044	7,401	4.82%								Moderate	NA	NA	3					
	Balance of Park County	8,304	8,404	1.19%								Low-Moderate	NA	NA	3					
6	**Petroleum County**	494	489	-1.02%	NA	2003	NA	N	N		2008				3					
	Winnett town	182	185	1.62%								Low	Moderate	Low-Moderate	3					
	Balance of Petroleum County	312	304	-2.63%								Low	Moderate	Low-Moderate	3					
6	**Phillips County**	4,253	4,133	-2.90%	2	2006	NA	NA	NA	14	2012	NA	NA	NA	14					
	Dodson town	124	124	0.00%																
	Malta city	1,997	1,950	-2.41%																
	Saco town	197	197	0.00%																
	Balance of Phillips County	1,935	1,862	-3.92%																
2	**Pondera County**	6,153	6,084	-1.13%	1	2005	NA	NA	NA		2011	NA	NA	NA	14					
	Conrad city	2,570	2,550	-0.78%																
	Valier town	509	498	-2.21%																
	Balance of Pondera County	3,074	3,036	-1.25%																
4	**Powder River County**	1,743	1,746	0.17%	NA	2007	NA	NA	NA	3	2011	Low	Moderate-High	High	3	2015	Low	Low	NA	9
	Broadus town	468	481	2.70%																
	Balance of Powder River County	1,275	1,265	-0.79%																
1	**Powell County**	7,027	6,858	-2.46%	32	2004	NA	NA	NA		2012	NA	NA	NA	10	2017	NA	NA	NA	7
	Deer Lodge city	3,111	2,994	-3.91%																
	Balance of Powell County	3,916	3,864	-1.35%																
4	**Prairie County**	1,179	1,182	0.25%	NA	2006	NA	NA	NA		2012	Low	NA	NA	12					
	Terry town	605	609	0.66%																
	Balance of Prairie County	574	573	-0.17%																
1	**Ravalli County**	40,212	42,088	4.46%	20	2005	NA	NA	NA	1	2012	NA	NA	NA	1	2017	NA	NA	NA	14
	Darby town	720	763	5.64%																
	Hamilton city	4,348	4,674	6.97%																
	Pinesdale town	917	967	5.17%																
	Stevensville town	1,809	1,963	7.85%																

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	Balance of Ravalli County	32,418	33,721	3.86%																
4	**Richland County**	9,746	11,482	15.12%	16	2006	NA	NA	NA	4	2014	Low	Low	Low	9					
	Fairview town	840	922	8.89%																
	Sidney city	5,191	6,566	20.94%																
	Balance of Richland County	3,715	3,994	6.99%																
6	**Roosevelt County**	10,425	11,305	7.78%	1	2004	NA	NA	NA	14	2016	NA	NA	NA	8					
	Bainville town	208	314	33.76%																
	Brockton town	255	243	-4.94%																
	Culbertson town	714	804	11.19%																
	Froid town	185	201	7.96%																
	Poplar city	810	854	5.15%																
	Wolf Point city	2,621	2,806	6.59%																
	Balance of Roosevelt County	5,632	6,083	7.41%																
5	**Rosebud County**	9,233	9,287	0.58%	1	2007	Low	Moderate-High	High	3	2013	NA	NA	NA	2					
	Colstrip city	2,214	2,311	4.20%																
	Forsyth city	1,777	1,869	4.92%																
	Balance of Rosebud County	5,242	1,903	-175.46%																
1	**Sanders County**	11,413	11,534	1.05%	0	2012	NA	NA	NA	14										
	Hot Springs town	544	557	2.33%																
	Plains town	1,048	1,071	2.15%																
	Thompson Falls city	1,313	1,356	3.17%																
	Balance of Sanders County	8,508	8,550	0.49%																
6	**Sheridan County**	3,384	3,648	7.24%	2	2003	NA	NA	NA	14	2008				3	2016				8
	Medicine Lake town	225	241	6.64%								Low	Moderate	Low-Moderate	3		Low	Low	Low	8
	Outlook town	47	52	9.62%								Low	Moderate	Low-Moderate	3		Low	Low	Low	8
	Plentywood city	1,734	1,904	8.93%								Low	Moderate	Low-Moderate	3		Low	Low	Low	8
	Westby town	168	174	3.45%								Low	Moderate	Low-Moderate	3		Low	Low	Low	8
	Balance of Sheridan County	1,210	1,277	5.25%								Low	Moderate	Low-Moderate	3		Low	Low	Low	8
1	**Silver Bow County**	34,200	34,553	1.02%	86	2004	NA	NA	NA	3	2010	NA	NA	NA	14	2016				14
	Butte-Silver Bow (remainder)	33,525	33,853	0.97%													R=$1,550,525,438 C=$674,083,208	34,501; <18=7,239	NA	14
	Walkerville town	675	700	3.57%													R=$26,148,532 C=$4,408,020	844; <18=195	NA	14
5	**Stillwater County**	9,117	9,406	3.07%	0	2010	Low-Moderate	High	NA	3	2015				14					
	Columbus town	1,893	2,028	6.66%			Moderate-High	Moderate-High	NA	3		R=$65,383,045 C=$46,507,380	1,893; <18=492	NA	14					
	Balance of Stillwater County	7,224	7,378	2.09%			Moderate-High	Moderate-High	NA	3		R=$430,493,951 C=$33,051,089	7,224; <18=1,496	NA	14					
3	**Sweet Grass County**	3,651	3,623	-0.77%	1	2005	NA	NA	NA		2010	NA	NA	NA	13					
	Big Timber city	1,641	1,645	0.24%																
	Balance of Sweet Grass County	2,010	1,978	-1.62%																
2	**Teton County**	6,073	6,056	-0.28%	1	2006	NA	NA	NA	NA	2014	NA	NA	NA	2					
	Choteau city	1,684	1,686	0.12%																
	Dutton town	316	308	-2.60%																
	Fairfield town	708	922	23.21%																
	Balance of Teton County	3,365	3,140	-7.17%																
2	**Toole County**	5,324	4,977	-6.97%	2	2007	NA	NA	NA	2	2013	NA	NA	NA	2					
	Kevin town	154	138	-11.59%																
	Shelby city	3,376	3,216	-4.98%																
	Sunburst town	375	338	-10.95%																
	Balance of Toole County	1,419	1,285	-10.43%																
5	**Treasure County**	718	692	-3.76%	0	2007	Low	Moderate-High	Moderate-High	3										
	Hysham town	312	301	-3.65%																
	Balance of Treasure County	406	391	-3.84%																
6	**Valley County**	7,369	7,539	2.25%	4	2003	NA	NA	NA	14	2008				3	2016				8
	Fort Peck town	233	247	5.67%								Low	Moderate	Low-Moderate	3		Low	Low	Low	8
	Glasgow city	3,250	3,364	3.39%								Low	Moderate	Low-Moderate	3		Low	Low	Low	8
	Nashua town	290	290	0.00%								Low	Moderate	Low-Moderate	3		Low	Low	Low	8
	Opheim town	85	290	70.69%								Low	Moderate	Low-Moderate	3		Low	Low	Low	8
	Balance of Valley County	3,511	3,348	-4.87%								Low	Moderate	Low-Moderate	3		Low	Low	Low	8
5	**Wheatland County**	2,168	2,117	-2.41%	NA	2007	NA	NA	NA	14	2013	NA	NA	NA	14					
	Harlowton city	997	984	-1.32%																
	Judith Gap city	126	123	-2.44%																
	Balance of Wheatland County	1,045	1,010	-3.47%																

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4	**Wibaux County**	1,017	1,093	6.95%	8	2006	NA	NA	NA	2	2014	Low	Low	Low	9					
	Wibaux town	589	649	9.24%																
	Balance of Wibaux County	428	444	3.60%																
5	**Yellowstone County**	147,972	158,437	6.61%	1,198	2005	NA	NA	NA		2012	NA	NA	NA	1					
	Billings city	104,170	110,323	5.58%																
	Broadview town	192	193	0.52%																
	Laurel city	6,718	6,865	2.14%																
	Balance of Yellowstone County	36,892	41,056	10.14%																
2	**Blackfeet Indian Reservation**	10,405				2008	NA	NA	NA	14										
2	**Rocky Boy's Indian Reservation**	3,323				2008	NA	NA	NA		2010	NA	NA	NA	14					
2	**Fort Belknap Indian Reservation**	2,851				2007	NA	NA	NA	14	2013	NA	NA	NA	14					
6	**Fort Peck Indian Reservation**	10,008				2004	NA	NA	NA	14	2012	Low	Low	NA	10					
5	**Crow Indian Reservation**	6,863				2008	NA	NA	NA	4	2015	Low	Low	NA	9					
5	**Northern Cheyenne Indian Res.**	4,789				2008	NA	NA	NA	4										
1	**Flathead Indian Reservation**	28,359				2006	NA	NA	NA	NA	2017	NA	NA	NA	11					

NOTES:
R = Residential
C = Commercial/Agricultural/Industrial
CF = Critical Facilities
AL = Annual Loss
M = Million
K = Thousand
B = Billion
O = Other
NA = Not Analyzed or Not Quantitied

REFERENCES:
1 = Respec (formerly Adkins, PBS&J, Land & Water)
2 = Beck Consulting & AMEC
3 = Big Sky Hazard Management
4 = Cossitt Consulting
5 = Fire Logistics, Inc.
6 = Gallatin County
7 = Great West Engineering and Powell County
8 = Integrated Solutions Consulting
9 = KLJ
10 = Morrison-Maierle
11 = Risks and Rewards Management
12 = Single Tree Consulting
13 = Sweet Grass County
14 = Tetra Tech (formerly Maxim Tech)

Montana THIRA-SPR Executive Summary

May 15, 2018

2017

This document summarizes the results of Montana's 2017 Threat & Hazard Identification and Risk Assessment (THIRA) and Stakeholder Preparedness Review (SPR) which, along with other input, influences Montana's preparedness planning, training, and exercise activities, and guides decisions concerning the use of preparedness grants funding.

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2017 Montana THIRA-SPR Executive Summary

Montana Disaster & Emergency Services (MT DES), a division of the Department of Military Affairs, presents this summary of the 2017 Montana Threat and Hazard Identification and Risk Assessment (THIRA)* and the Stakeholder Preparedness Review (SPR)*, which influence future planning, training, exercise, preparedness, mitigation, response, and recovery efforts.

Presidential Policy Directive 8: National Preparedness (PPD-8) established the National Preparedness Goal (updated 2015), which views the nation's security and resilience posture through 32 Core Capabilities relevant to 5 Mission Areas – Prevention, Protection, Mitigation, Response and Recovery*. Assessments such as the THIRA and the SPR are intended to allow government of all levels, communities, the private sector and individuals to prioritize the Core Capabilities for which they see high risk and low capacity.

*see Appendix A for all definitions

Montana's 2017 THIRA-SPR High Priority Core Capabilities are as follows:

Core Capability

1. Public Information and Warning
2. Fire Management and Suppression
3. Operational Coordination
4. Planning
5. Operational Communications
6. Public Health, Healthcare and Emergency Medical Services
7. Community Resilience
8. Threats & Hazard Identification
9. Mass Care Services
10. Cybersecurity

Consideration is to be given to enhancing Core Capabilities with high priority and low capacity. Montana has expertise for many of its highest priority Core Capabilities so future actions are intended to sustain such strengths while enhancing the Core Capabilities that are not as strong as desired. "Recipients [and sub-recipients**] should prioritize the use of grant funds to maintain/sustain current capabilities, to validate capability levels, and to increase capability for high-priority core capabilities with low capability [capacity] levels." (FY 2016 HSGP Notice of Funding Opportunity (NOFO) p.36, ** FY 2016 EMPG NOFO p. 3).

Priority and capacity ratings were established via self-assessments from cities, counties and the state by community partners in:

- Emergency management
- Elected officials
- Law enforcement
- Fire services
- Public works
- Public safety
- Public health
- Agriculture
- Sanitarians
- Medical professionals
- Transportation
- Utility authorities
- IT experts
- Environmental organizations
- Flood plain managers
- Educators
- Faith-based organizations
- Non-governmental organizations (NGOs) such as the Red Cross, VOAD, and community advocacy groups
- Community members with disabilities or access/functional needs
- Federal partners such as the Border Patrol and National Park Service
- The private sector within Montana
- State Emergency Support Function (ESF) Primary Agencies

The heat map on the following pages shows the strength (capacity) of each Core Capability, broken down by the Solution Areas* of Planning, Organization, Equipment, Training, and Exercises; the Priority assigned to the Core Capability; and who is deemed to be responsible to fill the gap in each capability's capacity.

Core Capability	P	O	Eq	T	Ex	Priority	Gap Responsibility
Planning	3	4	5	5	4	High Priority	The jurisdiction will continue to increase this capability; some small portion of capacity will remain reliant on outside assets from higher levels of government
Public Information and Warning	4	4	4	4	4	High Priority	The jurisdiction will continue to increase this capability; some small portion of capacity will remain reliant on outside assets from higher levels of government
Operational Coordination	4	5	5	4	4	High Priority	The jurisdiction will continue to increase this capability; some small portion of capacity will remain reliant on outside assets from higher levels of government
Forensics and Attribution	2	3	2	2	2	Low Priority	The jurisdiction will potentially increase this capability; a significant portion of required capacity will remain reliant on outside assets from higher levels of government
Intelligence and Information Sharing	2	5	5	4	4	Medium Priority	The jurisdiction will potentially increase this capability; a significant portion of required capacity will remain reliant on outside assets from higher levels of government
Interdiction and	2	2	1	2	1	Low	The jurisdiction will potentially increase this capability; a

Core Capability	P	O	Eq	T	Ex	Priority	Gap Responsibility
Disruption						Priority	significant portion of required capacity will remain reliant on outside assets from higher levels of government
Screening, Search, and Detection	2	1	1	2	1	Low Priority	The jurisdiction will potentially increase this capability; a significant portion of required capacity will remain reliant on outside assets from higher levels of government
Access Control and Identity Verification	2	2	3	3	1	Low Priority	The jurisdiction will potentially increase this capability; a significant portion of required capacity will remain reliant on outside assets from higher levels of government
Cybersecurity	2	2	2	2	1	High Priority	The jurisdiction will continue to increase this capability; some small portion of capacity will remain reliant on outside assets from higher levels of government
Physical Protective Measures	3	4	4	5	1	Medium Priority	The jurisdiction will continue to increase this capability; some small portion of capacity will remain reliant on outside assets from higher levels of government
Risk Management for Protection Programs and	3	2	5	2	4	Low Priority	The jurisdiction will potentially increase this capability; a significant portion of required capacity will remain reliant on

Core Capability	P	O	Eq	T	Ex	Priority	Gap Responsibility
Activities							outside assets from higher levels of government
Supply Chain Integrity and Security	2	5	1	1	1	Low Priority	The jurisdiction will potentially increase this capability; a significant portion of required capacity will remain reliant on outside assets from higher levels of government
Community Resilience	4	4	5	4	4	High Priority	The jurisdiction will continue to increase this capability; some small portion of capacity will remain reliant on outside assets from higher levels of government
Long-term Vulnerability Reduction	4	5	5	5	4	Medium Priority	The jurisdiction will continue to increase this capability; some small portion of capacity will remain reliant on outside assets from higher levels of government
Risk and Disaster Resilience Assessment	4	5	5	5	4	Medium Priority	The jurisdiction will continue to increase this capability; some small portion of capacity will remain reliant on outside assets from higher levels of government
Threats and Hazards Identification	5	5	5	5	4	High Priority	The jurisdiction will continue to increase this capability; some small portion of capacity will remain reliant on outside assets from higher levels of government

Core Capability	P	O	Eq	T	Ex	Priority	Gap Responsibility
Critical Transportation	4	3	3	4	3	Medium Priority	The jurisdiction will continue to increase this capability; some small portion of capacity will remain reliant on outside assets from higher levels of government
Environmental Response/Health and Safety	3	5	4	5	4	Medium Priority	The jurisdiction will continue to increase this capability; some small portion of capacity will remain reliant on outside assets from higher levels of government
Fatality Management Services	3	4	4	5	1	Low Priority	The jurisdiction will potentially increase this capability; a significant portion of required capacity will remain reliant on outside assets from higher levels of government
Fire Management and Suppression	5	5	4	5	4	High Priority	The jurisdiction will continue to increase this capability; some small portion of capacity will remain reliant on outside assets from higher levels of government
Infrastructure Systems	2	3	4	5	4	Medium Priority	The jurisdiction will continue to increase this capability; some small portion of capacity will remain reliant on outside assets from higher levels of government
Logistics and Supply Chain Management	3	4	4	5	4	Medium Priority	The jurisdiction will continue to increase this capability; some small portion of capacity will remain reliant on outside assets

Core Capability	P	O	Eq	T	Ex	Priority	Gap Responsibility
							from higher levels of government
Mass Care Services	3	4	4	4	4	High Priority	The jurisdiction will continue to increase this capability; some small portion of capacity will remain reliant on outside assets from higher levels of government
Mass Search and Rescue Operations	4	4	4	4	4	Medium Priority	The jurisdiction will potentially increase this capability; a significant portion of required capacity will remain reliant on outside assets from higher levels of government
On-scene Security, Protection, and Law Enforcement	2	4	4	4	4	Medium Priority	The jurisdiction will continue to increase this capability; some small portion of capacity will remain reliant on outside assets from higher levels of government
Operational Communications	3	5	3	4	4	High Priority	The jurisdiction will continue to increase this capability; some small portion of capacity will remain reliant on outside assets from higher levels of government
Public Health, Healthcare, and Emergency Medical Services	4	4	5	4	4	High Priority	The jurisdiction will potentially increase this capability; a significant portion of required capacity will remain reliant on outside assets from higher levels of government

Core Capability	P	O	Eq	T	Ex	Priority	Gap Responsibility
Situational Assessment	4	4	5	4	4	Medium Priority	The jurisdiction will potentially increase this capability; a significant portion of required capacity will remain reliant on outside assets from higher levels of government
Economic Recovery	1	4	5	4	1	Medium Priority	The jurisdiction will potentially increase this capability; a significant portion of required capacity will remain reliant on outside assets from higher levels of government
Health and Social Services	4	4	4	4	4	Medium Priority	The jurisdiction will potentially increase this capability; a significant portion of required capacity will remain reliant on outside assets from higher levels of government
Housing	2	3	5	1	1	Low Priority	The jurisdiction will potentially increase this capability; a significant portion of required capacity will remain reliant on outside assets from higher levels of government
Natural and Cultural Resources	1	1	1	2	1	Low Priority	The jurisdiction will potentially increase this capability; a significant portion of required capacity will remain reliant on outside assets from higher levels of government

The ratings of each Core Capability range from a low of 1 up to a high of 5. Below is a key to what the specific scores mean:

Planning –
1 – No plans/annexes exist
2 – Some plans/annexes exist
3 – Plans/annexes are complete but require update
4 – Plans/annexes are complete and have been updated within 5 years
5 – Plans/annexes are complete, up to date, and verified through either exercises or real-world events
N/A – Planning is not relevant for this capability

Organization –
1 - 0-20% of required organization/personnel exists
2 - 21-40% of required organization/personnel exists
3 - 41-60% of required organization/personnel exists
4 - 61-80% of the required organization/personnel exists
5 - 81-100% of the required organization/personnel exists
N/A - Organization is not relevant for this capability

Equipment –
1 - 0-20% of required equipment exists
2 - 21-40% of required equipment exists
3 - 41-60% of required equipment exists
4 - 61-80% of required equipment exists
5 - 81-100% of required equipment exists
N/A - Equipment is not relevant for this capability

Training –
1 - 0-20% of required training exists
2 - 21-40% of required training exists
3 - 41-60% of required training exists
4 - 61-80% of required training exists
5 - 81-100% of required training exists
N/A - Training is not relevant for this capability

Exercises –
1 - No exercises/real-world demonstrations have occurred in the last 5 years
2 - Exercises/real-world demonstrations have occurred; many mission critical findings exist
3 - Exercises/real-world demonstrations have occurred; few mission critical findings exist
4 - Exercises/real-world demonstrations have occurred; some areas for improvement exist
5 - Exercises/real-world demonstrations have occurred; no areas for improvement exist
N - Exercises/real-world demonstrations is not relevant for this capability

This Executive Summary of Montana's 2017 THIRA and SPR is intended to illustrate the results of the two assessments with as little bias as possible. The Heat Map gives visual support for the conclusions and narrative stated in the summary and is intended to give additional information expected to inform not only decisions concerning training and exercise planning, but also the priorities, funding and strategies of Montana's prevention, protection, mitigation, response, recover, preparedness, and emergency management activities.

Appendix A - Definitions

THIRA – Threat and Hazard Identification and Risk Assessment is a risk assessment collecting information regarding the threats and hazards, including their projected consequences or impacts, the desired outcomes (what success looks like), targets for which to strive, and the estimated resources needed to reach those targets. The THIRA provides a common, consistent approach for identifying and assessing risks and associated impacts.

SPR – Stakeholder Preparedness Review (formerly known as the State Preparedness Report) is a standardized statewide self-assessment of Core Capabilities from the point of view of each of the 5 Solution Areas – Planning, Organization, Equipment, Training and Exercise (*see next page for POETE definitions). Annual SPRs are a requirement by the Post-Katrina Emergency Management Reform Act of 2006.

Mission Areas – 5 themes (Prevention, Protection, Mitigation, Response, and Recovery) identified in the National Preparedness Goal that comprise the parts of Preparedness. These five mission areas serve as an aid in organizing our national preparedness activities, and do not constrain or limit integration across mission areas and core capabilities, which by their nature are highly interdependent and applicable to any threat or hazard. These mission areas exist along a continuum, and there is a dynamic interplay between and among them and even some commonality in the core capabilities essential to each.

1. **Prevention** - Prevention includes those capabilities necessary to avoid, prevent, or stop a threatened or actual act of terrorism. It is focused on ensuring optimal preparedness to prevent an imminent terrorist attack within the United States through a collaborative investigative process. Prevention includes the intelligence, law enforcement, and homeland defense activities conducted in the event of an act of terrorism in the homeland to determine if follow-on attacks are planned and to thwart and/or apprehend the adversary.

2. **Protection** - Protection includes capabilities to safeguard the homeland against acts of terrorism and man-made or natural disasters. It is focused on actions to protect the citizens, residents, visitors, and critical assets, systems, and networks against the greatest risks in a manner that allows our interests, aspirations, and way of life to continue by enhancing Protection through cooperation and collaboration with all sectors of society. The Protection capabilities include, but are not limited to, critical infrastructure protection, cybersecurity, border security, immigration security, protection of key leadership and events, maritime security, transportation security, defense of agriculture and food, defense against WMD threats, and health security.

3. **Mitigation** - Mitigation includes those capabilities necessary to reduce loss of life and property by lessening the impact of disasters. It is focused on the premise that individuals, the private sector, communities, critical infrastructure, and the Nation as a whole are made more resilient when the consequences and impacts, the duration, and the financial and human costs to respond to and recover from adverse incidents are all reduced.

4. **Response** - Response includes those capabilities necessary to save lives, protect property and the environment, and meet basic human needs after an incident has occurred. It is focused on ensuring that a community is able to effectively respond to any threat or hazard, including those with cascading effects, with an emphasis on saving and sustaining lives and stabilizing the incident, as well as rapidly meeting basic human needs, restoring basic services and community functionality, establishing a safe and secure environment, and supporting the transition to recovery.

5. **Recovery** - Recovery includes those capabilities necessary to assist communities affected by an incident in recovering effectively. It is focused on a timely restoration, strengthening, and revitalization of the infrastructure; housing; a sustainable economy; and the health, social, cultural, historic, and environmental fabric of communities affected by a catastrophic incident.

Solution Areas – POETE

- **Planning** - Collection and analysis of intelligence and information, and development of policies, plans, procedures, mutual aid agreements, strategies, and other publications that comply with relevant laws, regulations, and guidance necessary to perform assigned missions and tasks.

- **Organization** - Individual teams, an overall organizational structure, and leadership at each level in the structure that comply with relevant laws, regulations, and guidance necessary to perform assigned missions and tasks. Organization includes paid staff and volunteers who meet relevant qualification and certification standards necessary to perform assigned missions and tasks.

- **Equipment** - Major items of equipment, supplies, facilities, and systems that comply with relevant standards necessary to perform assigned missions and tasks.

- **Training** - Content and methods of delivery that comply with relevant training standards necessary to perform assigned missions and tasks.

- **Exercise** - Exercises and actual major events that provide opportunities to demonstrate, evaluate, and improve the combined capability and interoperability of the other elements to perform assigned missions and tasks to standards necessary to achieve successful outcomes.

Core Capabilities (in alphabetical order) - Capabilities are the means to accomplish a mission, function, or objective based on the performance of related tasks, under specified conditions, to target levels of performance. There are 32 Core Capabilities outlined in the National Preparedness Goal (2015).

1. **Access Control & Identity Verification**- Apply and support necessary physical, technological, and cyber measures to control admittance to critical locations and systems.
2. **Community Resilience** – Enable the recognition, understanding, communication of, and planning for risk and empower individuals and communities to make informed risk management decisions necessary to adapt to, withstand, and quickly recover from future incidents.

3. **Critical Transportation** – Provide transportation (including infrastructure access and accessible transportation services) for response priority objectives, including the evacuation of people and animals, and the delivery of vital response personnel, equipment and services into the affected areas.

4. **Cybersecurity** – Protect (and, if needed, restore) electronic communications systems, information, and services from damage, unauthorized use, and exploitation.

5. **Economic Recovery** – Return economic and business activities (including food and agriculture) to a healthy state and develop new business and employment opportunities that result in an economically viable community.

6. **Environmental Response/Health & Safety** – Conduct appropriate measures to ensure the protection of the health and safety of the public and workers, as well as the environment, from all-hazards in support of responder operations and the affected communities. Provide protective guidance, training and resources to responders and affected communities. Minimize exposure to environmental public health hazards, i.e. contaminated food, air, water, waste, debris and hazardous waste. Manage the consequences of hazardous materials release, including conducting searches of suspected sources, testing and identifying substances, identifying isolation perimeters, decontamination procedures, and the notification of proper authorities.

7. **Fatality Management Services** – Provide fatality management services, including decedent remains recovery and victim identification, working with local, state, tribal, and Federal authorities to provide mortuary processes, temporary storage or permanent internment solutions, sharing information with mass care services for the purpose of reunifying family members and caregivers with missing persons/remains, and providing counseling to the bereaved.

8. **Fire Management and Suppression** – Provide structural, wildland, and specialized firefighting capabilities to manage and suppress fires of all types, kings, and complexities while protection the lives, property, and the environment in the affected area.

9. **Forensics & Attribution** – Conduct forensic analysis and attribute terrorist acts (including the means and methods of terrorism) to their source, to include forensic analysis as well as attribution for an

attack and for the preparation for an attack in an effort to prevent initial or follow-on acts and/or swiftly develop counter-options.

10. **Health & Social Services** – Restore and improve health and social services capabilities and networks to promote the resilience, independence, health (including behavioral health), and well-being of the whole community.

11. **Housing** – Implement housing solutions that effectively support the needs of the whole community and contribute to its sustainability and resilience.

12. **Intelligence & Information sharing** – Provide timely, accurate, and actionable information resulting from the planning, direction, collection, exploitation, processing, analysis, production, dissemination, evaluation, and feedback of available information concerning physical and cyber threats to the United States, its people, property, or interests; the development, proliferation, or use of WMDs; or any other matter bearing on U.S. national or homeland security by local, state, tribal, territorial, Federal, and other stakeholders. Information sharing is the ability to exchange intelligence, information, data, or knowledge among government or private sector entities, as appropriate.

13. **Interdiction & Disruption** – Delay, divert, intercept, halt, apprehend or secure threats and/or hazards. Activities include detection and investigation of potential terrorist activities.

14. **Infrastructure Systems** – Stabilize critical infrastructure functions, minimize health and safety threats, and efficiently restore and revitalize systems and services to support a viable, resilient community. Stabilization activities include damage and safety assessments and the repair of infrastructure for oil, gas, electric, telecommunications, data, drinking water, wastewater, and transportations systems.

15. **Logistics & Supply Chain Management** – Deliver essential commodities, equipment, and services in support of impacted communities and survivors, to include emergency power and fuel support, as well as the coordination of access to community staples. Synchronize logistics capabilities and enable the restoration of impacted supply chains.

16. **Long-term Vulnerability Reduction** – Build and sustain resilient systems, communities, critical infrastructure and key resources to reduce vulnerability and lessen the likelihood, severity and duration of adverse consequences.

17. **Mass Care Services** – Provide life-sustaining and human services to the affected population, to include hydration, feeding, sheltering, temporary housing, evacuee support, reunification, and distribution of emergency supplies.

18. **Mass Search & Rescue Operations** – Deliver traditional and atypical search and rescue capabilities, including personnel, services, animals, and assets to survivors in need, with the goal of saving the greatest number of endangered lives in the shortest time possible.

19. **Natural & Cultural Resources** – Protect natural and cultural resources and historic properties through appropriate planning, mitigation, response, and recovery actions to preserve, conserve, rehabilitate, and restore them consistent with post-disaster community priorities and best practices and in compliance with applicable environmental and historic preservation laws and executive orders.

20. **On-scene Security, Protection & Law Enforcement** – Ensure a safe and secure environment through law enforcement and related security and protection operations for people and communities located within affected areas and also for response personnel engaged in lifesaving and life-sustaining operations.

21. **Operational Communications** – Ensure the capacity for timely communications in support of security, situational awareness, and operations by any and all means available, among and between affected communities in the impact area and all response forces.

22. **Operational Coordination** – Establish and maintain a unified and coordinated operational structure and process that appropriately integrates all critical stakeholders and supports the execution of core capabilities.

23. **Physical Protective Measures** – Implement and maintain risk-informed countermeasures, and policies protecting people, borders, structures, materials, products, and systems associated with key operational activities and critical infrastructure sectors.

24. **Planning** – Conduct a systematic process engaging the whole community as appropriate in the development of executable strategic, operational, and/or tactical-level approaches to meet defined objectives.

25. **Public Health, Healthcare & Emergency Medical Services** – Provide lifesaving medical treatment via Emergency Medical Services and related operations and avoid additional disease and injury by providing targeted public health, medical, and behavioral health support, and products to all affected populations.

26. **Public Information & Warning** – Deliver coordinated, prompt, reliable, and actionable information to the whole community through the use of clear, consistent, accessible, and culturally and linguistically appropriate methods to effectively relay information regarding any threat or hazard, as well as the actions being taken and the assistance being made available, as appropriate.

27. **Risk & Disaster Resilience Assessment** – Assess risk and disaster resilience so decision makers, responders, and community members can take informed action to reduce risk and increase resilience.

28. **Risk Management for Protection Programs & Activities** – Identify, assess, and prioritize risks to inform Protection activities, countermeasures, and investments.

29. **Screen, Search & Detection** – Identify, discover, or locate threats and/or hazards through active and passive surveillance and search procedures. This may include the use of systematic examinations and assessments, biosurveillance, sensor technologies, or physical investigation and intelligence.

30. **Situational Assessment** – Provide all decision makers with decision-relevant information regarding the nature and extent of the hazard, any cascading effects, and the status of the response.

31. **Supply Chain Integrity & Security** – Strengthen the security and resilience of the supply chain, which includes food and agricultural production, food processing facilities, laboratory surveillance, transportation, retail points, public notification, and domestic and international confidence in the US food supply.

32. **Threats & Hazard Identification** – Identify threats and hazards that occur in the geographic area, determine the frequency and magnitude, and incorporate this information into analysis and planning processes so as to clearly understand the needs of a community or entity.

APPENDIX B-13

VOLCANIC ASH VULNERABILITY ASSESSMENT DOCUMENTATION

APPENDIX B-13. LOCAL PLAN EXPOSURE SUMMARY - VOLCANIC ASH

DES District	Geography	Census 2010	Census 2016 Estimate	% Change 2010 to 2016	# Building Permits (2016)	Original Local Plan FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan	Estimated Societal Loss/ Exposure from Local Plan	Estimated Economic Loss from Local Plan	Ref	Local Plan Update #1 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #1	Estimated Societal Loss/ Exposure from Local Plan Update #1	Estimated Economic Loss from Local Plan Update #1	Ref	Local Plan Update #2 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #2	Estimated Societal Loss/ Exposure from Local Plan Update #2	Estimated Economic Loss from Local Plan Update #2	Ref
	Montana	989,415	1,042,520	5.09%	4,781															
3	**Beaverhead County**	9,246	9,401	1.65%	3	2004				3	2010	NA	NA	NA	3	2017				1
	Dillon city	4,134	4,257	2.89%			Low-Moderate	Moderate	Low-Moderate	3							Low-Moderate	Low-Moderate	Low-Moderate	1
	Lima town	221	224	1.34%			Low-Moderate	Moderate	Low-Moderate	3							Low-Moderate	Moderate	Low-Moderate	1
	Balance of Beaverhead County	4,891	4,920	0.59%			Low-Moderate	Moderate	Low-Moderate	3							Low-Moderate	Moderate	Low-Moderate	1
5	**Big Horn County**	12,865	13,343	3.58%	2	2006	NA	NA	NA	2	2012	NA	NA	$6,000,000	2					
	Hardin city	3,505	3,829	8.46%																
	Lodge Grass town	428	446	4.04%																
	Balance of Big Horn County	8,932	9,068	1.50%																
2	**Blaine County**	6,491	6,601	1.67%	0	2006	NA	NA	NA	14	2012	NA	NA	NA	14					
	Chinook city	1,203	1,233	2.43%																
	Harlem city	808	823	1.82%																
	Balance of Blaine County	4,480	4,545	1.43%																
3	**Broadwater County**	5,612	5,747	2.35%	0	2004	NA	NA	NA	3	2009				3	2016	NA	NA	NA	14
	Townsend city	1,878	1,978	5.06%								Low-Moderate	Moderate	Low-Moderate	3					
	Balance of Broadwater County	3,734	3,769	0.93%								Low-Moderate	Moderate	Low-Moderate	3					
5	**Carbon County**	10,078	10,460	3.65%	8	2006	NA	NA	NA	2	2012	NA	NA	NA	2					
	Bearcreek town	79	84	5.95%																
	Bridger town	708	732	3.28%																
	Fromberg town	438	445	1.57%																
	Joliet town	595	640	7.03%																
	Red Lodge city	2,125	2,237	5.01%																
	Balance of Carbon County	6,133	6,322	2.99%																
4	**Carter County**	1,160	1,203	3.57%	1	2005	NA	NA	NA		2012	NA	NA	NA	12					
	Ekalaka town	332	353	5.95%																
	Balance of Carter County	828	850	2.59%																
2	**Cascade County**	81,327	81,755	0.52%	242	2012	NA	NA	NA	14	2017	NA	NA	NA	14					
	Belt city	597	588	-1.53%																
	Cascade town	685	688	0.44%																
	Great Falls city	58,505	59,178	1.14%																
	Neihart town	51	50	-2.00%																
	Balance of Cascade County	21,489	21,251	-1.12%																
2	**Chouteau County**	5,813	5,759	-0.94%	10	2010	NA	NA	NA	5	2017	NA	NA	NA	5					
	Big Sandy town	598	590	-1.36%																
	Fort Benton city	1,464	1,456	-0.55%																
	Geraldine town	261	261	0.00%																
	Balance of Chouteau County	3,490	3,452	-1.10%																
4	**Custer County**	11,699	11,924	1.89%	0	2005	NA	NA	NA	2	2012	NA	NA	NA	2	2017	NA	NA	NA	14
	Ismay town	19	21	9.52%																
	Miles City city	8,410	8,647	2.74%																
	Balance of Custer County	3,270	3,256	-0.43%																
6	**Daniels County**	1,751	1,755	0.23%	0	2003	NA	NA	NA	14	2008	NA	NA	NA	3	2016	NA	NA	NA	8
	Flaxville town	71	71	0.00%											3					
	Scobey city	1,017	1,032	1.45%											3					
	Balance of Daniels County	663	652	-1.69%											3					
4	**Dawson County**	8,966	9,327	3.87%	1	2006	NA	NA	NA	2	2014	NA	NA	NA	9					
	Glendive city	4,935	5,332	7.45%																
	Richey town	177	187	5.35%																
	Balance of Dawson County	3,854	3,808	-1.21%																
1	**Deer Lodge County**	9,298	9,085	-2.34%	17	2005	Moderate	Moderate	Low	3	2013	Low-Moderate	Moderate	Moderate-High	3					
	Anaconda-Deer Lodge County	9,298	9,085	-2.34%																
4	**Fallon County**	2,890	3,120	7.37%	35	2006	NA	NA	NA	12	2012	NA	NA	NA	12					
	Baker city	1,741	1,990	12.51%																
	Plevna town	162	176	7.95%																
	Balance of Fallon County	987	954	-3.46%																
6	**Fergus County**	11,586	11,413	-1.52%	1	2008	NA	Low	Low	3	2014	NA	NA	NA	9					
	Denton town	255	247	-3.24%																
	Grass Range town	110	108	-1.85%																
	Lewistown city	5,901	5,870	-0.53%																
	Moore town	193	198	2.53%																
	Winifred town	208	206	-0.97%																
	Balance of Fergus County	4,919	4,784	-2.82%																

APPENDIX B-13. LOCAL PLAN EXPOSURE SUMMARY - VOLCANIC ASH

DES District	Geography	Census 2010	Census 2016 Estimate	% Change 2010 to 2016	# Building Permits (2016)	Original Local Plan FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan	Estimated Societal Loss/ Exposure from Local Plan	Estimated Economic Loss from Local Plan	Ref	Local Plan Update #1 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #1	Estimated Societal Loss/ Exposure from Local Plan Update #1	Estimated Economic Loss from Local Plan Update #1	Ref	Local Plan Update #2 FEMA Approval Date	Estimated Building Loss/ Exposure from Local Plan Update #2	Estimated Societal Loss/ Exposure from Local Plan Update #2	Estimated Economic Loss from Local Plan Update #2	Ref
1	**Flathead County**	90,928	98,082	7.29%	316	2009	NA	NA	NA		2014	NA	NA	NA	14					
	Columbia Falls city	4,688	5,241	10.55%																
	Kalispell city	19,927	22,761	12.45%																
	Whitefish city	6,357	7,279	12.67%																
	Balance of Flathead County	59,956	62,801	4.53%																
3	**Gallatin County**	89,513	104,502	14.34%	1,550	2006	NA	NA	NA	6	2012	Moderate	Moderate	Moderate	6					
	Belgrade city	7,389	8,254	10.48%																
	Bozeman city	37,280	45,250	17.61%																
	Manhattan town	1,520	1,691	10.11%																
	Three Forks city	1,869	1,944	3.86%																
	West Yellowstone town	1,271	1,353	6.06%																
	Balance of Gallatin County	40,184	46,010	12.66%																
4	**Garfield County**	1,206	1,310	7.94%	0	2007	Low-Moderate	Low	Low-Moderate	3	2014	NA	NA	NA	9					
	Jordan town	343	399	14.04%																
	Balance of Garfield County	863	911	5.27%																
2	**Glacier County**	13,399	13,694	2.15%	0	2005	NA	NA	NA		2012	NA	NA	NA	14					
	Browning town	1,016	1,031	1.45%																
	Cut Bank city	2,869	3,012	4.75%																
	Balance of Glacier County	9,514	9,651	1.42%																
5	**Golden Valley County**	884	831	-6.38%	NA	2008	NA	NA	NA	14										
	Lavina town	187	173	-8.09%																
	Ryegate town	245	236	-3.81%																
	Balance of Golden Valley County	452	422	-7.11%																
1	**Granite County**	3,079	3,368	8.58%	NA	2006	Moderate	Low	Moderate	3	2013	Low-Moderate	Moderate	Moderate-High	3					
	Drummond town	309	348	11.21%																
	Philipsburg town	820	920	10.87%																
	Balance of Granite County	1,950	2,100	7.14%																
2	**Hill County**	16,096	16,542	2.70%	4	2006	NA	NA	NA	14	2012	NA	NA	NA	14					
	Havre city	9,310	9,846	5.44%																
	Hingham town	118	122	3.28%																
	Balance of Hill County	6,668	6,574	-1.43%																
3	**Jefferson County**	11,406	11,853	3.77%	5	2005	NA	NA	NA	3	2011	NA	NA	NA	14	2017	NA	NA	NA	14
	Boulder town	1,183	1,230	3.82%																
	Whitehall town	1,038	1,114	6.82%																
	Balance of Jefferson County	9,185	9,509	3.41%																
6	**Judith Basin County**	2,072	1,940	-6.80%	NA	2008	NA	NA	NA	14	2013	NA	NA	NA	14					
	Hobson town	215	218	1.38%																
	Stanford town	401	384	-4.43%																
	Balance of Judith Basin County	1,456	1,338	-8.82%																
1	**Lake County**	28,746	29,758	3.40%	44	2006	NA	NA	NA		2012	NA	NA	NA	14					
	Polson city	4,488	4,777	6.05%																
	Ronan city	1,871	2,016	7.19%																
	St. Ignatius town	842	824	-2.18%																
	Balance of Lake County	21,545	22,141	2.69%																
3	**Lewis and Clark County**	63,395	67,282	5.78%	176	2005	NA	NA	NA		2011	NA	NA	NA	14	2017	NA	NA	NA	14
	East Helena town	1,984	2,074	4.34%																
	Helena city	28,190	31,169	9.56%																
	Balance of Lewis and Clark County	33,221	34,039	2.40%																
2	**Liberty County**	2,339	2,409	2.91%	NA	2007	NA	NA	NA	2	2013	NA	NA	NA	2					
	Chester town	847	884	4.19%																
	Balance of Liberty County	1,492	1,525	2.16%																
1	**Lincoln County**	19,687	19,259	-2.22%	8	2005	NA	NA	NA		2012	NA	NA	NA	14					
	Eureka town	1,037	1,086	4.51%																
	Libby city	2,628	2,678	1.87%																
	Rexford town	105	151	30.46%																
	Troy city	938	890	-5.39%																
	Balance of Lincoln County	14,979	14,454	-3.63%																
3	**Madison County**	7,691	7,924	2.94%	7	2004	NA	NA	NA	3	2010				3	2017				1
	Ennis town	838	890	5.84%								Low-Moderate	Moderate	Low-Moderate	3		Low-Moderate	Moderate	Low-Moderate	1
	Sheridan town	642	677	5.17%								Low-Moderate	Moderate	Low-Moderate	3		Low-Moderate	Moderate	Low-Moderate	1
	Twin Bridges town	375	395	5.06%								Low-Moderate	Moderate	Low-Moderate	3		Low-Moderate	Moderate	Low-Moderate	1
	Virginia City town	190	198	4.04%								Low-Moderate	Moderate	Low-Moderate	3		Low-Moderate	Moderate	Low-Moderate	1
	Balance of Madison County	5,646	5,764	2.05%								Low-Moderate	Moderate	Low-Moderate	3		Low-Moderate	Moderate	Low-Moderate	1

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4	**McCone County**	1,734	1,700	-2.00%	0	2006	NA	NA	NA	4	2014	NA	NA	NA	9					
	Circle town	615	619	0.65%																
	Balance of McCone County	1,119	1,081	-3.52%																
3	**Meagher County**	1,891	1,827	-3.50%	NA															
	White Sulphur Springs city	939	908	-3.41%																
	Balance of Meagher County	952	919	-3.59%																
1	**Mineral County**	4,223	4,184	-0.93%	1	2005	NA	NA	NA		2012				1					
	Alberton town	420	417	-0.72%								Low	Low	NA	1					
	Superior town	812	826	1.69%								Low	Low	NA	1					
	Balance of Mineral County	2,991	2,941	-1.70%								Low	Low	NA	1					
1	**Missoula County**	109,299	116,130	5.88%	930	2004	NA	NA	NA	1	2011	NA	Low	$1.62M; AL = $16K	1	2017	NA	NA	NA	14
	Missoula city	66,788	72,364	7.71%																
	Balance of Missoula County	42,511	43,766	2.87%																
5	**Musselshell County**	4,538	4,589	1.11%	1	2008	NA	NA	NA	14	2013	NA	NA	NA	14					
	Melstone town	96	107	10.28%																
	Roundup city	1,788	1,840	2.83%																
	Balance of Musselshell County	2,654	2,642	-0.45%																
3	**Park County**	15,636	16,114	2.97%	44	2006	NA	NA	NA	3	2012				3					
	Clyde Park town	288	309	6.80%								Low-Moderate	NA	NA	3					
	Livingston city	7,044	7,401	4.82%								Low	NA	NA	3					
	Balance of Park County	8,304	8,404	1.19%								Low	NA	NA	3					
6	**Petroleum County**	494	489	-1.02%	NA	2003	NA	NA	NA		2008				3					
	Winnett town	182	185	1.62%								Low	Low-Moderate	Low-Moderate	3					
	Balance of Petroleum County	312	304	-2.63%								Low	Low-Moderate	Low-Moderate	3					
6	**Phillips County**	4,253	4,133	-2.90%	2	2006	NA	NA	NA	14	2012	NA	NA	NA	14					
	Dodson town	124	124	0.00%																
	Malta city	1,997	1,950	-2.41%																
	Saco town	197	197	0.00%																
	Balance of Phillips County	1,935	1,862	-3.92%																
2	**Pondera County**	6,153	6,084	-1.13%	1	2005	NA	NA	NA		2011	NA	NA	NA	14					
	Conrad city	2,570	2,550	-0.78%																
	Valier town	509	498	-2.21%																
	Balance of Pondera County	3,074	3,036	-1.25%																
4	**Powder River County**	1,743	1,746	0.17%	NA	2007	NA	NA	NA	3	2011	Low-Moderate	Low	Low-Moderate	3	2015	NA	NA	NA	9
	Broadus town	468	481	2.70%																
	Balance of Powder River County	1,275	1,265	-0.79%																
1	**Powell County**	7,027	6,858	-2.46%	32	2004	NA	NA	NA		2012	NA	NA	NA	10	2017	NA	NA	NA	7
	Deer Lodge city	3,111	2,994	-3.91%																
	Balance of Powell County	3,916	3,864	-1.35%																
4	**Prairie County**	1,179	1,182	0.25%	NA	2006	NA	NA	NA		2012	Low	NA	NA	12					
	Terry town	605	609	0.66%																
	Balance of Prairie County	574	573	-0.17%																
1	**Ravalli County**	40,212	42,088	4.46%	20	2005	NA	NA	NA	1	2012	AL=$12K	Low	NA	1	2017	NA	NA	NA	14
	Darby town	720	763	5.64%								Low	Low	NA	1					
	Hamilton city	4,348	4,674	6.97%								Low	Low	NA	1					
	Pinesdale town	917	967	5.17%								Low	Low	NA	1					
	Stevensville town	1,809	1,963	7.85%								Low	Low	NA	1					
	Balance of Ravalli County	32,418	33,721	3.86%								Low	Low	NA	1					
4	**Richland County**	9,746	11,482	15.12%	16	2006	NA	NA	NA	4	2014	NA	NA	NA	9					
	Fairview town	840	922	8.89%																
	Sidney city	5,191	6,566	20.94%																
	Balance of Richland County	3,715	3,994	6.99%																
6	**Roosevelt County**	10,425	11,305	7.78%	1	2004	NA	NA	NA	14	2016	NA	NA	NA	8					
	Bainville town	208	314	33.76%																
	Brockton town	255	243	-4.94%																
	Culbertson town	714	804	11.19%																
	Froid town	185	201	7.96%																
	Poplar city	810	854	5.15%																
	Wolf Point city	2,621	2,806	6.59%																
	Balance of Roosevelt County	5,632	6,083	7.41%																
5	**Rosebud County**	9,233	9,287	0.58%	1	2007	Low-Moderate	Low	Low-Moderate	3	2013	NA	NA	NA	2					
	Colstrip city	2,214	2,311	4.20%																

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	Forsyth city	1,777	1,869	4.92%																
	Balance of Rosebud County	5,242	1,903	-175.46%																
1	**Sanders County**	11,413	11,534	1.05%	0	2012	NA	NA	NA	14										
	Hot Springs town	544	557	2.33%																
	Plains town	1,048	1,071	2.15%																
	Thompson Falls city	1,313	1,356	3.17%																
	Balance of Sanders County	8,508	8,550	0.49%																
6	**Sheridan County**	3,384	3,648	7.24%	2	2003	NA	NA	NA	14	2008	NA	NA	NA	3	2016	NA	NA	NA	8
	Medicine Lake town	225	241	6.64%											3					
	Outlook town	47	52	9.62%											3					
	Plentywood city	1,734	1,904	8.93%											3					
	Westby town	168	174	3.45%											3					
	Balance of Sheridan County	1,210	1,277	5.25%											3					
1	**Silver Bow County**	34,200	34,553	1.02%	86	2004	NA	NA	NA	3	2010	NA	NA	NA	14	2016	NA	NA	NA	14
	Butte-Silver Bow (remainder)	33,525	33,853	0.97%																
	Walkerville town	675	700	3.57%																
5	**Stillwater County**	9,117	9,406	3.07%	0	2010	Low-Moderate	Moderate	NA	3	2015	NA	NA	NA	14					
	Columbus town	1,893	2,028	6.66%			Moderate	Moderate	NA	3										
	Balance of Stillwater County	7,224	7,378	2.09%			Moderate	Moderate	NA	3										
3	**Sweet Grass County**	3,651	3,623	-0.77%	1	2005	NA	NA	NA		2010	NA	NA	NA	13					
	Big Timber city	1,641	1,645	0.24%																
	Balance of Sweet Grass County	2,010	1,978	-1.62%																
2	**Teton County**	6,073	6,056	-0.28%	1	2006	NA	NA	NA	NA	2014	NA	NA	NA	2					
	Choteau city	1,684	1,686	0.12%																
	Dutton town	316	308	-2.60%																
	Fairfield town	708	922	23.21%																
	Balance of Teton County	3,365	3,140	-7.17%																
2	**Toole County**	5,324	4,977	-6.97%	2	2007	High	High	NA	2	2013	NA	NA	NA	2					
	Kevin town	154	138	-11.59%																
	Shelby city	3,376	3,216	-4.98%																
	Sunburst town	375	338	-10.95%																
	Balance of Toole County	1,419	1,285	-10.43%																
5	**Treasure County**	718	692	-3.76%	0	2007	Low-Moderate	Low	Low-Moderate	3										
	Hysham town	312	301	-3.65%																
	Balance of Treasure County	406	391	-3.84%																
6	**Valley County**	7,369	7,539	2.25%	4	2003	NA	NA	NA	14	2008	NA	NA	NA	3	2016	NA	NA	NA	8
	Fort Peck town	233	247	5.67%											3					
	Glasgow city	3,250	3,364	3.39%											3					
	Nashua town	290	290	0.00%											3					
	Opheim town	85	290	70.69%											3					
	Balance of Valley County	3,511	3,348	-4.87%											3					
5	**Wheatland County**	2,168	2,117	-2.41%	NA	2007	NA	NA	NA	14	2013	NA	NA	NA	14					
	Harlowton city	997	984	-1.32%																
	Judith Gap city	126	123	-2.44%																
	Balance of Wheatland County	1,045	1,010	-3.47%																
4	**Wibaux County**	1,017	1,093	6.95%	8	2006	NA	NA	NA	2	2014	NA	N	N	9					
	Wibaux town	589	649	9.24%																
	Balance of Wibaux County	428	444	3.60%																
5	**Yellowstone County**	147,972	158,437	6.61%	1,198	2005	NA	NA	NA		2012	$5K	Very Low	NA	1					
	Billings city	104,170	110,323	5.58%																
	Broadview town	192	193	0.52%																
	Laurel city	6,718	6,865	2.14%																
	Balance of Yellowstone County	36,892	41,056	10.14%																
2	**Blackfeet Indian Reservation**	10,405				2008	NA	NA	NA	14										
2	**Rocky Boy's Indian Reservation**	3,323				2008	NA	NA	NA		2010	NA	NA	NA	14					
2	**Fort Belknap Indian Reservation**	2,851				2007	NA	NA	NA	14	2013	NA	NA	NA	14					
6	**Fort Peck Indian Reservation**	10,008				2004	NA	NA	NA	14	2012	NA	NA	NA	10					
5	**Crow Indian Reservation**	6,863				2008	NA	NA	NA	4	2015	NA	NA	NA	9					
5	**Northern Cheyenne Indian Res.**	4,789				2008	NA	NA	NA	4										
1	**Flathead Indian Reservation**	28,359				2006	NA	NA	NA	NA	2017	NA	NA	NA	11					

NOTES: R = Residential

REFERENCES: 1 = Respec (formerly Adkins, PBS&J, Land & Water)

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C = Commercial/Agricultural/Industrial
CF = Critical Facilities
AL = Annual Loss
M = Million
K = Thousand
B = Billion
O = Other
NA = Not Analyzed or Not Quantitied

2 = Beck Consulting & AMEC
3 = Big Sky Hazard Management
4 = Cossitt Consulting
5 = Fire Logistics, Inc.
6 = Gallatin County
7 = Great West Engineering and Powell County
8 = Integrated Solutions Consulting
9 = KLJ
10 = Morrison-Maierle
11 = Risks and Rewards Management
12 = Single Tree Consulting
13 = Sweet Grass County
14 = Tetra Tech (formerly Maxim Tech)

APPENDIX B-14

RISK ASSESSMENT TEMPLATE

STATE OF MONTANA MULTI-HAZARD MITIGATION PLAN - 2018 UPDATE
RISK ASSESSMENT TEMPLATE

The State of Montana Multi-Hazard Mitigation Plan (MHMP) and Statewide Hazard Assessment profiles a number of hazards that can impact the lives and property of Montana's residents. As a supplement to the 2018 Update of this Plan, a Template Risk Assessment Methodology using Geographic Information System (GIS) technology has been developed to calculate loss estimates. The purpose of this Risk Assessment Template is to provide local jurisdictions a standard methodology to build upon and improve data presented in their local plans. The objective is to allow local jurisdictions to produce standardized risk assessments and "apple to apple" comparison of hazard risks across the state. The Risk Assessment Template is presented in three parts. Start with Part 1 and progress through the methodology.

The Risk Assessment Template is designed to address hazards quantitatively. Some hazards can only be addressed qualitatively due to a lack of structural damage data (disease, drought, terrorism, volcanic ash). Methodology for qualitative analysis is not described in this document. Hazards profiled in the 2018 State MHMP which are addressed in this document are listed below with the source of data used to develop the hazard layer. Hazard layers are available from MT DES.

DAM FAILURE - A GIS layer was created of the inundation areas, digitized from Emergency Action Plans, associated with federal, state, local and private high hazard dams. High hazard dam data was provided by MT DNRC.

EARTHQUAKE – A digital earthquake hazard layer was developed using the U.S. Geological Survey (USGS) Peak Ground Acceleration Maps depicting a 2 percent probability of exceedance in a 50 years period. This earthquake hazard layer for 18%g and greater used in the analysis.

FLOODING - The flood hazard area created for the 2018 State MHMP represents a combination of datasets with the primary being the 2017 National Flood Hazard Layer geodatabase downloaded from the FEMA Flood Map Service Center. This geodatabase represents digital Flood Insurance Rate Maps (FIRMs) for over 30 counties in Montana. Data collected to represent missing counties come from the MT DNRC (digitized FIRMs of Golden Valley, Musselshell, and Wheatland counties), the Montana State Library (Channel Migration Zones for Prickly Pear Creek and the Yellowstone, Ruby, Flathead, and Big Hole rivers, and a FEMA HAZUS-derived flood risk map of Montana completed in 2010. The HAZUS scenario was for a simulated 100-year flood using National Elevation Dataset, a flood frequency discharge table that references a specific discharge per return period for a given point (stream gage derived) and regression equations used between stream gage areas. The current flood hazard area represents the 100-Year floodplain boundary.

HAZARDOUS MATERIAL INCIDENTS – A digital hazardous material incident hazard layer was developed by buffering by 0.25 mile the highways, railroads, and toxic release inventory (TRI) facility listings from the U.S. Environmental Protection Agency (EPA).

LANDSLIDE – The Landslide hazard area consists of two datasets, terrain with slopes 30 degrees and greater, and mapped landslide areas from surficial geology datasets downloaded from the Montana Bureau of Mines and Geology (MBMG). The 30+ degree terrain dataset was created in GIS by downloading a Digital Elevation Model (DEM) and using a spatial analyst tool to produce a slope dataset. These areas are considered susceptible to landslides. A total of 77 digital geologic maps were downloaded from the MBMG website. These datasets were filtered for areas mapped as Quaternary Landslide and merged together. The resulting dataset also has some limitations as the entire state of Montana is not represented by digital geologic maps. Additionally, different specialists mapped landslides over a number of years and it is likely the criteria for identifying past landslides varied.

SEVERE WEATHER – A digital severe summer weather hazard layer was developed by downloading climate event datasets from the National Oceanic and Atmospheric Administration, National Centers for Environmental Information for the years 1995-2018. The datasets were filtered for hail (over 0.75-inch), strong wind and thunderstorm wind (over 50 knots), and tornadoes. The datasets provided latitude/longitude coordinates and these points were brought into ArcGIS software. Individual datasets were created for hail, wind, and tornado and the Aggregate Points tool in GIS was used to identify clusters of point features located no more than 20 miles apart. The clusters represent areas where hail, wind, and tornado events are likely to occur based on over 20 years of climatic event documentation.

WILDFIRE AND RANGELAND FIRE – The wildfire hazard area consists of the following three datasets: WUI layer from Region 1 Healthy Forest Restoration Act (R1HFRA) that modeled communities at risk, population density, and topography; *Community Zones Threatened by Large Geographic Scale Fire* layer developed by the US Forest Service, Northern Region, Engineering, Geospatial Group. This dataset was developed based on fuels layers, fire behavior potential assessment, and communities identified as Urban Wildland Interface Communities at risk. WUI layer developed by Tetra Tech that buffered interface communities with a population density equal or greater than 250 people. The communities were buffered by four miles but incorporated town areas were extracted from the dataset as these places tend to be protected by fire departments. For local analysis, a 1,000-ft. buffer around incorporated town represented the wildfire hazard area. Development of this WUI layer follows a method presented in the Tri-County Regional Community Wildfire Protection Plan (CWPP) 2015 Update for Lewis & Clark, Jefferson, and Broadwater counties. Agricultural areas (hay/pasture and crop) displayed on wildfire hazard maps provided by the Montana Natural Heritage Program.

PART 1 - ANNUALIZED PROPERTY LOSS CALCULATIONS

A1. HAZARD DATA – PROPERTY DAMAGE

SHELDUS (Spatial Hazard Events and Losses Database for the United States), data which can be found at: https://cemhs.asu.edu/sheldus, provides data for the risk assessment for several hazards including severe weather, flooding, and drought. Create an account and login. Go to "Data Downloads" and search by "Hazard Type, Location and Date" to download the data necessary for the risk assessment, as follows:

- Flooding hazard, search for: Flooding.
- Severe Weather hazard, search for: Hail, Severe Storm/Thunderstorm, Lightning, Tornado, Winter Weather, and Wind events.
- Drought

There may not be frequency or damage data for some hazards (i.e. dam failure, earthquake, hazardous material incidents, landslide, wildfire). In this case, annualized loss cannot be computed. However, number and value of building stock can be determined – go to Part 2 of the Risk Assessment Template for these hazards.

B1. FREQUENCY

For each hazard calculate the hazard frequency. This value is needed to determine annualized property loss. Frequency is:

- Number of Incidents / Period of Record

Determine your period of record. Count the number of incidents in each data set and divide by the period of record to establish the hazard frequency.

- Example: 80 incidents / 50-year record = 1.6 frequency

C1. MAGNITUDE

For each hazard where damage data exists, calculate the magnitude. Magnitude is:

- (Property Damage / Number of Incidents) / Total $ of Building Stock = Magnitude expressed as a percentage.

In SHELDUS property damage adjusted to current dollars can be downloaded. Total $ of building stock is from the Montana Dept. of Revenue's Cadastral Mapping Program [http://svc.mt.gov/msl/mtcadastral/].

- Example: $1,026,785 property damage / 80 incidents) / $41,155,665,000 building stock

  12,834.8 / 41,155,665,000 = 0.0000003118

  Magnitude = 0.0000318%

D1. ANNUALIZED PROPERTY LOSS – BUILDING STOCK

For hazards like dam failure, flooding, hazardous material incidents, landslide, and wildfire that occur in specific areas within the jurisdiction, go to **Part 2**. For hazards that have damage data (i.e. flooding, severe weather) follow the methodology presented below to determine annualized property loss.

- Total Building Stock x Frequency x Magnitude
- Example: $1,155,665,000 x 0.55 x 0.00224% (aka 0.0000224) = $14,279

The total building stock data is available from the Montana Dept. of Revenue's Cadastral Mapping Program for residential and "other" properties which would include commercial, agricultural, and industrial. The following equation is used to determine how many buildings would be affected by the hazard event:

- Total Number of Buildings x Frequency x Magnitude
- Example: 5,332 x 0.55 x 0.00224% (aka 0.0000224) = 0.07 buildings

E1. ANNUALIZED PROPERTY LOSS – CRITICAL FACILITIES

Values of critical facilities should be available from the jurisdiction or from HAZUS. Use the same methodology described in *Section D1*, above to calculate annualized loss for critical facilities.

F1. VULNERABLE POPULATIONS

Using GIS, calculate the number of residential structures in each hazard impact area using data from the Montana Cadastral dataset linked by parcel number to the Montana State Library's Structures Framework. Vulnerable population can be estimated by assigning U.S. Census county estimates on number of persons residing in each structure, percent of population over age 65 years, and under age 18. The number of residential buildings within a hazard impact area can be multiplied by its respective county average number of people residing in a household in Montana (US Census Quick Facts July 1, 2016). Exceptions include structures typed as "Multi-Family" residential dwellings and "Nursing Home". Multi-Family structures (e.g., apartment buildings) were estimated at 18 people and nursing homes were estimated at 40 people. Census data also provided county percentages for persons under 18 years and persons 65 years and over. These percentages can be multiplied by the total population number within a hazard area to calculate people at risk under 18 and age 65 years or more.

PART 2 – PROPERTY/POPULATION EXPOSURE FOR HAZARDS WITH UNIQUE IMPACT AREAS

D2. BUILDING STOCK EXPOSURE

For hazards that are not uniform across the jurisdiction and instead occur in specific areas (e.g. flooding, wildfire, landslide, dam failure, hazardous material incidents, and possibly severe weather depending on the jurisdiction) the hazard risk area must factor into loss estimation calculations. Using GIS, the hazard risk area should be intersected with the parcel data available from the Montana Dept. of Revenue's Cadastral Mapping Program linked to the Montana State Library's Structures Framework, based on parcel number. This enables the location of structures to be connected to their appraised value. Using GIS, hazard impact areas can be intersected with the Structures dataset to identify the number of structures and exposure due to each hazard.

E2. CRITICAL FACILITY VULNERABILITY

If the jurisdiction has spatial coordinates and values for its critical facilities then exposure can be determined for each hazard. Use the same methodology described in *Section D2*, above to intersect the critical facility locations with the hazard layer to determine exposure (value and number of critical facilities at risk).

For hazards without property damage, this is as far as you can go. Without hazard "magnitude" you are only able to determine building stock or population exposure. Annual loss estimates cannot be calculated without damage data using this approach. For hazards with property damage values, go to **Part 3**.

F2. VULNERABLE POPULATIONS

Using GIS, calculate the number of residential structures in each hazard impact area using data from the Montana Cadastral dataset linked by parcel number to the Montana State Library's Structures Framework. Vulnerable population can be estimated by assigning U.S. Census county estimates on number of persons residing in each structure, percent of population over age 65 years, and under age 18. The number of residential buildings within a hazard impact area can be multiplied by its respective county average number of people residing in a household in Montana (US Census Quick Facts July 1, 2016). Exceptions include structures typed as "Multi-Family" residential dwellings and "Nursing Home". Multi-Family structures (e.g., apartment buildings) were estimated at 18 people and nursing homes were estimated at 40 people. Census data also provided county percentages for persons under 18 years and persons 65 years and over. These percentages can be multiplied by the total population number within a hazard area to calculate people at risk under 18 and age 65 years or more.

PART 3 - ANNUALIZED PROPERTY LOSS CALCULATIONS WHERE PROPERTY DAMAGE IS AVAILABLE

D3. ANNUALIZED PROPERTY LOSS – BUILDING STOCK

The following equation is used to develop annualized property loss for hazards where there is property damage that can be used to calculate magnitude. Apply the following formula:

- Building Stock value in hazard area x Frequency x Magnitude
- Example: $315,226,000 x 1.6 x 0.00318% (aka 0.0000318) = $1,604

E3. CRITICAL FACILITY VULNERABILITY

Critical facility data should be available from the jurisdiction and can be used to compute annualized loss using the same methodology described in *Section D3*, above.

State of Montana Multi-Hazard Mitigation Plan 2018 Update

APPENDIX C

Mitigation Strategy Documentation

APPENDIX C-1

MITIGATION ACTION PLANS

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 1 - Reduce Impacts from All Hazards		
Objective	*Objective 1.1 - Implement Property Protection Projects to Reduce Impacts from All Hazards*		
Project	**Project 1.1.1 - Identify and protect essential government records in appropriate facilities.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)	x	1
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)	x	1
Hazard Magnitude	Hazard has high damage and loss of life (3 points)	x	3
	Hazard causes moderage damage and occassional loss of life (2 points)		
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		18
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)	x	27
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36	x	27
	Medium = 15 - 22		
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	Admin - State Continuity and Emergency Management Office., Secretary of State		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	Just finished major upgrade to system which includes planning software that collects information on whether records are paper or electronic, where they are stored, and whether they are critical to business continuity. Pushing out to agencies. It is an ongoing process.		
Planned Activities	Agencies will continue to inventory government records and identify those that are critical in the planning software. Data will be used to update business continuity plans for recovery.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.1 - Implement Property Protection Projects to Reduce Impacts from All Hazards*		
Project	**Project 1.1.2 - Plan for the protection of historic and cultural properties in hazard prone areas.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	Commerce, Historical Society, Administration, FWP, University System.		
Potential Funding Source(s)	State Resources, FEMA		
Implementation Schedule	Ongoing		
Progress Made	Bannack State Park completed a flood mitigation project in 2016.		
Planned Activities	A fire alarm system upgrade is planned at Bannack State Park. Identify other projects.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.2 - Implement Public Education and Awareness Projects to Reduce Impacts from All Hazards*		
Project	**Project 1.2.1 - Promote mitigation awareness and successes.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	18
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	All State Agencies, DES		
Potential Funding Source(s)	Dept. Homeland Security, FEMA		
Implementation Schedule	Ongoing		
Progress Made	The Let's Mitigate Montana is no longer a valid webpage. MT DES has a new website where mitigation is included and update. http://readyandsafe.gov/emergency. An Emergency management expo in 2015 at farmers market in Helena.		
Planned Activities	Continue to provide education and outreach via social media and the ready and safe website. Stress mitigation each November as part of infrastructure protection month.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.2 - Implement Public Education and Awareness Projects to Reduce Impacts from All Hazards*		
Project	**Project 1.2.2 - Continue outreach of mitigation project funding opportunities to agencies, counties and tribes.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is effective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	15
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES		
Potential Funding Source(s)	Dept. Homeland Security, FEMA		
Implementation Schedule	Ongoing		
Progress Made	SHMO contacted local jurisdications and tribes when HMGP funding associated with FEMA disaster declarations was available.		
Planned Activities	When a new disaster impacts Montana the SHMO will go out and conduct applicant briefs in conjunction with PA applicant briefs. The SHMO will send out notifications on open PDM/FMA grant opportunities. As well as brief DES coordinators during the monthly coordinator calls hosted by MT DES.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.2 - Implement Public Education and Awareness Projects to Reduce Impacts from All Hazards*		
Project	**Project 1.2.3 - Support National Weather Service's efforts to communicate probabilistic hazard information.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, DNRC, Others		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	New Project for 2018 Plan.		
Planned Activities	Utilize verbal, print, and online resources to promote NWS efforts.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.2 - Implement Public Education and Awareness Projects to Reduce Impacts from All Hazards*		
Project	**Project 1.2.4 - Promote hazard mitigation education in schools.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	15
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DES, OPI		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Mid-Term		
Progress Made	No progress to report.		
Planned Activities	DES plans to re-promote mitigation curriculum developed in 2013 with OPI. Post curriculum on project website and promote availability to all school districts in Montana.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.2 - Implement Public Education and Awareness Projects to Reduce Impacts from All Hazards*		
Project	**Project 1.2.5 - Promote public emergency notification sign-ups and All-Hazards NOAA Weather Radio through counties.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	National Weather Service		
Potential Funding Source(s)	National Weather Service		
Implementation Schedule	Ongoing		
Progress Made	New Project for 2018 Plan.		
Planned Activities	Use social media to share information on how people can sign up for emergency notifications in their county.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.2 - Implement Public Education and Awareness Projects to Reduce Impacts from All Hazards*		
Project	**Project 1.2.6 - Coordinate public emergency notification for all hazards with local, state and federal jurisdictions through the Emergency Alert System.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	National Weather Service		
Potential Funding Source(s)	National Weather Service		
Implementation Schedule	Ongoing		
Progress Made	New Project for 2018 Plan.		
Planned Activities	NWS will share information of all hazards affecting residents and visitors across Montana through the web, social media, press releases, NOAA Weather Radio.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.2 - Implement Public Education and Awareness Projects to Reduce Impacts from All Hazards*		
Project	**Project 1.2.7 - Support the Montana Ready Communities Initiative.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	18
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	Commerce, Administration, DES, Others		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	New Project for 2018 Plan.		
Planned Activities	Utilize verbal, print and online resources to promote HUD-funded program that deals with resiliency and aging infrastructure. Communicate to local/tribal emergency managers.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.2 - Implement Public Education and Awareness Projects to Reduce Impacts from All Hazards*		
Project	**Project 1.2.8 - Promote importance of developing personal preparedness kits.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	3
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	Governor's Office of Community Service made preparedness "bags" available at no charge to eastern Montana residents. Participated in drills with local communities.		
Planned Activities	DES now in charge of this program and pushing out information on personal preparedness kits.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.3 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from All Hazards*		
Project	**Project 1.3.1 - Establish permanent Montana Mitigation Team.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	
	Project is protective but moderately sustainable (2 points)		3
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	18
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	All State Agencies and partners involved in mitigation.		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	2018 State Plan Update included 7 mitigation workshops and permanent Mitigation Planning Team established.		
Planned Activities	Develop framework whereby each agency has a designated representative who tracks and disseminates information. Hold monthly conference calls of this Permanent Mitigation Team. Update job descriptions to emphasize importance of coordination and collaboration.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.3 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from All Hazards*		
Project	**Project 1.3.2- Bring agency hazard experts, emergency preparedness coordinators, and partners together on a regular basis to share information, coordinate efforts, and identify funding opportunties in order to focus mitigation efforts and avoid overlaps.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	18
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, DNRC, FWP, DPHHS, MDT, DEQ, Administration, Commerce, BLM, USFS, National Weather Service, FireSafe MT, Conservation Districts		
Potential Funding Source(s)	State and Federal resources		
Implementation Schedule	Ongoing		
Progress Made	DES desires to brief cabinet members of new Montana administration. Hold mitigation workshops with state agencies. DPHHS gives $2.6 million to locals annually for preparedness activities.		
Planned Activities	Schedule hazard-specific meetings to review and evaluate mitigation strategy, accomplishments, and challenges. Post meetings notes on State website and archive for 2023 State Plan Update. Agencies need to meet regularly on funding opportunities. Can provide grant match for each other.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.3 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from All Hazards*		
Project	**Project 1.3.3 - Build relationships with local, state and federal agencies and stakeholders who promote public safety in an effort to further the National Weather Service's mission of protecting lives and property and enhancing the economy from all hazards.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	18
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	National Weather Service		
Potential Funding Source(s)	National Weather Service		
Implementation Schedule	Ongoing		
Progress Made	New Project for 2018 Plan.		
Planned Activities	NWS will develop a Resource Guide for products and services offered and distribute.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.3 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from All Hazards*		
Project	**Project 1.3.4 - Identify, maintain and support Montana recovery and resiliency efforts.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	18
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	Commerce		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Provide research, technical assistance, legal guidance, education, and training to local governments, planning depts, private developers, non-profit orgs, and the public to encourage planning, sustainable development, and resiliency in Montana communities and support disaster recovery. Montana DES is the lead state emergency management agency in charge of comprehensive emergency management. The main core capability under the mitigation mission area is community resiliency. The recovery and mitigation mission areas are housed within MT DES.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.3 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from All Hazards*		
Project	**Project 1.3.5 - Provide mitigation benefit-cost analysis (BCA) training courses.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)		
	Medium = Technology available/legislative support difficult/implementation possible (2 points)	x	2
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES		
Potential Funding Source(s)	State resources, FEMA		
Implementation Schedule	Ongoing		
Progress Made	SHMO hosted and facilitated BCA trainings in 2012, 2013, 2014, 2015, 2016.		
Planned Activities	FEMA has limited the amount of BCA trainings for the region. The SHMO will try and host a BCA training every other year.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.3 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from All Hazards*		
Project	**Project 1.3.6 - Coordinate Local and Tribal Multi-Hazard Mitigation Plan Updates.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	15
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES		
Potential Funding Source(s)	State resources, FEMA		
Implementation Schedule	Ongoing		
Progress Made	Since 2013 HMGP has funded 13 County, Tribal, or University Plan updates. PDM has funded 25 County Plan updates. 1 County successfully updated their plan in house. MT DES hosted the Local Mitigation Planning G318 Workshop in 2014 & 2015		
Planned Activities	MT DES plans to host at least every other year a G318 Local Mitigation Planning Workshop. MT DES will promote mitigation planning at all conferences or events that the SHMO participates including AMFM, FireSafe, MACD, and MAP.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.3 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from All Hazards*		
Project	**Project 1.3.7 - Assist local jurisdictions and Tribes fill out FEMA mitigation grant applications.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	15
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES		
Potential Funding Source(s)	State resources, FEMA		
Implementation Schedule	Ongoing		
Progress Made	SHMO has assisted with the development of over 70 applciations between HMGP, PDM, FMA resulting in over $13 million dollars in funds coming into the state.		
Planned Activities	SHMO will continue to assist with application development for HMGP, PDM, and FMA grants. SHMO will continue to emphasize the importance of hiring additional mitigation staff to support the mitigation program.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.3 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from All Hazards*		
Project	**Project 1.3.8 - Promote participation in the State Emergency Response Committee (SERC).**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	17
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	All State Agencies		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Ensure SERC committee members are fully engaged. Keep website current with meeting notes and committee assignments. Strengthen SERC's public outreach through social media postings.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.4 - Enhance Emergency Service Capabilities to Reduce Impacts from All Hazards*		
Project	**Project 1.4.1 - Provide and promote on-site and remote weather support for all hazards to local, state and federal partners.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	15
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	National Weather Service		
Potential Funding Source(s)	National Weather Service		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	This is the mission of the National Weather Service. Services will be promoted to local and county emergency managers and to the public through website and outreach.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.4 - Enhance Emergency Service Capabilities to Reduce Impacts from All Hazards*		
Project	**Project 1.4.2 - Recommend voluntary placement of NOAA Weather Radios in government offices, public facilities, homes, and when recreating (battery operated).**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	13
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	National Weather Service		
Potential Funding Source(s)	National Weather Service		
Implementation Schedule	Ongoing		
Progress Made	NWS received 80 NOAA Weather Radios in 2017 to distribute. Priority placed on tribal nations.		
Planned Activities	Continue same.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.4 - Enhance Emergency Service Capabilities to Reduce Impacts from All Hazards*		
Project	**Project 1.4.3 - Provide Incident Command System training and other NIMS requirements to all appropriate State employees.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	12
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	All State agencies		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Identify appropriate training modules. Continually offer training sessions so all appropriate staff.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.4 - Enhance Emergency Service Capabilities to Reduce Impacts from All Hazards*		
Project	**Project 1.4.4 - Identify exercises that can be brought to locals.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DES		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Work with local and tribal partners to identify concerns that may impact their jurisdiction. Utilize best practices from past exercises to create and implement a unique exercise geared towards their area.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.5 - Implement Regulatory Projects to Reduce Impacts from All Hazards*		
Project	**Project 1.5.1 - Continually update planning and zoning guidelines and model regulations (including growth policies, subdivision regulations, floodplain regulations, design standards for open space, setbacks and vegetative buffers) which recognize the risk from natural and manmade hazards and offer recommendations on best practices and smart growth solutions.**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	Commerce		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	Ongoing progress to update model growth policy guidelines.		
Planned Activities	Model subdivision regulations are currentlty being updated. Once published, will be available so communities can apply these consistently. Continue to update and improve, as appropriate.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 1: Reduce Impacts from All Hazards		
Objective	*Objective 1.6 - Suggest Legislative Changesto Reduce Impacts from All Hazards*		
Project	**Project 1.6.1 - Explore economic incentives for mitigation (i.e. insurance premium discounts, state tax credits, etc.).**		
Hazard(s) Addressed	All Hazards		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)		
	Medium = Technology available/legislative support difficult/implementation possible (2 points)	x	2
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	12
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DES, DNRC-Fire, FireSafe MT		
Potential Funding Source(s)	State resources		
Implementation Schedule	Mid-Term		
Progress Made	New Project for 2018 Plan.		
Planned Activities	Continue to encourage local champions to reach out to elected officials on incentives for mitigation actions across all hazards.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.1 - Implement Property Protection Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.1.1 - Conduct wildland fuel reduction on state property including parks, state structures, day-use facilities and highway rights-of-way.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)	x	1
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)	x	2
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)		
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		18
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)		
	Project located in moderate population density area (Score X 1.25)	x	22.5
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36		
	Medium = 15 - 22	x	22.5
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	DNRC - Forest & Trust Lands, FWP, MDT		
Potential Funding Source(s)	State resources, Federal grants (FEMA, Landscape Scale Restoration, Pine Beetle PSR, WUI), and Private organiztions (Rocky Mountain Elk Foundation (RMEF), MDF)		
Implementation Schedule	Ongoing		
Progress Made	MDT has completed fuel treatments on the following highway right-of-ways: Highway 200 near Greenough, Dry Creek Road near Ovando, and highway east of Miles City containing a major power line.. FWP has completed forestry projects to reduce hazardous fuels within the WUI at: Lone Pine State Park (SP), Milltown SP, Mt. Haggin Wildlife Management Area (WMA), West Kootenai WMA, Threemile WMA, Blackfoot Clearwater WMA, Mt. Silcox WMA, and West Kootenai WMA. DNRC continued to reduce the wildfire risk associated with state property.		

Planned Activities	FWP is planning forestry projects to reduce hazardous fuels within the WUI at: Blackfoot Clearwater WMA, Nevada Lake WMA, Mt. Haggin WMA, River Junction Fishing Access Site (FAS), Blackfoot Clearwater WMA, Marshall WMA, Threemile WMA, Ray Kuhns WMA, and Calf Creek WMA. Working group to develop a list of prioritied projects to help allocate funding. MDT will participate and support in reducing wildfire risk along state highway-rights -of-way, as needed. DNRC will work in high priority landscape areas to reduce the wildfire risk associated with state property.

