TOOLE COUNTY PRE-DISASTER MITIGATION PLAN

City of Shelby, Town of Kevin, Town of Sunburst,

and Toole County, Montana

Prepared by Toole County with assistance from

Beck Consulting and

AMEC Environment and Infrastructure, Inc.

DRAFT, August 2013

Toole County Pre-Disaster Mitigation Plan
Table of Contents

Executive Summary.....**ii**

Chapters

1......**Introduction**..... **1**
2......**Preparation of the Plan**.....**9**
3......**Hazard Profiles and Risk Assessment**.....**11**
Blowing Saline Dust.....14
Drought.....17
Flooding.....25
Geological Events.....38
Hazardous Materials.....43
Wildland Fire.....50
Wind Events.....58
Winter Storms 71
4......**Mitigation**.....**80**
5......**Monitoring, Maintenance, Revision, and Coordination.88**

Appendix A: Planning Process Documentation.....**90**

Appendix B: Local Jurisdiction Assets, Essential Facilities....**118**

Appendix C: 2007 Mitigation Project Status in 2013.....**126**

Appendix D: Adoption Documentation.....**130**

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. The original Toole County Pre-Disaster Mitigation Plan was adopted in 2007. This plan updates that original plan. The PDM plan addresses five major natural hazards plus hazardous material incidents with respect to risk and vulnerabilities, specific to the county, including the City of Shelby and the Towns of Kevin and Sunburst. Through a collaborative planning process, the Toole County hazards were identified, researched, and profiled.

The major hazards – blowing saline dust; drought; flooding; geological events; hazardous material spills; wildland fire; wind events; and winter weather – are each profiled in terms of their hazard description, history, location, probability, and magnitude. The vulnerabilities are evaluated for each hazard.

The following goals are outlined in the plan's mitigation strategy, based on the results of the risk assessment:

1. Mitigate natural hazards to reduce the potential for property loss or damage, injury, and loss of life in the City of Shelby.
2. Mitigate natural hazards to reduce the potential for property loss or damage, injury, and loss of life in the Town of Sunburst.
3. Mitigate natural hazards to reduce the potential for property loss or damage, injury, and loss of life in the Town of Kevin.
4. Mitigate natural hazards to reduce the potential for property loss or damage, injury, and loss of life in the unincorporated areas of Toole County.

The mitigation actions (projects) were developed building on the 2007 plan and adding mitigation projects identified by the LEPC and the local governments of Shelby, Kevin, Sunburst, and Toole County.

Associated with each of the goals are 20 mitigation actions ranging from mitigating blowing dust on I-15 to constructing an additional railroad crossing, to ensuring the city's water supply is protected from a hazardous material spill, to a bulk purchase of fire extinguishers for farm equipment. The mitigation actions are representative of a variety of project types including education, emergency services, infrastructure, prevention, property protection, and natural resources.

The mitigation actions were prioritized by the LEPC and the local governments based on the potential to save lives and reduce property damage and economic impacts.

An implementation plan outlines the suggested course of action, given the limited resources available to the county and the communities. The county's Disaster and Emergency Services Coordinator and Local Emergency Planning Committee are responsible for the implementation and maintenance of the plan. Other recommended activities, such as integrating this plan into other county, city, and town plans as appropriate, will further the goals of hazard mitigation in Toole County.

The Toole County Pre-Disaster Mitigation Plan fully meets the requirements of a local hazard mitigation plan as outlined in the Interim Final Rule published in the Federal Register on February 26, 2002 at Title 44 of the Code of Federal Regulations, Part 201 as part of the Disaster Mitigation Act of 2000.

This plan has been deemed "approvable" by the Federal Emergency Management Agency as a Pre-Disaster Mitigation Plan, and therefore, the county and the city may adopt the plan. These jurisdictions, the city and county may be eligible for federal mitigation funds. This plan serves as a guide for understanding the major natural hazards facing Toole County, the City of Shelby, and the Towns of Kevin and Sunburst, and provides a strategy for preventing or minimizing some of the impacts.