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.1 - Implement Property Protection Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.1.2 - Encourage fuel reduction in the WUI and evacuation routes on county, tribal, and privately-owned lands.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DNRC - Fire, DES, FireSafe MT, RC&Ds		
Potential Funding Source(s)	State resources, Federal grants (FEMA, BLM).		
Implementation Schedule	Ongoing		
Progress Made	The Northern Rockies Coordinating Group (DNRC Fire Management offices and all Federal agencies) established the Fire Prevention and Fuels Committees to do this. Progress has been made by many agencies and organizations. Programs include: Ready Set Go, One Less Spark One Less Wildfire, Living with Fire, Firewise USA, FireSafe Councils, Evacuation Safety, Ignition Resistant Construction, among others. FireSafe Montana has conducted extensive outreach to raise awareness and holds workshops for the public.		
Planned Activities	Continue wildfire risk reduction projects and programs with the emphasize on protection of life, property and natural resources. Future programs include but are not limited to, ember aware, home ignition zone, ignition-resistant landscaping; fire-resistant construction techniques; parcel level risk assessments; implementing hazardous fuels reduction treatments.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.1 - Implement Property Protection Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.1.3 - Encourage utilities and private landowners to conduct fuel reduction in rights-of-way.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	Utilities, FireSafe MT, DNRC - Fire, DES, State Fire Marshall		
Potential Funding Source(s)	State & Private resources		
Implementation Schedule	Ongoing		
Progress Made	Fuel mitigation projects were completed by NorthWestern Energy and several Rural Electric Cooperatives (RECs). SHMO presented at annual convention of RECs and discussed fuel mitigation.		
Planned Activities	Continue same.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.1 - Implement Property Protection Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.1.4 - Reduce wildfire risk associated with cultural resources.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)	x	1
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)	x	2
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)		
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		17
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)		
	Project located in moderate population density area (Score X 1.25)	x	21.25
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36		
	Medium = 15 - 22	x	21.25
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	DNRC, FWP, Commerce, Historical Society		
Potential Funding Source(s)	State resources, federal grants, private resources		
Implementation Schedule	Long-term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Working group to identify high priority projects (Virginia City, Bannack, others). Seek funding from private foundations.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.1 - Implement Property Protection Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.1.5 - Support and coordinate hazardous fuels reduction projects and emphasize the importance of projects that support wood products industry and biomass facilities.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DNRC, Forest Service and public non-profit organizations		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	As part of the Fuels for Schools Program, biomass boilers were installed in Darby, Victor, Thompson Falls, Philipsburg, Troy, Kalispell, Townsend and Eureka, UM-Western in Dillon and Deer Lodge Elementary.		
Planned Activities	Promote creative ways to utilize wood waste from fuel mitigation projects. Make presentation at wood products industry conference. Look into funding to off-set transportation costs.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.2.1 - Develop and update state wildfire risk map and GIS layer.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	1
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	11
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DNRC-Fire		
Potential Funding Source(s)	State resources, Federal grants		
Implementation Schedule	Mid-term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Contract work out to a private company to update our statewide wildfire risk data. Work with fire partners to ensure data is accurate. Make wildfire risk GIS layer available for various online portals to be used by all agencies and organizations.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.2.2 - Identify other values at risk from wildfire and create GIS layer.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	Dept. Ag, Cultural Resource Orgs.		
Potential Funding Source(s)	State resources, Federal grants		
Implementation Schedule	Mid-term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Identify and map other values at risk including agricultural and cultural resources. Compile into a statewide GIS layer.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.2.3 - Develop working group to encourage insurance underwriters to establish rate for fuel mitigated properties.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)		
	Medium = Technology available/legislative support difficult/implementation possible (2 points)	x	2
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DES, DNRC-Fire, public non-profit orgs.		
Potential Funding Source(s)	State resources		
Implementation Schedule	Mid-term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Consider NFIP CRS program as a model. See what other states have done on this.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.2.4 - Compile database of structure damage from wildfire for use in future risk and damage assessments.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	12
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DNRC - Fire, Dept. Justice-State Fire Marshall		
Potential Funding Source(s)	State resources, Federal grants		
Implementation Schedule	Short-Term		
Progress Made	Data on structures lost to wildfire is compiled by DNRC.		
Planned Activities	Identify number of structures saved as a result of firefighting efforts and add to database.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.2.5 - Establish collaborative group to evaluate hazardous fuels reduction and forestry projects and create priorities and encourage groups at local level.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DNRC, FWP, MDT, BLM, USFS, Counties, Tribes		
Potential Funding Source(s)	State and Federal resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Identify cross-boundary areas that are priorities. Establish costs and report to legislature.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.2.6 - Participate in the coordination of mitigation projects on federal lands adjacent to state/private holdings.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DNRC-Fire, BLM, USFS		
Potential Funding Source(s)	State and Federal resources, Federal grants		
Implementation Schedule	Ongoing		
Progress Made	This is an on-going effort with too many projects to mention.		
Planned Activities	State has identified priority landscapes instead of specific projects.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.2.7 - Support and provide financial assistance when available to counties and public non-profit organizations that work to reduce residents and communities wildfire risk.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DES, DNRC, USFS, BLM		
Potential Funding Source(s)	State resources, Federal grants		
Implementation Schedule	Mid-term		
Progress Made	DES has assisted various counties and cities with FEMA HMGP and PDM grant applications to mitigate wildfire. DNRC and FireSafe Montana assist with project development.		
Planned Activities	Continue same.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.2.8 - Promote the development of projects that strive to better understand community and homeowners perceptions in order to develop more effecting programs that move people into action.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	BLM, DNRC, public non-profit organizations		
Potential Funding Source(s)	State and Federal resoures		
Implementation Schedule	Mid-term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Work with organizations and programs that offer expertise in better understanding communities and homeowners.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.2.9 - Promote and utilize parcel level risk assessment tool available through Situation Analyst Montana.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	13
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	BLM, DNRC, public non-profit organizations		
Potential Funding Source(s)	State and Federal resoures		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	This parcel level risk assessment tool provides standardized methodology that is consistent with current home ignition research. This tool will assist with wildfire risk reduction planning, evaluating high risk areas and where forest management action is need and can be implemented.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.2.10 - Promote partnerships that will facilitate immediate assistance to communities, producers and businesses after a wildfire.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	1
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	11
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	Commerce, Red Cross, Conservation Districts, public non-profit organizations, resource protection NGOs, NRCS, FSA, federal, state, local agencies		
Potential Funding Source(s)	State and Federal resources, Federal grants, Private organizations		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Identify and meet with businesses and partners who can help communities and producers after wildfire. Identify resources that can be shared and sources of emergency funding for recovery efforts.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.2.11 - Create a standard statewide criteria for mapping Montana's WUI and support Counties who are willing to use this standard and update their WUI.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	12
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	Counties, DES, DNRC, State Legislature		
Potential Funding Source(s)	State, County & Tribal resources, Federal grants		
Implementation Schedule	Mid-term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Work with counties and tribes to update WUI mapping with new statewide standard. Compile local maps into a state-wide GIS layer to use for planning.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.2.12- Assist local/tribal partners with updaing CWPPs.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)	x	2
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	15
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, DNRC, FEMA		
Potential Funding Source(s)	State resources, federal grants		
Implementation Schedule	Mid-term		
Progress Made	New project for 2018 Plan.		
Planned Activities	MT DES will apply for a large planning grant with PDM to assist emergency managers to develop or update the CWPP. To act as an addendum to the local/tribal hazard mitigation plan. MT DES will work closely with the DNRC to identify eligible applicants, and disperse funds.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.3 - Implement Public Education and Awareness Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.3.1 - Promote public responsibility through education and marketing that moves people into action to prepare their property and communities for wildfire, especially residents who live in the wildland urban area and/or high wildfire areas.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DNRC - Fire, FireSafe Montana, DNRC-Fire, FWP, State Fire Marshall		
Potential Funding Source(s)	State and Federal resources, Federal grants		
Implementation Schedule	Ongoing		
Progress Made	FireSafe Montana has informative website and brochures. They hold a conference every other year around the state and active broadcast media campaign. Northern Rocky Coordinating Group also holds conferences. Fire Teams consistently promote this during fire season. Numerous on-going activities. This work will continue.		
Planned Activities	Continue wildfire risk reduction projects and programs with the emphasize on protection of life, property and natural resources. Future programs include but are not limited to, ember aware, home ignition zone, ignition-resistant landscaping; fire-resistant construction techniques; parcel level risk assessments; implementing hazardous fuels reduction treatments.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.3 - Implement Public Education and Awareness Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.3.2 - Coordinate, disseminate, and educate the public, realtors, contractors and insurers on wildfire preparedness.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	Federal, State and Local agencies: DNRC, BLM, USFS. Along with public non-profit organizations such as FireSafe MT		
Potential Funding Source(s)	State and Federal resources, Federal grants		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Develop learning exchange, resource training, education forum to share with people on mitigating wildfire risk. Provide education program for insurance agents and realtors. Provide outreach to MT Logging Assoc. and contractors on performing fuel treatments. Promote message to public that accepting smoke from prescribed burns is better than future wildfires.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.3 - Implement Public Education and Awareness Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.3.3 - Update templates for smoke messaging.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DPHHS		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Short term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Develop templates and roll out to emergency managers.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.4 - Implement Natural Resource Protection Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.4.1 - Identify and further develop resilient landscapes and post-fire events such as monitoring, grass planting, and erosion control.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)	x	1
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	3
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)	x	2
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)		
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		17
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)		
	Project located in moderate population density area (Score X 1.25)	x	21.25
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36		
	Medium = 15 - 22	x	21.25
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	Conservation districts, NRCS, DNRC, BLM, USFS, USFWS, FWP, DES		
Potential Funding Source(s)	State and Federal resources, Federal grants		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Develop and implement rapid assessment processes for quickly determining vulnerabilities of systems to secondary effects (e.g., flooding, debris-flows, sedimentation, ash build-up), recovery needs, and roles and responsibilities. Build natural resilience through passive restoration using native species (e.g., seed bank regeneration).		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.5 - Implement Regulatory Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.5.1 - Promote and educate local jurisdictions on the benefits of plans, land use regulations, revenue-generating strategies, and voluntary measures (i.e. WUI Code, subdivision regulations, zoning, building codes).**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	15
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	Commerce, Dept. of Labor and Industry, DES, DNRC, State Legislatures, public non-profit organizations and advocate groups		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Long-term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Provide jurisdictions with example language for WUI code and zoning regulation with required mitigation and guidance similar to subdivision regulations. Discuss internal capacity requirements for code enforcement.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.5 - Implement Regulatory Projects to Reduce Impacts from Wildfire*		
Project	**Project 2.5.2 - Consolidate permitting process between DEQ and counties regarding burn permits.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	12
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DEQ and Counties		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Mid-term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Identify funding source and develop platform for online application.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.6 - Enhance Emergency Service Capabilities to Reduce Impacts from Wildfire*		
Project	**Project 2.6.1 - Ensure that continuity of operations can be maintained during wildfire events.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, DNRC		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Establish and/or periodically review agency COOPs to address wildfire. Conduct table top exercises for staff		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 2 - Reduce Impacts of Wildland and Rangeland Fires		
Objective	*Objective 2.6 - Enhance Emergency Service Capabilities to Reduce Impacts from Wildfire*		
Project	**Project 2.6.2 - Improve ingress and egress, i.e. evacuation routes on county, tribal and private lands.**		
Hazard(s) Addressed	Wildfire		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, DNRC, Counties, federal fire protection agencies, public non-profit organizations		
Potential Funding Source(s)	State, County, Tribal resources		
Implementation Schedule	Ongoing		
Progress Made	Roadside and right-of-way thinning and clearing has been conducted to improve evacuation routes. Work will continue to increase emergency responders and public safety.		
Planned Activities	Support Counties to identify areas that have inadequate ingress and egress and provide resources to counties for them to improve these areas.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 3: Mitigate the Potential Loss of Life and Property from Flooding		
Objective	*Objective 3.1 - Implement Property Protection Projects to Reduce Impacts from Flooding*		
Project	**Project 3.1.1 - Encourage jurisdictions to pursue mitigation projects for repetitive loss structures or any severe repetitive loss properties identified in the future.**		
Hazard(s) Addressed	Flooding		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)		
	Medium = Technology available/legislative support difficult/implementation possible (2 points)	x	2
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	13
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, DNRC-Water		
Potential Funding Source(s)	FEMA		
Implementation Schedule	Ongoing		
Progress Made	Musselshell County received a large grant and is moving forward with buying out numerous flooded properties in the greater Roundup area. CAP community visits include discussing community repetitive loss structres and available mitigation options. CRS also focuses on these properties and provides credit for annual outreach activites to each property owner.		
Planned Activities	Missoula County and other CRS communities are working on mitigating RL properties. Blaine County has only SRL property in state. DES and DNRC will continue to coordinate and educate communities and property owners about potential funding.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 3: Mitigate the Potential Loss of Life and Property from Flooding		
Objective	*Objective 3.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Flooding*		
Project	**Project 3.2.1 - Improve flood risk hazard mapping.**		
Hazard(s) Addressed	Flooding		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)	x	1
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)	x	2
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)		
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		17
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)		
	Project located in moderate population density area (Score X 1.25)	x	21.25
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36		
	Medium = 15 - 22	x	21.25
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	DNRC - Water		
Potential Funding Source(s)	FEMA, State Resources, Local Jurisdictions		
Implementation Schedule	Ongoing		
Progress Made	The completed mapping projects in the last 5 yrs are as follows: Lake County, Broadwater County, Missoula County, Ravalli County, Stillwater County, Sweet Grass County, Flathead County, Granite County, and Carbon County PMR. There were also two other mapping projects completed one was the Big Hole Study and the other was Melrose LOMR.		
Planned Activities	The planned mapping projects include: Mineral County, Jefferson River, Watershed, Madison River, Gallatin County, Musselshell Tributaries, Jefferson County, Milk River, and Clark Fork, Bitterroot and Blackfoot river project. This list also includes Silver Bow Creek PMR and Clearwater River Study.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 3: Mitigate the Potential Loss of Life and Property from Flooding		
Objective	*Objective 3.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Flooding*		
Project	**Project 3.2.2 - Coordinate with partners on flood mitigation (e.g. Joint Stream Restoration Committee, Conservation Districts, Drought and Water Supply Committee, Silver Jackets).**		
Hazard(s) Addressed	Flooding		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, DNRC-Water, Conservation Districts, FEMA, USACE, MFWP		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	Projects completed using FEMA funds DNRC stream guides, DNRC drought public education and outrreach. Presentations and collaboration at the Association of State Floodplain Managers Conference, Montana Association of Conservation Districts, Joint stream restoration committee, Silver Jackets meetings. Trainings held in conjunction with DNRC resource seminar to faciliate collaboration at the local level with DES coordinators and floodplain managers.		
Planned Activities	Continue same collaboration with local partners finding opportunities to hold joint workshops or trainings. Find opportunities to promote 5% project opportunites with state partners.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 3: Mitigate the Potential Loss of Life and Property from Flooding		
Objective	*Objective 3.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Flooding*		
Project	**Project 3.2.3 - Develop digital mapping for all levees within the State.**		
Hazard(s) Addressed	Flooding		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)	x	2
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)		
	Project is protective but moderately sustainable (2 points)	x	2
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DNRC-Water, NRIS		
Potential Funding Source(s)	State Resources, USACE		
Implementation Schedule	Mid-Term		
Progress Made	DNRC and Montana Silver Jackets are working with the City of Glendive on looking at alternatives and mapping behind the levee. On-going mapping project in the City of Roundup behind levee like structure (railroad embankment). DNRC is working with USACE on the their accredited and unaccredited levee lists.		
Planned Activities	Continue working with USACE on the accredited and non-accredited levee lists. Will utilize mapping provided in local hazard mitigation plans of levees to pull together GIS layer for State. Will reach out to counties/tribes if data is missing.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 3: Mitigate the Potential Loss of Life and Property from Flooding		
Objective	*Objective 3.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Flooding*		
Project	**Project 3.2.4 - Identify and catalog all repetitive and severe repetitive loss properties in the State.**		
Hazard(s) Addressed	Flooding		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	12
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DNRC-Water		
Potential Funding Source(s)	State Resources, FEMA		
Implementation Schedule	Mid-Term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Identify agencies where data exists. Pull together into one database and verify accuracy. Keep updated.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 3: Mitigate the Potential Loss of Life and Property from Flooding		
Objective	*Objective 3.3 - Implement Natural Resource Protection Projects to Reduce Impacts from Flooding*		
Project	**Project 3.3.1 - Encourage appropriate entities to obtain conservation easements for land in the floodplain.**		
Hazard(s) Addressed	Flooding		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)		
	Medium = Technology available/legislative support difficult/implementation possible (2 points)	x	2
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	12
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	MDT, MFWP, DNRC-Water, DES, Conservation Districts		
Potential Funding Source(s)	MDT, FWP, DES, DNRC-Water, Conservation Districts, NGOs, Communities with open lands programs		
Implementation Schedule	Mid-Term		
Progress Made	DNRC, DES, and Montana Silver Jackets are working with the City of Glendive and the City of Roundup on looking at alternatives behind their levees which could include conservation easements for some of the lands in the floodplain.		
Planned Activities	FWP prioritizes riparian areas and wetlands for conservation easements. DNRC will continue to work with Park County and the Livingston Island Trailer Park, the area behind the levees in the City of Glendive, and the City of Roundup.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 3: Mitigate the Potential Loss of Life and Property from Flooding		
Objective	*Objective 3.4 - Implement Structural Projects to Reduce Impacts from Flooding*		
Project	**Project 3.4.1 - Increase flood water convenance at transportation crossings including upgrades to undersized bridges or those with scour damage.**		
Hazard(s) Addressed	Flooding		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)	x	1
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)	x	3
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)		
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		18
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)		
	Project located in moderate population density area (Score X 1.25)	x	22.5
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36		
	Medium = 15 - 22	x	22.5
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, MDT, DNRC-Water		
Potential Funding Source(s)	FEMA, State Resources, Federal Highway Administration (FHWA) funding		
Implementation Schedule	Ongoing		
Progress Made	Various culvert/bridge projects completed under DR-4074. MDT is completing bank stabilization in Roundup and changing bridge height/realigning Granite Creek in Virgina City. MDT has completed numerous culvert projects in past 5 years.		
Planned Activities	MDT to continue same, as needed. DES to assist local jurisdictions apply for FEMA grants when funding available.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 3: Mitigate the Potential Loss of Life and Property from Flooding		
Objective	*Objective 3.4 - Implement Structural Projects to Reduce Impacts from Flooding*		
Project	**Project 3.4.2 - Implement appropriate mitigation for highways that flood.**		
Hazard(s) Addressed	Flooding		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)	x	1
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)	x	2
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)		
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		18
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)		
	Project located in moderate population density area (Score X 1.25)	x	22.5
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36		
	Medium = 15 - 22	x	22.5
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	MDT		
Potential Funding Source(s)	State Resources, Federal Highway Administration (FHWA) funding		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	MDT will continue to do this, as needed.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 3: Mitigate the Potential Loss of Life and Property from Flooding		
Objective	*Objective 3.4 - Implement Structural Projects to Reduce Impacts from Flooding*		
Project	**Project 3.4.3 - Support local communities to elevate community water systems where vulnerable to flooding.**		
Hazard(s) Addressed	Flooding		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	15
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, DNRC-Water		
Potential Funding Source(s)	FEMA, State Resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan. Town of Valier completed project.		
Planned Activities	State to provide guidance so local jurisdictions can create more resilient infrastructure. Fromberg water system needs upgrade.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 3: Mitigate the Potential Loss of Life and Property from Flooding		
Objective	*Objective 3.4 - Implement Structural Projects to Reduce Impacts from Flooding*		
Project	**Project 3.4.4 - Support local communities to install and/or enhance storm water systems to reduce flood damage.**		
Hazard(s) Addressed	Flooding		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, DNRC-Water		
Potential Funding Source(s)	FEMA, CDBG		
Implementation Schedule	Ongoing		
Progress Made	DNRC, Montana Silver Jackets, and USACE are working with the Town of Ekalaka, the City of Three Forks, and the City of Glasgow to enhance storm water systems to reduce flood damage.		
Planned Activities	Ekalaka is securing USACE funding and other grants to identify localized flooding issues including storm water. DNRC will provide guidance to communities who could alleviate flood damage through upgrading stormwater systems. DNRC will assist with grants.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 3: Mitigate the Potential Loss of Life and Property from Flooding		
Objective	*Objective 3.4 - Implement Structural Projects to Reduce Impacts from Flooding*		
Project	**Project 3.4.5 - Encourage Natural Channel Design (NCD) techniques for stream restoration and bank restoration/stabilization projects to increase flood resiliency.**		
Hazard(s) Addressed	Flooding		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DNRC, DEQ, FWP		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Incorporate NCD in state floodplain trainings, workshops, and educational materials		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 3: Mitigate the Potential Loss of Life and Property from Flooding		
Objective	*Objective 3.4 - Implement Structural Projects to Reduce Impacts from Flooding*		
Project	**Project 3.4.6 - Encourage projects that will increase stream length to regain natural function and reduce impact of flooding.**		
Hazard(s) Addressed	Flooding		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	3
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	3	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, private, conservation districts		
Potential Funding Source(s)	DNRC grants, FEMA		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Identify projects that are resilient to drought and reconnect stream to water table (e.g. Ninemile stream restoration project).		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 3: Mitigate the Potential Loss of Life and Property from Flooding		
Objective	*Objective 3.5 - Implement Public Education and Awareness Projects to Reduce Impacts from Flooding*		
Project	**Project 3.5.1- Promote flood hazard risk communications.**		
Hazard(s) Addressed	Flooding		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	17
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, DNRC-Water		
Potential Funding Source(s)	FEMA, State Resources, NWS		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	State agencies to rely on federal partners to perform flood outreach due to budget cuts.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 3: Mitigate the Potential Loss of Life and Property from Flooding		
Objective	*Objective 3.5 - Implement Public Education and Awareness Projects to Reduce Impacts from Flooding*		
Project	**Project 3.5.2 - Continue to provide education on benefits of National Flood Insurance Program (NFIP).**		
Hazard(s) Addressed	Flooding		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	17
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DNRC-Water, NWS		
Potential Funding Source(s)	FEMA, State Resources		
Implementation Schedule	Ongoing		
Progress Made	DNRC and NWS promote NFIP via websites/social media feeds, in education venues, in meetings with local communities, and in workshops, conferences, and outreach projects.		
Planned Activities	Continue same.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 3: Mitigate the Potential Loss of Life and Property from Flooding		
Objective	*Objective 3.5 - Implement Public Education and Awareness Projects to Reduce Impacts from Flooding*		
Project	**Project 3.5.3 - Provide outreach and technical assistance in joining the NFIP Community Rating System for reducing flood insurance premiums.**		
Hazard(s) Addressed	Flooding		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)		
	Medium = Technology available/legislative support difficult/implementation possible (2 points)	x	2
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	12
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DNRC-Water		
Potential Funding Source(s)	FEMA		
Implementation Schedule	Ongoing		
Progress Made	Gallatin County joined the CRS program and two more communities are putting together their CRS applications.		
Planned Activities	DNRC is working with local communities on the application requirements to join the CRS program. Education and Technical assistance will continue to be provided in educational venues and with outreach projects.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 3: Mitigate the Potential Loss of Life and Property from Flooding		
Objective	*Objective 3.5 - Implement Public Education and Awareness Projects to Reduce Impacts from Flooding*		
Project	**Project 3.5.4 - Educate home and business owners on anchoring fuel storage tanks, backflow valves in toilets and floating propane tanks.**		
Hazard(s) Addressed	Flooding		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	15
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DNRC-Water, DES		
Potential Funding Source(s)	FEMA		
Implementation Schedule	Mid-Term		
Progress Made	Part of NFIP outreach.		
Planned Activities	Information will continue to be provided by DNRC in annual education venues and outreach events.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 3: Mitigate the Potential Loss of Life and Property from Flooding		
Objective	*Objective 3.5 - Implement Public Education and Awareness Projects to Reduce Impacts from Flooding*		
Project	**Project 3.5.5 - Identify and manage risks associated with levees by promoting insurance and financial assistance programs.**		
Hazard(s) Addressed	Flooding		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)		
	Medium = Technology available/legislative support difficult/implementation possible (2 points)	x	2
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	15
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DNRC-Water, DES		
Potential Funding Source(s)	State Resources, USACE		
Implementation Schedule	Ongoing		
Progress Made	DNRC, Montana Silver Jackets, and USACE have been promoting this information with annual conferences and local community meetings.		
Planned Activities	Will utilize website and social media to promote insurance and mitigation through financial mechanisms. Levee outreach programs are being rolled out by USACE. All three programs are also promoting insurance and financial assistance programs with numerous communities including Miles City, Forsyth, Glendive, Glasgow, Havre, Hill County, Dawson County, and Cascade County.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 3: Mitigate the Potential Loss of Life and Property from Flooding		
Objective	*Objective 3.5 - Implement Public Education and Awareness Projects to Reduce Impacts from Flooding*		
Project	**Project 3.5.6 - Support community-based education and outreach to landowners about the risks of developing outside of designated areas, but in known flood prone and Channel Migration Zones.**		
Hazard(s) Addressed	Flooding		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	Silver Jackets		
Potential Funding Source(s)	State Resources, USACE		
Implementation Schedule	Mid-Term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Develop tools and guidance to support efforts by local governments and community organizations.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 3: Mitigate the Potential Loss of Life and Property from Flooding		
Objective	*Objective 3.5 - Implement Public Education and Awareness Projects to Reduce Impacts from Flooding*		
Project	**Project 3.5.7 - Educate public on need to limit future development in the floodplain.**		
Hazard(s) Addressed	Flooding		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DNRC-Water		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	DNRC provides outreach and training on existing regulations that limit development in the most vulnerable areas such as floodplains.		
Planned Activities	Continue same.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 3: Mitigate the Potential Loss of Life and Property from Flooding		
Objective	*Objective 3.6 - Enhance Emergency Service Capabilities to Reduce Impacts from Flooding*		
Project	**Project 3.6.1 - Improve identification of ice jams and promote development of emergency action plans.**		
Hazard(s) Addressed	Flooding		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	15
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, DNRC-Water, USACE		
Potential Funding Source(s)	FEMA, USACE, State Resources		
Implementation Schedule	Ongoing		
Progress Made	DNRC, Montana Silver Jackets, USGS, NWS, and USACE are continuing to improve the identification of ice jams for the state through Silver Jackets projects. Miles City has producted and EAP for Levee breaches including ice jam events and Glendive is being approached about a similar project.		
Planned Activities	Various agencies (USGS, NWS, Montana Silver Jackets, and USACE) will continue to coordinate to identify locations prone to ice jams. Will provide outreach to local/tribal emergency managers on identification of ice jams. Will promote development of EAPs at training, on websites and in social media. Continue development of ice jam database and placement of infromation on the Montana All Rivers Hazard Map.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 4; Reduce Impacts from Earthquakes		
Objective	*Objective 4.1 - Implement Prevention Projects to Reduce Impacts from Earthquakes*		
Project	**Project 4.1.1 - Adopt seismic requirements of updated International Code Council.**		
Hazard(s) Addressed	Earthquake		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)		
	Project is protective but moderately sustainable (2 points)	x	2
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	Dept. Labor & Industry-Building Codes		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	2012 IBC was adopted.		
Planned Activities	Every 3 years new codes released. Update as appropriate.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 4: Reduce Impacts from Earthquakes		
Objective	*Objective 4.2 - Implement Structural Projects to Reduce Impacts from Earthquakes*		
Project	**Project 4.2.1 - Integrate seismic resilience into significant building retrofits.**		
Hazard(s) Addressed	Earthquake		
DES District(s)	1, 3		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)	x	1
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)	x	1
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		18
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)	x	27
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36	x	27
	Medium = 15 - 22		
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	Dept. Administration		
Potential Funding Source(s)	FEMA, State Resources		
Implementation Schedule	Ongoing		
Progress Made	High performance building standards were developed. Seismic retrofits were completed at Main and Mathews Halls at UM-Western projects are complete and at the Creative Arts Center at MSU-Bozeman.		
Planned Activities	Elevator and restroom updates at Main Hall at MSU-Bozeman to include with seismic upgrades.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 4: Reduce Impacts from Earthquakes		
Objective	*Objective 4.2 - Implement Structural Projects to Reduce Impacts from Earthquakes*		
Project	**Project 4.2.2 - At Montana University System campuses in the intermountain seismic belt, seismically retrofit most vulnerable and highest occupancy buildings.**		
Hazard(s) Addressed	Earthquake		
DES District(s)	1, 3		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)	x	1
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)	x	1
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		17
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)	x	25.5
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36	x	25.5
	Medium = 15 - 22		
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	Dept. Administration, University System		
Potential Funding Source(s)	FEMA, State Resources		
Implementation Schedule	Ongoing		
Progress Made	Completed seismically retrofit Main and Mathews Halls at UM-Western, Creative Arts Center at MSU-Bozeman.		
Planned Activities	Review Tier 1 assessments completed and determine which buildings should be targeted for future retrofits.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 4: Reduce Impacts from Earthquakes		
Objective	*Objective 4.2 - Implement Structural Projects to Reduce Impacts from Earthquakes*		
Project	**Project 4.2.3 - At the Department of Corrections facilities in Deer Lodge, improve support systems and implement seismic upgrades to ensure security and maintain operation.**		
Hazard(s) Addressed	Earthquake		
DES District(s)	1		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)	x	1
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)	x	1
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		15
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)		
	Project located in moderate population density area (Score X 1.25)	x	18.75
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36		
	Medium = 15 - 22	x	18.75
	Low = 8 - 14		
State Priority	High, Medium, Low	Low	
Responsible Agency	Dept. Administration, Dept. Corrections		
Potential Funding Source(s)	FEMA, State Resources		
Implementation Schedule	Mid-Term		
Progress Made	Seismic resilience will be integrated into future building retrofits. Upgraded electrical feed.		
Planned Activities	Water system will be evaluated.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 4: Reduce Impacts from Earthquakes		
Objective	*Objective 4.2 - Implement Structural Projects to Reduce Impacts from Earthquakes*		
Project	**Project 4.2.4 - At the Montana State Hospital in Warm Springs, seismically harden buildings and expand support systems to assure continued operation and meet medical needs.**		
Hazard(s) Addressed	Earthquake		
DES District(s)	1		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)	x	1
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)	x	1
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		15
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)		
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)	x	15
TOTAL SCORE	High = 23 - 36		
	Medium = 15 - 22	x	15
	Low = 8 - 14		
State Priority	High, Medium, Low	Low	
Responsible Agency	Dept. Administration		
Potential Funding Source(s)	FEMA, State Resources		
Implementation Schedule	Mid-Term		
Progress Made	Seismic resilience will be integrated into future building retrofits. Analysis of electrical system completed.		
Planned Activities	Major electrical upgrade planned.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 4: Reduce Impacts from Earthquakes		
Objective	*Objective 4.2 - Implement Structural Projects to Reduce Impacts from Earthquakes*		
Project	**Project 4.2.5 - At the Capitol Complex in Helena, seismically retrofit buildings with most vulnerability and highest occupancy to mitigate loss.**		
Hazard(s) Addressed	Earthquake		
DES District(s)	3		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)	x	1
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)	x	1
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		18
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)	x	27
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36	x	27
	Medium = 15 - 22		
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	Dept. Administration		
Potential Funding Source(s)	FEMA, State Resources		
Implementation Schedule	Ongoing		
Progress Made	Seismic resilience will be integrated into future building retrofits. Highest vulnerability determined to be DNRC Aircraft Hangar in Helena.		
Planned Activities	Consider grant for retrofit of DNRC aircraft hangar.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 4: Reduce Impacts from Earthquakes		
Objective	*Objective 4.2 - Implement Structural Projects to Reduce Impacts from Earthquakes*		
Project	**Project 4.2.6 - Retrofit bridges in Intermountain Seismic Belt, as needed.**		
Hazard(s) Addressed	Earthquake		
DES District(s)	1, 3		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)	x	1
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)	x	1
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		18
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)	x	27
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36	x	27
	Medium = 15 - 22		
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	MDT		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	All new bridges designed to seismic code.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 4: Reduce Impacts from Earthquakes		
Objective	*Objective 4.2 - Implement Structural Projects to Reduce Impacts from Earthquakes*		
Project	**Project 4.2.7 - Complete seismic retrofits on historic and culturally significant buildings including Bannack, and Virginia City.**		
Hazard(s) Addressed	Earthquake		
DES District(s)	1, 3		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)	x	1
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)	x	1
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		17
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)		
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)	x	17
TOTAL SCORE	High = 23 - 36		
	Medium = 15 - 22	x	17
	Low = 8 - 14		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DES, Dept. Commerce, FWP		
Potential Funding Source(s)	FEMA, State Resources		
Implementation Schedule	Long-term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Complete BCA and FEMA grant application for funding. Implement project		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 4; Reduce Impacts from Earthquakes		
Objective	*Objective 4.3 - Implement Public Education and Awareness Projects to Reduce Impacts from Earthquakes*		
Project	**Project 4.3.1 - Continue "Earthquake Preparedness Month" outreach activities during the month of October.**		
Hazard(s) Addressed	Earthquake		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)		
	Medium = Technology available/legislative support difficult/implementation possible (2 points)	x	2
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, Dept. Commerce		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	DES used social media for earthquake preparedness outreach during October. Increased participation in "Great Montana Shake Out".		
Planned Activities	Coordinate with Dept. of Commerce to continue social media campaign for October participation in Great Montana Shake Out. Expand Shake Out expercise to include COOP. Expand outreach to include September for National Preparedness Month. Complete Vigilant Guard exercise in 2018.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 4; Reduce Impacts from Earthquakes		
Objective	*Objective 4.3 - Implement Public Education and Awareness Projects to Reduce Impacts from Earthquakes*		
Project	**Project 4.3.2 - Continue presentations and distribution of earthquake preparedness materials including encouraging steps such as anchoring hot water heaters.**		
Hazard(s) Addressed	Earthquake		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)	x	
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	17
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, MT DES Association		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	DES conducts social media campaign on non-structural mitigation. MT DES Association h has promoted MAP Your Neighborhood and CERT training.		
Planned Activities	Continue same.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 4; Reduce Impacts from Earthquakes		
Objective	*Objective 4.3 - Implement Public Education and Awareness Projects to Reduce Impacts from Earthquakes*		
Project	**Project 4.3.3 - Encourage and educate home owners and businesses in the intermountain seismic belt to implement seismic retrofit projects.**		
Hazard(s) Addressed	Earthquake		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	17
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DES, Commerce Housing Division, Commerce Tourist Division		
Potential Funding Source(s)	Dept. Homeland Security, FEMA, State Resources		
Implementation Schedule	Ongoing		
Progress Made	DES using social media to provide outreach. Have found that when there is an earthquake that they get a lot of local interest.		
Planned Activities	Continue social media media campaign. Promote through emergency managers.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 4: Reduce Impacts from Earthquakes		
Objective	*Objective 4.4 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Earthquakes*		
Project	**Project 4.4.1 - Expand and upgrade the earthquake monitoring network and information reporting capabilities in high hazard areas.**		
Hazard(s) Addressed	Earthquake		
DES District(s)	1, 3		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)	x	2
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)	x	1
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		15
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)	x	22.5
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36		
	Medium = 15 - 22	x	22.5
	Low = 8 - 14		
State Priority	High, Medium, Low	Medium	
Responsible Agency	Montana Bureau Mines & Geology		
Potential Funding Source(s)	FEMA, State Resources		
Implementation Schedule	Mid-Term		
Progress Made	MBMG upgraded to latest analysis reporting equipment. University of Utah seismic program has assisted with software. New seismic station at Libby dam reporting to the network. In cooperation with the USGS, MBMG added sensors at 4 strong motion areas including West Yellowstone, Helena, Butte, and Bozeman to collect continuous data. The USGS Advanced National Seismic System (ANSS) did not renew funding to the Montana Regional Seismic Network which resulted in elimination of a staff computer position.		
Planned Activities	Reapply in 2020 fot the USGS ANSS grant to get five years of funding for a MBMG staff person. Continue program as funding allows.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 4: Reduce Impacts from Earthquakes		
Objective	*Objective 4.4 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Earthquakes*		
Project	**Project 4.4.2 - Quantify seismic hazards posed by faults.**		
Hazard(s) Addressed	Earthquake		
DES District(s)	1, 3		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)	x	2
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)	x	1
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		15
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)	x	22.5
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36		
	Medium = 15 - 22	x	22.5
	Low = 8 - 14		
State Priority	High, Medium, Low	Medium	
Responsible Agency	Montana Bureau Mines & Geology		
Potential Funding Source(s)	FEMA, State Resources		
Implementation Schedule	Ongoing		
Progress Made	MBMG was successful in getting one year of funding from FEMA to study the Bitterroot Valley Fault.		
Planned Activities	Complete Bitterroot Valley Fault Study. Follow up with a proposal to trench fault and study subsurface in order to work out movement history.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 4; Reduce Impacts from Earthquakes		
Objective	*Objective 4.4 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Earthquakes*		
Project	**Project 4.4.3 - Encourage local jurisdictions and tribal nations in the intermountain seismic belt to conduct seismic evaluations of their critical facilities.**		
Hazard(s) Addressed	Earthquake		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)		
	Medium = Technology available/legislative support difficult/implementation possible (2 points)	x	2
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	15
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, Local Jurisdictions, Tribal Nations		
Potential Funding Source(s)	Dept. Homeland Security, FEMA, Local Jurisdictions		
Implementation Schedule	Ongoing		
Progress Made	Local MHMP updates have identified this as a mitigation project. SHMO works with jurisdiction to identify projects.		
Planned Activities	Butte-Silver Bow is working to do this for their Courthouse. SHMO to emphasize program to evaluate schools.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 4; Reduce Impacts from Earthquakes		
Objective	*Objective 4.4 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Earthquakes*		
Project	**Project 4.4.4 - Complete liquifaction mapping of potentially vulnerable areas in high population areas within Intermountain Seismic Belt.**		
Hazard(s) Addressed	Earthquake		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)	x	2
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DES, MBMG		
Potential Funding Source(s)	FEMA, State Resources		
Implementation Schedule	Long-term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Identify vulnerable areas. Apply for funding to complete study.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 4; Reduce Impacts from Earthquakes		
Objective	*Objective 4.4 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Earthquakes*		
Project	**Project 4.4.5 - Work with insurance companies and Montana legislature to develop program that offers discounts on earthquake insurance for residents that complete training and implement non-structural projects around their homes.**		
Hazard(s) Addressed	Earthquake		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)	x	2
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)		
	Medium = Technology available/legislative support difficult/implementation possible (2 points)	x	2
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	15
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DES, MBMG		
Potential Funding Source(s)	FEMA, State Resources		
Implementation Schedule	Long-term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Identify vulnerable areas. Apply for funding to complete study.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 4: Reduce Impacts from Earthquakes		
Objective	*Objective 4.5 - Implement Property Protection Projects to Reduce Impacts from Earthquakes*		
Project	**Project 4.5.1 - Survey and install utility shut-off valves at all state buildings in the intermountain seismic belt.**		
Hazard(s) Addressed	Earthquake		
DES District(s)	1, 3		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)	x	2
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)	x	1
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		17
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)	x	25.5
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36	x	25.5
	Medium = 15 - 22		
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	Dept. Admin-A&E		
Potential Funding Source(s)	FEMA, State Resources		
Implementation Schedule	Ongoing		
Progress Made	City of Helena Seismic Shut-off valves for reservoirs. Mathews Hall retrofit at UM-Western. Seismic resilience will be integrated into future building retrofits.		
Planned Activities	Field assessment of where we're at. Probably in good shape. In process of doing facility assessment. Can integrate into these.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 4: Reduce Impacts from Earthquakes		
Objective	*Objective 4.5 - Implement Property Protection Projects to Reduce Impacts from Earthquakes*		
Project	**Project 4.5.2 - Implement non-structural projects at state buildings in the intermountain seismic belt such as anchoring utilities.**		
Hazard(s) Addressed	Earthquake		
DES District(s)	1, 3		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)	x	2
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)	x	1
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		18
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)	x	27
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36	x	27
	Medium = 15 - 22		
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	All State Agencies, University System		
Potential Funding Source(s)	FEMA, State Resources		
Implementation Schedule	Mid-Term		
Progress Made	General Services Administration continues to implement non-structural projects as part of building maintenance. Funding received for Law Enforcement Academy. Project is currently underway.		
Planned Activities	Complete non-structural project at Creative Arts Center at MSU-Bozeman to secure tall tower. Identify other potential projects and complete application for funding.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 4: Reduce Impacts from Earthquakes		
Objective	*Objective 4.5 - Implement Property Protection Projects to Reduce Impacts from Earthquakes*		
Project	**Project 4.5.3 - Utilize 3-mil film on windows of public buildings in intermountain seismic belt to avoid shattering during seismic event.**		
Hazard(s) Addressed	Earthquake		
DES District(s)	1, 3		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)		
	Project is protective but moderately sustainable (2 points)	x	2
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)	x	1
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		15
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)	x	22.5
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36		
	Medium = 15 - 22	x	22.5
	Low = 8 - 14		
State Priority	High, Medium, Low	Medium	
Responsible Agency	Dept. Admin-GSA		
Potential Funding Source(s)	FEMA, State Resources		
Implementation Schedule	Mid-Term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Develop scope of work and budget for FEMA grant. Obtain funding. Implement project.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 4; Reduce Impacts from Earthquakes		
Objective	*Objective 4.6 - Enhance Emergency Service Capabilities to Reduce Impacts from Earthquakes*		
Project	**Project 4.6.1 - Provide training to Rapid Building Assessment Teams to evaluate buildings after an earthquake.**		
Hazard(s) Addressed	Earthquake		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	15
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DES		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Long-term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Colaborate with flood people and develop checklist. Determine team members who have gone through training. Train others.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 5: Reduce the Impacts from Drought		
Objective	*Objective 5.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Drought*		
Project	**Project 5.1.1 - Provide outreach on management practices for minimizing the impacts from drought.**		
Hazard(s) Addressed	Drought		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	15
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DNRC, Dept. Ag, FWP, NRCS, FSA, Conservation Districts		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	Governor's Committee on Drought and Water Supply provide outreach and hold forums around		
Planned Activities	Continue same. Emphasize soil health and water management. Continue to look at ways that		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 5: Reduce the Impacts from Drought		
Objective	*Objective 5.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Drought*		
Project	**Project 5.1.2 - Educate ranchers to work with local weed districts to reduce spread of invasive species.**		
Hazard(s) Addressed	Drought		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	2
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	13
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	Dept. Agriculture		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan		
Planned Activities	Dept. of Agriculture starting program to get ahead of weed problem associated with imported forage use and weed spread in drought-impacted crop lands.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 5: Reduce the Impacts from Drought		
Objective	*Objective 5.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Drought*		
Project	**Project 5.1.3 - Encourage voluntary water conservation by domestic, municipal, and industrial users.**		
Hazard(s) Addressed	Drought		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	13
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DEQ		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	Some municipalities have adopted watering restrictions.		
Planned Activities	Utilize television and social media to educate public.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 5: Reduce the Impacts from Drought		
Objective	*Objective 5.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Drought*		
Project	**Project 5.1.4 - Provide outreach on algal blooms and what to do when they happen.**		
Hazard(s) Addressed	Drought		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	13
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DPHHS, DEQ		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan		
Planned Activities	Utilize television and social media to educate public.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 5: Reduce the Impacts from Drought		
Objective	*Objective 5.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Drought*		
Project	**Project 5.1.5- Develop a toolbox to assist local/ tribal partners with drought management planning.**		
Hazard(s) Addressed	Drought		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, DNRC		
Potential Funding Source(s)	State Resouces, FEMA		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan		
Planned Activities	Develop a toolbox that is housed on the DRNC website that local/tribal partners can use to develop comprehensive drought management plans. This toolbox will utilize best planning practices and mimic that of mitigation planning documents.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 5: Reduce the Impacts from Drought		
Objective	*Objective 5.2 - Support Planning and Monitoring Projects to Reduce Impacts from Drought*		
Project	**Project 5.2.1 - Inventory operating plans of reservoirs to ensure drought contingency plans.**		
Hazard(s) Addressed	Drought		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	12
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DNRC, BOR, USACE		
Potential Funding Source(s)	State Resources, USACE, BOR		
Implementation Schedule	Mid-Term		
Progress Made	DNRC-Dam Safety reviews plans for state dams on ongoing basis. Working with BOR & USACE to do same.		
Planned Activities	Bring to Silver Jackets group. Continue working with federal partners.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 5: Reduce the Impacts from Drought		
Objective	*Objective 5.2 - Support Planning and Monitoring Projects to Reduce Impacts from Drought*		
Project	**Project 5.2.2 - Encourage system of soil moisture gauges to monitor drought.**		
Hazard(s) Addressed	Drought		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	13
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	Montana Climate Office, USGS, Dept. Agriculture, NRCS		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Mid-Term		
Progress Made	Variety of agencies are improving monitoring capabilities including USGS, Dept. Agriculture, and NRCS.		
Planned Activities	Montana Climate Office MESONET project taking lead on this.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 5: Reduce the Impacts from Drought		
Objective	*Objective 5.2 - Support Planning and Monitoring Projects to Reduce Impacts from Drought*		
Project	**Project 5.2.3 Develop drought plans as an addendum to the local/tribal mitigation plan.**		
Hazard(s) Addressed	Drought		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, DNRC		
Potential Funding Source(s)	State Resources, FEMA, BOR		
Implementation Schedule	Mid-Term		
Progress Made	New project for 2018 plan		
Planned Activities	MT DES will apply for a large planning grant with PDM to assist local conservation districts or emergency managers to develop a comprehensive drought management plan to mimic the county mitigation plan to assist with implementing drought projects. MT DES will work closely with the DNRC Conservation Bureau to identify eligible applicants, and disperse funds.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 5: Reduce the Impacts from Drought		
Objective	*Objective 5.3 - Support Natural Resource Protection Efforts to Reduce Impacts from Drought*		
Project	**Project 5.3.1 - Continue to implement angling restrictions and closures to reduce drought impacts on Montana fisheries.**		
Hazard(s) Addressed	Drought		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	13
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	FWP		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Continue to monitor conditions and implement recreational restrictions to reduce stress on fish.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 5: Reduce the Impacts from Drought		
Objective	*Objective 5.3 - Support Natural Resource Protection Efforts to Reduce Impacts from Drought*		
Project	**Project 5.3.2 - Continue to administer Fish, Wildlife, and Parks' Water Rights and Water Reservations to protect instream flows during drought for the benefit of fish and wildlife**		
Hazard(s) Addressed	Drought		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	13
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	FWP		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Continue to monitor stream flows and if stream flows fall below specific instream flow criteria, request that junior in priority water users limit or cease diversions until stream flow conditions improve.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 5: Reduce the Impacts from Drought		
Objective	*Objective 5.4 - Implement Structural Projects to Reduce Impacts from Drought*		
Project	**Project 5.4.1 - Consider feasibility of creating infiltration basins to capture early spring runoff.**		
Hazard(s) Addressed	Drought		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)		
	Medium = Technology available/legislative support difficult/implementation possible (2 points)	x	2
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)		
	Project is protective but moderately sustainable (2 points)	x	2
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	11
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DNRC-Water		
Potential Funding Source(s)	State Resources, FEMA		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Work with conservation districts to identify potential areas where this may be feasible.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 5: Reduce the Impacts from Drought		
Objective	*Objective 5.4 - Implement Structural Projects to Reduce Impacts from Drought*		
Project	**Project 5.4.2 - Encourage passive water storage where it will enhance natural function and increase water supply security.**		
Hazard(s) Addressed	Drought		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)		
	Project is protective but moderately sustainable (2 points)	x	2
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	12
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DNRC-Water, Conservation Districts		
Potential Funding Source(s)	DNRC grants, FEMA,		
Implementation Schedule	Ongoing		
Progress Made	DNRC, FWP, Conservation districts promote this across the state.		
Planned Activities	Identify wetland and stream restoration projects that are good candidates for funding.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 5: Reduce the Impacts from Drought		
Objective	*Objective 5.4 - Implement Structural Projects to Reduce Impacts from Drought*		
Project	**Project 5.4.3 - Encourage water conveyance efficiencies in agricultural, municipal, and industrial uses.**		
Hazard(s) Addressed	Drought		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	13
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DNRC, Local partners		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	CSKT water compact set aside money for improved conveyance. Hundreds of projects have been completed.		
Planned Activities	Continue same.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 5: Reduce the Impacts from Drought		
Objective	*Objective 5.4 - Implement Structural Projects to Reduce Impacts from Drought*		
Project	**Project 5.4.4 - Encourage removal of abandoned structures to improve stream connectivity.**		
Hazard(s) Addressed	Drought		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)		
	Medium = Technology available/legislative support difficult/implementation possible (2 points)	x	2
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	11
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	Conservation Districts		
Potential Funding Source(s)	Local resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan		
Planned Activities	Identify structures which should be removed. Work with landowners.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 5: Reduce the Impacts from Drought		
Objective	*Objective 5.5 - Suggest Legislative Changes to Reduce Impacts from Drought*		
Project	**Project 5.5.1 - Develop a model water conservation ordinance for use by municipalities and rural domestic water suppliers.**		
Hazard(s) Addressed	Drought		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DNRC, MACO, Dept. Commerce		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Long-Term		
Progress Made	Bozeman and Missoula have done this.		
Planned Activities	Talk to MACO and hold sessions. Refer to example ordinances available nationwide.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 5: Reduce the Impacts from Drought		
Objective	*Objective 5.5 - Suggest Legislative Changes to Reduce Impacts from Drought*		
Project	**Project 5.5.2 - Clarify state law to allow voluntary, temporary changes of water rights and contract water exchanges.**		
Hazard(s) Addressed	Drought		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)		
	Medium = Technology available/legislative support difficult/implementation possible (2 points)	x	2
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)		
	Project is protective but moderately sustainable (2 points)	x	2
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	11
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DNRC, Conservation Districts		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Long-Term		
Progress Made	Temporary leasing bill exists which allows transfer from another water right holder.		
Planned Activities	Work with subdivisions to pass water rights onto water conservation organizations. Exempt		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 5: Reduce the Impacts from Drought		
Objective	*Objective 5.5 - Suggest Legislative Changes to Reduce Impacts from Drought*		
Project	**Project 5.5.3 - Find ways to expedite the resolution of water use conflicts and water rights enforcement during drought.**		
Hazard(s) Addressed	Drought		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)		
	Medium = Technology available/legislative support difficult/implementation possible (2 points)	x	2
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)		
	Project is protective but moderately sustainable (2 points)	x	2
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	11
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DNRC		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Long-Term		
Progress Made	No progress to report. Controversial.		
Planned Activities	Increase support for drought planning.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 5: Reduce the Impacts from Drought		
Objective	*Objective 5.5 - Suggest Legislative Changes to Reduce Impacts from Drought*		
Project	**Project 5.5.4 - Adopt rules for the installation of water metering devices to resolve conflict on water short drainages.**		
Hazard(s) Addressed	Drought		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)		
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)	x	1
Environmentally Sound	Project is protective of the environment (3 points)		
	Project is protective but moderately sustainable (2 points)	x	2
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14		
	Low = 6 - 9	x	9
State Priority	High, Medium, Low	Medium	
Responsible Agency	DNRC		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Long-Term		
Progress Made	No progress to report.		
Planned Activities	Encourage grant programs for water conservation to require measurement.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 5: Reduce the Impacts from Drought		
Objective	*Objective 5.5 - Suggest Legislative Changes to Reduce Impacts from Drought*		
Project	**Project 5.5.5 - Establish stronger economic and other incentives for private investments in water conservation.**		
Hazard(s) Addressed	Drought		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)		
	Medium = Technology available/legislative support difficult/implementation possible (2 points)	x	2
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	12
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DNRC, DES		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Long-Term		
Progress Made	No progress to report. State/Legislature must determine it's important. Montana insurance companies can offer price breaks; however, legislature must pass law to allow this.		
Planned Activities	Draft bill for legislature. Encourage private investment in water conservation through loans and grants available through DNRC.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 6: Reduce Impacts from Severe Weather		
Objective	*Objective 6.1 - Implement Property Protection Projects to Reduce Impacts from Severe Weather*		
Project	**Project 6.1.1 - Modify vulnerable buildings to resist water penetration and wind damage.**		
Hazard(s) Addressed	Severe Weather		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)	x	1
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)	x	3
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)		
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		19
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)	x	28.5
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36	x	28.5
	Medium = 15 - 22		
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	Dept. Administration, University System		
Potential Funding Source(s)	FEMA, State Resources		
Implementation Schedule	Ongoing		
Progress Made	High performance building standards were developed for State property.		
Planned Activities	Continue to implement with new construction and remodels.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 6: Reduce Impacts from Severe Weather		
Objective	*Objective 6.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Severe Weather*		
Project	**Project 6.2.1- Maintain partnership with National Weather Service, DES and media to educate public on advisories, watches, and warnings when weather hazards are forecast to impact Montana.**		
Hazard(s) Addressed	Severe Weather		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	17
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	National Weather Service, DES		
Potential Funding Source(s)	National Weather Service		
Implementation Schedule	Ongoing		
Progress Made	NWS conducts media outreach (website, social media) on an annual basis. They do local presentations, post YouTube videos, offer weather spotter training, and provide INWS text messages to cell phones.		
Planned Activities	Continue to communicate and identify training opportunities to educate partners on weather related hazards and impacts.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 6: Reduce Impacts from Severe Weather		
Objective	*Objective 6.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Severe Weather*		
Project	**Project 6.2.2 - Promote distribution of NOAA weather radios.**		
Hazard(s) Addressed	Severe Weather		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	15
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	NWS, DES		
Potential Funding Source(s)	National Weather Service, FEMA		
Implementation Schedule	Ongoing		
Progress Made	NWS Great Falls got grant for 80 NOAA radios. Distributing to Tribal nations. FEMA grant funded radios for Town of Baker after tornado disaster.		
Planned Activities	Continue same.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 6: Reduce Impacts from Severe Weather		
Objective	*Objective 6.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Severe Weather*		
Project	**Project 6.2.3 - Partner with National Weather Service on the Weather Ready Nation Ambassador Program and increase program participation.**		
Hazard(s) Addressed	Severe Weather		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	15
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	National Weather Service, DES		
Potential Funding Source(s)	National Weather Service, State Resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan		
Planned Activities	Promote participation by state agencies and schools.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 6: Reduce Impacts from Severe Weather		
Objective	*Objective 6.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Severe Weather*		
Project	**Project 6.2.4 - Encourage participation in National Weather Service Storm Ready Community program.**		
Hazard(s) Addressed	Severe Weather		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	15
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	National Weather Service, DES		
Potential Funding Source(s)	National Weather Service, State Resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan		
Planned Activities	Encourage communities with NFIP policies to participate so they can get flood insurance discount.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 6: Reduce Impacts from Severe Weather		
Objective	*Objective 6.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Severe Weather*		
Project	**Project 6.2.5 - Evaluate locations for Remote Weather Information System video cameras.**		
Hazard(s) Addressed	Severe Weather		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	2
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	12
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	MDT, NWS		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan		
Planned Activities	Look into locations for RWIS cameras on Marias Pass, Kings Hill Pass, and others.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 6: Reduce Impacts from Severe Weather		
Objective	*Objective 6.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Severe Weather*		
Project	**Project 6.2.6 - Continue to distribute winter weather survival booklet.**		
Hazard(s) Addressed	Severe Weather		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		3
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)	x	3
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)		
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		19
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)	x	28.5
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36	x	28.5
	Medium = 15 - 22		
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	MDT, DES		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan		
Planned Activities	Expand distribution and make booklets available to new residents at city halls and county courthouses.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 6: Reduce Impacts from Severe Weather		
Objective	*Objective 6.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Severe Weather*		
Project	**Project 6.2.7 - Provide education on weather events and public health at locations with temporary occupancy (man camps, rainbow gathering, etc.).**		
Hazard(s) Addressed	Severe Weather		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	2
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	11
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DPHHS, National Weather Service		
Potential Funding Source(s)	Federal resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Prepare flyers to distribute if locations spring up that could be vulnerable.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 6: Reduce Impacts from Severe Weather		
Objective	*Objective 6.3 - Implement Prevention Projects to Reduce Impacts from Severe Weather*		
Project	**Project 6.3.1 - Encourage utilities to bury electric lines to improve reliability.**		
Hazard(s) Addressed	Severe Weather		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)		
	Medium = Technology available/legislative support difficult/implementation possible (2 points)	x	2
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	13
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, RECs		
Potential Funding Source(s)	FEMA		
Implementation Schedule	Ongoing		
Progress Made	SHMO made presentation at annual meeting of RECs to encourage them to bury transmission lines.		
Planned Activities	Provide outreach to RECs on funding opportunities through FEMA grants programs.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 6: Reduce Impacts from Severe Weather		
Objective	*Objective 6.3 - Implement Prevention Projects to Reduce Impacts from Severe Weather*		
Project	**Project 6.3.2 - Encourage utilities to apply for mitigation grants to install air flow spoilers on above ground utility lines.**		
Hazard(s) Addressed	Severe Weather		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)		
	Project is protective but moderately sustainable (2 points)	x	2
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	13
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, Utilities		
Potential Funding Source(s)	FEMA		
Implementation Schedule	Ongoing		
Progress Made	No progress to report.		
Planned Activities	Provide outreach to RECs on funding opportunities through FEMA grants programs.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 6: Reduce Impacts from Severe Weather		
Objective	*Objective 6.4 - Implement Structural Projects to Reduce Impacts from Severe Weather*		
Project	**Project 6.4.1 - Encourage cities and towns in tornado alley to establish community safe rooms.**		
Hazard(s) Addressed	Severe Weather		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	2
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	11
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DES		
Potential Funding Source(s)	State Resources, FEMA		
Implementation Schedule	Short-Term		
Progress Made	New project for 2018 Plan		
Planned Activities	South Dakota SHMO will make presentations on helping tornado alley towns develop community safe rooms.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 7: Reduce Losses from Hazardous Material Incidents and Transportation Accidents		
Objective	*Objective 7.1 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Hazardous Material Incidents and Transportation Accidents*		
Project	**Project 7.1.1 - Encourage State Emergency Response Committee (SERC) to consider validity of commodity haz-mat flow studies.**		
Hazard(s) Addressed	Haz-Mat Incidents & Transportation Accidents		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)		
	Medium = Technology available/legislative support difficult/implementation possible (2 points)	x	2
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)		
	Project is protective but moderately sustainable (2 points)		
	Project is not protective or sustainable (1 point)	x	1
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14		
	Low = 6 - 9	x	9
State Priority	High, Medium, Low	Medium	
Responsible Agency	SERC		
Potential Funding Source(s)	State resources		
Implementation Schedule	Mid-term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Add to agenda for twice/year SERC meetings. Identify and apply for funding.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 7: Reduce Losses from Hazardous Material Incidents and Transportation Accidents		
Objective	*Objective 7.1 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Hazardous Material Incidents and Transportation Accidents*		
Project	**Project 7.1.2 - Conduct road safety audits on corridors with safety issues.**		
Hazard(s) Addressed	Transportation Accidents		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)	x	2
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)	x	3
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)		
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		18
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)	x	27
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36	x	27
	Medium = 15 - 22		
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, SERC		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Communicate to local emergency managers.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 7: Reduce Losses from Hazardous Material Incidents and Transportation Accidents		
Objective	*Objective 7.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Hazardous Material Incidents and Transportation Accidents*		
Project	**Project 7.2.1 - Promote Hazardous Material Emergency Preparedness (HMEP) grants to local partners.**		
Hazard(s) Addressed	Haz-Mat Incidents & Transportation Accidents		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, SERC		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Communicate to local emergency managers.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 7: Reduce Losses from Hazardous Material Incidents and Transportation Accidents		
Objective	*Objective 7.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Hazardous Material Incidents and Transportation Accidents*		
Project	**Project 7.2.2 - Promote outreach on impaired driving through prevention education.**		
Hazard(s) Addressed	Haz-Mat Incidents & Transportation Accidents		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	MDT		
Potential Funding Source(s)	State & federal resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Develop public education campaign on a range of impaired driving topics using print, broadcast and social media.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 7: Reduce Losses from Hazardous Material Incidents and Transportation Accidents		
Objective	*Objective 7.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Hazardous Material Incidents and Transportation Accidents*		
Project	**Project 7.2.3 - Reduce roadway departure and intersection crashes through education.**		
Hazard(s) Addressed	Haz-Mat Incidents & Transportation Accidents		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	MDT		
Potential Funding Source(s)	State & federal resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Encourage awareness of and participation in defensive driving classes and continue media campaign via print, broadcast, and social media.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 7: Reduce Losses from Hazardous Material Incidents and Transportation Accidents		
Objective	*Objective 7.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Hazardous Material Incidents and Transportation Accidents*		
Project	**Project 7.2.4 - Support policies, education, training, programs and activities that promote and increase seat belt and child safety seat use.**		
Hazard(s) Addressed	Haz-Mat Incidents & Transportation Accidents		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	MDT		
Potential Funding Source(s)	State & federal resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Continue education programs and media campaign via print, broadcast, and social media.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 7: Reduce Losses from Hazardous Material Incidents and Transportation Accidents		
Objective	*Objective 7.3 - Enhance Emergency Service Capabilities to Reduce Impacts from Hazardous Material Incidents and Transportation Accidents*		
Project	**Project 7.3.1 - Identify and encourage participation in trainings and education offered by stakeholders (those who handle hazardous materials).**		
Hazard(s) Addressed	Haz-Mat Incidents & Transportation Accidents		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	13
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, SERC, LEPCs		
Potential Funding Source(s)	State & federal resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Communicate to local emergency managers. Identify training opportunities. Add to state training calendar. Push out announcements.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 7: Reduce Losses from Hazardous Material Incidents and Transportation Accidents		
Objective	*Objective 7.3 - Enhance Emergency Service Capabilities to Reduce Impacts from Hazardous Material Incidents and Transportation Accidents*		
Project	**Project 7.3.2 - Encourage participation from all emergency responders in Traffic Incident Management System (TIMS) training.**		
Hazard(s) Addressed	Haz-Mat Incidents & Transportation Accidents		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	12
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	MDT, FHWA, Fire Depts., Highway Patrol, EMS, towing association		
Potential Funding Source(s)	State & federal resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Communicate with partners on training opportunities. Promote that it's a collaborative effort.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 7: Reduce Losses from Hazardous Material Incidents and Transportation Accidents		
Objective	*Objective 7.4 - Implement Prevention Projects to Reduce Impacts from Hazardous Material Incidents and Transportation Accidents*		
Project	**Project 7.4.1 - Implement highway safety projects.**		
Hazard(s) Addressed	Transportation Accidents		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)	x	1
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)	x	3
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)		
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)	x	2
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		17
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)	x	25.5
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36	x	25.5
	Medium = 15 - 22		
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	MDT		
Potential Funding Source(s)	State & federal resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Continue infrastructure improvements to mitigate road departure crashes and intersection crashes including installation of signage, centerline and shoulder rumble strips, guard rail improvements, wider shoulders and intersection improvements (turn lanes, roundabouts, signal improvements).		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 7: Reduce Losses from Hazardous Material Incidents and Transportation Accidents		
Objective	*Objective 7.4 - Implement Prevention Projects to Reduce Impacts from Hazardous Material Incidents and Transportation Accidents*		
Project	**Project 7.4.2 - Identify opportunities to incorporate wildlife mitigation on already planned projects to reduce wildlife/vehicle collisions.**		
Hazard(s) Addressed	Haz-Mat Incidents & Transportation Accidents		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	13
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	MDT, FWP		
Potential Funding Source(s)	State & federal resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	When highway improvement projects are identified, coordinate with FWP on types and location of treatments.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 8: Minimize Impacts from Disease Outbreaks		
Objective	*Objective 8.1 - Implement Prevention Projects to Reduce Impacts from Disease*		
Project	**Project 8.1.1 Continue public health surveillance, disease investigations, and provide mitigation strategies.**		
Hazard(s) Addressed	Disease		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DPHHS		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	Increased percentage of communicable diseases reported from local health depts. within 24 hours. Inspected and provided educational materials on food safety to licensed food establishments. Increased age-appropriate immunizations rates for vaccine preventable communicable diseases.		
Planned Activities	Continue same. Increase percentage of communicable diseases getting back from local health departments to within 24 hours.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 8: Minimize Impacts from Disease Outbreaks		
Objective	*Objective 8.1 - Implement Prevention Projects to Reduce Impacts from Disease*		
Project	**Project 8.1.2 - Conduct surveillance and disease investigations for reportable animal diseases and maintain the Designated Surveillance Area (DSA) for Brucellosis.**		
Hazard(s) Addressed	Agro-Security		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)	x	2
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	1
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)	x	2
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)		
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)		
	Hazard causes minor damage and rarely loss of life (1 point)	x	1
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		14
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)		
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)	x	14
TOTAL SCORE	High = 23 - 36		
	Medium = 15 - 22		
	Low = 8 - 14	x	14
State Priority	High, Medium, Low	High	
Responsible Agency	Dept. Livestock		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Continue to operate the MT Veterinary Diagnostic Laboratory. Monitor compliance with DSA regulations. Conduct slaughter and disease trace investigations. Conduct regulatory testing.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 8: Minimize Impacts from Disease Outbreaks		
Objective	*Objective 8.1 - Implement Prevention Projects to Reduce Impacts from Disease*		
Project	**Project 8.1.3 - Conduct surveillance and disease investigations for reportable diseases in fish and wildlife.**		
Hazard(s) Addressed	Fish & Wildlife Disease		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)	x	2
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)	x	2
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)		
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)		
	Hazard causes minor damage and rarely loss of life (1 point)	x	1
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		16
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)		
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)	x	16
TOTAL SCORE	High = 23 - 36		
	Medium = 15 - 22	x	16
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	FWP		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Morbidity/mortality investigations to detect reportable diseases in fish and wildlife. Examples include monitoring fish for Proliferative Kidney Disease and surveying harvested, symptomatic, or road-killed deer for Chronic Wasting Disease.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 8: Minimize Impacts from Disease Outbreaks		
Objective	*Objective 8.1 - Implement Prevention Projects to Reduce Impacts from Disease*		
Project	**Project 8.1.4 - Maintain policies and regulations that prevent and minimize the spread of animal diseases.**		
Hazard(s) Addressed	Disease		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	Dept. Livestock		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Maintain import requirements for animals entering MT. Maintain and update list of reportable animal diseases in MT. Require training for veterinarians to become accredited in MT.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 8: Minimize Impacts from Disease Outbreaks		
Objective	*Objective 8.1 - Implement Prevention Projects to Reduce Impacts from Disease*		
Project	**Project 8.1.5 - Maintain policies and regulations that prevent and minimize the spread of fish and wildlife disease.**		
Hazard(s) Addressed	Disease		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	FWP		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Maintain cervid transport regulations to prevent spread of CWD, maintain feeding ban to prevent spread of disease through wildlife populations. Train FWP field staff on wildlife disease recognition/necropsy techniques.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 8: Minimize Impacts from Disease Outbreaks		
Objective	*Objective 8.1 - Implement Prevention Projects to Reduce Impacts from Disease*		
Project	**Project 8.1.6 - Maintain watercraft inspection and decontamination stations for Aquatic Invasive Species during the boating season.**		
Hazard(s) Addressed	Aquatic Invasive Species		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)	x	2
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)	x	2
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)		
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)		
	Hazard causes minor damage and rarely loss of life (1 point)	x	1
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		16
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)		
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)	x	16
TOTAL SCORE	High = 23 - 36		
	Medium = 15 - 22	x	16
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	FWP		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Continue and expand existing program.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 8: Minimize Impacts from Disease Outbreaks		
Objective	*Objective 8.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Disease*		
Project	**Project 8.2.1 - Continue to provide outreach to both local health jurisdictions and the public on public health topics.**		
Hazard(s) Addressed	Disease		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DPHHS		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Utilize print, broadcast and social media to inform and educate.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 8: Minimize Impacts from Disease Outbreaks		
Objective	*Objective 8.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Disease*		
Project	**Project 8.2.2 - Promote the "clean, drain, dry" campaign to prevent the spread of Aquatic Invasive Species, including diseases, for boats and equipment to waters and native aquatic species.**		
Hazard(s) Addressed	Disease		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)	x	2
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	13
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	FWP		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Continue program to inform and educate the public through print, broadcast and social media.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 8: Minimize Impacts from Disease Outbreaks		
Objective	*Objective 8.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Disease*		
Project	**Project 8.2.3 - Provide education and outreach to Montana hunters, landowners, and general public about signs/symptoms of wildlife disease, safe field dressing precautions, and the status of wildlife diseases in the state.**		
Hazard(s) Addressed	Disease		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)	x	2
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	FWP		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Continue program to inform and educate the public and provide training sessions, wildlife health section on website, wildlife disease manual and other printed materials.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 8: Minimize Impacts from Disease Outbreaks		
Objective	*Objective 8.3 - Implement Natural Resource Protection Projects to Reduce Impacts from Disease*		
Project	**Project 8.3.1 - Encourage water saving measures and institute fishing restrictions during drought to reduce stress on fish, which can make them more susceptible to disease.**		
Hazard(s) Addressed	Disease		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	FWP		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Continue program to inform and educate the public through print, broadcast and social media.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 8: Minimize Impacts from Disease Outbreaks		
Objective	*Objective 8.4 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Disease*		
Project	**Project 8.4.1- Ensure DPHHS Emergency Operations Plans (EOPs) and all associated annexes and procedures are current and complete for public health.**		
Hazard(s) Addressed	Disease		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DPHHS		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	Annually updated EOP including Medical Surge Annex. Incorporated Communicable Disease Epidemiological Annex including Outbreak Response Protocol.		
Planned Activities	Complete provider Crisis Standards of Care including hospital bed availability reporting and procedures for sharing clinical hospital staff. Continue to update EOP documents annually.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 8: Minimize Impacts from Disease Outbreaks		
Objective	*Objective 8.4 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Disease*		
Project	**Project 8.4.2 - Encourage local jurisdictions to update and maintain EOPs for public health.**		
Hazard(s) Addressed	Disease		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DPHHS		
Potential Funding Source(s)	Local resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Provide outreach and expertise to assist locals with their public health EOPs. Provide template		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 8: Minimize Impacts from Disease Outbreaks		
Objective	*Objective 8.4 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Disease*		
Project	**Project 8.4.3 - Update the Foreign Animal Disease (FAD) Response Plan.**		
Hazard(s) Addressed	Disease		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	Dept. Livestock		
Potential Funding Source(s)	State resources		
Implementation Schedule	Mid-term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Implementation depends on appropriate staffing. In May 2018, Dept. Livestock will participate in large-scale, national exercise to test plan. Other activities to include holding National Veterinary Stockpile table top exercise with USDA, and getting staff trained in ICS.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 8: Minimize Impacts from Disease Outbreaks		
Objective	*Objective 8.4 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Disease*		
Project	**Project 8.4.4 - Develop guidelines for individual producer biosecurity plans to include outlining criteria for movement permits from a disease control zone.**		
Hazard(s) Addressed	Disease		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	Dept. Livestock		
Potential Funding Source(s)	State resources		
Implementation Schedule	Long-term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Implementation depends on appropriate staffing. Goal is to protect MT livestock businesses and ensure continuity of operations in the case of a foreign animal disease outbreak.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 8: Minimize Impacts from Disease Outbreaks		
Objective	*Objective 8.4 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Disease*		
Project	**Project 8.4.5 - Develop and maintain rapid response plans to minimize the spread of fish and wildlife disease.**		
Hazard(s) Addressed	Disease		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	FWP		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Reach out to specialists to acquire best available methods. Prepare plans. Review and revise. Continually update.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 8: Minimize Impacts from Disease Outbreaks		
Objective	*Objective 8.4 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Disease*		
Project	**Project 8.4.6 - Map the presence and spread of fish and wildlife disease to prioritize prevention efforts, surveillance, and public education.**		
Hazard(s) Addressed	Disease		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)	x	2
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	13
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	FWP		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Ensure field staff have proper mapping equipment and training. Compile data in central database. Review annual data collected and develop strategy to implement project.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 8: Minimize Impacts from Disease Outbreaks		
Objective	*Objective 8.5 - Enhance Emergency Service Capabilities to Reduce Impacts from Disease*		
Project	**Project 8.5.1 Test and evaluate public health response plans.**		
Hazard(s) Addressed	Disease		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DPHHS		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	Established training and exercise calendar. Completed After Action Reports and Corrective Action Plans for exercises. Utilized Health Alert Network notification system to verify ability to contact all health jurisdictions within 24 hours of releasing significant message.		
Planned Activities	Ongoing each year. Full scale exercise planned for 2019 to test this.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 8: Minimize Impacts from Disease Outbreaks		
Objective	*Objective 8.5 - Enhance Emergency Service Capabilities to Reduce Impacts from Disease*		
Project	**Project 8.5.2 - Provide Rapid Response and Incident Command System training for agencies responding to emergencies relating to fish and wildfire disease.**		
Hazard(s) Addressed	Disease		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	FWP		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Identify appropriate training modules. Continually offer training sessions so all appropriate staff have opportunity to train.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 9: Reduce Impacts from Landslides and Avalanche		
Objective	*Objective 9.1 - Implement Structural Projects to Reduce Impacts from Landslides and Avalanche*		
Project	**Project 9.1.1 - Conduct proactive scaling and reducing of back slopes along highways.**		
Hazard(s) Addressed	Landslide		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)	x	1
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)		
	Project is protective but moderately sustainable (2 points)	x	2
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)	x	2
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)		
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)		
	Hazard causes minor damage and rarely loss of life (1 point)	x	1
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		15
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)		
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)	x	15
TOTAL SCORE	High = 23 - 36		
	Medium = 15 - 22	x	15
	Low = 8 - 14		
State Priority	High, Medium, Low	Medium	
Responsible Agency	MDT		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	Stillwater County received PDM grant for road reconstruction due to landslide damage. Rock scaling		
Planned Activities	MDT continues this as needed. Projects planned in Lame Deer, Missoula, and Billings.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 9: Reduce Impacts from Landslides and Avalanche		
Objective	*Objective 9.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Landslides and Avalanche*		
Project	**Project 9.2.1 - Educate homeowners of benefits of avalanche protection devices.**		
Hazard(s) Addressed	Avalanche		
DES District(s)	1, 3		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	X	13
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Look for innovative projects to protect avalanche prone structures. Coordinate with Missoula County.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 9: Reduce Impacts from Landslides and Avalanche		
Objective	*Objective 9.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Landslides and Avalanche*		
Project	**Project 9.2.2 - Promote avalanche forecasting and public awareness.**		
Hazard(s) Addressed	Avalanche		
DES District(s)	1, 3		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	X	13
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Use social media to promote organizations that do avalanche forecasting and provide awareness training.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 9: Reduce Impacts from Landslides and Avalanche		
Objective	*Objective 9.3 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Landslides and Avalanche*		
Project	**Project 9.3.1 - Identify high population areas vulnerable to avalanches.**		
Hazard(s) Addressed	Avalanche		
DES District(s)	1, 3		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	X	13
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Short-term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Using GIS, do modeling exercise using snow probability, slope, and population to develop avalanche hazard map.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 9: Reduce Impacts from Landslides and Avalanche		
Objective	*Objective 9.3 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Landslides and Avalanche*		
Project	**Project 9.3.2 - Conduct landslide studies and monitoring in high population areas.**		
Hazard(s) Addressed	Landslide		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)	x	2
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)	x	2
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)		
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)		
	Hazard causes minor damage and rarely loss of life (1 point)	x	1
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		18
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)	x	27
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36	x	27
	Medium = 15 - 22		
	Low = 8 - 14		
State Priority	High, Medium, Low	Medium	
Responsible Agency	MBMG, MDT		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	MBMG Billings Office plans to use LiDar data to repeat their study of movement of Billings rimrocks. Identify other vulnerable areas.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 9: Reduce Impacts from Landslides and Avalanche		
Objective	*Objective 9.3 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Landslides and Avalanche*		
Project	**Project 9.3.3 - Create a state-wide landslide map.**		
Hazard(s) Addressed	Landslide		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)	x	2
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	X	14
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	MBMG		
Potential Funding Source(s)	FEMA, State Resources		
Implementation Schedule	Short-term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Develop grant proposal with scope of work and budget. Obtain project funding. Utilize digital geologic map and field verification to create map.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 10: Reduce Impacts from Dam Failure Hazard		
Objective	*Objective 10.1 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Dam Failure*		
Project	**Project 10.1.1 - Develop updated evacuation maps for non-federal high hazard dams for risk assessment.**		
Hazard(s) Addressed	Dam Failure		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)	x	2
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)		
	Medium = Technology available/legislative support difficult/implementation possible (2 points)	x	2
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DNRC-Dam Safety		
Potential Funding Source(s)	FEMA National Dam Safety Program Assistance to States Grant, State Resources; NRCS funds		
Implementation Schedule	Short-Term		
Progress Made	Federal agencies reluctant to release inudation maps. New maps developed for Flower Creek, Painted Rocks, Middle Creek, Glacier Lake and East Fork dams. An assessment of existing evacuation maps was completed in 2013. This assessment identified priorities for redoing maps and tabulated deficiencies. Limited new mapping activitiy for other dams, due to lack of success in obtaining funding. Cost of developing detailed evacuation maps is high due to the advanced level of engineering required. Typical cost per map = $25,000.		
Planned Activities	The NRCS is initiating a program to develop more accurate and improved evacuation maps for their 11 dams. The State Dam Safety Program initiated a program to develop more accurate and improve evacuation maps for other dams identified as a priority in the 2013 assessment or missing evacuation maps.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 10: Reduce Impacts from Dam Failure Hazard		
Objective	*Objective 10.1 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Dam Failure*		
Project	**Project 10.1.2 - Evaluate existing dams for hazard classification.**		
Hazard(s) Addressed	Dam Failure		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)		
	Medium = Technology available/legislative support difficult/implementation possible (2 points)	x	2
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	12
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DNRC-Dam Safety		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	No mechanism in place to force dam owners to submit application, unless repair work is planned. Done as needed on an application basis. USFS completed comprehensive dam reclassification on Beaverhead-Deerlodge National Forest.		
Planned Activities	DNRC Dam Safety will continue owner education efforts with a focus on the liability of dam ownership to encourage owners to voluntarily submit hazard classifications.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 10: Reduce Impacts from Dam Failure Hazard		
Objective	*Objective 10.1 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Dam Failure*		
Project	**Project 10.1.3 - Keep Emergency Action Plans current.**		
Hazard(s) Addressed	Dam Failure		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	15
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	Dam owners (private, city, county and State); DNRC Dam Safety		
Potential Funding Source(s)	FEMA National Dam Safety Program Assistance to States Grant, State Resources		
Implementation Schedule	Ongoing		
Progress Made	EAPs for State-owned dams are continually updated; many issues with keeping EAP's for non-State owned dams updated. In addition, existing EAP's are in poor condition, varied formats, difficult to use by emergency managers.		
Planned Activities	DNRC Dam Safety lost the EAP coordinator position and must now rely on dam owners to keep EAPs current. New owner education and table top exercise program using contractor will help encourage dam owners to have up to date EAPs; New system of online approval and distribution close to being implemented (beta testing); Adopting new format for EAPs (NRCS Model) which will facilitate uniformity making EAP's easier to use by emergency managers.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 10: Reduce Impacts from Dam Failure Hazard		
Objective	*Objective 10.2 - Implement Structural Projects to Reduce Impacts from Dam Failure*		
Project	**Project 10.2.1 - Repair high hazard dams with deficiencies.**		
Hazard(s) Addressed	Dam Failure		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)	x	1
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)	x	1
Hazard Magnitude	Hazard has high damage and loss of life (3 points)	x	3
	Hazard causes moderage damage and occassional loss of life (2 points)		
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		19
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)		
	Project located in moderate population density area (Score X 1.25)	x	20.25
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36		
	Medium = 15 - 22	x	20.25
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	Dam owners		
Potential Funding Source(s)	State Grants and Loans (RRGL), Private loans, National Dam Rehab Act may provides future funds. (not appropriated yet); Water Storage Account, Revenue from Broadwater Hydro Power Project; State WUA contributions		
Implementation Schedule	Ongoing		
Progress Made	Flower Creek dam in Libby was repaired.		
Planned Activities	Dam Owners will continue this activity as funding allows. Lack of funding is an obstacle for many dam owners. In cases, restrictions on storage until repairs are completed are implemented to protect the downstream public.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 10: Reduce Impacts from Dam Failure Hazard		
Objective	*Objective 10.3 - Enhance Emergency Service Capabilities to Reduce Impacts from Dam Failure*		
Project	**Project 10.3.1 - Exercise Emergency Action Plans.**		
Hazard(s) Addressed	Dam Failure		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)	x	2
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)	x	1
Hazard Magnitude	Hazard has high damage and loss of life (3 points)	x	3
	Hazard causes moderage damage and occassional loss of life (2 points)		
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		20
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)		
	Project located in moderate population density area (Score X 1.25)	x	21.25
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36		
	Medium = 15 - 22	x	21.25
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	DNRC-Dam Safety, and DNRC Contractor, Dam Owners		
Potential Funding Source(s)	FEMA National Dam Safety Program Assistance to States Grant, State Resources		
Implementation Schedule	Ongoing		
Progress Made	DNRC Dam Safety facilitated EAP tests involving several dams in a specific area and focused on training emergency managers to deal with a dam failure. DES exercised EAPs with the following counties: 2013-Cascade, Choteau, and Yellowstone; 2014-Lincoln, Blaine, Broadwater, Jefferson, Lewis and Clark, Stillwater, Yellowstone, Carbon, and Daniels; 2015-Cascade, McCone, Richland, Phillips, Valley, Daniels, Roosevelt, Sheridan, Fort Peck, and Granite; 2016- Ravalli, Sanders, Lincoln, Teton, Hill, Beaverhead, Madison, Gallatin, Sweet Grass, Broadwater, Carbon, Phillips, Roosevelt, and Sheridan; and, 2017- Ravalli, Powell, Blaine, Fort Peck, Phillips, Daniels, and Roosevelt.		
Planned Activities	DNRC Dam Safety has implemented a new owner education and table top exercize program using a private engineering contractor. Dams chosen will have deficiencies or have a need for additional public awareness. The primary focus will be more on training dam owners on how to prevent an emergency in the first place. A secondary focus will be on hazards in the evacuation area. A variety of factors will be used to determine dams, including staff workload, seriousness of deficiency, willingness of dam owner to participate and location.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 10: Reduce Impacts from Dam Failure Hazard		
Objective	*Objective 10.3 - Enhance Emergency Service Capabilities to Reduce Impacts from Dam Failure*		
Project	**Project 10.3.2 - Encourage continued participation of local and tribal DES in DNRC dam safety table top exercises.**		
Hazard(s) Addressed	Dam Failure		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DNRC-Dam Safety, and DNRC Contractor, Dam Owners		
Potential Funding Source(s)	FEMA National Dam Safety Program Assistance to States Grant, State Resources		
Implementation Schedule	Ongoing		
Progress Made	DNRC Dam Safety facilitated EAP tests involving several dams in a specific area and focused on training emergency managers to deal with a dam failure. DES exercised EAPs with the following counties: 2013- Cascade, Choteau, and Yellowstone; 2014-Lincoln, Blaine, Broadwater, Jefferson, Lewis and Clark, Stillwater, Yellowstone, Carbon, and Daniels; 2015-Cascade, McCone, Richland, Phillips, Valley, Daniels, Roosevelt, Sheridan, Fort Peck, and Granite; 2016- Ravalli, Sanders, Lincoln, Teton, Hill, Beaverhead, Madison, Gallatin, Sweet Grass, Broadwater, Carbon, Phillips, Roosevelt, and Sheridan; and, 2017- Ravalli, Powell, Blaine, Fort Peck, Phillips, Daniels, and Roosevelt.		
Planned Activities	DNRC Dam Safety has implemented a new owner education and table top exercize program using a private engineering contractor. Dams chosen will have deficiencies or have a need for additional public awareness. The primary focus will be more on training dam owners on how to prevent an emergency in the first place. A secondary focus will be on hazards in the evacuation area. A variety of factors will be used to determine dams, including staff workload, seriousness of deficiency, willingness of dam owner to participate and location.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 10: Reduce Impacts from Dam Failure Hazard		
Objective	*Objective 10.3 - Enhance Emergency Service Capabilities to Reduce Impacts from Dam Failure*		
Project	**Project 10.3.3 - Streamline and improve DNRC earthquake response protocol.**		
Hazard(s) Addressed	Dam Failure		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DNRC (Dept. initiative)		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Short-Term		
Progress Made	New project for 2018 Plan.		
Planned Activities	DNRC is working on a comprehensive plan to improve their earthquake response. The plan should be complete and in place by the Vigilant Guard exercise in 2018 which will simulate an earthquake near Hebgen Lake dam. DNRC will test their improved response plan at this time.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 10: Reduce Impacts from Dam Failure Hazard		
Objective	*Objective 10.4 - Implement Public Education and Awareness Projects to Reduce Impacts from Operational Flows*		
Project	**Project 10.4.1 - Provide awareness to community of possible flooding from operational flows.**		
Hazard(s) Addressed	Dam Failure		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	Medium	
Responsible Agency	DNRC-Dam Safety		
Potential Funding Source(s)	FEMA National Dam Safety Program Assistance to States Grant, State Resources; NRCS funds		
Implementation Schedule	Ongoing		
Progress Made	New Project for 2018 Plan.		
Planned Activities	Identify dam locations where this may be problematic. Include operational flow impacts as an additional map in emergency action plans.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 11: Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security		
Objective	*Objective 11.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security*		
Project	**Project 11.1.1 - Raise level of awareness of citizens of Montana on topics associated with terrorism and cyber security.**		
Hazard(s) Addressed	Terrorism, Cyber Security		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	All State agencies, DHS		
Potential Funding Source(s)	State and federal resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	MT Info Security Advisory Council was established in 2015 and brings together state, law enforcement and private industry to dissemintate information on cyber security. Monthly meetings and website. Empower state partners to disseminate information to local partners. Training and education will be offered through Public Service Commission.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 11: Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security		
Objective	*Objective 11.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security*		
Project	**Project 11.1.2 - Promote information sharing on prevention of acts of terrorism by local and state agencies and partners.**		
Hazard(s) Addressed	Terrorism		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	15
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, DMA, DHS		
Potential Funding Source(s)	State and federal resources		
Implementation Schedule	Mid-term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Work with MT AG's office to develop an acceptible program. Disseminate info to local and tribal partners.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 11: Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security		
Objective	*Objective 11.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security*		
Project	**Project 11.1.3 - Update emergency action flip chart that can be provided to schools.**		
Hazard(s) Addressed	Terrorism		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	13
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, OPI		
Potential Funding Source(s)	Dept. Education grants		
Implementation Schedule	Mid-term		
Progress Made	New project for 2018 Plan.		
Planned Activities	Reach out to schools to see if they're interested in flip charts. Explain about annex and emergency action plans. Provide outreach on armed intruders.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 11: Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security		
Objective	*Objective 11.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security*		
Project	**Project 11.1.4 - Promote availability of armed intruder/active shooting training.**		
Hazard(s) Addressed	Terrorism		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, DHS		
Potential Funding Source(s)	State and federal resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Provide outreach to local jurisdictions and tribes on availability of training.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 11: Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security		
Objective	*Objective 11.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security*		
Project	**Project 11.1.5 - Promote and encourage cyber assessments for water and wastewater systems.**		
Hazard(s) Addressed	Cyber Security		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, DPHHS, DHS		
Potential Funding Source(s)	State and federal resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Provide outreach to local jurisdictions and tribes that tools are available from DHS that will enable them to conduct their own assessments.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 11: Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security		
Objective	*Objective 11.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security*		
Project	**Project 11.1.6 - Promote and educate on the Federal Homeland Security Infrastructure Protection Program and how they can help locals and tribes.**		
Hazard(s) Addressed	Terrorism, Cyber Security		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	18
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, DHS		
Potential Funding Source(s)	State and federal resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan.		
Planned Activities	Have Office of Infrastructure Protection present at DES Conference. Encourage meetings with		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 11 - Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security		
Objective	*Objective 11.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security*		
Project	**Project 11.2.1 - Perform vulnerability assessments on security of State buildings.**		
Hazard(s) Addressed	Terrorism, Cyber Security		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)	x	2
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)	x	1
Hazard Magnitude	Hazard has high damage and loss of life (3 points)	x	3
	Hazard causes moderage damage and occassional loss of life (2 points)		
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		21
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)	x	31.5
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36	x	31.5
	Medium = 15 - 22		
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	Admin - State Continuity & Emergency Management Office		
Potential Funding Source(s)	State and federal resources		
Implementation Schedule	Short-term		
Progress Made	New project for 2018 Plan		
Planned Activities	System is in place to collect building info for Emergency Action Plans (EAPs) which are the building evacuation and employee accountability plans. Staff has received infrastructure protection training and is available to conduct assessments; however, grants are needed to fund travel. Physical Security Plans will include physical current and needed state of security. Will utilize with incident and capability modules.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 11 - Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security		
Objective	*Objective 11.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security*		
Project	**Project 11.2.2 - Perform cyber assessments for State-owned water and wastewater systems.**		
Hazard(s) Addressed	Cyber Security		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)	x	1
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)	x	2
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)		
Hazard Magnitude	Hazard has high damage and loss of life (3 points)		
	Hazard causes moderage damage and occassional loss of life (2 points)		
	Hazard causes minor damage and rarely loss of life (1 point)	x	1
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		18
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)		
	Project located in moderate population density area (Score X 1.25)	x	22.5
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36		
	Medium = 15 - 22	x	22.5
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	Admin, DHS		
Potential Funding Source(s)	State and federal resources		
Implementation Schedule	Mid-term		
Progress Made	New project for 2018 Plan		
Planned Activities	Do assessments at other WWPs		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 11: Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security		
Objective	*Objective 11.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security*		
Project	**Project 11.2.3 - Support mitigation-related goals, objectives, and actions of the State Core Capabilities.**		
Hazard(s) Addressed	Terrorism, Violence, Civil Unrest, Cyber Security		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	18
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES		
Potential Funding Source(s)	State and federal resources		
Implementation Schedule	Ongoing		
Progress Made	Ongoing planning effort at DES.		
Planned Activities	Continue same.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 11: Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security		
Objective	*Objective 11.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security*		
Project	**Project 11.2.4 - Develop framework to prioritize special events at the State level.**		
Hazard(s) Addressed	Violence, Civil Unrest		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	13
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, National Guard, DOJ, DHS		
Potential Funding Source(s)	State and federal resources		
Implementation Schedule	Short-term		
Progress Made	New project for 2018 Plan		
Planned Activities	Develop clearinghouse of events reporting. Reach out to MT Assoc. of Counties.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 11: Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security		
Objective	*Objective 11.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security*		
Project	**Project 11.2.5 - Continue vulnerability assessments for large events.**		
Hazard(s) Addressed	Violence, Civil Unrest		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	13
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, National Guard, DOJ, DHS		
Potential Funding Source(s)	State and federal resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan		
Planned Activities	National Guard conducts vulnerability assessments for events over 300 people.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 11: Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security		
Objective	*Objective 11.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security*		
Project	**Project 11.2.6 - Establish working group to develop resource guide of tools for local jurisdictions and tribes.**		
Hazard(s) Addressed	Terrorism, Violence, Civil Unrest, Cyber Security		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)	x	2
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18	x	16
	Medium = 10 - 14		
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, National Guard, DOJ, DHS		
Potential Funding Source(s)	State and federal resources		
Implementation Schedule	Short-term		
Progress Made	New project for 2018 Plan		
Planned Activities	Develop a one page online resource guide with internet links and contacts on active shooter training, vulnerability assessments, emergency protection, and funding opportunties. PSA in Colorado has a good tool that could serve as basis.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Non-Planning Project Scoring Matrix			
Goal	Goal 11 - Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security		
Objective	*Objective 11.3 - Implement Structural Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security*		
Project	**Project 11.3.1 - Consider physical hardening of critical facilities including bollards and generators.**		
Hazard(s) Addressed	Terrorism		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)	x	1
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)		
Population Benefit	High = 100% to 70% of State residents (3 points)	x	3
	Medium = 30% to 70% of State residents (2 points)		
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)	x	3
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)		
Averts Economic Loss	High = > $1,000,000 (3 points)	x	3
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation highly unlikely (1 point)		
Environmentally Sound	Project is protective of the environment and sustainable (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
Hazard Frequency	Project mitigates common hazard; occurs more than once a year (3 points)		
	Project mitigates a frequent hazard; occurs less than once a year but more than once a decade (2 points)		
	Project mitigates an Infrequent hazard; occurs less than once a decade (1 point)	x	1
Hazard Magnitude	Hazard has high damage and loss of life (3 points)	x	3
	Hazard causes moderage damage and occassional loss of life (2 points)		
	Hazard causes minor damage and rarely loss of life (1 point)		
SUBTOTAL	ADD SCORE FROM CATEGORIES ABOVE		20
Base Plus Risk Weighting Factor	Project located in high population density area (Score X 1.5)	x	30
	Project located in moderate population density area (Score X 1.25)		
	Project specific to rural location (Score X 1)		
TOTAL SCORE	High = 23 - 36	x	30
	Medium = 15 - 22		
	Low = 8 - 14		
State Priority	High, Medium, Low	High	
Responsible Agency	Admin, University System		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan		
Planned Activities	Conduct building assessments to determine needs. Apply for funding. Implement physical hardening for high priority buildings, in new construction, and with remodel projects.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 11: Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security		
Objective	*Objective 11.4 - Enhance Emergency Service Capabilities to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security*		
Project	**Project 11.4.1 - Continue efforts to coordinate law enforcement for potential civil unrest/violence associated with resource development and large events in Montana.**		
Hazard(s) Addressed	Violence, Civil Unrest		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)		
	Low = Little of no economic impact (1 point)	x	1
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	13
	Low = 6 - 9		
State Priority	High, Medium, Low	High	
Responsible Agency	DES, National Guard, FWP, local and tribal jurisdictions		
Potential Funding Source(s)	State resources		
Implementation Schedule	Ongoing		
Progress Made	New project for 2018 Plan		
Planned Activities	Establish framework whereby law enforcement entities are informed on potential threats. Ensure that FWP game wardens are involved in briefings.		

State of Montana Mitigation Action Plan			
2018 MHMP Update - Planning Project Scoring Matrix			
Goal	Goal 12: Reduce Impacts from Volcanic Ash		
Objective	*Objective 12.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Volcanic Ash*		
Project	**Project 12.1.1 Educate the public on how to respond to volcanic ash fall-out when monitoring determines eruption is imminent.**		
Hazard(s) Addressed	Volcanic Ash		
DES District(s)	Statewide		
Benefit-Cost Ranking	**Options**	**Selection**	**Score**
Estimated Cost	High = > $500,000 (1 point)		
	Medium = $100,000 to $500,000 (2 points)		
	Low = < $100,000 (3 points)	x	3
Population Benefit	High = 100% to 70% of State residents (3 points)		
	Medium = 30% to 70% of State residents (2 points)	x	2
	Low = < 30% State residents (1 points)		
Property Benefit	High = > $1,000,000 (3 points)		
	Medium = $500,000 to $1,000,000 (2 points)		
	Low = < $100,000 (1 points)	x	1
Averts Economic Loss	High = > $1,000,000 (3 points)		
	Medium = <$1,000,000 (2 points)	x	2
	Low = Little of no economic impact (1 point)		
Technically Feasible	High = Technology available/legislative support or implementation very likely (3 points)	x	3
	Medium = Technology available/legislative support difficult/implementation possible (2 points)		
	Low = No technology available/legislative support or implementation unlikely (1 point)		
Environmentally Sound	Project is protective of the environment (3 points)	x	3
	Project is protective but moderately sustainable (2 points)		
	Project is neither protective nor sustainable (1 point)		
TOTAL SCORE	High = 15 - 18		
	Medium = 10 - 14	x	14
	Low = 6 - 9		
State Priority	High, Medium, Low	Low	
Responsible Agency	DES		
Potential Funding Source(s)	State Resources		
Implementation Schedule	Ongoing		
Progress Made	DES uses social media to provide outreach on all hazards including volcanic ash.		
Planned Activities	Continue social media campaign. Increase efforts is eruption concern is apparent.		

APPENDIX C-2

MITIGATION STRATEGY RECONCILIATION

APPENDIX C-2				
2018 STATE OF MONTANA MHMP UPDATE				
MITIGATION STRATEGY RECONCILIATION - 2013 to 2018				
GOAL	OBJECTIVE	PROJECT	STATUS	COMMENTS
Goal 1 - Reduce Impacts from All Hazards				
	Objective 1.1 - Implement Property Protection Projects to Reduce Impacts from All Hazards			
		Project 1.1.1 - Identify and protect essential government records in appropriate facilities.	Retain	
		Project 1.1.2 - Plan for the protection of historic and cultural properties in hazard prone areas	Retain	Was Project 1.5.1
	Objective 1.2 - Implement Public Education and Awareness Projects to Reduce Impacts from All Hazards			
		Project 1.2.1 - Promote mitigation awareness and successes.	Retain	Was Project 2.2.4
		Project 1.2.2 - Continue outreach of mitigation project funding opportunities to agencies, counties and tribes.	Reword	Was Project 2.3.1. Continue outreach of mitigation project funding opportunities.
		Project 1.2.3 - Support National Weather Service's efforts to communicate probabilistic hazard information.	New project	
		Project 1.2.4 - Promote hazard mitigation education in schools.	Retain	Was Project 1.3.2
		Project 1.2.5 - Promote public emergency notification sign-ups and All-Hazards NOAA Weather Radios through counties.	New project	
		Project 1.2.6 - Coordinate public emergency notification for all hazards with local, state and federal jurisdictions through the Emergency Alert System.	New project	
		Project 1.2.7 - Support the Montana Ready Communities Initiative.	New project	
		Project 1.2.8 - Promote importance of developing personal preparedness kits.	Reword	Was Project 7.2.1 - Encourage local jurisdictions and tribal nations to create partnerships with a private company for winter survival kits already put together that can be sold to the public at a reasonable price.
	Objective 1.3 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from All Hazards			
		Project 1.3.1 - Establish permanent Montana Mitigation Team.	Reword	Was Project 2.3.4 - Increase the scope and participation of the State Planning Team during State PDM updates.
		Project 1.3.2- Bring agency hazard experts, emergency preparedness coordinators, and partners together on a regular basis to share information, coordinate efforts, and identify funding opportunities in order to focus mitigation efforts and avoid overlaps.	Reword	Was Project 2.3.3 - Continue to engage State agencies such as DMA, DOA, MDT, MFWP and DNRC in the mitigation planning process.
		Project 1.3.3 - Build relationships with local, state and federal agencies and stakeholders who promote public safety in an effort to further the National Weather Service's mission of protecting lives and property and enhancing the economy from all hazards.	New project	
		Project 1.3.4 - Identify, maintain and support Montana recovery and resiliency efforts.	New project	
		Project 1.3.5 - Provide mitigation benefit-cost analysis (BCA) training courses.	Retain	Was Project 2.1.1

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GOAL	**OBJECTIVE**	**PROJECT**	**STATUS**	**COMMENTS**
		Project 1.3.6 - Coordinate Local and Tribal Multi-Hazard Mitigation Plan Updates.	Retain	Was Project 2.1.2
		Project 1.3.7 - Assist local jurisdictions and Tribes fill out FEMA mitigation grant applications.	Retain	Was Project 2.1.3
		Project 1.3.8 - Promote participation in the State Emergency Response Committee (SERC).	New project	
	Objective 1.4 - Enhance Emergency Service Capabilities to Reduce Impacts from All Hazards			
		Project 1.4.1 - Provide and promote on-site and remote weather support for all hazards to local, state and federal partners.	New project	
		Project 1.4.2 - Recommend voluntary placement of NOAA Weather Radios in government offices, public facilities, homes, and when recreating (battery operated).	Reword	Combined three projects into one, including: Project 1.2.1 - Place NOAA weather radios in all state government offices; Project 1.2.2 - Promote use of NOAA weather radios in homes and when recreating (battery operated); and Project 1.2.3 - Recommend voluntary placement of NOAA weather radios in restaurants, gas stations, stores, day cares, movie theaters, baseball fields, and/or golf courses."
		Project 1.4.3 - Provide Incident Command System training and other NIMS requirements to all appropriate State employees.	New project	
		Project 1.4.4 - Identify exercises that can be brought to locals.	New project	
	Objective 1.5 - Implement Regulatory Pro jects to Reduce Impacts from All Hazards			
		Project 1.5.1 - Continually update planning and zoning guidelines and model regulations (including growth policies, subdivision regulations, floodplain regulations, design standards for open space, setbacks and vegetative buffers) which recognize the risk from natural and manmade hazards and offer recommendations on best practices and smart growth solutions.	Reword	Was Project 2.3.3 - Encourage local and Tribal growth policies to consider natural and man-made hazards.
	Objective 1.6 - Suggest Legislative Changes to Reduce Impacts from All Hazards			
		Project 1.6.1 - Explore economic incentives for mitigation (i.e. insurance premium discounts, state tax credits, etc.).	New project	
		COMPLETE - Encourage local jurisdictions and Tribal Nations to geo-locate their critical facilities for use in risk assessment.	Complete	Updated local PDM plans have done this. NRIS has some spatial coordinates available for local critical facilities with more accurate locations than HAZUS.
		COMPLETE - Negotiate with FEMA to unify and simplify HMA grant process.	Complete	Was Project 2.1.5
		DELETE- Encourage DES staff to assist local and Tribal emergency managers develop a plan of action to complete their more feasible mitigation projects.	Delete	This isnt something that will be done by the other DES staff it would just be a few. Was Project 2.1.4

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MITIGATION STRATEGY RECONCILIATION - 2013 to 2018				
GOAL	**OBJECTIVE**	**PROJECT**	**STATUS**	**COMMENTS**
		DELETE - Place NOAA weather radios in all state government offices.	Delete	Combined with Project 1.2.5.
		DELETE - Recommend voluntary placement of NOAA weather radios in restaurants, gas stations, stores, day cares, movie theaters, baseball fields, and/or golf courses.	Delete	Combined with Project 1.2.1. NWS is doing this. It is rolled into all their products.
		DELETE - Document mitigation successes.	Delete	Combined with Project 1.2.1. Was Project 2.3.2.
		DELETE - Recommend that local and Tribal PDM Plans conduct Level 2 HAZUS analysis for critical facilities.	Delete. .	Some updated local PDM plans in the Intermountain Seismic Belt have done this.
		DELETE - Encourage HMA applicants to work more closely with federal counterparts and utilize their expertise and training relative to hazard mitigation.	Delete	No progress to report.
		DELETE - Create a State-funded grant program to assist with the 25 percent PDM-C match for local and Tribal governments.	Delete	Bill of this nature failed in 2009 legislature.
		DELETE - Promote State programs that receive adequate funding to engage in mitigation planning and project implementation.	Delete	SHMO does this as part of his job.
Goal 2 - Reduce Impacts of Wildland and Rangeland Fires				
	Objective 2.1 - Implement Property Protection Projects to Reduce Impacts from Wildfire			
		Project 2.1.1 - Conduct wildland fuel reduction on state property including parks, state structures, day-use facilities and highway rights-of-way.	Retain	Was Project 3.1.1
		Project 2.1.2 - Encourage fuel reduction in the WUI and evacuation routes on county, tribal, and privately-owned lands.	Retain	Was Project 3.1.2
		Project 2.1.3 - Encourage utilities and private landowners to conduct fuel reduction in rights-of-way.	Retain	Was Project 3.1.3.
		Project 2.1.4 - Reduce wildfire risk associated with cultural resources.	New project	
		Project 2.1.5 - Support and coordinate hazardous fuels reduction projects and emphasize the importance of projects that support wood products industry and biomass facilities.	Reword	Was Project 3.1.5 - Encourage biomass utilization from wildland fuel mitigation projects.
	Objective 2.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Wildfire			
		Project 2.2.1 - Develop and update state wildfire risk map and GIS layer.	New project	
		Project 2.2.2 - Identify other values at risk from wildfire and create GIS layer.	New project	
		Project 2.2.3 - Develop working group to encourage insurance underwriters to establish rate for fuel mitigated properties.	New project	
		Project 2.2.4 - Compile database of structure damage from wildfire for use in future risk and damage assessments.	Retain	Was Project 3.3.3.

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GOAL	OBJECTIVE	PROJECT	STATUS	COMMENTS
		Project 2.2.5 - Establish collaborative group to evaluate hazardous fuels reduction and forestry project s and create priorities and encourage groups at local level.	New project	
		Project 2.2.6 - Participate in the coordination of mitigation projects on federal lands adjacent to state/private holdings.	Retain	Was Project 3.1.4.
		Project 2.2.7 - Support and provide financial assistance when available to counties and public non-profit organizations that work to reduce residents and communities wildfire risk.	Reword	Was Project 3.2.2 - Continue to support and fund the statewide FireSafe MT orgs that gathers, disseminates and assists counties and other political subdivisions with grant information, project development and operations.
		Project 2.2.8 - Promote the development of projects that strive to better understand community and homeowners perceptions (example perception is wildfire risk) in order to develop more effecting programs that move people into action.	New project	
		Project 2.2.9 - Promote and utilize parcel level risk assessment tool available through Situation Analyst Montana.	New project	
		Project 2.2.10 - Promote partnerships that will facilitate immediate assistance to communities, producers and businesses after a wildfire.	New project	
		Project 2.2.11 - Create a standard statewide criteria for mapping Montana's WUI and support Counties who are willing to use this standard and update their WUI.	New project	
		Project 2.2.12- Assist local/tribal partners with updaing CWPPs.	New project	
	Objective 2.3 - Implement Public Education and Awareness Projects to Reduce Impacts from Wildfire			
		Project 2.3.1 - Promote public responsibility through education and marketing that moves people into action to prepare their property and communities for wildfire, especially residents who live in the wildland urban area and/or high wildfire areas.	Reword	Was Project 3.2.1 - Promote public responsibility for defensible/survivable space in the WUI.
		Project 2.3.2 - Coordinate, disseminate, and educate the public, realtors, contractors and insurers on wildfire preparedness.	New project	
		Project 2.3.3 - Update templates for smoke messaging.	New project	
	Objective 2.4 - Implement Natural Resource Protection Projects to Reduce Impacts from Wildfire			
		Project 2.4.1 - Identify and further develop resilient landscapes and post-fire events such as monitoring, grass planting, and erosion control.	New project	
	Objective 2.5 - Implement Regulatory Projects to Reduce Impacts from			
		Project 2.5.1 - Promote and educate local jurisdictions on the benefits of plans, land use regulations, revenue-generating strategies, and voluntary measures (i.e. WUI Code, subdivision regulations, zoning, building codes).	New project	
		Project 2.5.2 - Consolidate permitting process between DEQ and counties regarding burn permits.	New project	

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GOAL	OBJECTIVE	PROJECT	STATUS	COMMENTS
	Objective 2.6 - Enhance Emergency Service Capabilities to Reduce Impacts from Wildfire			
		Project 2.6.1 - Ensure that continuity of operations can be maintained during wildfire events.	New project	
		Project 2.6.2 - Improve ingress and egress, i.e. evacuation routes on county, tribal and private lands.	New project	
		DELETE - Protect state structures in WUI via fuel reduction.	Delete	Was Project 3.1.6. Redundant with project 2.1.1.
Goal 3: Mitigate the Potential Loss of Life and Property from Flooding				
	Objective 3.1 - Implement Property Protection Projects to Reduce Impacts from Flooding			
		Project 3.1.1 - Encourage jurisdictions to pursue mitigation projects for repetitive loss structures or any severe repetitive loss properties identified in the future.	Retaiin	Was Project 4.1.1.
	Objective 3.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Flooding			
		Project 3.2.1 - Improve flood risk hazard mapping.	Reword	Combined three projects into one, including; Project 4.4.2 - Develop mapping for flood prone areas without maps; and, Project 4.4.3 - Update floodplain mapping from approximate to detailed maps; Project 4.4.4 - Establish a schedule for National Flood Insurance Program map review and updates.
		Project 3.2.2 - Coordinate with partners on flood mitigation (e.g. Joint Stream Restoration Committee, Conservation Districts, Drought and Water Supply Committee, Silver Jackets).	Reword	Was Project 4.4.5 - Encourage coordination between DES Coordinators, floodplain managers and land use planners.
		Project 3.2.3 - Develop digital mapping for all levees within the State.	New project	
		Project 3.2.4 - Identify and catalog all repetitive and severe repetitive loss properties in the State.	New project	
	Objective 3.3 - Implement Natural Resource Protection Projects to Reduce Impacts from Flooding			
		Project 3.3.1 - Encourage appropriate entities to obtain conservation easements for land in the floodplain.	Retain	Was Project 4.1.3
	Objective 3.4 - Implement Structural Projects to Reduce Impacts from Flooding			
		Project 3.4.1 - Increase flood water conveyance at transportation crossings including upgrades to undersized bridges or those with scour damage.	Reword	Was Project 4.2.1 - Encourage mitigation projects that upgrade undersized bridges that inhibit water flow or those with scour potential.
		Project 3.4.2 - Implement appropriate mitigation for highways that flood.	New project	
		Project 3.4.3 - Support local communities to elevate community water systems where vulnerable to flooding.	New project	

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GOAL	**OBJECTIVE**	**PROJECT**	**STATUS**	**COMMENTS**
		Project 3.4.4 - Support local communities to install and/or enhance storm water systems to reduce flood damage.	New project	
		Project 3.4.5 - Encourage Natural Channel Design (NCD) techniques for stream restoration and bank restoration/stabilization projects to increase flood resiliency.	New project	
		Project 3.4.6 - Encourage projects that will increase stream length to regain natural function and reduce impact of flooding.	New Project	
	Objective 3.5 - Implement Public Education and Awareness Projects to Reduce Impacts from Flooding			
		Project 3.5.1- Promote flood hazard risk communications.	New project	
		Project 3.5.2 - Continue to provide education on benefits of National Flood Insurance Program (NFIP).	Retain	Was Project 4.3.1
		Project 3.5.3 - Provide outreach and technical assistance in joining the NFIP Community Rating System for reducing flood insurance premiums.	Retain	Was Project 4.4.1.
		Project 3.5.4 - Educate home and business owners on anchoring fuel storage tanks, backflow valves in toilets and floating propane tanks.	Reword	Was Project 4.3.3 - Educate home and business owners on utility tie-downs.
		Project 3.5.5 - Identify and manage risks associated with levees by promoting insurance and financial assistance programs.	New Project	
		Project 3.5.6 - Support community-based education and outreach to landowners about the risks of developing outside of designated areas, but in known flood prone and Channel Migration Zones.	New project	
		Project 3.5.7 - Educate public on need to limit future development in the floodplain.	Retain	Was Project 4.3.2.
	Objective 3.6 - Enhance Emergency Service Capabilities to Reduce Impacts from Flooding			
		Project 3.6.1 - Improve identification of ice jams and promote development of emergency action plans.	Reword	Was Project 4.2.2 - Encourage communities at risk from ice jam flooding to apply for mitigation grants to install ice jam mitigation systems.
		DELETE - Develop and improve upon model floodplain ordinances for local and Tribal governments.	Delete	Was Project 4.1.2. Combined w/ similar project under All Hazards
		DELTE - Develop mapping for flood prone areas without maps.	Delete	Was Project 4.4.2. Combined with Project 3.2.1.
		DELETE - Update floodplain mapping from approximate to detailed maps.	Delete	Was Project 4.4.3. Combined with Project 3.2.1
		DELETE - Establish a schedule for National Flood Insurance Program map review and updates.	Delete	Was Project 4.4.4. Combined with Project 3.2.1
Goal 4: Reduce Impacts from Earthquakes			Reword	Was: Reduce Potential Earthquake Losses in Seismically Prone Areas
	Objective 4.1 - Implement Prevention Projects to Reduce Impacts from Earthquakes		New objective	

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MITIGATION STRATEGY RECONCILIATION - 2013 to 2018				
GOAL	**OBJECTIVE**	**PROJECT**	**STATUS**	**COMMENTS**
		Project 5.1.1 - Adopt seismic requirements of updated International Code Council.	Retain	Was Project 5.1.2
	Objective 4.2 - Implement Structural Projects to Reduce Impacts from Earthquakes		Reword	Was: Provide for earthquake resistance in new construction.
		Project 5.2.1 - Integrate seismic resilience into significant building retrofits.	Retain	Was Project 5.1.1
		Project 5.2.2 - At Montana University System campuses in the intermountain seismic belt, seismically retrofit most vulnerable and highest occupancy buildings.	Retain	Was Project 5.3.3
		Project 5.2.3 - At the Department of Corrections facilities in Deer Lodge, improve support systems and implement seismic upgrades to ensure security and maintain operation.	Retain	Was Project 5.3.4
		Project 5.2.4 - At the Montana State Hospital in Warm Springs, seismically harden buildings and expand support systems to assure continued operation and meet medical needs.	Retain	Was Project 5.3.5
		Project 5.2.5 - At the Capitol Complex in Helena, seismically retrofit buildings with most vulnerability and highest occupancy to mitigate loss.	Retain	Was Project 5.3.2
		Project 5.2.6 - Retrofit bridges in Intermountain Seismic Belt, as needed.	New project	
		Project 5.2.7 - Complete seismic retrofits on historic and culturally significant buildings including Bannack, and Virginia City.	New project	
	Objective 4.3 - Implement Public Education and Awareness Projects to Reduce Impacts from Earthquakes		Reword	Was: Educate the public in earthquake mitigation and readiness.
		Project 5.3.1 - Continue "Earthquake Preparedness Month" outreach activities during the month of October.	Retain	Was Project 5.2.1
		Project 5.3.2 - Continue presentations and distribution of earthquake preparedness materials including encouraging steps such as anchoring hot water heaters.	Retain	Was Project 5.2.2
		Project 5.3.3 - Encourage and educate home owners and businesses in the intermountain seismic belt to implement seismic retrofit projects.	Retain	Was Project 5.3.9
	Objective 4.4 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Earthquakes		New objective	
		Project 4.4.1 - Expand and upgrade the earthquake monitoring network and information reporting capabilities in high hazard areas.	Retain	Was Project 5.2.3
		Project 4.4.2 - Quantify seismic hazards posed by faults.	Retain	Was Project 5.2.4
		Project 4.4.3 - Encourage local jurisdictions and tribal nations in the intermountain seismic belt to conduct seismic evaluations of their critical facilities.	Retain	Was Project 5.3.8

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GOAL	OBJECTIVE	PROJECT	STATUS	COMMENTS
		Project 4.4.4 - Complete liquifaction mapping of potentially vulnerable areas in high population areas within Intermountain Seismic Belt.	New project	
		Project 4.4.5 - Work with insurance companies and Montana legislature to develop program that offers discounts on earthquake insurance for residents that complete training and implement non-structural projects around their homes.	New project	
	Objective 4.5 - Implement Property Protection Projects to Reduce Impacts from Earthquakes		Reword	Was: Implement non-structural mitigation projects to harden State and community assets and infrastructure from seismic hazards.
		Project 4.5.1 - Survey and install utility shut-off valves at all state buildings in the intermountain seismic belt.	Retain	Was Project 5.3.1
		Project 4.5.2 - Implement non-structural projects at state buildings in the intermountain seismic belt such as anchoring utilities.	Retain	Was Project 5.4.1
		Project 4.5.3 - Utilize 3-mil film on windows of public buildings in intermountain seismic belt to avoid shattering during seismic event.	New project	
	Objective 4.6 - Enhance Emergency Service Capabilities to Reduce Impacts from Earthquakes		Reword	Was: Seismically retrofit existing critical facilities/infrastructure and government assets.
		Project 4.6.1 - Provide training to Rapid Building Assessment Teams to evaluate buildings after an earthquake.	New project	
		DELETE - Encourage private utilities in intermountain seismic belt to retrofit their systems for seismic stability.	Delete	Was 5.3.10.Delete - Not a seismic project
		DELETE - At the Montana Developmental Center and Riverside in Boulder, implement seismic upgrades.	Delete	Was 5.3.6. Delete - MDC is no longer operating
Goal 5: Reduce the Impacts from Drought				
	Objective 5.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Drought			
		Project 5.1.1 - Provide outreach on management practices for minimizing the impacts from drought.	Reword.	Was Project 6.1.1 - Increase the educational emphasis given to forest and range management practices for the minimizing of drought impacts.
		Project 5.1.2 - Educate ranchers to work with local weed districts to reduce spread of invasive species.	New Project	
		Project 5.1.3 - Encourage voluntary water conservation by domestic, municipal, and industrial users.	Retain	Was Project 6.3.1
		Project 5.1.4 - Provide outreach on algal blooms and what to do when they happen.	New Project	
		Project 5.1.5- Develop a toolbox to assist local/ tribal partners with drought management planning	New Project	
	Objective 5.2 - Support Planning and Monitoring Projects to Reduce Impacts from Drought			
		Project 5.2.1 - Inventory operating plans of reservoirs to ensure drought contingency plans.	Retain	Was Project 6.1.2

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GOAL	OBJECTIVE	PROJECT	STATUS	COMMENTS
		Project 5.2.2 - Encourage system of soil moisture gauges to monitor drought.	Retain	Was Project 6.1.4
		Project 5.2.3 Develop drought plans as an addendum to the local/tribal mitigation plan.	New Project	
	Objective 5.3 - Support Natural Resource Protection Efforts to Reduce Impacts from Drought			
		Project 5.3.1 - Continue to implement angling restrictions and closures to reduce drought impacts on Montana fisheries.	New Project	
		Project 5.3.2 - Continue to administer Fish, Wildlife, and Parks' Water Rights and Water Reservations to protect instream flows during drought for the benefit of fish and wildlife	New Project	
	Objective 5.4 - Implement Structural Projects to Reduce Impacts from Drought			
		Project 5.4.1 - Consider feasibility of creating infiltration basins to capture early spring runoff.	New Project	
		Project 5.4.2 - Encourage passive water storage where it will enhance natural function and increase water supply security.	Reword.	Was Project 6.4.1 - Consider feasible water storage where it will increase water supply security such as development of catchment basins with wells and storage capacity and/or percolation ponds.
		Project 5.4.3 - Encourage water conveyance efficiencies in agricultural, municipal, and industrial uses.	New Project	
		Project 5.4.4 - Encourage removal of abandoned structures to improve stream connectivity.	New Project	
	Objective 5.5 - Suggest Legislative Changes to Reduce Impacts from Drought			
		Project 5.5.1 - Develop a model water conservation ordinance for use by municipalities and rural domestic water suppliers.	Retain	Was Project 6.5.1
		Project 5.5.2 - Clarify state law to allow voluntary, temporary changes of water rights and contract water exchanges.	Retain	Was Project 6.5.2
		Project 5.5.3 - Find ways to expedite the resolution of water use conflicts and water rights enforcement during drought.	Retain	Was Project 6.4.4.
		Project 5.5.4 - Adopt rules for the installation of water metering devices to resolve conflict on water short drainages.	Reword.	Was Project 6.4.3 - Urge the Board of Natural Resources and Conservation to adopt rules for the installation of water metering devices to resolve conflict on water short drainages.
		Project 5.5.5 - Establish stronger economic and other incentives for private investments in water conservation.	Retain	Was Project 6.2.1
		DELETE - Develop and implement drought plans for state-funded reservoirs.	Delete	Was Project 6.1.3. Delete - Same as Project 5.2.1
		DELETE - Clarify state law so that water rights holders who conserve water are clearly allowed to sell or lease salvaged water in a manner that does not adversely affect water rights.	Delete	Was Project 6.3.2 Delete - Not feasible
Goal 6: Reduce Impacts from Severe Weather				

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GOAL	OBJECTIVE	PROJECT	STATUS	COMMENTS
	Objective 6.1 - Implement Property Protection Projects to Reduce Impacts from Severe Weather			
		Project 6.1.1 - Modify vulnerable buildings to resist water penetration and wind damage.	Retain	Was Project 7.1.2
	Objective 6.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Severe Weather			
		Project 6.2.1- Maintain partnership with National Weather Service, DES and media to educate public on advisories, watches, and warnings when weather hazards are forecast to impact Montana.	Reword	Was Project 7.2.1 - Maintain partnership with NWS and media to publicize Severe Weather Awareness Week to help educate public on preparedness and what to do when the warnings are issued.
		Project 6.2.2 - Promote distribution of NOAA weather radios.	New Project	
		Project 6.2.3 - Partner with National Weather Service on the Weather Ready Nation Ambassador Program and increase program participation.	New Project	
		Project 6.2.4 - Encourage participation in National Weather Service Storm Ready Community program.	New Project	
		Project 6.2.5 - Evaluate locations for Remote Weather Information System video cameras.	New Project	
		Project 6.2.6 - Continue to distribute winter weather survival booklet.	New Project	
		Project 6.2.7 - Provide education on weather events and public health at locations with temporary occupancy (man camps, rainbow gathering, etc.).	New project	
	Objective 6.3 - Implement Prevention Projects to Reduce Impacts from Severe Weather			
		Project 6.3.1 - Encourage utilities to bury electric lines to improve reliability.	Retain	Was Project 7.1.1
		Project 6.3.2 - Encourage utilities to apply for mitigation grants to install air flow spoilers on above ground utility lines.	Retain	Was Project 7.1.3
	Objective 6.4 - Implement Structural Projects to Reduce Impacts from Severe Weather			
		Project 6.4.1 - Encourage cities and towns in tornado alley to establish community safe rooms.	New Project	
		DELETE - Publicize demonstrated ability of airflow spoilers to reduce powerline failure.	Delete. Combined with project 7.3.2.	Was Project 7. Delete. Combined with project 6.3.2.
Goal 7: Reduce Losses from Hazardous Material Incidents and Transportation Accidents				
	Objective 7.1 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Hazardous Material Incidents and Transportation Accidents			
		Project 7.1.1 - Encourage State Emergency Response Committee (SERC) to consider validity of commodity haz-mat flow studies.	New project	

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GOAL	OBJECTIVE	PROJECT	STATUS	COMMENTS
		Project 7.1.2 - Conduct road safety audits on corridors with safety issues.	New project	
	Objective 7.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Hazardous Material Incidents and Transportation Accidents			
		Project 7.2.1 - Promote Hazardous Material Emergency Preparedness (HMEP) grants to local partners.	New project	
		Project 7.2.2 - Promote outreach on impaired driving through prevention education.	New project	
		Project 7.2.3 - Reduce roadway departure and intersection crashes through education.	New project	
		Project 7.2.4 - Support policies, education, training, programs and activities that promote and increase seat belt and child safety seat use.	New project	
	Objective 7.3 - Enhance Emergency Service Capabilities to Reduce Impacts from Hazardous Material Incidents and Transportation Accidents			
		Project 7.3.1 - Identify and encourage participation in trainings and education offered by stakeholders (those who handle hazardous materials).	New project	
		Project 7.3.2 - Encourage participation from all emergency responders in Traffic Incident Management System (TIMS) training.	New project	
	Objective 7.4 - Implement Prevention Projects to Reduce Impacts from Hazardous Material Incidents and Transportation Accidents			
		Project 7.4.1 - Implement highway safety projects.	New project	
		Project 7.4.2 - Identify opportunities to incorporate wildlife mitigation on already planned projects to reduce wildlife/vehicle collisions.	New project	
		DELETE - Complete haz-mat flow studies at highly vulnerable locations.	Delete	Was Project 8.4.1. Delete - MDT doesn't deal with what's in trucks; just weights.
Goal 8: Minimize Impacts from Disease Outbreaks				
	Objective 8.1 - Implement Prevention Projects to Reduce Impacts from Disease			
		Project 8.1.1 - Continue public health surveillance, disease investigations, and provide mitigation strategies.	Reword	Was Project 9.1.1 - Conduct public health surveillance, disease investigations, and provide mitigation strategies.
		Project 8.1.2 - Conduct surveillance and disease investigations for reportable animal diseases and maintain the Designated Surveillance Area (DSA) for Brucellosis.	New Project	
		Project 8.1.3 - Conduct surveillance and disease investigations for reportable diseases in fish and wildlife.	New Project	
		Project 8.1.4 - Maintain policies and regulations that prevent and minimize the spread of animal diseases.	New Project	
		Project 8.1.5 - Maintain policies and regulations that prevent and minimize the spread of fish and wildlife disease.	New Project	

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GOAL	OBJECTIVE	PROJECT	STATUS	COMMENTS
		Project 8.1.6 - Maintain watercraft inspection and decontamination stations for Aquatic Invasive Species during the boating season.	New Project	
	Objective 8.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Disease			
		Project 8.2.1 - Continue to provide outreach to both local health jurisdictions and the public on public health topics.	New Project	
		Project 8.2.2 - Promote the "clean, drain, dry" campaign to prevent the spread of Aquatic Invasive Species, including diseases, for boats and equipment to waters and native aquatic species.	New Project	
		Project 8.2.3 - Provide education and outreach to Montana hunters, landowners, and general public about signs/symptoms of wildlife disease, safe field dressing precautions, and the status of wildlife diseases in the state.	New Project	
	Objective 8.3 - Implement Natural Resource Protection Projects to Reduce Impacts from Disease			
		Project 8.3.1 - Encourage water saving measures and institute fishing restrictions during drought to reduce stress on fish, which can make them more susceptible to disease.	New Project	
	Objective 8.4 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Disease			
		Project 8.4.1- Ensure DPHHS Emergency Operations Plans (EOPs) and all associated annexes and procedures are current and complete for public health.	Retain	Was Project 9.1.3
		Project 8.4.2 - Encourage local jurisdictions to update and maintain EOPs for public health.	New Project	
		Project 8.4.3 - Update the Foreign Animal Disease (FAD) Response Plan.	New Project	
		Project 8.4.4 - Develop guidelines for individual producer biosecurity plans to include outlining criteria for movement permits from a disease control zone.	New Project	
		Project 8.4.5 - Develop and maintain rapid response plans to minimize the spread of fish and wildfire disease.	New Project	
		Project 8.4.6 - Map the presence and spread of fish and wildlife disease to prioritize prevention efforts, surveillance, and public education.	New Project	
	Objective 8.5 - Enhance Emergency Service Capabilities to Reduce Impacts from Disease			
		Project 8.5.1 Test and evaluate public health response plans.	Retain	Was Project 9.1.4
		Project 8.5.2 - Provide Rapid Response and Incident Command System training for agencies responding to emergencies relating to fish and wildfire disease.	New Project	

APPENDIX C-2				
2018 STATE OF MONTANA MHMP UPDATE				
MITIGATION STRATEGY RECONCILIATION - 2013 to 2018				
GOAL	**OBJECTIVE**	**PROJECT**	**STATUS**	**COMMENTS**
		COMPLETE - Improve the timeliness and completeness of disease reporting.	Complete.	Was Project 9.1.2. All local public health depts. now on Montana Infectious Disease Information System (MIDIS) as of 7/14/17
Goal 9: Reduce Impacts from Landslides and Avalanche				Was Goal 12
	Objective 9.1 - Implement Structural Projects to Reduce Impacts from Landslides and Avalanche			Was 12.1. Changed from: Reduce the risk that landslides will damage public property.
		Project 9.1.1 - Conduct proactive scaling and reducing of back slopes along highways.	Retain	Was Project 12.1.1
	Objective 9.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Landslides and Avalanche		New objective	
		Project 9.2.1 - Educate homeowners of benefits of avalanche protection devices.	New project	
		Project 9.2.2 - Promote avalanche forecasting and public awareness.	New project	
	Objective 9.3 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Landslides and Avalanche		New objective	
		Project 9.3.1 - Identify high population areas vulnerable to avalanches.	New project	
		Project 9.3.2 - Conduct landslide studies and monitoring in high population areas.	New project	
		Project 9.3.3 - Create a state-wide landslide map.	New project	
Goal 10: Reduce Impacts from Dam Failure Hazard				
	Objective 10.1 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Dam Failure			
		Project 10.1.1 - Develop updated evacuation maps for non-federal high hazard dams for risk assessment.	Reword	Was Project 11.1.1 - Obtain digitized inundation maps for federally-regulated high hazard dams for risk assessment.
		Project 10.1.2 - Evaluate existing dams for hazard classification.	Reword	Was Project 11.1.3 - Evaluate existing state dams for hazard classification.
		Project 10.1.3 - Keep Emergency Action Plans current.	Retain	Was Project 11.1.4
	Objective 10.2 - Implement Structural Projects to Reduce Impacts from Dam Failure			
		Project 10.2.1 - Repair high hazard dams with deficiencies.	Reword	Was Project 11.1.2 - Repair state high hazard dams with deficiencies.
	Objective 10.3 - Enhance Emergency Service Capabilities to Reduce Impacts from Dam Failure			
		Project 10.3.1 - Exercise Emergency Action Plans.	Reword	Was Project 11.1.5 -Exercise Emergency Action Plans every five years.
		Project 10.3.2 - Encourage continued participation of local and tribal DES in DNRC dam safety table top exercises.	Retain	Was Project 11.1.6
		Project 10.3.3 - Streamline and improve DNRC earthquake response protocol.	New Project	

APPENDIX C-2				
2018 STATE OF MONTANA MHMP UPDATE				
MITIGATION STRATEGY RECONCILIATION - 2013 to 2018				
GOAL	OBJECTIVE	PROJECT	STATUS	COMMENTS
	Objective 10.4 - Implement Public Education and Awareness Projects to Reduce Impacts from Operational Flows			
		Project 10.4.1 - Provide awareness to community of possible flooding from operational flows.	New Project	
Goal 11 - Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security				
	Objective 11.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security			
		Project 11.1.1 - Raise level of awareness of citizens of Montana on topics associated with terrorism and cyber security.	New project	
		Project 11.1.2 - Promote information sharing on prevention of acts of terrorism by local and state agencies and partners.	New project	
		Project 11.1.3 - Update emergency action flip chart that can be provided to schools.	New project	
		Project 11.1.4 - Promote availability of armed intruder/active shooting training.	New project	
		Project 11.1.5 - Promote and encourage cyber assessments for water and wastewater systems.	New project	
		Project 11.1.6 - Promote and educate on the Federal Homeland Security Infrastructure Protection Program and how they can help locals and tribes.	New project	
	Objective 11.2 - Support Planning/Mapping/Analysis Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security			
		Project 11.2.1 - Perform vulnerability assessments on security of State buildings.	New project	
		Project 11.2.2 - Perform cyber assessments for State-owned water and wastewater systems.	New project	
		Project 11.2.3 - Support mitigation-related goals, objectives, and actions of the State Core Capabilities.	Reword	Was Project 12.1.1 - Support mitigation-related goals, objectives, and actions of the Montana Homeland Security Security Strategic Plan.
		Project 11.2.4 - Develop framework to prioritize special events at the State level.	New project	
		Project 11.2.5 - Continue vulnerability assessments for large events.	New project	
		Project 11.2.6 - Establish working group to develop resource guide of tools for local jurisdictions and tribes.	New project	
	Objective 11.3 - Implement Structural Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security			
		Project 11.3.1 - Consider physical hardening of critical facilities including bollards and generators.	New project	
	Objective 11.4 - Enhance Emergency Service Capabilities to Reduce Impacts from Terrorism, Violence, Civil Unrest, and Cyber Security			

APPENDIX C-2				
2018 STATE OF MONTANA MHMP UPDATE				
MITIGATION STRATEGY RECONCILIATION - 2013 to 2018				
GOAL	OBJECTIVE	PROJECT	STATUS	COMMENTS
		Project 11.4.1 - Continue efforts to coordinate law enforcement for potential civil unrest/violence associated with resource development and large events in Montana.	New project	
Goal 12: Reduce Impacts from Volcanic Ash				Was Goal 13
	Objective 12.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Volcanic Ash			Was Objective 13.1 - Identify and reduce losses from volcanic activitity.
		Project 12.1.1 Educate the public on how to respond to volcanic ash fall-out when monitoring determines eruption is imminent.	Reword.	W as Project 13.1.1 -Educate the public on how to respond to volcanic ash fall-out.

APPENDIX C-3

LOCAL MITIGATION PROJECTS AND CONSISTENCY WITH STATE MITIGATION STRATEGY

APPENDIX C-3						
2018 STATE OF MONTANA MHMH UPDATE						
LOCAL MITIGATION PROJECTS AND CONSISTENCY WITH STATE MITIGATION STRATEGY						
DES District	**Plan Year**	**County/Hazard**	**Local Goal**	**Local Objective**	**Local Mitigation Project**	**State Plan Goal/ Objective/Project**
3	**2017**	**Beaverhead**				
			Goal 1 - Reduce risks from all hazards through comprehensive mitigation activities			
				Objective 1.1 - Enhance early warning systems		
		All Hazards			Action 1.1.1 - Storm Ready Program	6.2.4
		All Hazards			Action 1.1.2 - NOAA Weather Radios	1.2.5, 6.2.2
		Dam Failure			Action 1.1.3 - Dam Early Warning Systems	1.2.6
		All Hazards			Action 1.1.4 - Wisdom Weather Observing Station	1.4.1, 6.2.5
		All Hazards			Action 1.1.5 - Lima Warning System	1.2.6
		All Hazards			Action 1.1.6: City of Dillon Warning Systems	1.2.6, 6.2.1
		All Hazards			Action 1.1.7: Radio Repeaters	1.2.6
				Objective 1.2 - Improve the Functionality of Critical Facilities and Infrastructure during Disasters		
		All Hazards			Action 1.2.1: Emergency Communications	1.2.6
		All Hazards			Action 1.2.2: Emergency Power Backup	1.2.7, 1.3.4, 11.3.1
		All Hazards			Action 1.2.3: Water-Supply/Storage Backup	
		All Hazards			Action 1.2.4: Upgrades and Enhancements of Emergency Secondary Dispatching Center	
		Severe Weather, Earthquake			Action 1.2.5 - University of MT-Western Campus Improvements	4.2.1, 4.2.2, 6.1.1,
		All Hazards			Action 1.2.6: Radio Repeaters to Increase Range Emergency Staff	1.2.7
				Objective 1.3 - Mitigate the Impact of Hazards on Future Development through Land Use and Buidling Regulations		
		All Hazards			Action 1.3.1: Subdivision Regulations	1.5.1, 2.5.1
				Objective 1.4 - Educate Businesses and the Public on Simple Mitigaiton Activities		
		All Hazards			Action 1.4.1 - Public Education	1.2.1
		All Hazards			Action 1.4.2 - Builder Education	1.2.1, 2.3.2
			Goal 2: Reduce impacts from flooding.			
				Objective 2.1: Reduce losses to road infrastructure from flooding.		
		Flooding			Action 2.1.1: Culvert, Drainage, and Road Improvements	3.4.1
				Objective 2.2: Improve understanding of the flood hazard.		
		Flooding			Action 2.2.1: Floodplain Mapping	3.2.1
		Flooding			Action 2.2.2: Flood Insurance Education	3.5.2
		Flooding			Action 2.2.3: Stream Gages	3.2.2
				Objective 2.3: Protect structures from flood damages.		
		Flooding			Action 2.3.1: Acquisitions, Relocations, and Elevations	3.1.1
			Goal 3: Minimize risk of wildfire at the urban interface.			
				Objective 3.1: Maximize mitigation efforts by using a combination of programs targeting the wildland urban interface.		
		Wildfire			Action 3.1.1: Enact Specific Hazard Mitigation Actions Identified in the 2010 Community Wildfire Protection Plan	2.2.1, , 2.2.12, 2.5.1
		Wildfire			Action 3.1.2: Firewise Program	2.1.2, 2.1.3, 2.3.1, 2.3.2
		Wildfire			Action 3.1.3: Hazardous Fuels Treatments	2.1.2
					Action 3.1.4: Fire Safe Montana Program	2.1.2, 2.1.3, 2.3.1, 2.3.2
			Goal 4: Reduce risk of hazardous material incidents.			
				Objective 4.1: Improve information, coordination, and security prior to future hazardous material releases.		
		Haz-Mat			Action 4.1.1: Continued Hazardous Material Training for First Responders	7.3.1
		Haz-Mat			Action 4.1.2: Hazardous Material Study	7.1.1
		Haz-Mat			Action 4.1.3: Hazardous Material Site Security	11.3.1
			Goal 5: Reduce risk of disease, environmental hazards, and terrorist acts.			
				Objective 5.1: Prevent risks to human health and safety through coordination, planning, and policies.		
		Terrorism			Action 5.1.1: Public Health Planning	8.1.1
		Terrorism			Action 5.1.2: Active Shooter Preparedness/Training	11.1.4
		Terrorism			Action 5.1.3: Environmental Laws, Rules, and Regulations	1.5.1
		Terrorism			Action 5.14: Terrorism Planning	11.1.4
			Goal 6: Reduce impact of earthquakes.			
				Objective 6.1: Minimize earthquake losses to public schools.		
		Earthquakes			Action 6.1.1: Earthquake Education and Assessments	4.3.1, 4.3.2
		Earthquakes			Action 6.1.2: Earthquake School Retrofits and Other Public Buildings	4.2.1
			Goal 7: Reduce impact of countywide weather hazards such as drought and winter weather.			
				Objective 7.1: Use information and education strategies to minimize the impact of drought.		
		Drought			Action 7.1.1: Drought Education	5.1.1, 5.1.5
		Drought			Action 7.1.2: Watershed Drought Management Plans	5.2.3
		Drought			Action 7.1.3: Beaverhead Watershed Drought Resiliency Plan Mitigation Actions	5.2.3
				Objective 7.2: Minimize weather impacts to critical infrastructure.		
		Severe Weather			Action 7.2.1: Electric Infrastructure Protection	1.2.7, 1.3.4, 11.3.1
		Severe Weather			Action 7.2.2: Snow Fences	7.4.1
			Goal 8: Minimize impact of aircraft accidents.			
				Objective 8.1: Improve safety and security airport capabilities.		
		Transp. Accidents			Action 8.1.1: Airport Incident Training	-

APPENDIX C-3						
2018 STATE OF MONTANA MHMH UPDATE						
LOCAL MITIGATION PROJECTS AND CONSISTENCY WITH STATE MITIGATION STRATEGY						
DES District	**Plan Year**	**County/Hazard**	**Local Goal**	**Local Objective**	**Local Mitigation Project**	**State Plan Goal/ Objective/Project**
		Transp. Accidents			Action 8.1.2: Airport Security Improvements	-
		Transp. Accidents			Action 8.1.3: Airport Instrument Approach	-
		All Hazards	**Goal 9: Continue to emphasize preparedness, response, and recovery activities in all types of emergency management planning.**			
5	**2012**	**Big Horn**				
			Goal 1 - Improve disaster preparedness in Lodge Grass.			
		All Hazards			1.1 - Address back-up power supply needs of Lodge Grass by determining requirements and wiring a manual transfer switch at school, town hall, water and wastewater plants to connect a generator	1.2.7, 1.3.4, 11.3.1
		All Hazards			1.2 - Develop an evacuation plan, including identification of local evacuation shelter.	1.2.7
		All Hazards			1.3 - Obtain technical assistance on storm water drainage situation	3.4.4
		All Hazards			1.4 - Large decadent cottonwood trees and tree branches in town create a safety hazard for people and property and need to be removed.	-
		All Hazards			1.5 - Determine tones and duration for various siren messages. Educate the public on what they mean.	1.2.7
		All Hazards			1.6 - Add a siren for the housing area on the hill.	-
		All Hazards			1.7 - Provide a weather radio for the Cenex Station to inform inquiring travelers.	1.2.5, 6.2.2
		Flooding			1.8 - Address hazard created by unmaintained irrigation ditch west of town that has caused past flood damage.	3.2.2
		All Hazards			1.9 - Provide 24-hour emergency response.	1.2.7
			Goal 2 - Improve disaster preparedness in Hardin.			
		All Hazards			2.1 - Address back-up power supply needs of city by determining requirements and wiring manual transfer switches at the firehall, water treatment plant, river pump house, and city hall to connect a generator	1.2.7, 1.3.4, 11.3.1
		All Hazards			2.2 - Maintain existing building inspection program, adopting and enforcing new IBC and IRB codes as available	4.1.1
		Flooding			2.3 - Rebuild dike around pump house at river	3.5.5
		Flooding			2.4 - Prepare a stormwater management plan for Hardin	3.4.4
			Goal 3 - Improve disaster preparedness across the county.			
				Objective1: Reduce potential for damages from flooding		
		Flooding			3.1 - Obtain an approved DFIRM for Crow Agency	3.2.1
		Flooding			3.2 - Investigate potential for a flood protection dike at Crow Agency	3.5.5
		Flooding			3.3 -Receive FEMA approval of floodplain delineations of the Little and Big Horn Rivers	3.2.1
		Flooding			3.4 -Raise elevations of trailers that have experienced repeated flood damage.	3.1.1
		Flooding			3.5 - Adopt policy for minimum culvert size across county.	3.4.1
		Flooding			3.6 - Encourage restoration of natural stream function by treating invasive species	3.4.5
				Objective 2: Improve cross-jurisdictional coordination and communication		
		All Hazards			3.7 - Look into centralizing 911 center for entire county. Add ground trunk capability and establish communication protocols.	1.2.7
		All Hazards			3.8 - Activate Emergency Operations Center (EOC) during large events.	11.2.5
		All Hazards			3.9 - Implement narrow-banding. Develop standard operating procedures for Law Enforcement on joint operations.	1.2.7
		All Hazards			3.10 - Set up a Facebook page for DES	1.2.7
				Objective 3: Improve warning and response capability		
		All Hazards			3.11 - Get Reverse 911 operational.	1.2.7
		All Hazards			3.12 - Develop common language for sirens. Educate public.	1.2.7
		All Hazards			3.13 - Request BOR to notify county dispatch for incidents at Government Camp.	1.2.6
		Dam Failure			3.14 - Research warning system for Tongue River Dam. Educate public.	1.2.6, 6.2.1
		All Hazards			3.15 - Develop pocket guide of response protocols	1.2.7
				Objective 4: Reduce potential for damaging power outages		
		Severe Weather			3.16 - Develop a list of critical county infrastructure and the power requirements of each. Install manual transfer switches.	1.2.7
		Severe Weather			3.17 - Identify sources of fuel in region that could be accessed if power outages are lasting.	1.2.7
		Severe Weather			3.18 - Inquire to Public Service Commission about condition of power lines serving Pryor area	-
				Objective 5: Improve safety of school children		
		All Hazards			3.19 - Foster support for importance of being current on shelter-in-place response.	1.2.7
		All Hazards			3.20 - Support school system's emergency planning	1.2.4
				Objective 6: Support efforts to ensure public health during and after emergencies		
		Disease			3.21 - Work cooperatively with county public health department on public health emergency planning	8.4.1, 8.4.2
		Disease			3.22 - Make public health department aware of appropriate training	8.2.1, 8.5.1
		Disease			3.23 - Include county public health in preparedness exercises	8.5.1
				Objective 7: Improve general citizen preparedness for disasters		
		All Hazards			3.23 - Conduct educational activities to encourage citizen preparedness (PSA's, materials, county fair, etc)	1.2.7, 1.2.8
		All Hazards			3.24 - Support development and training of community CERT teams	1.3.8, 1.4.4
		All Hazards			3.25 - Host annual weather spotter training	1.2.3, 6.2.3, 6.24
			Goal 4 - Work effectively with Crow and Cheyenne Tribes to increase their disaster resistance			
		Flooding			4.1 - Support NFIP participation by the Crow Tribe	3.5.2
		Flooding			4.2 - Support NFIP participation by the Cheyenne Tribe	3.5.2
		All Hazards			4.3 - Coordinate identification of emergency shelters with Crow Tribe	1.2.7

APPENDIX C-3						
2018 STATE OF MONTANA MHMH UPDATE						
LOCAL MITIGATION PROJECTS AND CONSISTENCY WITH STATE MITIGATION STRATEGY						
DES District	**Plan Year**	**County/Hazard**	**Local Goal**	**Local Objective**	**Local Mitigation Project**	**State Plan Goal/ Objective/Project**
		Wildfire			4.4 - Participate in updates of Crow and Cheyenne Tribal PDM and CWPP plans as requested	1.3.6, 2.12
		All Hazards			4.5 - Share information on training opportunities	1.4.3, 1.4.4
		All Hazards			4.6 - Include tribes and BIA in exercises	1.4.4
2	**2012**	**Blaine**				
			Goal 1 - Reduce Impacts from Wildfire			
				Objective 1.1 - Enhance Emergency Services to Mitigate Impacts from Wildfire		
		Wildfire			1.1.1 - Develop GPS database of water sources in County to enhance firefighting efforts.	2.6.1
		Wildfire			1.1.2 - With cooperators, provide classroom or video fire suppression training for rural area citizens and County employees who will respond to wildland fires.	1.4.4, 2.6.1
		Wildfire			1.1.3 - Obtain GPS units and provide training for fire departments	1.4.4, 2.6.1
		Wildfire			1.1.4 - Recruit and train volunteer fire fighters	2.6.1
				Objective 1.2 - Enhance Opportunities to Protect Property from Wildfire		
		Wildfire			1.2.1 - Encourage fuel reduction measures along highways and county roads, around perimeter and within communities by cutting or mowing where feasible.	2.1.2, 2.1.3, 2.2.5, 2.2.7, 2.3.1
		Wildfire			1.2.2 - Utilize and enforce Blaine County burning permits.	2.5.2
		Wildfire			1.2.3 - Coordinate with cooperators to employ fuel reduction treatments on CRP and other lands with high or undesirable fuels.	2.1.2, 2.1.3, 2.2.5, 2.2.7, 2.3.1
				Objective 1.3 - Provide Public Education and Awareness on Wildfire		
		Wildfire			1.3.1 - Promote Firewise practices and encourage creation of defensible space around communities and private homes.	2.1.2, 2.1.3, 2.3.1, 2.3.2
		Wildfire			1.3.2 - Participate in the National Firewise Communities program.	2.1.2, 2.1.3, 2.3.1, 2.3.2
		Wildfire			1.3.3 - Publicize the fire seasons	2.3.1
				Objective 1.4 - Implement Actions to Prevent Impacts from Wildfires		
		Wildfire			1.4.1 - Consider updating subdivision regulations to include defensible space requirement to protect future development.	1.5.1, 2.5.1
			Goal 2 - Reduce Impacts from Hazardous Material Incidents			
				Objective 2.1 - Enhance Emergency Services to Mitigate Impacts from Hazardous Material Incidents		
		Haz-Mat			2.1.1 - Continue providing awareness and safety training to emergency responders.	1.4.4, 7.3.1, 7.3.2
		Haz-Mat			2.1.2 - Obtain and update SCBA units for city and rural fire departments.	7.2.1
				Objective 2.2 - Provide Public Education and Awareness to Mitigate Hazardous Material Incidents		
		Haz-Mat			2.2.1 - Increase participation in LEPC to enhance public's awareness of hazardous material risk in the County.	1.2.7, 7.3.1
			Goal 3 - Reduce Impacts from Transportation Accidents			
				Objective 3.1 - Enhance Emergency Services to Mitigate Impacts from Transportation Accidents		
		Transportation Accidents			3.1.1 - Refine warning system protocol for train derailments involving hazardous materials.	1.2.6
				Objective 3.2 - Implement Structural Projects to Reduce Impact of Transportation Accidents		
		Transportation Accidents			3.2.1 - Coordinate with MDT, County, and BNSF regarding approach heights between railroad and highway	7.2.1, 7.4.1
		Transportation Accidents			3.2.2 - Coordinate with MDT, County, and BNSF regarding increasing distance between highway and railroad at select locations.	7.2.1, 7.4.1
		Transportation Accidents			3.2.3 - Support expansion of Highway 2 to four lanes to accommodate traffic and future development	7.4.1
			Goal 4 - Reduce Impacts from Flooding			
				Objective 4.1 - Protect Property from Flooding		
		Flooding			4.1.1 - Consider mitigation options for homes repeatedly flooded in Harlem.	3.1.1
		Flooding			4.1.2 - Consider mitigation options for homes repeatedly flooded on the north side of Chinook.	3.1.1
		Flooding			4.1.3 - Install culverts on sections of road impacted by flooding.	3.4.1
		Flooding			4.1.4 - Obtain river gauges where needed.	3.2.2
		Flooding			4.1.5 - Promote that debris be removed from floodways along the Milk River.	3.4.5
				Objective 4.2 - Implement Actions to Prevent Impacts from Flooding		
		Flooding			4.2.1 - Update flood regulations with new DFIRM to protect future development	3.2.1
		Flooding			4.2.2 - Look at ways to fund recertification of Chinook levee	3.5.5
				Objective 4.3 - Provide Public Education and Awareness on Flooding		
		Flooding			4.3.1 - Educate homeowners on purchasing flood insurance through the National Flood Insurance Program.	3.5.2
		Flooding			4.3.2 - Participate in the National Weather Service's Flood Awareness Week	1.2.3, 6.2.3, 6.24.
		Flooding			4.3.3 - Provide awareness training to property owners on mitigation programs to relocate, elevate, and floodproof structures in the floodplain.	1.4.4, 3.1.1
		Flooding			4.3.4 - Provide bulletins as needed that livestock grazing and farm equipment in floodplains should include a high spot where animals/equipment can be evacuated to.	3.5.1
		Flooding			4.3.5 - Explore possibility of joining the CRS Program	3.5.3
			Goal 5 - Reduce Impacts from Dam Failure			
				Objective 5.1 - Provide Public Education and Awareness on Dam Failure		
		Dam Failure			5.1.1 - Conduct public outreach / education with residents living in inundation areas.	3.5.1, 10.1.1, 10.4.1
		Dam Failure			5.1.2 - Encourage BLM to do Emergency Action Plan for BR-12	10.1.1
				Objective 5.2 - Implement Structural Projects to Reduce Impacts from Dam Failure		
		Dam Failure			5.2.1 - Promote and support rapid restructuring of BLM's BR-12 .	10.2.1
			Goal 6 - Reduce Impacts from Severe Winter Weather			

APPENDIX C-3						
2018 STATE OF MONTANA MHMH UPDATE						
LOCAL MITIGATION PROJECTS AND CONSISTENCY WITH STATE MITIGATION STRATEGY						
DES District	**Plan Year**	**County/Hazard**	**Local Goal**	**Local Objective**	**Local Mitigation Project**	**State Plan Goal/ Objective/Project**
				Objective 6.1 - Enhance Emergency Service Capabilities to Respond to Severe Winter Weather		
		Severe Weather			6.1.1 - Promote enhanced weather monitoring to attain earlier severe winter storm warnings.	1.2.3, 1.2.6, 6.2.1
				Objective 6.2 - Provide Public Education and Awareness on Severe Winter Weather		
		Severe Weather			6.2.1 - Conduct public outreach campaign where special needs residents would provide information on where they live and what they need. Develop a database with this information.	8.4.1, 8.4.2
		Severe Weather			6.2.2 - Promote the National Weather Service's Winter Weather Awareness Week.	1.2.3, 6.2.3, 6.24
		Severe Weather			6.2.3 - Continue participating in StormReady Community program.	6.2.4
			Goal 7 - Reduce Impacts from Severe Summer Weather and Drought			
				Objective 7.1 - Provide Public Education and Awareness on Severe Summer Weather and Drought		
		Severe Weather			7.1.1 - Promote the National Weather Service's Severe Weather Awareness Week.	1.2.3, 6.2.3, 6.24
		Severe Weather			7.1.2 - Promote National Weather Service's severe weather spotter training program	1.2.3, 6.2.3, 6.24
		Drought			7.1.3 - Support drought programs implemented through the Conservation District, FSA, and MSU extension.	5.1.1, 5.1.5, 5.2.2, 5.4.1, 5.4.2, 5.4.3
			Goal 8 - Reduce Impacts from Structure Fire			
				Objective 8.1 - Enhance Emergency Services to Mitigation Impacts		
		Structure Fire			8.1.1 - Continue support of St. Mary's water pipeline that supplies Milk River.	5.4.3
		Structure Fire			8.1.2 - Recruit and train volunteer fire fighters	7.3.1
		Structure Fire			8.1.3 - Update equipment needed for suppressing structure fires	1.2.7
				Objective 8.2 - Provide Public Education and Awareness on Structure Fire Mitigation		
		Structure Fire			8.2.1 - Promote public education on the benefit of smoke detectors	1.2.1
		Structure Fire			8.2.2 - Support volunteer fire department fire prevention activities	1.2.1
			Goal 9 - Reduce Impacts Associated with All Hazards			
				Objective 9.1 - Enhance Emergency Services to Mitigate Impacts from All Hazards		
		All Hazards			9.1.1 - Obtain or update sirens in all communities.	1.2.7
		All Hazards			9.1.2 - Identify emergency shelters in each community.	1.2.7
		All Hazards			9.1.3 - Obtain mobile generator(s) to use as emergency back-up power to critical facilities, as needed.	1.2.7, 1.3.4, 11.3.1
		All Hazards			9.1.4 - Rewire critical facilities and emergency shelters to accommodate mobile generators and provide training to community partners.	1.2.7, 1.3.4, 11.3.1, 1.4.4
		All Hazards			9.1.5 - Obtain connecting hardware and trailer associated with mobile emergency generators.	1.2.7
		All Hazards			9.1.6 - Encourage emergency responders and community partners to attend Incident Command System (ICS) 100/200 and/or IS 700 or State of Montana DES training.	1.4.3, 1.4.4
		All Hazards			9.1.7 - Assist Montana DES in developing Type III Incident Management Team table of organization utilizing expertise within the county and adjacent counties within the MT State DES Region.	1.4.3
		All Hazards			9.1.7 - Continue dialog on constructing dam on Thirtymile Creek to ensure north/south access is maintained in northern portion of County for evacuation purposes.	10.1.1
		All Hazards			9.1.8 - Coordinate radio/repeater sites to enhance communication system.	1.2.7
				Objective 9.2 - Provide Public Education and Awareness on All Hazards		
		All Hazards			9.2.1 - Launch public awareness campaign so residents understand what hazards are present.	1.2.1
		All Hazards			9.2.2 - Encourage preparation of Family Emergency Plans.	1.2.8
		All Hazards			9.2.3 - Encourage cross training between governments (federal, state, county, local, tribal) and community partners (churches, schools, parents).	1.4.4
		All Hazards			9.2.4 - Create and maintain a website for County DES.	1.2.7
		All Hazards			9.2.5 - Consider integrating social media into emergency management.	1.2.7
		All Hazards			9.2.6 - Encourage emergency preparedness training throughout the community to establish roles and responsibilities during emergencies and promote personal accoutability.	1.2.8, 1.4.4
				Objective 9.3 - Implement Actions to Prevent Impacts from All Hazards		
		All Hazards			9.3.1 - Consider developing county zoning ordinance which considers impact of energy/alternative energy industry on potential growth.	1.5.1
3	**2016**	**Broadwater**				
			Goal 1 - Reduce the Risk of Wildland Fire			
				Objective 1.1 - Encourage wildfire mitigation through public outreach and education		
		Wildfire			Project 1.1.1 - Educate the public on wildfire mitigation, especially those at high risk from wildland urban interface fires.	2.3.1, 2.3.2
				Objective 1.2 - Implement property protection projects in the WUI.		
		Wildfire			Project 1.2.1 - Encourage and support Forest Service and BLM initiatives for landscape level burning and fuel mitigation projects.	2.2.5
		Wildfire			Project 1.2.2 - Coordinate activities of rural fire departments and partner agencies to provide for cooperation before, during, and after a fire incident.	2.6.1
		Wildfire			Project 1.2.3 - Encourage at risk landowners to participate in cost-share fuel reduction programs through Tri-County FireSafe Working Group and/or NRCS to reduce fuels round homes.	2.1.2, 2.1.3, 2.3.1
		Wildfire			Project 1.2.4 - Encourage rural fire dept. and private landowners to install water storage tanks for fire protection.	1.2.7
				Objective 1.3 - Improve access to WUI areas.		
		Wildfire			Project 1.3.1 - Encourage evacuation route safety, including making roads wider, reducing fuels along them, and having secondary access.	2.1.2, 2.1.3, 2.6.2
				Objective 1.4 - Reduce the impacts following a wildfire from floods and landslides.		
		Wildfire			Project 1.4.1 - Encourage land management agencies and private landowners to conduct stabilization and revegetation projects in burned areas.	2.4.1
				Objective 1.5 - Prevent wildfire losses in the WUI.		

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DES District	**Plan Year**	**County/Hazard**	**Local Goal**	**Local Objective**	**Local Mitigation Project**	**State Plan Goal/ Objective/Project**
		Wildfire			Project 1.5.1 - Update subdivision regulations to include recommendations for wildfire resistant construction.	1.5.1, 2.5.1
			Goal 2 - Reduce Impacts from Hazardous Material Incidents & Transportation Accidents			
				Objective 2.2 - Provide outreach and education to reduce impacts from hazardous material incidents and transportation accidents		
		Haz-Mat & Transp. Accidents			Project 2.2.1 - Educate teachers and school staff in schools near hazardous material facilities and transportation routes in how to limit exposure to hazardous materials to students during an incident.	1.4.4
		Haz-Mat & Transp. Accidents			Project 2.2.2 - Ensure local emergency responders have adequate training to respond to hazardous material incidents consistent with local capabilities.	1.4.4, 7.3.1, 7.3.2
		Haz-Mat & Transp. Accidents			Project 2.2.3 - Develop evacuation procedures for homes near highways that commonly carry hazardous materials and near haz-mat storage facilities and pipelines.	1.2.7
		Haz-Mat & Transp. Accidents			Project 2.2.4 - Implement training program for use of 2-way radio for all school bus drivers.	1.4.4
			Goal 3 - Reduce impacts from Structure Fire			
				Objective 3.1 - Reduce losses through property protection		
		Structure Fire			Project 3.1.1 - Continue cleaning chimneys and installing smoke detectors for citizens.	1.2.7
			Goal 4 - Reduce impacts from Flooding			
				Objective 4.2 - Identify and mitigate flood problems caused by ice jams and spring runoffs.		
		Flooding			Project 4.2.3 - Identify and improve bridges and culverts prone to flooding.	3.4.1
		Flooding			Project 4.2.4 - Continue participation in the National Flood Insurance Program.	3.5.2
		Flooding			Project 4.2.5 - Consider ice jam mitigation for Missouri River west of railroad tracks and north of Townsend.	3.6.1
		Flooding			Project 4.2.6 - Elevate well No. 3 on Railroad Ave. so it isn't vulnerable to flooding.	3.4.3
			Goal 5 - Reduce the Impact of Severe Weather and Drought			
				Objective 5.2 - Provide outreach and education to reduce impacts from severe weather and drought.		
		Severe Weather			Project 5.2.1 - Educate the public on registering cell phones for Reverse-911	1.2.5
		Severe Weather			Project 5.2.2 - Participate in the NWS's Storm Ready Program to ensure community readiness for severe weather	6.2.4
		Drought			Project 5.2.3 - Support MSU Extension's efforts to develop and distribute range and agriculture management tools to mitigate affects from drought.	5.1.1, 5.2.2, 5.4.1, 5.4.2, 5.4.3
				Objective 5.3 - Enhance continuity of services during emergencies.		
		Severe Weather			Project 5.3.1 - Purchase and install generators at critical facilities.	1.2.7, 1.3.4, 11.3.1
			Goal 6 – Reduce Impacts from Communicable Disease			
				Objective 6.1 - Provide outreach and education on communicable diseases.		
		Disease			Project 6.1.1 - Support Public Health Department's public education programs on communicable disease.	8.2.1
			Goal 7 - Reduce Impacts from Earthquakes			
				Objective 7.1 - Protect property from earthquake damage.		
		Earthquakes			Project 7.1.1 - Study and implement seismic retrofits for critical facilities and other public buildings, such as the school.	4.2.1
		Earthquakes			Project 7.1.2 - Implement non-structural mitigation projects in county and city facilities.	4.5.2
				Objective 7.2 - Provide outreach and education on reducing impacts from earthquake		
		Earthquakes			Project 7.2.1 - Promote participation in earthquake preparedness programs in schools, municipal offices, businesses, and the media.	4.3.1
		Earthquakes			Project 7.2.2 - Provide information to structure owners on techniques to mitigate damage from earthquakes.	4.3.2, 4.3.3
				Objective 7.3 - Prevent significant damage from earthquakes		
		Earthquakes			Project 7.3.1 - Continue to enforce the state's building code.	4.1.1
				Objective 7.4 - Implement structural projects to reduce earthquake damage.		
		Earthquakes			Project 7.4.1- Encourage MDT to upgrade bridge at Toston to meet earthquake standards.	4.2.5
			Goal 8 - Reduce Impacts from Terrorism			
				Objective 8.1 - Minimize losses from terrorism, civil unrest, and violence.		
		Terrorism			Project 8.1.1 - Conduct active shooter exercises.	1.4.4, 11.1.4
			Goal 9 - Reduce Impacts from Dam Failure			
				Objective 9.1 - Provide outreach on reducing impacts from dam failure		
		Dam Failure			Project 9.1.1 – Participate in dam owner's table top exercises.	1.4.4, 10.3.1
			Goal 10 - Reduce Impacts from Landslide			
				Objective 10.1 - Minimize structural losses from landslide.		
		Landslides			Project 10.1.1 - Encourage state and federal agencies to implement preservation and stabilization measures at slide-prone areas, as needed.	9.1.1
			Goal 11 - Reduce Impacts from All-Hazards			
				Objective 11.1 - Enhance emergency response capabilities.		
		All Hazards			Project 11.1.2 - Consider a mandatory signage program consisting of reflective, non-flammable address numbers at a standard height.	1.2.7
		All Hazards			Project 11.1.3 - Improve and develop emergency preparedness and response plans.	1.2.7, 1.3.4
				Objective 11.2 - Prevent losses from natural hazard events.		
		All Hazards			Project 11.2.1 - Consider updating growth policies to encourage growth in low hazard areas.	1.5.1, 2.5.1
		All Hazards			Project 11.2.2 - Consider updating subdivision regulations to adopt higher minimum standards that improve disaster resistance.	1.5.1, 2.5.1
5	**2012**	**Carbon**	**Goal 1 - Mitigate natural hazards to reduce the potential for property loss or damage, injury and loss of life in the town of Bearcreek.**			
				Objective 1.1: Reduce potential for flood damage		

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		Flooding			1.1a - Adopt DFIRM for Bearcreek	3.2.1
		Flooding			1.1b - Investigate benefits of applying for a grant to develop detailed floodplain map.	1.3.7, 3.2.1
		Flooding			1.1c - Pursue grant above if determined advantageous	1.3.7
				Objective 1.2: Be prepared for power outages		
		Severe Weather			1.2a - Insulate existing shed behind town hall or build a new shed to store portable backup generator inside.	1.2.7, 1.3.4, 11.3.1
			Goal 2 - Mitigate natural hazards to reduce the potential for property loss or damage, injury and loss of life in the town of Bridger			
				Objective 2.1: Raise awareness to make citizens safer from all natural hazards.		
		All Hazards			2.1a - Put a seasonal safety message on the water bills twice/year—suggestions to cover winter weather and wildland fire.	1.2.1, 2.3.2
		All Hazards			2.1b - Go live with Bridger Police Department web pages and link to county emergency information	1.2.7
				Objective 2.2: Maintain emergency communications		
		All Hazards			2.2a - Purchase narrowband radio for police to comply with switch from analog.	1.2.7
			Goal 3 - Mitigate natural hazards to reduce the potential for property loss or damage, injury and loss of life in the town of Fromberg			
				Objective 3.1: Reduce potential for flood damage		
		Flooding			3.1a - Adopt new DFIRM.	3.5.2
		Flooding			3.1b - Obtain back-up power to operate water and wastewater facilities during power outages.	1.2.7
				Objective 3.2: Improve structural fire protection		
		Structure Fire			3.2a - Evaluate fire hydrant coverage of town. Add/replace hydrants as indicated. (12)	1.2.7
		Structure Fire			3.2b - Install additional waterline under RR tracks. (Damage to existing line would leave entire town without water.)	1.2.7
		Structure Fire			3.2c - Install separate waterline from storage tank to school.	1.2.7
				Objective 3.3: Maintain emergency communications during disasters		
		All Hazards			3.3a -Purchase narrowband radio for police to comply with switch from analog.	1.2.7
			Goal 4 - Mitigate natural hazards to reduce the potential for property loss or damage, injury and loss of life in the town of Joliet			
				Objective 4.1: Reduce potential for flood damage		
		Flooding			4.1a - Adopt new DFIRM.	3.5.2
		Flooding			4.1b - Remove unused piers in Rock Creek south of Joliet	3.5.4
		Flooding			4.1c - Relocate water pressure tank to the other side of creek	1.2.7
		Flooding			4.1d - Monitor Rock Creek stream channel movement and protect town's lagoon with stream structures.	3.4.5
		Flooding			4.1e - Monitor Rock Creek stream channel movement. Protect Joliet-Fromberg bridge/road with stream structures.	3.4.1, 3.5.6
				Objective 4.2: Improve communications for all hazards		
		All Hazards			4.2a - Replace warning siren on town hall	1.2.3, 1.2.6, 6.2.1
		All Hazards			4.2b - Purchase 2 mobile, 3 handheld digital radios for conversion	1.2.7
				Objective 4.3: Reduce vegetative hazard		
		Wildfire			4.3a - Address tree hazard along abandoned ditch, north side	1.2.7
				Objective 4.4: Be prepared for power outages		
		Severe Weather			4.4a - Support county purchase of mobile back-up generator	1.2.7, 1.3.4, 11.3.1
			Goal 5 - Mitigate natural hazards to reduce the potential for property loss or damage, injury and loss of life in the city of Red Lodge			
				Objective 5.1: Reduce potential for flood damage		
		Flooding			5.1a - Adopt new DFIRMs.	3.5.2
		Flooding			5.1b - Prepare storm water drainage plan for city.	3.4.4
		Flooding			5.1c - Remove abandoned concrete piers in Rock Creek at Island at Rock Creek to prevent ice jam floods.	3.6.1
		Flooding			5.1d - Remove abandoned concrete piers in Rock Creek at 8th Street to prevent ice jam floods.	3.6.1
				Objective 5.2: Reduce potential for structure damage and loss of life from wind, other natural hazards, and haz-mat		
		Severe Weather			5.2a - Maintain building inspection program. Adopt revisions to IBC and IRC as appropriate.	1.5.1, 4.1.1
		Haz-Mat			5.2b - Encourage owner of natural gas distribution facility to relocate tanks outside of city limits	7.2.1
				Objective 5.3: Reduce vegetation hazard from wind.		
		Severe Weatheer			5.3a - Remove hazard trees and branches in city parks.	1.2.7
				Objective 5.4: Be prepared for conducting evacuations		
		All Hazards			5.4a - Review contents of EAP for failure of Glacier Lake Dam with DES every other year.	10.1.3, 10.3.1
		All Hazards			5.4b - Develop procedures for evacuation of town from a wildland fire.	1.2.7
			Goal 6 - Mitigate natural hazards to reduce the potential for property loss or damage, injury and loss of life in the unincorporated areas of Carbon County			
				Objective 6.1: Reduce potential for flood damage		
		Flooding			6.1a - Install an automated gauging station in Rock Creek south of Red Lodge.	3.2.2
		Flooding			6.1b - Monitor channel changes and protect critical infrastructure (Two Mile Bridge and road and the Red Lodge sewer lagoons) from flooding on the north end of Red Lodge.	3.4.1, 3.5.6
		Flooding			6.1c -Replace the dike in Rock Creek at the end of Grapevine Road	3.5.5
		Flooding			6.1d - Post DFIRMs on the County website.	3.5.7

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		Flooding			6.1e - Remove bridge abutments from floodplain when county bridges are replaced	3.4.5
		Flooding			6.1f - Continue to provide information to property owners about building in the floodplain	3.5.7
		Flooding			6.1g - Provide educational materials about flood insurance - whiat is covered by what types of policies.	3.5.2
				Objective 6.2: Address oil and gas pipeline hazards		
		Haz-Mat			6.2a - Continue to provide training for responders in conjunction with pipeline companies	1.4.4
		Haz-Mat			6.2b - Address issues with pressurized natural gas line crossing Rock Creek south of Roberts.	7.1.2
				Objective 6.3: Improve communications during all natural hazard disasters		
		All Hazards			6.3a - Develop emergency notification system	1.2.6
		All Hazards			6.3b - Complete implementation of E-911	1.2.5
		All Hazards			6.3c - Complete the conversion of radios to narrow band	1.2.7
		All Hazards			6.3d - Relocate the fiber optic line from Billings to Red Lodge to reduce vulnerability	1.3.4
		All Hazards			6.3e - Continue to broadcast weather warnings through dispatch	1.2.3, 1.2.6, 6.2.1
		All Hazards			6.3f - Develop the DES page of the county's website to provide information about emergency management	1.2.7
				Objective 6.4: Be prepared for winter storms.		
		Severe Weather			6.4a - Purchase one back-up generators on trailers that can be moved to shelter or critical infrastructure locations.	1.2.7, 1.3.4, 11.3.1
		Severe Weather			6.4b - Maintain shelter agreements with American Red Cross	1.2.7
		Severe Weather			6.4c - Host NWS weather spotter training in county annually	1.2.3, 6.2.3, 6.24
		Severe Weather			6.4d - Invite NWS to make presentations in the schools	6.2.3
				Objective 6.5: Enhance emergency planning for all natural disasters		
		All Hazards			6.5a - Prepare a strategic plan for the LEPC including clarification of purpose and identification of roles and responsibilities	1.2.7
				Objective 6.6: Coordinate with public health emergency planning		
		Disease			6.6a - Participate as requested in the development of public health emergency plans	8.4.1, 8.4.2
		Disease			6.6b - Include public health in disaster response exercises	1.4.4, 8.5.1
4	**2012**	**Carter**				
			Goal 1- Flood mitigation to improve damage			
				Objective 1.1 Improve drainage within Ekalaka		
		Flooding			a. Construct dips rather than culverts to improve drainage.	3.4.1
		Flooding			b. Mitigate accidents with culverts rather than old bridges	3.4.1
		Flooding			c. Participate in the National Flood Insurance Program.	3.5.2
			Goal 2 - Improve Communications			
				Objective 2.1 Radio Communications		
		All Hazards			a. Narrow Banded Radios needed for all responders as per required by FCC prior to January 1st, 2013	1.2.7
		All Hazards			b. Repeater Towers placed to cover all areas of the County.	1.2.7, 1.3.4
				Objective 2.2 Weather Radio		1.2.5, 6.2.2
		All Hazards			a. Use weather radio all hazard alert system as warning.	1.2.5, 6.2.2
		All Hazards			b. Educate public on use and advantages of weather radio.	1.2.5, 6.2.2
				Objective 2.3 Improve Cell phone communications		
		All Hazards			a. Work with Mid Rivers to add cell towers within the county.	1.2.7, 1.3.4
			Goal 3 - Forestry Management			
				Objective 3.1 Educate those living within forested areas		
		Wildfire			a. Provide education on defensible space	2.3.1, 2.3.2
		Wildfire			b. Maintain and improve access to public and private forest lands	2.1.2, 2.2.6
				Objective 3.2 Utilize the Carter County Fire Mitigation Plan		
		Wildfire			a. Educate the public as to the objectives and value of the plan	2.3.1, 2.3.2, 2.5.1
		Wildfire			b. Implement the Fire Mitigation Plan	2.1.2, 2.1.3, 2.2.4, 2.2.6, 2.3.1, 2.3.2
			Goal 4 - Improve transportation within Carter County			
				Objective 4.1 Mitigate road hazards within county		
		Transp. Accidents			a. Procure and install signs for county marking such hazards as auto gates, sharp curves and bridges	7.4.1
		Transp. Accidents			b. Work with road crew to identify hazards within county.	7.1.2, 7.4.1
				Objective 4.2 All-weather storage for equipment		
		Severe Weather			a. Construct storage building for equipment	1.2.7
				Objective 4.3 Obtain needed lifesaving response equipment		
		Transp. Accidents			a. Obtain jaws of life equipment for the county.	1.2.7
		Transp. Accidents			b. Ambulance	1.2.7
				Objective 4.4 Prepare vulnerable populations for winter weather.		
		Severe Weather			a. Provide education for the public on winter survival	6.2.6
		Severe Weather			b. Provide education on hazards when power outages occur	6.2.1
		Severe Weather			c. Provide generators in the Carter County Courthouse and the Carter High School	1.2.7, 1.3.4, 11.3.1
				Objective 4.5 Prepare vulnerable populations for extreme summer storms or heat.		
		Severe Weather			a. Provide lightning storm education	6.2.1
		Severe Weather			b. Provide education on heat related illness	6.2.1

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		Severe Weather			c. Provide basic weather observation training for residents.	1.2.3, 6.2.3
			Goal 5 - Public Safety for Town of Ekalaka			
				Objective 5.1 Upgrade the water and sewer infrastructure within the jurisdictional limits of Ekalaka.		
		Severe Weather			a. Continue efforts to acquire grants and low interest loans that are affordable to the community for housing and public facility projects.	1.2.7
				Objective 5.2 Install safe sidewalks within downtown area of Ekalaka		
		Severe Weather			a. Install sidewalks on the east side of Main Street	1.2.7
				Objective 5.3 All-weather storage for equipment/training room		
		Severe Weather			a. Construct storage building for equipment	1.2.7
		Severe Weather			b. Provide a training room for responders	1.2.7
			Goal 6 - Improve transportation within Carter County -			
				Objective 6.1 Provide all weather road access for residents		
		Transp. Accidents			a. Pave remainder of Highway 323, to complete a paved highway from Ekalaka to Alzada, the north/south route through the county.	7.4.1
		Transp. Accidents			b. Develop a plan for improving all county side roads	7.1.2
		Transp. Accidents			c. Procure more suitable gravel and improve county roads	7.4.1
		Transp. Accidents			d. Continue efforts to improve all weather travel within the county.	7.4.1
			Goal 7 - Improve the Emergency Operations Center			
				Objective 7.1 Establish the Carter County Event Center as a backup Emergency		
		All Hazards			a. Provide WIFI to the center.	1.2.7
2	**2017**	**Cascade**				
			Goal 1 - Reduce the Impacts from Hazardous Material Incidents			
				Objective 1.1 - Implement Prevention Projects to Reduce Impacts from Hazardous Material Incidents		
		Haz-Mat			Project 1.1.1 - Explore the possibility of a signed hazardous material route around Great Falls to avoid population center.	7.2.1
				Objective 1.2 - Enhance Emergency Service Capabilities to Reduce Impacts from Hazardous Material Incidents		
		Haz-Mat			Project 1.2.1 - Ensure local emergency responders have adequate training to respond to haz-mat events consistent with local capabilities.	1.4.4, 7.3.1, 7.3.2
		Haz-Mat			Project 1.2.2 - Obtain regional containment equipment trailers and supplies to strategically position for response in the county.	7.2.1
		Haz-Mat			Project 1.2.3 - Update resource list of emergency response supplies/vendors.	1.2.7
				Objective 1.3 - Implement Public Education and Awareness Projects to Reduce Impacts from Hazardous Material Incidents		
		Haz-Mat			Project 1.3.1 - Increase public awareness of common hazardous materials either stored, used or transported through the area.	7.1.1
		Haz-Mat			Project 1.3.2 - Educate teachers and school staff in schools near hazardous materials facilities and transportation routes in how to limit exposure to hazardous materials to students during an incident.	1.2.7
		Haz-Mat			Project 1.3.3 - Evaluate opportunities to inform private property owners who live along state highways on hazardous-material traffic.	7.1.1
			Goal 2 - Reduce Impacts from Wildfire			
				Objective 2.1 - Implement Property Protection Projects to Reduce Impacts from Wildfire		
		Wildfire			Project 2.1.1 - Continue grants programs for landowners to create defensible space.	2.1.2, 2.1.3, 2.2.5
				Objective 2.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Wildfire		
		Wildfire			Project 2.2.1 - Continue education programs to raise consciousness of landowners on wildfire.	2.3.1, 2.3.2
				Objective 2.3 - Enhance Emergency Service Capabilities to Reduce Impacts from Wildfire		
		Wildfire			Project 2.3.1 - Recruit and train volunteer firefighters.	1.2.7
		Wildfire			Project 2.3.2 - Obtain more 4-WD tenders.	1.2.7
		Wildfire			Project 2.3.3 - Install culverts on initial attack roads in Dearborn area.	3.4.1
		Wildfire			Project 2.3.4 - Improve training and qualifications of personnel to more effectively interface with incoming Incident Management Teams deployed in the county.	1.4.3, 1.4.4
		Wildfire			Project 2.3.5 - Increase availability of water resources for wildland firefighting by strategic placement of water tanks and ponds.	1.2.7
		Wildfire			Project 2.3.6 - Create a database of water sources for firefighting and make database available to rural fire districts.	2.2.7
		Wildfire			Project 2.3.7 - Perform fuel treatments along evacuation routes.	2.1.2, 2.1.3
				Objective 2.4 - Support Mapping/Analysis/ Planning Projects to Reduce Impacts from Wildfire		
		Wildfire			Project 2.4.1 - Study creation of fire breaks in appropriate locations in Conservation Reserve Program lands and areas of future development.	2.2.5, 2.2.6
		Wildfire			Project 2.4.2 - Conduct WUI mapping to support new Community Wildfire Protection Plan.	2.2.1, 2.2.11, 2.2.12, 2.5.1
		Wildfire			Project 2.4.3 - Update Community Wildfire Protection Plan.	2.2.1, 2.2.11, 2.2.12, 2.5.1
		Wildfire			Project 2.4.4 - Complete a study of impact fees for rural residents to fund more reliable water supplies and fire safety.	2.5.1
			Goal 3 - Reduce the Impacts from Severe Weather & Drought			
				Objective 3.1 - Implement Property Protection Projects to Reduce Impacts from Severe Weather		
		Severe Weather			Project 3.1.1 - Install windows with shatterproof glass at new schools and critical facilities and upgrade windows at existing facilities during regular maintenance.	4.5.3
				Objective 3.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Severe Weather & Drought		
		Severe Weather			Project 3.2.1 - Promote the National Weather Service's Severe Weather Awareness program.	1.2.3, 6.2.3, 6.2.4

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		Severe Weather			Project 3.2.2 - Promote National Weather Service's severe weather spotter training program.	1.2.3, 6.2.3, 6.24
		Drought			Project 3.2.3 - Support drought programs implemented through the Conservation District, FSA, and MSU extension.	5.1.1, 5.1.5, 5.2.2, 5.4.1, 5.4.2, 5.4.3
		Drought			Project 3.2.4 - Implement projects from Conservation District's drought planning process.	5.2.2, 5.4.1, 5.4.2, 5.4.3
				Objective 3.3 - Implement Prevention Projects to Reduce Impacts from Severe Weather & Drought		
		Severe Weather			Project 3.3.1 - Encourage utility companies to bury power lines where interruption of service is frequent.	6.3.1
			Goal 4 - Reduce Impacts from Communicable Disease			
				Objective 4.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Communicable Disease		
		Disease			Project 4.1.1 - Support Public Health Department's public education programs on communicable disease.	8.2.1
		Disease			Project 4.1.2 - Promote immunizations and disseminate information.	8.1.1
		Disease			Project 4.1.3 - Promote active surveillance between Public Health and healthcare providers.	8.1.1
			Goal 5 - Reduce Impacts from Transportation Accidents			
				Objective 5.1 - Enhance Emergency Service Capabilities to Reduce Impacts from Transportation Accidents		
		Transp. Accidents			Project 5.1.1 - Continue exercises to prepare for mass casualty incidents.	1.4.4
		Transp. Accidents			Project 51.2 - Recruit and train EMS volunteers to staff Quick Response Units.	1.2.7
				Objective 5.2 - Implement Structural Projects to Reduce Impacts from Transportation Accidents		
		Transp. Accidents			Project 5.2.1 - Work with railroad to reconstruct Belt underpass to create a wider and straighter alignment.	7.1.2, 7.4.1
		Transp. Accidents			Project 5.2.2 - Encourage railroads to enhance safety at crossings.	7.1.2
				Objective 5.3 - Implement Public Education and Awareness Projects to Reduce Impacts from Transportation Accidents		
		Transp. Accidents			Project 5.3.1 - Support MDT's Transportation Safety Program.	7.2.2, 7.2.3, 7.2.4
			Goal 6 - Reduce Impacts from Flooding and Dam Failure			
				Objective 6.1 - Implement Prevention Projects to Reduce Impacts from Flooding and Dam Failure		
		Flooding			Project 6.1.1 - Re-certify the West Great Falls and Vaughn levees.	3.5.5
				Objective 6.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Flooding and Dam Failure		
		Flooding			Project 6.2.1 - Educate homeowners on the advantages of purchasing flood insurance through the National Flood Insurance Program.	3.5.2
		Flooding			Project 6.2.2 - Work towards achieving a lower rating through the National Flood Insurance Program Community Rating System.	3.5.3
		Flooding			Project 6.2.3 - Participate in the National Weather Service's Flood Awareness program.	1.2.3, 6.2.3, 6.24
		Flooding			Project 6.2.4 - Provide awareness training to repetitive loss property owners (and others) on mitigation programs to relocate, elevate, and floodproof structures in the floodplain.	3.1.1
		Dam Failure			Project 6.2.5 - Conduct public outreach / education with residents living in inundation areas.	3.5.1, 10.1.1, 10.4.1
				Objective 6.3 - Implement Property Protection Projects to Reduce Impacts from Flooding and Dam Failure		
		Flooding			Project 6.3.1 - Obtain river gauges for 6th Street SW bridge in Great Falls, in the town of Sun River, and elsewhere as needed.	3.2.2
		Flooding			Project 6.3.2 - As needed, remove woody vegetation from the edge of the county's levee and dikes.	3.5.5
		Flooding			Project 6.3.3 - Remove debris from floodways.	3.4.5
		Flooding			Project 6.3.4 - Install and maintain security fencing and signage on levees and dikes in the county.	3.5.5
		Flooding			Project 6.3 5 - Consider forming a flood control district in Belt to address concerns with the dike.	3.5.5
				Objective 6.4 - Implement Structural Projects to Reduce Impacts from Flooding and Dam Failure		
		Flooding			Project 6.4.1 - Reduce flooding in the Gibson Flats area by installing drainage ditches in the vicinity of Gerber Road.	3.4.1
		Flooding			Project 6.4.2 - Resize culverts in various locations throughout the county.	3.4.1
		Flooding			Project 6.4.3 - Identify locations in Neihart where culverts are needed.	3.4.1
		Flooding			Project 6.4.4 - Redesign the storm drain system in Belt.	3.4.4
		Flooding			Project 6.4.5 - Construct a dike on the west side of the town of Sun River.	3.5.5
		Flooding			Project 6.4.6 - Protect riverside berms along the Sun River to prevent erosion.	3.5.5
		Flooding			Project 6.4.7 - Evaluate the outlets on WGF levee for improvements in stormwater drainage	3.5.5
		Flooding			Project 6.4.8 - Update the storm water system in the Town of Cascade	3.4.4
			Goal 7 - Reduce Impacts from Terrorism			
				Objective 7.1 - Enhance Emergency Service Capabilities to Reduce Impacts from Terrorism		
		Terrorism			Project 7.1.1 - Conduct comprehensive vulnerability assessment that provides priorities.	11.1.6, 11.2.1, 11.2.5
		Terrorism			Project 7.1.2 - Prioritize active shooter/armed intruder response training for employees of critical facilities.	1.4.4, 11.1.4
				Objective 7.2- Implement Property Protection Projects to Reduce Impacts from Terrorism		
		Terrorism			Project 7.2.1 - Consider installing video surveillance or alarms in critical facilities, especially in unattended locations (i.e. – water towers/communication sites/power or water sub-stations).	11.3.1
		Terrorism			Project 7.2.2 - Consider physical hardening of critical facilities (i.e. anti-vehicle barricades / interior barricades for locking doors [door kicks, door stops] / perimeter fencing / controlled access gates).	11.3.1
			Goal 8 - Enhance Cyber Security			