I. Introduction

Authority

Toole County intends to remain disaster resistant by revising and updating their 2007 Pre-Disaster Mitigation Plan. The plan identifies mitigation measures to be taken, guides the expenditure of funds, and raises awareness about the importance of taking personal and collective (public and private) responsibility for foreseeable natural disasters. The plan meets the requirements of the Interim Final Rule published in the Federal Register on February 26, 2003, at 44 CFR Part 201 as part of the Disaster Mitigation Act of 2000.

Scope and Plan Organization

This plan is organized into five chapters.

- Chapter I. Introduction

This chapter provides background material to put the plan and mitigation strategies into the context of Toole County's unique assets, resources, hazards and risks.

- Chapter II. Preparation of the Plan

This chapter describes how the plan was developed, including public involvement. Documentation of the planning process is provided in Appendix A.

- Chapter III. Hazard Evaluation and Risk Assessment

This chapter lists potential hazards, gives information about historical disaster occurrences in the county, frequency, and probability of future events. Chapter III also provides information about asset values, for example, how much the county courthouse or the city hall would cost to replace if they were lost in a disaster.

- Chapter IV. Mitigation Strategy

This chapter takes the hazard information and develops goals and projects that can be accomplished to lessen the chances and/or severity of a potential disaster. Recognizing the limitation of resources to accomplish all projects identified, Chapter IV also provides the local priorities for the projects.

- Chapter V. Monitoring, Maintenance, Revision, and Coordination

This chapter describes how the plan is to be maintained and kept current. Those responsible for maintaining the plan are identified.

Toole County Courthouse, Shelby, Montana

Preparation of the Plan

The pre-disaster mitigation plan was prepared by Barb Beck of Beck Consulting and AMEC Earth and Environmental. County Disaster and Emergency Services Coordinator, Darrell Stafford, served as the primary contact for the county and assisted in data collection, public involvement, and document review.

Each of the signing entities to the plan, the Towns of Kevin and Sunburst, the City of Shelby, and Toole County participated in the development of the plan specifically by some combination of the following: receiving briefings, attending public meetings, providing data and copies of existing plans, identifying mitigation projects, setting project priorities, and adopting the plan. Additional information on the planning process is provided in Chapter II and Appendix A.

Project Area

The project area for this plan is Toole County, located in north-central Montana. The county was established in 1914 from parts of neighboring Choteau, Teton, and Hill Counties. Toole derives its name from Joseph K. Toole, the first Governor of Montana. Toole County, originally Blackfeet Indian Territory, was visited by the Lewis and Clark expedition in 1804-1805 and the Marias River was named by Captain Clark.

The county contains three incorporated communities, the Towns of Kevin and Sunburst, and the City of Shelby. Toole County encompasses 1,950 square miles. (Montana Association of Counties, 2005) Toole County borders Alberta, Canada to the north, Glacier County to the west, Pondera County to the south, and Liberty County to the east.

With the exception of the Sweetgrass Hills and the Marias River breaks the landscape is nearly level to rolling plains and uplands. Elevations range from a low of 2900 feet above sea level in the southeast corner to a high of 6983 feet on the West Butte in the Sweetgrass Hills. The largest river, the Marias, flows from west to east emptying into Lake Elwell Reservoir. Willow Creek flows south through the center of the county also into Lake Elwell. (Toole County Soil Survey, 2002, Montana Atlas and Gazetteer 1997)

Woody wetlands are found along the major drainages of the Marias River, Willow Creek, and their tributaries. Shelter belts provide the only other areas of woody vegetation. Forested lands are limited to the higher elevations of the Sweetgrass Hills. (USGS, National Land Cover, Natural Resource Information System)

Toole County is known for its oil and gas fields. Additional mineral resources include gold, coal, sand, and gravel. Oil has been produced in the county since the 1920's. Oil and gas development has occurred in all areas of the county with the heaviest production coming from the west and the Sweetgrass Hills. Production has cycled with demand over the past 80 years and currently remains active. Mining of other mineral resources has been infrequent and small scale compared to oil and gas development. (Toole County Soil Survey, 2002)

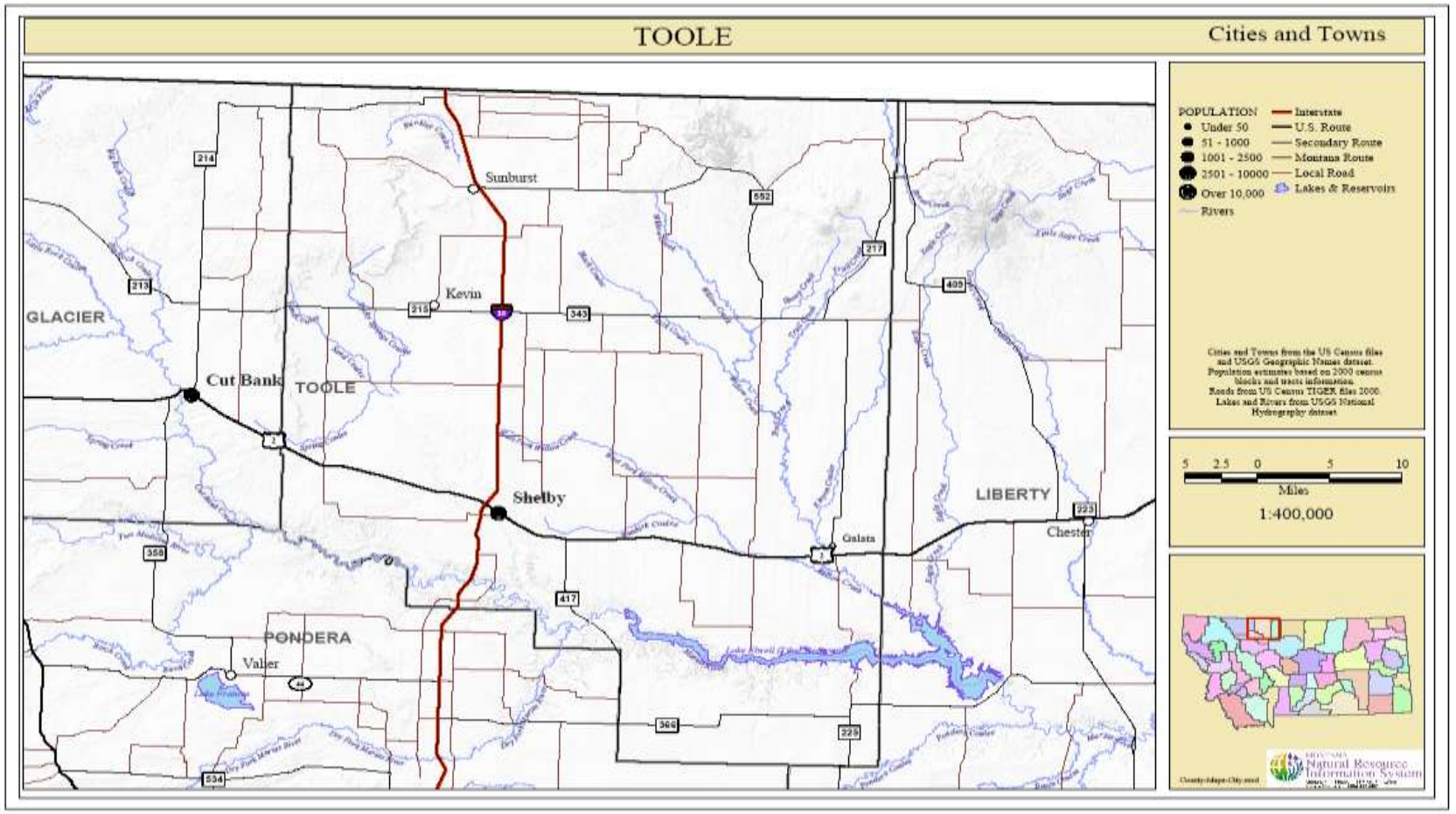


Figure 1.1 Toole County Orientation Map

Table 1.1 Land Ownership in Toole County

Surface Ownership	*Acres*
Private	1,091,803
State	100,630
Bureau of Land Management	27,549
Bureau of Reclamation	12,740
U.S. Fish and Wildlife Service	4,142

Source: BLM Havre Field Office, Amanda Keefer, BLM Annual Report, 2006
Note: The BLM acreage is accurate. The figures for other ownerships are estimated.