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				Objective 8.1 - Implement Property Protection Projects to Enhance Cyber Security		
		Cyber Security			Project 8.1.1 - Conduct vulnerability assessment of critical cyber infrastructure.	11.2.2
		Cyber Security			Project 8.1.2 - Conduct external security audit of fire walls on networks.	11.1.6, 11.2.1
		Cyber Security			Project 8.1.3 - Expand access to controls that check computers to enhance security.	11.1.6, 11.2.1
				Objective 8.2 - Implement Public Education and Awareness Projects to Enhance Cyber Security		
		Cyber Security			Project 8.2.1 - Require training for employees and local organizations on cyber security.	1.4.4, 11.1.1, 11.1.6
				Objective 8.3 - Support Mapping/Analysis/ Planning Projects to Enhance Cyber Security		
		Cyber Security			Project 8.3.1 – Perform cyber mapping for planning and vulnerability mitigation.	11.1.5, 11.2.2
			Goal 9 - Reduce Impacts from All Hazards			
				Objective 9.1 - Implement Prevention Projects to Reduce Impacts from All Hazards		
		All Hazards			Project 9.1.1 - Provide NOAA weather radios to all schools and critical facilities.	1.2.5, 6.2.2
				Objective 9.2 - Enhance Emergency Service Capabilities to Reduce Impacts from All Hazards		
		All Hazards			Project 9.2.1 - Update list of emergency shelter locations in each community.	1.2.7
		All Hazards			Project 9.2.2 - Obtain generators for emergency shelters.	1.2.7, 1.3.4, 11.3.1
		All Hazards			Project 9.2.3 - Continue to aggressively address rural locations within the county so people's residences can be found for rescue purposes.	1.2.7
		All Hazards			Project 9.2.4 - Identify and secure a back-up location for the dispatch center.	1.2.7
				Objective 9.3 - Implement Public Education and Awareness Projects to Reduce Impacts from All Hazards		
		All Hazards			Project 9.3.1 - Encourage public to engage in Volunteer Organizations Active in Disaster (VOAD).	1.2.7
		All Hazards			Project 9.3.2 - Provide shelter-in-place training to the public	1.2.7
		All Hazards			Project 9.3.3 - Perform public outreach/education on location of emergency shelters.	1.2.7
		All Hazards			Project 9.3.4 - Conduct public outreach campaign where special needs residents would provide information on where they live and what they need. Develop a database with this information.	8.4.1, 8.4.2
2	**2017**	**Chouteau**				
			Goal - Prevent personal injury, loss of life and damage to property and the environment from natural and techno-logical hazards.			
			Goal - Document hazards, risk assessments, and vulnerabilities and rate those hazards based on probability and potential impact to the County.			
			Goal - Encourage public participation in preparedness and mitigation activities, by promoting public awareness and an understanding of natural and technological hazards; as well as the risk those hazards potentially present to quality of life and economic vitality.			
			Goal - Continue to form partnerships with private and public sector agencies, businesses and organizations to fur-ther comprehensive planning and implementation of mitigation measures.			
			Goal - Continue updating the Continuity of Government plan for the County and assist private and public sector agencies and businesses to prepare Continuity of Operations plans.			
			Goal - Establish a framework for reducing future losses from technological and natural disasters.			
			Goal - Prepare for, mitigate, avoid, reduce and minimize the disruption, damage and losses that occur from a dis-aster and facilitate post-disaster funding.			
			Goal - Sustain existing public safety programs by assessing current emergency services capabilities and identify-ing future needs.			
		All Hazard			Increase knowledge of the hazards and mitigation strategies that would apply in Chouteau County and adjust policies and programs based on that knowledge.	1.2.1, 1.2.7
		All Hazard			Initiate a review of County's radio system to create a more efficient and effective radio system for the responders.	1.2.7
		All Hazard			Create and maintain a system and plan to support populations with functional needs, adults and children, within Chouteau County, including evacuation and shelter.	1.2.7, 8.4.1, 8.4.2
		All Hazard			Create disaster related educational programs to be used through the school system.	1.2.4
		All Hazard			Improve public awareness & provide citizens with specific steps to reduce their risks to natural hazards.	1.2.1
		All Hazard			Develop a long-term recovery plan for Chouteau County, including data and cost estimates for structures, contents and function losses for critical infrastructure from the effects of a catastrophic disaster.	1.3.4
		All Hazard			Continue to refine the list of Critical Facilities capable of offering safe haven to the citizens of Chouteau County during a disaster and evaluate their location relative to known hazardous or high risk areas.	1.2.7
		All Hazard			Identify specific mitigation related criteria to be incorporated into the land use planning process, e.g., prohibiting development in high hazard areas, etc.	1.5.1, 2.5.1
		All Hazard			As future subdivisions or critical infrastructure are developed, review the hazards and risks associated with the development.	1.2.7, 2.5.1
		All Hazard			Update current County map to include new infrastructures, new buildings and/or remove ones no longer there.	1.2.7
		Severe Weather			Support the concept of a removal/replacement for trees that threaten or pose a risk to utilities and strutures.	1.2.7
		Severe Weather			Support the construction of underground utilities when and where practical.	6.3.1
		Severe Weather			Develop a plan for clearing debris from priority routes to maintain access to critical facilities.	1.2.7, 1.3.4
		Severe Weather			Develop and implement programs to reduce risks to public infrastructure.	1.2.1
		Severe Weather			Develop a list of resources for homeowners to use when building new structures to aid in a more storm ready home.	6.2.4
		Flooding			Educate the public about purchasing National Flood Insurance or basement backup insurance.	3.5.2

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		Flooding			Update Applicable City codes to improve risk reduction and prevention of flood impacts.	1.5.1
		Flooding			Continue participation in the NFIP and consider joining the Community Rating System (CRS).	3.5.3
		Flooding			Create planning and zoning regulations for development within the floodplain.	1.5.1
		Flooding			Develop mitigation and preparedness data and measures for critical public infrastructure and facilities located in flood hazard areas.	3.4.3
		Flooding			Pursue public acquisition to preserve open space in the floodplain.	3.3.1
		Disease			Increase the vaccination rate for Chouteau County residents; especially amongst the younger age groups, in the schools and for emergency providers. Continue to provide public awareness on Communicable disease prevention.	8.1.1
		Wildfire			Remove vegetation and combustible materials around structures.	2.1.2, 2.3.1
		Wildfire			When county planning board reviews new subdivisions incorporate fuel breaks and safety zone areas into the planning process as well as requirements for roofing with fire resistant materials.	1.5.1, 2.5.1
		Wildfire			Prepare a strategic water source plan for the county, which shows the most efficient sources of water needed to support wildland firefighting efforts. It may be necessary to develop new sources in some isolated dry locations in order to reduce refill times. Explore opportunities to use dry hydrants and stored water facilities. GPS the location of water supply points to develop a water supply map for Chouteau County.	2.2.7
		Wildfire			Complete wildfire hazard rating forms for the "Wildland Urban Interface" areas of the county.	2.2.1
		Flooding			Prepare land use maps and flood plain maps which will be of aid to future administrators, planners and developers.	3.2.1
		All Hazards			Obtain data to allow for more thorough and improved future risk assessment analysis efforts.	2.2.1, 3.2.1
		All Hazards			Collect updated data on critical structures, values and location in one easy to access database to utilize for future planning efforts.	1.2.7
4	**2017**	**Custer**				
			Goal 1 - Reduce Impacts from Wildfire			
				Objective 1.1 - Support Mapping/Analysis/ Planning Projects to Reduce Impacts from Wildfire		
		Wildfire			Project 1.1.1 - Coordinate mapping of WUI areas with rural addressing.	2.2.1
		Wildfire			Project 1.1.2 - Continually update the strategic water source plan for the county.	1.2.7
		Wildfire			Project 1.1.3 - Develop a capital improvements plan to maintain fire apparatus and equipment in the county.	1.2.7
		Wildfire			Project 1.1.4 - Review each subdivision and identify safety zones, as needed.	1.2.7
				Objective 1.2 - Enhance Emergency Service Capabilities to Reduce Impacts from Wildfire		
		Wildfire			Project 1.2.1 - Implement training program for firefighters which focuses on structural-wildland cross training.	1.4.4
				Objective 1.3 - Implement Prevention Projects to Reduce Impacts from Wildfire		
		Wildfire			Project 1.3.1 - Develop annexation policy for future development which addresses wildfire risk and includes develop standards.	1.5.1
				Objective 1.4 - Implement Public Education and Awareness Projects to Reduce Impacts from Wildfire		
		Wildfire			Project 1.4.1 - Provide information about FireWise construction and landscaping to homeowners and commercial builders.	2.3.2
		Wildfire			Project 1.4.2 - Educate property owners about defensible space and cost-share grants.	2.3.1, 2.3.2
		Wildfire			Project 1.4.3 - Continue to sponsor a FireWise community program.	2.1.2, 2.1.3, 2.3.1, 2.3.2
				Objective 1.5 - Implement Property Protection Projects to Reduce Impacts from Wildfire		
		Wildfire			Project 1.5.1 - Work with the DNRC, landowners, and the BLM to reduce vegetation in subdivision areas where fuels represent a clear potential to generate high fire intensities (Pine Hills Ranchettes, Wolf Creek Estates, Moon Creek, and other developed areas).	2.2.1, 2.1.3, 2.2.6
		Wildfire			Project 1.5.2 - Ensure assets owned by the local jurisdictions have defensible space and are continually maintained.	2.2.1
		Wildfire			Project 1.5.3 - Encourage utility companies to perform fuel reduction along utility corridors.	2.1.3
		Wildfire			Project 1.5.4 - Encourage BLM to mitigate wildfire risk on Pumpkin Ranch where grazing is not allowed.	2.2.6
			Goal 2 - Reduce Impacts from Severe Weather			
				Objective 2.1 - Implement Public Education and Awareness Projects to Reduce Impacts from Severe Weather		
		Severe Weather			Project 2.1.1 - Utilize radio and other media to broadcast weather warning information, as situations develop.	1.2.3, 1.2.6, 6.2.1
		Severe Weather			Project 2.1.2 - Provide outreach, both through printed material and social media, on how to prepare for severe weather including Shelter-In-Plan and obtaining battery-operated NOAA weather radios.	1.2.5, 1.2.7, 6.2.2
		Severe Weather			Project 2.1.3 - Partner with the National Weather Service on the Weather Ready Nation Ambassador Program.	1.2.3, 6.2.3, 6.2.4
				Objective 2.2 - Enhance Emergency Service Capabilities to Reduce Impacts from Severe Weather		
		Severe Weather			Project 2.2.1 - Have county dispatch broadcast severe weather warnings to emergency responders as situations develop.	1.2.3, 1.2.6, 6.2.1
		Severe Weather			Project 2.2.2 - Continue to offer weather spotter training.	1.2.3, 6.2.3, 6.24
		Severe Weather			Project 2.2.3 - Consider installing signs marking snow routes in Miles City.	1.2.7
				Objective 2.3 - Implement Property Protection Projects to Reduce Impacts from Severe Weather		
		Severe Weather			Project 2.3.1 - Maintain trees that could impact county or city property.	1.2.7
			Goal 3 - Reduce Impacts from Drought			
				Objective 3.1 - Support Monitoring and Planning Projects to Reduce Impacts from Drought		
		Drought			3.1.1 - Support programs implemented through the Conservation District, NOAA, FSA, NRCS, DNRC, and MSU extension to monitor drought.	5.2.2, 5.4.1, 5.4.2, 5.4.3

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				Objective 3.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Drought		
		Drought			Project 3.2.1 - Support efforts by federal and state agencies to hold workshops, develop and distribute range and agriculture management tools. and provide information to producers on drought.	5.1.1
			Goal 4 - Reduce Impacts from Flooding and Levee/Dam Failure			
				Objective 4.1 - Implement Property Protection Projects to Reduce Impacts from Flooding and Levee/Dam Failure		
		Flooding			Project 4.1.1 - Continue participation in the National Flood Insurance Program.	3.5.2
		Flooding			Project 4.1.2 - Work towards achieving a lower rating through the National Flood Insurance Program Community Rating System.	3.5.3
				Objective 4.2 - Support Mapping/Analysis/ Planning Projects to Reduce Impacts from Flooding and Levee/Dam Failure		
		Flooding			Project 4.2.1 - Develop Stormwater Master Plan for Miles City.	3.4.4
		Dam Failure			Project 4.2.2 - Encourage DNRC to evaluate reservoir dams in the county and reclassify if necessary.	10.1.2
		Flooding			Project 4.2.3 - Consider forming a 501(c)3 non-profit to manage donations during flood disasters.	1.2.7, 1.3.4
				Objective 4.3 - Implement Structural Projects to Reduce Impacts from Flooding and Levee/Dam Failure		
		Flooding			Project 4.3.1 - Upgrade culverts and bridges to mitigate impacts of runoff.	3.4.1
		Levee Failure			Project 4.3.2 - Continue the levee project from the USACE constructed levee to the wastewater treatment plant.	3.5.5
		Levee Failure			Project 4.3.3 - Reconstruct the levee to protect the water treatment plant in accordance with FEMA requirements.	3.5.5
		Levee Failure			Project 4.3.4 - Construct a levee to protect property along the Tongue River including the Custer County Fair Grounds, I-94 Business Loop Highway (Main Street), South to Pacific Avenue.	3.5.5
		Levee Failure			Project 4.3.5 - Construct a levee to protect property along the Tongue River including the Range Riders Museum, I-94 Business Loop Highway (Main Street), North to Old Milwaukee Road Tracks.	3.5.5
		Flooding			Project 4.3.6 - Enlarge storm sewer line to drain the underpass efficiently.	3.4.4
		Flooding			Project 4.3.7 - Enlarge sanitary sewer main from Tongue River Main Street bridge to Montana Ave.	3.4.4
		Flooding			Project 4.3.8 - Revitalize slough for better overall drainage.	3.4.5
				Objective 4.4 - Implement Public Education and Awareness Projects to Reduce Impacts from Flooding and Levee/Dam Failure		
		Flooding			Project 4.4.1 - Increase awareness about what to do during a major flood.	1.2.7
		Flooding			Project 4.4.2 - Educate the public on the benefit of installing mechanical devices in drains and toilets to prevent flood water from entering buildings.	3.5.4
		Dam Failure			Project 4.4.3 - Target potentially affected citizens with information about the dam failure risk in their area.	1.2.7
				Objective 4.5 - Implement Prevention Projects to Reduce Impacts from Flooding and Levee/Dam Failure		
		Flooding			Project 4.5.1 - Set up program to acquire properties in the floodway at tax sales and/or from willing sellers.	3.3.1, 3.5.7
		Levee Failure			Project 4.5.2 -Acquire easements or land to provide access to Miles City levee.	3.5.5
				Objective 4.6 - Support Mapping/Analysis/ Planning Projects to Reduce Impacts from Flooding and Levee/Dam Failure		
		Levee Failure			Project 4.6.1 - Continue working with USACE (and other agencies) on study which leads to Section 205 construction for the Tongue River levee.	3.5.5
			Goal 5 - Reduce Impacts from Hazardous Material Incidents and Transportation Accidents			
				Objective 5.1 - Enhance Emergency Service Capabilities to Reduce Impacts from Hazardous Material & Transportation Accidents		
		Haz-Mat & Transp. Accidents			Project 5.1.1 - Work cooperatively with BNSF personnel on training opportunities for emergency responders.	1.4.4, 7.3.1
		Haz-Mat & Transp. Accidents			Project 5.1.2 - Review and update contingency plan for a railroad incident in downtown Miles City.	1.2.7, 7.2.1
		Haz-Mat & Transp. Accidents			Project 5.1.3 - Offer joint training on hazmat response to fire departments and hospital personnel.	1.4.4, 7.3.1
		Haz-Mat & Transp. Accidents			Project 5.1.4 - Invite BNSF to be part of LEPC and conduct exercises once every two or three years.	1.4.4, 7.3.1
		Haz-Mat & Transp. Accidents			Project 5.1.5 - Offer hazmat awareness-level training to Ismay Fire Department.	1.4.4, 7.3.1
		Haz-Mat & Transp. Accidents			Project 5.1.6 - Look into feasibility of placing a Hazardous Material Response Team in Eastern Montana.	7.1.2
				Objective 5.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Hazardous Material and Transportation Accidents		
		Haz-Mat & Transp. Accidents			Project 5.2.1 - Increase public awareness of common hazardous materials either stored, used or transported through the area.	7.1.1
				Objective 5.3 - Implement Prevent Projects to Reduce Impacts from Hazardous Material & Transportation Accidents		
		Haz-Mat & Transp. Accidents			Project 5.3.1 - Encourage railroad to implement slower train speeds through town.	1.2.7
		Haz-Mat & Transp. Accidents			Project 5.3.2 - Encourage MDT on provide better signage for truckers to get through Miles City going north.	7.4.1
				Objective 5.4 - Support Planning Projects to Reduce Impacts from Hazardous Material & Transportation Accidents		
		Haz-Mat & Transp. Accidents			Project 5.4.1 - Develop population protection plans for residents along railroad or near chemical facilities.	1.2.7
			Goal 6 - Reduce Impacts from Terrorism, Violence, Civil Unrest and Cyber Security			
				Objective 6.1- Enhance Emergency Service Capabilities to Reduce Impacts from Terrorism, Violence, Civil Unrest and Cyber Security		
		Terrorism			Project 6.1.1 - Continue awareness and training on armed intruders and active shooters.	1.4.4, 11.1.4
		Terrorism			Project 6.1.2 - Review Crisis Action Plans in all schools and hospitals to ensure they include adequate security measures.	11.1.3, 11.2.6

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		Terrorism			Project 6.1.3 - Conduct comprehensive vulnerability assessment that provides priorities for critical infrastructure.	11.2.1
				Objective 6.2 - Implement Public Education and Awareness Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest and Cyber Security		
		Terrorism			Project 6.2.1 - Promote See Something-Say Something Campaign to report unusual behavior.	11.1.1
		Terrorism			Project 6.2.2 - Require training for employees and local organizations on cyber security.	1.4.4, 11.1.6
				Objective 6.3 - Implement Property Protection Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest and Cyber Security		
		Terrorism			Project 6.3.1 - Consider installing video surveillance or alarms in critical facilities, especially in unattended locations (i.e. – water towers/communication sites/power or water sub-stations).	11.3.1
		Terrorism			Project 6.3.2 - Consider physical hardening of critical facilities and schools (i.e. anti-vehicle barricades / interior barricades for locking doors [door kicks, door stops] / perimeter fencing / controlled access gates).	11.3.1
				Objective 6.4 - Support Planning Projects to Reduce Impacts from Terrorism, Violence, Civil Unrest and Cyber Security		
		Terrorism			Project 6.4.1 - Conduct audit of city-county operations security.	11.1.5
			Goal 7 - Reduce Impacts from Communicable Disease			
				Objective 7.1- Implement Prevention Projects to Reduce Impacts from Communicable Disease		
		Disease			Project 7.1.1 - Prevent and control communicable disease by activities to raise and sustain vaccine coverage in all populations.	8.1.1
		Disease			Project 7.1.2 - Prevent and control communicable disease by surveillance.	8.1.1
		Disease			Project 7.1.3 - Continue to control mosquito populations in and around Miles City.	8.1.1
		Disease			Project 7.1.4 - Conduct risk-based inspections of all food service establishments.	8.1.1
		Disease			Project 7.1.5 - Enforce local and state regulations for water quality, sewage and solid waste disposal.	8.1.1
				Objective 7.2 - Enhance Emergency Service Capabilities to Reduce Impacts from Communicable Disease		
		Disease			Project 7.2.1 - Procure and train all emergency responders for potential threats, as needed.	8.5.1
		Disease			Project 7.2.2 - Conduct exercise on distribution of vaccinations and/or antibiotics throughout county.	1.4.4, 8.5.1
		Disease			Project 7.2.3 - Continue to train with DPHHS on strategic national stockpile and Chempack Plan on annual basis.	8..1
		Disease			Project 7.2.4 - Update and expand the HAN (Health Alert Network) listserve as needed.	8.5.1
				Objective 7.3 - Implement Public Education and Awareness Projects to Reduce Impacts from Communicable Disease		
		Disease			Project 7.3.1 - Promote mass vaccination clinics.	8.1.1
		Disease			Project 7.3.2 - Promote public education on preventing communicable disease.	8.2.1
		Disease			Project 7.3.3 - Provide education and/or training for Public Health Dept. staff.	1.4.4
				Objective 7.4 - Support Planning Projects to Reduce Impacts from Communicable Disease		
		Disease			Project 7.4.1 - Keep pandemic plans up to date and complete exercises.	1.4.4, 8.5.1
		Disease			Project 7.4.2 - Develop guidelines for agri-security.	8.4.4
			Goal 8 - Reduce Impacts from Structure Fire			
				Objective 8.1- Implement Property Protection Projects to Reduce Impacts from Structure Fire		
		Structure Fire			Project 8.1.1 - Continue cleaning chimneys and installing smoke detectors for citizens.	1.2.7
				Objective 8.2 - Enhance Emergency Service Capabilities to Reduce Impacts from Structure Fire		
		Structure Fire			Project 8.2.1 - Recruit and train volunteer fire fighters.	7.3.1
		Structure Fire			Project 8.2.2 -Update equipment needed for suppressing structure fires.	1.2.7
				Objective 8.3 - Implement Public Education and Awareness Projects to Reduce Impacts from Structure Fire		
		Structure Fire			Project 8.3.1 - Continue to support a community education program on structure fire prevention.	1.2.7
		Structure Fire			Project 8.3.2 - Support the education program in school on topics supplied by International Fire Council.	1.2.7
		Structure Fire			Project 8.3.3 - Promote sprinkler system installation in commercial structures.	1.2.7
			Goal 9 - Reduce Impacts from All Hazards			
				Objective 9.1 - Enhance Emergency Service Capabilities to Reduce Impacts from All Hazards		
		All Hazards			Project 9.1.1 - Upgrade communications systems for all response entities, as funding permits.	1.2.7
		All Hazards			Project 9.1.2 - Develop social networking methods to convey information during disasters.	1.2.7
		All Hazards			Project 9.1.3 - Improve dissemination of information from MDU and Tongue River Electric regarding estimated duration of power outages.	1.2.7
		All Hazards			Project 9.1.4 - Increase number of elected officials and emergency responders trained in ICS and NIMS.	1.4.3
		All Hazards			Project 9.1.5 - Review and update emergency response MOUs, as needed.	1.2.7
		All Hazards			Project 9.1.6 - Encourage cell phone companies to get additional towers throughout county, as needed.	1.2.7
		All Hazards			Project 9.1.7 - Update list of repeater locations, as needed, and provide to emergency responders.	1.2.7
		All Hazards			Project 9.1.8 - Install generator hookups for emergency shelters and critical facilities.	1.2.7, 1.3.4, 11.3.1
		All Hazards			Project 9.1.9 - Encourage people without cell phones to get NOAA weather radios so they receive weather alerts.	1.2.5, 6.2.2
		All Hazards			Project 9.1.10 - Require residential address numbers be displayed at proper height for rescue purposes.	1.2.7

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				Objective 9.2 - Support Planning Projects to Reduce Impacts from All Hazards		
		All Hazards			Project 9.2.1 - Continually update Emergency Operations Plan.	1.2.7, 1.3.4, 8.4.1
		All Hazards			Project 9.2.2 - Update the county and city growth policies, as needed, to address mitigation of high hazard areas prior to new development.	1.5.1, 2.5.1
		All Hazards			Project 9.2.3 - Support faith-based organizations in coordination of sheltering and disaster relief.	1.2.7
		All Hazards			Project 9.2.4 - Coordinate with Red Cross for mass care and sheltering plan.	1.2.7
		All Hazards			Project 9.2.5 - Provide special needs facilities with guidelines for emergency actions plans disaster preparedness.	8.4.1, 8.4.2
		All Hazards			Project 9.2.6 - Develop guidelines for evacuation of pets and livestock.	1.2.7
				Objective 9.3 - Implement Public Education and Awareness Projects to Reduce Impacts from All Hazards		
		All Hazards			Project 9.3.1 - Promote FEMA's National Preparedness Month each September.	1.2.8
		All Hazards			Project 9.3.2 - Provide awareness on developing a family disaster plan and disaster supply kit.	1.2.8
6	**2016**	**Daniels**				
			Goal - Increase community understanding of emergency management and build support for hazard mitigation			
			Goal - Develop, promote, integrate, and track mitigation strategies			
			Goal - Continue to improve and enhance the county's emergency management program			
			Goal - Increase the economic stability, core values, and quality of services of the participating jurisdictions			
			Goal - Increase mitigation resources to eliminate or minimize harm done to people, property, jobs, and natural resources in Daniels County by natural and manmade hazards			
		All Hazards			Adopt building codes that require disaster resistance to hazards such as severe thunderstorms, the wind, tornadoes, floods, wildfire, winter storms, terrorism, and earthquakes.	1.5.1
		Transp. Accidents			When developed, consider and include projects related to hazard mitigation, such as transportation and public utility infrastructure improvements, in the capital improvements schedule.	6.3.1, 6.3.2, 7.1.2, 7.4.1
		Wildfire, Flooding			Adopt ordinances that create disaster resistance such as mowing and fire reduction ordinances and flood ordinances.	1.5.1
		All Hazards			Update or create zoning ordinances to limit development in high hazard areas.	1.5.1
		Wildfire			Create a plan that meets federal standards and identifies hazards and mitigation measures specific to wildfire.	1.3.6, 2.2.5, 2.5.1
		All Hazards			Integrate the operational, response, training, and preparedness needs that are not directly tied to mitigation into the county's emergency operation plan	1.4.3, 1.4.4
		All Hazards			Further, incorporate elements of the risk assessment and mitigation strategy into the county's growth policy, considering sustainability and disaster resistance a top priority.	1.5.1, 2.5.1
		All Hazards			Include elements of the risk assessment and mitigation strategy in the county's subdivision regulations, considering sustainability and disaster resistance a top priority.	1.5.1, 2.5.1
4	**2014**	**Dawson**				
			Goal - Reduce or avoid flood damage to people and property.			
			Goal - Reduce the potential for hazardous materials incidents and mitigate potential impacts to life and property.			
			Goal - Minimize the impacts of severe winter storms.			
			Goal - Minimize the impacts of severe summer storms.			
		Flooding			A - Utilize the results and recommendations from the ongoing Corps of Engineers flood study in Glendive to pursue mitigation projects that reduce the flood risk for the community.	1.2.2, 1.3.7, 3.4.1
		All Hazards			B - Acquire replacement sirens where necessary and identify strategic locations for new sirens.	1.2.7
		All Hazards			C - Designate an emergency shelter in Richey.	1.2.7
		Haz-Mat			D - Map all hazardous materials locations in the county using GIS mapping software and distribute maps to first responders.	7.1.1
		Severe Weather			E - Set up and test generator for Dawson County High School so the school can serve as a winter shelter.	1.2.7, 1.3.4, 11.3.1
		Landslide			F - Define steep slope/landslide areas in Growth Policy and implement development restrictions in those areas.	1.5.1
		Severe Weather			G - Require new mobile home/RV parks and workforce housing facilities of a certain size to have a safe room or sheltering plan.	1.2.7, 6.4.1
		Flooding			H - Install Yellowstone River gauge upstream of Glendive.	3.2.2
		Haz-Mat			I - Develop ordinances for Richey that restrict the parking of vehicles carrying hazardous materials through the county.	1.5.1
		Flooding			J - Identify and prepare solutions to mitigate ongoing bank erosion for the creek that bisects the Dawson County High School and athletic fields.	3.4.5
		Severe Weather			K - Create or identify adequate safe rooms for schools.	6.4.1
		Haz-Mat			L - Work with BNSF or other agencies/organizations (Federal Railroad Administration, American Association of Railroads) to receive rail transport hazardous materials reports.	7.3.1
		Flooding			M - Conduct NFIP community workshops to provide information and incentives for property owners to acquire flood insurance.	3.5.2
		Severe Weather			N - Continue educating residents about seasonal weather safety.	1.2.3, 6.2.3, 6.2.4
		Haz-Mat			O - Educate residents about hazardous materials.	1.2.7
		Severe Weather			P - Coordinate with MDT to construct snow fences along critical county roads, especially near Richey.	7.4.1
		Flooding			Q - Evaluate participation in the NFIP Community Rating System (CRS)	3.5.3
		All Hazards			R - Assist local businesses with creating emergency action plans	1.2.7, 1.3.4
1	**2013**	**Anaconda-Deer Lodge**				
			Goal 1: Prevent community losses from wildfires and structure fires.			

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				Objective 1.1 : Minimize the risk to structures in the wildland/urban interface.		
		Wildfire			Project 1.1.1: FireSafe Program	2.2.5, 2.2.6
		Wildfire			Project 1.1.2: WUI Assessments	2.1.2, 2.2.9
		Wildfire			Project 1.1.3: Fuel Reductions	2.1.2, 2.1.3
					Project 1.1.4: Uniform Fire Code	2.5.1
				Objective 1.2 : Improve wildland firefighting capabilities.		
		Wildfire			Project 1.2.1: Dry Hydrants	2.2.7
		Wildfire			Project 1.2.2: Ingress/Egress Road Improvements	2.6.2
				Objective 1.3: Reduce the possibility of large urban structure fires.		
		Wildfire			Project 1.3.1: City Hydrants	-
		Wildfire			Project 1.3.2: Sprinklers	-
			Goal 2: Reduce potential losses from earthquakes.			
				Objective 2.1 : Prevent earthquake damages to critical facilities, infrastructure, and facilities housing vulnerable populations.		
		Earthquakes			Project 2.1.1: Critical Facility Seismic Retrofits	4.2.1
		Earthquakes			Project 2.1.2: Infrastructure Seismic Improvements	4.2.6
				Objective 2.2 : Prevent residential and commercial losses from earthquakes.		
		Earthquakes			Project 2.2.1: Earthquake Retrofit Education	4.3.2, 4.3.3
			Goal 3: Reduce future damages from flooding.			
				Objective 3.1 : Prevent flood losses to Anaconda-Deer Lodge infrastructure.		
		Flooding			Project 3.1.1: Bridge, Culvert, and Road Improvements	3.4.1
		Flooding			Project 3.1.2: Critical Facility Flood Mitigation	3.4.1
		Flooding			Project 3.1.3: Water Body and Drain Maintenance	3.4.1
		Flooding			Project 3.1.4: Dam Security	10.3.1
				Objective 3.2 : Reduce losses to private property from flooding.		
		Flooding			Project 3.2.1: Flood Insurance Education	3.5.2
		Flooding			Project 3.2.2: Floodplain Ordinances	1.5.1
		Terrorism			Project 3.2.3: Backflow Prevention	3.5.4
			Goal 4: Minimize Community Exposure to Hazardous Materials Releases			
				Objective 4.1: Reduce the risk to Montana State Hospital and other critical facilities in Warm Springs from hazardous materials releases.		
		Haz-Mat			Project 4.1.1: Montana State Hospital Emergency Exit	1.2.7
				Objective 4.2: Harden hazardous material critical infrastructure.		
		Haz-Mat			Project 4.2.1: Natural Gas Line Protection	11.3.1
			Goal 5: Reduce community risk from communicable disease.			
				Objective 5.1 : Slow the spread of communicable disease.		
		Disease			Project 5.1.1: Communicable Disease Prevention Program	8.2.1
			Goal 6: Optimize the use of all-hazard mitigation measures.			
				Objective 6.1 : Maintain continuity of government services in a disaster.		
		All Hazards			Project 6.1.1: Generators	1.2.7, 1.3.4, 11.3.1
		All Hazards			Project 6.1.2: Emergency Operations Center	1.2.7
		All Hazards			Project 6.1.3: Sheltering Plan	1.2.7
				Objective 6.2 : Develop resources that can be used to further study and prepare for all hazards.		
		All Hazards			Project 6.2.1: HAZUS-MH GIS Data	2.2.1, 3.2.1
		All Hazards			Project 6.2.2: Storm Ready Community	6.2.4
		All Hazards			Project 6.2.3: Hazard Mitigation Training	1.2.1, 1.4.3
		All Hazards			Project 6.2.4: NOAA Weather Radios	1.2.5, 6.2.2
				Objective 6.3: Mitigate the impact of hazards on future development through land use and building regulations.		
		All Hazards			Project 6.3.1: Growth Policy and Subdivision Regulations	1.5.1, 2.5.1
		All Hazards			Project 6.3.2: Capital Improvements Plans	1.5.1
		Flooding			Project 6.3.3: Conservation Easements	3.3.1
4	**2012**	**Fallon**				
			Goal No. 1) Mitigate the potential loss of life and property from flooding.			
				Objective 1.1. Ensure new construction and development does not put property at risk.		
		Flooding			Project 1.1a Enforce existing floodplain regulations in the Baker area.	3.5.7
		Flooding			Project 1.1b Make information about floodplain requirements available to public.	3.5.1, 3.5.7
		Flooding			Project 1.1c Develop a joint written floodplain policy for the city and county to ensure consistent handling of floodplain activities.	1.5.1
		Flooding			Project 1.1d Participate in the National Flood Insurance Program.	3.5.2
				Objective 1.2.Protect property and infrastructure from flooding.		
		Flooding			Project 1.2a Develop a plan for maintenance of the Baker Lake spillway.	10.2.1
		Flooding			Project 1.2b Replace City shop.	1.2.7
		Flooding			Project 1.2c Submit a proposal to EPA to develop drainage plan for the City of Baker.	3.4.4
		Flooding			Project 1.2d Monitor and provide input to joint effort with City of Baker and Montana Department of Transportation on Highway 7 south storm water system project.	3.4.2, 3.4.4
		Flooding			Project 1.2e Remote monitoring system for Baker Lake	1.2.7
			Goal No. 2) Minimize damage and loss of life from summer storm			

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				Objective 2.1. Warn citizens ahead of storms.		
		Severe Weather			Project 2.1a Install a siren in Plevna.	1.2.7
		Severe Weather			Project 2.1b Determine location and install additional siren's in Baker.	1.2.7
		Severe Weather			Project 2.1c Purchase and distribute weather radios.	1.2.5, 6.2.2
				Objective 2.2. Provide education about summer storms.		
		Severe Weather			Project 2.2a. Offer a session for school children and adults on recognizing severe weather and behaving safely in severe weather.	1.2.4, 6.2.3
				Objective 2.3 Improve weather information across country.		
		Severe Weather			Project 2.3a. Request more advanced technology to provide more timely and accurate weather coverage of the county.	1.2.3, 6.2.1
			Goal No. 3) Be prepared for Winter Storms			
				Objective 3.1. Warn citizens ahead of winter storms.		
		Severe Weather			Project 3.1a Warn citizens ahead of winter storms.	1.2.3, 6.2.1
		Severe Weather			Project 3.2b Obtain back-up power source for Plevna in the event of a winter storm power outage.	1.2.7
			Goal No. 4) Monitor Drought Conditions			
				Objective 4.1. Monitor drought conditions.		
		Drought			Project 4.1a Install remote drought monitoring equipment to gather data and document situation.	5.2.2
			Goal No. 5) Provide a un-interrupted dispatch service for a four- county area			
				Objective 5.1. Operate the dispatch function even if present location becomes inoperable.		
		All Hazards			Project 5.1a. Establish back up Emergency Operations Center in Plevna	1.2.7
			Goal No. 6) Protect people (firefighters and the public) from injury or loss of life due to wildland fires.			
				Objective 6.1 Obtain appropriate training for firefighters.		
		Wildfire			Project 6.1a In addition to basic wildland fire fighting courses, host a course in cooperation with oil producers on responding to hydrocarbon incidents.	7.3.1
		Wildfire			Project 6.1b Establish an all-hazards training facility to train on oil/gas fires, wildfires, structure fires, vehicle fires, hazmat fires and spills, and rescues. Obtain assistance from oil companies to equip and build the facility.	1.4.4
		Wildfire			Project 6.1 c Maintain an adequate number of trained volunteer firefighters that can fight timber fires by working with adjacent counties on mutual aid calls and with the DNRC to create opportunities for Fallon County fire fighters to receive assignments to other fires outside the county.	1.4.4
				Objective 6.2. Ensure firefighters are properly equipped.		
		Wildfire			Project 6.2a Work closely with the oil companies to train and equip individuals in the specialized area of response of hydrocarbon incidents.	7.3.1
		Wildfire			Project 6.2b Equip wildland fire apparatus with wildland monitor guns.	1.2.7
		Wildfire			Project 6.2c Switch all equipment to DNRC Standards	1.2.7
		Wildfire			Project 6.2d Improve SCBA discipline and training for fire fighters.	1.4.4
				Objective 6.3. Warn members of the public about wildland fires that may be approaching and other disasters.		
		Wildfire			Project 6.3a Implement E-911 reverse call-up function. Raise public awareness about this capability.	1.2.5
			Goal No. 7) Maintain an adequate number of trained volunteer firefighters in each department.			
				Objective 7.1 Recruit and retain firefighters.		
		Wildfire, Haz-Mat			Project 7.1a Develop an annual recruitment plan for each department that includes some or all of the following: coverage in the local media, handout materials, tours, visit to schools, and mentoring.	1.2.7
		Wildfire, Haz-Mat			Project 7.1 b Develop community and county recognition program for length of service and special acts.	1.2.7
			Goal No. 8) Address distance to water issues on rural areas.			
				Objective 8.1 Reduce time spent to bring water to incidents.		
		Wildfire			Project 8.1a Purchase and install in-ground water storage tanks countywide. Cover areas without an option for dry hydrants.	2.2.5, 2.2.7
		Wildfire			Project 8.1b Proceed with installation of dry hydrants in previously identified locations.	2.2.5, 2.2.7
		Wildfire			Project 8.1c Continue to maintain water resources in remote locations.	1.2.7
			Goal No. 9) Improve location and facility for Baker Fire Department.			
				Objective 9.1 Implement plans to relocate and construct a new facility.		
		Wildfire			Project 9.1a Select final location. Construct new facility.	1.2.7
			Goal No. 10) Raise public awareness about fire danger and fire prevention.			
				Objective 10.1 Encourage people to think about fire protection.		
		Wildfire			Project 10.1a Place Fire Danger signs in Plevna and Baker.	1.2.7
		Wildfire			Project 10.1b Provide an opportunity to recharge fire extinguishers and combine this with education on requirement for farm equipment and other vehicles.	1.2.7
			Goal No. 11) Use technology effectively.			
				Objective 11.1 Improve response to and data collection about incidents.		
		Wildfire			Project 11.1a Request on-site training in use of NFIRS.	1.4.4
		Wildfire			Project 11.1b Assign incident reporting to one individual in each department.	1.4.3
		Wildfire			Project 11.1 c Retrieve and analyze data at the end of each fire season.	2.2.4, 2.2.8
		Wildfire			Project 11.1d Develop GIS capability and fire/fuel map layers,	2.2.1
		Wildfire			Project 11.1e Obtain handheld GPS units for department's vehicles.	2.2.1, 2.2.2
		Wildfire			Project 11.1 f Obtain navigation systems for each ambulance to ensure shortest response time.	1.2.7
			Goal No. 12) Improve defensible space.			
				Objective 12.1 Raise awareness and understanding of defensible space.		

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		Wildfire			Project 12.1a Complete a demonstration project to create defensible space between CRP land and/or timber for a rural residence. Conduct a tour of the project in cooperation with the Fallon County Conservation District following completion.	2.1.2
6	**2014**	**Fergus**				
			Goal - Promote the use of multi-hazard mitigation measures			
			Goal - Prevent potential wildfire losses			
			Goal - Reduce future losses from flood events			
			Goal - Minimize losses from low frequency, high impact events			
		Flooding			A - Acquire and remove repetitive loss and high risk properties in the floodplain.	3.1.1
		Flooding			B - Upgrade city's floodplain mapping capabilities to include FEMA DFIRM analysis.	3.2.1
		Haz-Mat			C - Work with MDT to improve truck route signage.	7.1.2
		All Hazards			D - Acquire replacement emergency sirens and identify strategic locations for new sirens.	1.2.7
		Flooding			E - Certify and/or improve existing levee system in Denton. Existing levee requires certification for residents to achieve NFIP premium reductions.	3.5.5
		Haz-Mat			F - Designate evacuation shelter facility located a safe distance from likely sources of a hazardous materials incident.	1.2.7
		Severe Weather			G - Require new mobile home/RV parks of a certain size to have a safe room or sheltering plan.	1.2.7, 6.4.1
		Severe Weather			H - Upgrade Trade Center building for use as shelter and staging area. Upgrades include water, sewer and a back-up generator.	1.2.7, 1.3.4, 11.3.1
		Flooding			I - Perform updated hydrologic and hydraulic study of the floodplain.	3.2.1
		All Hazards			J - Develop rural addressing system to aid response.	
		Severe Weather			K - Designate emergency shelters in Denton, Grass Range, Moore and Winifred. Acquire back-up generators for shelters to enable use as warming facilities.	1.2.7, 1.3.4, 11.3.1
		Dam Failure			L - Improve road access to East Fork Dam for ease of maintenance.	7.4.1
		Flooding			M - Study and implement a flood control levee at southern confluence of the diversion and main channel of Big Spring Creek along the Left Bank.	3.5.5
		Flooding			N - Send annual/semi-annual notification letters to property owners located within regulatory floodplain.	3.5.1, 3.5.7
		Flooding			O - Re-evaluate NFIP participation in Grass Range.	3.5.2
		Flooding			P - Promote alternative tilling methods with area farmers to divert field runoff away from Moore.	-
		Haz-Mat			Q - Educate residents about hazardous materials and continue first responder training.	1.4.4, 7.3.1, 7.3.2
		Wildfire			R - Install additional water storage tanks in selected districts and subdivisions.	2.2.5, 2.2.7
		All Hazards			S - Construct additional radio repeaters or work with service providers to improve cellular coverage.	1.2.7
					T - Raise and/or maintain rail bed pedestrian trail along old Milwaukee and BNSF railroad grade.	-
		Flooding			U - Perform streambank restoration activities along Big Spring Creek to prevent erosion.	3.4.5
1	**2014**	**Flathead**				
			Goal 1 - Minimize Risk of Wildfire at Urban Interface			
				Objective 1.1 - Reduce fuels in the wildland urban interface		
		Wildfire			1.1.2 - Provide landowner, farmer, rancher and homeowner education on wildfire and fuel reduction of the WUI and adjoining lands.	2.3.1
		Wildfire			1.1.3 - Support controlled burns to mitigate wildfire risk.	2.2.5, 2.2.6
		Wildfire			1.1.6 - Encourage ingress and egress fuel reduction.	2.1.2
		Wildfire			1.1.7 - Encourage fuel reduction in utility right-of-ways and around critical infrastructure.	2.1.3
		Wildfire			1.1.12 - Perform weed control or mowing along county roads and encourage weed control or mowing along railroads and USFS roads.	2.1.3, 2.2.6
		Wildfire			1.1.13 - Support alternative methods to burning when reducing fuel hazards, such as chipping and harvest.	2.1.5
				Objective 1.2 - Accurately assess and address the current WUI problems at the subdivision level		
		Wildfire			1.2.3 - Annex subdivisions outside of existing rural fire districts into nearest district, if possible.	1.5.1
		Wildfire			1.2.4 - Ensure convenient access to and within all subdivisions for the largest emergency service vehicles.	1.5.1, 2.6.2
		Wildfire			1.2.5 - Encourage two or more subdivision access points in areas of high and extreme fire hazard.	1.5.1, 2.6.2
		Wildfire			1.2.6 - Encourage defensible space and fuel treatments on new subdivisions.	2.1.2, 2.5.1
		Wildfire			1.2.7 - Implement Community Wildfire Protection Plan.	2.1.2, 2.1.3, 2.2.4, 2.2.11, 2.3.1
		Wildfire			1.2.9 - Encourage water supply systems in new and existing subdivisions.	2.2.5, 2.5.1
				Objective 1.3 - Encourage structure protection in the WUI		
		Wildfire			1.3.3 - Encourage a structure sprinkler systems program.	1.2.7
		Wildfire			1.3.4 - Support homeowner fuel reduction programs to get landowners to do fuel reduction on private properties.	2.1.2, 2.1.3, 2.2.5, 2.2.7, 2.3.1
				Objective 1.4 - Improve fire fighting capabilities		
		Wildfire			1.4.2 - Improve fire agency infrastructure (training facility, additional fire equipment storage, enhanced communications systems).	1.4.4
		Wildfire			1.4.5 - Identify areas with high number of fire starts and inadequate suppression equipment.	2.2.4
		Wildfire			1.4.6 - Install more year-round water draft sites (dry hydrants) in the rural fire districts.	2.2.5
				Objective 1.5 - Enhance wildfire detection capabilities		
		Wildfire			1.5.1 - Subscribe to lightning detection and prediction program through Wildfire Management Information at BLM.	1.2.3, 1.2.7

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			Goal 2 - Reduce Impacts from Flooding			
				Objective 2.1 - Prevent flooding of structures and infrastructure from inadequate storm drainage and poorly designed irrigation waterways		
		Flooding			2.1.3 - Evaluate bridges and culverts at risk from flooding and develop schedule and funding to replace or upgrade as necessary.	3.4.1
		Flooding			2.1.4 - Implement stream bank restoration projects to improve floodplain.	3.4.5
		Flooding			2.1.5 - Encourage installation of backflow valves.	3.5.4
		Flooding			2.1.6 - Install storm drains in municipalities, as needed.	3.4.4
		Flooding			2.1.7 - Elevate roadways, as needed to reduce flood damage.	3.4.2
		Flooding			2.1.8 - Install water retention basins to improve safety from flooding.	3.3.1
		Flooding			2.1.9 - Identify areas that could be turned into parks to mitigate reoccurring flood damage.	3.3.1
				Objective 2.2 - Provide adequate warning of flooding events		
		Flooding			2.2.2 - Obtain real time automated river gauges.	3.2.2
				Objective 2.3 - Improve the effectiveness of flood insurance programs		
		Flooding			2.3.1 - Promote flood insurance education, especially insurance agents and home\business owners living in floodplain.	3.5.2
		Flooding			2.3.2 - Adopt new FEMA maps and updates of existing floodplain studies as they become available.	3.5.2
		Flooding			2.3.3 - Review and revise floodplain regulations as changes occur in the NFIP, Montana law, and/or local policy.	1.5.1, 3.5.2
			Goal 3 - Reduce Impacts from Hazardous Material Incidents			
				Objective 3.1 - Enhance emergency service capabilities		
		Haz-Mat			3.1.2 - Ensure emergency service personnel have current training and equipment for response.	1.4.4, 7.3.1, 7.3.2
		Haz-Mat			3.1.3 - Educate emergency service personnel on capabilities of privately owned response equipment and local government resources.	1.4.4
				Objective 3.2 - Provide outreach to private and public entities to enhance preparedness		
		Haz-Mat			3.2.1 - Work with vulnerable populations along hazardous material routes to ensure they have a response plan.	1.2.7
		Haz-Mat			3.2.2 - Create a brochure targeting people along haz-mat routes on commodities transported and response.	7.1.1
				Objective 3.3 - Encourage activities to minimize haz-mat incidents		
		Haz-Mat			3.3.1 - Promote businesses doing their Tier II reporting.	1.2.7
		Haz-Mat			3.3.2 - Continue to support the Highway 93 Alternate.	7.1.2, 7.4.1
			Goal 4 - Reduce Impacts from Severe Winter Weather			
				Objective 4.1 - Encourage public to protect themselves and their property		
		Severe Weather			4.1.2 - Encourage public to report trees at risk of impacting power lines.	1.2.7
		Severe Weather			4.1.3 - Provide outreach on recognizing when danger zone has approached; i.e. snow load on roofs, etc.	6.2.6
			Goal 5 - Reduce Impacts from Communicable Disease			
				Objective 5.1 - Promote activities to minimize disease outbreaks and impacts		
		Disease			5.1.1 - Develop a response plan on how to handle individuals determined to be diagnosed with a communicable disease while on-route through air travel.	8.4.1, 8.4.2
		Disease			5.1.2 - Continue to provide public health surveillance, disease investigations, and mitigation strategies.	8.1.1
		Disease			5.1.3 - Continue Public Health education on sanitation and prevention.	8.2.1
		Disease			5.1.4 - Educate on the importance of employee cross training, record keeping and COOP plans to minimize the impact of epidemics.	1.4.4, 8.4.2
			Goal 6 - Reduce Impacts from Transportation Accidents			
				Objective 6.1 - Promote measures to protect public safety		
		Transp. Accidents			6.1.1 - Identify problem intersections and recommend traffic control methods.	7.1.2
		Transp. Accidents			6.1.2 - Consider installing RADAR system for departing and landing aircraft at international airport.	-
		Transp. Accidents			6.1.3 - Examine unprotected railroad crossings and recommend if gates/signage are needed.	7.1.2
			Goal 7 - Reduce Impacts from Severe Summer Weather			
				Objective 7.1 - Promote activities s to protect property		
		Severe Weather			7.1.1 - Develop and implement programs to keep trees from threatening lives, property, and public infrastructure during wind events	1.2.7
				Objective 7.2 - Promote public awareness		
		Severe Weather			7.2.1 - Promote NWS Severe Weather Awareness Week.	1.2.3, 6.2.3, 6.24
		Severe Weather			7.2.2 - Provide outreach on the risks of lightning and other severe summer weather hazards.	1.2.3, 6.2.3, 6.24
			Goal 8 - Reduce Impacts from Earthquakes			
				Objective 8.1 - Make existing residential, commercial, and government structures more resilient.		
		Earthquakes			8.1.1 - Conduct site evaluations of critical facilities.	4.4.3
		Earthquakes			8.1.2 - Install window film for shatter prevention in schools.	4.5.3
		Earthquakes			8.1.3 - Implement non-structural mitigation program for public schools, i.e., equipment/furniture straps.	4.5.2
		Earthquakes			8.1.4 - Implement non-structural and structural retrofits of government buildings, particularly critical infrastructure.	4.5.2
		Earthquakes			8.1.5 - Encourage residential and business retrofit programs.	4.2.1, 4.4.5
				Objective 8.2 - Provide for earthquake resistance in new construction		
		Earthquakes			8.2.1 - Encourage enforcement of current building codes.	4.1.1
				Objective 8.3 - Educate the public in earthquake mitigation and readiness.		

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		Earthquakes			8.3.1 - Require earthquake drills in schools in Flathead County.	4.3.1
		Earthquakes			8.3.2 - Provide public education regarding earthquake awareness.	4.3.1, 4.3.2, 4.3.3
		Earthquakes			8.3.3 - Encourage workplace earthquake drills.	4.3.1
		Earthquakes			8.3.5 - Continue "Earthquake Preparedness Month" outreach activities during October.	4.3.1
				Objective 8.4 - Upgrade community infrastructure for seismic hazards.		
		Earthquakes			8.4.1 - Retrofit bridges and overpasses for seismic stability.	4.2.6
		Earthquakes			8.4.2 - Encourage retrofit public utility systems for seismic resistance.	4.2.1
		Earthquakes			8.4.3 - Encourage installation of public utility shut off and isolation valves.	4.5.1
		Earthquakes			8.4.4 - Encourage seismic evaluations of dams.	4.4.2, 4.4.3
			Goal 9 - Reduce Impacts from Landslides/Subsidence			
				Objective 9.1 - Protect property from landslide damage		
		Landslides			9.1.1 - Implement slope preservation/ stabilization in slide-prone areas in the public domain.	9.1.1
		Landslides			9.1.2 - Encourage slope preservation/ stabilization in slide-prone areas on private land.	9.1.1
			Goal 10 - Reduce Impacts from Drought			
				Objective 10.1 - Promote drought awareness		
		Drought			10.1.1 - Monitor drought conditions	5.2.2
		Drought			10.1.2 - Encourage water conservation by domestic, municipal and industrial users.	5.1.3
		Drought			10.1.3 - Support drought programs implemented through the Conservation District, FSA and MSU extension.	5.1.1, 5.1.5, 5.2.2, 5.4.1, 5.4.2, 5.4.3
		Drought			10.1.4 - Support the development of Water Shortage Contingency Plans for communities and water systems.	5.1.3
			Goal 11 - Reduce Impacts from Terrorism, Violence, and Civil Unrest			
				Objective 11.1 - Ensure readiness in the event of a terrorist incident		
		Terrorism			11.1.1 - Maintain situational awareness through coordination with DES, DOJ and DHS.	11.1.1, 11.1.2
		Terrorism			11.1.2 - Continue to participate in exercises with Border Patrol and/or Civil Support Team.	1.4.4
		Terrorism			11.1.3 - Educate the public and critical infrastructure on "See Something, Say Something" program.	11.1.1
			Goal 12 - Reduce Impacts from Dam Failure			
				Objective 12.1 - Encourage dam safety		
		Dam Failure			12.1.2 - Repair dams and levees, as needed.	3.5.5, 10.2.1
		Dam Failure			12.1.3 - Implement dam failure alert systems.	1.2.5
		Dam Failure			12.1.4- Develop/maintain list of house occupants in inundation areas (evacuation list) to include in EAPs.	10.1.1
				Objective 12.2 - Promote awareness of dam failure hazard in future development		
		Dam Failure			12.2.1 - Consider using dam inundation as item of consideration in subdivision and critical infrastructure location reviews.	1.5.1
		Dam Failure			12.2.2 - Determine when dams need reclassification.	10.1.2
			Goal 13 - Reduce Impacts from Volcanic Ash			
				Objective 13.1 - Promote awareness on ash fall hazard		
		Volcanic Ash			13.1.1 - Develop brochure related to volcanic ash fall.	12.1.2
		Volcanic Ash			13.1.2 - Support the development of a volcanic ash contingency plan for surface water treatment and waste water systems.	1.2.7
			Goal 14 - Reduce Impacts from All Hazards			
				Objective 14.1 - Encourage awareness of all hazards		
		All Hazards			14.1.2 - Promote public education for emergency preparedness.	
		All Hazards			14.1.3 - Utilize social media as outreach for hazard mitigation.	
		All Hazards			14.1.4 - Promote NOAA Weather Radios and Storm Ready Program.	6.2.4, 1.2.5, 6.2.2
				Objective 14.2 - Promote preparedness planning		
		All Hazards			14.2.1 - Promote development of disaster supply kits.	1.2.8
		All Hazards			14.2.2 - Confirm capabilities of shelters with Red Cross.	1.2.7
		All Hazards			14.2.3 - Maintain and update GIS mapping of critical infrastructure.	1.2.7
		All Hazards			14.2.4 - Understand the impact of interruption of commodity transport (propane, natural gas).	7.1.1
		All Hazards			14.2.5 - Promote continuity of operations planning.	1.2.7
		All Hazards			14.2.6 - Support critical infrastructure in conducting vulnerability assessments and developing emergency response plans.	1.2.7
				Objective 14.3 - Upgrade equipment to manage all hazards		
		All Hazards			14.3.1 - Obtain generators for critical facilities and schools.	1.2.7, 1.3.4, 11.3.1
		All Hazards			14.3.2 - Implement reverse 911 technology that includes cell phones.	1.2.5
3	**2012**	**Gallatin**				
			Goal 1: Prevent losses from wildfires.			
				Objective 1.1 : Reduce private losses in the wildland/urban interface.		
		Wildfire			Promote Firewise type programs.	2.1.2, 2.1.3, 2.3.1, 2.3.2
		Wildfire			Require defensible space and inspection of new development in the wildland urban interface.	1.5.1
		Wildfire			Revise subdivision regulations with a better focus on defensible space/maintenance and water supply requirements in the wildland/urban interface.	1.5.1, 2.5.1
		Wildfire			Reduce fuels along ingress and egress roadways.	2.1.2, 2.1.3
		Wildfire			Conduct fuels reduction along utility right-of-ways.	2.1.3, 2.1.2, 2.1.3

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				Objective 1.2 : Increase understanding of the wildfire hazard areas.		
		Wildfire			Develop fuels mapping for public and private lands.	2.2.1
		Wildfire			Develop and maintain a Community Wildfire Protection Plan.	2.2.1, 2.2.11, 2.2.12, 2.5.1
		Wildfire			Develop a centralized, countywide wildfire history database.	2.2.4
				Objective 1.3: Assist property owners in completing mitigation measures.		
		Wildfire			Conduct individual WUI wildfire assessments.	2.1.2, 2.3.1
		Wildfire			Encourage homeowners to reduce fuels around structures and create a fire defensible space.	2.1.2, 2.1.3
			Goal 2: Reduce potential losses from earthquakes.			
				Objective 2.1 : Prevent earthquake losses to critical facilities, vulnerable populations, and infrastructure.		
		Earthquakes			Tie down/secure objects in critical facilities and vulnerable population locations that could fall during an earthquake.	4.5.2
					Retrofit critical government facilities for earthquakes.	4.2.1
		Earthquakes			Inspect key bridges for seismic stability.	4.2.6
		Earthquakes			Anchor or stabilize electric transformers and generators for seismic motion during maintenance and new installations.	4.5.2
		Earthquakes			Install expansion joints in underground utilities during new or replacement construction.	4.5.1
				Objective 2.2: Minimize private earthquake losses.		
		Earthquakes			Educate home and business owners on simple earthquake retrofits.	4.3.1, 4.3.2, 4.3.3
		Earthquakes			Survey commercial structures for earthquake stability and recommend retrofits.	4.4.3
		Earthquakes			Create a financial incentive program for major earthquake retrofits in the priority hazard areas.	1.6.1, 4.4.5
			Goal 3: Reduce damages from flooding.			
				Objective 3.1: Reduce losses to private property from flooding.		
		Flooding			Implement security measures at the dams to include early warning systems.	1.2.6
		Flooding			Educate the public on flood insurance.	3.5.2
		Flooding			Mitigate damages to critical infrastructure in the 100 year flood plain.	3.1.1, 3.4.1
				Objective 3.2: Maximize the protection of life and property through government resources and services.		
		Flooding			Remove woody debris, as needed to protect public safety, but not excessively as such debris is important to ecological health.	3.4.5
		Flooding			Consider where more restrictive regulations or prohibition of development in the floodplain may be necessary.	3.2.1
		Flooding			Map floodplain areas and join the National Flood Insurance Program in the City of Belgrade, Town Of Manhattan, City of Three Forks.	3.5.2
				Objective 3.3: Provide the public with information and means to prevent private flood losses.		
		Flooding			Establish financial incentives for landowners to remove, modify, or replace obsolete and non-functioning flood control and bank stabilization structures.	1.6.1, 3.4.5
		Flooding			Conduct an analysis on the feasibility of a floodplain and floodway buyout and/or relocation program.	3.3.1, 3.1.1
		Flooding			Educate the public on flood insurance.	3.5.2
				Objective 3.4: Improve understanding of the flood hazard and mitigation measures.		
		Flooding			Secure digital flood plain mapping for all substantial rivers and streams in Gallatin County.	3.2.1
		Flooding			Study alternative flood mitigation measures.	3.3.2
			Goal 4: Reduce losses from a transportation or hazardous materials accident.			
				Objective 4.1: Allow for emergency traffic and evacuation routes during a hazardous materials or ground transportation incident.		
		Haz-Mat & Transp. Accidents			Develop an emergency transportation plan that considers key roadways and intersections.	7.1.2
		Haz-Mat & Transp. Accidents			Improve mapping of hazardous materials fixed site locations and common transportation routes.	7.1.1
			Goal 5: Prevent significant loss of life and illness from communicable disease and bioterrorism			
				Objective 5.1: Improve ability to quickly identify communicable disease outbreaks or a bioterrorism incident		
		Disease			Maintain surveillance system to rapidly identify communicable disease incidents and outbreaks	8.1.1
		Disease			Develop laboratory network contacts	1.2.7
				Objective 5.2: Increase ability to provide communicable disease information during an outbreak or bioterrorism incident		
		Disease			Maintain system to provide frequent and effective communications to health care providers and other partners during a communicable disease incident or outbreak	8.2.1, 8.5.1
		Disease			Maintain system to provide adequate public communication during an outbreak or significant disease event	8.2.1
				Objective 5.3: Reduce mortality and morbidity related to communicable disease		
		Disease			Ensure communicable disease investigation and follow-up to contain communicable disease and limit mortality and morbidity	8.4.2
		Disease			Revise Chempack plan as needed	8.4.2
		Disease			Improve immunization rates for vaccine-preventable diseases	8.1.1
			Goal 6: Promote all-hazard mitigation measures.			
				Objective 6.1: Ensure critical infrastructure is operational during disasters.		
		All Hazards			Identify, prioritize, and harden infrastructure from damages during disasters.	1.2.7
		All Hazards			Install or designate back-up systems for critical infrastructure, including emergency communications systems.	1.2.7

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		All Hazards			Install an uninterruptible power supplies on all Gallatin County Public Safety Communications Systems.	1.2.7
				Objective 6.2: Improve warning capabilities.		
		All Hazards			Become a National Weather Service Storm Ready Community in the incorporated cities and towns.	6.2.4
		All Hazards			Develop an Emergency Alert System plan.	1.2.5, 1.2.6
		All Hazards			Put NOAA Weather Radios transmitter in the West Yellowstone area and receivers in critical facilities and schools.	1.2.5, 6.2.2
		All Hazards			Put Early warning on Hyalite Dam	1.2.6
		All Hazards			Develop evacuation plans for all communities.	1.2.7
				Objective 6.3: Increase emergency management and disaster service capabilities to prevent additional losses in a disaster.		
		All Hazards			Develop a sheltering plan specific to utility failures.	1.2.7
		All Hazards			Install generators at critical facilities and vulnerable population locations.	1.2.7, 1.3.4, 11.3.1
				Objective 6.4: Improve digital data for assessing all hazards.		
		All Hazards			Develop GIS data that can be used with FEMA's HAZUS loss estimated models specifically the flood module.	3.2.1
4	**2014**	**Garfield**				
			Goal - Maximize the use of mitigation actions that prevent losses from all hazards.			
			Goal - Reduce community impacts of wildland and rangeland fires.			
			Goal - Mitigate the potential loss of life and property from flooding.			
			Goal - Reduce impacts from severe summer weather.			
			Goal - Reduce impacts from severe winter weather.			
		Flooding			A - Consider joining National Flood Insurance Program (NFIP) county-wide.	3.5.2
		Severe Weather			B - Designate location and develop operating plan for accessible heating center that could be utilized during power outages.	1.2.7
		Flooding			C - Conduct NFIP workshop in Jordan to educate public about benefits of flood insurance.	3.5.2
		Flooding			D - Work with FEMA to determine revised floodplain boundaries for Jordan.	3.2.1
		All Hazards			E - Update the Garfield County-Jordan Growth Policy to include greater consideration of multi-hazard resilience.	1.5.1, 2.5.1
		Severe Weather			F - Receive StormReady designation from the National Weather Service.	6.2.4
		Flooding			G - Mitigate culverts and roads.	3.4.1
		Wildfire			H - Utilize brush removal program to create defensible zones around homes and infrastructure in high risk areas.	2.1.2
		Haz-Mat			I - Continue providing hazardous materials awareness training for first responders.	1.4.4, 7.3.1, 7.3.2
		All Hazards			J - Educate residents about multi-hazard awareness.	1.2.1
2	**2011**	**Glacier**				
			Goal 1- Reduce the Impact from Severe Winter Weather			
				Objective 1.1 - Provide Public Education and Awareness on Severe Winter Weather		
		Severe Weather			1.1.1 - Provide information to special needs populations on winter weather survival	6.2.6
		Severe Weather			1.1.2 - Develop and distribute educational material on how to prepare for winter.	6.2.6
		Severe Weather			1.1.3 - Educate the public on techniques to construct homes that will better withstand severe winds	1.5.1
				Objective 1.2 - Promote Emergency Service Activities to Mitigate Severe Winter Weather		
		Severe Weather			1.2.1 - Obtain generators for critical facilities and schools to maintain power supply during severe winter weather	1.2.7, 1.3.4, 11.3.1
		Severe Weather			1.2.2 - Develop coordinated management strategies for de-icing roads, plowing snow, clearing roads of fallen trees, and clearing debris.	1.2.7
		Severe Weather			1.2.3 - Install markers on fences to determine mileages so people's residences can be found for rescue purposes.	1.2.7
				Objective 1.3 - Implement Property Protection Measures to Mitigate Impacts from Severe Winter Weather		
		Severe Weather			1.3.1 - Bury power lines in Babb, Browning and E. Glacier.	6.3.1
		Severe Weather			1.3.2 - Install air flow spoilers on powerlines as needed to reduce snow/ice buildup.	6.3.2
		Severe Weather			1.3.3 - Coordinate maintenance and mitigation activities to reduce risk to public infrastructure from severe winter storms.	1.2.7
				Objective 1.4 - Implement Prevention Measures to Mitigate Impacts from Severe Winter Weather		
		Severe Weather			1.4.1 - Explore implementing a building code that would require stronger building construction to withstand severe winds	1.5.1
			Goal 2 - Reduce the Impact of Wildland Fires			
				Objective 2.1 - Support Public Education and Awareness Wildfire Mitigation Projects		
		Wildfire			2.1.1 - Promote educational programs such as FireWise	2.3.1, 2.3.2
		Wildfire			2.1.2 - Educate the public on grants program available to assist the public to develop defensible space around dwellings/farm buildings	1.3.7, 2.2.7, 2.3.1
				Objective 2.2 - Promote Emergency Service Activities to Mitigate Wildfire		
		Wildfire			2.2.1 - Obtain 4-wheel drive tenders for hauling water to rural locations	1.2.7
		Wildfire			2.2.2 - Construct buildings attached to fire halls for tenders in Babb, Browning and elsewhere.	1.2.7
				Objective 2.3 - Implement Requirements to Prevent Wildfire		
		Wildfire			2.3.1 - Consider new subdivisions regulations that require fire breaks, on-site water storage, wide roads, multiple access and fuel mitigation in the Wildland Urban interface and inspection of new development.	1.5.1, 2.5.1
			Goal 3 - Reduce Losses from Flooding			
				Objective 3.1 - Implement Property Protection Measures to Mitigate Impacts from Flooding		

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		Flooding			3.1.1 - Resize culverts where needed to mitigate flooding impacts.	3.4.1
		Flooding			3.1.2 - Identify locations where culverts are needed	3.4.1
				Objective 3.2 - Provide Public Education and Awareness on Flooding		
		Flooding			3.2.1 - Promote participation in the National Flood Insurance Program.	3.5.2
		Flooding			3.2.2 - Pursue enrollment in the National Flood Insurance Program Community Rating System.	3.5.3
				Objective 3.3 - Implement Structural Projects to Mitigate Impacts from Flooding		
		Flooding			3.3.1 - Engineer and construct a stormwater management system in Browning.	3.4.4
		Flooding			3.3.2 - Fortify the dikes on Willow Creek in Browning.	3.5.5
			Goal 4 - Reduce the Impact of Communicable Disease			
				Objective 4.1 - Support Public Education and Awareness on Mitigation of Communicable Disease		
		Disease			4.1.1 - Provide public awareness on communicable disease prevention.	8.2.1
				Objective 4.2 - Promote Emergency Service Activities to Mitigate Communicable Disease		
		Disease			4.2.1 - Expand capacity of facilities to handle an outbreak.	8.4.2
			Goal 5 - Reduce the Impact from Hazardous Material Incidents			
				Objective 5.1 - Promote Emergency Service Activities to Mitigate Hazardous Material Incidents.		
		Haz-Mat			5.1.1 - Obtain mobile decontamination trailer for use around the county.	7.2.1
		Haz-Mat			5.1.2 - Ensure local emergency responders have adequate training to respond to haz-mat events consistent with local capabilities.	1.4.4, 7.3.1, 7.3.2
			Goal 6 - Reduce the Impact from Severe Summer Weather			
				Objective 6.1 - Support Public Education and Awareness on Mitigation of Summer Weather Hazards		
		Severe Weather			6.1.1 - Promote the National Weather Services "Severe Weather Awareness Week"	1.2.3, 6.2.3, 6.24
		Severe Weather			6.1.2 - Work towards Glacier County becoming a National Weather Service Storm Ready Community	6.2.4
			Goal 7 - Reduce the Impact of Earthquakes			
				Objective 7.1 - Support Public Education and Awareness on Mitigation of Impacts from Earthquakes		
		Earthquakes			7.1.1 - Provide educational awareness on earthquake hazards.	4.3.1, 4.3.2, 4.3.3
				Objective 7.2 - Implement Property Protection Measures to Mitigate Impacts from Earthquakes		
		Earthquakes			7.2.1 - Promote use of shatter-proof window materials and tie down techniques in critical facilities.	4.5.3
			Goal 8 - Reduce the Impact of Drought			
				Objective 8.1 - Support Public Education and Awareness on Drought		
		Drought			8.1.1 - Support drought programs implemented through the Conservation District, FSA , and MSU extension.	5.1.1, 5.1.5, 5.2.2, 5.4.1, 5.4.2, 5.4.3
		Drought			8.1.2 - Develop funds and public impetus to improve Cut Bank's water intake system.	3.4.3
			Goal 9 - Reduce the Impact of Dam Failure			
				Objective 9.1 - Support Public Education and Awareness on Dam Failure		
		Dam Failure			9.1.1 - Promote the benefit of residents downstream from high hazard dams having NOAA weather radios.	1.2.5, 6.2.2
			Goal 10 - Mitigate the Impacts from All-Hazards			
				Objective 10.1 - Enhance Public Education/Awareness on All-Hazards		
		All Hazards			10.1.1 - Increase NOAA weather radio capabilities in Babb, St. Mary's, and surrounding area	1.2.5, 6.2.2
		All Hazards			10.1.2 - Promote awareness on the local NOAA Weather Radio station and the benefits of owning a weather radio.	1.2.5, 6.2.2
		All Hazards			10.1.3 - Promote awareness on developing a family disaster plan.	1.2.8
		All Hazards			10.1.4 - Promote awareness on preparing disaster supply kits.	1.2.8
				Objective 10.2 - Enhance Emergency Services to Mitigation Impacts from All-Hazards		
		All Hazards			10.2.1 - Coordinate with volunteer agencies regarding sheltering during emergencies or disaster.	1.2.7
		All Hazards			10.2.2 - Identify sponsors for purchase of NOAA weather radios.	1.2.5, 6.2.2
		All Hazards			10.2.3 - Assist critical facilities in acquiring NOAA Weather Radios.	1.2.5, 6.2.2
5	**2007**	**Golden Valley**				
			Goal 1 - Reduce Impacts from Flooding			
				Objective 1.1: Maintain Integrity of Roads		
		Flooding			Install larger culverts/drainage structures where repetitive flood damage occurs.	3.4.1
				Objective 1.2: Protect Structures from Flood Damage		
		Flooding			Conduct elevation survey of buildings in Ryegate subject to flooding.	3.2.1
			Goal 2 - Prevent Losses from Wildfire			
				Objective 2.1: Improve Firefighting Capabilities		
		Wildfire			Obtain new fire truck for Ryegate.	1.2.7
		Wildfire			Construct new fire hall in Ryegate.	1.2.7
		Wildfire			Install a hydrant system in the town of Lavina to protect Main Street businesses which are connected wood structures.	2.2.7
		Wildfire			Recruit more volunteer fire fighters.	1.2.7
		Wildfire			Provide training for volunteer fire fighters for wildland certification.	1.4.4
		Wildfire			Increase water storage facilities in town of Lavina	2.2.7

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		Wildfire			Secure portable water pumps with large diameter piping that can be laid in the Musselshell River.	2.2.7
		Wildfire			Install water tanks in outlying areas of the county.	2.2.7
				Objective 2.2: Minimize Risk of Wildfire at Urban Interface		
		Wildfire			Create fuel breaks east and west of Ryegate and Lavina.	2.2.6, 2.2.7
		Wildfire			Create defensible space around structures and promote FIREWISE programs in communities.	2.1.2, 2.1.3, 2.3.1, 2.3.2
		Wildfire			Clean up slash piles in the community of Lavina.	1.2.7
		Wildfire			Provide better weed control around town of Lavina.	1.2.7
		Wildfire			Coordinate with landowners for enhanced grazing around towns to reduce fuels.	1.2.7
				Objective 2.3: Reduce Wildfire Risk in Outlying Areas of the County		
		Wildfire			Collaborate with USFS and BLM on fuel reduction projects.	2.1.2, 2.1.3, 2.2.5, 2.2.7, 2.3.1
		Wildfire			Modify fuels in Bull Mountains.	2.2.6
		Wildfire			Implement ordinances to not allow shake shingle roofs in fire-prone areas.	1.5.1
			Goal 3: Reduce Impacts from Winter Storms			
				Objective 3:1: Maintain Continuity of Infrastructure during Extreme Cold		
		Severe Weather			Obtain generators for schools to maintain power supply during winter.	1.2.7, 1.3.4, 11.3.1
				Objective 3.2: Provide Early Warning of Severe Weather Conditions		
		Severe Weather			Obtain NOAA weather radios for critical facilities.	1.2.5, 6.2.2
			Goal 4: Prevent Losses from Severe Winds and Hail			
				Objective 4.1: Enhance Safety at Public Facilities		
		Severe Weather			Obtain shatterproof film for windows at critical facilities.	4.5.3
			Goal 5: Reduce Losses from Transportation-Related Hazardous Materials Accidents			
				Objective 5.1: Consider Mitigation for Constant Derailments at Cushman Crossing (located upwind of Lavina)		
		Transp. Accidents			Initiate dialog with railroad on measures to reduce derailments.	1.2.7
		Transp. Accidents			Consider emergency warning system at Cushman Crossing that interfaces with dispatch in Lavina.	1.2.6
			Goal 6: Reduce Risk of Losses from Dam Failure			
				Objective 6.1: Protect Ryegate from Potential Failure of Deadman's Basin Dam		
		Dam Failure			Install movement sensors on face of Deadman's Basin Dam to detect pending failure.	1.2.6
		Dam Failure			Install an early warning system on Deadman's Basin Dam to interface with dispatch in Ryegate.	1.2.6
		Dam Failure			Provide NOAA weather radios to ranchers downstream from Deadman's Basin Dam and residents in Ryegate.	1.2.5, 6.2.2
			Goal 7: Promote All-Hazard Mitigation Measures			
				Objective 7.1: Enhance Communication Systems		
		All Hazards			Obtain portable repeater that could be used in Snowy Mountain to north and Broadview area where current communication is poor.	1.2.7
		All Hazards			Obtain backup generator for courthouse to support emergency communications.	1.2.7, 1.3.4, 11.3.1
				Objective 7.2: Enhance Early Warning Capabilities		
		All Hazards			Obtain sirens for towns of Ryegate and Lavina.	1.2.7
		All Hazards			Implement reverse 911 system for all areas within the county.	1.2.5, 1.2.6
				Objective 7.3: Maintain Continuity of Infrastructure during Disasters		
		All Hazards			Obtain new ambulances for Ryegate and Lavina.	1.2.7
		All Hazards			Obtain generator for repeater site.	1.2.7, 1.3.4, 11.3.1
		All Hazards			Obtain mobile generator to use at Golden Valley County courthouse and other critical facilities.	1.2.7, 1.3.4, 11.3.1
		All Hazards			Install pigtail connections at county critical facilities for mobile generator.	1.2.7, 1.3.4, 11.3.1
				Object 7.4: Enhance Awareness on Hazard Risk Reduction and Emergency Preparedness		
		All Hazards			Identify awareness through the media of emergency shelter locations.	1.2.7
		All Hazards			Increase public awareness of risk reduction at 4H and County Fairs.	1.2.1
		All Hazards			Implement reverse 911 system for all areas within the county.	1.2.5, 1.2.6
1	**2005**	**Granite**				
		Wildfire	**Goal 1: Prevent community losses from wildfires.**			
				Objective 1.1: Minimize the risk to structures in the wildland/urban interface.		
		Wildfire			Project 1.1.1: WUI Assessments	2.1.2, 2.2.9
		Wildfire			Project 1.1.2: Fuel Reductions	2.1.2, 2.1.3
				Objective 1.2: Improve wildland firefighting capabilities.		
		Wildfire			Project 1.2.1: Dry Hydrants	2.2.7
		Wildfire			Project 1.2.2: Ingress/Egress Road Improvements	2.6.2
			Goal 2: Reduce future damages from flooding.			
				Objective 2.1: Reduce losses to private property from flooding.		
		Flooding			Project 2.1.1: Flood Insurance Education	3.5.2
		Flooding			Project 2.1.2: Bridge, Culvert, and Road Improvements	3.4.1
		Flooding			Project 2.1.3: Floodplain Ordinances	1.5.1
			Goal 3: Reduce potential losses from earthquakes.			
				Objective 3.1: Prevent earthquake damages to critical facilities, infrastructure, and facilities housing vulnerable populations.		
		Earthquakes			Project 3.1.1: Critical Facility Seismic Retrofits	4.2.1

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		Earthquakes			Project 3.1.2: Infrastructure Seismic Improvements	4.2.6
				Objective 3.2: Prevent residential and commercial losses from earthquakes.		
		Earthquakes			Project 3.2.1: Earthquake Retrofit Education	4.3.2, 4.3.3
			Goal 4: Minimize the impacts from a transportation or hazardous materials accident.			
				Objective 4.1: Reduce the probability of hazardous materials affecting a populated area.		
		Haz-Mat			Project 4.1.1: Highway Barriers	7.4.1
		Haz-Mat			Project 4.1.2: Fuel Tank Protection	7.4.1
				Objective 4.2: Minimize injuries and fatalities from transportation accidents.		
		Transp. Accidents			Project 4.2.1: School Bus Safety Program	7.4.1
			Goal 5: Reduce the community risk from public health threats.			
				Objective 5.1: Slow the spread of communicable disease.		
		Disease			Project 5.1.1: Communicable Disease Prevention Program	8.2.1
				Objective 5.2: Prevent water contamination.		
		Disease			Project 5.2.1: Public Water Supply Protection	-
			Goal 6: Optimize the use of all-hazard mitigation measures.			
				Objective 6.1 : Develop resources that can be used to further study and prepare for all hazards.		
		All Hazards			Project 6.1.1: HAZUS-MH GIS Data	2.2.1, 3.2.1
				Objective 6.2: Protect the population from utility outages.		
		All Hazards			Project 6.2.1: Generators	1.2.7, 1.3.4, 11.3.1
		All Hazards			Project 6.2.2: Electric Infrastructure Protection	1.2.7, 1.3.4, 11.3.1
				Objective 6.3: Improve public warning capabilities.		
		All Hazards			Project 6.3.1: Storm Ready Community	6.2.4
		All Hazards			Project 6.3.2: NOAA Weather Radio	1.2.5, 6.2.2
				Objective 6.4: Plan for population protection needs.		
		All Hazards			Project 6.4.1: Functional Annexes	1.2.7
				Objective 6.5: Mitigate the impact of hazards on future development through land use and building regulations.		
		Severe Weather, Earthquake			Project 6.5.1: Building Codes	1.5.1, 2.5.1
		All Hazards			Project 6.5.2: Growth Policies and Subdivision Regulations	1.5.1, 2.5.1
		All Hazards			Project 6.5.3: Capital Improvements Plans	1.5.1
		Flooding			Project 6.5.4: Conservation Easements	3.3.1
2	**2012**	**Hill**				
			Goal 1 - Reduce Impacts from Wildfire			
				Objective 1.1 - Enhance Opportunities to Protect Property from Wildfire		
		Wildfire			1.1.1 - Continue grazing in sustainable areas to reduce fuel loading and decrease potential wildfire intensity.	2.1.2, 2.2.6
		Wildfire			1.1.2 - Coordinate and request railroad right-of-way fuel reduction to include mowing/spraying and removal at appropriate times to reduce number of wildfire ignitions.	2.1.3
		Wildfire			1.1.3 - Encourage Firewise practices through creation of defensible space around communities and private homes.	2.1.2, 2.1.3, 2.3.1, 2.3.2
		Wildfire			1.1.4 - Encourage fuel reduction and/or containment treatments on CRP lands such as double row plow/disk of perimeter, mow vegetation, introduce prescribed fire or a combination of these.	2.1.2, 2.1.3, 2.2.5, 2.2.7
		Wildfire			1.1.5 - Utilize and enforce Hill County Burning Permit requirements.	2.5.2
		Wildfire			1.1.6 - Encourage fuel reduction along highways, at communication sites, and on the perimeter and within communities by cutting or mowing where feasible.	2.1.2, 2.1.3, 2.2.5, 2.2.7, 2.3.1
		Wildfire			1.1.7 - Encourage BNSF and other agencies to maintain a water truck during activities that may ignite a wildland fire	2.2.5
				Objective 1.2 - Enhance Emergency Service Capabilities to Mitigation Impacts from Wildfire		
		Wildfire			1.2.1 - Recruit people for volunteer fire departments.	1.2.7
		Wildfire			1.2.2 - Develop GPS database of water sources for distribution and inclusion in County and municipality fire apparatus.	2.2.2
		Wildfire			1.2.3 - Utilize County and cooperators expertise and provide GPS training to emergency services personnel	1.4.4
				Objective 1.3 - Provide Public Education and Awareness on Wildfire		
		Wildfire			1.3.1 - With cooperators, provide classroom or video fire suppression training for rural area citizens and County employees who will respond to wildland fires.	1.4.4
		Wildfire			1.3.2 - Develop and disseminate updated maps relating to fire hazard to assist builders and homeowners	2.2.1
		Wildfire			1.3.3 - Develop partnerships and outreach to provide for fire mitigation activities and suppression preparedness.	2.2.5, 2.2.6
		Wildfire			1.3.4 - Support volunteer fire department fire prevention activities	1.2.7
		Wildfire			1.3.5 - Provide outreach to citizens on wildfire mitigation techniques.	2.3.1, 2.3.2
			Goal 2 - Reduce Impacts from Severe Winter Weather			
				Objective 2.1 - Enhance Opportunities to Protect Property from Severe Winter Weather		
		Severe Weather			2.1.1 - Encourage utility companies to install air flow spoilers on power lines in areas vulnerable to heavy snow loads.	6.3.2
				Objective 2.2 - Provide Public Education and Awareness on Severe Winter Weather		
		Severe Weather			2.2.1 - Have available for distribution Montana DES/MDT guide book on winter weather survival.	6.2.6
		Severe Weather			2.2.2 - Promote the National Weather Service's Winter Weather Awareness Week.	1.2.3, 6.2.3, 6.24
			Goal 3 - Reduce Impacts from Flooding			
				Objective 3.1 - Enhance Opportunities to Protect Property from Flooding		

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		Flooding			3.1.1 - Repair Henry Bridge near Box Elder and Cottonwood Bridge north of Havre.	3.4.1
		Flooding			3.1.2 - Resize and replace culverts as needed to mitigate impacts from spring runoff.	3.4.1
		Flooding			3.1.3 - Obtain automatic river and stream gauges where needed.	3.2.2
		Flooding			3.1.4 - Continue to remove woody vegetation from the edge of the levee and dikes.	3.5.5
		Flooding			3.1.5 - Explore options to relocate, elevate and/or floodproof structures which have been repeatedly flooded.	3.1.1
		Flooding			3.1.6 - Consider installing security fencing and signage on levees and dikes.	3.5.5
		Flooding			3.1.7 - Consider forming a flood control district to address concerns with the dikes/levees.	3.5.5
		Flooding			3.1.8 - Perform maintenance on Milk River dike drainage systems.	3.5.5
				Objective 3.2 - Implement Structural Projects to Mitigate Flooding		
		Flooding			3.2.1 - Work towards meeting FEMA's levee/dike certification requirements to ensure compliance.	3.5.5
				Objective 3.3 - Provide Public Education and Awareness on Flooding		
		Flooding			3.3.1 - Educate homeowners on purchasing flood insurance through the National Flood Insurance Program.	3.5.2
		Flooding			3.3.2 - Participate in the National Weather Service's Flood Awareness Week.	1.2.3, 6.2.3, 6.24
			Goal 4 - Reduce Impacts from Dam Failure			
				Objective 4.1 - Enhance Opportunities to Protect Property from the Risk of Dam Failure		
		Dam Failure			4.1.1 - Support ways to mitigate siltation problem at Fresno Reservoir	3.4.5
				Objective 4.2 - Implement Structural Projects to Mitigate Dam Failure		
		Dam Failure			4.2.1 - Monitor and reconstruct rip-rap on earthen dams as needed.	10.2.1
		Dam Failure			4.2.2 - Continue to work towards bringing the dams into compliance.	10.2.1
				Objective 4.3 - Enhance Emergency Service Capabilities to Mitigation Impacts from Dam Failure		
		Dam Failure			4.3.1 - Promote installation of early warning systems on high hazard dams to interface with dispatch.	1.2.6
				Objective 4.4 - Provide Public Education and Awareness on Dam Failure		
		Dam Failure			4.4.1 - Continue to conduct public outreach / education with residents living in inundation areas.	3.5.1, 10.1.1, 10.4.1
		Dam Failure			4.4.2 - Promote the benefit of residents downstream from high hazard dams having NOAA weather radios.	1.2.5, 6.2.2
			Goal 5 - Reduce Impacts from Structure Fire			
				Objective 5.1 - Enhance Emergence Service Capabilities to Mitigate the Impacts from Structure Fire		
		Structure Fire			5.1.1 - Update Volunteer Fire Department PPE (turnouts) and equipment.	1.2.7
		Structure Fire			5.1.2 - Support reconstruction of St. Mary's water pipeline that supplies Milk River.	5.4.3
		Structure Fire			5.1.3 - Recruit and train volunteer fire fighters.	1.2.7
				Objective 5.2 - Provide Public Education and Awareness on Structure Fire		
		Structure Fire			5.2.1 - Promote public education on the benefit of smoke detectors.	1.2.7
		Structure Fire			5.2.2 - Support volunteer fire department fire prevention activities.	1.2.7
		Structure Fire			5.2.3 - Support the education program in school on topics supplied by International Fire Council.	1.2.4
		Structure Fire			5.2.4 - Support a community education program on structure fire prevention.	1.2.1, 1.2.4
		Structure Fire			5.2.5 - Promote sprinkler system installation in residential and commercial structures.	1.2.7
			Goal 6 - Reduce Impacts from Transportation Accidents			
				Objective 6.1 - Implement Structural Projects to Mitigate Transportation Accidents		
		Transp. Accidents			6.1.1 - Examine and prioritize unprotected railroad crossings and recommend if gates/signage are needed.	7.1.2
		Transp. Accidents			6.1.2 - Explore options to make State Secondary 232 safer to the traveling public.	7.4.1
		Transp. Accidents			6.1.3 - Explore options for establishing a controlled crosswalk at 1st Street & 7th Avenue in Havre.	7.1.2
				Objective 6.2 - Provide Public Education and Awareness on Transportation Accidents		
		Transp. Accidents			6.2.1 - Increase public awareness on how to safely cross 1st Street and 7th Avenue in Havre.	7.2.3
			Goal 7 - Reduce Impacts from Landslides/Land Slippage			
				Objective 7.1 - Enhance Opportunities to Protect Property from Landslides		
		Landslide			7.1.1 - Identify landslide-prone areas in Beaver Creek Park, City of Havre, and other areas as needed.	9.3.2
		Landslide			7.1.2 - Implement preservation/stabilization measures of slide-prone areas.	9.1.1
			Goal 8 - Reduce Impacts from Severe Summer Weather and Drought			
				Objective 8.1 - Provide Public Education and Awareness on Severe Summer Weather		
		Severe Weather			8.1.1 - Promote the National Weather Service's Severe Weather Awareness Week.	1.2.3, 6.2.3, 6.24
		Severe Weather			8.1.2 -Continue to participate in National Weather Service Storm Ready Community.	6.2.4
		Severe Weather			8.1.3 -Promote National Weather Service's severe weather spotter training program	1.2.3, 6.2.3, 6.24
		Severe Weather			8.1.4 -Consider reinstating County Drought Committee.	5.2.3
		Drought			8.1.5 -Support drought programs implemented through the Conservation District, FSA, and MSU extension.	5.1.1, 5.1.5, 5.2.2, 5.4.1, 5.4.2, 5.4.3
			Goal 9 - Reduce Impacts from Hazardous Material Incidents			
				Objective 9.1 - Enhance Emergency Service Capabilities to Mitigate Impacts from Hazardous Material Incidents		
		Haz-Mat			9.1.1 - Provide additional Haz-Mat training to fire departments.	1.4.4, 7.3.1, 7.3.2

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				Objective 9.2 - Implement Actions to Prevent Hazardous Material Incidents		
		Haz-Mat			9.2.1 - Explore the possibility of an alternate route for truck traffic carrying hazardous material loads and/or a signed hazardous material route to avoid population center.	7.2.2
				Objective 9.3 - Provide Public Education and Awareness on Hazardous Material Incidents		
		Haz-Mat			9.3.1 - Provide public education on methamphetamine labs and how to identify signs of labs and the dangers of labs	1.4.4
		Haz-Mat			9.3.2 - Increase public awareness of common hazardous materials either stored, used or transported through the area	7.1.1
		Haz-Mat			9.3.3 - Continue to educate teachers and school staff in schools near hazardous materials facilities and transportation routes in how to limit exposure to hazardous materials to students during an incident.	1.2.7, 1.4.4
			Goal 10 - Reduce Impacts from Communicable Disease			
				Objective 10.1 - Provide Public Education and Awareness on Communicable Disease		
		Disease			10.1.1 - Continue to provide public awareness on communicable disease prevention.	8.2.1
			Goal 11 - Reduce Impacts from All Hazards			
				Objective 11.1 - Enhance Emergency Service Capabilities to Mitigate Impacts from All Hazards		
		All Hazards			11.1.1 - Upgrade sirens in Hingham.	
		All Hazards			11.1.2 - Update and replace radios for emergency responders including jurisdictional agencies.	1.2.7
		All Hazards			11.1.3 - With rural, county, and municipal fire departments, County DES, and cooperators (schools, hospital, and others) continue committee to discuss all aspects of communication including using available frequencies and cooperator frequencies or repeaters during emergency incidents.	1.2.6, 1.2.7
		All Hazards			11.1.4 - Designate emergency shelters and increase public awareness on shelters.	1.2.7
		All Hazards			11.1.5 - Coordinate with State DES and Federal partners for scheduling and attendance at Incident Command System (ICS) 100/200 and/or IS 700 or State of Montana DES training.	1.4.3, 1.4.4
		All Hazards			11.1.6 - Continue to support NOAA weather radios in all schools and critical facilities	1.2.5, 6.2.2
		All Hazards			11.1.7 - Continue to support improved cell phone coverage, as needed.	1.2.7
				Objective 11.2 - Provide Public Education and Awareness on All Hazards		
		All Hazards			11.2.1 - Promote evacuation planning for landowners.	1.2.7
		All Hazards			11.2.2 - Promote disaster-related educational programs through the school system.	1.2.4
		All Hazards			11.2.3 - Provide awareness on developing a family disaster plan and disaster supply kit.	1.2.8
		All Hazards			11.2.4 - Encourage and assist the public to self-register cell phone numbers for Reverse-911 alerts.	1.2.6
3	**2017**	**Jefferson**				
			Goal 1 – Reduce the Impact of Wildland Fires on the Community			
				Objective 1.1 - Implement Property Protection Projects to Reduce Wildfire Impacts		
		Wildfire			Project 1.1.1 - Perform fuel mitigation on evacuation routes, initial attack roads, power lines, and communication sites in the WUI.	2.1.2, 2.1.3
		Wildfire			Project 1.1.2 - Encourage creation of survivable space in current developments through coordinated landowner mitigation projects.	2.2.1, 2.2.5
		Wildfire			Project 1.1.3 - Perform fuel mitigation around historic sites (Comet, Elkhorn).	2.1.4
		Wildfire			Project 1.1.4 - Perform fuel mitigation around the town of Basin and other vulnerable communities.	2.1.2, 2.1.2, 2.1.4
		Wildfire			Project 1.1.5 - Collaborate with and assist with design of fuel mitigation on federal and state lands in Jefferson County.	2.2.5, 2.2.6
				Objective 1.2 - Implement Public Education and Awareness Project to Reduce Impacts from Wildfire		
		Wildfire			Project 1.2.1 - Support the Tri-County FireSafe Working Group to assist private property owners.	2.2.5
		Wildfire			Project 1.2.2 - Support volunteer fire department fire prevention activities.	1.2.7
		Wildfire			Project 1.2.3 - Provide outreach to citizens on wildfire mitigation techniques.	2.3.1, 2.3.2
				Objective 1.3 - Implement Structural Projects to Reduce Impacts from Wildfire		
		Wildfire			Project 1.3.1 - Collaborate with state and federal partners to maintain initial attack roads and install culverts where needed.	3.4.1
				Objective 1.4 - Implement Prevention Measures to Reduce Impacts from Wildfire		
		Wildfire			Project 1.4.1 - Encourage Planning Board to adopt subdivision regulations that require vegetation management plans to create and maintain survivable space, roof covering requirements, and fire protection covenants.	1.5.1, 2.5.1
				Objective 1.5 - Enhance Emergency Service Capabilities to Reduce Impacts from Wildfire		
		Wildfire			Project 1.5.1 - Provide adequate water supply to create water sources for fighting fires in current and future developments.	2.2.5, 2.2.7
		Wildfire			Project 1.5.2 - Upgrade the water supply in communities as needed to more effectively assist with wildfire suppression.	2.2.5, 2.2.7
		Wildfire			Project 1.5.3 - Work with Planning Department to create legal basis for Improvement Districts that would assess impact fees on existing subdivisions to fund development of fire protection water supplies.	1.5.1, 2.5.1
				Objective 1.6 - Implement Mapping/ Analysis/Planning Projects to Reduce Impacts from Wildfire		
		Wildfire			Project 1.6.1 - Continue to update and maintain fire hazard mapping project as well as compilation of completed fuel mitigation projects.	2.2.1
			Goal 2 – Reduce Impacts from Hazardous Material Incidents			
				Objective 2.1 - Implement Public Outreach and Education Projects to Reduce Impacts from Hazardous Material Incidents		
		Haz-Mat			Project 2.1.1 - Provide outreach to schools on how to limit exposure during a hazardous material incident.	1.2.7, 1.4.4
1.2.7,		Haz-Mat			Project 2.1.2 - Provide information to citizens on hazardous material incident awareness.	1.2.7, 1.4.4

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				Objective 2.2 - Enhance Emergency Service Capabilities to Reduce Impacts from Hazardous Material Incidents		
		Haz-Mat			Project 2.2.1 - Continue providing awareness training to emergency responders.	1.4.4, 7.3.1, 7.3.2
		Haz-Mat			Project 2.2.2 - Explore alternate routes for haz-mat traffic.	7.2.2
			Goal 3 – Reduce Impacts from Severe Weather and Drought			
				Objective 3.1 - Implement Public Outreach and Education Projects to Reduce Impacts from Severe Weather Hazards and Drought		
		Severe Weather			Project 3.1.1 - Promote National Weather Service Severe Weather Awareness Week.	1.2.3, 6.2.3, 6.24
		Severe Weather			Project 3.1.2 - Attempt to become a National Weather Service Storm Ready Community.	6.2.4
		Severe Weather			Project 3.1.3 - Provide public outreach on hazardous tree mitigation to enhance life safety and reduce property damage.	1.2.7
				Objective 3.2 - Support Mapping/ Analysis/Planning Projects to Reduce Impacts from Drought		
		Drought			Project 3.2.1 - Support drought programs implemented through the Conservation District, FSA, NRCS, MSU Extension, DNRC and Jefferson River Water Council.	5.1.1, 5.1.5, 5.2.2, 5.4.1, 5.4.2, 5.4.3
		Drought			Project 3.2.2 - Pursue Drought Resiliency Planning Committee and Drought Coordinator position for Jefferson County.	5.2.3
		Drought			Project 3.2.3 - Support initiative of prescribed burning program to reduce conifer encroachment which impacts water availability.	5.1.1, 5.1.5
		Drought			Project 3.2.4 - Support water storage projects to enhance late summer flows.	5.4.2
				Objective 3.3 - Implement Structural Projects to Reduce Impacts from Drought		5.4.1
		Drought			Project 3.3.1 - Create infiltration basins to capture early spring runoff.	
			Goal 4 - Reduce Impacts from Flooding and Dam Failure			
				Objective 4.1 - Implement Property Protection Projects to Reduce Impacts from Flooding		
		Flooding			Project 4.1.1 - Install culverts and upgrade streets and roads for runoff management.	3.4.1
		Flooding			Project 4.1.2 - Improve storm water systems in Boulder.	3.4.4
		Flooding			Project 4.1.3 - Protect county/town infrastructure from flooding.	1.3.7, 3.1.1, 3.2.2, 3.4.1
		Flooding			Project 4.1.4 - Clear debris from stream channels, as needed.	3.4.5
		Flooding			Project 4.1.5 - Evaluate feasibility of creating a flood channel to redirect a portion of Big Pipestone Creek to south side of Whitehall.	3.2.2, 3.4.5
		Flooding			Project 4.1.6 - Promote personal responsibility to protect individual private property from flooding.	1.2.8
		Flooding			Project 4.1.7 - Improve stormwater system in Whitehall.	3.4.4
				Objective 4.2 - Implement Public Outreach and Education Projects to Reduce Impacts from Flooding and Dam Failure		
		Flooding			Project 4.2.1 - Promote participation in the National Flood Insurance Program.	3.5.2
		Dam Failure			Project 4.2.2 - Educate people downstream of dams that they live in the inundation area.	3.5.1, 10.1.1, 10.4.1
				Objective 4.3 - Implement Structural Projects to Mitigate Impacts from Flooding		
		Flooding			Project 4.3.1 - Analyze bridge integrity and replace as necessary.	3.4.1
		Flooding			Project 4.3.2 - Remove Renova irrigation structure on Jefferson River to allow natural channel migration and reduce potential flood damages.	3.4.5, 5.4.4
				Objective 4.4 - Implement Prevention Projects to Reduce Impacts from Flooding and Dam Failure		
		Dam Failure			Project 4.4.1 - Consider providing Planning Board with dam inundation maps to use when reviewing subdivision applications.	1.5.1
				Objective 4.5 - Implement Mapping/ Analysis/Planning Projects Reduce Impacts from Flooding and Dam Failure		
		Flooding			Project 4.5.1 - Encourage DNRC/FEMA to update Jefferson County floodplain maps.	3.2.1
		Dam Failure			Project 4.5.2 - Ensure owners of high hazard dams update EAPs and provide copies to DES.	10.1.3
			Goal 5 - Reduce Impacts from Transportation Accidents			
				Objective 5.1 - Implement Projects to Prevent Impacts from Transportation Accidents		
		Transp. Accidents			Project 5.1.1 - Encourage MDT to obtain electronic signs for Boulder Hill and Canyon through Basin to Elk Park.	7.4.1
		Transp. Accidents			Project 5.1.2 - Encourage MDT to look at game fences or underpass to avoid vehicle/game collisions.	7.4.2
				Objective 5.2 - Implement Public Outreach and Education Projects to Reduce Impacts from Transportation Accidents		
		Transp. Accidents			Project 5.2.1 - Obtain equipment and provide training for responding agencies.	1.4.3, 1.4.4
			Goal 6 – Reduce Impacts from Earthquakes			
				Objective 6.1 - Implement Property Protection Projects to Reduce Impacts from Earthquakes		
		Earthquake			Project 6.1.1 - Identify need for structural retrofits on schools and critical facilities.	4.2.1
		Earthquake			Project 6.1.2 - Implement non-structural projects in schools and critical facilities.	4.5.2
				Objective 6.2 - Implement Public Outreach and Education Projects to Reduce Impacts from Earthquakes		
		Earthquake			Project 6.2.1 - Conduct educational earthquake awareness and preparedness in schools and for the general public.	4.3.1, 4.3.2, 4.3.3
			Goal 7 - Reduce Impacts from Terrorism and Violence			
				Objective 7.1 - Enhance Emergency Services Capabilities to Reduce Impacts from Terrorism		
		Terrorism			Project 7.1.1 - Continue armed intruder training.	1.4.4, 11.1.4
		Terrorism			Project 7.1.2 - Procure equipment and train to reduce impacts from terrorism.	11.1.2, 11.1.6
		Terrorism			Project 7.1.3 - Continue to train with DPHHS on strategic national stockpile.	8..1
				Objective 7.2 - Implement Property Protection Projects to Reduce Impacts from Terrorism		

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		Terrorism			Project 7.2.1 - Install security around Boulder water tanks.	11.3.1
			Goal 8 - Reduce Impacts from Communicable Disease			
				Objective 8.1 - Implement Projects to Prevent Communicable Disease		
		Disease			Project 8.1.1 - Promote immunizations and disseminate information.	8.1.1
		Disease			Project 8.1.2 - Continue mosquito mitigation projects around the county.	8.1.1, 8.4.2
				Objective 8.2 - Implement Public Outreach and Education Projects to Reduce Impacts from Communicable Disease		
		Disease			Project 8.2.1 - Support Public Health Departments public education programs on communicable diseases.	8.2.1
			Goal 9 - Reduce Impacts from All-Hazards			
				Objective 9.1 - Enhance Emergency Services Capabilities to Reduce Impacts from All Hazards		
		All Hazards			Project 9.1.1 - Recruit and train emergency response personnel.	1.4.4, 7.3.1, 7.3.2
		All Hazards			Project 9.1.2 - Update templates for messaging system that could be used for transmission on radio stations (road reports, weather forecasts and conditions, emergency conditions and events, and public services).	1.2.3, 1.2.5, 1.2.6
		All Hazards			Project 9.1.3 - Obtain self-start generators for FM radio antennas.	1.2.7, 1.3.4, 11.3.1
		All Hazards			Project 9.1.4 - Obtain self-start generators for schools/shelters.	1.2.7, 1.3.4, 11.3.1
		All Hazards			Project 9.1.5 - Enhance communications throughout County.	1.2.7
		All Hazards			Project 9.1.6 - Update local hazard communication plan that establishes protocol for providing information to residents.	1.2.6
		All Hazards			Project 9.1.7 -Encourage citizens to register cell phones to receive 911 notifications.	1.2.5
		All Hazards			Project 9.1.8 - Update a resource list for emergency response.	1.2.7
		All Hazards			Project 9.1.9 - Identify and develop emergency shelters within the County.	1.2.7
		All Hazards			Project 9.1.10 - Update animal annex in EOP to include current animal rescue organizations.	1.2.7, 8.4.1, 8.4.2
		All Hazards			Project 9.1.11 - Update EOC volunteer staff directory.	1.2.7
		All Hazards			Project 9.1.12 - Assist special needs caregivers to develop plans for disaster preparedness.	8.4.1, 8.4.2
				Objective 9.2 - Implement Public Outreach and Education Projects to Reduce Impacts from All-Hazards		
		All Hazards			Project 9.2.1 - Promote disaster-related educational programs through the school system.	1.2.4
6	**2013**	**Judith Basin**				
			Goal 1: Reduce Impacts from Drought			
				Objective 1.1: Prevent Losses Associated with Drought		
		Drought			1.1.1 - Continue water conservation practices/restrictions to manage drought	5.1.3
				Objective 1.2: Implement Public Education and Awareness Projects on Reducing Losses from Drought		
		Drought			1.2.1 - Support drought programs implemented through the Conservation District, FS, and MSU extension.	5.1.1, 5.1.5, 5.2.2, 5.4.1, 5.4.2, 5.4.3
		Drought			1.2.2 - Increase the educational emphasis given to forest and range management practices for the minimization of drought impacts.	5.1.1, 5.1.5
			Goal 2: Reduce Impacts from Wildfire			
				Objective 2.1: Implement Property Protection Projects to Reduce Wildfire Losses		
		Wildfire			2.1.1 - Encourage WUI home site treatments throughout the county including grant programs to create defensible space.	2.1.2, 2.1.3, 2.2.7
		Wildfire			2.1.2 - Support Fuel Reduction Programs to mitigate wildland fire risk on public and private lands.	2.1.2, 2.1.3, 2.2.5, 2.2.7
		Wildfire			2.1.3 - Map and create inventory of existing dry hydrants and develop plan for future expansion	2.2.2
				Objective 2.2: Implement Public Education and Awareness Projects on Wildfire Mitigation		
		Wildfire			2.2.1 - Develop a FireSafe Montana working group in Judith Basin County to Promote public awareness of wildfire risk and issues	2.2.5, 2.2.6
				Objective 2.3: Prevent Losses Associated with Wildfire		
		Wildfire			2.3.1 - Ensure that future development complies with State subdivision regulations which require fuel reduction, water supply, and ingress/egress.	1.5.1, 2.5.1
			Goal 3: Reduce Impacts from Flooding			
				Objective 3.1: Implement Property Protection Projects to Reduce Flood Losses		
		Flooding			3.1.1 - Resize culverts and/or replace culverts with bridges as needed to reduce flood losses.	3.4.1
				Objective 3.2: Implement Public Education and Awareness Projects on Reducing Flood Losses		
		Flooding			3.2.1 - Conduct public outreach to prepare for and recover from floods by distributing information on mold abatement, safe drinking water, and flood mitigation	1.2.7, 1.3.4
			Goal 4: Reduce Impacts from Severe Summer Weather			
				Objective 4.1: Implement Public Education and Awareness Projects to Reduce Losses from Severe Summer Weather		
		Severe Weather			4.1.1 - Implement NWS Weather Spotter Training for Responders and the public	1.2.3, 6.2.3, 6.24
		Severe Weather			4.1.2 - Encourage Community involvement in becoming a Storm Ready Community	6.2.4
				Objective 4.2: Implement Property Protection Projects to Reduce Losses from Severe Summer Weather		
		Severe Weather			4.2.1 - Develop a resource library to inform the public of severe summer weather related materials and building options	6.2.2, 6.2.4
			Goal 5: Reduce Impacts from Severe Winter Weather			
				Objective 5.1: Implement Emergency Service Projects to Reduce Losses from Severe Winter Weather		

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		Severe Weather			5.1.1 - Obtain stationary generator for Judith Basin County Courthouse	1.2.7, 1.3.4, 11.3.1
		Severe Weather			5.1.2 - Obtain mobile generator for city of Hobson	1.2.7, 1.3.4, 11.3.1
		Severe Weather			5.1.3 - Obtain snow removal equipment for City of Stanford.	1.2.7
		Severe Weather			5.1.4 - Obtain mobile generator for Stanford Water System	1.2.7, 1.3.4, 11.3.1
			Goal 6: Reduce Impacts Associated with Communicable Disease in the Ag Industry			
				Objective 6.1: Implement Public Education and Awareness Projects on Communicable Disease in the Ag Industry		
		Disease			6.1.1 - Collaborate with local MSU Extension, State & Federal agencies to provide the public & emergency responders with resources and education	8.1.4, 8.4.4
				Objective 6.2: Implement Emergency Service Projects to Reduce Losses from Communicable Disease in the Ag-Industry		
		Disease			6.2.1 - Establish an Ag Emergency Response Team to respond to Ag-related incidents	8.4.4
			Goal 7: Reduce Impacts from Transportation-Related Hazardous Materials Incidents			
				Objective 7.1: Prevent Losses from Transportation-Related Haz-Mat Incidents		
		Haz-Mat & Transp. Accidents			7.1.1 - Encourage BNSF Railroad to install railroad crossing arms and lights at Moccasin	7.4.1
				Objective 7.2: Implement Emergency Service Projects to Reduce Losses from Transportation-Related Haz- Mat Incidents		
		Haz-Mat & Transp. Accidents			7.2.1 - Exercise a haz-mat railroad derailment.	1.4.4, 7.3.1, 7.3.2
			Goal 8: Promote All-Hazard Mitigation Measures			
				Objective 8.1: Implement Emergency Service Projects to Reduce Losses from All Hazards		
		All Hazards			8.1.1 - Equip critical facilities with NOAA Radios.	1.2.5, 6.2.2
		All Hazards			8.1.2 - Obtain portable radios for emergency responders.	1.2.7
		All Hazards			8.1.3 - Obtain a HAM radio for the County Emergency Operations Center	1.2.7
		All Hazards			8.1.4 - Conduct emergency response training and exercises within all communities	1.4.4
		All Hazards			8.1.5 - Increase involvement of LEPC within County and Towns	1.2.7
				Objective 2.2: Implement Public Education and Awareness Projects on All Hazard Mitigation		
		All Hazards			8.2.1 - Create social media sites to provide the public with hazard reduction and emergency information	1.2.7
1	**2012**	**Lake**				
			Goal 1 - Reduce Impacts from Wildfire			
				Objective 1.1 - Enhance Emergency Services to Mitigate Impacts from Wildfire		
		Wildfire			1.1.1 - Identify and facilitate additional training for firefighters.	1.4.4
				Objective 1.2 - Protect Property from Wildfire		
		Wildfire			1.2.1 - Continue to be proactive in fuel management county- and reservation-wide.	2.1.2, 2.1.3, 2.2.6
		Wildfire			1.2.2 - Support interagency collaboration on fuel management projects.	2.2.6
		Wildfire			1.2.3 - Continue to support and enhance County fuel reduction program.	2.1.2, 2.1.3, 2.2.5, 2.2.7, 2.3.1
				Objective 1.3 - Provide Public Education and Awareness on Wildfire		
		Wildfire			1.3.1 - Provide wildfire mitigation information to urban interface landowners.	2.3.1, 2.3.2
			Goal 2 - Reduce Impacts from Transportation Accidents			
				Objective 2.1 - Enhance Emergency Services to Mitigate Impacts from Transportation Accidents		
		Transp. Accidents			2.1.1 - Coordinate emergency response activities between railroad, Tribes, counties and municipalities.	1.3.3
		Transp. Accidents			Project 2.1.2 - Encourage local emergency responders to have adequate training to respond to hazardous material incidents consistent with local capabilities.	1.4.4, 7.3.1, 7.3.2
		Transp. Accidents			2.1.3 - Work with MDT to enhance chain-up areas along Highway 93.	7.4.1
		Transp. Accidents			2.1.4 - Continue to work with MRL and encourage ongoing training with local responders.	1.4.4
				Objective 2.2 - Implement Actions to Prevent Impacts from Transportation Accidents		
		Transp. Accidents			2.2.1 - Explore the possibility of a Polson Bypass for truck traffic carrying hazardous material loads and/or a signed hazardous material route to avoid population center.	7.4.1
		Transp. Accidents			2.2.2 - Encourage truck traffic to use Highway 93 instead of Highway 35 around Flathead Lake.	7.4.1
				Objective 2.3 - Provide Public Education and Awareness on Transportation Accidents		
		Transp. Accidents			2.3.1 - Increase public awareness of common hazardous materials either stored, used or transported through the area.	7.1.1
			Goal 3 - Reduce Impacts from Landslides			
				Objective 3.1 - Protect Property from Landslides		
		Landslides			3.1.1 - Encourage MDT to work with the County to identify landslide prone areas.	9.3.2
		Landslides			3.1.2 - Encourage MDT to implement preservation/stabilization measures of slide-prone areas.	9.1.1
			Goal 4 - Reduce Impacts from Structure Fire			
				Objective 4.1 - Protect Property from Structure Fire		
		Structure Fire			4.1.1 - Encourage fire sprinkler systems in residential and older commercial buildings.	1.2.7
		Structure Fire			4.1.2 - Continue to consult with Fire Chiefs regarding whether new water supplies are needed to maintain fire flows in new housing developments.	1.2.7, 1.5.1
				Objective 4.2 - Enhance Emergency Services to Mitigate Impacts from Structure Fire		
		Structure Fire			4.2.1 - Encourage volunteer fire departments to recruit and train volunteers.	1.4.4, 7.3.1, 7.3.2
				Objective 4.3 - Provide Public Education and Awareness on Structure Fire		

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		Structure Fire			4.3.1 - Support volunteer fire department fire prevention activities.	1.2.7
			Goal 5 - Reduce Impacts from Severe Winter Weather			
				Objective 5.1 - Enhance Emergency Services to Mitigate Impacts from Severe Winter Weather		
		Severe Weather			5.1.1 - Develop coordinated management strategies for de-icing roads, plowing snow, clearing roads of fallen trees, and clearing debris from public and private property.	1.2.7
		Severe Weather			5.1.2 - Partner with responsible agencies and organizations to design and implement programs that reduce risk to life, property, and utility systems.	1.3.3, 2.2.5, 3.2.2
		Severe Weather			5.1.3 - Continue to aggressively address rural locations within the county so people's residences can be found for rescue purposes.	1.2.7
		Severe Weather			5.1.4 - Enhance weather monitoring to attain earlier severe winter storm warnings through collaboration with NWS.	1.2.3, 1.2.6, 6.2.1
				Objective 5.2 - Provide Public Education and Awareness on Severe Winter Weather		
		Severe Weather			5.2.1 - Continue to distribute educational material on how to prepare for winter.	6.2.6
		Severe Weather			5.2.2 - Conduct public outreach campaign where special needs residents would provide information on where they live and what they need. Explore software program to allow County to develop and maintain database with this information.	8.4.1, 8.4.2
		Severe Weather			5.2.3 - Promote the National Weather Service's Winter Weather Awareness Week (third full week in October).	1.2.3, 6.2.3, 6.24
			Goal 6 - Reduce Impacts from Flooding			
				Objective 6.1 - Implement Actions to Prevent Impacts from Flooding		
		Flooding			6.1.1 - Support FEMA's Map Modernization Program which will provide Lake County with updated floodplain mapping (DFIRMS).	3.2.1
		Flooding			6.1.2 - Update flood regulations when DFIRMs are adopted to protect future development.	1.5.1
				Objective 6.2 - Implement Actions to Protect Natural Resources from Flooding		
		Flooding			6.2.1 - Work with partner agencies to identify erosion and sediment control	3.2.2
				Objective 6.3 - Implement Structural Projects to Reduce Impacts from Flooding		
		Flooding			6.3.1 - Continue to resize and upgrade culverts in various locations throughout the county.	3.4.1
		Flooding			6.3.2 - Identify locations throughout the county where culverts are needed.	3.4.1
				Objective 6.4 - Enhance Emergency Services to Mitigate Impacts from Flooding		
		Flooding			6.4.1 - Continue to work with landowners, ranchers, and response agencies on flood response activities.	1.2.7
		Flooding			6.4.2 - GPS all homes along waterways.	3.2.1
				Objective 6.5 - Provide Public Education and Awareness on Flooding		
		Flooding			6.5.1 - Continue to educate homeowners on purchasing flood insurance through the National Flood Insurance Program through availability of information.	3.5.2
		Flooding			6.5.2 - Educate homeowners on flood concerns.	3.5.6, 3.5.7
		Flooding			6.5.3 - Publish and distribute floodplain maps to homeowners.	3.2.1, 3.5.6, 3.5.7
			Goal 7 - Reduce Impacts from Communicable Disease			
				Objective 7.1 - Provide Public Education and Awareness on Communicable Disease		
		Disease			7.1.1 - Encourage and support local public health in preparing plans for biological hazards.	8.4.2, 8.4.4, 8.4.5
		Disease			7.1.2 - Provide public awareness on communicable disease prevention.	8.2.1
			Goal 8 - Reduce Impacts from Severe Summer Weather			
				Objective 8.1 - Protect Property from Severe Summer Weather		
		Severe Weather			8.1.1 - Support/encourage electrical utilities to use underground construction methods where possible to reduce power outages from windstorms.	6.3.1
		Severe Weather			8.1.2 - Develop strategies for clearing roads of fallen trees, and clearing debris from public and private property.	1.2.7
				Objective 8.2 - Provide Public Education and Awareness on Severe Summer Weather		
		Severe Weather			8.2.1 - Continue participation in National Weather Service Storm Ready Community Program.	6.2.4
		Severe Weather			8.2.2 - Promote National Weather Service's severe weather spotter training program.	1.2.3, 6.2.3, 6.24
			Goal 9 - Reduce Impacts from Earthquakes			
				Objective 9.1 - Protect Property from Earthquakes		
		Earthquakes			9.1.1 - Encourage non-structural projects in schools and critical facilities.	4.5.2
		Earthquakes			9.1.2 - Encourage schools and critical facilities to identify the need for structural retrofits.	4.2.1
		Earthquakes			9.1.3 - Encourage homeowners to perform structural and non-structural retrofits on their homes.	4.3.2
				Objective 9.2 - Provide Public Education and Awareness on Earthquakes		
		Earthquakes			9.2.1 - Conduct educational earthquake awareness and preparedness in schools and for the general public.	1.2.4, 4.3.1, 4.3.2, 4.3.3
			Goal 10 - Reduce Impacts from Dam Failure			
				Objective 10.1 - Implement Actions to Prevent Impacts from Dam Failure		
		Dam Failure			10.1.1 - Consider using dam inundation as criteria for future subdivision review and require disclosure by developers to prospective buyers.	1.5.1
				Objective 10.2 - Enhance Emergency Services to Mitigate Impacts from Dam Failure		
		Dam Failure			10.2.1 - Coordinate with dam owners to exercise EAPs with responders.	1.4.4, 10.3.1
		Dam Failure			10.2.2 - Maintain Emergency Action Plans of high hazard dams and work with owners to keeps plans current.	10.1.3
			Goal 11 - Reduce Impacts from All Hazards			
				Objective 11.1 - Enhance Emergency Services to Mitigate Impacts from All Hazards		
		All Hazards			11.1.1 - Buy weather radios for various critical facilities.	1.2.5, 6.2.2

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		All Hazards			11.1.2 - Continue coordinating with public broadcasting stations with Early Alert System information.	1.2.6
		All Hazards			11.1.3 - Continue to encourage that public facilities and schools obtain generators for backup power.	1.2.7, 1.3.4, 11.3.1
		All Hazards			11.1.4 - Identify emergency shelters and encourage them to obtain generators.	1.2.7, 1.3.4, 11.3.1
		All Hazards			11.1.5 - Continue to enhance and improve back-up location for dispatch center.	1.2.7
		All Hazards			11.1.6 - Continue to enhance and improve Reverse 911 capabilities through exercise and software development.	1.2.6, 1.4.4
				Objective 11.2 - Provide Public Education and Awareness on All Hazards		
		All Hazards			11.2.1 - Promote the need for emergency action plans for special needs populations.	8.4.1, 8.4.2
		All Hazards			11.2.2 - Encourage preparation of Family Emergency Plans.	1.2.8
		All Hazards			11.2.3 - Promote disaster-related educational programs through the school system.	1.2.4
				Objective 11.3 - Implement Actions to Prevent Impacts from All Hazards		
		All Hazards			11.3.1 - Continue to work with cell phone companies to get a tower in towns, as needed.	1.2.7
3	**2017**	**Lewis & Clark**				
			Goal 1 – Reduce Impacts from Wildfire			
				Objective 1.1 - Implement Property Protection Projects to Reduce Impacts from Wildfire		
		Wildfire			Project 1.1.1 - Continue grants programs for landowners to create survivable space.	1.2.2, 2.2.7
					Project 1.1.2 - Identify and perform fuel reduction along evacuation routes .	2.1.2, 2.1.3
		Wildfire			Project 1.1.3 - Encourage utility companies to perform fuel reduction along utility corridors.	2.1.3
		Wildfire			Project 1.1.4 - Encourage identification and completion of fuel mitigation projects by other land management and fire protection entities.	2.2.5, 2.2.6
		Wildfire			Project 1.1.5 - Support interagency collaboration on fuel management projects.	2.2.5, 2.2.6
		Wildfire			Project 1.1.6 - Encourage contiguity in fuel management projects so there will be no gaps in treatment.	2.2.5, 2.2.6
		Wildfire			Project 1.1.7 - Work with the Tri-County FireSafe Working Group and its local affiliates to integrate the rural growth management program with regional fire protection efforts.	2.6.1
				Objective 1.2 - Provide Public Education and Awareness to Reduce Impacts from Wildfire		
		Wildfire			Project 1.2.1 - Provide education to landowners on wildfire mitigation around homes and evacuation routes.	2.3.1, 2.3.2
		Wildfire			Project 1.2.2 - Promote evacuation planning for landowners.	1.2.7
		Wildfire			Project 1.2.3 - Support FireSafe Montana's efforts to provide info to home construction industry and landowners on fire-resistant construction.	2.3.2
		Wildfire			Project 1.2.4 - Participate in NFPA Firewise Communities Program.	2.1.2, 2.1.3, 2.3.1, 2.3.2
				Objective 1.3 - Encourage Prevention Projects to Reduce Impacts from Wildfire		
		Wildfire			Project 1.3.1 - Expand county growth policy to address wildfire hazard in rural planning areas.	1.5.1, 2.5.1
		Wildfire			Project 1.3.2 - Adopt rural fire protection standards for low-density development.	1.5.1
		Wildfire			Project 1.3.3 - 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.	1.5.1
				Objective 1.4 - Enhance Emergency Service Capabilities to Reduce Impacts from Wildfire		
		Wildfire			Project 1.4.1 - Develop and/or update water supplies (wells and tanks) in communities to enhance firefighting capabilities.	2.2.5, 2.2.7
		Wildfire			Project 1.4.2 - Develop and implement an enhanced communication/alert system for notification of impending wildland fire activity or evacuation for outlying areas.	1.2.6
		Wildfire			Project 1.4.3 - Procure and designate a wildland supply cache to outfit fire departments to ensure wildland firefighter safety.	2.2.5, 2.2.7
		Wildfire			Project 1.4.4 - Develop public-private partnerships to fund regional water sources for fire protection.	2.2.5, 2.2.7
				Objective 1.5 - Conduct Mapping/ Analysis/Planning Projects to Reduce Impacts from Wildfire		
		Wildfire			Project 1.5.1 - Develop map showing where fuel mitigation projects have been completed.	2.2.1
		Wildfire			Project 1.5.2 - Update WUI mapping.	2.2.1
		Wildfire			Project 1.5.3 - Develop a plan for regional water sources for fire protection.	2.2.2
				Objective 1.6 - Implement Structural Projects to Reduce Impacts from Wildfire		
		Wildfire			Project 1.6.1 - Upgrade City of Helena's water collection system replacing Chessman reservoir trestle with HDPE piping.	2.2.6, 2.2.7
		Wildfire			Project 1.6.2 - Install water storage tank at Fort Harrison and VA Hospital for resiliency of the system.	2.2.6, 2.2.7
			Goal 2 – Reduce the Impacts from Flooding			
				Objective 2.1 - Implement Prevention Projects to Reduce Impacts from Flooding		
		Flooding			Project 2.1.1 - Use State model floodplain ordinance to revise county flood ordinance.	1.5.1
		Flooding			Project 2.1.2 -Adopt zoning for the Tenmile Creek floodplain that addresses the development constraint of flooding in that area.	1.5.1
				Objective 2.2 - Provide Public Education and Awareness to Reduce Impacts from Flooding		
		Flooding			Project 2.2.1 - Promote participation in the National Flood Insurance Program.	3.5.2
		Flooding			Project 2.2.2 - Provide education to the communities on building in the floodplain.	3.5.6, 3.5.7
		Flooding			Project 2.2.3 - Educate county residents on what must be done to manage storm water in the community.	3.4.4
				Objective 2.3 - Implement Structural Projects to Reduce Impacts from Flooding		
		Flooding			Project 2.3.1 - Identify and install culverts as needed to improve drainage and handle storm water.	3.4.1

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		Flooding			Project 2.3.2 - Review use of detention ponds to mitigate flooding at problem areas within the county.	3.4.4
		Flooding			Project 2.3.3 - Explore the possibility of constructing a storm water system for the town of Lincoln.	3.4.4
		Flooding			Project 2.3.4 - Construct storm water pond in upper reaches of Davis Gulch.	3.4.4
		Flooding			Project 2.3.5 - Increase carrying capacity of Prickly Pear Creek in East Helena.	3.4.5
		Flooding			Project 2.3.6 - Replace Elk Creek bridge 13 miles southwest of Augusta which has been damaged from flood scour.	3.4.1
		Flooding			Project 2.3.7 - Evaluate and install structure(s) on Stemple Pass Road in Lincoln to stop water from running over the road.	3.4.1, 3.4.2
		Flooding			Project 2.3.8 - Analyze existing 36" culverts on Dalton Mtn Rd. in Lincoln and replace with appropriate structure(s).	3.4.1
		Flooding			Project 2.3.9 - Design, fund and construct West-Side storm water conveyance improvements.	3.4.4
		Flooding			Project 2.3.10 - Design, fund and construct West-Side storm water pond improvements.	3.4.4
		Flooding			Project 2.3.11 - Design, fund and construct Last Chance Gulch storm sewer replacement and capacity improvements.	3.4.4
		Flooding			Project 2.3.12 - Design, fund and construct Nature Park storm water pond Improvements.	3.4.4
		Flooding			Project 2.3.13 - Design, fund and construct Upper Last Chance storm water pond siting and construction.	3.4.4
		Flooding			Project 2.3.14 - Design, fund and construct Davis Gulch storm sewer replacement and capacity improvements.	3.4.4
		Flooding			Project 2.3.15 - Design, fund and construct DNRC storm water pond improvements.	3.4.4
		Flooding			Project 2.3.16 - Design, fund and construct Helena High storm water pond improvements.	3.4.4
		Flooding			Project 2.3.17 - Design, fund and construct Bull Run storm sewer replacement and capacity improvements.	3.4.4
		Flooding			Project 2.3.18 - Design, fund and construct Bull Run storm water pond improvements.	3.4.4
		Flooding			Project 2.3.19 – Design, fund and construct Crystal Springs Creek improvements.	3.4.5
		Flooding			Project 2.3.20 – Implement D2 drain improvements to increase the capacity of each canal crossing up to the capacity of the D2 drain.	3.4.1
		Flooding			Project 2.3.21 – Implement Silver Creek/Sewell subdivision improvements to handle flood waters to the extent possible.	3.4.1, 3.4.5
		Flooding			Project 2.3.22 – Implement Tenmile Creek improvements to increase the efficiency with which flood waters are conveyed down gradient to existing flood control infrastructures.	3.4.1
				Objective 2.4 - Enhance Emergency Service Capabilities to Reduce Impacts from Flooding		
		Flooding			Project 2.4.1– Design, fund and install flood and storm water monitoring system.	3.4.4
				Objective 2.5- Implement Planning/ Analysis/Mapping Projects to Reduce Impacts from Flooding		
		Flooding			Project 2.5.1 - Develop a stormwater management plan for the Helena Valley.	3.4.4
		Flooding			Project 2.5.2 - Complete H&H study of the contributing waters to the D2 Drain, including Tenmile, Sevenmile, and Silver Creeks.	3.2.1, 3.4.5
			Goal 3 – Reduce Impacts from Earthquakes			
				Objective 3.1 - Provide Public Education and Awareness to Reduce Impacts from Earthquakes		
		Earthquakes			Project 3.1.1 - Promote more frequent and complex earthquake drills in Lewis & Clark County.	4.3.1
		Earthquakes			Project 3.1.2 - Encourage public to purchase earthquake insurance.	4.4.5
				Objective 3.2 - Implement Property Protection Projects to Reduce Impacts from Earthquakes		
		Earthquakes			Project 3.2.1 - Pursue structural and non-structural mitigation projects for vulnerable schools and public infrastructure.	4.2.1, 4.5.2
		Earthquakes			Project 3.2.2 - Encourage homeowners to perform structural and non-structural retrofits on their homes.	4.2.1, 4.5.2
				Objective 3.3 - Enhance Emergency Services to Reduce Impacts from Earthquakes		
		Earthquakes			Project 3.3.1- Harden critical wireless emergency communications system.	4.2.1, 4.4.3
				Objective 3.4 - Conduct Mapping/ Analysis/Planning Projects to Reduce Impacts from Earthquakes		
		Earthquakes			Project 3.4.1 - Perform structural analysis for critical facilities and schools, as needed.	4.4.3
				Objective 3.5 - Implement Structural Projects to Reduce Impacts from Earthquakes		
		Earthquakes			Project 3.5.1 - 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.	4.5.1
		Earthquakes			Project 3.5.2 - Install wells for redundancy to enhance City's system to provide potable water	4.5.1
			Goal 4 – Reduce Impacts from Severe Weather and Drought			
				Objective 4.1 - Provide Public Education and Awareness to Reduce Impacts from Severe Weather		
		Severe Weather			Project 4.1.1 - Partner with the National Weather Service to provide weather education presentations to educate the public on severe weather hazards.	1.2.3, 6.2.3, 6.2.4
		Severe Weather			Project 4.1.2 - Encourage homeowners to install address plaques at proper height for rescue purposes.	1.2.7
		Severe Weather			Project 4.1.3 - Partner with the National Weather Service on the Weather Ready Nation Ambassador Program and increase participation in program.	6.2.3
				Objective 4.2 - Implement Structural Projects to Reduce Impacts from Drought		
		Drought			Project 4.2.1 - Change wastewater treatment plant relocation discharge to groundwater or ECO Park discharge.	5.4.2
			Goal 5 - Reduce Impacts from Hazardous Material Incidents			
				Objective 5.1 - Provide Public Education and Awareness to Reduce Impacts from Hazardous Material Incidents		

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		Haz-Mat			Project 5.1.1 - 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.	1.2.7, 1.4.4
				Objective 5.2 - Implement Property Protection Projects to Reduce Impacts from Hazardous Material Incidents		
		Haz-Mat			Project 5.2.1 - Revisit idea of an east-west corridor through Helena as a truck by-pass.	7.4.1
				Objective 5.3 - Enhance Emergency Service Capabilities to Reduce Impacts from Hazardous Material Incidents		
		Haz-Mat			Project 5.3.1 - Continue training with regional haz-mat team and civil support team at Fort Harrison.	1.4.4, 7.3.1, 7.3.2
			Goal 6 - Reduce Impacts from Communicable Disease			
				Objective 6.1 - Provide Public Education and Awareness to Reduce Impacts from Communicable Disease		
		Disease			Project 6.1.1 - Promote public education on preventing communicable disease.	8.2.1
		Disease			Project 6.1.2 - Provide education and/or training for Public Health Dept. staff.	8.4.2
				Objective 6.2 - Enhance Emergency Service Capabilities to Reduce Impacts from Communicable Disease		
		Disease			Project 6.2.1 - Procure, train, and supply all emergency responders for potential threats annually.	8.5.1
		Disease			Project 6.2.2 - Expand listserve for Health Alert Network.	8.2.1
				Objective 6.3 - Implement Prevention Projects to Reduce Impacts from Communicable Disease		
		Disease			Project 6.3.1- Prevent and control communicable disease by surveillance.	8.1.1
		Disease			Project 6.3.2 - Prevent and control communicable disease by activities to raise and sustain vaccine coverage in all populations.	8.1.1
		Disease			Project 6.3.3 - Conduct risk-based inspections of all food service establishments.	8.1.1, 8.4.2
		Disease			Project 6.3.4 - Enforce sewage and solid waste disposal local and state regulations.	8.1.1, 8.4.2
			Goal 7 - Reduce Impacts from Dam Failure			
				Objective 7.1 - Provide Public Education and Awareness to Reduce Impacts from Dam Failure		
		Dam Failure			Project 7.1.1 - Initiate a public awareness campaign aimed at educating people who live in dam inundation areas.	3.5.1, 10.1.1, 10.4.1
				Objective 7.2 - Enhance Emergency Service Capabilities to Reduce Impacts from Dam Failure		
		Dam Failure			Project 7.2.1 - Promote installation of early warning systems on high hazard dams to interface with dispatch.	1.2.6
		Dam Failure			Project 7.2.2 - Continue to exercise dam failure with dam owners.	1.4.4, 10.3.1
		Dam Failure			Project 7.2.3 - Request dam owners update EAPs, as needed.	10.1.3
				Objective 7.3 - Implement Structural Projects to Reduce Impacts from Dam Failure		
		Dam Failure			Project 7.3.1- Refurbish Chessman Dam.	10.2.1
		Dam Failure			Project 7.3.2 - Refurbish Scott Reservoir Dam.	10.2.1
				Objective 7.4 - Implement Planning/ Analysis/Mapping Projects to Reduce Impacts from Dam Failure		
		Dam Failure			Project 7.4.1 - Develop Emergency Action Plan for Scott Reservoir Dam.	10.3.1
			Goal 8 - Reduce Impacts from Terrorism			
				Objective 8.1 - Enhance Emergency Service Capabilities to Reduce Impacts from Terrorism		
		Terrorism			Project 8.1.1 - Counter violent extremism (active shooter) training with schools and critical facilities.	1.4.4, 11.1.4
					Project 8.1.2 - Integrate training with emergency services and real scenarios.	1.4.4
				Objective 8.2 - Provide Public Education and Awareness to Reduce Impacts from Terrorism		
		Terrorism			Project 8.2.1 - Promote See Something-Say Something Campaign to report unusual behavior.	11.1.1
				Objective 8.3 - Conduct Mapping/ Analysis/Planning Projects to Reduce Impacts from Terrorism		
		Terrorism			Project 8.3.1 - Conduct vulnerability assessment of city-county infrastructure (SCADA) systems	11.1.5, 11.2.2
		Terrorism			Project 8.3.2 - Conduct audit of city-county operations security.	11.1.6, 11.2.1
		Terrorism			Project 8.3.3 - Implement recommendations from vulnerability assessment.	11.3.1
			Goal 9 - Reduce Impacts from All Hazards			
				Objective 9.1 - Enhance Emergency Services to Mitigate Impacts from All Hazards		
		All Hazards			Project 9.1.1 - Obtain generators for critical infrastructure.	1.2.7, 1.3.4, 11.3.1
		All Hazards			Project 9.1.2 - Enhance, expand and upgrade communications for all emergency responders in Lewis and Clark County.	1.2.7
		All Hazards			Project 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.	1.4.4
		All Hazards			Project 9.1.4 - Develop train and equip emergency responders for dealing with mass trauma events	1.2.7
				Objective 9.2 - Provide Public Education and Awareness to Reduce Impacts from All Hazards		
		All Hazards			Project 9.2.1 - Promote registration of cell phones for Outbound notification system (reverse 911).	1.2.5
				Objective 9.3 - Implement Structural Projects to Reduce Impacts from All Hazards		
		All Hazards			Project 9.3.1 - Promote grade separation for Montana Ave. for enhanced access.	7.4.1
2	**2013**	**Liberty**				
			Goal One: Mitigate natural hazards to reduce the potential for property loss or damage, injury and loss of life in the City of Chester.			
		Flooding			Address repeated road and property flash flooding by enhancing storm-water drainage system	3.4.2, 3.4.4
		All Hazards			Replace the one existing siren for the city, enhance coverage for whole city.	1.2.7

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		Flooding			Continue participation in NFIP. Find assistance to administer regulations so that development complies	3.5.2
			Goal Two: Mitigate natural hazards to reduce the potential for property loss or damage, injury and loss of life in unincorporated areas of Liberty County.			
		Wildfire			Manage forest fuels on Mt. Royal communications site	2.2.5, 2.2.6
		Haz-Mat			Update the hazardous materials flow study	7.1.1
		All Hazards			Offer a CPR and First Aid course	1.4.4
		All Hazards			Complete rural addressing system and install fireproof road signs	1.2.7
		All Hazards			Continue to enhance radio availability.	1.2.7
		All Hazards			Purchase radios for Joplin	1.2.7
		All Hazards			Educate school children on what to during a natural disaster	1.2.4
		All Hazards			Provide information on natural hazards at the Liberty Co fair	1.2.1
		All Hazards			Provide information on natural hazards at the Health Fair	1.2.1
1	**2011**	**Lincoln**				
			Goal 1 - Reduce The Impacts From Wildfire			
				Objective 1.1 - Implement Actions to Prevent Impacts from Wildfire		
		Wildfire			1.1.1 - Encourage Eureka to complete a Growth Policy that considers wildfire mitigation	1.5.1, 2.5.1
		Wildfire			1.1.2 - Encourage Troy and Eureka to become FireWise communities	2.1.2, 2.1.3, 2.3.1, 2.3.2
				Objective 1.2 - Enhance Opportunities to Protect Property from Wildfire		
		Wildfire			1.2.1 - Encourage fuel control activities, such as thinning and fire breaks, particularly near more highly populated areas.	2.1.2, 2.1.3, 2.2.6
		Wildfire			1.2.2 – Promote fuel mitigation projects in OU3	2.2.5, 2.2.6
				Objective 1.3 - Enhance Emergency Service Capabilities to Mitigate Impacts from Wildfire		
		Wildfire			1.3.1 - Complete fuel mitigation along evacuation routes	2.1.2, 2.1.3
		Wildfire			1.3.2 - Improve fire agency infrastructure (training facility, additional fire suppression equipment and storage, enhanced communications systems).	1.4.4
		Wildfire			1.3.3 - Provide for shared database between fire suppression agencies on road closures, water sources, fuel ratings, district boundaries, ignition hazards and railroads.	2.2.2
		Wildfire			1.3.4 - Identify areas with high number of potential fire starts to pre-position resources.	2.2.5, 2.2.7
		Wildfire			1.3.5 - Develop water storage capacity and water supply sites to enhance fire-fighting capability.	2.2.5, 2.2.7
		Wildfire			1.3.6 – Identify primary and secondary evacuation routes.	1.2.7
		Wildfire			1.3.7 – Risk rate the fire hazard for all WUI areas in the County.	2.2.1
		Wildfire			1.3.8 – Acquire specialized equipment for firefighting in OU3	2.2.5, 2.27
		Wildfire			1.3.9 – Provide training for firefighters and emergency service personnel on wildfire response in OU3.	1.4.4
				Objective 1.4 - Provide Public Education and Awareness on Wildfire		
		Wildfire			1.4.1 - Educate landowners about alternatives to burning slash (i.e. chipping, community landfill, etc.).	2.1.5
		Wildfire			1.4.2 - Promote FireWise education efforts in communities and schools.	1.2.4
		Wildfire			1.4.3 - Support alternative methods to burning when reducing fuel hazards.	2.1.5
		Wildfire			1.4.4 – Educate public on the hazard and how to protect their health if larger wildfire occurs in OU3.	2.2.5, 2.3.3
		Wildfire			1.4.5 – Provide education on sirens and broadcasts associated with OU3.	
			Goal 2 - Reduce The Impacts From Structure Fire			
				Objective 2.1 - Enhance Opportunities to Protect Property from Structure Fire		
		Structure Fire			2.1.1 - Equip water storage facilities with fire-resistant electrical pumps when not connected to a community water system	1.2.7
		Structure Fire			2.1.2 - Develop alternative firefighting water sources	2.2.5, 2.2.7
				Objective 2.2 - Provide Public Education and Awareness on Structure Fire		
		Structure Fire			2.2.1 - Implement the October education program in schools on topics supplied by International Fire Council	1.2.4
		Structure Fire			2.2.2 - Implement a community education program on structure fire prevention	
			Goal 3 - Reduce The Impacts From Flooding			
				Objective 3.1 - Enhance Opportunities to Protect Property from Flooding		
		Flooding			3.1.1 - Obtain river gauges where needed (i.e.Cherry Creek, Libby Creek, Lake Creek, Tobacco River, Fortine Creek, Graves Creek and Sinclair Creek)	3.2.2
		Flooding			3.1.2 - Remove woody vegetation from the edge of the Parmenter and Callahan Creek levees and remove the folf tee from the top of the Callahan Creek levee.	3.5.5
		Flooding			3.1.3 - Relocate furnaces, hot water heaters, and electrical panels from flood-prone areas at residences near Flower Creek	3.5.4
		Flooding			3.1.4 - Reduce stream bed load in Flower Creek.	3.4.5
		Flooding			3.1.5 - Conduct an engineering study to make recommendations to reduce the ice jams from causing a flood during winter thaw.	3.6.1
		Flooding			3.1.6 - Conduct an engineering study to make recommendations for bank stabilization and rerouting of Libby Creek that threatens critical infrastructure along Farm to Market Road area	3.4.5
		Flooding			3.1.7 - Conduct an engineering study to make recommendations for bank stabilization and rerouting of Lake Creek that threatens critical infrastructure.	3.4.5
		Flooding			3.1.8 - Initiate engineering evaluation of flood control measures within 100-year floodplains in Lincoln County	3.2.1
				Objective 3.2 - Implement Structural Projects to Reduce Impact of Flooding		
		Flooding			3.2.1 - Replace culverts with bridges to mitigate impacts of runoff	3.4.1
		Flooding			3.2.2 - Resize and upgrade culverts as needed throughout the county.	3.4.1
		Flooding			3.2.3 - Redesign specific areas of the Libby storm drainage system where problems exist.	3.4.4

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		Flooding			3.2.4 - Improve roads and road drainage to withstand flood flows in selected areas.	3.4.1, 3.4.2
		Flooding			3.2.5 - Replace the Balsam Bridge over Flower Creek (the bridge is a bottle neck for ice causing the creek to overflow and flood Libby).	3.4.1
		Flooding			3.2.6 - Build levees to prevent water from over flowing banks of streams along Libby and Flower Creeks.	3.5.5
				Objective 3.3 - Provide Public Education and Awareness on Flooding		
		Flooding			3.3.1 - Educate homeowners on the advantages of purchasing flood insurance through the National Flood Insurance Program.	3.5.2
		Flooding			3.3.2 - Work towards getting Lincoln County into the National Flood Insurance Program Community Rating System.	3.5.3
		Flooding			3.3.3 - Obtain and disseminate revised flood plain mapping to increase knowledge of flood prone areas.	3.5.1
			Goal 4 - Reduce The Impacts From Dam Failure			
				Objective 4.1 - Implement Actions to Prevent Impacts from Dam Failure		
		Dam Failure			4.1.1 - Consider using dam inundation as criteria to be identified during subdivision review process.	1.5.1
				Objective 4.2 - Enhance Opportunities to Protect Property from Dam Failure		
		Dam Failure			4.2.1 - Create an inundation map for Miller Lake Dam with technical study data (from dam to Hwy 2)	10.1.1, 10.1.3
				Objective 4.3 - Implement Structural Projects to Reduce Impacts from Dam Failure		
		Dam Failure			4.3.1 - Replace Flower Creek Dam	10.2.1
				Objective 4.4 - Provide Public Education and Awareness on Dam Failure		
		Dam Failure			4.4.1 - Conduct public outreach / education with residents living in inundation areas.	3.5.1, 10.1.1, 10.4.1
			Goal 5 - Reduce The Impacts From Hazardous Material Incidents			
				Objective 5.1 - Enhance Emergency Service Capabilities to Mitigate Impacts from Hazardous Material Incidents		
		Haz-Mat			5.1.1 - Ensure local emergency responders have adequate training to respond to hazardous material events consistent with local capabilities	1.4.4, 7.3.1, 7.3.2
		Haz-Mat			5.1.2 - Obtain decontamination trailers that can be placed around County.	7.2.1
		Haz-Mat			5.1.3 - Improve emergency communications network throughout the County.	7.2.1
			Goal 6 - Reduce The Impacts From Railroad Accidents			
				Objective 6.1 - Implement Structural Projects to Reduce Impacts Railroad Accidents		
		Transp. Accidents			6.1.1 - Close down an unsafe crossing (5th Street Extension in Libby) and replace with new one	7.4.1
				Objective 6.2 - Enhance Emergency Service Capabilities to Mitigate Impacts from Railroad Accidents		
		Transp. Accidents			6.2.1 - Examine unprotected railroad crossings and recommend if gates/signage are needed.	7.1.2
			Goal 7 - Reduce The Impacts From Severe Winter Weather			
				Objective 7.1- Enhance Emergency Service Capabilities to Mitigate Impacts from Severe Winter Weather		
		Severe Weather			7.1.1 - Upgrade existing emergency shelters	1.2.7
		Severe Weather			7.1.2 - Identify new emergency shelters	1.2.7
		Severe Weather			7.1.3 - Provide generators for emergency shelters	1.2.7, 1.3.4, 11.3.1
		Severe Weather			7.1.4 - Provide generators for Fire Departments for emergency power.	1.2.7, 1.3.4, 11.3.1
				Objective 7.2 - Provide Public Education and Awareness on Severe Winter Weather		
		Severe Weather			7.2.1 - Prepare a guide book for special needs populations on winter weather survival	6.2.6
		Severe Weather			7.2.2 - Conduct public outreach campaign where special needs residents would provide information on where they live and what they need. Develop a database with this information.	8.4.1, 8.4.2
			Goal 8 - Reduce The Impacts From Severe Summer Weather			
				Objective 8.1 - Implement Structural Projects to Reduce Impact of Severe Summer Weather		
		Severe Weather			8.1.1 - Structurally analyze all buildings or rooms identified as shelters and strengthen these as necessary	1.2.7
				Objective 8.2 - Enhance Emergency Service Capabilities to Mitigate Impacts from Severe Summer Weather		
		Severe Weather			8.2.1 - Provide emergency back-up power to critical facilities; emergency generators, secondary feeds, portable generators with standard camlock connections	1.2.7, 1.3.4, 11.3.1
			Goal 9 - Reduce The Impacts From Landslides			
				Objective 9.1 - Enhance Opportunities to Protect Property from Landslides		
		Landslides			9.1.1 - Conduct study of landslide-prone areas	9.3.2
		Landslides			9.1.2 - Implement preservation/stabilization measures of slide-prone areas (i.e. Lake Creek in Troy; Cherry Creek in Libby)	9.1.1
			Goal 10 - Reduce The Impacts From Earthquakes			
				Objective 10.1 - Enhance Opportunities to Protect Property from Earthquake Damage		
		Earthquakes			10.1.1 - Identify need for structural retrofits on schools and critical facilities	4.2.1, 4.4.3
			Goal 11 - Reduce The Impacts From All Hazards			
				Objective 11.1 - Implement Actions to Prevent Impacts from All Hazards		
		All Hazards			11.1.1 - Provide NOAA weather radios to all schools and critical facilities	1.2.5, 6.2.2
				Objective 11.2 - Enhance Emergency Service Capabilities to Mitigate Impacts from All-Hazards		
		All Hazards			11.2.1- Enhance GIS data to better assist with mitigation.	2.2.1, 3.2.1
		All Hazards			11.2.2 - Obtain additional repeaters for County.	1.2.7
4	**2014**	**McCone**				
			Goal - Reduce flood damage.			
			Goal - Reduce the economic impacts of drought.			

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			Goal - Improve the warning systems and preparedness for disasters.			
			Goal - Reduce the impact of hazardous materials incidents.			
			Goal - Improve the ability to respond to power outages.			
		Severe Weather			A - Designate an emergency storm shelter in Circle that can be used for summer storms and develop operating procedures.	1.2.7
		Severe Weather			B - Require new mobile home/RV parks and workforce housing facilities of a certain size to have a safe room or sheltering plan as part of permitting process.	1.2.7, 6.4.1
		All Hazards			C - Establish McCone County DES webpage and Facebook page as an outlet to deliver emergency/ disaster information.	1.2.7
		All Hazards			D - Acquire a generator or install portable generator hook-ups for designated emergency shelter(s).	1.2.7, 1.3.4, 11.3.1
		Haz-Mat			E - Map all hazardous materials locations in the county using GIS mapping software and distribute maps to all first responders. Hazardous materials locations can also be integrated into GIS-based dispatch system.	1.2.7, 7.1.1
		All Hazards			F - Conduct inventory of roads at increased risk for traffic damage to assist with future upgrades and improvements.	7.1.2
		Wildfire			G - Install fire weather danger sign(s).	1.2.7
		All Hazards			H - Install surge protection on critical infrastructure.	1.2.7
		Flooding			I - Host NFIP community workshops to provide information and incentives for property owners to acquire flood insurance or install floodproofing.	3.5.2
		All Hazards			J - Expand the use of new NOAA weather radios by the general public.	1.2.5, 6.2.2
		Haz-Mat			K - Provide additional hazardous materials training for first responders	1.4.4, 7.3.1, 7.3.2
		Flooding			L - Continue to examine the county's potential participation in the NFIP.	3.5.2
		All Hazards			M - Continue educating residents about seasonal weather safety.	1.2.3, 6.2.3, 6.2.4
3	**2009**	**Madison**				
			Goal 1: Encourage mitigation from multiple hazards through education and existing programs.			
				Objective 1.1: Foster public and interagency cooperation to ensure effective implementation of mitigation activities.		
		All Hazards			Action 1.1.1: Public Education	1.2.1
		All Hazards			Action 1.1.2: Town Employee Education	1.4.3
		All Hazards			Action 1.1.3: Healthcare Provider Education	8.2.1
		All Hazards			Action 1.1.4: Address Signage	1.2.7
				Objective 1.2: Mitigate hazards during the construction of new development.		
		All Hazards			Action 1.2.1: Growth Policy	1.5.1, 2.5.1
		All Hazards			Action 1.2.2: Subdivision Regulations	1.5.1, 2.5.1
		All Hazards			Action 1.2.3: Building Codes	1.5.1, 2.5.1
			Goal 2: Reduce loss of life, injuries, and property damage in the event of an earthquake.			
				Objective 2.1: Educate the populace of proactive measures regarding earthquake safety.		
		Earthquakes			Action 2.1.1: Existing Subdivision Geologic Review	4.4.2, 4.4.3
		Earthquakes			Action 2.1.2: New Homebuilder Earthquake Education	4.3.3
				Objective 2.2: Educate the public sector on earthquake mitigation measures.		
		Earthquakes			Action 2.2.1: Public Building Seismic Retrofits	4.2.1
		Earthquakes			Action 2.2.2: Infrastructure Seismic Improvements	4.2.6, 4.4.1
		Earthquakes			Action 2.2.3: Future Infrastructure Seismic Requirements	4.2.6, 4.4.1
			Goal 3: Reduce loss of life and prevent injury in the event of a hazardous material incident.			
				Objective 3.1: Undertake a program of public education and awareness of hazardous materials.		
		Haz-Mat			Action 3.1.1: Hazardous Material Study	7.1.1
		Haz-Mat			Action 3.1.2: Hazardous Material Educational Publications	1.2.7, 7.3.1
		Haz-Mat			Action 3.1.3: Hazardous Material Early Warning System	1.2.6
				Objective 3.2: Minimize the probability of and lessen the exposure to future hazardous material releases.		
		Haz-Mat			Action 3.2.1: Passing Lanes and Truck Routes	7.4.1
		Haz-Mat			Action 3.2.2: Chain-Up Area Signage	7.4.1
			Goal 4: Reduce or prevent loss of life and injuries and property damage in the event of flooding.			
				Objective 4.1: Improve flood hazard information and education.		
		Flooding			Action 4.1.1: Floodplain Mapping	3.2.1
		Flooding			Action 4.1.2: Floodplain Study	3.2.1
		Flooding			Action 4.1.3: Flood Public Education	3.5.1, 3.5.4, 3.5.7
				Objective 4.2: Reduce property and infrastructure losses from flood events.		
		Flooding			Action 4.2.1: Structural Flood Mitigation	3.4.1
		Flooding			Action 4.2.2: Road, Bridge, and Culvert Upgrades	3.4.1
		Flooding			Action 4.2.3: Flood Insurance Education	3.5.2
				Objective 4.3: Reduce flood losses to future development.		
		Flooding			Action 4.3.1: Flood Ordinances	1.5.1
			Goal 5: Reduce losses from wildfires in the wildland urban interface.			
				Objective 5.1: Reduce risks in existing wildland urban interface areas.		
		Wildfire			Action 5.1.1: Firewise Program	2.1.2, 2.1.3, 2.3.1, 2.3.2
		Wildfire			Action 5.1.2: Fuel Treatments	2.1.2, 2.1.3, 2.2.6
				Objective 5.2: Minimize damage potential to future development.		

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		Wildfire			Action 5.2.1: WUI Structure Siting Requirements	1.5.1, 2.5.1
		Wildfire			Action 5.2.2: Ingress/Egress Requirements	1.5.1, 2.5.1
		Wildfire			Action 5.2.3: Conservation Easements	3.3.1
		Wildfire			Action 5.2.4: WUI Water Requirements	1.5.1, 2.5.1
		Wildfire			Action 5.2.5: Covenant Requirements	1.5.1, 2.5.1
			Goal 6: Minimize impacts from weather events such as severe thunderstorms and winter storms.			
				Objective 6.1: Ensure the public can receive weather warnings.		
		Severe Weather			Action 6.1.1: NOAA Weather Radio Repeater	1.2.5, 6.2.2
				Objective 6.2: Protect critical infrastructure from harsh weather conditions.		
		Severe Weather			Action 6.2.1: Electric Infrastructure Protection	1.2.7, 1.3.4, 11.3.1
		Severe Weather			Action 6.2.2: Enhance Natural Water Storage Capacity	3.4.5
		Severe Weather			Action 6.2.3: Water Resource Management Education	5.1.1, 5.1.5
		Severe Weather			Action 6.2.4: Surface-Water Management Strategies	3.4.1
		Severe Weather			Action 6.2.5: Snow Fences	7.4.1
1	**2012**	**Mineral**				
			Goal - Reduce Wildland Fire Risk in Wildland Urban Interface			
				Objective - Public Education on Wildfires		
		Wildfire			Provide/prepare educational material to inform public about wildfire risks	2.3.1, 2.3.2
		Wildfire			Map/locate structures within WU	2.2.1
				Objective - Thinning of Public and Private Land with Heavy Fuels		
		Wildfire			Encourage/provide financial incentives for fuel reduction around homes.	1.6.1, 2.1.2, 2.1.3, 2.2.5, 2.2.7, 2.3.1
		Wildfire			Encourage/support fuel mitigation projects on federal lands	2.2.6
		Wildfire			Implement fuel mitigation projects as designated in the Community Wildfire Protection Plan	2.1.2, 2.1.3, 2.2.6
				Objective - Effective Response to Wildland Fires		
		Wildfire			Develop safe ingress/egress routes for homes in the WUI	2.6.2
		Wildfire			Encourage Greater Initial Response and Active Nighttime Fighting of Wildland Fires	1.2.7
		Wildfire			Training of Local officials to Effectively Coordinate Evacuations	1.4.4
			Goal - Reduce Exposure to Flooding			
				Objective - Reduce Environmental Impacts from Flooding		
		Flooding			Build community sewer systems away from 100 year floodplain	3.4.4
		Flooding			Ensure water supplies are protected from bacterial contamination after flooding events	3.4.3
				Objective - Identify flood prone zones throughout the County		
		Flooding			More detailed floodplain determination in areas of frequent flooding (St Regis)	3.2.1
		Flooding			Debris removal from culverts in developed areas	3.4.1
				Objective - Safe and Orderly Evacuations During Flooding		
		Flooding			Training of Local officials to Effectively Coordinate Evacuations	1.2.7, 1.4.4
			Goal - Enhance Communication for Hazard Warnings			
				Objective - Upgrade EAS System for all Hazard Warning/ Communication		
		All Hazards			Evaluation of possible communication systems that can effectively reach all portions of the County	1.2.5, 1.2.6
		All Hazards			Mapping locations of all residences within the County	1.2.7, 2.2.1
		All Hazards			Additional cell towers to improve cellular communication	1.2.7
				Objective - Install Weather Stations to Enhance Storm Prediction		
		All Hazards			Install Additional early warning weather stations to predict hazardous weather conditions	1.2.3, 1.2.6, 6.2.1
			Goal - Reduce Vulnerability to Hazardous Material Releases			
				Objective - Infrastructure Improvements to Reduce Potential Accidents		
		Haz-Mat			Improve 25 mph railroad curves near Superior	7.4.1
		Haz-Mat			Cooperative agreements with MRL and County to ensure rail lines are effectively inspected and maintained	7.1.2
		Haz-Mat			Examine high accident rates on Interstate 90, work with MDT to reduce the hazards causing truck accidents and hazmat spills	7.1.2, 7.4.1
				Objective - Improve County Readiness to Hazardous Material Spills		
		Haz-Mat			Ensure fixed facilities have toxic release plans that identify hazards and potential exposed areas in the event of a release.	1.2.7
		Haz-Mat			Obtain regular reports from MRL on the hazardous material flow through the County.	7.1.1
		Haz-Mat			Conduct training exercises for hazardous material spills from both railroad and highway transport	1.4.4
			Goal - Reduce Associated Impacts from Hazards			
				Objective - Reduce County's Vulnerability to Power Failure and Utility Disruption		
		All Hazards			Provide generators for essential facilities to ensure operations during power disruption.	1.2.7, 1.3.4, 11.3.1
		All Hazards			Develop program for affected communities/vulnerable populations to acquire generators during power failures.	1.2.7, 1.3.4, 11.3.1
				Objective - GIS/Mapping throughout County		
		All Hazards			Mapping and location of each residence within the County.	1.2.7, 2.2.1
		All Hazards			Mapping and location of potential egress routes from communities during disasters.	1.2.7, 2.6.2
				Objective - Public Education		

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		All Hazards			Develop educational materials regarding snow loads & safe removal.	6.2.6
		All Hazards			Information about the potential hazards that can affect the community.	1.2.1, 1.2.7
		All Hazards			Education on safe egress from communities during disasters.	1.2.7
1	**2017**	**Missoula**				
			Goal 1 – Reduce Wildland Fire Risk within WUI			
				Objective 1.1 - Conduct mapping/analysis/planning projects to reduce impacts from wildfires		
		Wildfire			Project 1.1.1 - Continue to work with cooperating agencies to develop population protection plans.	1.2.7, 8.4.2
		Wildfire			Project 1.1.2 - Update CWPP based on new fire data.	2.2.1, 2.2.11, 2.2.12
		Wildfire			Project 1.1.3 - Assist fire jurisdictions/community groups with mapping.	2.2.1
				Objective 1.2 - Perform property protection projects to reduce impacts from wildfires		
		Wildfire			Project 1.2.1 - Continue to look for funding opportunities for fuel mitigation on private land.	1.2.2, 2.2.7
		Wildfire			Project 1.2.2 - Implement FireWise principles and upgrade county facilities with non-combustible materials in Seeley Lake area.	2.1.2, 2.1.3, 2.3.1, 2.3.2
		Wildfire			Project 1.2.3 - Apply for federally competitive grant to sustain fuel mitigation on private land for 10 year period.	2.2.5, 2.2.7
		Wildfire			Project 1.2.4 - Track completed fuel-reduction projects to update vulnerability and support future grants.	1.2.1, 2.2.2
				Objective 1.3 - Implement public awareness and education projects to reduce impacts from wildfires		
		Wildfire			Project 1.3.1 - Update education materials targeting High Priority Areas.	2.3.1, 2.3.2
				Objective 1.4 - Encourage projects to prevent impacts from wildfire		
		Wildfire			Project 1.4.1 - Encourage use of fire-resistant materials/design of non-combustible homes in future developments.	2.3.1, 2.3.2
		Wildfire			Project 1.4.2 - Encourage review of subdivision regulations for coordination with the updated CWPP.	1.5.1, 2.2.11, 2.2.12, 2.5.1
				Objective 1.5 - Upgrade emergency service capabilities to reduce impacts from wildfires		
		Wildfire			Project 1.5.1 - Continue to enhance availability of water supply for fire fighting in urban and rural locations.	1.2.7, 2.2.5
		Wildfire			Project 1.5.2 - Formalize agreements for fire response in unprotected County lands.	1.2.7
		Wildfire			Project 1.5.3 - Obtain mobile air quality monitors to determine unhealthy wildfire smoke conditions.	2.3.3
			Goal 2 – Reduce Impacts from Hazardous Material Incidents and Train Derailments			
				Objective 2.1 - Encourage projects to prevent impacts from haz-mat incidents and derailments		
		Haz-Mat & Transp. Accidents			Project 2.1.1 - Encourage railroad to implement slower train speeds through towns and vulnerable areas to prevent derailments and protect water resources.	7.1.2
				Objective 2.2 - Upgrade emergency service capabilities to reduce impacts from haz-mat incidents and derailments		
		Haz-Mat & Transp. Accidents			Project 2.2.1 - Ensure local emergency responders have adequate training to respond to hazardous material events consistent with local capabilities.	1.4.4, 7.3.1, 7.3.2
		Haz-Mat & Transp. Accidents			Project 2.2.2 - Continue to involve railroad and fixed facilities owners in local emergency response exercises.	1.4.4, 7.3.1
				Objective 2.3 - Implement public outreach and education projects to reduce impacts from haz-mat incidents and derailments		
		Haz-Mat & Transp. Accidents			Project 2.3.1 - Develop population protection plans for residents along railroad or near chemical facilities.	1.2.7
			Goal 3 – Reduce Exposure to Flooding			
				Objective 3.1 - Implement projects to prevent impacts from flooding		
		Flooding			Project 3.1.1 – Determine feasibility of regulating development within unmapped flood prone and channel migration zones.	3.5.6
		Flooding			Project 3.1.2 – Relocate, elevate and/or floodproof structures which have been repeatedly flooded.	3.1.1
				Objective 3.2 - Implement structural projects to reduce impacts from flooding		
		Flooding			Project 3.2.1 – Maintain and improve the existing stormwater infrastructure to mitigate impacts from flash flooding.	3.4.4
				Objective 3.3 - Conduct mapping/analysis/planning projects to reduce impacts from flooding		
		Flooding			Project 3.3.1 – Complete floodplain mapping where LiDar data exists.	3.2.1
		Flooding			Project 3.3.2 – Evaluate and if appropriate, implement a telemetered river gauge on Rattlesnake Creek to notify community of possible flood surges.	3.2.2
				Objective 3.4 - Implement natural resource protection projects to reduce impacts from flooding		
		Flooding			Project 3.4.1 – Restore connectivity of floodplain and function around former Stone Container Plant.	3.4.5
		Flooding			Project 3.4.2 – Enhance floodplain and wetland capacity as opportunities present themselves.	3.4.5
				Objective 3.5 - Upgrade emergency service capabilities to reduce impacts from flooding		
		Flooding			Project 3.5.1 - Conduct exercises on levee failure/breach.	1.4.4, 10.3.2
				Objective 3.6 - Implement public outreach and education projects to reduce impacts from flooding		
		Flooding			Project 3.6.1 - Continue to educate the public on the National Flood Insurance Program.	3.5.2
		Flooding			Project 3.6.2 - Work towards achieving a lower rating through the National Flood Insurance Program Community Rating System.	3.5.3
		Flooding			Project 3.6.3 - Participate in the National Weather Service's Flood Awareness Program	1.2.3, 6.2.3, 6.2.4
			Goal 4 – Minimize Impacts from Severe Weather and Drought			
				Objective 4.1 - Implement public awareness and education projects to reduce impacts from severe weather and drought		

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		Severe Weather			Project 4.1.1 - Partner with the National Weather Service to provide weather education presentations to educate the public on severe weather hazards.	1.2.3, 6.2.3, 6.2.4
		Severe Weather			Project 4.1.2 - Partner with the National Weather Service on the Weather Ready Nation Ambassador Program and increase participation in program.	6.2.3
		Drought			Project 4.1.3 - Support local agency efforts to develop and distribute range and agriculture management tools to mitigate impacts from drought.	5.1.1, 5.2.2, 5.4.1, 5.4.2, 5.4.3
				Objective 4.2 - Implement property protection projects to reduce impacts from severe weather and drought		
		Severe Weather			Project 4.2.1 - Continue to work with City's Urban Forester to maintain trees that could impact property.	1.2.7
				Objective 4.3 - Implement projects to prevents impacts from severe weather and drought		
		Drought			Project 4.3.1 - Improve water conveyance and application efficiencies in agricultural, municipal, and industrial uses.	5.4.3
		Drought			Project 4.3.2- Encourage voluntary water conservation by domestic, municipal, and industrial users.	5.1.3
		Drought			Project 4.3.3 - Install meters on public water systems.	5.5.4
		Drought			Project 4.3.4 - Support the State's efforts to establish a drought emergency fund for temporary water leases.	5.5.2
			Goal 5 - Minimize Impacts from Earthquakes			
				Objective 5.1 - Implement property protection projects to reduce impacts from earthquakes		
		Earthquakes			Project 5.1.1- Tie down/secure objects in critical facilities and schools that could fall during an earthquake.	4.5.2
				Objective 5.2 - Implement public awareness and education projects to reduce impacts from earthquakes		
		Earthquakes			Project 5.2.1 - Promote participation in Great Montana Shake-out in schools, municipal offices, businesses, and the media.	4.3.1
			Goal 6 - Reduce Impacts from Communicable Disease			
				Objective 6.1 - Implement public awareness and education projects to reduce impacts from communicable disease		
		Disease			Project 6.1.1 - Support Public Health Department's public education programs on communicable disease.	8.2.1
		Disease			Project 6.1.2 - Promote mass vaccination clinics.	8.1.1
				Objective 6.2 - Enhance emergency service capabilities to reduce impacts from communicable disease		
		Disease			Project 6.2.1 - Complete exercise and update Chempack Plan on annual basis.	8.5.1
		Disease			Project 6.2.2 - Keep pandemic plans up to date and complete exercises.	8.4.2
			Goal 7 – Reduce Impacts from Avalanches			
				Objective 7.1 - Implement public awareness and education projects to reduce impacts from avalanches		
		Avalanche			Project 7.1.1 - Partner with avalanche center to do forecasting and public education and awareness.	9.2.2
			Goal 8 – Reduce Impacts from Dam Failure			
				Objective 8.1 - Enhance emergency service capabilities to reduce impacts from dam failure		
		Dam Failure			Project 8.1.1 - Work with DNRC and dam owners to update EAPs on annual basis.	10.1.3
		Dam Failure			Project 8.1.2 - Participate in dam exercises with emergency response partners.	1.4.4, 10.3.1
		Dam Failure			Project 8.1.3 - Develop evacuation plan for Spartan-Playfair stormwater facilities.	10.1.1
				Objective 8.2 - Conduct mapping/analysis/planning projects to reduce impacts from dam failure		
		Dam Failure			Project 8.2.1 - Evaluate individual and cumulative risk of failure of Rattlesnake Wilderness Dams and the current Mountain Water Company Intake Dam, and options for mitigation of identified risks	10.1.2
				Objective 8.3 - Implement structural projects to reduce impacts from dam failure		
		Dam Failure			Project 8.3.1 - Decommission or modify non-essential dams that present unacceptablable risk of failure	10.2.1
			Goal 9 - Reduce Impacts from All Hazards			
				Objective 9.1 - Implement public awareness and education projects to reduce impacts from all hazards		
		All Hazards			Project 9.1.1 - Provide targeted education and information to public officials on general hazard mitigation.	1.2.1, 1.4.3
		All Hazards			Project 9.1.2 -Encourage citizens to register cell phones for emergency alerts.	1.2.5
		All Hazards			Project 9.1.3 -Encourage citizens to create individual safety profiles in Smart-911.	1.2.5
		All Hazards			Project 9.1.4 -Create public education campaign aimed at informing public on appropriate uses of 911 and emergency alerts.	1.2.5, 1.2.7
				Objective 9.2 - Conduct mapping/analysis/planning projects to reduce impacts from from all hazards		
		All Hazards			Project 9.2.1 - Assist planners with comprehensive planning to mitigate disasters.	1.5.1, 2.5.1
				Objective 9.3 - Enhance emergency service capabilities to reduce impacts from all hazards		
		All Hazards			Project 9.3.1 - Work with American Red Cross and City-County Health Department to determine which shelters need emergency generators.	1.2.7
		All Hazards			Project 9.3.2 - Obtain generators for critical facilities and shelters.	1.2.7, 1.3.4, 11.3.1
		All Hazards			Project 9.3.3 - Continue to work with vulnerable facilities to create or enhance emergency plans.	8.4.2
		All Hazards			Project 9.3.4 - Enhance or develop EOP annex for livestock and domestic animal management during emergencies.	1.2.7, 8.4.1, 8.4.2
5	**2013**	**Musselshell**				
			Goal 1: Reduce Impacts from Flooding			
				Objective 1.1: Implement Projects to Protect Natural Resources		
		Flooding			1.1.1 - Examine old river channels to increase carrying capacity during flooding.	3.4.5

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				Objective 1.2: Implement Structural Projects to Reduce Losses from Flooding		
		Flooding			1.2.1 - Repair impaired bridges impacted by flood scour.	3.4.1
		Flooding			1.2.2 - Resize culverts or replace culverts with bridges to accommodate flood flow.	3.4.1
				Objective 1.3: Implement Property Protection Projects to Reduce Flood Losses		
		Flooding			1.3.1 - Complete elevation survey of homes in the Musselshell River floodplain in the City of Roundup and county.	3.2.1
		Flooding			1.3.2 - Anchor fuel oil and propane tanks at residences in floodplain.	3.5.4
		Flooding			1.3.3 - Relocate, elevate and/or flood proof structures which have been repeatedly flooded.	3.1.1
		Flooding			1.3.4 - Obtain river gauges where needed between Lavina and Musselshell.	3.2.2
		Flooding			1.3.5 - Complete floodplain mapping.	3.2.1
		Flooding			1.3.6 - Elevate controls in lift stations above flood stage to prevent backflow of sewage.	3.5.4
		Flooding			1.3.7 - Install backflow values on sewage system on flats in Roundup.	3.5.4
				Objective 1.4: Implement Public Education & Awareness Projects to Reduce Flood Losses		
		Flooding			1.4.1 - Recommend real estate disclosure for properties within floodplain and dam inundation areas.	1.2.7
		Flooding			1.4.2 - Initiate outreach project targeting those living in dam inundation area.	3.5.1, 10.1.1, 10.4.1
		Flooding			1.4.3 - Educate public on flood prevention and protection measures.	3.5.1, 3.5.4, 3.5.7
		Flooding			1.4.4 - Promote and educate public on the National Flood Insurance Program.	3.5.2
			Goal 2: Reduce Impacts from Wildfire			
				Objective 2.1: Implement Property Protection Projects to Reduce Wildfire Losses		
		Wildfire			2.1.1 - Install water tanks and dry hydrants in rural parts of the county.	2.2.5
		Wildfire			2.1.2 - Coordinate with other agencies and landowners regarding construction of fuel breaks and fuel reduction projects.	2.1.2, 2.1.3, 2.2.5, 2.2.7
		Wildfire			2.1.3 - Encourage mechanical thinning and prescribed burning to abate the risk of catastrophic fire.	2.1.2, 2.1.3, 2.2.5, 2.2.7
				Objective 2.2: Implement Emergency Service Projects to Reduce Wildfire Losses		
		Wildfire			2.2.1 - Recruit and provide continuing education for VFD and EMS personnel.	2.3.1, 2.3.2
		Wildfire			2.2.2 - Widen private roads and install culverts where needed to include ingress and egress roads to standards.	2.6.2
		Wildfire			2.2.3 - Develop GPS database of water sources in County to enhance firefighting efforts.	2.2.2
		Wildfire			2.2.4 - Enhance evacuation procedures associated with wildfire events.	1.2.7, 2.6.2
				Objective 2.3: Implement Public Education & Awareness Projects to Reduce Wildfire Losses		
		Wildfire			2.3.1 - Provide community fire education regarding fuel reduction projects and firewise practices utilizing resources available through FireSafe Montana.	2.3.1, 2.3.2
		Wildfire			2.3.2 - Develop or obtain training DVD on wildland firefighting and risk reduction that can be distributed to ranchers and homeowners.	1.4.4
			Goal 3: Reduce Impacts from Transportation-Related Hazardous Materials Incidents			
				Objective 3.1: Implement Emergency Service Projects to Reduce Losses from Transportation-Related Hazardous Material Incidents		
		Haz-Mat & Transp. Accidents			3.1.1 - Ensure local emergency responders have adequate training to respond to hazardous material events consistent with local capabilities.	1.4.4, 7.3.1, 7.3.2
		Haz-Mat & Transp. Accidents			3.1.2 - Develop alternative routes when major arteries are compromised.	7.4.1
		Haz-Mat & Transp. Accidents			3.1.3 - Explore creating a safe haven for haz-mat loads that may be in trouble.	7.2.1
		Haz-Mat & Transp. Accidents			3.1.4 - Install better indicator lights at Signal Peak railroad crossings in Musselshell County.	7.4.1
		Haz-Mat & Transp. Accidents			3.1.5 - Develop and improve hazardous material response strategies.	7.2.1
		Haz-Mat & Transp. Accidents			3.1.6 - Provide first responder education on methamphetamine labs and how to identify signs of labs.	1.4.4
		Haz-Mat & Transp. Accidents			3.1.7 - Develop outreach for responders and law enforcement on haz-mat evacuation.	1.2.7
				Objective 3.2: Implement Public Education & Awareness Projects to Reduce Transportation-Related Hazardous Material Losses		
		Haz-Mat & Transp. Accidents			3.2.1 - Educate teachers and school staff in schools near hazardous material facilities and transportation routes on how to limit exposure to students during an incident.	1.2.7, 1.4.4
			Goal 4: Reduce Impacts from Severe Weather			
				Objective 4.1: Implement Property Protection Projects to Reduce Severe Weather Losses		
		Severe Weather			4.1.1 - Encourage utilities to install air flow spoilers.	6.3.2
				Objective 4.2: Implement Emergency Service Projects to Reduce Losses from Severe Weather		
		Severe Weather			4.2.1 - Obtain NOAA weather radios for critical facilities.	1.2.5, 6.2.2
				Objective 4.3: Implement Public Education & Awareness Projects to Reduce Severe Weather Losses		
		Severe Weather			4.3.1 - Support drought programs implemented through the Conservation District, FSA, and MSU Extension.	5.1.1, 5.1.5, 5.2.2, 5.4.1, 5.4.2, 5.4.3
		Severe Weather			4.3.2 - Encourage voluntary water conservation by domestic, municipal, agricultural, and industrial users.	5.1.3
			Goal 5: Promote All-Hazard Mitigation Measures			
				Objective 5.1: Implement Emergency Service Projects to Reduce Losses from All Hazards		
		All Hazards			5.1.1 - Adopt a county standard for emergency service road system and its development.	1.5.1, 7.4.1
		All Hazards			5.1.2 - Rebroadcast NOAA weather alerts on local radio station.	1.2.5
		All Hazards			5.1.3 - Develop and utilize short-wave radio system for emergency communications.	1.2.7
		All Hazards			5.1.4 - Establish a long range exercise program for all hazards.	1.4.4
		All Hazards			5.1.5 - Improve/replace repeater buildings to accommodate new technology.	1.2.7
		All Hazards			5.1.6 - Obtain a generator for the community of Musselshell for their emergency shelter.	1.2.7, 1.3.4, 11.3.1

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		All Hazards			5.1.7 - Obtain generator for City of Roundup pumping station.	1.2.7, 1.3.4, 11.3.1
		All Hazards			5.1.8 - Obtain generators for all repeater sites.	1.2.7, 1.3.4, 11.3.1
		All Hazards			5.1.9 - Obtain generators (2) for Town of Melstone for use in their emergency shelters.	1.2.7, 1.3.4, 11.3.1
		All Hazards			5.1.10 - Obtain trailer-mounted generators.	1.2.7, 1.3.4, 11.3.1
		All Hazards			5.1.11 - Install pigtail and transfer switches to connect stationary generator sites.	1.2.7, 1.3.4, 11.3.1
				Objective 5.2 – Implement Public Education & Awareness Projects to Reduce Losses from All Hazards		
		All Hazards			5.2.1 - Provide public awareness on location of emergency shelters.	1.2.7
		All Hazards			5.2.2 - Promote disaster-related educational programs through the school system.	1.2.4
		All Hazards			5.2.3 - Provide awareness on developing a family disaster plan and disaster supply kit.	1.2.8
3	**2011**	**Park**				
			Goal 1: Reduce Damages from Flooding			
				Objective 1.1: Prevent flood damages to critical facilities, critical infrastructure, and future development through government resources, services, and authorities.		
		Flooding			Project 1.1.1: River Crossing Improvements	3.4.1
		Flooding			Project 1.1.2: Floodplain Ordinances	1.5.1
		Flooding			Project 1.1.3: Conservation Easements	3.3.1
		Flooding			Project 1.1.4: Water Body and Ditch Maintenance	3.4.5
		Flooding			Project 1.1.5: Bridge, Culvert, and Road Improvements	3.4.1
		Flooding			Project 1.1.6: Livingston Berm Alternatives	3.5.5
				Objective 1.2: Provide the public with information and means to prevent private flood losses.		
		Flooding			Project 1.2.1: River Bank Stabilization and Flood Mitigation Program	3.4.5
		Flooding			Project 1.2.2: Flood-prone Property Acquisition Program	3.1.1
		Flooding			Project 1.2.3: Flood Insurance Education	3.5.2
			Goal 2: Prevent Losses from Wildfires			
				Objective 2.1: Increase understanding of the wildfire hazard areas.		
		Wildfire			Project 2.1.1: FireSafe Coalition	2.1.2, 2.1.3, 2.2.5
		Wildfire			Project 2.1.2: Fuels and Fire Mapping	2.2.1
		Wildfire			Project 2.2.1: Fuel Reductions	2.1.2, 2.1.3, 2.2.5, 2.2.7, 2.3.1
		Wildfire			Project 2.2.2: Regional Water Sources	2.2.5
		Wildfire			Project 2.2.3: Ingress/Egress Road Improvements	2.6.2
			Goal 3: Reduce Potential Losses from Earthquakes			
				Objective 3.1: Prevent earthquake losses to critical facilities, vulnerable populations, and infrastructure.		
		Earthquakes			Project 3.1.1: Critical Facility Seismic Retrofits	4.2.1
		Earthquakes			Project 3.1.2: Infrastructure Seismic Improvements	4.2.6, 4.5.1
				Objective 3.2: Minimize private earthquake losses.		
		Earthquakes			Project 3.2.1: Earthquake Retrofit Education	4.3.2, 4.3.3
		Earthquakes			Project 3.2.2: Earthquake Retrofit Program	4.2.1, 4.4.3
			Goal 4: Reduce Losses from a Trnasportation or Hazardous Materials Accident			
				Objective 4.1: Allow for emergency traffic and evacuation routes during a hazardous materials or ground transportation incident.		1.2.7
		Haz-Mat			Project 4.1.1: Railroad Crossing	7.2.1
			Goal 5: Promote Effective Multi-Hazard Mitigation Measures			
				Objective 5.1: Improve warning capabilities.		
		All Hazards			Project 5.1.1: Storm Ready Community	6.2.4
				Objective 5.2: Increase emergency management and disaster service capabilities to prevent additional losses in a disaster.		
		All Hazards			Project 5.2.1: Generators	1.2.7, 1.3.4, 11.3.1
				Objective 5.3: Improve digital data for assessing all hazards.		
		All Hazards			Project 5.3.1: HAZUS-MH GIS Data	2.2.1, 3.2.1
				Objective 5.4: Mitigate the impact of hazards on future development through land use and building regulations.		
		All Hazards			Project 5.4.1: Building Codes	1.5.1
		All Hazards			Project 5.4.2: Growth Policies and Subdivision Regulations	1.5.1, 2.5.1
		All Hazards			Project 5.4.3: Capital Improvements Plans	1.2.7, 1.5.1
				Objective 5.5: Educate businesses and the public on simple mitigation activities.		
		All Hazards			Project 5.5.1: Mitigation Education	1.2.1, 2.3.2
				Objective 5.6: Protect critical infrastructure from a variety of hazards.		
		All Hazards			Project 5.6.1: Electric and Communications Infrastructure Burying	6.3.1
		All Hazards			Project 5.6.2: Snow Fences	7.4.1
6	**2008**	**Petroleum**				
			Goal #1 - Protect Life and Property			
				Objective 1.1 - Implement activities that assist in protecting lives by making homes, businesses, infrastructure, critical facilities, and other property more resistant to losses from hazards.		