In addition to the surface acres managed by the BLM, BLM is responsible for the mineral estate under all federal surface ownerships and some private lands. The BLM has 124,312 subsurface or mineral acres in Toole County.

Population and Land Use

Toole County ranked 35 of Montana's 56 counties in population in 2011. The Census Bureau estimated the 2011 county population to be 5,239. This represents an increase of 96 persons from 2004. According to the decennial census, the population of Toole County in 2010 was 5,324. Kevin had a population of 154, Sunburst 375, and Shelby, 3,376. Approximately 74% of the population of the county resides in one of the three incorporated communities. (http://factfinder.census.gov) The median age of county residents in 2010 was 41.5 years. Eighty-eight percent of the population was high school graduates or higher.

The majority of land (56%) in the county is in production of small grains. The vast majority of crops are dryland farmed (700,000 acres) compared to the 2,500 acres of irrigated cropland. (Toole County Soil Survey, 2002) Additional lands are in pasture or hay production. In 2007, there were 428 farms in the county, each averaging 2,605 acres. The total land in farms in 2007 was 1,115,019 acres. (National Agricultural Statistics Service, 2007) The trend between 2002 and 2007 was an increase in both the number of farms (+6%) and the average size of farms (+3%.)

Development Trends

Toole County is experiencing robust commercial construction and activity. Much, but not all of the construction is occurring in the Shelby area.

- An international free trade zone is being reactivated. This will result in construction of a 15-acre industrial subdivision in Shelby by Ryder Logistics. The area will facilitate the movement of cigarettes from Mexico to Canada and create 100 new jobs.

- Development of a 110-acre multi-modal transportation center (allow shipping containers to be transferred between trucks and trains) creating 300 jobs. This is made possible following award of a $10 million TIGER grant to the Northern Express Transportation Authority in Shelby. The center expects to handle sand from China used in oil well fracking, wind turbine components, peas and lentils.

- Construction of a new 42,000-ton bulk fertilizer plant on the east edge of Shelby by CHS.

- An increase in the number of railroad oil tanker cars transporting oil and gas from the Bakken field in eastern Montana and western North Dakota.

- Traffic resulting from movement of large equipment from the west coast to the tar sands oil producing area of British Columbia.

- Construction of a new 74-room Best Western Hotel and associated 35-unit RV park.

- Doubling in size of the existing Comfort Inn (56 new guest rooms) and the addition of an 85-unit RV park.

- The City of Shelby has installed a state-of-the-art water treatment system. They have already extended water service to the community of Ethridge and the Wild Rose Hutterite Colony. They will extend to Vaughn in the future and plan to serve the town of Cut Bank in Glacier County with potable water by 2015.

- The Federal Bureau of Investigation opened a new office in Shelby 18 month ago.

- Construction of the North Central Montana Regional Water Authority/Rocky Boy water project to bring potable water to communities, water districts, and Hutterite colonies across the highline.

- Construction of the Glacier Wind Farm by NaturEner was underway during preparation of the original plan. That construction has been completed and the wind farm is operational. A second wind farm--Rimrock--has recently been completed by the same firm and is also operational. More turbines may be added in the future to Rimrock.

- A new Border Patrol station has been constructed on the east edge of Sunburst (below.)

- The town of Sunburst is annexing land to the east of I-15 to include a residential housing area and land owned by Carolina Logistics, a trucking firm based in North Carolina.

- According to the April 21, 2013 Billings Gazette, pork producers in Montana doing business as the North West Pork Cooperative have plans for a $250 million meat processing plant in Shelby. This location will help serve the Asian market.

- Columbia Grain is upgrading their facility in Sweetgrass ($12 million project.)