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				Objective 1.2 - Reduce losses and repetitive damages from chronic hazard events while promoting insurance coverage for catastrophic hazards.		
				Objective 1.3 - Improve hazard assessment information to make recommendations for new development and encourage preventative measures for existing development in areas vulnerable to hazards.		
			Goal #2 - Improve Public Awareness			
				Objective 2.1 - Develop and implement education and outreach programs to increase public awareness of the risks associated with the hazards.		
				Objective 2.2 - Provide information on tools, partnership opportunities, and funding resources to assist in implementing mitigation activities.		
			Goal #3 - Protect Natural Systems			
				Objective 3.1 - Balance watershed planning, natural resource management, and land use planning with hazard mitigation to protect life, property, and the environment.		
				Objective 3.2 - Preserve, rehabilitate, and enhance natural systems to serve mitigation functions.		
			Goal #4 - Build Partnerships for Implementation			
				Objective 4.1 - Strengthen communication and coordinate participation among and within public agencies, citizens, non-profit organizations, business, and industry to gain a vested interest in implementation of mitigation measures.		
			Goal #5 - Improve Emergency Services			
				Objective 5.1 - Strengthen emergency operations by increasing collaboration and coordination among public agencies, profit organizations, and business.		
				Objective 5.2 - Coordinate and integrate hazard mitigation activities, where appropriate, with emergency operations plans and procedures.		
		All Hazards			Incorporate hazard mitigation into county growth policy, when developed	1.5.1, 2.5.1
		All Hazards			Incorporate hazard mitigation into county subdivision regulations during next update	1.5.1, 2.5.1
		All Hazards			Adopt the residential building codes	1.5.1
		All Hazards			Home safety inspection program	1.2.7
		All Hazards			Reverse 911	1.2.5
		Drought			Enhance irrigation capabilities	5.4.3
		Drought			Form a local Drought Advisory Committee	5.2.3
		Drought			Water conservation	5.1.3
		Flooding			Join the National Flood Insurance Program	3.5.2
		Flooding			Bridge and culvert replacements	3.4.1
		Flooding			Distribute flood information to homes along the Musselshell River and in school	3.5.1, 3.5.4, 3.5.7
		Haz-Mat			Identify and map all hazardous material sites in the county	1.2.7, 7.1.1
		Haz-Mat			Public education for hazardous material releases	1.2.7
		Severe Weather			Develop a program to keep trees trimmed	1.2.7
		Severe Weather			Community education regarding tornado shelters	1.2.7
		All Hazards			Develop programs to reduce the risk to public infrastructure	1.2.7
		Severe Weather			Support/encourage electric utilities to use underground utilities	6.3.1
		Severe Weather			Severe weather spotter training	1.2.3, 6.2.3, 6.24
		Severe Weather			Increase public awareness of severe weather and mitigation activities	1.2.3, 6.2.3, 6.2.4
		Severe Weather			Enhance weather monitoring abilities	1.2.3
		Volanic Ash			Public education for volcanic ashfall	12.1.1
		Wildfire			Conduct wildfire fuels mitigation, especially in the wildland urban interface	2.1.2, 2.1.3
		Wildfire			Develop educational programs and written material for fire mitigation	2.3.1, 2.3.2
		Wildfire			Update the Community Wildfire Protection Plan	2.2.1, 2.2.11, 2.2.12, 2.5.1
		Wildfire			Upgrade fire reports	2.2.4
		Wildfire			Identify all water sources in the county	2.2.2
6	**2012**	**Phillips**				
			Goal 1 - Reduce Impacts from Wildfire			
				Objective 1.1 - Enhance Emergency Service Capabilities for Wildfire		
		Wildfire			1.1.1 - Obtain digital radios for firefighters.	1.2.7
		Wildfire			1.1.2 - Provide radios in rural fire apparatus.	1.2.7
		Wildfire			1.1.3 - Provide training on firefighting techniques.	1.4.4
		Wildfire			1.1.4 - Locate and identify roads that have wooden bridges within the County. Plan protection measures and alternate routes in the event of a wildfire compromising or burning these bridges.	2.6.2, 7.1.2
		Wildfire			1.1.5 - Develop GPS database of water sources for fighting fires.	2.2.2
		Wildfire			1.1.6 - Identify alternative firefighting water sources	2.2.5
				Objective 1.2 - Enhance Opportunities to Protect Property from Wildfire		
		Wildfire			1.2.1 - Encourage all rural fire districts to obtain heated buildings for fire truck storage.	1.2.7
		Wildfire			1.2.2 - Encourage all rural communities to have fire resistant buildings for their water supplies.	1.2.7
		Wildfire			1.2.3 - Encourage Firewise practices through creation of defensible space around communities and private homes.	2.1.2, 2.1.3
				Objective 1.3 - Provide Public Education and Awareness on Wildfire		
		Wildfire			1.3.1 – Continue participation in the National Firewise Communities program.	2.1.2, 2.1.3, 2.3.1, 2.3.2

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		Wildfire			1.3.2 - With cooperators, provide classroom or video fire suppression training for rural area citizens and County employees who will respond to wildland fires.	1.4.4
		Wildfire			1.3.3 - Maintain participation in area fire restriction group and promote wildfire awareness based on restrictions that go into effect.	1.2.3, 1.2.6
			Goal 2 - Reduce Impacts from Severe Winter Weather			
				Objective 2.1 - Provide Public Education and Awareness on Severe Winter Weather		
		Severe Weather			2.1.1 - Continue to make available guide book on Montana Winter Survival.	6.2.6
		Severe Weather			2.1.2 - Promote the National Weather Service's Winter Weather Awareness Week (third full week in October).	1.2.3, 6.2.3, 6.24
		Severe Weather			2.1.3 - Continue participation in NWS weather briefings.	1.2.3, 1.4.1, 6.2.1
		Severe Weather			2.1.4 - Promote MDT 511 road report system.	6.2.6
			Goal 3 - Reduce Impacts from Flooding			
				Objective 3.1 -Implement Structural Projects to Mitigate Impacts from Flooding		
		Flooding			3.1.1 - Resize and upgrade culverts in various locations throughout the county as needed	3.4.1
				Objective 3.2 - Provide Public Education and Awareness on Flooding		
		Flooding			3.2.1 - Educate homeowners on purchasing flood insurance through the National Flood Insurance Program.	3.5.2
		Flooding			3.2.2 - Participate in the National Weather Service's Flood Awareness Week (third full week in March).	1.2.3, 6.2.3, 6.24
				Objective 3.3 - Enhance Opportunities to Protect Property from Flooding		
		Flooding			Project 3.3.1 - Install an automatic river gauge on the Milk River at Malta	3.2.2
			Goal 4 - Reduce Impacts Railroad Accidents			
				Objective 4.1 - Enhance Emergency Service Capabilities for Railroad Accidents		
		Transp. Accidents			4.1.1 - Examine unprotected railroad crossings and recommend if gates/signage are needed.	7.1.2
		Transp. Accidents			4.1.2 - Host a transcar training for local first responders.	1.4.4
			Goal 5 - Reduce Impacts from Hazardous Material Incidents			
				Objective 5.1 - Enhance Emergency Service Capabilities for Hazardous Material Incidents		
		Haz-Mat			5.1.1 - Encourage local emergency responders to have adequate training to respond to hazardous material events consistent with local capabilities	1.4.4, 7.3.1, 7.3.2
			Goal 6 - Reduce Impacts from Severe Summer Weather			
				Objective 6.1 - Provide Public Education and Awareness on Severe Summer Weather		
		Severe Weather			6.1.1 - Promote the National Weather Service's Severe Weather Awareness Week (third week in April).	1.2.3, 6.2.3, 6.24
		Severe Weather			6.1.2 - Designate an official weather watcher at outdoor community events.	6.2.7
			Goal 7 - Reduce Impacts from Drought			
				Objective 7.1 - Implement Structural Projects to Reduce Impact from Drought		
		Drought			7.1.1 - Support reconstruction of St. Mary's water pipeline that supplies Milk River.	5.4.3
				Objective 7.2 - Provide Public Education and Awareness on Drought		
		Drought			7.2.1 - Support drought programs implemented through the Conservation District, FSA, and MSU extension.	5.1.1, 5.1.5, 5.2.2, 5.4.1, 5.4.2, 5.4.3
			Goal 8 - Reduce Impacts from Structure Fire			
				Objective 8.1 - Enhance Emergency Service Capabilities for Structure Fire		
		Structure Fire			8.1.1 - Obtain firefighting equipment (including SCBAs) for fire departments.	1.2.7
		Structure Fire			8.1.2 - Continue to recruit and train volunteer fire fighters.	1.2.7
				Objective 8.2 - Provide Public Education and Awareness on Structure Fire		
		Structure Fire			8.2.1 - Promote public education on the benefit of smoke detectors.	1.4.4
		Structure Fire			8.2.2 - Support volunteer fire department fire prevention activities.	1.2.7
		Structure Fire			8.2.3 - Support the education program in school on topics supplied by International Fire Council.	1.2.4
		Structure Fire			8.2.4 - Support a community education program on structure fire prevention.	1.2.7
			Goal 9 - Reduce Impacts from Dam Failure			
				Objective 9.1 - Provide Public Education and Awareness on Dam Failure		
		Dam Failure			9.1.1 - Continue to conduct public outreach/education with residents living in inundation areas.	3.5.1, 10.1.1, 10.4.1
		Dam Failure			9.1.2 - Participate in tabletop to exercise EAPS on high hazard dams.	1.4.4, 10.3.1
			Goal 10 - Reduce Impacts from All Hazards			
				Objective 10.1 - Enhance Emergency Service Capabilities for All Hazards		
		All Hazards			10.1.1 - Obtain NOAA weather radios for critical facilities.	1.2.5, 6.2.2
		All Hazards			10.1.2 - Develop an emergency alert system for the county such as Reverse 911.	1.2.5, 1.2.6
		All Hazards			10.1.3 - Obtain mobile generators to use around County as needed.	1.2.7, 1.3.4, 11.3.1
		All Hazards			10.1.4 - Install pig-tails at shelters to accommodate mobile generators.	1.2.7, 1.3.4, 11.3.1
		All Hazards			10.1.5 - Develop map of ranch roads to enhance response efforts.	2.2.2
		All Hazards			10.1.6 - Coordinate with State DES and Federal partners to attend Incident Command System 100/200 and/or IS 700.	1.4.3
		All Hazards			10.1.7 - Upgrade sirens for Malta and Saco, as needed.	1.2.7
		All Hazards			10.1.8 - Encourage private owner to obtain a self-start generator for FM radio antennas.	1.2.7, 1.3.4, 11.3.1
				Objective 10.2 - Provide Public Education and Awareness on All Hazards		
		All Hazards			10.2.1 - Once a new siren is acquired for the Town of Saco, initiate a public awareness campaign on how it will be used.	1.2.7
		All Hazards			10.2.2 - Promote disaster-related educational programs through the school system.	1.2.4
		All Hazards			10.2.3 - Encourage preparation of family disaster plan and disaster supply kit.	1.2.8

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		All Hazards			10.2.4 - Work towards becoming a National Weather Service StormReady Community.	1.2.3, 6,2,3, 6.2.4
		All Hazards			10.2.5 - Promote National Weather Service's severe weather spotter training program.	1.2.3, 6.2.3, 6.24
2	**2011**	**Pondera**				
			Goal 1 - Reduce the Impact from Hazardous Material Incidents			
				Objective 1.1 - Promote Emergency Service Activities to Mitigate Hazardous Material Incidents.		
		Haz-Mat			1.1.1 - Ensure local emergency responders and PMC medical personnel have adequate training to respond to hazardous material events consistent with local capabilities.	1.4.4, 7.3.1, 7.3.2
			Goal 2 - Reduce the Impact from Severe Winter Weather			
				Objective 2.1 - Provide Public Education and Awareness on Flooding		
		Severe Weather			2.1.1 - Continue to provide outreach on winter preparedness, wind chill and other severe weather hazards.	6.2.6
		Severe Weather			2.1.2 - Promote awareness on the local NOAA Weather Radio station and the benefits of owning a weather radio.	1.2.5, 6.2.2
			Goal 3 - Reduce Losses from Flooding			
				Objective 3.1 - Implement Property Protection Measures to Mitigate Impacts from Flooding		
		Flooding			3.1.1 - Resize and upgrade culverts (4th Street & Teton Ave./Hwy 44 three way junction in Valier, and others as needed)	3.4.1
		Flooding			3.1.2 - Determine where additional culverts are needed to mitigate flooding impacts	3.4.1
		Flooding			3.1.3 - Protect infrastructure from flooding in the city/towns and county (i.e. Valier Pump Station)	3.4.3
		Flooding			3.1.4 - Explore options to mitigation flooding on Front Street outside of Conrad	3.2.2
				Objective 3.2 - Provide Public Education and Awareness on Flooding		
		Flooding			3.2.1 - Promote participation in the National Flood Insurance Program.	3.5.2
		Flooding			3.2.2 - Pursue enrollment in the National Flood Insurance Program Community Rating System.	3.5.3
				Objective 3.3 - Implement Structural Projects to Mitigate Impacts from Flooding		
		Flooding			3.3.1 - Replace bridges compromised by flooding.	3.4.1
		Flooding			3.3.2 - Upgrade streets and roads in Valier and Dupuyer for runoff management	3.4.2
		Flooding			3.3.3 - Elevate Valier pump house that repeatedly floods. The project should include raising the concrete floor and extending the well head casing.	3.4.3
			Goal 4 - Reduce the Impact of Wildland Fires			
				Objective 4.1 - Support Public Education and Awareness Wildfire Mitigation Projects		
		Wildfire			4.1.1 - Provide outreach on creating and maintaining defensible space	2.3.1, 2.3.2
		Wildfire			4.1.2 - Promote educational programs such as FireWise	2.3.1, 2.3.2
				Objective 4.2 - Implement Requirements to Prevent Wildfire Losses		
		Wildfire			4.2.1 - Update the Pondera County subdivision regulations to include provisions/standards for defensible space, ingress/egress, and water supply requirements for future development	1.5.1, 2.5.1, 2.6.2
			Goal 5 - Reduce the Impact from Severe Summer Weather			
				Objective 5.1 - Support Public Education and Awareness on Mitigation of Summer Weather Hazards		
		Severe Weather			5.1.1 - Provide outreach on the risks of lightning and other severe summer weather hazards	1.2.3, 6.2.3, 6.24
		Severe Weather			5.1.2 - Promote awareness on the local NOAA Weather Radio station and the benefits of owning a weather radio.	1.2.5, 6.2.2
		Severe Weather			5.1.3 - Promote the National Weather Services "Severe Weather Awareness Week"	1.2.3, 6.2.3, 6.24
		Severe Weather			5.1.4 - Continue activities to become a Storm Ready Community	1.2.3, 6.2.3, 6.2.4
			Goal 6- Reduce the Impact of Dam Failure			
				Objective 6.1 - Support Public Education and Awareness on Dam Failure		
		Dam Failure			6.1.1 - Provide to dam owners information on who to contact in case of suspected problems	1.2.7
			Goal 7 - Reduce the Impact of Drought			
				Objective 7.1 - Support Public Education and Awareness on Drought		
		Drought			7.1.1 - Support drought programs implemented through the Conservation District, FSA, and MSU extension.	5.1.1, 5.1.5, 5.2.2, 5.4.1, 5.4.2, 5.4.3
			Goal 8 - Reduce the Impact from Structure Fire			
				Objective 8.1 - Support Public Education and Awareness Projects on Structure Fire Mitigation.		
		Structure Fire			8.1.1 - Encourage preparation of Family Emergency Plans.	1.2.8
		Structure Fire			8.1.2 - Support volunteer fire department fire prevention activities	1.2.7
				Objective 8.2 - Implement Property Protection Measures to Mitigate Impacts from Structure Fires		
		Structure Fire			8.2.1 - Continue efforts to put smoke detectors in all residences, business, and critical facilities.	1.2.7
			Goal 9 - Reduce the Impact of Highway Accidents			
				Objective 9.1 - Implement Structural Projects to Mitigate Impacts from Highway Accidents		
		Transp. Accidents			9.1.1 - Coordinate with MDT for better signage and/or a flashing light at Hwy 44 & Teton in Valier	7.4.1
			Goal 10 - Reduce the Impact of Railroad Accidents			
				Objective 10.1 - Implement Structural Projects to Mitigate Impacts from Railroad Accidents		
		Transp. Accidents			10.1.1 - Examine unprotected railroad crossings and recommend if more gates/signage are needed (i.e. railroad crossings at Old Shelby Hwy and Hwy 91 N at Dry Fork).	7.1.2

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			Goal 11 - Mitigate the Impacts from All Hazards			
				Objective 11.1 - Enhance Public Education/Awareness on All-Hazards		
		All Hazards			11.1.1 - Provide awareness on developing a family disaster plan and disaster supply kit.	1.2.8
		All Hazards			11.1.2 - Obtain NOAA Weather Radios for critical facilities and schools.	1.2.5, 6.2.2
4	**2015**	**Powder River**				
			Goal - Maximize the use of mitigation actions that prevent losses from all hazards.			
			Goal - Reduce community impacts of wildland and rangeland fires.			
			Goal - Mitigate the potential loss of life and property from flooding.			
			Goal - Reduce impacts from severe summer weather.			
			Goal - Reduce impacts from severe winter weather.			
		Flooding			A - Conduct NFIP workshop to educate public about benefits of flood insurance.	3.5.2
		All Hazards			B - Update subdivision regulations to improve the county's multi-hazard resiliency.	1.5.1, 2.5.1
		Flooding			C - Install sewer backflow prevention valves on selected facilities.	3.5.4
		Severe Weather			D - Survey the number and types of hazardous materials passing through the county.	7.1.1
		Severe Weather			E - Cover windows in select facilities with shatter-resistant film.	4.5.3
		Flooding			F - Consider joining the NFIP Community Rating System (CRS) program.	3.5.3
		Flooding			G - Conduct engineering study to analyze possible mitigation solutions for drainages that pass through Broadus.	3.2.1
		Flooding			H - Mitigate culverts and roads to prevent flood damage.	3.4.1
		Wildfire			I - Utilize public education and brush removal program to create defensible zones around homes and infrastructure in high risk areas.	2.3.1, 2.3.2
		Haz-Mat			J - Continue providing hazardous materials awareness training for first responders.	1.4.4, 7.3.1, 7.3.2
		Severe Weather			K - Distribute NOAA weather radios.	1.2.5, 6.2.2
		All Hazards			L - Educate residents about multi-hazard awareness.	1.2.1
1	**2017**	**Powell**				
			Goal 1 - Reduce Exposure to Flooding			
				Implement projects to prevent impacts from flooding		
				Implement structural projects to reduce impacts from flooding		
				Update mapping/analysis/planning projects to reduce impacts from flooding		
				Implement riparian restoration projects to reduce impacts from flooding		
				Conduct public outreach and education to reduce impacts from flooding		
		Flooding			Update floodplain mapping	3.2.1
		Flooding			Property acquisition and construction of a flood diversion channel west of Interstate 90.	3.2.2
		Flooding			Property acquisition and construction of a detention pond for Cottonwood Creek floodwaters east of Interstate 90.	3.4.4
		Flooding			Identify and purchase flood-prone properties along Cottonwood Creek	3.1.1
		Flooding			Restore the natural function of Cottonwood Creek to increase the storage of floodwaters in the Creek.	3.4.5
		Flooding			Update the City Floodplain Ordinance using the State of Montana Model Floodplain Regulations	1.5.1
		Flooding			Conduct an analysis of sheet flooding that is occurring on the west side of the City	3.2.1
		Flooding			Conduct an analysis of the flooding that is occurring in relation to Johnson Creek and nearby irrigation ditches	3.2.1
		Flooding			Undertake a Level 2 HAZUS analysis of flooding	3.2.1
		Flooding			Educate residents on need to limit future development in the floodplain	3.5.6, 3.5.7
		Flooding			Continue the upgrade of undersized bridges and culverts that inhibit water flow or those with scour potential	3.4.1
			Goal 2 - Reduce Wildland Fire Risk within WUI			
				Perform property protection projects to reduce impacts from wildfires		
				Implement public awareness and education projects toreduce impacts from wildfires		
				Encourage projects to prevent impacts from wildfire		
		Wildfire			Develop detailed wildland fire hazard mapping for the City and the surrounding area	2.2.1
		Wildfire			Create fuel reduction (thinning) plans for County residential areas at highest risk for wildfire	2.1.2, 2.1.3, 2.2.5, 2.2.6
		Wildfire			Conduct wildland fuel reduction in locations identified through fuel reduction plans	2.1.2, 2.1.3, 2.2.5, 2.2.6
		Wildfire			Develop evacuation plans for the highest risk communities	1.2.7
		Wildfire			Provide wildfire risk reduction education and assistance to residents to promote responsibility for defensible/ survivable space in the WUI	2.2.7, 2.3.1
			Goal 3 - Reduce Impacts from Hazardous Material Incidents and Train Derailments			
				Encourage projects to prevent impacts from hazardous materials incidents and derailments		
				Upgrade emergency service capabilities to reduce impacts from hazardous materials incidents and derailments		
				Implement public outreach and education projects to reduce impacts from hazardous materials incidents and derailments		
		Haz-Mat & Transp. Accidents			Undertake scenario and preparedness planning	1.2.7

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		Haz-Mat & Transp. Accidents			Develop evacuation plans for the highest risk communities	1.2.7
			Goal 4 - Minimize Impacts from Severe Weather and Drought			
				Implement public awareness and education projects to reduce impacts from severe weather and drought		
				Implement property protection projects to reduce impacts from severe weather and drought		
				Implement projects to prevents impacts from severe weather and drought		
		Severe Weather & Drought			Improve technical and administrative communications methods to improve warnings for emergency responders and residents	1.2.3, 1.2.6, 6.2.1
		Severe Weather			Encourage local utilities to install their lines underground	6.3.1
		Severe Weather			Encourage local utilities to apply for mitigation grants to install air flow spoilers on above ground utility lines to reduce power line failure	6.3.2
		Drought			Establish stronger economic and other incentives for private investments in water conservation	1.6.1, 5.5.5
		Drought			Encourage voluntary water conservation by residents, City, and commercial users	5.1.3
		Drought			Encourage improving water conveyance efficiencies in residential, agricultural and municipal uses	5.4.3
			Goal 5 - Minimize Impacts from Earthquakes			
				Conduct mapping/analysis/planning projects to reduce impacts from earthquakes		
				Encourage projects to prevent impacts from earthquakes		
				Implement public awareness and education projects to reduce impacts from earthquakes		
		Earthquakes			Conduct a structural analysis of critical County and City facilities	4.4.3
		Earthquakes			Seismically retrofit existing critical facilities and infrastructure	4.2.1, 4.2.6
		Earthquakes			Undertake a Level 2 HAZUS analysis of earthquakes	4.4.2
		Earthquakes			Provide and distribute earthquake preparedness information to emergency responders and residents	4.3.2, 4.3.3
			Goal 6 - Reduce Impacts from Dam Failure			
				Enhance emergency service capabilities to reduce impacts from dam failure		
		Dam Failure			Obtain digital maps of inundation areas for analysis by local emergency service providers	10.1.1
		Dam Failure			Undertake scenario and preparedness planning using the Emergency Action Plans (EAP)	10.3.1
		Dam Failure			Provide and distribute landslide hazard information to residents	9.3.3
			Goal 7 - Reduce Impacts from Landslides			
				Conduct mapping/analysis/planning projects to reduce impacts from landslides		
		Landslides			Ensure that Emergency Action Plans are kept current	10.1.3
		Landslides			Create a GIS layer of County areas vulnerable to landslides	9.3.2, 9.3.3
			Goal 8 - Minimize Impacts from Prison Emergencies			
				Enhance law enforcements capabilities to reduce impacts from a prison emergency		
		Terrorism			Develop an emergency response plan	11.2.6
4	**2012**	**Prairie**				
			Goal 1 – Minimize the impacts of drought			
				Objective 1 – Coordinate with others on preparing the impacts of drought.		
		Drought			1.1.1 - County participate in Governor's Drought Advisory Committee	5.2.3
		Drought			1.1.1 - Coordinate with major water suppliers, managers, and users to share information and plans for drought	5.1.1, 5.1.5
		Drought			1.1.2 - Encourage and support efforts to increase efficiency of water distribution and water conservation (emphasis on agricultural use)	5.1.3, 5.4.3
		Drought			1.1.2 - Provide education on water conservation measures to residents of the county and town of Terry	5.1.1
			Goal 2 - Reduce the effects of winter storms			
				Objective 1 – Reduce the effects of weather related accidents and interstate road closures.		
		Severe Weather			1.2.1 - Develop policies for closing the Interstate at locations that divert storm-bound travelers to Glendive or Miles City	1.2.7
		Severe Weather			1.2.3 - Enforce road closures sooner so there are few weather-related accidents and stranded travelers	1.2.7
			Goal 3 – Reduce the impacts of flooding			
				Objective 1 – Enter the National Flood Insurance Program		
		Flooding			1.3.1 - Initiate steps to enter in the National Flood Insurance Program. Prairie County has been mapped, Town of Terry has not.	3.5.2
				Objective 2 – Ensure that storm drainage does not inundate streets of Terry,		
		Flooding			2.3.1 - Develop projects to improve storm drainage in the town of Terry.	3.4.4
			Goal 4 – Improve Capabilities to prepare for and respond to disasters			
				Objective 1 – Expand public preparedness for disasters.		
		All Hazards			1.4.1 - Work with critical facilities and public building occupants to ensure each has working National Oceanic and Atmospheric Adminstration (NOAA) weather radios.	1.2.5, 6.2.2
		All Hazards			1.4.4 - Provide public education on various disasters, how to prepare and respond.	1.2.1, 1.2.3, 6.2.3
				Objective 2 – Improve the ability of emergency responders and county officials to respond to disasters.		
		All Hazards			2.4.6 - Develop and Emergency Operations Center (EOC)/Disaster Shelter at the new fire facility in Terry with its own water supply and back-up power.	1.2.7
		All Hazards			2.4.7 - Improve ability to respond to disasters of all types by sharing issues with other counties in Montana.	1.2.7
		All Hazards			2.4.8 - Conduct training exercises.	1.4.4

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		All Hazards			2.4.9 - Develop and practice evacuation plans.	1.2.7
		All Hazards			2.4.10 - Consider continuity of important records and assess need to address problems associated with interruption of access to records.	1.1.1
		All Hazards			2.4.11 - Inventory various equipment needed for emergencies.	1.2.7
		All Hazards			2.4.12 - Assess emergency telecommunications capabilities.	1.2.7
		All Hazards			2.4.13 - Provide generators where needed	1.2.7, 1.3.4, 11.3.1
		All Hazards			2.4.14 - Continue to improve communication among emergency providers	1.2.7
		All Hazards			2.4.15 - Work with Cell Phone Providers to provide more cell phone service county-wide.	1.2.7
		All Hazards			2.4.16 - Update emergency services communications to digital sources	1.2.7
		All Hazards			2.4.17 - Continue to work on sirens	1.2.7
			Goal Five – Reduce the potential for spread of vector born and other serious diseases			
		Disese			5.1 - Examine need to expand the existing mosquito control area and consider need for a similar area around Prairie.	8.1.1
			Goal Six – Reduce power outages and effects of outages			
		Severe Weather			6.2 -Work with electric cooperatives to install mechanisms to reduce line damage caused by undulating lines.	6.3.2
		Severe Weather			6.3 -Identify and inventory back-up power sources for key facilities.	1.2.7
		Severe Weather			6.4 - Identify mechanisms to reduce health- related effects of power outages for especially vulnerable populations.	8.4.2
			Goal Seven – Reduce the economic impacts of businesses closed as a result of disasters.			
		All Hazards			7.1 - Consider options for ensuring continued business operations for critical businesses.	1.2.7, 1.3.4
		All Hazards			7.3 - Consider options for using public facilities to temporarily house critical and vital business operations.	1.2.7
			Goal Eight – Reduce the impacts of wildfire			
		Wildfire			8.1 - Continue the permit process for open burning	2.5.2
		Wildfire			8.3-8.7 - Continue to notify the public of fire dangers	1.2.5, 1.2.6
		Wildfire			8.9 - Continue to recruit new volunteer fire members, as needed	1.2.7
1	**2017**	**Ravalli**				
			Goal 1 – Reduce Wildland Fire Risk within WUI			
				Objective 1.1 - Perform property protection projects to reduce impacts from wildfires		
		Wildfire			Project 1.1.1 - Identify, maintain, update and support high priority fuel treatment areas within the WUI for hazardous fuel treatment by private landowners.	2.1.2, 2.1.3
		Wildfire			Project 1.1.2 - Support hazardous fuel treatment projects between private landowners, state, and federal land managers.	2.2.6
				Objective 1.2 - Implement public outreach and education projects to reduce impacts from wildfire		
		Wildfire			Project 1.2.1 - Educate the public on wildfire mitigation, especially those at high risk from wildland urban interface fires.	2.3.1, 2.3.2
		Wildfire			Project 1.2.2 - Support FireSafe Montana in their work educating realtors, building contractors, insurance industry, and landscaping companies to ensure they have knowledge on FIREWISE principals.	2.3.2
		Wildfire			Project 1.2.3 - Continue to conduct Wildfire Home Assessments for landowners to understand actions needed to reduce the ignitability of structures in Ravalli County.	2.2.9
		Wildfire			Project 1.2.4 - Support efforts of County Health Officer to provide public info and guidance when wildfire smoke conditions are unhealthy.	2.3.3
				Objective 1.3 - Enhance emergency services to reduce impacts from wildfire		
		Wildfire			Project 1.3.1 - Integrate GIS technology for multi-jurisdictional response and mitigation planning.	2.2.1, 2.2.2
				Objective 1.4 - Encourage prevention projects to reduce impacts from wildfire		
		Wildfire			Project 1.4.1 - Consider adopting growth policy to guide new development in wildland fire planning area.	1.5.1, 2.5.1
				Objective 1.5 - Conduct mapping/analysis/ planning projects to reduce impacts from wildfires		
		Wildfire			Project 1.5.1 - Update and adopt map of the WUI.	2.2.1, 2.2.11
		Wildfire			Project 1.5.2 - Support Bitterroot RC&D's efforts to maintain year-end and quarterly fuel treatment accomplishment reporting system.	1.2.1, 2.2.4
			Goal 2 – Reduce Exposure to Flooding			
				Objective 2.1 - Conduct mapping/analysis/ planning projects to mitigate impacts from flooding		
		Flooding			Project 2.1.1 - Assess vulnerability of the Town of Stevensville wastewater treatment plant to flooding or levee damage.	3.5.5
				Objective 2.2 - Implement property protection projects to reduce impacts from flooding		
		Flooding			Project 2.2.1 - Install culverts in areas where water runoff is problematic.	3.4.1
		Flooding			Project 2.2.2 - Obtain river gauges where needed for modeling and flood prediction.	3.2.2
		Flooding			Project 2.2.3 - Relocate Darby sewage lagoons that are currently in floodplain.	3.4.3, 3.4.4
		Flooding			Project 2.2.4 - Expand storm water system in Hamilton as needed to improve drainage.	3.4.4
				Objective 2.3 - Implement public outreach and education projects to reduce impacts from flooding		
		Flooding			Project 2.3.1 - Participate in the National Weather Service's Flood Awareness Program.	1.2.3, 6.2.3, 6.2.4
		Flooding			Project 2.3.2 - Continue to educate the public on the NFIP.	3.5.2
			Goal 3 – Reduce Impacts from Severe Weather and Drought			
				Objective 3.1 - Implement property protection projects to reduce impacts from severe weather		
		Severe Weather			Project 3.1.1 - Maintain trees that could impact county or city property.	1.2.7

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				Objective 3.2 - Implement property protection projects to reduce impacts from severe weather and drought		
		Severe Weather			Project 3.2.1 - Promote the National Weather Service's Severe Weather Awareness Week.	1.2.3, 6.2.3, 6.24
		Severe Weather			Project 3.2.2 - Maintain a National Weather Service Storm Ready Community.	6.2.4
		Drought			Project 3.2.3 - Support drought programs implemented through the Conservation District, FSA, MSU extension, and others and increase education emphasis on range management.	5.1.1, 5.1.5, 5.2.2, 5.4.1, 5.4.2, 5.4.3
		Drought		*Objective 3.3 - Implement property protection projects to reduce impacts from severe weather and drought*		
		Drought			Project 3.3.1 - Improve water conveyance efficiencies in agricultural, municipal, and industrial uses.	5.4.3
				Objective 3.4 - Implement property protection projects to reduce impacts from severe weather and drought		
		Drought			Project 3.4.1 - Promote and improve floodplain restoration and reconnection including restoration of hydrologic functions.	3.4.6
		Drought			Project 3.4.2 - Consider feasible water storage where it will increase water supply security.	5.4.2
			Goal 4 - Reduce Impacts from Hazardous Material Incidents & Transportation Accidents			
				Objective 4.1 - Enhance emergency service capabilities to reduce impacts from hazardous material incidents and transportation accidents		
		Haz-Mat & Transp. Accidents			Project 4.1.1 - Ensure local emergency responders have adequate training to respond to hazardous material events consistent with local capabilities.	1.4.4, 7.3.1, 7.3.2
		Haz-Mat & Transp. Accidents			Project 4.1.2 - Continue partnering with MDT to identify and rectify areas of concern on highway systems throughout the City, Towns, and County.	7.2.1, 7.4.1
		Haz-Mat & Transp. Accidents			Project 4.1.3 - Acquire appropriate equipment to enhance aviation safety.	_
		Haz-Mat & Transp. Accidents			Project 4.1.4 - Encourage MDT to inspect bridges along US93 and East-Side Highway.	7.4.1
			Goal 5 - Reduce Impacts from Communicable Disease			
				Objective 5.1 - Implement public outreach and education projects to reduce impacts from communicable disease		
		Disese			Project 5.1.1 - Promote immunizations and disseminate information.	8.1.1
		Disese			Project 5.1.2 - Support Public Health Department's public education programs on communicable disease.	8.2.1
				Objective 5.2 - Enhance emergency service capabilities to reduce impacts from communicable disease		
		Disese			Project 5.2.1 - Conduct exercise on distribution of vacinations and/or antibiotics throughout county.	8.5.1
			Goal 6 – Reduce Impacts from Structure Fire			
				Objective 6.1 - Enhance emergency service capabilities to reduce impacts from structure fire		
		Structure Fire			Project 6.1.1 - Increase availability of water resources for structure fire suppression by creating reliable water supplies in rural areas.	2.2.5
				Objective 6.2 - Implement public outreach and education projects to reduce impacts from structure fire		
		Structure Fire			Project 6.2.1 - Support volunteer fire department fire prevention activities	1.2.7
			Goal 7 – Reduce Impacts from Earthquakes			
				Objective 7.1 - Implement property protection projects to reduce impacts from earthquakes		
		Earthquake			Project 7.1.1 - Tie down/secure objects in critical facilities and schools that could fall during an earthquake.	4.5.2
				Objective 7.2 - Implement public outreach and education projects to reduce impacts from earthquakes		
		Earthquake			Project 7.2.1 - Promote participation in Great Montana Shake-out earthquake preparedness programs in schools, municipal offices, businesses, and the media.	4.3.1
			Goal 8 – Reduce Impacts from Dam Failure			
				Objective 8.1 - Enhance emergency services to reduce impacts from dam failure		
		Dam Failure			Project 8.1.1 - Obtain and install real time monitoring and/or telemetry equipment on dams.	10.3.3
		Dam Failure			Project 8.1.2 - Investigate early warning systems for residents below dams.	1.2.6
		Dam Failure			Project 8.1.3 - Participate in dam owner's table top exercises with emergency response partners.	1.4.4, 10.3.1
		Dam Failure			Project 8.1.4 - Develop evacuation plans and evacuation routes as part of EOP update.	1.2.7, 10.3.1
		Dam Failure			Project 8.2.1 - Revise breach flow projections for Painted Rocks and Lake Como based on enhanced digital elevation models and improved flood modeling software.	10.4.1
			Goal 9 - Reduce Impacts from All Hazards			
				Objective 9.1 - Enhance emergency service capabilities to reduce impacts from all hazards		
		All Hazard			Project 9.1.1 - Provide emergency back-up power to critical facilities including generators and secondary feeds.	1.2.7, 1.3.4, 11.3.1
		All Hazard			Project 9.1.2 - Provide special needs individuals with guidelines for disaster preparedness measures, including pet needs.	8.4.1, 8.4.2
		All Hazard			Project 9.1.3 - Obtain additional repeaters or relocate existing repeaters to enhance radio communications.	1.2.7
				Objective 9.2 - Implement public outreach and education projects to reduce impacts from all hazards		
		All Hazard			Project 9.2.1 - Publicize enhanced notification system and encourage registration of cell phones.	1.2.5
4	**2014**	**Richland**				
			Goal - Expand capabilities to prepare for and respond to natural disasters.			
			Goal - Mitigate the potential loss of life, property and infrastructure from flooding.			
			Goal - Reduce the impacts of severe winter storms.			
			Goal - Reduce the potential for impacts of transportation-related hazardous materials spills.			

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			Goal - Minimize the economic impacts of drought and water shortages.			
		Flooding			A - Assess need to enlarge storm drains in targeted areas of Sidney.	3.4.4
		Severe Weather			B - Assess need and establish emergency winter shelters in strategic locations.	1.2.7
		Severe Weather			C - Require new mobile home/RV parks and workforce housing facilities of a certain size to have a safe room or sheltering plan as part of permitting process.	1.2.7, 6.4.1
		Severe Weather			D - Determine parking/shelter area for semi-truck drivers during winter storms.	1.2.7
		Haz-Mat			E - Update subdivision regulations to require oil well setbacks from residential structures.	1.5.1
		Landslides			F - Define steep slope/landslide areas in Growth Policy and implement development restrictions in those areas.	1.5.1
		Severe Weather			G - Install portable generator hook-ups on designated winter shelters.	1.2.7, 1.3.4, 11.3.1
		Flooding			H - Work with the railroad to develop necessary drainage improvements along the right-of-way in Sidney.	3.4.1
		Severe Weather			I - Identify, mark and publicize snow routes.	1.2.7
		Haz-Mat			J - Map all hazardous materials locations in the county using GIS mapping software and distribute maps to first responders.	1.2.7, 7.1.1
		Flooding			K - Investigate potential flood control projects and protocols to ensure Lone Tree Creek can free flow.	3.2.2
		Severe Weather			L - Ensure adequate power back-up for key facilities in Sidney and Fairview.	1.2.7, 1.3.4
		All Hazards			M - Install and maintain surge protection on critical electrical equipment.	1.2.7
		Flooding			N - Conduct NFIP community workshops to provide information and incentives for property owners to acquire flood insurance or install floodproofing.	3.5.2
		All Hazards			O - Expand the use of NOAA weather radios by the general public.	1.2.5, 6.2.2
		All Hazards			P - Continue educating residents about seasonal weather safety.	1.2.3, 6.2.3, 6.2.4
6	**2016**	**Roosevelt**				
			Goal - Increase community understanding of emergency management and build support for hazard mitigation			
			Goal - Develop, promote, integrate and track mitigation strategies			
			Goal - Continue to improve and enhance the county's emergency management program			
			Goal - Increase the economic stability, core values, and quality of services of the participating jurisdictions			
			Goal - Increase mitigation resources to eliminate or minimize harm done to people, property, jobs, and natural resources in Roosevelt County by natural and manmade hazards			
		Flooding			Enter into and maintain National Flood Insurance Program	3.5.2
		Flooding			Maintain diversion and low-water crossing	3.4.5
		Severe Weather			Create, continue and or enhance and enforce Electric Infrastructure Protection	1.2.7, 1.3.4, 11.3.1
		Flooding			Maintain waterways to keep free from debris	3.4.5
		Flooding			Determine flood elevations for town of Culbertson and update floodplain maps	3.2.1
		Flooding			Construct flood diversion	3.2.2
		Flooding			Install flood diversion and culverts	3.4.1
		Flooding			Construct diversion in Saddle Club area to slow down water prior to culverts (Culbertson)	3.4.1
		Flooding			Design storm sewers for town of Culbertson to handle surface water runoff	3.4.4
		All Hazards			Maintain and upgrade siren systems in all communities	1.2.7
		All Hazards			Create, implement and update local first responder/community warning systems.	1.2.6
		Haz-Mat & Terrorism			Purchase equipment for emergency response agencies to respond to chemical, biological & terrorist incidents	1.2.7
		Severe Weather			Purchase mobile generators to provide alternate power for critical facilities	1.2.7, 1.3.4, 11.3.1
		Severe Weather			Install pigtails (electrical wiring) at shelters and critical facilities to accommodate mobile generators	1.2.7, 1.3.4, 11.3.1
		Haz-Mat			Purchase equipment for the first responder to prepare for chemical disasters	1.2.7
		All Hazards			Provide training for first responders	1.4.4
		Severe Weather			Purchase generators for emergency response and sheltering activities	1.2.7, 1.3.4, 11.3.1
		Wildfire			Minimize Risk of Wildfire at Urban Interface	2.1.2, 2.1.3
		Terrorism			Secure Integrity of Utilities and Infrastructure	6.3.1, 6.3.2
		Terrorism			Install fencing and alarm system at water treatment plant and water supply wells	11.3.1
		Drought			Develop additional water supplies	1.2.7
		Drought			Construct Fort Peck Tribes Dry Prairie water line	5.4.3
		Haz-Mat			Relocate hazardous materials storage facilities currently adjacent to city limits	7.2.1
		Severe Weather			Create Public Education concerning hazards sheltering warnings and response	1.2.7
		All Hazards			Update and or create population growth and or reduction Policy/Plan	1.5.1
		All Hazards			Update and or create Subdivision Regulations	1.5.1, 2.5.1
		Flooding			Continue Road, Bridge, and Culvert Upgrades	3.4.1
		Disease			Continue Disease Education	8.2.1
		Disease			Create and or continue Mosquito control program	8.1.1, 8.4.2
		Disease			Continue Inspect & Replace Sewer Lines	1.2.7
		Structure Fire			Continue and or create Fire Inspection and protection Programs	1.2.7
		Severe Weather			Continue Tree Trimming & right away Inspection	1.2.7
		Flooding			Add Culverts to HWY 2	3.4.1
		Severe Weather			Create an Emergency Shelter plan	1.2.7

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DES District	**Plan Year**	**County/Hazard**	**Local Goal**	**Local Objective**	**Local Mitigation Project**	**State Plan Goal/ Objective/Project**
		Severe Weather			Create a snow removal plan and maintain/acquire the necessary equipment to carry the plan out.	1.2.7
		Flooding			Reduce flow and increase retention of Shotgun Creek through the City	3.2.2
		All Hazards			Railroad blocking track	1.2.7
		Flooding			Put a Culvert in County Road 1007 "Graveyard Crossing" to reduce flooding of Community private citizens	3.4.1
5	**2013**	**Rosebud**				
			Goal One: Mitigate natural hazards to reduce the potential for property loss or damage, injury and loss of life in the City of Colstrip.			
		All Hazards			Obtain back-up power for city water treatment plant.	1.2.7, 11.3.1
		All Hazards			Adopt updated building codes once available from the state	1.5.1
		Wildfire			Work with Montana Department of Natural Resources and Conservation to create and maintain fuel breaks around City of Colstrip.	2.2.6
		All Hazards			Educate dispatch and responders about new siren system. Coordinate with PPL.	1.2.7
			Goal Two: Mitigate natural hazards to reduce the potential for property loss or damage, injury, and loss of life in the City of Forsyth.			
		Flooding			Address any issues related to the Forsyth levee on the Yellowstone River that arise during the current re- certification process. These could include encroachment and vegetation.	3.5.5
		All Hazards			Adopt updated building codes once available from the state	1.5.1
		Severe Weather			Obtain back-up power source for water treatment plant.	1.2.7, 11.3.1
		Severe Weather			Obtain back-up power for city hall/fire department.	1.2.7, 11.3.1
			Goal Three: Mitigate natural hazards to reduce the potential for property loss or damage, injury, and loss of life in the unincorporated areas of Rosebud County.			
		Wildfire			Work with Montana Department of Fish, Wildlife and Parks to treat hazardous fuels at the East Rosebud Fishing Access site on the Yellowstone River on the east side of Forsyth.	2.1.1, 2.2.6
1.2.7		Wildfire			Continue to make information on survivable space available on line through the county with links to additional information and resources.	1.2.7, 2.3.1, 2.3.2
		Wildfire			Support coordination between private land owners, Forest Service, BLM, and Northern Cheyenne Tribe to treat hazard fuels on private lands adjacent to these public and tribal lands.	2.2.5, 2.2.6
		Wildfire			Purchase and replace county road signs with non-combustible, break- away signs.	1.2.7
		Wildfire			When subdivision regulations are updated, review requirements for access (slope, egress, turnarounds, bridge standards, etc.) Consider adopting either a requirement or recommendations for types of building materials in the wildland urban interface to reduce fire danger in new construction.	1.5.1, 2.5.1, 2.6.2
		Wildfire			Implement "Fire Programs" software program	1.2.7
		Wildfire			Enhance communications infrastructure in Ashland area by constructing radio tower site and fireproof shed, coordinate with BIA to reduce duplication.	1.2.7
		Severe Weather			Obtain back-up power for county courthouse.	1.2.7, 1.3.4, 11.3.1
		All Hazards			Enhance communications infrastructure, Treasure Co radio repeater. Coordinate with Richland Co on best location and if needed relocate. Obtain back-up power for site.	1.2.7, 1.3.4, 11.3.1
		All Hazards			Obtain back-up power for Ashland water and wastewater treatment plants.	1.2.7, 1.3.4, 11.3.1
		All Hazards			Enhance communications infrastructure, Little Wolf radio repeater. Convert commercial lease to county lease, add back-up power, place equipment into externally fireproof shed.	1.2.7, 1.3.4, 11.3.1
		All Hazards			Replace the radio tower at the sheriff's office in Forsyth.	1.2.7
		All Hazards			Install/activate base unit in Sheriff's office for Sarpy Creek	1.2.7
		All Hazards			Complete implementation of enhanced 911 system	1.2.5, 1.2.6
		Haz-Mat			Educate Rosebud area residents on what to do during a hazardous material spill by the railroad.	1.2.7
		Haz-Mat			Assist Rosebud school in preparation for railroad hazmat incident	1.2.7
		Flooding			Stabilize bank erosion at intersection of River and Old Mission Roads	3.4.5
1	**2012**	**Sanders**				
			Goal 1 - Reduce Impacts from Wildfire			
				Objective 1.1 - Enhance Emergency Services to Mitigate Impacts from Wildfire		
		Wildfire			1.1.1 - Promote additional training opportunities for firefighters.	1.4.4
		Wildfire			1.1.2 - Promote that local fire departments/districts assess and purchase necessary equipment through available grants.	1.2.2, 2.2.5. 2.2.7
		Wildfire			1.1.3 - Assist fire departments/districts in identifying grant opportunities and assist them in grant writing.	1.2.2, 2.2.7
				Objective 1.2 - Protect Property from Wildfire		
		Wildfire			1.2.1 - Upgrade the water supply in communities as needed to more effectively assist with wildfire suppression.	2.2.5
		Wildfire			1.2.2 - Strongly encourage USFS to perform fuel mitigation on federal lands adjacent to the WUI.	2.2.6
				Objective 1.3 - Implement Structural Projects to Reduce Impacts from Wildfire		
		Wildfire			1.3.1 - Promote that improvements be made to existing access routes based upon the likely threat or hazard (i.e. Cherry Creek Road, River Road West, and others).	1.2.7, 7.4.1
				Objective 1.4 - Provide Public Education and Awareness on Wildfire		
		Wildfire			1.4.1 - Provide outreach to citizens on wildfire mitigation techniques.	2.3.1, 2.3.2
			Goal 2 - Reduce Impacts from Railroad Accidents			
				Objective 2.1 - Enhance Emergency Services to Mitigate Impacts from Railroad Accidents		
		Transp. Accidents			2.1.1 - Encourage railroad to examine unprotected railroad crossings and install gates/signage as needed.	7.1.2
		Transp. Accidents			2.2.2 - Encourage railroad to address egress hazard created by blocked evacuation routes.	1.2.7

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				Objective 2.2 - Implement Structural Projects to Reduce Impacts from Railroad Accidents		
		Transp. Accidents			2.2.1 - Encourage railroad to install at-grade crossings to accommodate wheelchairs in at least one location in each community.	7.4.1
			Goal 3 – Reduce Impacts from Hazardous Material Incidents			
				Objective 3.1 - Enhance Emergency Services to Mitigate Impacts from Hazardous Material Incidents		
		Haz-Mat			3.1.1 - Promote that local emergency responders have adequate training to respond to hazardous material events consistent with local capabilities.	1.4.4, 7.3.1, 7.3.2
		Haz-Mat			3.1.2 - Continue to provide training and software on hazardous materials to emergency managers.	1.4.4, 7.3.1, 7.3.2
				Objective 3.2 - Provide Public Education and Awareness on Hazardous Material Incidents		
		Haz-Mat			3.2.1 - Increase public awareness of common hazardous materials either stored, used or transported through the area.	7.1.1
		Haz-Mat			3.2.2 - Continue to educate teachers and school staff in schools near hazardous materials facilities and transportation routes in how to limit exposure to hazardous materials to students during an incident.	1.2.7, 1.4.4
				Objective 3.3 - Protect Property from Hazardous Material Incidents		
		Haz-Mat			3.3.1 - Promote that bulk fuel and chemical dealers should fence and provide security on their tanks.	11.3.1
			Goal 4 – Reduce Impacts from Flooding			
				Objective 4.1 - Implement Structural Projects to Reduce Impacts from Flooding		
		Flooding			4.1.1 - Resize and upgrade culverts in various locations throughout the county.	3.4.1
				Objective 4.2 - Provide Public Education and Awareness on Flooding		
		Flooding			4.2.1 - Educate homeowners on purchasing flood insurance through the National Flood Insurance Program.	3.5.2
		Flooding			4.2.2 - Participate in the National Weather Service's Flood Awareness Week (first full week in March) and educate locals on flood concerns.	1.2.3, 6.2.3, 6.24
		Flooding			4.2.3 - Support NRCS committee that's looking at flood mitigation projects and completion of Phase I Treatment Plan for the Plains Reach of the Clark Fork River from Henry to Lynch Creeks.	3.4.5
			Goal 5 – Reduce Impacts from Landslides			
				Objective 5.1 - Protect Property from Landslides		
		Landslides			5.1.1 - Identify and document landslide-prone areas.	9.3.2, 9.3.3
		Landslides			5.1.2 - Promote that preservation/ stabilization measures be implemented on slide-prone areas affecting county roads.	9.1.1
			Goal 6 – Reduce Impacts from Drought			
				Objective 6.1 - Provide Public Education and Awareness on Drought		
		Drought			6.1.1 - Support drought programs implemented through the Conservation District, FSA, and MSU extension.	5.1.1, 5.1.5, 5.2.2, 5.4.1, 5.4.2, 5.4.3
			Goal 7 – Reduce Impacts from Severe Winter Weather			
				Objective 7.1 - Enhance Emergency Services to Mitigate Impacts from Severe Winter Weather		
		Severe Weather			7.1.1 - Develop coordinated management strategies for de-icing roads, plowing snow, clearing roads of fallen trees, and clearing debris from public property.	1.2.7
		Severe Weather			7.1.2 - Develop a resource list of people who shovel snow from roofs and plow snow.	1.2.7
				Objective 7.2 - Provide Public Education and Awareness on Severe Winter Weather		
		Severe Weather			7.2.1 - Make available educational material on winter weather survival.	6.2.6
		Severe Weather			7.2.2 - Promote the National Weather Service's Winter Weather Awareness Week (third full week in October).	1.2.3, 6.2.3, 6.24
			Goal 8 – Reduce Impacts from Structure Fire			
				Objective 8.1 - Enhance Emergency Services to Mitigate Impacts from Structure Fire		
		Structure Fire			8.1.1 - Recruit and train volunteer fire fighters.	1.2.7
		Structure Fire			8.1.2 - Update equipment needed for suppressing structure fires.	1.2.7
				Objective 8.2 - Provide Public Education and Awareness on Structure Fire		
		Structure Fire			8.2.1 - Support volunteer fire department fire prevention activities.	1.2.7
				Objective 8.3 - Implement Structural Projects to Reduce Impacts from Structure Fire		
		Structure Fire			8.3.1 - Construct a water tank in Heron.	1.2.7
			Goal 9 – Reduce Impacts from Earthquakes			
				Objective 9.1 - Protect Property from Earthquakes		
		Earthquakes			9.1.1 - Promote that non-structural projects (bracing, anchoring) be installed in schools and critical facilities.	4.5.2
		Earthquakes			9.1.2 - Identify need for structural retrofits on schools, critical facilities and other public buildings.	4.2.1, 4.4.3
				Objective 9.2 - Provide Public Education and Awareness on Earthquakes		
		Earthquakes			9.2.1 - Conduct educational earthquake awareness and preparedness in schools and for the general public.	4.3.1, 4.3.2, 4.3.3
			Goal 10 – Reduce Impacts from Severe Summer Weather			
				Objective 10.1 - Protect Property from Severe Summer Weather		
		Severe Weather			10.1.1 - Develop strategies for clearing roads of fallen trees, and clearing debris from public property.	1.2.7
				Objective 10.2 - Provide Public Education and Awareness on Severe Summer Weather		
		Severe Weather			10.2.1 - Promote the National Weather Service's Severe Weather Awareness Week (third week in April).	1.2.3, 6.2.3, 6.24
			Goal 11 – Reduce Impacts from Dam Failure			
				Objective 11.1 - Provide Public Education and Awareness on Dam Failure		
		Dam Failure			11.1.1 - Conduct public outreach / education with residents living in inundation areas.	3.5.1, 10.1.1, 10.4.1
		Dam Failure			11.1.2 - Promote the benefit of residents downstream from high hazard dams having NOAA weather radios.	1.2.5, 6.2.2

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		Dam Failure			11.1.3 - Provide outreach to residents on siren warning system for dam failure.	1.2.6
			Goal 12 – Reduce Impacts from All Hazards			
				Objective 12.1 - Enhance Emergency Services to Mitigate Impacts from All Hazards		
		All Hazards			12.1.1 - Recruit and provide training to first responders and EMS volunteers.	1.4.4
		All Hazards			12.1.2 - Coordinate emergency response activities between railroad, Tribes, counties, municipalities, and state and federal agencies.	1.2.7
		All Hazards			12.1.3 - Identify nursing homes/schools that need standby emergency generators.	1.2.7, 1.3.4, 11.3.1
		All Hazards			12.1.4 - Identify municipalities and communities that need generators for their water treatment plants, lift stations and pumping stations.	1.2.7, 1.3.4, 11.3.1
		All Hazards			12.1.5 - Negotiate with National Weather Service for another NOAA weather radio transmitter to provide coverage to the west end of county.	1.2.5, 6.2.2
				Objective 12.2 - Provide Public Education and Awareness on All Hazards		
		All Hazards			12.2.1 - Provide awareness on developing a family disaster plan and disaster supply kit.	1.2.8
		All Hazards			12.2.2 - Promote registration of cell phones for Reverse-911 notification.	1.2.5
6	**2016**	**Sheridan**				
			Goal - Increase community understanding of emergency management and build support for hazard mitigation.			
			Goal - Develop, promote, integrate, and track mitigation strategies.			
			Goal - Continue to improve and enhance the county's emergency management program.			
			Goal - Increase the economic stability, core values, and quality of services of the participating jurisdictions.			
			Goal - Increase mitigation resources to eliminate or minimize the harm done to people, property, jobs, and natural resources in Sheridan County by natural and manmade hazards.			
		Severe Weather			NOAA Weather Radios	1.2.5, 6.2.2
		Severe Weather			Generators	1.2.7, 1.3.4, 11.3.1
		All Hazards			Electric Infrastructure Protection	1.2.7, 1.3.4, 11.3.1
		All Hazards			Public Education	1.2.1, 2.3.1, 6.2.3
		All Hazards			Data Improvements	1.2.7
		All Hazards			Growth Policy	1.5.1, 2.5.1
		All Hazards			Subdivision Regulations	1.5.1, 2.5.1
		Wildfire			Fire-Resistant Generator Houses	1.2.7, 1.3.4, 11.3.1
		Flooding			Road, Bridge, and Culvert Upgrades	3.4.1
		Wildfire			Abandoned Building Removal	2.1.2
		Wildfire			Vegetative Fuel Treatments	2.1.2, 2.1.3, 2.2.6
		Wildfire			Water Storage Capacity	1.2.7
		Disease			Disease Education	8.2.1
		Disease			Mosquito control	8.1.1, 8.4.2
		All Hazards			Interoperable Communication Project	1.2.7
		All Hazards			Warning System Upgrade	1.2.6
		Flooding			Debris Removal from Box Elder Creek	3.4.5
		Disease			Inspect & Replace Sewer Lines	1.2.7
		Structure Fire			Fire Inspection Program	1.2.7
		Severe Weather			Tree Trimming & Inspection	1.2.7
		Flooding			Debris Removal	3.4.5
		Wildfire			Fire Break	2.2.5, 2.2.6
		Flooding			Medicine Lake Lagoon	3.4.3, 3.4.4
		Transp. Accidents			Highway 5 Improvement	7.4.1
1	**2016**	**Butte- Silver Bow**				
			Goal 1 – Reduce Impacts from a Hazardous Material Incident			
				Objective 1.1 - Develop information/outreach and public education projects to mitigate impacts from hazardous material incidents		
		Haz-Mat			Project 1.1.1 - Educate teachers and school staff in schools near hazardous materials facilities and transportation routes in how to limit exposure to hazardous materials to students during an incident.	1.2.7, 1.4.4
				Objective 1.2 - Implement property protection projects to mitigate impacts from hazardous material incidents		
		Haz-Mat			Project 1.2.1 - Encourage owners to install perimeter security fencing at bulk chemical and petroleum facilities.	11.4.1
				Objective 1.3 - Upgrade emergency service capabilities to mitigate impacts from hazardous material incidents		
		Haz-Mat			Project 1.3.1 - Ensure local emergency responders have adequate training to respond to hazardous material events consistent with local capabilities.	1.4.4
		Haz-Mat			Project 1.3.2 - Pursue funding for supplies and equipment trailer.	7.2.1
		Haz-Mat			Project 1.3.3 - Invite railroad companies be part of LEPC and do exercises once every two or three years.	1.4.4
		Haz-Mat			Project 1.3.4 - Determine whether a regional haz-mat team could be located in BSB County.	7.1.2
			Goal 2 – Reduce Impacts from Wildfires			
				Objective 2.1 - Develop information/outreach and public education projects to mitigate impacts from wildfires		
		Wildfire			Project 2.1.1 - Provide outreach to landowners on fuel mitigation funding opportunities for private land.	

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		Wildfire			Project 2.1.2 - Implement robust public outreach project on FireWise principles.	2.3.1, 2.3.2
				Objective 2.2 - Perform property protection projects to mitigate impacts from wildfires		
		Wildfire			Project 2.2.1 - Promote coordination with USFS regarding fuels reduction in the Basin Creek watershed to protect water supply.	2.2.6
		Wildfire			Project 2.2.2 - Promote expansion of existing hazardous fuels reduction programs to other wildland-urban interface areas, in particular where future development is planned.	2.1.2, 2.1.3, 2.2.6
		Wildfire			Project 2.2.3 - Install dry hydrants through the county as determined necessary by local fire districts.	2.2.5
				Objective 2.3 - Upgrade emergency service capabilities to mitigate impacts from wildfires		
		Wildfire			Project 2.3.1 - Obtain attachments to connect fire suppression equipment to rancher's sprinkler systems.	1.2.7
		Wildfire			Project - Obtain trailer-mounted 1,000-gallon pumps (2) which can be used for fire fighting.	1.2.7
				Objective 2.4 - Support regional planning projects to mitigate impacts from wildfires		
		Wildfire			Project 2.4.1 - Actively support the Butte Fire Protection Association in expanding a wildland fire management committee consisting of Butte-Silver Bow, State, and Federal departments to coordinate planning, training, prevention, and suppression.	1.2.7, 1.4.4
		Wildfire			Project 2.4.2 - Integrate GIS technology for multi-jurisdictional response and mitigation planning.	2.2.1, 2.2.2
		Wildfire			Project 2.4.3 - Advocate and promote through statewide associations insurance rate reduction for homeowners who participate in defensible space projects.	2.2.3
		Wildfire			Project 2.4.4 - Support conifer encroachment group and their efforts to do prescribed burning to mitigate wildfire risk.	2.2.5
			Goal 3 – Reduce Impacts from Earthquakes			
				Objective 3.1 - Conduct mapping/analysis/planning projects to mitigate impacts from earthquakes		
		Earthquakes			Project 3.1.1 - Encourage MBMG to obtain funding to obtain LiDAR data and conduct a trenching and age dating study along the Continental and Rocker faults to detail their movement history.	4.4.1, 4.4.2
		Earthquakes			Project 3.1.2 - Complete study and catalog unreinforced commercial/ institutional/ government masonry buildings in BSB County.	4.4.3
				Objective 3.2 - Develop information/outreach and public education projects to mitigate impacts from earthquakes		
		Earthquakes			Project 3.2.1 - Provide educational awareness for students and the general public on earthquake safety.	4.3.1, 4.3.2, 4.3.3
				Objective 3.3 - Perform property protection activities to mitigate impacts from earthquakes		
		Earthquakes			Project 3.3.1 - Strengthen windows in schools by replacing with shatterproof glass as part of regular maintenance.	4.5.3
		Earthquakes			Project 3.3.2 - Tie down/secure objects in critical facilities and schools that could fall during an earthquake.	4.5.2
		Earthquakes			Project 3.3.3 - Perform seismic retrofits of critical facilities and schools vulnerable to earthquake hazard.	4.2.1
				Objective 3.4 - Implement regulatory projects to mitigate impacts from earthquake		
		Earthquakes			Project 3.4.1 - Implement process whereby building department notifies builders requesting permits of high earthquake risk.	1.5.1
			Goal 4 – Reduce Impacts from Severe Weather			
				Objective 4.1 - Develop information/outreach and public education projects to mitigate impacts from severe weather		
		Severe Weather			Project 4.1.1 - Host National Weather Service spotter training sessions throughout the county.	6.2.3, 6.2.4
		Severe Weather			Project 4.1.2 - Promote the National Weather Service's Severe Weather Awareness Weeks.	1.2.3, 6.2.3, 6.24
		Severe Weather			Project 4.1.3 - Continue participating in National Weather Service's storm ready community program.	6.2.4
		Severe Weather			Project 4.1.4 - Use social media to publicize winter weather hazards and distribute information in welcome packets to new residents.	6.2.6
			Goal 5 - Reduce Impacts from Transportation Accidents			
				Objective 5.1 - Partner with transportation service providers to mitigate impacts from transportation accidents		
		Transp. Accidents			Project 5.1.1 - Encourage railroad to upgrade condition of railroad crossings throughout BSB County and improve signage where needed.	7.1.2, 7.4.1
		Transp. Accidents			Project 5.1.2 - Continue partnering with MDT to identify and rectify areas of concern on highway systems throughout BSB County.	7.1.2, 7.4.1
		Transp. Accidents			Project 5.1.3 - Acquire appropriate equipment to enhance aviation safety.	
			Goal 6 - Reduce Impacts that Communicable Disease has on Public Health			
				Objective 6.1- Develop information/outreach and public education projects to mitigate impacts from communicable disease.		
		Disease			Project 6.1.1 - Disseminate promotional information on immunizations.	8.2.1
		Disease			Project 6.1.2 - Support BSB Health Department's public education programs on communicable disease.	8.2.1
		Disease			Project 6.1.3 - Promote Community Health Committee that is part of LEPC.	8.4.2
			Goal 7 – Minimize Impacts of Terrorism, Violence and Civil Unrest			
				Objective 7.1 - Conduct mapping/analysis/planning projects to mitigate impacts from Terrorism, Violence and Civil Unrest		
		Terrorism			Project 7.1.1 - Review Crisis Action Plans in all schools, hospitals, and Montana Tech to ensure they include adequate security measures.	11.1.3, 11.1.6
				Objective 7.2 - Enhance emergency service capabilities to mitigate impacts from Terrorism, Violence and Civil Unrest		
		Terrorism			Project 7.2.1 - Continue awareness and training on active shooters.	1.4.4, 11.1.4

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		Terrorism			Project 7.2.2 - Pursue funding for development and implementation of a campaign to educate the public on active shooter response.	11.1.1, 11.1.2
			Goal 8 – Reduce Impacts from Flooding and Dam Failure			
				Objective 8.1 - Implement structural projects to mitigate impacts from flooding		
		Dam Failure			Project 8.1.1 - Install culverts in areas where water runoff is problematic.	3.4.1
		Dam Failure			Project 8.1.2 - Increase stormwater systems in poor drainage areas.	3.4.4
		Dam Failure			Project 8.1.3 - Maintain the existing stormwater infrastructure to mitigate impacts from flash flooding.	3.4.4
				Objective 8.2 - Develop information/outreach and public education projects to mitigate impacts from flooding and dam failure		
		Dam Failure			Project 8.2.1 - Educate the public on the National Flood Insurance Program.	3.5.2
		Dam Failure			Project 8.2.2 - Educate development community (including surveyors, builders, realtors, and developers) on floodplain building requirements.	3,5,6, 3.5.7
		Dam Failure			Project 8.2.3 - Monitor process on Yankee Doodle tailings dam permit project and provide public input and outreach as appropriate.	10.2.1
		Dam Failure			Project 8.2.4 - Consider participation in FEMA's Community Rating System Program.	3.5.3
				Objective 8.3 - Implement regulatory projects to mitigate impacts from flooding and dam failure		
		Dam Failure			Project 8.3.1 - Consider using dam inundation as criteria for future subdivision review and require disclosure by developers to prospective buyers.	1.5.1
				Objective 8.4 - Enhance emergency services to mitigate impacts from flooding and dam failure.		
		Dam Failure			Project 8.4.1 - Participate in dam exercises on Basin Creek dams with BSB Public Works Dept. and emergency response partners.	1.4.4, 10.3.1
			Goal 9 - Reduce Impacts from All Hazards			
				Objective 9.1 - Obtain capital equipment to mitigate impacts from all hazards		
		All Hazards			Project 9.1.1 - Obtain backup generators for emergency shelters and city/county critical facilities.	1.2.7, 1.3.4, 11.3.1
				Objective 9.2 - Enhance emergency service capabilities to mitigate impacts from all hazards		
		All Hazards			Project 9.2.1 - Coordinate with Red Cross for mass care and sheltering plan.	1.2.7
		All Hazards			Project 9.2.2 - Enhance general public alert, notification and warning capabilities.	1.2.3, 1.2.6, 6.2.1
				Objective 9.3 - Develop information/outreach and public education projects to mitigate impacts from all hazards		
		All Hazards			Project 9.3.1 - Educate local government officials in mitigation and readiness for all hazards.	1.2.1, 1.4.3
		All Hazards			Project 9.3.2 - Provide special needs facilities with guidelines for disaster preparedness measures, including pet needs.	8.4.1, 8.4.2
		All Hazards			Project 9.3.3 - Develop an ad campaign on readiness for evacuation or other emergencies.	1.2.7
5	**2015**	**Stillwater**				
			Goal 1 - Reduce population and property losses through comprehensive mitigation programs.			
				Objective 1.1 - Provide the public, businesses, and local officials with ample educational opportunities regarding hazard mitigation.		
		Wildfire			Project 1.1.1 - Conduct workshops and distribute information on wildfire hazard reduction and seasonal fire danger to rural property owners.	2.3.1, 2.3.2
		Severe Weather			Project 1.1.3 - Distribute winter weather information in welcome packets to new residents.	6.2.6
		Dam Failure			Project 1.1.7 - Target potentially affected citizens with information about the dam failure risk in their area and include information on exercises.	1.4.4, 10.3.1
		Flooding			Project 1.1.8 - Distribute information about building in the floodplain.	3.5.6, 3.5.7
		Disease			Project 1.1.9 - Promote immunizations and disseminate information on other public health topics.	8.2.1
		Wildfire			Project 1.1.10 - Partner with surrounding counties and present workshops and presentations focused on defensible space and FireWise principles targeting county planning staff, county planning boards, architects, engineers, and realtors.	2.3.1, 2.3.2
		Severe Weather			Project 1.1.12 - Conduct workshops and educational programs focused on severe weather for public and school children.	1.2.3, 1.2.4, 6.2.3, 6.2.4
				Objective 1.2 - Increase the situational awareness and warning of imminent or occurring hazards.		
		All Hazards			Project 1.2.1 - Work with the local media and Yellowstone County to continue broadcasting weather warnings over the Emergency Alert System.	1.2.3, 1.2.6, 6.2.1
		All Hazards			Project 1.2.6 - Continue to broadcast warning information through dispatch.	1.2.3, 1.2.6, 6.2.1
		Severe Weather			Project 1.2.7 - Host National Weather spotter training sessions throughout the county.	1.2.3, 6.2.3, 6.24
		Wildfire			Project 1.2.9 - Continue pushing out information on Red Flag Warnings for broadcast over Emergency Alert Systems.	1.2.3, 1.2.6, 6.2.1
				Objective 1.3 - Protect critical infrastructure and facilities to reduce future losses and ensure continued delivery of essential services.		
		All Hazards			Project 1.3.1 - Purchase and install generators at critical facilities and potential shelter locations.	1.2.7, 1.3.4, 11.3.1
		Severe Weather			Project 1.3.2 - Encourage utility companies to bury electric and communication lines in hazard areas.	6.3.1
		Severe Weather			Project 1.3.3 - Maintain trees that could impact county or city property.	1.2.7
				Objective 1.4 - Mitigate the impact of hazards on future development through land use and building regulations.		
		All Hazards			Project 1.4.5 - Investigate developing a regulatory mechanism to ensure that subdivisions are built as approved and fire protection systems are initially and periodically certified.	1.5.1, 2.5.1
		All Hazards			Project 1.4.6 - Update the countywide and town growth policies to require stricter consideration of high hazard areas during subdivision reviews.	1.5.1, 2.5.1
		Flooding			Project 1.4.7 - Use conservation easements in high hazard areas such as flood prone areas to prevent future development.	3.3.1

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		Wildfire			Project 1.4.8 - Develop WUI defensible space guidelines to update subdivision regulations.	1.5.1, 2.5.1
			Goal 2 - Protect the public, firefighters, communities, and property from losses due to wildfire.			
				Objective 2.1 - Decrease the probability of structure ignitions in the wildland urban interface		
		Wildfire			Project 2.1.1 - Encourage state and federal agencies and landowners to conduct fuel reduction on their property in the WUI.	2.1.2, 2.1.3, 2.2.5, 2.2.7, 2.3.1
		Wildfire			Project 2.1.3 - Encourage homeowner associations to review their covenants to incorporate fire resistant materials.	1.5.1, 2.3.2
		Wildfire			Project 2.1.4 - Continue to increase size of ingress/egress roads where possible to create fire breaks.	2.6.2
		Wildfire			Project 2.1.5 - Promote the landowner fuel reduction cost-share programs available.	2.1.2, 2.1.3, 2.2.5, 2.2.7, 2.3.1
		Wildfire			Project 2.1.6 - Support inter-agency collaboration on fuel management projects.	2.2.5
				Objective 2.2 - Improve local understanding of the wildfire hazard.		
		Wildfire			Project 2.2.2 - Use the digital wildfire mapping for land management and project development.	2.2.1
		Wildfire			Project 2.2.3 - Conduct individual home audits for residences in the wildland urban interface.	2.2.9
		Wildfire			Project 2.2.5 - Keep digital WUI map up to date.	2.2.1
			Goal 3 - Utilize hazard-specific strategies to reduce future losses from particular hazards.			
				Objective 3.1 - Minimize impacts of hazardous material spills.		
		Haz-Mat			Project 3.1.1 - Continue to report hazardous material spills to MT DES.	1.2.7
		Haz-Mat			Project 3.1.4 - Ensure local emergency responders have adequate training to respond to hazardous material events consistent with local capabilities.	1.4.4, 7.3.1, 7.3.2
				Objective 3.2 - Minimize physical and financial losses from flood.		
		Flooding			Project 3.2.3 - Continue compliance with the National Flood Insurance Program and the Stillwater County Flood Ordinance.	3.5.2
		Flooding			Project 3.2.4 - Consider joining the Community Rating System volunteer incentive program.	3.5.3
		Flooding			Project 3.2.5 - Upgrade bridges, culverts, and roads to allow sufficient passage of floodwaters.	3.4.1
		Flooding			Project 3.2.7 - Continue to implement the storm water plan in Columbus.	3.4.4
		Flooding			Project 3.2.8 - Determine mitigation for waste-water lagoons in Columbus which are in mapped flood hazard area.	3.4.3, 3.4.4
		Flooding			Project 3.2.9 - Encourage MDT to implement appropriate mitigation for Highway 78 in Columbus.	3.4.2
		Flooding			Project 3.2.10 - Replace rip-rap near railroad north of Reed Point to preserve integrity of bridge.	3.4.1
		Flooding			Project 3.2.11- Determine source and nature of West Rosebud Road washout.	3.2.2
		Flooding			Project 3.2.13 - Encourage MDT to remove debris on Keyser Creek at I-90 to maintain integrity of culverts and bridge.	3.4.1
		Flooding			Project 3.2.14 - Encourage MDT to implement mitigation where flood maps indicate overtopping of I-90 between Springtime and Twin Bridges, west of Columbus.	3.4.2
		Flooding			Project 3.2.15 - Encourage MDT to construct new bridge at Ollie's Corner where there is a potential for a flood problem.	3.4.1
				Objective 3.3 - Reduce and minimize the impacts of human diseases.		
		Disease			Project 3.3.2 - Control mosquito populations in wet areas.	8.1.1, 8.4.2
				Objective 3.4 - Reduce the impacts to the agricultural community from drought.		
		Drought			Project 3.4.1 - Develop and distribute range and agriculture management tools for local producers using weather and soil monitoring, planning, and education.	5.1.1, 5.2.2
				Objective 3.5 - Minimize structural losses from severe weather.		
		Severe Weather			Project 3.5.1 - Implement the tree maintenance ordinance and address problem trees.	1.2.7
		Severe Weather			Project 3.5.2 - Perform simple mitigation activities such as filming windows and securing equipment.	4.5.3
				Objective 3.6 - Minimize structural losses from landslide.		
		Landslides			Project 3.6.1 - Conduct a study of landslide prone areas.	9.3.2
		Landslides			Project 3.6.2 - Implement preservation and stabilization measures at slide-prone areas.	9.1.1
				Objective 3.7 - Minimize losses from terrorism, civil unrest, and violence.		
		Terrorism			Project 3.7.1 - Continue to be notified when large events come through the County.	11.2.5
		Terrorism			Project 3.7.2 - Continue to conduct lone shooter exercises.	1.4.4, 11.1.4
3	**2005**	**Sweetgrass**				
			Goal 1. Improve communications capabilities.			
		All Hazards			1. Improve security in and around the dispatch center.	11.3.1
		All Hazards			2. Purchase a mobile command post trailer.	1.2.7
		All Hazards			3. Expand the county Web site and better publicize it.	1.2.7
		All Hazards			4. Assess communication needs in the county.	1.2.7
		All Hazards			5. Research additional locations for radio repeaters and/or cell phone towers.	1.2.7
		All Hazards			6. Install additional radio repeaters and/or cell phone towers.	1.2.7
		All Hazards			7. Purchase additional handheld radios for emergency services.	1.2.7
		All Hazards			8. Improve the county early warning system, including radio, TV, and sirens.	1.2.6
		All Hazards			9. Develop public education to inform the public about county disasters.	1.2.1
		All Hazards			10. Develop an official network of ham radio operators and research funding sources for improved equipment.	1.2.7
			Goal 2. Improve first responder capabilities.			
		All Hazards			1. Improve the 911 system by implementing E911 in a timely manner.	1.2.5, 1.2.6

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		All Hazards			2. Purchase a mobile command post trailer.	1.2.7
		All Hazards			3. Assess and improve the Emergency Operations Center and determine when to include a joint information center.	1.2.7
		All Hazards			4. Improve the county early warning system.	1.2.6
		All Hazards			5. Provide more opportunities for training, including sending three first responders to "train-the-trainer" sessions when available.	1.4.4
		All Hazards			6. Establish a schedule of training exercises.	1.4.4
			Goal 3. Reduce wildland fire risk in the urban interface.			
		Wildfire			1. Support action groups in the county with fuels reductions projects.	2.2.5, 2.2.6, 2.2.7
					2. Continue to assist the public with defensible space issues.	2.2.7
		Wildfire			3. Install dry hydrants in subdivisions.	1.2.7, 2.5.1
		Wildfire			4. Include wildland fire risk considerations when reviewing subdivision regulations.	1.5.1, 2.5.1
		Wildfire			5. Purchase better firefighting equipment.	1.2.7
		Wildfire			6. Provide more opportunities for advanced training.	1.4.4, 7.3.1
		Wildfire			7. Provide public education about wildfire mitigation.	2.3.1, 2.3.2
		Wildfire			8. Expand the county Web site and better publicize it.	1.2.7
		Wildfire			9. Recruit more firefighting personnel.	1.2.7
			Goal 4. Reduce the risk from severe weather events.			
		Severe Weather			1. Prioritize bridge replacement throughout the county, starting with the bridge across the Yellowstone on Lower Sweet Grass Rd. near Greycliff.	3.4.1
		Severe Weather			2. Provide bank stabilization, using natural stabilization methods whenever practical.	3.4.5
		Severe Weather			3. Establish and prioritize culvert and road projects.	3.4.1
		Severe Weather			4. Continue to reassess and revise floodplain regulations in conjunction with future development planning.	3.2.1
		Severe Weather			5. Improve the county early warning system.	1.2.6
		Severe Weather			6. Provide more opportunities for public education in cooperation with the National Weather Service.	1.2.3, 6.2.3, 6.2.4
		Severe Weather			7. Establish a emergency notification system after enhanced 911 is implemented.	1.2.5, 1.2.6
		Severe Weather			8. Assess the need for portable electronic warning signs for law enforcement.	1.2.7
		Severe Weather			9. Expand the county Web site and better publicize it.	1.2.7
			Goal 5. Reduce the risk from hazardous materials.			
		Haz-Mat			1. Research better security options for the current hazardous materials in the county.	11.4.1
		Haz-Mat			2. Work more closely with the railroad to develop mitigation projects.	1.2.7
		Haz-Mat			3. Research and/or establish truck routes.	7.1.2, 7.4.1
		Haz-Mat			4. Improve city/county regulations where applicable.	1.5.1
			Goal 6. Reduce the risk from biological hazards.			
		Disease			1. Establish pest control measures when appropriate.	8.1.1, 8.4.2
		Disease			2. Monitor disease outbreaks in neighboring counties and states through the use of the Public Health Network.	8.1.1
		Disease			3. Support updates and exercise of the mass vaccination plan.	8.5.1
		Disease			4. Support public health planning.	8.4.2
		Disease			5. Provide more opportunities for public education in cooperation with Public Health.	8.2.1, 8.4.2
		Disease			6. Expand the county Web site and better publicize it.	8.2.1
		Disease			7. Work with Public Health to prepare press releases for the diseases at highest risk for county residents to contract.	8.2.1
			Goal 7. Reduce the risk from agricultural threats.			
		Disease			1. Plan for mass vaccination of livestock.	8.1.2
		Disease			2. Establish reporting practices in conjunction with the local veterinarians.	8.4.4, 8.5.2
		Disease			3. Provide more opportunities for public education.	8.2.3
		Disease			4. Provide appropriate training for first responders and ranchers when appropriate	8.4.4, 8.5.2
2	**2014**	**Teton**				
			Goal 1: Mitigate natural hazards to reduce the potential for property loss or damage, injury and loss of life in the city of Choteau.			
		Flooding			1) Continue participation in the NFIP and provide information to property owners about the National Flood Insurance Program.	3.5.2
		Flooding			2) Request an examination of the FIRMs developed in the 1980s to reflect changed conditions and update as applicable.	3.2.1
		Flooding			3) Provide information to property owners about supplemental high groundwater insurance.	3.5.2
		Flooding			4) Conduct a detailed engineering study of impacts of flooding on sewer systems and identify and implement mitigation measures.	3.2.1, 3.2.2
		Flooding			5) Assess current condition and reconstruct Spring Creek bridges and culverts on 1st Street, Rodeo Road, and 3rd Street.	3.4.1
		Flooding			6) Establish and implement a plan for periodic removal of debris in and around city culverts, bridges and storm water drains.	3.4.5
		Flooding			6a) Mitigate the impact of high-groundwater flooding by fixing the sewer leaks	
		All Hazards			7) Support county efforts to improve communications systems.	1.2.7
		Structure Fire			8) Address the equipment needs of the Choteau Volunteer Fire Department	1.2.7
		Severe Weather			9) Maintain snow removal equipment and replace/update as needed.	1.2.7
		Haz-Mat			10) Identify and prepare for potential for incidents related to increased oil and gas development in the area.	7.3.1, 7.3.2
		All Hazards			11) Incorporate the PDM plan hazard information and recommendations into Choteau's growth policy and land use regulations.	1.5.1, 2.5.1

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		Flooding			12) Develop written standards for streets and roads that can be used as the basis for repair and replacement after an event.	1.5.1, 7.4.1
		All Hazards			13) Ensure that critical facilities and emergency shelters have alternative power during emergencies (e.g., Town Hall)	1.2.7
		All Hazards			14) Educate the public regarding the existence of hazards and how to prepare and respond to an event.	1.2.1
			Goal 2: Mitigate natural hazards to reduce the potential for property loss or damage, injury and loss of life in the town of Dutton.			
		All Hazards			1) Educate the public regarding the existence of hazards and how to prepare and respond to an event, including earthquakes	4.3.1, 4.3.2, 4.3.3
		All Hazards			2) Incorporate the PDM plan hazard information and recommendations into Dutton's growth policy and land use regulations.	1.5.1, 2.5.1
		Flooding			3) Develop written standards for streets and roads that can be used as the basis for repair and replacement after an event.	1.5.1, 7.4.1
		All Hazards			Support county efforts to improve communications systems.	1.2.7
		All Hazards			5) Ensure that critical facilities have alternative power during emergencies (e.g., Town Hall)	1.2.7, 1.3.4, 11.3.1
		Structure Fire			6) Address the equipment needs of the Dutton Volunteer Fire Department.	1.2.7
		Flooding			7) Establish and implement a plan for periodic removal of debris in and around town culverts and establish a standard replacement size.	3.4.1
		Severe Weather			8) Identify an emergency shelter for residents/travelers.	1.2.7
		Haz-Mat			9) Develop a response plan for derailment, hazardous materials spills and other disasters and method for noticing residents.	1.2.7
		Severe Weather			10) Ensure that the town has adequate equipment for snow removal.	1.2.7
			Goal 3: Mitigate natural hazards to reduce the potential for property loss or damage, injury and loss of life in the town of Fairfield.			
		All Hazards			1) Support county efforts to improve communications systems.	1.2.7
		All Hazards			2) Obtain a back-up communication system for town hall that can operate in power outages.	1.2.7, 1.3.4, 11.3.1
		Haz-Mat			3) Improve street sections on Central Avenue West and Division to safely accommodate heavy trucks carrying hazardous materials.	7.4.1
		Haz-Mat & Transp. Accidents			4) Develop a response and evacuation plan for train derailment, hazardous materials spills, explosions and other disasters and a method for noticing residents.	1.2.7
		All Hazards			5) Educate the public regarding the existence of hazards and how to prepare and respond to an event.	1.2.1
		All Hazards			6) Incorporate the PDM plan hazard information and recommendations into Fairfield's growth policy and land use regulations.	1.5.1, 2.5.1
		Flooding			7) Develop written standards for streets and roads that can be used as the basis for repair and replacement after an event.	1.5.1, 7.4.1
		All Hazards			8) Ensure that critical facilities have alternative power during emergencies (e.g., Town Hall).	1.2.7, 1.3.4, 11.3.1
		Structure Fire			9) Address the equipment needs of the Fairfield Volunteer Fire Department.	1.2.7
		Severe Weather			10) Ensure that the town has adequate equipment for snow removal.	1.2.7
		Severe Weather			11) Develop back-up water supply to supplement existing towers.	5.4.2
		Drought			12) Finalize and implement the town's source water protection plan.	1.2.7
			Goal 4: Mitigate natural hazards to reduce the potential for property loss or damage, injury and loss of life in unincorporated areas of Teton County.			
		All Hazards			1) Annually train dispatch personnel and first responders to use communication systems effectively.	1.4.4
		All Hazards			2) Continue implementation of Teton County's Interoperable Communication System.	1.2.7
		All Hazards			3) Continue implementation of narrow band radio system and install a new repeater east of Dutton	1.2.7
		All Hazards			4) Continue to maintain and improve a centralized countywide GIS data system, integrated with emergency 911 response.	1.2.7
		All Hazards			5) Implement a reverse 911 system.	1.2.5, 1.2.6
		All Hazards			6) Educate the public regarding the existence of hazards and how to prepare and respond to an event.	1.2.1
		Earthquakes			7) Educate owners of non-reinforced masonry buildings regarding earthquake stability	4.3.3
		All Hazards			8) Incorporate the PDM plan hazard information and recommendations into Teton County's growth policy and land use regulations.	1.5.1, 2.5.1
		Flooding			9) Develop written standards for roads that can be used as the basis for repair and replacement after an event.	1.5.1, 7.4.1
		All Hazards			10) Ensure that critical facilities have alternative power during emergencies	1.2.7, 1.3.4, 11.3.1
		Earthquakes			11) Evaluate court house to determine if a seismic retrofit is necessary	4.2.1
		Structure Fire			12) Identify and address the equipment needs of the local volunteer fire departments in Choteau, Dutton, Fairfield, Power, and Pendroy, including the purchase of 30 Self-Contained Breathing Apparatus Units that must be replaced within the next five years	1.2.7
		Flooding			13) Continue County participation in and encourage public participation in the National Flood Insurance Program.	3.5.2
		Haz-Mat			14) Develop an incident response plan and provide training for emergencies associated with the new fertilizer plant in Collins and for oil and gas operations (if developed).	1.4.4
		Flooding			15) Reconstruct Teton River Diversion gate to improve debris removal during flood events	3.4.5
		Flooding			16)Replace existing diversion gates with radial gates on Teton River Diversion	3.2.2
		Wildfire			17) Continue implementation of the Teton County CWPP.	2.1.2, 2.1.3, 2.2.6, 2.3.1
2	**2013**	**Toole**				
			Goal One: Mitigate natural hazards to reduce the potential for property loss or damage, injury and loss of life in the City of Shelby.			
		Haz-Mat			Get wellhead protection plans in place for the remaining 12 city wells	1.2.7
		All Hazards			Enhance siren coverage for city	1.2.7
		Haz-Mat			Cooperate on hazmat planning under grant funds received	7.2.1
		Flooding			Continue participation in the NFIP	3.5.2