- The oil and gas industry continues to be active in the county. Drill sites, compressor stations, pipelines, and storage facilities are associated with the production. A small amount of exploration activity is taking place in the north part of the county between I-15 and the Sweetgrass Hills. Older wells are being reworked to continue production. Most of these wells are "stripper wells." Stripper wells produce small quantities of oil, up to 30 barrels/day.

Climate and Weather

Toole County is located east of the Continental Divide in Montana and subject to continental weather patterns. In general summers are hotter, winters are colder, precipitation is less evenly distributed, skies are sunnier, and winds are stronger than on the west side of the divide. (Western Region Climate Center, Climate of Montana) According to the County Soil Survey, however, winters are not usually as cold as what might be expected for this latitude because of the Chinook winds. Cold waves with sub-zero temperatures are common but short-lived and frequently terminated by the southwesterly Chinook winds. The ground is usually bare of snow due to these winds.

The frost-free period at Sunburst averages 115 days. Normal annual precipitation is 13.05 inches with 10.06 inches of this total falling during the growing season, the months of April through September. (Montana Agricultural Statistics, 2005) There are considerable differences in the amounts of precipitation across the county with the wettest areas located in the Sweetgrass Hills. "Most summers pass with the highest temperatures failing to reach 100 degrees, and an average year will have only 15 days with maximums of 90 degrees or higher." (Toole County Soil Survey, 2002) Freezing temperatures occur most often during the months of September through May.

Extreme weather in the county consists of severe thunderstorms containing wind, lightning and hail, and severe winter storms with heavy snowfall, cold temperatures, ice, and strong winds. Specific weather events are covered in more detail in Chapter III under each hazard profile.

County Economy

The economy of Toole County is based largely upon its natural resources and is directly affected by demand for and prices of energy and agricultural products. The total value of agricultural products sold in 2007 was $47,727,000. This figure exceeds the total annual employment payroll from business establishments. The county ranked 16 (of 56 counties) in receipts for crops and 42 in receipts for livestock and livestock products. (USDA National Agricultural Statistics Service) Toole County is a big producer of wheat--ranking eighth in production of all wheat in the state. The county also grows barley, canola, hay, and dry edible peas.

The unemployment rate in the county from March 2012 to February 2013 ranged between 4.0 and 5.9%. The national unemployment average for this period was 8%. (U.S. Bureau of Labor Statistics, www.bls.gov)

The majority of business establishments in the county each employ only a small number of people. According to the U.S. Bureau of Economic Analysis (BEA) Toole County had a per capital personal income of $42,122. This PCPI ranked 4th in the state and was $117% of the state average of $36,016. This was 101% of the national average of $41,560. Median household income from 2007-2011 was $44,688. For this same period, 14.8% of the population was below the poverty level. (http://quickfacts.census.gov)

Transportation

Shelby is situated at the crossroads of Interstate 15, running north-south, and U.S. Highway 2, running east-west. I-15 connects Gt. Falls to the Canadian border and a 24-hour port of entry. Highway 2 runs the length of Montana connecting all of the towns along the "high line." State highways in the county include; Highway 215 east and west of Kevin, Highway 343 east of Oilmont, Highway 417 south of U.S. 2, and Highway 366 running east-west in the southeast corner of the county. (Montana Atlas and Gazetteer, 1997)

In addition to the state and federal highways, there is an extensive network of county roads, 1000-1100 miles. County roads follow north-south and east-west section lines where the terrain is suitable. County roads are used by residents, the energy industry, and recreationists, among others.

The Burlington Northern Santa Fe (BNSF) Railroad operates on track paralleling U.S. Highway 2 from the east to Shelby. West of Shelby the track splits with the mainline continuing to the west and another line turning north and continuing to the Canadian border running on either side of I-15. Amtrak passenger service utilizes the east-west track across the county, connecting Minneapolis to Seattle.

Commercial air transportation is available in Great Falls. Shelby has an airport located north of the city with two asphalt runways. Ross International, a grass strip airport is located at Sweet Grass near the Canadian border. Sunburst also has a grass strip. (Toole County Soil Survey, 2002)

II. Preparation of the Plan

Approach

The original plan and this 2013 update were prepared through the efforts of many. The information in the plan was obtained through research on the web, review of existing plans, personal interviews, meetings with elected officials, the LEPC, and public input. Individuals at the local, state, and federal levels all generously contributed information in a timely manner. These individuals and other sources are cited in the reference sections of the appropriate chapters.

Darrell Stafford, County Disaster and Emergency Services Coordinator attended meetings, provided information, assisted with logistics, and reviewed and commented on draft materials. County Commissioner, Deb Brandon, attended the LEPC meetings and Commissioners Brandon, Ober, and Underdal met with the contractor on several occasions.

Methodology

The county contracted the plan update with Barb Beck, Beck Consulting of Red Lodge, Montana. Subcontractor, AMEC Environment and Infrastructure, updated the hazard information and risk assessment. Beck coordinated, facilitated, and documented all meetings and prepared the entire plan. Beck also wrote the 2007 plan for the county. The project began with kick-off meetings with the DES Coordinator, county commissioners, and the LEPC. Following the initial meetings, the hazard profiles were updated. Then Beck presented the updates, briefed the elected, and gathered project ideas from a variety of sources. She refined the project ideas with the help of the LEPC and prepared the draft document.

A combination of LEPC meetings, public meetings, and meetings with the local elected bodies and officials were held during the planning process. Meetings and briefings were held in Shelby, Kevin, and Sunburst. Because attendance at public meetings is typically very low, the process emphasized using regular (publicly-noticed) meetings with elected officials--the county commissioners and the three incorporated communities. In addition to these meetings, the contractor spoke about the PDM plan update to the Shelby Chamber of Commerce membership. The draft plan was presented during a publicly-noticed meeting in the county commissioners' chambers on August 5, 2013.

Coordination with Other Plans

The following local plans were reviewed to insure consistency with this plan. Commissioner Brandon was the most recent county planner. The contracted planner for Shelby was interviewed by phone.

Jurisdiction	Policies and Plans
City of Shelby	Growth Policy 2010, Capital Improvement Plan 2012 Update, Municipal Codes 2012
Town of Kevin	Growth Policy 2011, Capital Improvement Plan 2011
Town of Sunburst	None
Toole County	Growth Policy 2006, Emergency Operations Plan 2011, Community Wildfire Protection Plan

Document Review

The draft document was made available for public review on August 5 with the comment period open until September 20, 2013. The schedule for release of the draft and the comment period, in addition to where copies could be obtained, was announced in the Shelby Promoter and at the public meeting held in August. Copies of the draft plan were placed at the Kevin and Sunburst town halls, the Shelby City Hall, and the Toole County Courthouse. The plan was also available on the county's website.

Toole County Commissioners
Left to right: Alan Underdal, Deb Brandon, and Ben Ober

Planning Process Documentation

Documentation of all meetings can be found in Appendix A. The documentation includes handouts such as the briefing paper, meeting agendas, meeting notes, sign-in sheets, project status updates, and news articles. The one-page briefing paper was made available to DES staff to hand out. The briefing paper explains the purpose of preparing the PDDM plan, the planning process and schedule, how to provide comments, and gives contact information for questions or comments.

III. Hazard Profiles and Risk Assessment

This chapter identifies:

- Natural hazards to which Toole County is susceptible
- Risks for each jurisdiction
- Documented historical occurrences of these hazards
- Potential losses from each of the hazards
- Potential impacts of each of the hazards
- Probability of occurrences in the future
- Critical infrastructure and vulnerable populations

Chapter III includes a short description of methodology; followed by a list of the identified hazards discussed in this chapter. Detailed profiles of each hazard type are provided including historical occurrences, potential losses, impacts, probability, a summary, and critical assets and populations that could be affected by various hazards.

Methodology

Information on historical natural hazards and disasters in Toole County was obtained from a number of sources. At the original and plan update project kick-off meetings, the County Commissioners were queried about natural disasters. At the first public meetings for the 2007 plan, participants provided their priorities for natural and other disasters of concern. The LEPC and the county commissioners validated the list of hazards for the 2013 update.