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		Flooding			Continue implementation of the CIP, storm drain projects	3.4.4
			Goal Two: Mitigate natural hazards to reduce the potential for property loss or damage, injury and loss of life in the Town of Sunburst.			
		Transp. Accidents			Locate and construct additional railroad track crossing for town residents	7.4.1
		Flooding			Continue participation in the NFIP	3.5.2
			Goal Three: Mitigate natural hazards to reduce the potential for property loss or damage, injury and loss of life in the Town of Kevin.			
		All Hazards			Use monthly town newsletter to provide safety message	1.2.7
		Haz-Mat			Provide education on what to do in event of railroad hazmat spill in town	1.2.7
		Structure Fire			Test fire hydrants, replace non-operational hydrants	1.2.7
		Flooding			Address recurring flooding along Front St	3.2.2
		Flooding			Check integrity of "Bird Pond Dike" following heavy precip. In 2013	3.5.5
		Flooding			Continue participation in the NFIP	3.5.2
			Goal Four: Mitigate natural hazards to reduce the potential for property loss or damage, injury and loss of life in unincorporated areas of Toole County.			
		All Hazards			Activate E-911 notification capability to warn/alert through cell phones	1.2.5, 1.2.6
		Drought			Continue to work with MDT and landowners to saline area through warning system and sprinkling (long-term)	1.2.6
		Haz-Mat			Update hazardous materials flow study	7.1.1
		Wildfire			Make bulk purchase of fire extinguishers and sell at cost for farm equipment	1.2.7
		Wildfire			Install one or more fire danger highway signs in county	1.2.7
		Flooding			Continue participation in the NFIP	3.5.2
5	**2007**	**Treasure**				
			Goal 1: Promote the use of multi-hazard mitigation measures.			
				Objective 1.1: Develop and implement population protective measures that can be used for many hazards.		
		All Hazards			Project 1.1.1: NOAA Weather Radio Transmitter	1.2.5, 6.2.2
		All Hazards			Project 1.1.2: NOAA Weather Radio Receivers	1.2.5, 6.2.2
		All Hazards			Project 1.1.3: Reverse 911	1.2.5, 1.2.6
		All Hazards			Project 1.1.4: Warning Siren	1.2.7
		All Hazards			Project 1.1.5: Community Shelter	1.2.7
		All Hazards			Project 1.1.6: Skywarn Training	1.4.4
		All Hazards			Project 1.1.7: Disaster Supplies Kits	1.2.8
				Objective 1.2: Mitigate hazards during the construction of new development.		
		All Hazards			Project 1.2.1: Growth Policy	1.5.1, 2.5.1
		All Hazards			Project 1.2.2: Subdivision Regulations	1.5.1, 2.5.1
				Objective 1.3: Improve the governments' ability to respond quickly to potential disasters.		
		All Hazards			Project 1.3.1: Generators	1.2.7, 1.3.4, 11.3.1
		All Hazards			Project 1.3.2: Railroad Emergency Locations	1.2.7
			Goal 2: Prevent potential wildfire losses.			
				Objective 2.1: Improve community consensus, understanding, preparedness, and participation in wildland firefighting.		
		Wildfire			Project 2.1.1: Landowner Capacity Building	2.3.1, 2.3.2
				Objective 2.2: Reduce structure and infrastructure losses during wildfires.		
		Wildfire			Project 2.2.1: Countywide Fuels Mitigation	2.1.2, 2.1.3, 2.2.6
		Wildfire			Project 2.2.2: FireWise Building Materials and Defensible Space	2.1.2, 2.1.3, 2.3.1, 2.3.2
		Wildfire			Project 2.2.3: Road Improvements	7.4.1
		Wildfire			Project 2.2.4: Public Lands Fuels Mitigation	2.2.6
				Objective 2.3: Acquire a better understanding of the local wildfire hazard.		
		Wildfire			Project 2.3.1: Fuels Mapping	2.2.1
		Wildfire			Project 2.3.2: Road and Structure Mapping	2.2.2
		Wildfire			Project 2.3.3: Insect and Drought Inspection	1.2.7
				Objective 2.4: Increase firefighter knowledge and awareness through training.		
		Wildfire			Project 2.4.1: Basic Wildland Fire Training	1.4.4
		Wildfire			Project 2.4.2: Map and Compass Training	1.4.4
		Wildfire			Project 2.4.3: Eastern Montana Wildfire Awareness Video	2.3.1, 2.3.2
				Objective 2.5: Improve the Treasure County Fire Department's response capabilities.		
		Wildfire			Project 2.5.1: Fire Liaisons	1.2.7
		Wildfire			Project 2.5.2: Water Storage	2.2.5
		Wildfire			Project 2.5.3: Volunteer Firefighting Reimbursement	1.2.7
			Goal 3: Reduce future losses from winter storms and floods.			
				Objective 3.1: Protect electric and transportation infrastructure from snow, wind, and flood damages.		
		Severe Weather			Project 3.1.1: Electric Infrastructure Protection	1.2.7, 1.3.4, 11.3.1
		Flooding			Project 3.1.2: Culvert Improvements	3.4.1
6	**2016**	**Valley**				
			Goal - Increase community understanding of emergency management and build support for hazard mitigation			
			Goal - Develop, promote, integrate and track mitigation strategies			
			Goal - Continue to improve and enhance the county's emergency management program			

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			Goal - Increase the economic stability, core values, and quality of services of the participating jurisdictions			
			Goal - Increase mitigation resources to eliminate or minimize harm done to people, property, jobs, and natural resources in Valley County by natural and manmade hazards			
		All Hazards			Building Codes	1.5.1
		Flooding			Martin Coulee culvert	3.4.1
		All Hazards			NOAA Weather Radios	1.2.5, 6.2.2
		Wildfire			The Pines Wildfire Planning	2.2.5
		Flooding			Hoyt Park Storm Drainage Project	3.4.4
		Flooding			Flood Setbacks	1.5.1
		All Hazards			Growth Policy	1.5.1, 2.5.1
		All Hazards			Subdivision Regulations	1.5.1, 2.5.1
		Structure Fire			Increase Capacity of Rural Fire Fighters	1.2.7
		Flooding			Milk River Drive Stabilization	3.2.2
		Wildfire			Increase Capacity of Fire Fighters	1.2.7
		Severe Weather			Develop Power Outage Plan	6.3.1, 6.3.2
		Dam Failure			Fresno Dam Releases	10.4.1
		All Hazards			Update/Modernize Evacuation Plan	1.2.7
		Flooding			Portable Pump	1.2.7
		Flooding			Northern-Side Diversion Box	3.2.2
		Flooding			South Side Storm Water Pump Stations	3.4.3
		Flooding			North-Side Water Pump Station	3.4.3
		Flooding			North-Side Water collection system	3.4.3
		Flooding			Billingsley Road Bridge	3.4.1
		Severe Weather			Countywide StormReady	6.2.3, 6.2.4
		All Hazards			Federal MOUs	1.2.7
		Flooding			Nashua Ice Jam Plan	3.6.1
		Wildfire			Dry Hydrants	2.2.5
		Flooding			Structure Elevation Measurements	3.2.1
		Flooding			Flood Mapping Improvements	3.2.1
		Flooding			Baylor Bridge Replacement	3.4.1
		Flooding			Beaverton Creek Bridge Replacement	3.4.1
		Flooding			Snake Creek Bridge Replacement	3.4.1
		All Hazards			Sewage Gas Generator	1.2.7, 1.3.4, 11.3.1
		Severe Weather			Critical Infrastructure Power Back Up	1.2.7, 1.3.4, 11.3.1
		All Hazards			EAS Equipment	1.2.6
		Flooding			Levee Mitigation Plan	3.5.5
		Flooding			Milk River Channel Reroute	3.2.2
		Flooding			Property Buy Outs	3.1.1
		Flooding			Levee Gates Rehabilitation	3.5.5, 10.2.1
		All Hazards			Public Education	1.2.1
		Wildfire			Red Flag Public Information	1.2.3
		Flooding			Hinsdale Ditch	3.2.2
		Flooding			Nashua NFIP Improvements	3.5.2
		Flooding			Nashua Gates and Backflow Valves	3.5.4
		Wildfire			Abandoned Building Removal	2.2.1
		Structure Fire			Fort Peck Theater Sprinkler System	1.2.7
		Flooding			Fairgrounds Drainage	3.2.2
		Severe Weather			All Weather Storm Shelter	1.2.7
		Severe Weather			Tornado Safe Rooms	6.4.1
		All Hazards			Electric Infrastructure Protection	1.2.7, 1.3.4, 11.3.1
		All Hazards			Universal First Responder Communications	1.2.7
		Wildfire			Fire Breaks	2.2.5, 2.2.6
		Flooding			Glasgow Levee Mitigation Plan	3.5.5
		Flooding			Flood Education	3.5.4, 3.5.6, 3.5.7
		Wildfire			Mowing and Brush Clearing	2.1.2, 2.1.3, 2.2.6
		Flooding			Nashua Dikes	3.5.5
		Flooding			Diversion Dams	3.5.5
		Flooding			Green Meadow Estates Flood Mitigation	3.2.2
		Terrorism			Fencing and Alarm Systems	11.3.1
		Disease			Mosquito Controls	8.1.1, 8.4.2
		Severe Weather			Valley Co. Library elevator and update for emergency shelter	1.2.7
		Flooding			Glasgow River Gage	3.2.2
		All Hazards			Emergency Route Ordinances	1.5.1
		Wildfire			Vegetative Fuel Treatments	2.1.2, 2.1.3, 2.2.6
		All Hazards			Hanger at Airport	2.1.7
		Flooding			Fort Peck Culvert Replacement and Installation	3.4.1
		Severe Weather			Update and Maintain Siren and Public Alert Systems	2.1.7

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		Severe Weather			Generators	1.2.7, 1.3.4, 11.3.1
		Wildfire			Firewise Program	2.1.2, 2.1.3, 2.3.1, 2.3.2
		Disease			Disease Education	8.2.1
		Flooding			Glasgow Sullivan Park Mitigation	3.2.2
		All Hazards			Valley Co Food Bank Building	2.1.7
		Haz-Mat			Hazardous Material Route	7.1.2, 7.4.1
		All Hazards			Fort Peck Emergency Route Road Repair	7.4.1
		Transp. Accidents			Railroad Safety	1.2.7
		Disease			Disease Surveillance	8.1.1
		Flooding			Fort Peck Erosion Control Critical infrastructure	3.4.5
		Severe Weather			Valley Co. Courthouse furnace update	1.2.7
		Severe Weather			Valley Co. Courthouse roof repair	1.2.7
5	**2013**	**Wheatland**				
			Goal 1: Reduce Impacts from Severe Winter Weather			
				Objective 1.1: Implement Emergency Service Projects to Reduce Losses from Severe Winter Weather		
		Severe Weather			1.1.1 - Obtain generator for city complex in Judith Gap.	1.2.7, 1.3.4, 11.3.1
		Severe Weather			1.1.2 - Obtain generators for emergency shelters including Harlowton Fire Hall	1.2.7, 1.3.4, 11.3.1
		Severe Weather			1.1.3 - Obtain a generator for the Harlowton Youth Center & Senior Center	1.2.7, 1.3.4, 11.3.1
				Objective 1.2: Implement Property Protection Projects to Reduce Losses from Severe Winter Weather		
		Severe Weather			1.2.1 - Proactively trim trees in Harlowton so limbs won't break during heavy snow causing property damage.	1.2.7
			Goal 2: Reduce Losses from Severe Summer Weather			
				Objective 2.1: Implement Public Education & Awareness Projects		
		Severe Weather			2.1.1 - Promote the National Weather Service's Severe Weather Awareness Week.	1.2.3, 6.2.3, 6.24
			Goal 3: Reduce Impacts from Flooding			
				Objective 3.1: Implement Public Education & Awareness Projects to Reduce Losses from Flooding		
		Flooding			3.1.1 - Promote the National Flood Insurance Program.	3.5.2
		Flooding			3.1.2 - Promote awareness in agricultural areas that livestock grazing and farm equipment in floodplains should include a high spot to evacuate to.	1.2.7, 8.4.2
				Objective 3.2: Implement Property Protection Projects to Reduce Flood Losses		
		Flooding			3.2.1 - Install culverts/storm drain system in developing subdivisions north of Harlowton.	3.4.1
			Goal 4: Reduce Losses from Wildfire			
				Objective 4.1: Prevent Losses Associated with Wildfire		
		Wildfire			4.1.1 - Ensure that updated subdivision regulations include measures for fuel mitigation prior to approving new developments.	1.5.1, 2.5.1
				Objective 4.2: Implement Property Protection Projects to Reduce Wildfire Losses		
		Wildfire			4.2.1 - Coordinate with ranches in north portion of county on placement of dry hydrants.	2.2.5
		Wildfire			4.2.2 - Coordinate with other agencies for implementation of fuels reduction projects.	2.2.5, 2.2.6
		Wildfire			4.2.3 - Mow and clean up fuels in all communities.	2.1.2, 2.1.3
				Objective 4.3: Implement Public Education & Awareness Projects to Reduce Losses from Wildfire		
		Wildfire			4.3.1 - Educate landowners on fuel reduction around homes.	2.1.2, 2.1.3, 2.2.5, 2.2.7, 2.3.1
		Wildfire			4.3.2 - Promote grants program available to landowners to create defensible space around residences.	1.2.2, 2.2.7
			Goal 5: Reduce Losses from Dam Failure			
				Objective 5.1: Implement Structural Projects to Reduce Losses from Dam Failure		
		Dam Failure			5.1.1 - Encourage DNRC to install movement sensors on face of Bair, Martinsdale and Deadman's Basin Dams to detect pending failure.	10.3.3
				Objective 5.2: Implement Public Education & Awareness Projects to Reduce Losses from Dam Failure		
		Dam Failure			5.2.1 - Encourage DNRC to install an early warning system on Bair, Martinsdale and Deadman's Basin Dams to interface with dispatch	1.2.6
		Dam Failure			5.2.2 - Continue to participate in dam failure exercises	1.4.4, 10.3.1
				Objective 5.3: Prevent Losses Associated with Dam Failure		
		Dam Failure			5.3.1 - Disclose dam inundation areas during subdivision review.	1.5.1
			Goal 6: Reduce Losses from Transportation-related Haz-Mat Incidents			
				Objective 6.1: Implement Emergency Service Projects to Reduce Losses from Hazardous Material Incidents		
		Haz-Mat & Transp. Accidents			6.1.1 - Provide haz-mat training to emergency responders.	1.4.4, 7.3.1, 7.3.2
		Haz-Mat & Transp. Accidents			6.1.2 - Obtain decontamination trailers that can be placed around county.	7.2.1
		Haz-Mat & Transp. Accidents			6.1.3 - Obtain rescue truck for Judith Gap	1.2.7, 7.2.1
			Goal 7: Reduce Losses from Communicable Disease			
				Objective 7.1: Implement Emergency Service Projects to Reduce Losses from Communicable Disease		
		Disease			7.1.1 - Promote awareness project so ranchers are informed if there is an accident involving at-risk livestock.	8.2.2, 8.2.3, 8.4.4
		Disease			7.1.2 - Promote awareness on public health emergencies and disseminate information from state if there is risk of pandemic.	8.2.1

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			Goal 8: Promote All-Hazard Mitigation Measures			
				Objective 8.1: Implement Public Education & Awareness Projects to Reduce Losses from All Hazards		
		All Hazards			8.1.1 - Promote disaster-related educational programs through the school system.	1.2.4
		All Hazards			8.1.2 - Provide awareness on developing a family disaster plan and disaster supply kit.	1.2.8
		All Hazards			8.1.3 - Identify and educate public on location of emergency shelters.	1.2.7
				Objective 8.2: Implement Emergency Service Projects to Reduce Losses from All Hazards		
		All Hazards			8.2.1 - Increase involvement of LEPC in all communities.	1.2.7
		All Hazards			8.2.2 - Install an emergency call box in Shawmut.	1.2.7
		All Hazards			8.2.3 - Recruit and provide training for volunteer response personnel.	1.4.4
		All Hazards			8.2.4 - Upgrade cascade system with a compressor (fills SCBA tanks).	1.2.7
		All Hazards			8.2.5 - Employ full time emergency medical technicians in Harlowton.	1.2.7
4	**2014**	**Wibaux**				
			Goal - Mitigate potential loss of life, property and infrastructure from flooding of Beaver Creek.			
			Goal - Manage impacts of severe winter storms.			
			Goal - Minimize the impacts of hazardous materials incidents.			
			Goal - Reduce the impacts of severe summer storms.			
			Goal - Enhance the public's awareness of hazards.			
		Severe Weather			A - Designate church as a shelter for summer storms and acquire storm shelter signage	1.2.7
		Severe Weather			B - Acquire generator for new Fire Hall/EOC	1.2.7, 1.3.4, 11.3.1
		All Hazards			C - Implement Reverse 911 as a supplemental warning system	1.2.6
		Drought			D - Develop drought emergency procedures	5.2.3
		Haz-Mat			E - Designate fairgrounds as hazardous materials evacuation sheltering area	1.2.7
		Severe Weather			F - Develop ordinances that require mobile home parks/crew camps of a certain size to have a safe room	6.4.1
		Haz-Mat			G - Acquire new Class B suits for the fire department to assist with response to a hazardous materials incident	7.2.1
		All Hazards			H - Install surge protection on critical infrastructure	1.2.7
		Severe Weather			I - Acquire generator for designated winter shelter	1.2.7, 1.3.4, 11.3.1
		Transp. Accidents			J - Improve speed limit recognition on 2nd Ave N leading into town	7.1.2
		Wildfire			K - Install fire weather danger sign	1.2.7
		Wildfire			L - Participate in Fire Prevention Week	2.3.1, 2.3.2
		Flooding			M - Provide education to homeowners about wet floodproofing techniques	1.2.1
		Haz-Mat			N - Provide additional hazardous materials training for first responders	1.4.4, 7.3.1, 7.3.2
		Flooding			Upsize culverts that are commonly washed out	3.4.1
		Haz-Mat			O - Educate residents about hazardous materials	1.2.7
		Severe Weather			P - Offer information about weather-resistant building materials and practices	2.3.2
5	**2012**	**Yellowstone**				
			Goal #1 Increase Hazard Awareness			
			Goal #2 Reduce Impacts of Flooding			
			Goal #3 Reduce Impacts of Wildfire and Structure Fires on the Community			
			Goal #4 Improve Emergency Communications			
			Goal #5 Countywide Mapping and Zoning			
			Goal #6 Protection of Public Health and Property from Disasters			
			Goal #7 Grow and Develop Partnerships			
			Goal #8 Enhance Emergency Services			
				Construction Projects		
		Flooding			West Billings Flood Mitigation Project: Construction of two small storage features on Cove and Little Cove Creeks and improving flood conveyance through the West Billings area.	3.2.2
		Flooding			Arrow Island Weir Project: Bank Stabilization project north of Huntley.	3.4.5
				Feasibility Studies		
		Flooding			Highway 3 Stormwater Controls: Study options for mitigating stormwater runoff from Highway 3 near the Airport.	3.4.4
		Flooding			Riverside Park Levee Repair: Study to assess options for controlling bank erosion and protection of buried pipelines near Riverside Park in Laurel.	3.5.5
		Flooding			Repetitive Loss Properties: Review losses to the three properties in Yellowstone County and address means to eliminate or reduce impacts from flooding.	3.1.1
		Flooding			Zoo Montana Flood Mitigation: Assess potential for flooding zoo and address options for managing zoo animals in the event of a flood.	3.2.1
		Flooding			Purchase of Knife River Pit: Examine the option for creating stormwater retention basin in the Knife River Pit to mitigate potential flooding downstream of the West Billings area.	3.4.4
				Public Education		
		Flooding			Floodplain Awareness: Continued community outreach on the potential for flooding in flood prone areas in the following jurisdictions, Yellowstone County, City of Billings, and City of Laurel.	3.5.1, 3.5.4, 3.5.6, 3.5.7
		Wildfire			Firewise Demonstrations: Continued community outreach on wise building practices in the wildland urban interface in the following jurisdictions, Yellowstone County, City of Billings, City of Laurel, and Town of Broadview.	2.1.2, 2.1.3, 2.3.1, 2.3.2
		Severe Weather			Severe Storm Education: Continued community outreach on preparation and safety during severe storms in the following jurisdictions, Yellowstone County, City of Billings, City of Laurel, and Town of Broadview.	1.2.3, 6.2.3, 6.2.4

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		All Hazards			School Safety: Interaction with public safety officials and schools on school population planning for emergencies in the following jurisdictions, Yellowstone County, City of Billings, City of Laurel, and Town of Broadview.	1.2.4
				Hazard Preparedness		
		Wildfire			Wildland Fire Mapping	2.2.1
		All Hazards			Public Alert System	1.2.5, 1.2.6
		All Hazards			Enhanced Rural Communication/Montana Interoperability Project	1.2.7
		Flooding			Modification of floodplain regulations to require property setbacks	1.5.1
		Severe Weather			Establish Tornado Shelter at the Broadview Elementary School	6.4.1
2	**2007**	**Blackfeet Reservation**				
			Goal 1: Reduce Impacts from Flooding			
				Objective 1.1: Protect Structures from Flood Damage		
		Flooding			Consider mitigation options (including relocation) for homes repeatedly flooded	3.1.1
		Flooding			Install backflow valves at homes in floodplain	3.5.4
		Flooding			Complete floodplain mapping and elevation survey of structures in the floodplain	3.2.1
		Flooding			Consider flood proofing options for critical facilities located in floodplain	3.1.1
		Flooding			Consider structural projects such as diversions or levees to protect Tribal infrastructure located in floodplain from damage	3.5.5
				Objective 1.2: Enact Policy Changes to Mitigate Impacts from Flooding		
		Flooding			Create planning and zoning guidelines for development within the floodplain	1.5.1
		Flooding			Create floodplain ordinances	1.5.1
				Objective 1.3: Enhance Preparedness for Flood Event		
		Flooding			Implement a flood warning system	1.2.6
			Goal 2: Prevent Losses from Wildfire			
				Objective 2.1: Improve Firefighting Capabilities		
		Wildfire			Recruit more volunteer fire fighters	1.2.7
		Wildfire			Provide training for volunteer fire fighters for wildland certification	1.4.4
		Wildfire			Develop additional water storage facilities	2.2.5
		Wildfire			Locate water tank in rural areas for fire fighting	2.2.5
		Wildfire			Obtain fire fighting equipment for VFDs in rural communities	1.2.7
		Wildfire			Construct a fire hall in community of Seville	1.2.7
				Objective 2.2: Minimize Risk of Wildfire at Urban Interface		
		Wildfire			Create defensible space around structures and promote FIREWISE programs in communities	2.1.2, 2.1.3, 2.3.1, 2.3.2
		Wildfire			Coordinate with landowners for enhanced grazing around towns to reduce fuels	2.1.2, 2.1.3, 2.2.6
		Wildfire			Complete hazardous fuel reduction projects in the WUI.	2.1.2, 2.1.3, 2.2.5, 2.2.7, 2.3.1
				Objective 2.3: Reduce Wildfire Risk in Outlying Areas of the Reservation		
		Wildfire			Create fire breaks as needed on the reservation	2.2.5, 2.2.6
		Wildfire			Conduct fuel reduction projects, as needed	2.1.2, 2.1.3, 2.2.5, 2.2.7, 2.3.1
		Wildfire			Complete hazardous fuel reduction projects in outlying areas.	2.1.2, 2.1.3, 2.2.5, 2.2.7, 2.3.1
			Goal 3: Reduce Impacts from Winter Storms			
				Objective 3:1: Maintain Continuity of Infrastructure during Extreme Cold		
		Severe Weather			Obtain generators for schools to maintain power supply during winter	1.2.7, 1.3.4, 11.3.1
		Severe Weather			Develop coordinated management strategies for de-icing roads; plowing snow, clearing roads of fallen trees, and clearing debris	1.2.7
		Severe Weather			Improve communication amongst emergency response and road department during extreme winter weather	1.2.7
		Severe Weather			Upgrade lighting system at airport	1.2.7
				Objective 3:2: Enhance Sheltering and Rescue Capabilities during Extreme Cold		
		Severe Weather			Inspect emergency shelters to make sure they are structurally sound to support snow loads	1.2.7
		Severe Weather			Install markers on fences to determine mileages so peoples residences can be found for rescue purposes	1.2.7
		Severe Weather			Obtain mobile generators for emergency shelters	1.2.7, 1.3.4, 11.3.1
		Severe Weather			Identify emergency shelters in each community.	1.2.7
				Objective 3.3: Reduce Effects of Power Outages Associated with Winter Storms		
		Severe Weather			Create partnerships with utility companies and negotiate for shorter span distances between power poles to better withstand snow loads and severe storms	6.3.2
		Severe Weather			Negotiate with utility companies for replacement of weak or rotten power poles	6.3.1, 6.3.2
		Severe Weather			Relocate power underground where possible	6.3.1
			Goal 4: Prevent Losses from Severe Winds, Hail, and Tornadoes			
				Objective 4.1: Enhance Safety at Public Facilities		
		Severe Weather			Install safety film on windows at critical facilities to prevent shattering of glass	4.5.3
			Goal 5: Reduce Risk of Losses from Dam Failure			
				Objective 5.1: Protect Residents from Potential Failure of Dams Located on Reservation		
		Dam Failure			Install movement sensors on faces of dams to detect pending failure	10.3.3

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		Dam Failure			Install an early warning system to interface with dispatch at Tribal headquarters	1.2.6
		Dam Failure			Equip dams with sirens to alert downstream residents of impending breach	1.2.7
		Dam Failure			Provide NOAA weather radios to residents downstream from dams	1.2.5, 6.2.2
		Dam Failure			Develop evacuation plans, including means of transporting people and evacuation routes	1.2.7
		Dam Failure			Evaluate structural soundness of dams	10.2.1
		Dam Failure			Implement zoning below and around dams	1.5.1
		Dam Failure			Develop protocol for notifying Canada in the event of Sherburne Dam breach	1.2.7
			Goal 6: Reduce Losses from Hazardous Materials Incidents			
				Objective 6.1: Enhance Evacuation Procedures Associated with Highway and Railroad Incidents		
		Haz-Mat			Develop an emergency transportation plan that considers key roadways and railroad intersections	1.2.7
		Haz-Mat			Plan alternate evacuation routes for instances when trains block intersections	7.1.2
				Objective 6.2: Enhance Response Capabilities for Hazardous Material Incidents		
		Haz-Mat			Provide hazardous material training to emergency responders	1.4.4, 7.3.1, 7.3.2
			Goal 7: Reduce Economic Impact of Drought			
				Objective 7.1: Interface with State on Drought Awareness and Relief		
		Drought			Continue meetings between TERC and Drought Taskforce subcommittee.	5.1.1, 5.2.3
		Drought			Provide education and awareness to Reservation community on drought.	5.1.1, 5.1.5
			Goal 8: Promote All-Hazard Mitigation Measures			
				Objective 8.1: Enhance Communication Systems		
		All Hazards			Map areas within the reservation that do not have communications.	1.2.7
		All Hazards			Obtain portable repeater that could be used in areas where current communication is poor	1.2.7
		All Hazards			Obtain backup generator for Tribal headquarters to support emergency communications	1.2.7, 1.3.4, 11.3.1
		All Hazards			Obtain antennae to pick up NOAA broadcasts from Great Falls	1.2.5, 1.2.6
		All Hazards			Establish high-speed communication system, network reliability/ interoperability	1.2.7
				Objective 8.2: Enhance Early Warning Capabilities		
		All Hazards			Obtain sirens for all reservation communities	1.2.7
		All Hazards			Obtain bullhorns or loud speakers to broadcast emergencies locally	1.2.7
		All Hazards			Implement reverse 911 system for all areas within the reservation	1.2.5, 1.2.6
		All Hazards			Obtain NOAA weather radios for Tribal critical facilities and schools	1.2.5, 6.2.2
				Objective 8.3: Maintain Continuity of Infrastructure during Disasters		
		All Hazards			Construct new Tribal dispatch building	1.2.7
		All Hazards			Obtain mobile generator to use at Tribal headquarters and other critical facilities including schools, medical clinics, and emergency shelters	1.2.7, 1.3.4, 11.3.1
		All Hazards			Install pigtail connections at Tribal critical facilities for mobile generator	1.2.7, 1.3.4, 11.3.1
		All Hazards			Obtain generators for water systems in all communities	1.2.7, 1.3.4, 11.3.1
		All Hazards			Establish telephone priority system regarding which phones would come back on-line first	1.2.7
				Objective 8.4: Enhance Awareness on Hazard Risk Reduction and Emergency Preparedness		
		All Hazards			Identify emergency shelters and increase awareness on shelter locations	1.2.7
		All Hazards			Create evacuation plans and educate public on evacuation routes	1.2.7
		All Hazards			Increase awareness on risk reduction at community events	6.2.7
		All Hazards			Launch public awareness campaign so residents understand what hazards are present when sirens are used	1.2.7
		All Hazards			Create activities for students of all ages to participate in involving disaster awareness	1.2.4
		All Hazards			Develop resource list of emergency services needed in event of disaster	1.2.7
		All Hazards			Establish protocols to assist citizens with special needs in event of disaster	8.4.1, 8.4.2
		All Hazards			Establish protocols for food and fuel distribution in event of disaster and cooperative agreements with providers	1.2.7
		All Hazards			Establish program where government credit cards would be available for emergency provisions in event of disaster.	1.2.7
		All Hazards			Mitigate against adverse effects of global warming on the reservation.	1.2.7
5	**2015**	**Crow Reservation**				
			Goal - Maximize the use of mitigation actions that prevent losses from all hazards.			
			Goal - Reduce community impacts of wildland and rangeland fires.			
			Goal - Mitigate the potential loss of life and property from flooding.			
			Goal - Reduce impacts from severe summer weather.			
			Goal - Reduce impacts from severe winter weather.			
		Flooding			A - Invite FEMA representative to present information about the National Flood Insurance Program (NFIP).	3.5.2
		Haz-Mat			B - Educate public about hazardous materials safety.	1.2.7
		Severe Weather			C - Designate emergency shelters in each community. Acquire back-up generators for shelters to enable use as warming facilities.	1.2.7, 1.3.4, 11.3.1
		All Hazards			D - Distribute additional NOAA radios.	1.2.5, 6.2.2
		Wildfire			E - Educate public about defensible space best practices.	2.3.1, 2.3.2
		Severe Weather			F - Install additional emergency sirens to improve Reservation-wide siren coverage.	1.2.7

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		Wildfire			G - Construct additional water storage tanks for fire suppression.	2.2.5
		Haz-Mat			H - Review and update Tribal hazardous materials response plan.	1.2.7
		All Hazards			I - Update zoning regulations to include elements that reduce the risk of hazards to people and property.	1.5.1
		Wildfire			J - Remove abandoned structures and vehicles to reduce the risk of arson.	2.1.2, 2.1.3
		Flooding			K - Assess mitigation options for Crow Agency water treatment plant.	3.4.3
1	**2017**	**Flathead Reservation -CSKT**				
			Goal 1 - Reduce Impacts from Wildfire			
				Objective 1.1 - Enhance Emergency Services to Mitigate Impacts from Wildfire		
		Wildfire			1.1.1 - Identify and facilitate additional training for firefighters.	1.4.4, 7.3.1
		Wildfire			1.2.1 - Continue to be proactive in fuel management reservation-wide.	2.1.2, 2.1.2, 2.1.6
				Objective 1.2 - Protect Property from Wildfire		
		Wildfire			1.2.2 - Support interagency collaboration on fuel management projects.	2.2.5
		Wildfire			1.2.3 - Continue to support and enhance reservation- fuel reduction programs.	2.1.2, 2.1.3, 2.2.5, 2.2.7,
				Objective 1.3 - Provide Public Education and Awareness on Wildfire		
		Wildfire			1.3.1 - Provide wildfire mitigation information to urban interface landowners.	2.3.1, 2.3.2
			Goal 2 - Reduce Impacts from Transportation Accidents			
				Objective 2.1 - Enhance Emergency Services to Mitigate Impacts from Transportation Accidents		
		Transp. Accidents			2.1.1 - Coordinate emergency response activities between railroad, Tribes, counties and municipalities.	1.2.7
					Project 2.1.2 - Encourage local emergency responders to have adequate training to respond to hazardous material incidents consistent with local capabilities.	1.4.4, 7.3.1, 7.3.2
		Transp. Accidents			2.1.3 - Work with State and County to enhance chain-up areas along Highway 93.	7.4.1
		Transp. Accidents			2.1.4 - Continue to work with MRL and encourage ongoing training with local responders.	1.4.4, 7.3.1
				Objective 2.2 - Implement Actions to Prevent Impacts from Transportation Accidents		
		Transp. Accidents			2.2.1 - Explore the possibility of a Polson Bypass for truck traffic carrying hazardous material loads and/or a signed hazardous material route to avoid population center.	7.1.2, 7.4.1
		Transp. Accidents			2.2.2 - Encourage truck traffic to use Highway 93 instead of Highway 35 around Flathead Lake.	7.1.2, 7.4.1
				Objective 2.3 - Provide Public Education and Awareness on Transportation Accidents		
		Transp. Accidents			2.3.1 - Increase public awareness of common hazardous materials stored, used or transported through the area.	7.1.1
			Goal 5 - Reduce Impacts from Severe Weather			
				Objective 5.1 - Enhance Emergency Services to Mitigate Impacts from Severe Weather		
		Severe Weather			5.1.1 - Develop coordinated management strategies for de-icing roads, plowing snow, clearing roads of fallen trees, and clearing debris from public and private property.	1.2.7
		Severe Weather			5.1.2 - Partner with responsible agencies and organizations to design and implement programs that reduce risk to life, property, and utility systems.	1.2.2, 2.2.5, 2.2.6
		Severe Weather			5.1.3 - Continue to aggressively address rural locations within the county so people's residences can be found for rescue purposes.	1.2.7
		Severe Weather			5.1.4 - Enhance weather monitoring to attain earlier severe winter storm warnings through collaboration with NWS.	1.2.3, 1.2.6, 6.2.1
				Objective 5.2 - Provide Public Education and Awareness on Severe Weather		
		Severe Weather			5.2.1 - Continue to distribute educational material on how to prepare for winter.	6.2.6
		Severe Weather			5.2.2 - Conduct public outreach campaign where special needs residents would provide information on where they live and what they need. Explore software program to allow county and reservation to develop and maintain database with this information.	8.4.1, 8.4.2
		Severe Weather			5.2.3 - Prmote the National Weather Service's Winter Weather Awareness Week (third full week in October).	1.2.3, 6.2.3, 6.24
			Goal 6 - Reduce Impacts from Flooding			
				Objective 6.1 - Implement Actions to Prevent Impacts from Flooding		
		Flooding			6.1.1 - Support FEMA's Map Modernization Program which will provide CSKT with updated floodplain mapping (DFIRMS).	3.2.1
		Flooding			6.1.2 - Update flood regulations when DFIRMs are adopted to protect future development.	1.5.1
				Objective 6.2 - Implement Actions to Protect Natural Resources from Flooding		
		Flooding			6.2.1 - Work with partner agencies to identify erosion and sediment control issues.	3.2.2, 3.4.5
				Objective 6.3 - Implement Structural Projects to Reduce Impacts from Flooding		
		Flooding			6.3.1 - Continue to resize and upgrade culverts in various locations throughout the county.	3.4.1
		Flooding			6.3.2 - Identify locations throughout the county where culverts are needed.	3.4.1
				Objective 6.4 - Enhance Emergency Services to Mitigate Impacts from Flooding		
		Flooding			6.4.1 - Continue to work with landowners, ranchers, and response agencies on flood response activities.	3.2.2
		Flooding			6.4.2 - GPS all homes along waterways.	3.2.1
				Objective 6.5 - Provide Public Education and Awareness on Flooding		
		Flooding			6.5.1 - Continue to educate homeowners on purchasing flood insurance through the National Flood Insurance Program through availability of information.	3.5.2
		Flooding			6.5.2 - Educate homeowners on flood concerns.	3.5.2, 3.5.4, 3.5.6, 3.5.7
		Flooding			6.5.3 - Publish and distribute floodplain maps to homeowners.	3.5.7

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			Goal 7 - Reduce Impacts from Public Health			
				Objective 7.1 - Provide Public Education and Awareness on Public Health		
		Disease			7.1.1 - Encourage and support local public health in preparing plans for biological hazards.	8.4.2
		Disease			7.1.2 - Provide public awareness on Meth prevention.	8.2.1
			Goal 9 - Reduce Impacts from Earthquakes			
				Objective 9.1 - Protect Property from Earthquakes		
		Earthquakes			9.1.1 - Encourage non-structural projects in schools and critical facilities.	4.5.2
		Earthquakes			9.1.2 - Encourage schools and critical facilities to identify the need for structural retrofits.	4.2.1, 4.4.3
		Earthquakes			9.1.3 - Encourage homeowners to perform structural and non-structural retrofits on their homes.	4.3.2, 4.3.3
				Objective 9.2 - Provide Public Education and Awareness on Earthquakes		
		Earthquakes			9.2.1 - Conduct educational earthquake awareness and preparedness in schools and for the general public.	4.3.1, 4.3.2, 4.3.3
			Goal 10 - Reduce Impacts from Dam Failure			
				Objective 10.1 - Implement Actions to Prevent Impacts from Dam Failure		
		Dam Failure			10.1.1 - Consider using dam inundation as criteria for future subdivision review and require disclosure by developers to prospective buyers.	1.5.1
				Objective 10.2 - Enhance Emergency Services to Mitigate Impacts from Dam Failure		
		Dam Failure			10.2.1 - Coordinate with dam owners to exercise EAPs with responders.	1.4.4, 10.3.1
		Dam Failure			10.2.2 - Maintain Emergency Action Plans of high hazard dams and work with owners to keeps plans current.	10.1.3
			Goal 11 - Reduce Impacts from All Hazards			
				Objective 11.1 - Enhance Emergency Services to Mitigate Impacts from All Hazards		
		All Hazards			11.1.1 - Buy weather radios for various critical facilities.	1.2.5, 6.2.2
		All Hazards			11.1.2 - Continue coordinating with public broadcasting stations with Early Alert System information.	1.2.5, 1.2.6
		All Hazards			11.1.3 - Continue to encourage that public facilities and schools obtain generators for backup power.	1.2.7, 1.3.4, 11.3.1
		All Hazards			11.1.4 - Identify emergency shelters and encourage them to obtain generators.	1.2.7, 1.3.4, 11.3.1
		All Hazards			11.1.5 - Continue to enhance and improve back-up location for dispatch center.	1.2.7
		All Hazards			11.1.6 - Continue to enhance and improve Reverse 911 capabilities through exercise and software development.	1.4.4
				Objective 11.2 - Provide Public Education and Awareness on All Hazards		
		All Hazards			11.2.1 - Promote the need for emergency action plans for special needs populations.	1.2.7, 1.3.4, 8.4.1, 8.4.2
		All Hazards			11.2.2 - Encourage preparation of Family Emergency Plans.	1.2.8
		All Hazards			11.2.3 - Promote disaster-related educational programs through the school system.	1.2.4
				Objective 11.3 - Implement Actions to Prevent Impacts from All Hazards		
		All Hazards			11.3.1 - Continue to work with cell phone companies to get better cell coverage	1.2.7
6	**2012**	**Fort Peck Reservation**				
			Goal - Enhance Emergency Response Systems			
		All Hazards			Install Pigtails (electrical wiring) at shelters and critical facilities to accommodate mobile generators	1.2.7, 1.3.4, 11.3.1
		All Hazards			Purchase mobile generators	1.2.7, 1.3.4, 11.3.1
		All Hazards			Provide training for first responders	1.4.4
			Goal - Reduce impacts from flooding			
		Flooding			Enter into National Flood Insurance Program (Wolf Point, Brocton, Frazer, Reserve)	3.5.2
		Flooding			Improve storm water system along Hwy 2 in Wolf Point and south side of town (wolf point)	3.4.4
		Flooding			Construct diversion (Brockton) Perform floodplain mapping (Reserve) Update dike (Reserve)	3.2.1, 3.2.2, 3.5.5,
		Flooding			Enhance Early Warning System	1.2.6
		Flooding			Upgrade siren systems in all communities	1.2.7
		Flooding			Implement local warning system (like channel 15) for local communities Purchase weather radios for critical facilities and provide at discount to rural residents	1.2.5, 1.2.6, 6.2.2
		Flooding			Become a StormReady Commmunity Secure Integrity of Utilities and Infrastructure	1.2.3, 6.2.3, 6.2.4, 6.3.1, 6.3.2
		Flooding			Install fencing and alarm system at water treatment plant and water supply wells	11.3.1
			Goal - Minimize Risk of Wildfire at Urban Interface			
		Wildfires			Institute weed control measures (mowing) along railroad	2.1.3
		Wildfires			Negotiate over haying of CRP land	2.2.5
			Goal - Minimize Economic Impact of Drought			
		Drought			Develop additional water supplies	5.4.2
		Drought			Negotiate for summer releases from Fort Peck Dam	5.5.2
			Goal - Reduce Risk of Hazardous Material Incidents			
		Haz-Mat			Relocate anhydrous ammonia tank currently located adjacent to Wolf Point city limits	7.2.1
2	**2013**	**Fort Belknap**				
			Goal 1: Reduce Impacts from Drought			
				Objective 1.1 - Provide Public Education and Awareness on Drought		
		Drought			1.1.1 - Support drought programs implemented through the Conservation District, FSA, and MSU Extension.	5.1.1, 5.1.5, 5.2.2, 5.4.1, 5.4.2, 5.4.3

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				Objective 1.2 Enhance water storage capacity and irrigation conveyance.		
		Drought			1.2.1 Consider feasible water storage where it will increase water supply security such as development of catchment basins with wells and storage capacity and/or percolation ponds.	5.4.2
		Drought			1.2.2 Improve water conveyance efficiencies in agricultural uses.	5.4.3
		Drought			1.2.3 Develop livestock watering sources (well and springs) that are no more than one mile apart in grazing areas.	5.4.2
			Goal 2: Reduce Impacts from Wildfire			
				Objective 2.1: Improve Firefighting Capabilities		
		Wildfires			2.1.1 Recruit more volunteer fire fighters.	1.2.7
		Wildfires			2.1.2 Provide training for volunteer fire fighters for Wildland certification.	1.4.4, 7.3.1
		Wildfires			2.1.4 Develop water storage facilities for towns of Hays and Lodge Pole, and other locations as necessary.	2.2.5
		Wildfires			2.1.6 Obtain a temporary water bladder(s) of 5,000 to 10,000 gallons for Hays and Lodge Pole until permanent water storage facilities are constructed.	1.2.7
		Wildfires			2.1.7 Develop new and upgrade existing dry hydrants in Hays and Lodge Pole from existing water supply.	2.2.5
		Wildfires			2.1.14 Investigate sources of used firefighting equipment to equip community fire halls.	1.2.7
				Objective 2.2: Minimize Risk of Wildfire at Urban Interface		
		Wildfires			2.2.1 Create defensible space around structures and promote FIREWISE programs around communities and private homes.	2.1.2, 2.1.3, 2.3.1, 2.3.2
		Wildfires			2.2.2 Coordinate with landowners for enhanced grazing around towns to reduce fuels.	2.1.2, 2.1.3, 2.2.6
		Wildfires			2.2.5 Burn around communities to mitigate wildfire risk	2.1.2, 2.1.3
				Objective 2.3: Reduce Wildfire Risk in Outlying Areas of the County		
		Wildfires			2.3.1 Coordinate with BLM to employ fuel reduction treatments on lands with high or undesirable fuels.	2.2.6
		Wildfires			2.3.3 Implement fuel reduction measures along highways by cutting or mowing where feasible.	2.1.2, 2.1.3, 2.2.6
				Objective 2.4: Protect Structures in the WUI		
		Wildfires			2.4.1 Implement water pressure reduction system in Lodge Pole School so sprinklers system will be operational.	1.2.7
			Goal 3: Reduce Impacts from Flooding			
				Objective 3.1: Maintain Integrity of Roads		
		Flooding			3.1.1 Install culverts on sections of road impacted by flooding.	3.4.1
		Flooding			3.1.2 Install larger concrete culverts in Lodge Pole.	3.4.1
		Flooding			3.1.3 Consider permit system for all new approaches to ensure properly sized culverts are installed so flood flow is not impeded.	3.4.1
				Objective 3.2: Protect Structures from Flood Damage		
		Flooding			3.2.1 Anchor prone tanks at homes in flood-prone areas.	3.5.4
		Flooding			3.2.2 Repair dike at Dodson	3.5.5
		Flooding			3.2.3 Explore possibility of additional dikes to protect homes	3.5.5
		Flooding			3.2.4 Consider adopting a floodplain ordinance to prevent future development in flood-prone areas.	1.5.1, 3.5.2
		Flooding			3.2.5 Consider elevation of homes which repeatedly experience flood damage.	3.1.1
		Flooding			3.2.6 Consider participating in the National Flood Insurance Program.	3.5.2
			Goal 4: Reduce Impacts from Severe Winter Weather			
				Objective 4:1: Enhance Sheltering and Rescue Capabilities		
		Severe Weather			4.1.2 Post addresses on all residences so they can be found for rescue purposes.	1.2.7
				Objective 4.2: Reduce Effects of Power Outages		
		Severe Weather			4.2.2 Encourage utility company to install air flow spoilers on power poles	6.3.2
				Objective 4.3: Enhance Snow Removal Capabilities		
		Severe Weather			4.3.1 Construct an indoor maintenance facility for the Tribal Road Department so equipment will be operational when it's needed.	1.2.7
			Goal 5: Reduce Risk of Communicable Disease			
				Objective 5.1: Implement Systems to Reduce Mosquito Exposure to Protect Against West Nile Virus		
		Disease			5.1.1 Provide outreach on how to avoid West Nile Virus exposure.	8.2.1
		Disease			5.1.2 Coordinate mosquito control internally.	8.1.1, 8.4.2
		Disease			5.1.3 Purchase mosquito control equipment to use during mosquito season.	1.2.7
			Goal 6: Reduce Impacts from Severe Summer Weather			
				Objective 6.1: Prevent Losses from High Winds, Hail and Tornados		
		Severe Weather			6.1.2 Encourage new construction to incorporate hurricane clips for roof security.	1.5.1
			Goal 7: Reduce Impacts from Hazardous Materials Incidents			
				Objective 7.1: Enhance Response Capabilities for Hazardous Materials Incidents		
		Haz-Mat			7.1.1 Develop an emergency transportation plan that considers key roadways and intersections.	7.1.2
		Haz-Mat			7.1.2 Improve mapping of hazardous materials fixed site locations and common transportation routes.	7.1.1
		Haz-Mat			7.1.3 Provide training to emergency responders on how to deal with methamphetamine labs.	1.4.4
			Goal 8: Promote All-Hazard Mitigation Measures			
				Objective 8.1: Enhance Communication Systems		
		All Hazards			8.1.1 Coordinate radio/repeater sites to enhance communication system.	1.2.7
		All Hazards			8.1.3 Obtain mobile repeaters.	1.2.7
		All Hazards			8.1.5 Petition for better mobile phone service.	1.2.7

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				Objective 8.2: Enhance Emergency Response Capabilities		
		All Hazards			8.2.2 Develop a centralized 911 dispatch system.	1.2.5, 1.2.6
		All Hazards			8.2.3 Develop a centralized incident command center.	1.2.7
		All Hazards			8.2.4 Obtain ambulance for Lodge Pole and Hays.	1.2.7
				Objective 8.3: Enhance Early Warning Capabilities		
		All Hazards			8.3.1 Obtain or update sirens in all communities.	1.2.7
		All Hazards			8.3.2 Obtain bullhorns or loud speakers to broadcast emergencies locally.	1.2.7
		All Hazards			8.3.3 Implement a reverse 911 system.	1.2.5, 1.2.6
		All Hazards			8.3.4 Launch public awareness campaign so residents understand what hazards are present.	1.2.1, 1.2.3, 6.2.3, 6.2.4
		All Hazards			8.3.6 Recruit more weather spotters.	1.2.3, 6.2.3, 6.24
				Objective 8.4: Maintain Continuity of Infrastructure during Disasters		
		All Hazards			8.4.1 Obtain mobile generators for critical facilities, shelters, and community wells.	1.2.7, 1.3.4, 11.3.1
		All Hazards			8.4.2 Equip schools and other critical facilities with pig-tails connections for emergency generators.	1.2.7, 1.3.4, 11.3.1
				Objective 8.5: Enhance Awareness on Hazard Risk Reduction and Emergency Preparedness		
		All Hazards			8.5.3 Develop education campaign for schools (all levels) on risk reduction measures and hazard awareness.	1.2.4
		All Hazards			8.5.4 Develop evacuation plan for communities on reservation and conduct drills.	1.2.7
5	**2006**	**No. Cheyene Reservation**				
			Goal 1: Improve emergency response and general disaster preparedness.			
				Objective 1.1 - Hire a DES Coordinator for the Northern Cheyenne Tribe.		
		All Hazards			Ensure that DES Coordinator has direct line of communication with the Tribal President and Council (similar to the way County DES Coordinators have direct line of communication with County Commissioners)	1.2.7
		All Hazards			DES Coordinator should be active coordinator of various disaster-related activities among the various tribal departments	1.2.7
				Objective 1.2 - Develop and maintain an active Tribal Emergency Response Committee		
		All Hazards			DES Coordinator is leader and motivator for the TERC	1.2.7
		All Hazards			DES Coordinator leads TERC in annual review of progress on PDM goals and objectives, assessment of next tasks necessary to accomplish goals	1.2.7
				Objective 1.3 - Develop systems and infrastructure to respond to emergencies.		
		All Hazards			Identify an Emergency Operations Center	1.2.7
		All Hazards			Regularly conduct training exercises, including table-top and field test exercises for various disaster scenarios and evacuations	1.2.7, 1.4.4
		All Hazards			Identify evacuation routes for various types of disasters, including hazardous materials	1.2.7, 7.1.2
		All Hazards			Develop systems for distributing emergency supplies and for their collection after the disaster	1.2.7, 1.3.4
				Objective 1.4 - Improve capabilities to forecast weather events and provide warning notifications to the public.		
		All Hazards			Obtain NOAA weather radio reception in Lame Deer	1.2.5, 6.2.2
		All Hazards			Work with critical facilities and public building occupants to ensure each has working NOAA weather radios.	1.2.5, 6.2.2
				Objective 1.5 - Improve public preparedness for disasters		
		All Hazards			Provide education and training for the public regarding how to prepare for serious weather and other disaster types	1.4.4, 6.2.3, 6.2.4
				Objective 1.6 - Improve Disaster-Related Communications		
		All Hazards			Identify existing warning systems (such as sirens in Birney and Magic City) and resources (such as the telephones in the water pump houses; identify inefficiencies and needed improvements and implement	1.2.6
		All Hazards			Northern Cheyenne continue to participate in the Big Sky 11 Interoperability project (communications among various emergency service providers/systems and jurisdictions in the area)	1.2.7
		All Hazards			Improve cell phone coverage on the Reservation	1.2.7
		All Hazards			Improve communication with Birney	1.2.7
			Goal 2: Reduce the impacts of power outages			
				Objective 2.1 - Put back-up power in place for critical buildings that do not have back-up power sources.		
		Severe Weather			Identify critical buildings/facilities according to standard criteria (e.g., need of facility during emergencies, shelter for special needs, children, elderly, etc., and get back-up power in place	1.2.7, 1.3.4, 11.3.1
		Severe Weather			Identify regular maintenance to ensure back-up power functions when needed.	1.2.7
				Objective 2.2 - Ensure adequate water supplies during power outages		
		Severe Weather			Install monitors to track water quantities in storage facilities	1.2.7
		Severe Weather			Public education on how to prepare for adequate water supplies during power outages	1.2.7
				Objective 2.3 - Reduce power outages		
		Severe Weather			Identify causes of power outages. (e.g., downed lines, system under-designed, other?) and implement needed changes	1.2.7
		Severe Weather			Install air flow spoilers where needed to keep lines from coming down due to winds/weather events	6.3.2
			Goal 3: Reduce potential for fires and improve fire response			
				Objective 3.1 - Ensure water systems are adequate for fire suppression needs.		
		Wildfire			Bring all fire hydrants into working order	1.2.7
		Wildfire			Ensure adequate water supplies and pressure for concurrent fire suppression and basic public needs	1.2.7

APPENDIX C-3						
2018 STATE OF MONTANA MHMH UPDATE						
LOCAL MITIGATION PROJECTS AND CONSISTENCY WITH STATE MITIGATION STRATEGY						
DES District	**Plan Year**	**County/Hazard**	**Local Goal**	**Local Objective**	**Local Mitigation Project**	**State Plan Goal/ Objective/Project**
		Wildfire			Build additional storage as needed	1.2.7
		Wildfire			Install water supply monitors at storage facilities	1.2.7
		Wildfire			Identify needs for dry hydrants and install as needed	1.2.7
				Objective 3.2 - Continue to implement existing fire plans		
		Wildfire			BIA Wildland Fire plan	2.1.2, 2.1.3, 2.2.6, 2.5.1
		Wildfire			Tribal Fire Plan/Community Fire Plans	2.2.1, 2.2.12, 2.5.1
		Wildfire			Applicable portions of the Big Horn County/Rosebud County CWPP	2.1.2, 2.1.3, 2.2.6, , 2.5.1
				Objective 3.3 - Ensure clear access for firefighting equipment		
		Wildfire			Identify critical roads and bridges in need of improvements (grade, slope, other) for access by firefighting equipment and implement needed changes	3.4.1, 7.1.2
		Wildfire			Keep streets in town clear of abandoned vehicles and other items that can restrict access by firefighting equipment	1.2.7
				Objective 3.4 - Continue fuel reduction in the wildland urban interface		
				Objective 3.5 - New development will be "fire-wise"		
		Wildfire			Construction will be of "fire-wise" materials (less subject to fires)	2.3.2
		Wildfire			New development will be designed and built to ensure access by fire suppression equipment	1.5.1
		Wildfire			Enforce existing Housing Authority ordinances related to fire reduction and suppression	1.5.1
			Goal 4: Reduce potential for Hazardous Materials spills and other Transportation-related accidents/disasters.			
				Objective 4.1 - Obtain more active enforcement of speed limits on state highways		
		Haz-Mat			Get more law enforcement on the highways	-
				Objective 4.2 - Ensure timely response to hazardous materials events		
		Haz-Mat			Conduct field training and exercises	1.4.4, 7.3.1, 7.3.2
		Haz-Mat			Update Tribal Hazardous Materials Plan (Tribal Fire Dept.)	7.1.2
		Haz-Mat			Continue to secure training and necessary equipment for hazardous materials responders	1.4.4, 7.3.1, 7.3.2
		Haz-Mat			Improve coordination with advanced hazardous materials teams (e.g., from Billings) that need to be called in for hazardous materials events that are beyond the certified capabilities of the local tribal team	1.2.7
				Objective 4.3 - Establish comprehensive tribal traffic regulations for the Reservation		
			Goal 5: Reduce potential for water quality contamination			
		Water Contamination		*Objective 5.1 - Implement recommendations made by the EPA in Sanitary Surveys of public water supplies*		
		Water Contamination		*Objective 5.2 - Continue to address remediation of underground fuel storage tank leaks*		
			Goal 6: Reduce effects of floods			
		Flooding		*Objective 6.1 - Continue to use flood plain maps in siting new development.*		3.2.1
		Flooding		*Objective 6.2 - Build a bridge to access homes on the other side of Rosebud Creek (near Busby)*		3.4.1
			Goal 7: Improve ability to respond to winter storms			
		Severe Weather		*Objective 7.1 - Roads should be cleared of snow (with priority for evacuation routes, main travel routes)*		1.2.7
			Goal 8: Improve ability to respond to drought			
		Drought		*Objective 8.1 - Continue public awareness and water conservation measures*		5.1.3
		Drought		*Objective 8.2 - Institute a grasshopper control program like Big Horn County*		1.2.7
			Goal 9: Plan Administration			
				Objective 9.1 Submit plan to the State of Montana and FEMA for approval.		
				Objective 9.2 Ensure coordination with other planning efforts		
					Incorporate elements of the PDM plan as appropriate into other plans	
					When updating or revising the PDM plan, incorporate elements of other plans as appropriate	1.3.6
2	**2010**	**Rocky Boys Reservation**				
			Goal 1: Reduce Impacts from Flooding			
				Objective 1.1: Maintain Integrity of Roads		
		Flooding			1.1.1 - Install larger culverts on sections of road impacted by flooding	3.4.1
		Flooding			1.1.2 - Perform maintenance (clean out wood debris) on drainage systems below dams	3.4.5
				Objective 1.2: Protect Structures from Flood Damage		
		Flooding			1.2.1 – Implement mitigation options for homes repeatedly flooded	3.1.1
		Flooding			1.2.2 - Install backflow valves at existing and future homes	3.5.4
		Flooding			1.2.3 – Secure propane and/or fuel tanks at homes in flood hazard areas	3.5.4
		Flooding			1.2.6 - Implement structural projects to protect existing and future Tribal infrastructure	3.4.1
				Objective 1.3: Enact Policy Changes to Mitigate Impacts from Flooding		
		Flooding			1.3.1 - Create planning and zoning guidelines for future development in flood hazard areas	1.5.1
		Flooding			1.3.2 - Create floodplain ordinances to guide future development	1.5.1
		Flooding			1.3.3 - Complete floodplain mapping	3.2.1
				Objective 1.4: Enhance Preparedness for Flood Event		
		Flooding			1.4.1 – Identify alternate location of emergency shelter in Box Elder since current shelter (Box Elder School) is located in flood hazard area.	1.2.7
			Goal 2: Prevent Losses from Wildfire			
				Objective 2.1: Improve fire fighting capabilities.		

APPENDIX C-3						
2018 STATE OF MONTANA MHMH UPDATE						
LOCAL MITIGATION PROJECTS AND CONSISTENCY WITH STATE MITIGATION STRATEGY						
DES District	**Plan Year**	**County/Hazard**	**Local Goal**	**Local Objective**	**Local Mitigation Project**	**State Plan Goal/ Objective/Project**
		Wildfire			2.1.3 - Develop additional water storage facilities	1.2.7, 2.2.5
		Wildfire			2.1.4 - Identify appropriate locations for the installation of dry hydrants to provide water for fire fighting	1.2.7, 2.2.5
				Objective 2.2: Minimize Risk of Wildfire at Urban Interface		
		Wildfire			2.2.1 - Create defensible space around structures and promote FIREWISE programs in communities	2.1.2, 2.1.3, 2.3.1, 2.3.2
		Wildfire			2.2.2 - Coordinate with landowners for enhanced grazing around villages to reduce fuels	2.1.2, 2.1.3, 2.2.6
		Wildfire			2.2.3 - Create fire breaks as needed on the reservation	2.2.5, 2.2.6
			Goal 3: Reduce Impacts from Winter Storms			
				Objective 3.1: Maintain Continuity of Infrastructure during Extreme Cold and Winter Storms		
		Severe Weather			3.1.4 - Structurally analyze all public buildings and strengthen as necessary	4.4.3
				Objective 3.2: Enhance Sheltering and Rescue Capabilities during Extreme Cold		
		Severe Weather			3.2.1 – Install markers on fences to determine mileages so peoples residences can be found for rescue purposes	1.2.7
				Objective 3.3: Reduce Effects of Power Outages Associated with Winter Storms		
		Severe Weather			3.3.3 – Install airflow spoilers on power lines	6.3.2
			Goal 4: Prevent Losses from Severe Winds, Hail, and Tornadoes			
				Objective 4.1: Enhance Safety at Public Facilities		
		Severe Weather			4.1.1 - Install safety film for windows at critical facilities to prevent shattering of glass	4.5.3
			Goal 5: Reduce Risk of Losses from Dam Failure			
				Objective 5.2.1: Eliminate Dam Failure Risk		
		Dam Failure			5.2.1 – Remove Agency Dam	10.2.1
			Goal 6: Promote All-Hazard Mitigation Measures			
				Objective 6.1: Enhance Communication Systems		
		All Hazards			6.1.1 – Map areas within the Reservation that do not have radio and cellular communication	1.2.7
		All Hazards			6.1.2 – Obtain repeater that could be used in areas where current communication is poor	1.2.7
					6.1.4 – Obtain cell phone tower for better mobile phone service	1.2.7
				Objective 6.2: Enhance Early Warning Capabilities		
		All Hazards			6.2.4 - Obtain NOAA weather radios for Tribal critical facilities	1.2.5, 6.2.2
		All Hazards			6.2.5 - Recruit new weather spotters	1.2.3, 6.2.3, 6.24
				Objective 6.3: Enhance Emerg Response Capabilities		
		All Hazards			6.3.3 - Develop a centralized incident command center (EOC)	1.2.7
				Objective 6.4: Maintain Continuity of Infrastructure during Disasters		
		All Hazards			6.4.1 – Secure uninterrupted power supply for critical facilities	6.3.1, 6.3.2
		All Hazards			6.4.3 – Secure uninterrupted power supply for water supply wells.	6.3.1, 6.3.2
				Object 6.5: Enhance Awareness on Hazard Risk Reduction and Preparedness		
		All Hazards			6.5.1 – Develop an outreach program on hazard awareness	1.2.1, 1.2.3, 6.2.3, 6.2.4
			Goal 7: Prevent Losses from Landslides			
				Objective 7.1: Protect Structures and Cultural Resources from Slippage		
		Landslides			7.1.1 – Implement preservation/stabilization measures on Camp Crier Hill cultural site.	9.1.1
		Landslides			7.1.2 – Implement preservation/stabilization measures at Wellness Center	9.1.1
		Landslides			7.1.3 – Conduct study of landslide-prone areas across the Reservation	9.3.2

APPENDIX C-4

COMPLETED LOCAL MITIGATION PROJECTS

APPENDIX C-4
2018 STATE OF MONTANA MHMP UPDATE
COMPLETED LOCAL MITIGATION PROJECTS

DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
3	**2017**	**Beaverhead**		
		All Hazard	Beaverhead County has taken an active role in the 15-90 Consortium and Interoperability Montana Project.	County Resources
		All Hazard	Enhanced 911 was implemented in the county and addressing continues.	County Resources
		All Hazard	The City of Dillon became a National Weather Service Storm Ready communit y.	City Resources
		All Hazard	NOAA Weather Radios were promoted in the county. Each school received a radio.	County Resources / School District
		Earthquake	UM-Mathews Hall Seismic Retrofit	FEMA-HMGP (DR-1996); Federal $857,904 / Local $285,968
		Flooding	Blacktail Deer Creek City/County Flood Mitigation Project	FEMA-PDM (2005); Federal $435,000 / Local $160,260
		Flooding	Bridges and culverts at risk from flooding are being upgraded in Dillon.	FEMA-PDM
		Flooding	An automatic stream gauge was installed on Grasshopper Creek.	US BOR/Montana FWP
		Flooding	In 2005, Beaverhead County, in coordination with the three other counties of the Big Hole Watershed, conducted a study called the Big Hole River Inundation Potential Mapping and Channel Migration Zone Deliniation Report.	County Resources
		Flooding	The 3rd Avenue bridge in Lima prone to flood damages is being replaced.	State - TSEP Grant
		Wildfire	A countywide CWPP was completed in 2005. Specific plans for the Wise River area were added by the US Forest Service in 2007.	USFS
		Wildfire	Wildland urban interface plans are being developed.	BLM
		Wildfire	Fuel mitigation work has been done by the BLM	BLM
		Wildfire	A cost share program was made available for fuel reductions by private landowners.	
		Drought	Beaverhead County established a Drought Task Force that meets monthly (ex cept Nov-Feb).	County Resources
5	**2012**	**Big Horn**		
		Drought	Identify options/mechanisms for improving supply.	County Resources
		All Hazards	Qualify the county as a NOAA storm-ready community.	County Resources
		All Hazards	Public education on preparing and responding to disasters.	County Resources
		All Hazards	Regularly release information about disaster warning systems.	County Resources
		All Hazards	Identify mechanism for safety response at major events, like Crow Fair.	County Resources
		All Hazards	Work with school systems on disaster prevention and education projects.	County Resources
		All Hazards	Continue to use and consult other disaster plans and programs in area.	County Resources
		All Hazards	Continue to coordinate with other agencies on rare but potentially catastrophic events (e.g., earthquake, volcanic events, dam failure, etc.).	County Resources
		All Hazards	Public information on importance of NOAA weather radios.	County Resources
		All Hazards	Identify sources of assistance for NOAA weather radio acquisition, as necessary.	County Resources
		All Hazards	Ensure critical facilities have working NOAA radios.	County Resources
		All Hazards	NOAA radio coverage to all Big Horn County communities.	County Resources
		All Hazards	Continue to update emergency resource guide and inventory	County Resources
		All Hazards	Develop an updatable GIS system	County Resources
		All Hazards	Evaluate county evacuation plan and update as necessary	County Resources
		All Hazards	Regularly assess communications capabilities and address needed changes/improvements, as necessary.	County Resources
		All Hazards	Review and update as necessary emergency response procedures for various disasters in public places.	County Resources
		All Hazards	Create Community Emergency Response Teams.	County Resources
		Winter Weather	Identify and publicize snow routes.	County Resources
		Winter Weather	Information to potential and existing homeowners about winter road conditions and other factors that can affect disaster response in winter storm conditions.	County Resources
		Agro-Security	Continue to provide for livestock and animals in emergency response plans	County Resources
		Flooding	Work to complete the FEMA FIRM floodplain maps for the entire county.	DNRC/FEMA
		Flooding	Examine potential impacts of flushing flows to existing and future development along the Big Horn River.	County/Bureau of Reclamation
		Flooding	Identify and implement options to reduce impacts to new and existing development in high hazard flood areas.	County Resources
		Flooding	Identify and address potential impacts of flooding on water supply and waste water systems.	County Resources
		Flooding	Assess and address storm drainage issues in Hardin.	City/County Resources
		Flooding	Assess and address storm drainage issues in Lodge Grass	City/County Resources
		Flooding	Assess and address storm drainage and flood issues along roadways in the county.	FEMA
		Dam Failure	Continue to test emergency response for dam failure.	County Resources

APPENDIX C-4
2018 STATE OF MONTANA MHMP UPDATE
COMPLETED LOCAL MITIGATION PROJECTS

DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
		All Hazards	Identify naturally occurring high hazard areas.	County Resources
		All Hazards	Identify back-up power for critical facilities.	County Resources
		All Hazards	Maintain inventory of portable generators.	County Resources
		Wildfire	Involve public and private (e.g., coal mines, oil and gas) in stakeholder groups and planning for response.	County Resources
		Wildfire	Hold an annual workshop.	County Resources
		Wildfire	Secure adequate public water supplies, including hydrants. Address specific needs of Lodge Grass, Fort Smith, Busby, Muddy Cluster, Rosebud, Eagle Feather, Wyola, Pryor, Crow Agency, St. Xavier.	County Resources
		Wildfire	Equip water supplies with standardized connections.	County Resources
		Wildfire	Provide information on the access requirements for firefighting equipment to homeowners throughout the county.	County Resources
		Wildfire	Encourage homeowners to work with fire departments to provide adequate access.	County Resources
		Wildfire	Annually review equipment and identify gaps.	County Resources
		Wildfire	Continue to work to identify funding sources.	County Resources
		Wildfire	Continue to provide training.	County Resources
		Wildfire	Continue to assure adequate gear and communications upgrades as necessary.	County Resources
		Wildfire	Develop a detailed map of critical infrastructure and other information for firefighting.	County Resources
		Wildfire	Information and education about personal safety in wildfire situation.	State/Federal Agencies
		Wildfire	Make sure steps to report a fire are clear to the public.	County Resources
		Wildfire	Annually provide a workshop for individuals who may find themselves as	County Resources
		Wildfire	Continue to mow and/or plow firebreaks around communities at risk.	County Resources
		Wildfire	Continue to mow along roads.	County Resources
		Wildfire	Assess need for fire breaks around communication facilities and implement as necessary.	County Resources
		Wildfire	Continue to implement actions for Muddy Cluster in the Northern Cheyenne Hazard Mitigation Plan.	Northern Cheyene Tribe/ County
		Wildfire	Continue to implement actions in Crow Fire Management Plan.	Crow Tribe/County
		Wildfire	Address fuel build-up and un-managed fuels in Lodge Grass.	County Resources
		Wildfire	Identify and address hazard areas along the Big Horn River.	County Resources
		Wildfire	Work with landowners and residents in other areas of the county to identify other specific areas of fuel build-up and means to address.	County Resources
		Wildfire	Work with BNSF to mow or reduce fuel-build up with prescribed burns.	County Resources
		Wildfire	Programs for school-age children to prevent fire experimentation and arson.	County Resources
		Wildfire	Education to make properties defensible, and on understanding wildfire, and role of wildfire (or other disturbance) in long-term land health/productivity.	County Resources
		Wildfire	Sponsor community clean up day or other special events.	County Resources
		Wildfire	Review subdivision applications to make sure they meet fire requirements.	County Resources
		Wildfire	Publication informing new and existing residents about wildfire issues and response times.	County Resources
		Wildfire	Continue to work with landowners and others on incident basis to protect sites.	County Resources
2	**2012**	**Blaine**		
		Wildfire	Obtain larger fire response vehicles to accommodate mobile generators.	Grants
		Wildfire	Improve communication amongst volunteer fire fighters.	Northern Tier
		Wildfire	Obtain a temporary water bladder(s) of 5,000 to 10,000 gallons for Turner and Hogeland.	County Resources
		Wildfire	Obtain mobile generators for response vehicles to pump water from hydrants and/or bladders.	Grants
		Wildfire	Reduce number of abandoned wood buildings in towns.	County Resources
		Wildfire	Utilize and enforce Blaine County burning permits. Examine adjacent County's Burning Permits and standardize requirements.	County Resources
		Wildfire	Implement fuel reduction measures along highways, communication sites, around perimeter and within communities by cutting or mowing where feasible.	County Resources
		Wildfire	With cooperators, provide classroom or video fire suppression training for rural area citizens and County employees who will respond to wildland fires.	County Resources
		Flooding	Install culverts on sections of road impacted by flooding.	County Resources
		Flooding	Consider mitigation projects for homes repeatedly flooded in Harlem.	FEMA - HMGP
		All Hazard	Meadowlark Generator	FEMA-HMGP (DR-1996); $32,01
		All Hazard	Harlem School Generator	FEMA-HMGP (DR-1996); $46,043
		All Hazard	Map areas within the county that do not have communications.	Northern Tier

APPENDIX C-4
2018 STATE OF MONTANA MHMP UPDATE
COMPLETED LOCAL MITIGATION PROJECTS

DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
		All Hazard	Obtain mobile generators for emergency shelters.	County Resources
		All Hazard	Obtain satellite phones to enhance communication in southern part of County.	County Resources
3	**2016**	**Broadwater**		
		Wildfire	Tri-County FireSafe Working Group administers a grant program for individual landowners and non-industrial private forest owners to create defensible space projects.	State-DNRC/BLM
		Wildfire	County recently adopted new subdivision regulations. All proposed subdivisions must provide a plan describing compliance with general fire protection, access and evacuation requirements. Subdivisions in high or extreme hazard WUI areas have additional requirements regarding water supply, access, fuel breaks and green belts. Fire Protection Covenants are required stipulating that property owners must maintain fire protection water supplies and fire protection systems (defensible spaces, driveway routes, fuel breaks) in perpetuity.	County Resources
		Haz-Mat	The City of Townsend installed barriers around propane supply tanks to protect them from vehicles.	City Resources
		Flooding	Dry Creek Broadwater County	FEMA-HMGP (DR-4127); Federal $65,475 / Local $21,825
		Flooding	Deep Creek Flood Mitigation Project. The Broadwater County Road Dept has made repairs and upgrades to culverts around the county to mitigate the flood hazard. Between 2010 and 2015, seven new bridges and culverts were installed along Deep Creek (Highway 12) as part of a FEMA flood mitigation grant in 2011.	FEMA-HMGP (DR-1996); Federal $1,331,250 / Local $443,750
		Flooding	DFIRMs were completed for Broadwater County in 2013 and floodplain ordinances are in affect providing the legal authority for enforcement.	FEMA / County Resources
		Flooding	A flood warning system has been implemented for Townsend. An automated gage is in place on the Missouri River at Toston and Reverse-911 is now available in Broadwater County. NOAA radios can also be used to send flood alerts.	City Resources
		Flooding	Flood hazard mapping is available to first responders and homeowners. The 2013 DFIRM maps for the Missouri River are available at the Broadwater County Community Development office and online on the FEMA website.	County Resources
		Flooding	The Montana Ditch crossing was improved to ensure that the Missouri River doesn't flood the City of Townsend at this location.	City Resources
		Severe Weather	Broadwater County and the City of Townsend have implemented systems to notify the community of the severity of storms through Reverse-911, and announcements on a low power FM radio station.	County & City Resources
		Severe Weather	Broadwater County recently adopted new subdivision regulations that require utility lines to be placed underground, where feasible.	County Resources
		Severe Weather	Rural addressing was completed in Broadwater County.	County Resources
		Severe Weather	A memorandum of understanding is now in place between Broadwater County and neighboring counties that establishes a "public health mutual aid" policy.	County Resources / DPHHS Grant
		Earthquake	The Missouri River Bridge north of Townsend was upgraded to meet seismic standards.	State - MDT
		All Hazard	Broadwater County has updated two-way radio communications among public safety agencies.	County Resources
		All Hazard	County prepared for an extended power outage including the following actions: installed backup generator at the County's ECC; encouraged Rural Fire District to acquire portable generator; worked with County maintenance personnel to ensure backup generators at the Sheriff's Office/911 Center/Detention Center and Broadwater Health Center (hospital and nursing home) are tested weekly and adequate fuel supply is maintained throughout the year; encouraged Trailhead Christian Fellowship, the primary ARC shelter site in the County, to look into the purchase and installation of a backup generator.	Homeland Security Grant
5	**2012**	**Carbon**		
		Severe Weather	Assist utilities in snow removal to restore power.	County Resources
		Severe Weather	Support preparation of utility Emergency Restoration plans	Utilities
		Severe Weather	Utilize new communications trailer	County Resources
		Severe Weather	Pursue improved cellular communications in Clarks Fork Valley	Cell Phone Providers
		Severe Weather	Continue to issue storm warnings	County Resources
		Severe Weather	Add a repeater at Bridger	County Resources
		Severe Weather	Distribute winter storm information to new residents	County Resources
		Severe Weather	Publish county snow removal priorities annually	County Resources
		Severe Weather	Assess tree hazards and contract a faller	County Resources
		Severe Weather	Educate the public to report trees down on power lines	County Resources
		Severe Weather	Brochures for building material and practices to avoid wind damage	County Resources
		Severe Weather	Sponsor weather spotter training	County Resources
		Severe Weather	Enforce Red Lodge building codes	County Resources
		Haz-Mat	Obtain hazmat training	County Resources

APPENDIX C-4
2018 STATE OF MONTANA MHMP UPDATE
COMPLETED LOCAL MITIGATION PROJECTS

DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
		Haz-Mat	Review agreements for hazmat response	County Resources
		Haz-Mat	Update/execute new hazmat response agreements as needed	County Resources
		Flooding	Provide information about building in the flood plain	FEMA/County
		Flooding	Maintain sand bag supplies	County Resources
		Flooding	Invite the NWS to make a presentation on flooding	NWS
		Flooding	Maintain network of flood watchers	County Resources
		Flooding	Broadcast weather warnings through dispatch	County Resources
		Flooding	Develop a storm drainage plan for Red Lodge	County Resources
		Flooding	Address drainage problem at Cedarwood Villa Nursing Home	County Resources
		Flooding	Work with FEMA to study floodplain delineations	DNRC/FEMA
		Flooding	Produce maps of revised floodplains as appropriate	DNRC/FEMA
		Dam Failure	Devise warning system for failure of Glacier Lake Dam	County Resources
		Dam Failure	Educate citizens about dam failure warning system	County Resources
		Dam Failure	Devise warning system for failure of Cooney Reservoir	County Resources
		All Hazards	Implement E-911, reverse calling	County Resources
4	**2012**	**Carter**		
		All Hazard	Radios needed for all responders.	Grants
		All Hazard	Additional repeater towers.	Grants
		All Hazard	Install booster repeaters.	Grants
		All Hazard	Provide weather radios.	County Resources
		All Hazard	Use weather radio all hazard alert system.	County Resources
		All Hazard	Educate public on use of weather radio.	County Resources
		All Hazard	Provide training room for First Responders.	County Resources
		All Hazard	Carter County High School Generator	FEMA-HMGP (DR-1996); $35,250
		All Hazard	Carter County Courthouse Generator	FEMA-HMGP (DR-1996); $11,559
		All Hazards	Upgrade water and sewer in Town of Ekalaka.	Grants?
		Wildfire	Provide education on defensible space.	County Resources
		Wildfire	Educate the public of the value of the Fire Mitigation Plan.	County Resources
		Wildfire	Implement the Fire Mitigation Plan.	County Resources
		Severe Weather	Provide education for winter survival.	County Resources
		Severe Weather	Provide education on power outage survival.	County Resources
		Severe Weather	Provide lightning storm education.	County Resources
		Severe Weather	Provide basic weather observation.	County Resources
		Severe Weather	Install sidewalks on east side of Main Street in Ekalaka.	Grants?
		Transp. Accidents	Pave remander of Highway 323.	Grants?
		Transp. Accidents	Develop a plan to improve all roads in County.	County Resources
		Transp. Accidents	Procure more suitable gravel for roads.	County Resources
		Transp. Accidents	Continue efforts to improve all weather travel in County.	County Resources
2	**2017**	**Cascade**		
		Haz-Mat	Cascade County DES is continually updating its resource list of emergency response supplies/vendors.	County Resources
		Wildfire	Fuel mitigation projects have been completed around Gore Hill, Fort Shaw, Monarch, and Neihart.	BLM Community Assistance Fuel Mitigation Program, Secure Rural Schools Title III funds
		Wildfire	USFS undertook a hazardous fuels reduction project for 50 acres in the O'Brien Creek drainage. They also prepared the Little Belt Landscape Assessment which provides an evaluation of the state of forest vegetation and with recommendations on where fuel treatments are needed.	USFS
		Wildfire	County Fire Departments have made visits to private residences in the WUI to raise consciousness on wildfire mitigation and promote participation in landowner defensible space projects.	County Resources
		Wildfire	Television commercials and newspaper articles have been ongoing to recruit volunteer fire fighters.	County Resources
		Wildfire	New 4-WD fire tenders have been obtained by the Sand Coulee, Simms, and Monarch fire departments.	County Resources
		Wildfire	Fire departments receive incident command training to more effectively interface with incident management teams.	County Resources
		Wildfire	A database of firefighting water sources is continually being worked on. The list for Gore Hill has been completed.	County Resources
		Wildfire	County subdivision regulations have been updated and now include water supply requirements.	County Resources
		Severe Weather	Two new schools and several additions have been built to include shatter-proof glass window upgrades.	City Resources
		Severe Weather	Cascade County DES has provided information to the public on the NWS Severe Weather Awareness program.	County Resources
		Severe Weather	The NWS has provided weather spotter training in Cascade County on an annual basis.	NWS, County Resources

APPENDIX C-4
2018 STATE OF MONTANA MHMP UPDATE
COMPLETED LOCAL MITIGATION PROJECTS

DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
		Severe Weather	The City of Great Falls subdivision regulations now require that power lines be buried to minimize interruption of service.	City Resources
		Severe Weather	The City of Great Falls has become a NWS Storm Ready Community.	County Resources
		Severe Weather	Snow removal services have been enhanced in Cascade County to support public safety and infrastructure protection.	County Resources
		Transp. Accidents	Cascade County and the City of Great Falls continue exercises to prepare for mass casualty incidents.	County & City Resources
		Transp. Accidents	Cascade County and the City of Great Falls have an on-going recruitment and training program for EMS volunteers to staff the Quick Response Units.	County & City Resources
		Transp. Accidents	The County Commissioners and Belt Town Council have discussed a strategy to work with the railroad to reconstruct the underpass in Belt to create a wider and straighter alignment and are working with Sweet Grass Development for funding.	County & Town Resources
		Transp. Accidents	Railroad crossing gates in Cascade County have been painted to enhance safety.	County Resources
		Transp. Accidents	Cascade County and the City of Great Falls support MDT's Transportation Safety Program and provide safety information to the public.	State Resources - MDT
		Flooding	Cascade Elevation	FEMA-HMGP (DR-4127); Federal $52,829 / Local $17,610
		Flooding	The levee districts continue operation and maintenance activities to maintain certification of the West Great Falls and Vaughn levees.	County, City, and Private Resources
		Flooding	Brochures are available at the County and City Planning offices to educate homeowners on the NFIP and the advantages of purchasing flood insurance.	County & City Resources
		Flooding	Cascade County and Great Falls are working towards achieving a lower rating through the NFIP CRS. They had their 5-year review in 2016 and a CRS manual is due out in 2017.	County & City Resources
		Flooding	Cascade County provides information to the public on the NWS Flood Awareness Program.	County Resources
		Flooding	The Cascade County and Great Falls Planning offices provide information on their websites and consult with the property owners on flood mitigation techniques to reduce losses.	County & City Resources
		Flooding	Cascade County provides information to residents who live within the inundation areas of the high-hazard dams on evacuation.	County Resources
		Flooding	The West Great Falls Levee District spent $55,000 over three seasons to remove woody debris from the edge of the levee.	Private Resources
		Flooding	The Cascade County Conservation District has removed debris from floodways in the county.	County Resources
		Flooding	West Great Falls Levee District has replaced aging security fencing along the levee and performs regular maintenance to enhance fencing.	Private Resources
		Flooding	The City of Great Falls has constructed an upstream detention and bypass channel to reduce flooding in the Gibson Flats area.	City Resources
		Flooding	Cascade County and the City of Great Falls have installed larger culverts on Briggs Road, Collins Road (2), Fields Road, Gerber Road (2) and on Gibson Flats to enhance drainage and reduce flooding.	County & City Resources
		Flooding	Town of Neihart has worked with the U.S. EPA on five locations where culverts are needed.	Federal-EPA & Town Resources
		Flooding	New DFIRMs were produced for Cascade County and the City of Great Falls in 2013. The maps and floodplain ordinances were adopted by the jurisdictions.	FEMA, County & City Resources
		Flooding	The sewer distribution system in Belt has been rehabilitated by running the line under Belt Creek which will enhance continuity of service during high water.	Town Resources
		All Hazards	City of Great Falls #2 Generator	FEMA-HMGP (DR-1996); $3,996
		All Hazards	Great Falls Fire #3 Generator	FEMA-HMGP (DR-1996); $11,985
		All Hazards	City of Great Falls #4 Generator	FEMA-HMGP (DR-1996); $3,996
		All Hazards	Vaughn Water Back-up Generator	FEMA-HMGP (DR-1996); $29,765
		All Hazards	Additional repeaters have been placed in the Sun River/Simms and Sand Coulee areas and a portable repeater has been obtained for the Neihart area to enhance radio communications.	County Resources
		All Hazards	Locations for emergency shelters have been identified in the City of Great Falls and the balance of Cascade County.	ARC, County & City Resources
		All Hazards	Meetings have been held with the North Central Independent Living Project to identify special needs residents and what they need during emergencies. The City-County Health Department has developed a Plan on this subject.	County & City Resources
		All Hazards	Some progress has been made in providing NOAA weather radios to schools and critical facilities.	County & City Resources
		All Hazards	Protocol has been established and a manual produced on addressing rural locations so people's residences can be found for rescue purposes. Emergency responders routinely identify residences without numbers and the County Public Works Dept. assigns numbers.	County Resources
		All Hazards	Progress has been made in establishing a back-up location for the Dispatch Center. Possible locations have been identified and evaluated.	County & City Resources
		All Hazards	Reverse 911 has been obtained for the county in the form of the Code Red program.	County Resources

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DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
		All Hazards	A new cell tower has been installed in the town of Sun River to enhance communications.	Private Resources
		All Hazards	A generator has been obtained for the County's new Emergency Operations Center (EOC) to ensure continuity of operations.	County Resources
2	**2017**	**Chouteau**		
		Wildfire	Prepare a strategic water source plan & GPS map for the county, which shows the most efficient sources of water needed to support wildland firefighting efforts.	County Resources
		Flooding	Prepare land use maps and flood plain map which will be of aid to future administrators, planners and developers	County Resources
		Flooding	During flooding in Big Sandy and Highwood/Geraldine areas, increasing culvert size, building new bridges and cleaning up dead trees and debris were completed.	County & Town Resources
		Structure Fire	Support the fire mutual aid response system	County Resources
		Communicable Disease	Information of different diseases is posted on social media and in local businesses.	County Resources
		Terrorism	Every year the Sheriff's department has done an active shooter exercise in Big Sandy which helps different responders train, this last year we had one in Fort Benton.	County Resources
		All Hazards	Chouteau County Generator	FEMA-HMGP (DR-1996); $52,500
		All Hazards	Develop mitigation and preparedness data and measures for critical public infrastructure and facilities located in flood hazard areas.	County Resources
		All Hazards	Collect data on critical structures, values and location in one easy to access database to utilize for future planning efforts.	County Resources
		All Hazards	Continue educating and encouraging registration of cells phones to utilize the use of the Emergency Notification Program, to effectively notify Chouteau Co. residents about impending disasters, evacuations, etc.	County Resources
		All Hazards	Maintain the Chouteau Co. LEPC to facilitate implementation, monitoring and evaluation of Chouteau Co. mitigation projects.	County Resources
		All Hazards	Continue developing SOPs & checklists for the operation of the County's EOC	County Resources
		All Hazards	Chouteau Co. and its emergency service agencies train all first responders to the operation level.	County Resources
4	**2017**	**Custer**		
		Wildfire	Fuel treatments have been ongoing for 6-7 years by BLM, Montana DNRC, and landowners to reduce vegetation in rural subdivisions (Pine Hills Ranchettes, Wolf Creek Estates, Moon Creek). Landowners are receiving cost-share grants for some of this work	State-DNRC, BLM, Private Resources
		Wildfire	Rural addressing has been completed which now allows for the coordination with WUI mapping.	County Resources
		Wildfire	County subdivision regulations were updated in 2016 and now include water supply requirements. They also now require a review of new developments by the County Fire Warden.	County Resources
		Wildfire	The 2015 update of the County's Growth Policy now addresses the wildfire hazard.	County Resources
		Wildfire	An engineer has been hired to oversee completion of the County's Capital Improvement Plan which will outline projects to maintain fire apparatus and equipment.	County Resources
		Wildfire	An annual training program has been implemented for firefighters which focuses on structural-wildland fire cross training.	County Resources
		Wildfire	Some progress has been made on an annexation policy for the City of Miles City which addresses wildfire risk and includes develop standards.	County & City Resources
		Wildfire	Custer County continues to sponsor a FireWise community program. Information is provided each year at the County fair about FireWise construction, fire-resistant construction materials, fire-resistant landscaping and vegetation, and the importance of creating defensible space around residences.	County Resources
		Wildfire	Custer County conducts meetings each year with landowners and homeowner associations in rural subdivisions to provide education on defensible space and fire-resistant landscaping and vegetation. Information on cost-share fuel reduction grants are provided.	County Resources
		Wildfire	Most of schools and fire stations have been surrounded by gravel to ensure assets owned by the County have defensible space and are continually maintained.	County Resources
		Wildfire	The County has assisted developers in preparing evacuation plans for new subdivisions located in the WUI.	County Resources
		Severe Weather	Pamphlets on various severe weather preparedness topics are available to the public in a rack on the main level of the Custer County Courthouse.	County Resources
		Severe Weather	Custer County offers weather spotter training annually.	NWS, County Resources
		Flooding	After the 2011 and 2013 flood disasters, public assistance funds were used to repair damaged roads and install culverts to enhance drainage in affected areas around the County.	FEMA & County Resources. See below
		Flooding	Miles City Transfer Switch	FEMA-HMPG (DR-4120); Federal $3,695 / Local $1,232
		Flooding	Wyttenhove Custer County	FEMA-PDM (2013); Federal $227,947 / Local $75,982

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DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
		Flooding	Miles City Floodplain	FEMA-FMA (2013); Federal $21,500 / Local $181,500
		Flooding	Harris Creek Bridge	FEMA-PDM (2009); Federal $139,870 / Local $62,330
		Flooding	Brochures are available at the County and City Planning offices to educate homeowners on the NFIP and the advantages of purchasing flood insurance. Miles City recently passed a FEMA audit and are in good standing with the program.	County & City Resources
		Flooding	The City of Miles City is working towards achieving a lower rating through the NFIP Community Rating System.	City Resources
		Flooding	Funding was identified to complete a Stormwater Master Plan for Miles City.	City Resources
		Flooding	A feasibility report was completed which presented alternatives for upgrading the Miles City levee system. Planning meetings have been conducted with FEMA and the USACE has completed inspections.	City Resources & USACE Section 205 funding
		Flooding	Miles City has access to the majority of their levee system and have attempted to acquire easements to the areas they aren't allowed to access. The City Attorney has drafted these agreements; however, property owners have refused to sign them.	City Resources
		Flooding	MDT has done some work to provide better drainage in the Miles City underpass.	City Resources
		Flooding	The Program for Public Information puts on a Flood Awareness Day annually. Mailings are sent out to residents to increase awareness about what to do during a major flood.	City Resources
		Flooding	Custer County has picked up several land parcels in the floodway at tax sales in the past few years.	County Resources
		Haz-Mat	Custer County sends fire department personnel to a week-long training sponsored by BNSF Railroad each year on how to mitigate a train derailment. In 2012, the County participated in an exercise involving a train derailment with tankers from the Bakken oil field.	County & Private Resources
		Haz-Mat	The County Emergency Operations Plan is continually updated including a contingency plan for a railroad incident in downtown Miles City.	County & City Resources
		Haz-Mat	A functional tabletop was conducted in 2016 between Holy Rosary Hospital, the City-County Health Dept. and DES involving a haz-mat scenario and decontamination.	County, City & Private Resources
		All Hazard	Miles City ARC GIS Software	FEMA-HMGP (DR-1996); $15,925
		All Hazard	Miles City Lift Station Generators	FEMA-HMGP (DR-1996); $43,980
		All Hazard	Custer County has implemented an emergency alert Nexell (E-911) system which pushes out alerts to landlines, cell phones and emails.	County Resources
		All Hazard	Custer County has updated their inventory of communication resources.	County Resources
6	**2016**	**Daniels**		
		Severe Weather	Local radio station notifies public of weather alerts.	County Resources
		Severe Weather	NOAA weather radios were purchased for courthouse and hospital.	County Resources
		Severe Weather	Public has has several opportunities to purchase NOAA radios at a discount.	County Resources
		Severe Weather	Utility providers have been upgrading the electrial infrastrucure.	Private Resources
		Severe Weather	The landfill now has enough space for debris.	County Resources
		Severe Weather	Tornado siren is tested weekly.	County Resources
		Drought	Dry Prairie Water District has begun developing plans for alternative water supplies.	Private Resources
		Wildfire	Rural fire departments use map of dams developed by DNRC as potential water sources to fight fires.	County Resources
		Wildfire	Reflective fire resistant road signage has occurred along numbered highways.	County Resources
		Wildfire	Many old abandoned buildings have been removed in Scobey.	City Resources
		Wildfire	The City has an active program to reduce vegetative overgrowth in the city limits.	City Resources
		Wildfire	Haying is taking place on CRP land.	Private Resources
		Wildfire	Some fire breaks have been constructued on CRP land.	Private Resources
		Communicable Disease	Health Dept. has a well-developed program to provide public and professional education..	County Resources
		Communicable Disease	Health Dept. has an active communicable disease surveillance program to reduce impacts of outbreaks in the communities.	County Resources
		Flooding	Fifty percent of the roads, bridges, and culverts have been upgraded to support flood volumes.	County Resources
		Flooding	Poplar River floodplain has been mapped.	FEMA
		Flooding	Flood insurance is now available for purchase in Daniels County	FEMA & County Resources
		Dam Failure	Canadian Power Company has completed improvements on dam, developed notification system, and provided inundation map.	Private Resources
		Haz-Mat	Anhydrous ammonia tank and fertilizer plans adjacent to Scoby have been relocated and tank and truck protection is underway.	City Resources
		All Hazards	Daniels Memorial Hospital Switch	FEMA-HMGP (DR-1996); $7,462
		All Hazards	Fire Dept. has an education program targeting school aged children.	County & City Resources
4	**2014**	**Dawson**		