State and federal websites and data bases were searched. These included information from the Bureau of Land Management, Natural Resources and Conservation Service, Farm Services Agency, National Weather Services' National Climate Data Center, the Western Regional Climate Center, Federal Emergency Management Agency (FEMA), Spatial Hazard Events and Losses Database for the United States (SHELDUS), and the National Response Center. Information was also provided by Montana Disaster and Emergency Services, Department of Environmental Quality, and the Department of Transportation.

Existing written plans, newspapers, and local oral histories were reviewed as well. These plans are cited in the text and listed in the reference sections at the end of each chapter. The 2007 (for drought hazard) and 2010 Update to the State of Montana Multi-Hazard Mitigation Plan also served as a sources of information.

Hazards were evaluated as follows:

1. Identify hazards that may occur. Hazards that may occur were identified through:
    a. Meetings and discussions with community leaders (County Commissioners, federal, state, county, and town staff) in 2006-7 and 2013
    b. Review of hazard lists in the FEMA "How-to Guide: Understanding your Risks" and initial research on recommended websites
    c. Review of the State of Montana Multi-Hazard Mitigation Plan
    d. Researching other plans, reports, newspapers and histories

2. Prioritize the hazards and focus on the most prevalent. Hazards were prioritized at the first public meeting held August 16, 2006. The LEPC validated the priorities for the 2013 plan update.
3. Profile hazard events. Using a variety of information sources, this included:
   a. Identifying the likely geographic extent of hazards.
   b. Obtaining data on historical occurrences--when available.

Potential losses and impacts were assessed as follows:

1. Identify the future potential for the hazard to result in damages. This was done primarily by looking at past occurrences. In 2006 probability was rated by public meeting participants. For the 2013 plan update, research into past occurrences formed the basis for this.
2. Inventory assets and identify what might be affected by the different hazard events. This includes structures, operations important to the town's and county's economy as well as vulnerable populations that could be particularly hard-hit by a disaster. High potential loss facilities, potential impacts for each type of hazard, and vulnerable populations were identified during the 2006-7 process. This information was updated in 2013.
3. Estimate losses. Generally, losses were estimated using information from past events. In cases where there is little or no historical damage information in terms of dollar cost, information may include costs from other locations. SHELDUS and HAZUS data was used as appropriate.

Table 3.1. Toole County Hazards

Hazard	How identified	Comments	2007 Rank	2013 Rank
Blowing saline dust	County Commissioners, DES Staff, Past occurrences, Town of Sunburst, MDT	When dry, an old lake bed saline area produces dust that blows across the Interstate obscuring visibility.	7	3
Drought	County Commissioners, Past occurrences, Public meeting, National Weather Service data	Recent multi-year drought is continuing	1	1
Flooding	Past occurrences, Public meetings, County/State information, State Plan	Marias River has flooded in the past. Flash flooding occurs in the Sweetgrass Hills. Kevin and Shelby have flooded in the past despite not being located in floodplains. Also covers dam failure since this was not identified as a separate issue.	2	7
Geological events such as earthquakes and volcanoes	Public meeting	Earthquakes and volcanoes are unlikely to be centered in the county, but secondary effects from events occurring elsewhere could be felt in the county.	8	

Hazard	How identified	Comments	2007 Rank	2013 Rank
Hazardous Materials	County Commissioners, Past occurrences, Public meetings, State plan	BNSF railroad bisects the county. U.S. Highway 2 and I-15 also go through the county. Hazardous materials are transported on all of these routes.	3	2
Wildland Fires	BLM, County Commissioners, Emergency Management, Past occurrences, Public meetings, State Plan	No Community Wildfire Protection Plan exists and the decision was made by the county that one was not needed.	4 (tie)	4
Wind Events	County Commissioners, Past occurrences, Public meetings, County/state information, State Plan, National Weather Service data	Includes other summer storm hazards such as hail, lightning, tornadoes, high winds.	4 (tie)	
Winter Storms	County Commissioners, Public meetings, Past occurrences, County/State information, National Weather Service data	Winter storms can include snow, ice, high winds, and cold temperatures. Storms over the past 125 years have caused heavy livestock losses.	6	5

Sources: County Commissioners, Montana Multi-Hazard Mitigation Plan, National Weather Service, Public Meetings, SHELDUS Note: NRCS verified that landslides and slumping were not issues for the county.