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DES District	**Plan Year**	**County/Hazard**	**Completed Local Mitigation Projects**	**Funding Source**
		Flooding	Flash flood reminders in media.	County Resources
		Haz-Mat	Haz-mat training for first responders	County Resources
		Severe Weather	Education and shelter-in-place brochures	County Resources
		Severe Weather	Provide information on winter storms	State (MDT)
		Severe Weather	Winter safety/survival workshops	County Resources
		Severe Weather	Improve weather information	County Resources
		Severe Weather	NOAA weather radios in some critical buildings	County Resources
		All Hazards	Educate residents about what to do during a hazard event	County Resources
		Wildfire	Maintain wildfire preparedness	County Resources
		Drought	Training on drought management options.	State (MSU Extension)
1	**2013**	**Anaconda-Deer Lodge**		
		Wildfire	A countywide Community Wildfire Protection Plan was completed in September 2005.	BLM Funding
		Wildfire	Logging is ongoing due to the mountain pine beetle problem.	Forest Service
		Earthquake	Montana State Hospital considered earthquake resistance when doing recent renovations.	State Resources
		Flooding	ARCO has mapped the storm drains in the county.	ARCO
		Haz-Mat	Research has been done on a back exit for the Montana State Hospital, but no obvious solutions exist.	State Resources
		All Hazards	GIS data has improved significantly since 2005 and was used in this plan update.	ARCO/County Resources
		All Hazards	All street trees have been mapped and many tree hazards have been identified.	County Resources
		All Hazards	The ADLC Maintenance Department has started a bridge inventory and identifying bridges that are deficient.	County Resources
		All Hazards	New septic permits are being entered into GIS.	County Resources
		All Hazards	Generators have been purchased for several critical facilities.	County Resources
		All Hazards	NOAA Weather Radios have been placed in all schools and some critical	County Resources
4	**2012**	**Fallon**		
		Flooding	Enforce floodplain regulations.	County Resources
		Flooding	Floodplain information to the public.	County Resources
		Flooding	Develop floodplain policy.	County Resources
		Flooding	Replace City Shop bridge.	City Resources/Grant?
		Flooding	Coordinate Highway 7 drainage project.	County Resources
		Dam Failure	Develop Baker Lake spillway Maintenance Plan.	County Resources
		Severe Weather	Fallon County Weather Radios	FEMA-HMGP (DR-4275); Federal $9,674 / Local $3,225
		Severe Weather	Education about severe weather.	County Resources
		Severe Weather	Obtain better weather coverage.	County Resources
		All Hazards	Install siren in Plevna.	County Resources
		All Hazards	Install additional sirens in Baker.	County Resources
		All Hazards	Purchase additional weather radios.	County Resources
		All Hazards	Back-up power for Plevna.	County Resources
		All Hazards	All hazards training facility.	County Resources
		Drought	Monitor drought conditions.	County Resources
		Wildfire	Coordination with oil companies.	County Resources
		Wildfire	Additional monitor guns.	City Resources
		Wildfire	Switch to DNRC standards.	County Resources
		Wildfire	SCBA training and discipline.	County Resources
		Wildfire	Implement E-911 reverse call-up.	County Resources
		Wildfire	Annual recritment plan.	County Resources
		Wildfire	Firefighter recognition.	County Resources
		Wildfire	Increase water storage.	County Resources
		Wildfire	Install dry hydrants.	County Resources
		Wildfire	Maintain remote water.	County Resources
		Wildfire	Locate and construct Baker Fire Hall.	City Resources/Grant
		Wildfire	Fire danger signs.	County Resources
		Wildfire	Recharage fire extinguishers/education.	County Resources
		Wildfire	Assign reporting responsibility.	County Resources
		Wildfire	Analyze data.	County Resources
		Wildfire	Develop GIS capability.	County Resources
		Wildfire	Obtain handheld GPS units.	County Resources
		Wildfire	Navigation systems for ambulances	County Resources
6	**2014**	**Fergus**		

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DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
		Flooding	Fergus County Acquisitions	FEMA-HMGP (DR-4127); Federal $120,821 / Local $30,418
		Flooding	Identify and remove surface water drainage obstructions through the county.	County Resources
		Flooding	Enhance GIS flood data in the County	County Resources
		Wildfire	Update subdivision regulations for wildfire considerations.	County Resources
		Wildfire	Conduct wildfire home site evaluations and education.	County Resources
		Wildfire	Support federal and state land management practices	County Resources
		Wildfire	Roadside fuels management at Maiden and Crystal Lake (in progress)	County Resources
		Wildfire	Snowy Mountain Development - Landowner Fuel Mitigation	FEMA-HMGP (DR-1996); $236,016
		SevereWeather	Improve weather information.	NWS
		Communicable Disease	Develop policies for closing schools to prevent disease spread.	City & County Resources
		All Hazards	Fergus County Generator	FEMA-HMGP (DR-1996); $5,210
		All Hazards	Encourage interaction with Malmstrom Air Force Base.	City & County Resources
		All Hazards	Develop countywide growth policy that addresses hazard areas.	County Resources
		All Hazards	Update Lewistown building codes for all-hazard resilience.	City resources
1	**2014**	**Flathead**		
		Wildfire	Require new subdivisions to have adequate on-site water capacity and recharge for fire protection.	County Resources
		Wildfire	Support mutual aid agreements between rural and municipal fire districts.	County Resources
		Wildfire	Develop water storage capacity and identify water supply sites to enhance fire-fighting capability.	County Resources
		Earthquake	Perform mapping of earthquake risk zones and faults at a local government scale.	County Resources
		Flooding	Whitefish Stage Road	FEMA HMGP (DR-1996); Federal $298,000 / Local $99,333
		Flooding	New driveway/private road bridge and culvert guidelines.	County Resources
		Flooding	Discourage (regulate/restrict) high density development within the 100-year floodplain.	County Resources
		Flooding	Mapping of burn areas to be provided to NWS.	County Resources
		Severe Weather	Develop and maintain early warning systems.	County Resources
		All Hazards	Kalispell Water System Generator	FEMA HMGP (DR-1996); $72,000
		All Hazards	Columbia Falls Generator	FEMA HMGP (DR-1996); $82,004
		All Hazards	Green Tree Meadows Generator	FEMA HMGP (DR-1996); $33,788
		All Hazards	Use enhanced 911 inventories to identify residences and critical infrastructure.	County Resources
3	**2012**	**Gallatin**		
		Dam Failure	Early warning on Hyalite Dam	County Resources
		Earthquake	MSU Creative Arts Center Seismic Retrofit	FEMA-PDM (2012); Federal $2,240,759 / State $746,921
		Earthquake	Anchor transformers and generators.	County Resources
		Earthquake	Earthquake retrofit education.	County Resources
		Flooding	Flood insurance education.	County Resources
		All Hazards	Belgrade Generator	FEMA HMGP (DR-1996); $28,079
		All Hazards	West Yellowstone Generator	FEMA HMGP (DR-1996); $18,987
		All Hazards	Gallatin County Courthouse Generator	FEMA HMGP (DR-1996); $22,500
		All Hazards	Critical infrastructure backup system/generators for critical facilities.	County Resources/HMGP
		All Hazards	NWS Storm Ready Community	County Resources
		All Hazards	Emergency Alert System Plan.	County Resources
		All Hazards	NOAA weather radios in critical facilities, West	County Resources.
4	**2014**	**Garfield**		
		Severe Weather	Increase usage of NOAA Weather Radios in County	County Resources
		All Hazards	Adopt a county-wide growth policy that addresses hazards and encourages growth in low hazard areas.	County Resources
		All Hazards	Require subdivisions to meet minimum requirements for disaster resistance.	County Resources
		All Hazards	Acquire a generator for the courthouse and health center.	?
		Flooding	Jordon now participates in NFIP	City Resources
		Flooding	Mitigate road and culvert damage during flood events	County Resources
		Wildfire	Create and maintain fuel breaks in wildfire hazard areas.	County Resources
		Wildfire	Educate homeowners about defensible space best practices.	County Resources
		Haz-Mat	Survey number and types of materials passing through the County	?
2	**2011**	**Glacier**		
		All Hazards	Review of existing laws, building codes and/or land development ordinances to determine if new legislation or amendments were needed.	County Resources

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DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
		All Hazards	Development of the Glacier County Growth Policy and new land use policies.	County Resources
		All Hazards	Promote development of family disaster plans.	County Resources
		All Hazards	Promote preparing disaster supply kits.	County Resources
		All Hazards	Town of Browning Generator	FEMA-HMGP (DR-1996); $17,258
		Severe Weather	Conduct educational awareness on severe weather.	County Resources
		Severe Weather	Obtain NOAA weather radios for critical facilities.	County Resources
		Flooding	Promote participation in the NFIP.	County Resources
		Flooding	Install culverts in locations prone to flooding.	County Resources
		Flooding	Install culverts in locations prone to flooding.	County Resources
		Wildfire	Promote FireWise principles.	County Resources
		Wildfire	Assist the public in creating defensible space around their structures and dwellings.	National Fire Plan Grants
5	**2007**	**Golden Valley**		
			Completed mitigation project not identified.	
1	**2013**	**Granite**		
		Flooding	Travelers Home	FEMA-HMGP (DR-1996); Federal $121,320 / Local $40,440
		All Hazards	Granite County Medical Center Generator	FEMA-HMGP (DR-1996); $105,000
		Wildfire	Residential wildfire assessments are ongoing through three different fire departments in Granite County. Over 300 residential wildfire assessments have been conducted.	Grants
		Wildfire	The US Forest Service has conducted several fuel reduction projects in the Georgetown Lake area.	US Forest Service
		Wildfire	Fuel reductions were conducted in the area of the Lolo National Forest Rock Creek Ranger Station and are ongoing.	US Forest Service
		Wildfire	The Missoula Field Office of the Bureau of Land Management has conducted vegetation projects, such as fuels reduction, prescribed burns, and timber sales, on about 2,500 acres since 2005.	BLM
		Wildfire	A countywide Community Wildfire Protection Plan was completed in November 2005.	BLM
		Wildfire	Wildfire improvements to the Granite County Subdivision Regulations were made in 2006.	County Resources
		Wildfire	The Georgetown Lake Fire Service Area Fire Protection Standards adopted in January 2007 provide additional standards for the area, specific to fire protection.	County Resources
		Flooding	A security and notification system was installed on Flint Creek Dam.	Dam Owner
		Flooding	Rip rap was placed along Rock Creek. Through public-private partnerships, the rip rap areas were re-vegetated in 2012.	Public-private partnerships
		All Hazards	GIS data has improved significantly since 2005.	County Resources
		All Hazards	New septic permits are being entered into GIS.	County Resources
		All Hazards	A Reverse 911 system has been put in place through Granite County 911.	County Resources
		All Hazards	Some school risk assessments and response plans have been developed; others are in the process.	County Resources
2	**2012**	**Hill**		
		Wildfire	Utilize and enforce Hill County Burning Permit requirements. Compare and review neighboring county burn permits for selection of standardized burn permits.	County Resources
		Wildfire	Locate and identify roads that have wooden bridges within the County. Plan protection measures and alternate routes in the event of a wildfire compromising or burning these bridges.	County Resources
		Wildfire	Utilize standard fire protection guidelines for residential development in the WUI as identified in NFPA 1144 Standard for Protection.	County Resources
		Wildfire	Update and replace FM radios for Fire Departments.	Grant
		Wildfire	Continue grazing in sustainable areas with wild and domestic ungulates to reduce fuel loading and decrease potential wildfire intensity.	County Resources
		Structure Fire	Update Volunteer Fire Department PPE (turnouts) and obtain SCBA's.	Title 10 Grants
		Wildfire	Develop GPS database of water sources for distribution and inclusion in County and municipality fire apparatus.	County Resources
		Wildfire	Implement fuel reduction measures along highways, at communication sites, and on the perimeter and within communities by cutting or mowing where feasible.	County Resources
		Wildfire	With cooperators, provide classroom or video fire suppression training for rural area citizens and County employees who will respond to wildland fires.	County Resources
		Wildfire	Utilize County and cooperators expertise for GPS training. Provide incentive for fire fighters and emergency services personnel to attend this training.	County Resources
		Wildfire	Construct fast fill water station north of Kremlin to reduce distance trucks have to travel to fill during fires.	County Resources
		Flooding	Replace culverts with bridges to mitigate impacts from spring runoff.	County Resources
		Dam Failure	Investigate ways to mitigate spring leak at Beaver Creek Dam.	County Resources

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DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
		Severe Weather	Designate emergency shelters and increase public awareness on shelters.	Salvation Army
		Severe Weather	Upgrade sirens in Havre and Hingham.	County Resources
		All Hazards	Havre High School Generator	FEMA-HMGP (DR-1996); $16,650
		All Hazards	Coordinate with State Regional DES and Federal partners for scheduling and attendance at Incident Command System (ICS) 100/200 and/or IS 700 or State of Montana DES training.	County Resources
		All Hazards	Obtain portable repeaters to use during emergencies.	County Resources
3	**2017**	**Jefferson**		
		Wildfire	Fuel mitigation in the WUI on evacuation routes and initial attack roads in the Upper Jackson Creek area by the BLM, the McClellan/Upper Warm Springs area by the USFS, and from Jefferson City two miles north.	USFS, BLM
		Wildfire	Grants and cost-share supported a number of landowner projects to create survivable space around their residences.	TCFSWG, NRCS, BLM.
		Wildfire	Fuel mitigation has been completed around the communities of Clancy, Montana City and Jefferson City.	County & Private Resources, Grants
		Wildfire	Fuel mitigation projects in the Brooklyn Bridge area south of Unionville, Clancy-Unionville, Park Lake, Clancy and MT City.	USFS
		Wildfire	Education provided to landowners on wildfire mitigation around homes and evacuation routes including TV commercials, radio PSAs, newspaper ads and workshops. Open house held at MT City VFD on 9/10/2016 and *Living with Fire and Evacuation* pamphlets distributed.	TCFSWG
		Wildfire	DNRC has pre-identified water supplies for fire fighters and the Jefferson County fire depts. have put in dry hydrants.	State Resources - DNRC
		Wildfire	Updated fuel mapping was completed for the 2015 update to the Tri-Co Regional CWPP.	TCFSWG
		Wildfire	Fire Council purchased banners to advertise that volunteers are needed.	County Resources
		Haz-Mat	Annual haz-mat training provided to VFDs, County Solid Waste, Public Health, Sheriff, Ambulance, and Road Departments and to Boulder Police.	County Resources
		Haz-Mat	Alternate route established for cyanide trucks going to Golden Sunlight Mine to stay on highways instead of going through Whitehall.	County, Town & Private Resources
		Flooding	Floodplain maps from the 1984 Big Pipestone Creek Flood Study have been digitized and are now used in planning.	County Resources
		Flooding	South of Boulder, Highway 69 was elevated and new bridges and culverts installed to improve drainage.	State (MDT), County Resources
		Flooding	Culverts were replaced on Clancy Creek above the school.	County Resources
		Flooding	Cataract Creek bridge was replaced in 2015.	County Resources
		Flooding	Wastewater plant in Boulder upgraded and lagoons in floodplain abandoned.	City Resources
		Flooding	Metal bridge that was slipping into river west of Boulder was removed.	County Resources
		Flooding	Whitehall removed beaver dams on Pipestone Creek twice in 2016.	City Resources
		Flooding	In 2014, debris was removed on Prickly Pear Creek by Clancy Fire Hall.	County Resources
		Flooding	Jefferson County hired a consultant to work with irrigators to determine feasibility of projects to mitigate flooding in Whitehall area. Several projects have been implemented, including: bridge replaced culvert on Kountz Rd.; railroad lowered siding and added culverts through the dike to accommodate a 10-year event; and, Jefferson River Water Council met with MDTabout constructing an emergency channel for Big Pipestone Creek south of Whitehall.	Jefferson River Water Council, MDT, Railroad, County Resources
		Earthquake	Jefferson County participated in the Great Montana Shakeout for the past two years. County personnel and the schools were involved in the exercise.	County Resources
		Earthquake	County's Safety Coordinator reviewed county facilities for non-structural mitigation projects. All recommended changes were implemented.	County Resources
		Terrorism	Sheriff's office has conducted armed intruder training with schools and teachers in Montana City, Boulder, Cardwell and Clancy.	County Resources
		All Hazards	Self-start generators have been purchased for the FM radion antennas.	County Resources
		All Hazards	The list of emergency shelters has been updated.	County Resources
6	**2013**	**Judith Basin**		
		Wildfire	Enhance radio availability in each fire district, link into existing dispatch, and improve range within the regions, update to new digital narrow band frequency adopted by federal and state agencies.	County Resources
		Wildfire	Acquire equipment needed for wildland and structure firefighting including a larger fire tender for Geyser VFD.	County Resources
		Wildfire	Perform facility improvements, heating, storage, and maintenance including construction of an Essential Services building in Geyser for water tenders.	County Resources
		Wildfire	Enhance incident command system/NIMS compliance.	County Resources
		Wildfire	Implement a County-wide Communications Plan.	County Resources
		Transp. Accidents	Install a railroad crossing gate and lights at the Geyser intersection.	Railroad
		Haz-Mat	Improve mapping of hazardous materials fixed site locations and common transportation routes.	County Resources
		All Hazards	Implement E911 reverse notification system.	County Resources

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COMPLETED LOCAL MITIGATION PROJECTS

DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
		All Hazards	Obtain road signage for rural addressing system.	County Resources
1	**2012**	**Lake**		
		Severe Weather	Buy weather radios for various critical facilities.	State Program
		Severe Weather	Provide public broadcasting station with information on dangers or critical information.	Emergency Alert System
		All Hazards	St. Luke Healthcare Generator	FEMA-HMGP (DR-1996); $13,061
		Communicable Disease	Investigate mitigation options for West Nile Virus.	County Resources
		Flooding	GPS all homes along waterways.	County Resources
		Flooding	Educate homeowners on flood concerns.	County Resources
		Flooding	Publish and distribute floodplain maps to homeowners.	County Resources
		Wildfire	Provide additional training to firefighters.	County Resources
		Wildfire	Provide wildfire mitigation information to urban interface landowners.	County Resources
3	**2017**	**Lewis & Clark**		
		Wildfire	Helena South Hills Fuel Reduction 2007	FEMA-PDM (2008); Federal $102,956/ Local $34,319
		Wildfire	City of Helena Tenmile Creek Water Supply Fuel Reduction Project	FEMA-PDM (2008); Federal $312,831/ Local $104,277
		Wildfire	City of Helena Open Lands Fuel Reduction	FEMA-PDM (2008); Federal $308,998/ Local $103,002
		Wildfire	South Hills Fuel Reduction (2009)	FEMA-HMGP (DR-1767); Federal $235,477/ Local $78,519
		Wildfire	Ten Mile Fuel Reduction	FEMA-HMGP (DR-1996); Federal $387,750 / Local $129,250
		Wildfire	Grants and cost-share supported a number of landowner projects to create survivable space around their residences.	NRCS, BLM, TCFSWG, Blackfoot Challenge
		Wildfire	MDT completed fuel reduction along evacuation routes including Unionville Rd, Rimini Rd, MacDonald Pass, and a portion of Jimtown Road.	State Resources - MDT
		Wildfire	NorthWestern Energy performed fuel reduction along utility corridors on Fletcher Pass, MacDonald Pass, and the west side of Davis/Dry Gulch.	Utility - NW Energy
		Wildfire	BLM completed fuel reduction along utility corridors along Belmont and Ottawa Gulch in the Marysville Area and along Hauser Lake Road.	BLM
		Wildfire	USFS is doing a large fuel mitigation project on Stonewall Mountain which will provide protection to areas north and west of Lincoln.	USFS
		Wildfire	The City of Helena and TCFSWG recently received a 360 grant which ensures there will be no gaps in fuel treatment (working with adjoining counties) and includes maintenance of past fuel mitigation areas.	DNRC-360 Grant
		Wildfire	TCFSWG meets monthly to encourage fuel mitigation projects by other land management and fire protection entities. Projects involving interagency collaboration have included the USFS Two Chiefs-Tenmile Fuel Reduction Initiative and Tenmile Helena South.	USFS, BLM, TCFSWG
		Wildfire	TCFSWG has provided education to landowners on wildfire mitigation around homes and evacuation routes including TV commercials, radio PSAs, newspaper ads and workshops. Outreach was conducted at the Watershed Festival and Disaster Preparedness Expo at Women's Park in Helena (July, 2016) where copies of the *Living with Fire and Evacuation* booklets were distributed.	TCFSWG
		Flooding	Trap Club Detention Pond	FEMA-HMGP (DR-1996); Federal $518,669 / Local $172,890
		Flooding	Lewis and Clark County, Helena, and East Helena continue to promote participation in the NFIP. Brochures are available at City and County Planning Depts.	City & County Resources
		Flooding	In 2012, FEMA completed a new floodplain study for Lewis and Clark County, Helena and East Helena and new DFIRMs were adopted. The County used the State's model floodplain ordinance to revise county flood ordinance and held public hears to provide education to the communities on building in the floodplain. Setback requirements were also added to the City of Helena's subdivision regulations.	FEMA, County & City Resources
		Flooding	County completed improvements to flood flows along Forestvale Road from McHugh Drive to Montana Ave. including expanding ditch capacity and installing larger culverts to convey flood waters.	County Resources
		Flooding	County is in ongoing meetings with the Helena Valley Flood Committee to pursue new projects and solutions to flood impacts throughout the valley.	County Resources
		Flooding	County is in the process of creating a special flood district to fund improvements to mitigate flood impacts throughout the valley.	County Resources
		Flooding	County secured Federal Highway Administration funding to rebuild Rimini Road from Highway 12 to the town of Rimini. The work included the replacement of three bridges that more naturally convey flows from Tenmile Creek.	Federal-DOT

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		Flooding	In February 2016, County signed off on an agreement with the Helena Gun Club to help divert spring flood water. The county spent two years negotiating the 20-year agreement that calls for a single $95,800 payment to the gun club for use of its land to detain flood water. Flood water would be pumped from the gun club's land into the ditch along Montana Ave. in the evenings to help keep the water moving out of the Helena Valley. The ability to use Forestvale Cemetery property for flood mitigation is another key component of the county's flood planning.	FEMA-PDM
		Flooding	Flood mitigation was completed at the smelter area in East Helena.	City Resources
		Flooding	In 2011, a channel migration study was completed on Prickly Pear Creek.	Conservation District
		Flooding	A stormwater upgrade project is planned for Front Street and W. Main in Helena to improve drainage.	City Resources
		Flooding	The Eastgate subdivision on Lake Helena Drive completed a stormwater project which eliminated a flooding problem.	County Resources
		Flooding	Culverts were installed at Fort Harrison to improve drainage on Williams Street and the Williams Street bridge over Tenmile Creek now has a stream gauge.	County Resources
		Flooding	New bridges have been installed on Stemple Pass Road and Poorman Creek to allow greater capacity for flood flows.	County Resources
		Earthquake	Montana Law Enforcement Academy Non-Structural	FEMA-HMGP (DR-1996); Federal $94,209 / Local $31,403
		Earthquake	City of Helena Seismic Shutoff Values	FEMA-HMGP (DR-1996); Federal $334,800 / Local $111,600
		Earthquake	County participates in and promotes earthquake drills including the Great Montana Shakeout each October. The Helena school system has participated in the Shakeout for the past several years.	County & City Resources
		Earthquake	The City of Helena installed seismic shut-off valves on the water system.	FEMA-PDM
		Earthquake	The I-15 bridges in Helena are currently being upgraded to meet seismic standards.	State Resources - MDT
		Earthquake	Placer Hotel in Helena is removing/replacing cornices which could fall off and cause injuries during a seismic event.	Private
		Earthquake	The I-15 rock fall mitigation project north of Helena will reduce risk of rock fall from seismic shaking.	State Resources - MDT
		Earthquake	An ordinance is now in place that requires water heaters to be tied down in the City of Helena. County facilities are inspected to ensure there is no illegal stacking.	County & City Resources
		Earthquake	Film was added to strengthen windows in Helena schools as part of Project Impact.	FEMA-Project Impact
		Earthquake	Public education on earthquake safety continues to be provided by DES including presentations and interviews with the media.	County Resources
		Severe Weather	DES continues to run PSAs during March and posts information on Facebook page to educate the public on severe weather hazards.	County Resources
		Severe Weather	Rural fire depts. encourage homeowners to install address plaques at proper heights for rescue purposes by putting this in their newsletter sent to homeowners twice a year.	County Resources
		Severe Weather	The aerial powerline along Jimtown Road was buried to improve reliability.	Utility - NW Energy
		Haz-Mat	County DES conducts outreach at the schools and others on shelter in place so individuals near hazardous material facilities and transportation routes know how to limit exposure during a hazardous material incident.	County Resources
		Dam Failure	Wolf Creek acquired a dam failure siren. Signage is provided at fishing access sites on what the sirens mean.	County Resources
		All Hazards	Generators have been obtained for the following critical infrastructure; Wolf Creek VFD (2), West Valley VFD (2), Lincoln VFD (1), Tri-Lakes VFD (3), Wolf Creek Wastewater plant, Augusta Senior Center, and the Lewis and Clark County Fairgrounds.	FEMA & County Resources (see below)
		All Hazards	West Valley Fire Dept. Generator	FEMA-HMGP (DR-1996); $56,383
		All Hazards	Helena College of Technologies Generator	FEMA-HMGP (DR-1996); $125,674
2	**2013**	**Liberty**		
		Severe Weather	Siren in Chester was repaired.	Town Resources
		All Hazards	County has implemented E-911 system.	County Resources
		Severe Weather	Weather radios were purchased for emergency responders.	County Resources
		All Hazards	Public education was provided on what to do in case of disaster including shelter-in-place and evacuation.	County Resources
		All Hazards	County has developed evacuation scenarios as part of their EOP revision.	County Resources
		All Hazards	Emergency shelters were identified in cooperation with ARC and formal agreements with facilities were established.	ARC & County Resources
		Flooding	Constructed a low water crossing	County Resources
		Drought	Water system for Chester area is being developed in conjunction with North Central and Rocky Boys water project.	Private Resources
		Wildfire	CWPP updated.	County Resources
1	**2011**	**Lincoln**		
		Wildfire	Instituting fuel control activities, such as thinning and fire breaks, particularly near more highly populated areas.	County/State/ USFS Resources - National Fire Plan Grants
		Wildfire	Supporting alternative methods to burning when reducing fuel hazards.	County Resources

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DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
		Wildfire	Educating landowners about alternatives to burning slash.	County Resources
		Wildfire	Promoting "fire wise" education efforts in communities and schools.	County Resources
		Wildfire	Developing water storage capacity and water supply sites to enhance fire-fighting capability.	County/State/ USFS Resources
		Wildfire	Improving fire agency infrastructure (training facility, additional fire suppression equipment and storage, enhanced communications systems).	County Resources
		Wildfire	Providing for a shared database between fire suppression agencies on road closures, water sources, fuel ratings, district boundaries, ignition hazards and railroads.	County Resources
		Flooding	Obtaining and disseminating revised floodplain maps to increase knowledge of flood prone areas.	County Resources
		Flooding	Evaluating bridges and culverts at risk from flooding and developing a schedule and funding to replace or upgrade as necessary.	County Resources
		Flooding	Improving roads and road drainage to withstand flood flows in selected areas.	County Resources
		Haz-Mat	Improving training for first responders.	County Resources
		Haz-Mat	Improving emergency communications network throughout the county.	County Resources
		All Hazards	Upper Yaak Generator	FEMA-HMGP (DR-1996); $11,976
		All Hazards	Bull Lake Generator	FEMA-HMGP (DR-1996); $11,976
		All Hazards	West Kootenai Generator	FEMA-HMGP (DR-1996); $11,976
		All Hazards	Cabinet View Generator	FEMA-HMGP (DR-1996); $11,976
		All Hazards	Fisher River Generator	FEMA-HMGP (DR-1996); $11,976
4	**2014**	**McCone**		
		Flooding	Examine county participation in NFIP (partially complete)	FEMA & County Resources
		Dam Failure	Identify alert procedure for Fort Peck Dam failure and identify any potential improvements	County Resources
		Flooding	Assess road capacity to handle flood events and mitigate as necessary	County Resources
		Drought	Encourage producers to continue to use and expand methods to minimize moisture loss (in progress)	County Resources
		Drought	Water conservation education (in progress).	County Resources
		All Hazards	Provide public education on how to prepare for various types of disasters.	County Resources
		Haz-Mat	Acquire haz-mat spill kits and continue to ensure staff training in use of the kits (in progress).	County Resources
		Severe Weather	Provide public education on power outage preparedness (in progress).	County Resources
		Communicable Disease	Assess need for and extent of a mosquito control district.	County Resources
3	**2017**	**Madison**		
		All Hazards	DES position was upgraded to a full-time position.	County/FEMA-EMPG funding
		All Hazards	Public education is regularly conducted through the county website and the weekly FireLine section in The Madisonian.	County Resources
		All Hazards	Melrose Sewer District Generator	FEMA-HMGP (DR-1996); $29,843
		Earthquake	Response procedures were outlined in the Disaster and Emergency Plan, Earthquake Annex, including self-mobilization.	Homeland Security/Counthy Resources
		Haz-Mat	A Reverse-911 early warning system was purchased and implemented.	County Resources
		Haz-Mat	Hospital staff were trained in reading hazaroud material placards.	Hospital Resources
		Communicable Disease	County hired a full-time Public Health Department Administrator.	County Resources
		Communicable Disease	County Public Health developed a database of providers with the ability to track weekly reports.	County Resources
		Communicable Disease	County Public Health has a fully functional Health Alert Network.	County Resources
		Communicable Disease	County Public Health developed MOUs with healthcare providers and institutions.	County Resources
		Severe Weather	Phone trees were created for severe weather.	County Resources
		Severe Weather	Emergency dispatch now broadcasts severe weather warnings to emergency responders.	County Resources
		Severe Weather	A new emergency website was established.	County Resources
		Flooding	Sheridan Board	FEMA-HMGP (DR-4127); Federal $13,070 / Local $4,357
		Flooding	Kearny Lane Bridge	FEMA-HMGP (DR-1996); Federal $57,000 / Local $19,000
		Flooding	Moores Creek	FEMA-HMGP (DR-1996); Federal $748,224 / Local $249,408
		Flooding	In 2005, the Big Hole Planning Group (a 4 county group) developed 100-year flood inundation potential mapping and channel migration zone delineation for the Big Hole River.	Big Hole Planning Group
		Wildfire	Madison County Mammoth Area Fuels Reduction	FEMA-HMGP (DR-4275); : Federal $120,257 / Local $40,086
		Wildfire	Work was done with the ranchlands group regarding living with wildfire.	County Resources
		Wildfire	The U.S. Forest Service has done numerous fuels reduction and mitigaiton projects for wildfire.	National Fire Plan
1	**2012**	**Mineral**		
		Wildfire	Map/locate structures within WUI.	County Resources

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DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
		Severe Weather	Develop educational materials regarding snow loads and safe removal.	County Resources
		Haz-Mat	Conduct training exercises for hazardous material spills from both railroad and highway transport.	County Resources
		All Hazards	Town of Superior Generator	FEMA-HMGP (DR-1996); $17,342
		All Hazards	Mapping locations of all residences within the County.	State - Dept. Revenue
		All Hazards	Additional cell towers to improve cellular communication.	Cell Companies
		All Hazards	Evaluation of possible communication systems that can effectively reach all portions of the county.	County Resources
		All Hazards	Provide generators for essential facilities to ensure operations during power disruption.	County Resources
		All Hazards	Develop program for affected communities/vulnerable populations to acquire generataors during power failures.	County Resources
		All Hazards	Mapping and location of each residence within the County	State -Dept. Revenue
		All Hazards	Information about the potential hazards that can affect the community	County Resources
		All Hazards	Education on safe egress from communities during disasters.	County Resources
1	**2017**	**Missoula**		
		Wildfire	Missoula County Fuel Reduction	FEMA-HMGP (DR-4127); Federal $112,500 / Local $37,500
		Wildfire	Missoula County continues to identify, maintain, update and support high priority fuel treatment areas within the WUI for hazardous fuel treatment by private landowners. Landowner Fuel Mitigation Program run through the Bitter Root RC&D and Blackfoot Challenge, a 50/50 cost-share grant funded through DNRC. Landowner fuel mitigation projects are also administered through the Clearwater Resource Council, Frenchtown RFD, and the Missoula RFD.	State Resources-DNRC, 50/50 Cost Share with Landowners
		Wildfire	Missoula County has compiled maps showing completed fuel treatment projects and associated project data which will update vulnerability and support future grants.	County Resources
		Wildfire	Missoula County OEM has worked with cooperating agencies to complete risk mapping which will be used in updating the CWPP and population protection plans.	County Resources
		Wildfire	Missoula County has been successful in receiving grants for fuel mitigation on private land.	FireWise , Secure Rural School Title III, FEMA-HMGP
		Wildfire	The Marshall Grade wildfire mitigation project was completed.	County Resources, Grants
		Wildfire	VFDs have used the existing CWPP to target education towards landowners in high priority WUI areas. During the fire season extensive outreach is conducted in cooperation with the USFS, DNRC, and Missoula Co. Fire Protection Association.	County Resources, USFS, State (DNRC)
		Wildfire	Missoula County OEM and the VFDs continue to encourage the use of fire-resistant materials/design of non-combustible homes in the county.	County Resources
		Wildfire	Framework has been created for formalized agreements for fire response in unprotected land in Missoula County lands.	County Resources
		Flooding	Missoula County Grant Creek Flood Mitigation Project	FEMA-PDM (2005); Federal $3M / Local $1,145K
		Flooding	FEMA grant received in 2011 to purchase a home which had repeatedly flooded. House was burned down as a training exercise for Fire Dept.	FEMA & County Resource (see below)
		Flooding	3417 Kehrwald Acquisition, Missoula	FEMA-HMGP (DR-1996); Federal $119,190 / Local $39,730
		Flooding	Missoula County has been using their subdivision regulations to regulate development within unmapped flood prone and channel migration zones.	County Resources
		Flooding	Floodplain modeling has been completed for all subdivisions in unmapped drainages.	City & County Resources
		Flooding	New digital flood insurance rate maps were adopted in 2015 along with a new Floodplain Ordinance.	FEMA, City & County Resources
		All Hazards	Missoula County OEM has provide targeted education and information to public officials on hazard mitigation by making presentations at commissioner and council meetings.	County Resources
		All Hazards	Missoula County OEM provides day-to-day coordination with Community and Planning Services to assist with comprehensive planning to mitigate disasters.	County Resources
5	**2013**	**Musselshell**		
		Flooding	Musselshell Co. Stage Stop Acquisition	FEMA-HMGP (DR-4198); Federal $160K / Local $53,333
		Flooding	Musselshell Acquisitions	FEMA-HMGP (DR-1996); Federal $110,346 / Local $92,016
		Flooding	Musselshell Acquisitions	FEMA-PDM (2016); Federal $2,522,236 / Local $966,156
		Flooding	Musselshell Acquisitions	FEMA-FMA (2015); Federal $177,922 / Local $19,769 (90/10 split repetitive loss
		Flooding	Musselshell Acquisitions	FEMA-FMA (2015); Federal $233,347 / Local $24,816 (90/10 split repetitive loss

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DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
		Flooding	Develop ordinances and residential zoning designed to prevent new construction in floodplain in the City of Roundup.	City Resources
		Flooding	Update dike around city water supply.	City Resources
		Haz-Mat	Develop communication plan for hazardous material emergencies.	County Resources
		All Hazards	Install communication tower at airport.	County Resources
		All Hazards	Implement reverse 911 system.	County Resources
		All Hazards	Obtain generator for Emergency Operations Center.	County Resources
		All Hazards	Obtain portable repeater to enhance communications within the County.	County Resources
		All Hazards	Upgrade radio communications at the dispatch center to become P-25 compliant.	County Resources
3	**2011**	**Park**		
		Flooding	Fleshman Creek Improvement Project: This project the increases channel capacity of a two-mile stretch of Fleshman Creek through Livingston while rehabilitating the creek channel and riparian zone including upgrade of six culverts at street/road crossings, installation of hydrodynamic separators at storm water outfalls, creation of wetlands along the creek channels, relocation of water main, sewer, and electric overhead utilities. Project is designed to protect areas threatened by the 25-year flood.	FEMA-PDM (2009); Federal $2,280,000/ Local; $760,000 - DNRC R&D Grant/MFWP Future Fisheries Grant/National Fish & Wildfire Foundation Grant.
		Flooding	Park County Culvert Mapping	FEMA-HMGP (DR-1996); $52,500
		Flooding	The new Ninth Street Island Bridge was constructed in 2010.	FEMA-PDM/City-County Resources
		Flooding	Letters were sent to Ninth Street Island owners regarding acquisition opportunities and some interest was generated, but ultimate project implementation did not occur.	City & County Resources
		Flooding	Conduct floodplain studies.	USACE/City of Livingston
		Flooding	The floodplain was mapped for the Town of Clyde Park and the town will be joining the National Flood Insurance Program in the spring of 2012.	FEMA/DNRC
		Flooding	New floodplain maps were created for Park County.	FEMA/DNRC
		Flooding	Park County Floodplain Regulations were updated.	County Resources
		Flooding	The U.S. Army Corps of Engineers creased a Special Area Management Plan for the Upper Yellowstone River in April 2011. This plan addresses the cumulative effects of anthropogenic bank stabilization and flood confinement on the Upper Yellowstone River.	USACE
		Flooding	In FY2009, the Yellowstone River Conservation District Council published a report entitles Yellowstone River Channel Mgration Zone, created associated mapping, and conducted workshops throughout the basin. The Council followed up with two more workshops and a BMP example.	Yellowstone River Conservation District Council
		Wildfire	CWPP completed in 2006 and updated in 2009.	BLM/County Resources
		Wildfire	Wildfire improvements to the Park County Subdivision Regulations made in 2007 and are being updated again.	County Resources
		Wildfire	County created a FireSafe Coalition that promoted wildfire mitigation strategies at public events and developed public-private partnerships with insurance, real estate, construction, landscapers, and firefighters.	County Resources
		Wildfire	Over 39 fuels reduction projects were accomplished from 2006-2009, treating almost 97 acres (mostly residential and camp properties).	NRMRCD/MSU Extension
		Wildfire	U.S. Forest Service (Big Timer, Gardiner, Livingston RDs) accomplished over 3,000 acres of fuels reductions projects from 2006-2009.	U.S. Forest Service
		Wildfire	County Commissioner's authorized the hire of a temporary fire planner to "raise community awareness of the issues and solutions of living in the WUI" and deployed a website.	County Resources
		Earthquakes	As interstate and highway bridges have been and are being replace, MDT is constructing bridges to meet eartquake standards.	MDT
		Haz-Mat	Additional railroad crossing was studied and now funding is being generated for construction.	City of Livingston
		Communicable Disease	Disease public education campaigns have been conducted.	County Resources
		Communicable Disease	Local and regional healthcare groups established.	County Resources
		Communicable Disease	City-County Complex ventillation system was upgraded in 2010.	County Resources
		All Hazards	Park County Calculator	FEMA-HMGP (DR-1996); $58,125
		All Hazards	Risk assessment tool created for county website.	County Resources
		All Hazards	Back-up systems were created for emergency communications.	County Resources
		All Hazards	The North Repeater was protected from vandals.	County Resources
		All Hazards	A NOAA Weather Radio transmitter was installed in Livingston.	County Resources
		All Hazards	State of Montana developed a statewise Emergency Alert System Plan.	County Resources
		All Hazards	All schools in the county received NOAA weather radios.	County Resources
		All Hazards	GIS data has improved significantly since 2005.	County Resources
6	**2008**	**Petroleum**		
		Wildfire	A comprehensive Wildland Urban Interface Wildfire Mitigation Plan was deve loped in 2004.	County Resources
		Wildfire	The Winnett Volunteer Fire Department provided wildfire defensible space a nd smoke alarm education to the public.	County Resources
		Wildfire	Fire department training and recruitment was increased substantially.	County Resources

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DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
		Wildfire	A new Montana Department of Natural Resources and Conservation (DNRC) fire engine was placed in the county.	County Resources
		Severe Weather	A generator and shelter were installed at the County Courthouse/EOC/Sheriff's Office in 2005.	County Resources
		Severe Weather	A NOAA Weather Radio transmitter was placed in Winnett.	County Resources
		Severe Weather	Petroleum County was designated a National Weather Service StormReady community.	County Resources
		Severe Weather	A NOAA Weather Radio has been placed in the school.	County Resources
		Severe Weather	The Town of Winnett Director of Public Works has coordinated efforts with the Petroleum County Road Department for snow and debris management during severe weather. The directors will continue to develop cooperative working relations with local utilities for debris management during severe weather.	County Resources
		Severe Weather	The Town of Winnett Director of Public Works is gathering current information and requirements from the Montana Department of Environmental Quality to upgrade the town's chlorination system that is currently at risk from severe weather conditions.	County Resources
		Severe Weather	Petroleum County and the Local Emergency Planning Committee conducted a Storm Warning School on April 26, 2005 in Winnett. The school certified 'storm watchers" and taught severe weather mitigation to class participants and the public.	County Resources
		Severe Weather	Petroleum Co. received 35 NOAA Weather Radios for emergency crews.	County Resources
		Severe Weather	Petroleum County received the original air strip from the town. The air strip was revitalized and is recognized as an Established Air Port. The 'north county' airstrip has been re-graded to accommodate emergency landings for search and rescue.	County Resources
		Severe Weather	A garage was built behind the courthouse to house emergency vehicles.	County Resources
		Severe Weather	A new ambulance was purchased using a variety of funding sources.	County Resources
		Drought	The local Montana Department of Natural Resources and Conservation (DNRC) and the Petroleum County Conservation District have assumed the responsibilities of tracking drought conditions and formulating mitigation strategies in Petroleum County.	County Resources
		Drought	The Town of Winnett Director of Public Works has developed a water resources mitigation plan for the town. The town has installed an underground sprinkler system for the town park and town hall lawn.	County Resources
6	**2012**	**Phillips**		
		Wildfire	Obtain digital radios for fire fighters.	County Resources
		Wildfire	Provide training to farmers and ranchers on firefighting techniques.	County Resources
		Wildfire	Obtain firefighting equipment (including SCBAs) for fire departments.	Grants
		Wildfire	Coordinate with cooperators and employ fuel reduction treatments on CRP and other lands, as needed.	BLM Resources
		Wildfire	Locate and identify roads that have wooden bridges within the County. Plan protection measures and alternate routes in the event of a wildfire compromising or burning these bridges.	County Resources
		All Hazard	Develop map of ranch roads to enhance response efforts.	County Resources
		All Hazard	Coordinate with State Regional DES and Federal partners to attend for scheduling and attendance at Incident Command System (ICS) 100/200 and/or IS 700 or State of Montana DES training requirement.	County Resources
		All Hazard	Obtain NOAA weather radios for critical facilities.	County Resources
2	**2011**	**Pondera**		
		All Hazards	Completed Pondera County Growth Policy which included land use policies.	County Resources
		Drought	Secure potable water supplies for the communities of Conrad and Valier.	County & City Resources
		Flooding	Valier pump house elevation.	FEMA-HMGP (DR-1996); Federal $141,191 / Local $47,064
4	**2015**	**Powder River**		
		Flooding	Lower the Powder River Clinic parking lot to prevent water from flowing into building.	Town Resources
		Flooding	Remove abandoned bridge abutments to improve streamflow.	County Resources
		Flooding	Mitigate bridges and culverts from flooding damage (in progress).	County Resources
		Flooding	Consider county-wide participation in NFIP.	County Resources
		All Hazards	Adopt a county-wide growth policy that addresses hazard mitigation issues.	County Resources
		All Hazards	Develop subdivision regulations to promote disaster resistance.	County Resources
		Terrorism	Improve security at various public facilities (partially complete).	County & Town Resources
1	**2017**	**Powell**		
		Earthquake	Conduct a bridge inventory to determine susceptibility of bridges to seismic damage.	County Resources
		Flooding	Deer Lodge Acquisition	FEMA-PDM (2016); Federal $99,377 / Local $24,844
		Flooding	Powell County/City of Deer Lodge Flood Hazard Mitigation Project	FEMA-PDM (2005); Federal $2,002,228 / Local $667,409

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COMPLETED LOCAL MITIGATION PROJECTS

DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
		Flooding	Acquisition 100 Main St, Deer Lodge	FEMA-HMGP (DR-1996); Federal $56,270 / Local $18,757
		Flooding	Main Street Bridge	FEMA-PDM (2011); Federal $1,191,304 / State (MDT) $692,831
		Flooding	2nd Street Bridge	FEMA-HMGP (DR-1767); Federal $166,945 / State (MDT) $142,411
		Flooding	Baker Acquisition	FEMA-HMGP (DR-4127); Federal $66,994 / Local $22,331
		All Hazards	Implement an enhanced County-wide geographic information system (GIS) for improved mapping abilities to aid management decisions.	County Resources
4	**2012**	**Prairie**		
		Drought	Participate in Governor's Drought Advisory Committee	County Resources
		Drought	Coordinate with major water suppliers, managers, and users to share information and plans for drought.	County Resources
		Drought	Encourage and support efforts to increase efficiency of water distribution and water conservation (emphasis on agricultural use).	County Resources
		Drought	Provide education on water conservation measures to residents of the county and Town of Terry.	County Resources
		Winter Weather	Enforce road closures sooner so therre are few weather-related accidents and stranded travelers.	County Resources
		Flooding	Initate steps to enter in the National Flood Insurance Program. Prairie County has been mapped, Town of Terry has not.	County Resources/DNRC/FEMA
		All Hazards	Work with critical facilities and public building occupants to ensure each has working NOAA weather radios.	County Resources
		All Hazards	Provide public education on various disaster, how to prepare and respone.	County Resources
		All Hazards	Develop and EOC/disaster shelter at the new fire facility in Terry with its own water supply and back-up power.	County/City Resources
		All Hazards	Improve ability to respond to disasters of all types by sharing issues with other counties in Montana.	County Resources
		All Hazards	Conduct training exercises.	County Resources
		All Hazards	Develop and practice evacuation plans.	County Resources
		All Hazards	Consider continuity of important records and assess need to address problems associated with interruption of access to records.	County Resources
		All Hazards	Inventory various equipment needed for emergencies.	County Resources
		All Hazards	Assess emergency telecommunications capabilities.	County Resources
		All Hazards	Provide generators where needed.	County Resources
		All Hazards	Continue to improve communication among emergency providers.	County Resources
		All Hazards	Work with cell phone providers to provide more cell phone service county-wide.	County Resources
		All Hazards	Update emergency services communications to digital sources.	County Resources
		All Hazards	Continue to work on sirens.	County Resources
		Communicable Disease	Examine need to expand the existing mosquito control area and consider need for a similar area around Prairie.	County Resources
		Severe Weather	Work with electric cooperatives to install mechanisms to reduce line damage caused by undulating lines.	County Resources
		All Hazards	Identify and inventory back-up power sources for key facilities.	County Resources
		All Hazards	Identify mechanisms to reduce health-related effects of power outages for especially vulnerable populations.	County Resources
		All Hazards	Consider options for ensuring continued business operations for critical businesses.	County Resources
		All Hazards	Consider options for using public facilities to temporarily house critical and vital business operatations.	County Resources
		Wildfire	Continue the permit process for open burning.	County Resources
		Wildfire	Continue to notify the public of fire dangers.	County Resources
		Wildfire	Continue to recruit new volunteer fire members, as needed.	County Resources
1	**2017**	**Ravalli**		
		Wildfire	Ravalli County continues to identify, maintain, update and support high priority fuel treatment areas within the WUI for hazardous fuel treatment by private landowners. In the past six years, 433 homeowners have treated 2,500 acres through the Landowner Fuel Mitigation Program run through the Bitter Root RC&D.	State Resources - DNRC/Landowner 50/50 Cost Share
		Wildfire	Hazardous fuel treatment projects between private landowners, state, and federal land managers; specifically, the U.S. Forest Service's Westside Collaborative Vegetation Management Project in the Bitterroot Mountains between Hamilton and Darby	USFS
		Wildfire	Education on wildfire mitigation continues to be offered to the public, especially those at high risk from WUI fires. During active fires, Ravalli County operates the FireSmart Wagon. DNRC also has an active public relations program providing education on wildfire.	County Resources, State-DNRC

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DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
		Wildfire	Wildfire home assessments continue to be conducted so landowners understand what actions are needed to reduce the ignitability of their structures. Assessments are completed by the fire departments, as requested, and by Bitter Root RC&D foresters who do it before issuing landowner grants.	County Resources, RC&D
		Wildfire	Over the past 15-20 years, the USFS has completed 5,000 to 20,000 acres of fuel reduction in the Bitterroot National Forest to mitigate the wildfire hazard.	USFS
		Wildfire	Communication was enhanced between the Ravalli County Fire Council and County Commissioners. Monday morning briefings now take place with the Fire Warden/Fire Council and Commissioners during fire season.	County Resources
		Wildfire	Mutual Aid Agreements were revised and are reviewed and updated on an as-needed basis.	County Resources
		Wildfire	A Communications Plan was completed establishing protocols between the Ravalli County Fire Council, USFS and DNRC.	County Resources
		Wildfire	Population Protection Plans were completed for all Rural Volunteer Fire Districts. They have been tested and are in good shape.	County Resources
		Wildfire	Ravalli County continues to support the Fuels for Schools project. The project utilizes conventionally unmerchantable wood from wildfire hazard reduction forest thinning operations on lands of all ownerships in the Bitterroot Valley. Both the Darby and Victor schools have biomass boilers .	County Resources
		Flooding	Upgrades were made to the Stevensville wastewater plant and the lagoons that were in the floodplain and subject to flooding were replaced.	Town Resources
		Flooding	New digital flood insurance rate maps were adopted in 2015 along with a new Floodplain Ordinance.	FEMA & County Resources
		Dam Failure	DNRC installed telemetry below the Painted Rocks dam for real-time monitoring.	State Resources-DNRC
4	**2014**	**Richland**		
		Drought	Develop baseline information on water supply and use.	County Resources
		Drought	Provide education on water conservation measures.	County Resources
		Severe Weather	Ensure adequate power and back-up in the towns of Sidney and Fairview.	City & Town Resources, Utility Co.
		Severe Weather	Provide information on warning systems.	City Resources
		All Hazards	Educate the public on how to get information during a disaster.	County Resources
		All Hazards	Provide information on various types of disasters and how to prepare.	County Resources
		All Hazards	Identify and implement best mechjanisms to reduce disaster impacts to high-risk populations (partially complete).	County Resources
		All Hazards	Sidney Water Treatment Generator	FEMA-HMGP (DR-1996); $47,411
		Flooding	Continue to address standards for rebuilding roads in areas subject to flood events (partially complete).	County Resources
		Dam Failure	Facilitate information to dam owners about dam maintenance and responsibilities.	County Resources
		Haz-Mat	Identify an alternate truck bypass route for Sidney.	City Resources
6	**2016**	**Roosevelt**		
			Completed mitigation projects not identified.	
5	**2013**	**Rosebud**		
		Severe Weather	NOAA weather radios purchased	County Resources
		All Hazards	Some generators have been obtained.	FEMA & County Resources (see below)
		All Hazards	Colstrip Generator	FEMA-HMGP (DR-1996); $44,278
		All Hazards	Growth policy completed	County Resources
		All Hazards	Subdivision regulations completed	County Resources
		Wildfire	Workshop held on defensible space	County Resources
		Wildfire	Implementing system for reporting wildfires	County Resources
		Flooding	Culvert improvements have been completed.	County Resources
		Flooding	Floodplain mapping has been completed for participating jurisdictions.	FEMA & County Resources
1	**2012**	**Sanders**		
			Completed mitigation projects not identified.	
6	**2016**	**Sheridan**		
		Structure Fire	Plentywood Volunteer Fire Dept. conducts an inspection program for all public/commercial buildings as well as private homes.	City Resources
		Structure Fire	Town of Medicine Lake enforces fire codes.	Town Resources
		All Hazards	Town of Outlook has adopted and strictly enforces a debris removal policy.	Town Resources
		Wildfire	Town of Outlook creates a fire break around the town.	Town Resources
		Wildfire	Town of Westby maintains a fire siren and has a fire break around the town.	Town Resources
		Wildfire	Town of Medicine Lake maintains a water tower to provide a backup water supply to fight fire.	Town Resources
		Flooding	Upgraded low water crossing on Welliver Road including new bridge and culverts.	County Resources
		Flooding	City of Plentywood removed debris from Box Elder Creek each year.	City Resources

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DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
		Flooding	Town of Westby cleans out creek and culverts annually.	Town Resources
		Haz-Mat	Town of Westby closed a community propane system and removed a large tank.	Town Resources
		Severe Weather	City of Plentywood conducts inspections of trees and removed dead and damaged trees and limbs.	City Resources
		All Hazards	Some generators have been purchased.	County Resources
		Severe Weather	Town of Westby received grant to install sidewalks to reduce slips and falls.	Town Resources
1	**2016**	**Butte- Silver Bow**		
		Haz-Mat	LEPC members have had training in how to participate on hazardous material teams and have been looking at equipment for their haz-mat response trailer.	City-County Resources
		Wildfire	The BSB County Fire Department has obtained a 1,000-gallon trailer-mounted pump that can be used for firefighting. The trailer has been obtained and is currently being constructed.	City-County Resources
		Wildfire	BSB OEM has had radio announcements promoting the wildfire season and discussion with community partners on preparedness and mitigation.	City-County Resources
		Wildfire	USFS completed fuel reduction project in Basin Creek drainage, BSB water supply, in 2004. USFS currently completing fuel reduction project along Lime Kiln Rd near the Thompson Park . BLM completed fuel reduction project in Jerry Creek in Big Hole.	USFS, BLM
		Wildfire	Arc GIS is now online and provides BSB OEM with tools when outside the urban area. GIS layers are available online with roads, railroads, and truck routes.	City-County Resources
		Earthquake	BSB and Montana Tech participated in the Great Montana Shakeout for the past two years. Montana Tech had tri-fold display and posters around campus on earthquake awareness.	City-County Resources and State (University System)
		Earthquake	BSB school district and OEM exercise on earthquake preparedness last year at Hillcrest Elementary.	City-County Resources
		Earthquake	An Ordinance is now in place that requires water heaters to be tied down. County facilities are inspected to ensure there is no illegal stacking.	City-County Resources
		Earthquake	MBMG/USGS completed an earthquake scenario that identified critical facilities vulnerable to significant earthquake damage.	State (MBMG) & USGS
		Transp. Accidents	BSB and MDT reduced the speed limit from 80 to 65 mph on I-15 & I-90	State (MDT)
		Communicable Disease	The BSB Health Dept. now maintains immunization records for daycare facilities.	City-County Resources
		Communicable Disease	A committee subgroup of the LEPC was formed on Public Health and includes representatives from St. James Healthcare, OEM, MT Tech, BSB Health Dept, and the American Red Cross.	City-County Resources
		Flooding	Culvert upgrades to mitigate flooding and maintenance issues included: 10 culverts in 2010, 8 culverts in 2011, 12 culverts in 2012, 8 culverts in 2013, 11 in 2014, and 5 culverts in 2015. During this period 4 bridges were also upgraded.	City-County Resources
		Flooding	In 2012, Stormwater Management ordinance passed requiring detention basins at new commercial improvements. Ordinance minimizes increases in stormwater runoff from any development to prevent or reduce flooding, siltation, and stream bank erosion, to protect private property, and maintain integrity of stream channels and runoff characteristics of area.	City-County Resources
		Flooding	Progress has been made on implementing the BSB Stormwater Master Plan. Storm water piping installed in the past several years included: 2010 - Pacific St., Main & Daly Storm, Arizona & Porphyry, Belle & Buffalo; 2011 - Anaconda Road Tunnel, O'Neil St.; 2013 - Buffalo Tunnel, Edison St.; 2014 - Hornet St.; 2015 - Kaw Ave., Earth Moon; 2016 - Woolman, George, Utah. Between 2011 & 2015, approximately 100 storm drain inlets were replaced. Over 6,000 lineal feet of street cub & gutter sections were installed.	City-County Resources
		Flooding	Progress has been made on implementing the stormwater projects in Walkerville including: Main and Daly (2010); O'Neil Street Stormwater and Sanitary Sewer Upgrades (2011); and Belle and Buffalo (2010)	Town Resources
		Flooding	The BSB Planning Dept. now has a permit system and DFIRMs available online. MT DNRC provides technical assistance. There is more public awareness now available and refinancing requirements	City-County Resources
		Flooding	The BSB County Planning Department has established new setback requirements whereby new development must be 100 feet outside the 100-year floodplain.	City-County Resources
		Flooding	In 2015, BSB OEM participated in the MT DES District 1 Montana Monsoon exercise which had a scenario of flooding from BSB to Missoula.	City-County Resources
		All Hazards	2014 Public Outreach Campaign - LEPC members produced 15- to 30- second public service announcements on hazard awareness and preparedness that were broadcast on the radio for 8 months.	City-County Resources
		All Hazards	New generators have been obtained for new EOC, Fire Station #1, and St. James Healthcare.	City-County & Private Resources

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DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
		All Hazards	A new website was developed for the BSB County Office of Emergency Management in 2014. In addition, a website manager was hired and serves as the social media coordinator and public information officer for the county.	City-County Resources
		All Hazards	Reverse-911 has been implemented in BSB County.	City-County Resources
		All Hazards	Rural addressing is complete. Driveways have been GPS'd and building footprints collected.	City-County Resources
		All Hazards	A subcommittee of the LEPC was formed on sheltering and mass care.	City-County Resources
5	**2015**	**Stillwater**		
		All Hazards	Stillwater Co. Generator Project	FEMA-HMGP (DR-4271); Federal $9,6745 / Local $3,225
		Landslide	Stillwater Landslide	FEMA-PDM (2016); Federal $1,860,000 / Local $620,000
		Flooding	In 2014, a Risk Map project was completed in Stillwater County. Through Risk MAP, FEMA provides communities with updated FIRMs and Flood Insurance Studies that focus on the probability of flood and that show where flooding may occur.	FEMA
		Flooding	The County and Town of Columbus participate in the NFIP, which requires the adoption of FEMA floodplain mapping and certain minimum construction standards for building within the floodplain.	FEMA, City & County Resources
		Flooding	The Stillwater County Road and Bridge Department has made repairs and upgrades to culverts around the county to mitigate the flood hazard. Between 2010 and 2015, culverts were repaired or upgraded at approximately 110 locations totaling over $238,500 including labor, equipment, and material costs.	County Resources
		Flooding	The Town of Columbus developed a storm drainage plan.	City Resources
		Dam Failure	Stillwater County expanded the warning system for failure of Mystic Lake Dam to areas further downstream.	County Resources
		Wildfire	Stillwater County added Red Flag Warnings to the suite of projects broadcast over the Emergency Alert System.	County Resources
		Wildfire	The Stillwater County Commissioners passed the county's first burn permit system in June 2015. Dispatchers are now able to check the location called in and immediately know if fire crews need to respond or if it is simply a controlled burn.	County Resources
		Wildfire	Hazardous fuel project from 2010 to 2015 included 1,436.5 acres at the following locations: Bearpaw Ranch – two projects, 13 acres; Beartooth Mountain Christian Ranch 1 – four projects, 21 acres; Beartooth Ranch – one project, 1,200 acres; Cathedral Mountain Ranch – annual workday, 10 acres; Countryman Creek Estates – four projects, 40 acres; Eagle Mountain Subdivision – three projects, 16 acres; Hearts & Diamonds Subdivision – six projects, 21 acres; Pinecrest Estates Phases 1 & 2 – 11 projects, 36 acres; Shane Creek Ranch – one project, 14 acres; Sutherland Subdivision – one project, 3 acres; Yellowstone River Landowners Association – three project, 26 acres; and, Yellowstone River Ranch – three projects, 11 acres.	County, USFS, State (DNRC), Private Resouces
3	**2005**	**Sweetgrass**		
		All Hazards	Sweet Grass Ambulance	FEMA-HMGP (DR-1996); $2,246
2	**2014**	**Teton**		
		Structure Fire	New fire hall in Choteau was completed.	County Resources
		Flooding	Assess stability and upgrade irrigation canal head gates.	County Resources
		Haz-Mat	Reconstruct U.S. Highway 89 bridge crossing Muddy Creek near Bynum to accommodate two lane truck traffic.	State (MDT)
		Flooding	Conduct an inventory of all bridges and culverts in Teton County. (ongoing)	County Resources
		All Hazards	Develop effective County Interoperable Communication System	County Resources
		Flooding	Install back up power source to run Bynum Bypass head gates and diversion gates during power outages	County Resources
2	**2013**	**Toole**		
		All Hazards	Toole Co. Marias Medical Center Generator	FEMA-HMGP (DR-4271); Federal $105,912 / Local $35,304
		All Hazards	Citizen preparedness was increased through newspaper insert on preparation	County Resources
		All Hazards	Emergency alert system developed and exercised.	County Resources
		All Hazards	Address evacuation plan for Shelby.	FEMA-HMGP
		Flooding	Sunburst NFIP issues were resolved.	FEMA & County Resources
5	**2007**	**Treasure**		
			Completed mitigation projects not identified.	
6	**2016**	**Valley**		
		Flooding	Valley County Stream Gauges	FEMA-HMGP (DR-4198); Federal $6,412 / Local $2,137
		Flooding	Replacement of Cutacross Bridge, Skylark Bridge, and Canal Bridge	FEMA/County
		Flooding	Whately Bridge extension	FEMA/County

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COMPLETED LOCAL MITIGATION PROJECTS

DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
		Flooding	Installed Billingsley Road Culvert and Liberty Road Culvert	FEMA/County
		Flooding	Glasgow-Cherry Creek left Bank and Milk River and Cherry Creek Levee System System Wide Infrastructure Framework (underway).	USACE/City of Glasgow
		Dam Failure	Repairs to Fort Peck Dam including repair of gates, spillway slab, plunge pool, recreation area roads and drains, spillway access road and drains, gates controls, relief wells, and horizontal outfall pipes.	USACE
		Severe Weather	NOAA radios were purchased for Opheim.	NWS, County Resources
		Severe Weather	Siren systems in Glasgow, Fort Peck, Opheim, Nashua, and Hinsdale were updated.	County Resources
		Severe Weather	County received Storm Ready designation from National Weather Service.	NWS, County Resources
		Severe Weather	Emergency advisory equipment at radio station in Glasgow was upgraded.	NWS, County Resources
		All Hazards	Generators were purchased and installed at critical and special needs facilities.	County & Private Resources
		Severe Weather	Electrical infrastructure was protected.	County Resources
		All Hazards	Ordinances were created and are enforced that prevent railroad from blocking emergency access routes.	County Resources
		All Hazards	County provides education on how the public can protect themselves during disasters.	County Resources
		Communicable Disease	Community Assessment for Public Health Emergency Response was completed in 2016.	County Resources
		All Hazards	General education and code enforcement involving subsidence have taken place.	County Resources
5	**2013**	**Wheatland**		
		Wildfire	Obtain fire tender for town of Judith Gap.	County & Town Resources
		Wildfire	Construct new fire complex for Harlowton.	City Resources
		Haz-Mat	Develop communications plan for haz-mat emergencies.	County Resources
		All Hazards	Obtain better ambulance for Judith Gap.	County & Town Resources
4	**2014**	**Wibaux**		
		All Hazards	Some offices are backing up public records off-site.	County Resources
		Flooding	Identify a location for storage of sand and bags.	County Resources
		Severe Weather	A weather service repeater is in the process of being installed.	County Resources
		Severe Weather	Identify winter storm shelter locations.	County Resources
		Severe Weather	Educate citizens about winter storm safety.	County Resources
		Wildfire	Maintain preparedness for wildfire.	County Resources
		Haz-Mat	Request haz-mat list from BNSF.	County Resources
		All Hazards	Develop a evacuation plan for Wibaux.	County Resources
5	**2012**	**Yellowstone**		
		Wildfire	Firewise	County Resources
		Wildfire	Fuel Reduction Project	FEMA-HMGP (DR-1767); Federal $101,720/ Local $38,830
		Wildfire	Rural Dry Hydrants	County Resources
		Wildfire	Wildland Fire Mapping	BLM/County Resources
		Wildfire	Firewise Demonstration Houses	County Resources
		Wildfire	Wise Building Practices	County Resources
		Wildfire	Subdivision Disaster Planning	County Resources
		Severe Weather	High Winds Awareness	County Resources
		Severe Weather	Weather Awareness	County Resources
		Flooding	Highway 87/Alkali Creek Crossing Improvement	County Resources
		Flooding	Storm Drain-Laurel	County Resources
		Flooding	Floodplain Awareness	County Resources
		Flooding	Resolution of Clarks Camp problem	County Resources
		Flooding	Floodplain Mapping	County Resources
		Flooding	New Floodplain Regulations	County Resources
		All Hazards	School Safety Education	County Resources
		All Hazards	School Violence Prevention	County Resources
		All Hazards	Wise Building Practices	County Resources
		All Hazards	Hazard Identification/Comprehensive Planning/GIS	County Resources
		All Hazards	Emergency Shelters	County Resources
2	**2007**	**Blackfeet Reservation**		
		Flooding	Completed mitigation projects not identified.	
5	**2015**	**Crow Reservation**		
		Flooding	Identify and mitigate commonly washed-out roads and culverts.	FEMA PA/Tribe

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COMPLETED LOCAL MITIGATION PROJECTS

DES District	Plan Year	County/Hazard	Completed Local Mitigation Projects	Funding Source
		Flooding	Little Bighorn River Flood Mitigation	FEMA-HMGP (DR-1996); Federal $607,831 / Local $202,610
		Flooding	Identify and mitigate river blockages.	Tribal funds
		Flooding	Identify effects on water supply and sewage treatment.	Tribal funds
		Haz-Mat	Complete operation-level Haz-Mat training.	FEMA EMPG
		Structure Fire	Acquire Class C suits	Tribal funds
		Structure Fire	Bring all hydrants into working order (partially complete)	Tribal funds
		Transp. Accidents	Install fence at Lodge Grass separting park from tracks.	Town funds.
		Severe Weather	Communicate with media to promote weather alerts	No cost
		Severe Weather	Keep critical routes plowed.	Tribal funds
		Drought	Install water supply monitors at storage facilities	Tribal funds
		Wildfire	Develop MOUS with neighboring jurisdictions (partially complete).	No cost
		All Hazards	Public education about multiple hazards	No cost
		All Hazards	Ensure repeaters are in operable condition	Tribal funds
1	**2017**	**CSKT - Flathead Reservation**		
		Wildfire	Identify risk areas and homes to develop pre-attack plans.	CSKT Resources
		Wildfire	Provide wildfire mitigation information to urban interface landowners.	CSKT Resources
6	**2012**	**Fort Peck Reservation**		
		All Hazards	Purchase mobile generators	Tribal Resources
		All Hazards	Provide training for first responders	Tribal Resources
		Flooding	Improve storm water system along Hwy 2 in Wolf Point and south side of town (wolf point)	Tribal Resources
		Flooding	Perform floodplain mapping (Reserve)	Tribal Resources
		All Hazards	Upgrade siren systems in all communities	Tribal Resources
		All Hazards	Purchase weather radios for critical facilities and provide at discount to rural residents	Tribal Resources
		All Hazards	Become a StormReady Community	Tribal Resources
		Terrorism	Install fencing and alarm system at water treatment plant and water supply wells.	Tribal Resources
		Wildfire	Institute weed control measures (mowing) along railroad.	Tribal Resources
		Wildfire	Negotiate over haying on CRP land	Tribal Resources
2	**2013**	**Fort Belknap**		
		Wildfire	Develop GPS database of water sources on reservation to enhance firefighting efforts.	Tribal Resources
		Wildfire	Construct a heated emergency response building in to house fire tenders and ambulance.	Tribal Resources
		Wildfire	Obtain fire tender for Lodge Pole.	Tribal Resources
		Wildfire	Implement Memorandum of Understanding with DNRC and BLM for fire response on reservation lands.	Tribal Resources
		Wildfire	GPS rural homes to enhance wildfire protection.	Tribal Resources
		Communicable Disease	Implement protocol for chemical applications in mosquito breeding grounds.	Tribal Resources
		All Hazards	Develop a rural addressing system.	Tribal Resources
		All Hazards	Identify emergency shelters in each community.	Tribal Resources
5	**2006**	**No. Cheyene Reservation**		
			Completed mitigation projects not identified.	
2	**2010**	**Rocky Boys Reservation**		
		Flooding	Agency Dam removed	Tribal Resources

APPENDIX C-5

MITIGATION PROJECT REVIEW FORM

APPENDIX C-5

MITIGATION PLAN & PROJECT ANNUAL REVIEW FORM

Montana Disaster and Emergency Services
State Multi-Hazard Mitigation Plan (MHMP) Annual Report

***Meeting Date:*_____**
***Plan Approval Date:*_____**
***Plan Expiration Date:*_____**

Have there been any disasters or training events since the last report? If so, list them below:

Disaster Number/Training Event	Hazard Type(s)	Was the hazard expected or unforeseen?	Is a plan update required?
Example: DR-4275	*Tornado*	*Unforeseen*	Yes

Mitigation Projects in progress/completed:

Project	Sub-applicant	Proposed/ Scheduled/ In Progress/ Completed	Behind/ Ahead/ On Schedule	Estimated Completion Date

Public Engagement and Outreach:

Training opportunities:

Miscellaneous:

State of Montana
Multi-Hazard
Mitigation Plan
2018 Update

APPENDIX D

Local Plan
Electronic Links

APPENDIX D-1

LOCAL PLAN INDEX

APPENDIX D-1
INDEX OF LOCAL HAZARD MITIGATION PLANS
EFFECTIVE DATE: JANUARY 2018

DES District 1

Butte Silver Bow County – FEMA Approved Plan, 2016

Confederate Salish and Kootenai Tribe (Flathead Reservation) – FEMA Approved Plan, 2017

Deer Lodge County – FEMA Approved Plan, 2013

Flathead County – FEMA Approved Plan, 2014

Granite County – FEMA Approved Plan, 2013

Lake County – FEMA Approved Plan, 2012

Lincoln County – FEMA Approved Plan, 2012

Mineral County – FEMA Approved Plan, 2012

Missoula County – FEMA Approved Plan, 2017

Powell County – FEMA Approved Plan, 2017

Ravalli County – FEMA Approved Plan, 2017

Sanders County – FEMA Approved Plan, 2012

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DES District 2

Blackfeet Reservation – FEMA Approved Plan, 2008

Blaine County – FEMA Approved Plan, 2012

Cascade County – FEMA Approved Plan, 2017

Chouteau County – FEMA Approved Plan, 2017

Fort Belknap Reservation – FEMA Approved Plan, 2013

Glacier County – FEMA Approved Plan, 2012

Hill County – FEMA Approved Plan, 2012

Liberty County – FEMA Approved Plan, 2013

Pondera County – FEMA Approved Plan, 2011

Rocky Boy's Reservation – FEMA Approved Plan, 2010

Teton County – FEMA Approved Plan, 2014

Toole County – FEMA Approved Plan, 2013

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DES District 3

Beaverhead County – FEMA Approved Plan, 2017

Broadwater County – FEMA Approved Plan, 2016

Gallatin County – FEMA Approved Plan, 2012

Jefferson County – FEMA Approved Plan, 2017

Lewis and Clark County – FEMA Approved Plan, 2017

Madison County – FEMA Approved Plan, 2017

Meagher County – No PDM Plan Available

Park County – FEMA Approved Plan, 2012

Sweet Grass County – FEMA Approved Plan, 2005

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DES District 4

Carter County – FEMA Approved Plan, 2012

Custer County – FEMA Approved Plan, 2017

Dawson County – FEMA Approved Plan, 2014

Fallon County – FEMA Approved Plan, 2012

Garfield County – FEMA Approved Plan, 2014

McCone County – FEMA Approved Plan, 2014

Prairie County – FEMA Approved Plan, 2006

Powder River County – FEMA Approved Plan, 2015

Richland County – FEMA Approved Plan, 2014

Wibaux County – FEMA Approved Plan, 2014

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DES District 5

Big Horn County – FEMA Approved Plan, 2006

Carbon County – FEMA Approved Plan, 2012

Crow Reservation – FEMA Approved Plan, 2015

Golden Valley County – FEMA Approved Plan, 2008

Musselshell County – FEMA Approved Plan, 2013

Northern Cheyenne Reservation – FEMA Approved Plan, 2008

Rosebud County – FEMA Approved Plan, 2013

Stillwater County – FEMA Approved Plan, 2015

Treasure County – FEMA Approved Plan, 2007

Wheatland County – FEMA Approved Plan, 2013

Yellowstone County – FEMA Approved Plan, 2012

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DES District 6

Daniels County – FEMA Approved Plan, 2016

Fergus County – FEMA Approved Plan, 2014

Fort Peck Reservation – FEMA Approved Plan, 2012

Judith Basin County – FEMA Approved Plan, 2013

Petroleum County – FEMA Approved Plan, 2008

Phillips County – FEMA Approved Plan, 2012

Roosevelt County – FEMA Approved Plan, 2016

Sheridan County – FEMA Approved Plan, 2016

Valley County – FEMA Approved Plan, 2016

APPENDIX D-2

LOCAL PLAN REFERENCES & LOSS ESTIMATION METHODS

APPENDIX D-2
2018 STATE OF MONTANA MHMP UPDATE
LOCAL PLAN REFERENCES & LOSS ESTIMATION METHODS

REFERENCE 1 – Respec (formerly known as Atkins, PBS&J, Land & Water)

Beaverhead (2017), Madison (2017), Mineral (2012), Yellowstone (2012) County PDM Plans
Loss estimates were assessed, as follows:

Earthquake -HAZUS-MH Earthquake Model, Montana CAMA data.
Flooding - Loss estimates in mapped floodplains, FEMA flood loss estimation tables, historic losses.
Dam Failure - Qualitative loss estimate from inundation areas.
Landslide - Landslide history, landslide prone areas.
Volcano - Historic losses.
Weather - SHELDUS data and trends from historic losses.
Wildfire - Montana CAMA data, historic wildfire losses.

Undefined qualitative methodologies were used to assign a Low, Low-Moderate, Moderate-High, and High rating to structures, population, and values for the county and incorporated communities.

REFERENCE 2 – Beck Consulting and AMEC

Big Horn (2012), Carbon (2012), Liberty (2013), Rosebud (2013), Teton (2014), Toole (2013) County PDM Plans
Estimated hazard losses were determined using information from past events. Losses were estimated as high, medium or low where: Low = <$500,000; Medium = $500,001 to $2.5 million; and High = >$2.5 million. Societal risk was also rated as low, medium or high where: Low= Sporadic impacts on individual properties; Medium= Significant impact locally; and, High= Half or more of the county's population is significantly impacted.

The Carbon County PDM Plans utilized HAZUS-MH to determine loss estimates for the flood and earthquake hazard. This methodology takes into account multiple types of loss such as direct structural and indirect economic losses. For the flood model, a 30-meter digital elevation model was used with the enhanced Quick Look tool to create an approximate depth grid from the DFIRM 1% annual chance flood boundaries. A Level 1 analysis was completed for the HAZUS earthquake analysis, meaning that only the default data was used and not supplemented with local building inventory or hazard data. There are certain data limitations when using the default data.

REFERENCE 3 – Big Sky Hazard Management

Deer Lodge (2013), Granite (2013), Park (2011), Petroleum (2008), Treasure County (2007) PDM Plans

Vulnerability was assessed based on mapping of the hazards. Structures and critical facilities were mapped and using GIS were compared to mapped hazard areas. Using this technique an approximate number of structures in the various hazard areas was determined. The value of structures in the hazard areas was determined using Montana Department of Revenue Computer Assisted Mass Appraisal System (CAMA) data that contains the taxable building value of each parcel in the county. The structure points provided by the counties were matched with the closest taxable building values. For some hazards, the total dollar exposure was multiplied by a damage factor since many hazards events will not result in a complete loss of all structures. The estimates are general in nature. HAZUS-MH approximated losses from earthquakes and floods to structures. Where GIS mapping was unavailable or not useful, estimation and plausible scenarios were used to quantify potential structure losses. Population impacts were qualitatively assessed based on the number of structures estimated to be in the hazard area. Qualitative methodologies helped determine the potential losses to economic, ecologic, historic, and social values.

Population impacts were qualitatively assessed based on the number of structures estimated to be in the hazard area multiplied by an average number of people per structure from the U.S. Census.

Undefined qualitative methodologies were used to assign a Low, Low-Moderate, Moderate-High, and High rating to structures, population, and economic values for the county and incorporated communities.

REFERENCE 4 – Cossitt Consulting

Northern Cheyenne Indian Reservation (2006) PDM Plan

Vulnerability and potential loss estimates were assessed as follows:

- Identify the future potential for the hazard to result in damages. Potential for future damage was assessed primarily by looking at past occurrences, by considering information from existing plans and technical information sources, and by considering factors that could potentially increase risk (such as new development in hazard areas).

- Inventory assets and identify what might be affected by the different hazard events. This includes structures, operations important to the jurisdiction's economy as well as vulnerable populations that could be particularly hard-hit by a disaster. Information from the inventory

of assets was used to identify potential dollar loss estimates for each specific hazard, where possible.

- Estimate losses. Loss estimates were based on:
  - Data on actual costs of past occurrences
  - Consideration of the value of assets at risk
  - Estimates from other information sources, such as the Montana Multi-Hazard Mitigation Plan.

REFERENCE 5 – Fire Logistics, Inc.

Chouteau County (2017) PDM Plan

No methods for loss estimates are provided with the exception of flooding. A 100 year flood was modeled to determine its impacts on the county and its communities. It is not stated what modeling program was used. Loss estimates for other hazards appear to have been based on historic occurrences.

REFERENCE 6 – Gallatin County

Gallatin County (2012) PDM Plan

The vulnerability assessment methodology used a combination of GIS analysis techniques and best estimates. Where possible, the digital data was used. Otherwise, a plausible scenario was created, and based on community values, potential losses were estimated.

The Gallatin County GIS department created a GPS database of the critical facilities. Preliminary structure locations were used, where possible, to show the relationship of structures to hazard areas. Otherwise, the Montana Department of Revenue Computer Assisted Mass Appraisal System (CAMA) system was used to delineate what parcels of land had taxable structures on them. The CAMA data is also limited by the fact that it does not cover all of the county areas, nor does it locate where the structure or structures are on a given parcel. This database, however, does provide structure values for the parcels.

Whenever possible, the hazard area was overlaid on the structure/parcel data to determine the number of structures and the structure values that lie within that hazard area. In most cases, the dollar values are multiplied by a damage factor since many events will not result in a complete loss of all structures. Frequently, only parts of the hazard area are affected or structures don't suffer a complete loss and may have only minor damage. These figures, of course, will only represent estimates but are based on current hazard data. Whenever possible, losses were estimated based on factors listed in the FEMA publication, *State and Local Mitigation Planning How-to Guide: Understanding Your Risks.*

The population impacts were qualitatively assessed based on the percentage of the population estimated to have residences in the hazard area and the general warning time that could be expected.

REFERENCE 7 – Great West Engineering and Powell County

Powell County (2017) PDM Plan

Methods used to quantify property, societal, and economic loss are described below. Losses for the other hazards profiled in the Plan were only qualitatively described.

Flooding - GIS analyses of floodplains using data from the County and State of Montana in combination with structures and property data from Montana State Library to identify number of structures in floodplains. Floodplain layer created by digitizing existing Flood Insurance Rate Maps (FIRMs). Also developed Letter of Map Revision (LOMAR) that identified new floodplain and number of structures at risk.

Wildfire – Using GIS, structure density was intersected with a wildfire hazard potential map created by the U.S. Forest Service in 2014. Loss data was not presented in the Plan. Population vulnerable to wildfire was estimated to include the entire rural population and 25 percent of city residents.

Earthquake – A Level 1 HAZUS earthquake analysis was performed for the 2012 Plan.

Severe Weather – An annual loss number is provided with no methods for its computation.

Drought – Economic effects of drought are based on a study conducted for the Farmers Union that shows a 20 percent decline in cattle production and a 25 percent decline in crops. Estimated economic loss was calculated using 2012 agricultural statistics.

Landslides – Estimated property loss was determined using GIS analysis and data from the Montana Dept. of Revenue's Cadastral parcel database and a landslide vulnerability map developed by the U.S. Geological Survey.

Hazardous Material Incidents – Vulnerable building stock was determined using GIS and buffering pipelines, railroads, and highways by ½ mile and intersecting this data with the Montana Dept. of Revenue Cadastral parcel database. Vulnerable population was estimated using U.S. Census estimates that 2.31 individuals reside in each residence.

REFERENCE 8 – Integrated Solutions Consulting

Daniels (2016), Roosevelt (2016), Sheridan (2016), Valley County (2016) PDM Plan

HAZUS-MH was used to conduct a flood analysis that determined building exposure by occupancy type. Estimated property loss was not quantified for the other hazards profiled.

REFERENCE 9 – KLJ

Dawson (2014), Fergus (2014), Garfield (2014), McCone (2014), Powder River (2015), Richland (2014), Wibaux County (2014) MHMP and Crow Reservation (2015) PDM Plan

Methods used to quantify property, societal, and economic loss are described below. Losses for the other hazards profiled in the Plan were only qualitatively described.

Drought - Economic losses are presented by comparing spring wheat production for a non-drought year to drought years from the USDA National Agricultural Statistics Service and listing drought losses based on drought yield reduction. Drought losses for 2008 in 2012 dollars are presented in the table.

Flood – Property loss was estimated utilizing FEMA FIRMs, Hazus-MH modeled floodplains and 2013 property value data compiled by the Montana State Library. GIS was used to intersect the flood hazard area with the 2010 U.S. Census block data. Vulnerable population was calculated based on the percent of the census block in the floodplain.

Landslide – Property loss was estimated utilizing U.S. Geologic Survey landslide map and property value data. GIS was used to intersect the flood hazard area with the 2010 U.S. Census block data. Vulnerable population was calculated based on the percent of the census block in the landslide hazard area.

Severe Summer & Winter Storms – A worst-case scenario was modeled assuming a direct hit of a large tornado on an incorporated city/town. Fifty (50) percent of the area was assumed to be affected with an 80 percent extent of damage. The entire county/reservation population was determined to by vulnerable to severe weather.

Wildfire – GIS was used to intersect a wildfire hazard area with the building stock data from the Montana State Library. Eight (8) percent of the rural building stock was assumed to be vulnerable to wildfire with the damage extent estimated at 75 percent. Incorporated cities/towns were assumed to have a ½ mile WUI outside the city limits and 100 yards inside the city limits with 100 percent of the area affected with 75 percent damage extent. Areas with rural population were determined vulnerable to wildfire; whereas, 25 percent of the incorporated city/town population was assumed to be at risk.

Hazardous Materials Release – Pipelines, railroads and highways were buffered by ½ mile then intersected with parcel data to determine building stock at risk. Vulnerable population was estimated from 2010 census block statistics intersected with the hazard areas.

REFERENCE 10 – Morrison-Maierle, Inc.

Fort Peck Tribes (2012) PDM Plan

Loss estimates were developed using a Level 1 HAZUS analysis of the flood and earthquake hazards. A 100-year flood was simulated to determine which buildings and critical infrastructure would be exposed. Loss estimates for other hazards were not provided.

REFERENCE 11 – Risks and Rewards Management Group

Confederated Salish and Kootenai Tribe (Flathead Reservation) (2017) PDM Plan
Loss estimates for the CSKT PDM Plan were taken from the Lake County (2012) and Flathead County (2014) PDM Plans prepared by Tetra Tech. See Reference 14 below for a description of methods.

REFERENCE 12 – Single Tree Consulting

Fallon (2012) and Prairie County (2012) PDM Plans
Loss estimates are described qualitatively with no methodology provided. It appears that loss estimates were determined based on historic occurrences using SHELDUS and census data.

REFERENCE 13 – Sweet Grass County

Sweet Grass County (2005) PDM Plan
An inventory of assets is provided, but no estimated dollar losses per hazard.

REFERENCE 14 – Tetra Tech (formerly Maxim Technologies)

Blaine (2012), Broadwater (2016), Butte-Silver Bow (2015), Cascade (2017), Custer (2017), Flathead (2014), Glacier (2011), Golden Valley (2017), Hill, Jefferson (2017), Judith Basin, Lake (2012), Lewis and Clark (2017), Lincoln (2011), Missoula (2017), Musselshell (2013), Phillips (2012), Pondera (2011), Ravalli (2017), Sanders (2012), and Wheatland County (2013) and Blackfeet (2007), Fort Belknap (2013), and Rocky Boy's Reservation (2010) PDM Plans
The methodology used to derive loss estimates presents a quantitative assessment of the building stock, population, and critical facility exposure to the individual hazards. Building stock data, available from the Montana Department of Revenue's Cadastral Mapping Program was used in the analysis. This data spatially recognizes land parcels along with the appraised value of building stock. Using GIS, hazard risk areas were intersected with the building stock data to identify the number of structures and exposure due to each hazard. For PDM Plans completed after 2016, the Montana Natural Resources Information System (NRIS) Structures database was linked to the Dept. of Revenue data to spatially locate structures within each parcel which provided a more exact location for building stock within each hazard area. Hazard areas were developed using the following data:

Dam Failure – Inundation dams available from high hazard dam Emergency Action Plans.
Earthquake – Peak Ground Acceleration data available from the U.S. Geological Survey.
Flooding – Digital flood insurance rate maps (DFIRMs) available from FEMA.
Hazardous Material Incidents – Buffering of pipelines, highways, and railroads by ¼ mile.

Wildfire – WUI maps available from Community Wildfire Protection Plans.

Population exposure was computed using data from the 2010 census and the percentage of the census blocks located in each hazard area. Population exposure was reported according to total population living in the hazard area and a subset of this data, individuals under the age of 18 years. Using GIS, total population for the census blocks was intersected with the hazard maps to determine the population at risk. For PDM Plans completed after 2016, vulnerable population was calculated by intersecting hazard areas with the NRIS structures shapefile and estimates by the U.S. Census that 2.35 individuals reside in each structure, 22.5 percent of whom are under age 18.

Annualized property loss for Severe Summer and Winter Weather was calculated according to: Exposure x Frequency x Magnitude

Where:

- Exposure = building stock, vulnerable population, or critical facilities at risk
- Frequency = annual number of events determined by calculating the number of hazard events / period of record
- Magnitude = percent of damage expected calculated by: (property damage/# incidents)/ total building stock or critical facilities

For hazards without property damage, magnitude could not be calculated and therefore, only the exposure of the building stock or population was computed.

In the Golden Valley County and Blackfeet and Rocky Boy's Reservation PDM Plans, the loss estimation methodology involved using GIS to intersect the hazard risk areas with census block data to determine the percentage of each census block containing the hazard. Building exposure values were based on building stock data available from the FEMA HAZUS software. This percentage was then applied to population and building stock data for each census block and summed to determine the vulnerability of the jurisdiction.