Hazard Risk by Jurisdiction

The natural disasters of concern to the Towns of Kevin and Sunburst, the City of Shelby, and Toole County could potentially happen anywhere in the county with a few exceptions. Hazardous material incidents of any magnitude are most likely to occur along I-15, U.S. Highway 2, and the Burlington Northern Santa Fe tracks.

Table 3.2. Hazard Vulnerability

Hazard	Toole County	Town of Kevin	Town of Sunburst	City of Shelby	Comments
Blowing saline dust	X		X		This area is limited to one location along I-15 near Sunburst.
Drought	X	X	X	X	Drought can affect not only agricultural producers, but also the many businesses that depend on them.
Flooding	X	X	X	X	Although the communities in the county are not located within floodplains, they are in low spots of ancient rivers. The county is also vulnerable to flash floods, especially the Sweetgrass hills.

Hazard	Toole County	Town of Kevin	Town of Sunburst	City of Shelby	Comments
Geological events	X	X	X	X	These events would likely be centered elsewhere and effects in the county would be indirect.
Hazardous Material Incidents	X	X	X	X	The areas most vulnerable to a hazardous material incident are located along transportation routes and around oil wells.
Wildland Fire	X				CRP and stubble are at risk from wildland fire. Only the Sweetgrass Hills and the Marias breaks contain any timber.
Wind Events	X	X	X	X	Damages could be caused anywhere in the county from high winds associated with severe summer storms and winter Chinook winds.
Winter Storms	X	X	X	X	Damages could be caused anywhere in the county from winter storms.

Blowing Saline Dust Hazard

Hazard Description

South of the Town of Sunburst lies an area that was once part of an ancient lakebed. The area is situated on both sides of Interstate 15 and is devoid of vegetation with a saline surface (see Figure 3.1). In dry years, the saline dust becomes airborne and blows across the Interstate on the prevailing winds out of the west. Blowing dust can completely obscure visibility. On occasion the Department of Transportation has closed the highway and required traffic to follow pilot vehicles through this area, but no long-term solution has been found for this problem. The Interstate has been signed for high winds here.

Figure 3.1. Foreground, I-15. Salt flat with Town of Sunburst in background.

Historic Occurrences

Local residents tell of numbers of times when blowing dust has obscured visibility to the point of low to no visibility. This occurs during dry years when there is no water to keep the dust in check and can occur any month that the area is snow-free. Occurrences seem to be more frequent in recent years probably due to the multi-year drought. Local Department of Transportation staff recalled several incidents where semi-trucks have rear-ended other trucks due to lack of visibility. (Wollan, MDT) County Commissioner Ober recalled the Interstate being closed here in the fall of 1960 or 1961 due to the blowing dust. According to records kept by the Montana Department of Transportation, there have been seven crashes between mile points 381 and 397 on I-15 that were specifically attributed to blowing soil. Four of these crashes occurred on May 19, 2001. Six of the seven crashes produced a total of 11 injuries and involved 16 vehicles. All of the incidents were rear end crashes. (Williams, MDT) No damage estimates were available for the crashes. In May of 2013, an accident on the flat outside of Sunburst due to the alkali occurred. There were nine vehicles involved, with one fatality and several people injured with non-life-threatening injuries.

Potential Losses

Potential losses from an incident of blowing dust would primarily result from vehicle accidents. Foremost would be injury, loss of human life, vehicles, and cargo, secondary losses would result from closure of the Interstate and/or a hazardous material spill or release caused by a vehicle accident. Counting loss of human life, costs could easily exceed one million dollars especially if hazardous materials were spilled or released associated with a vehicle accident.

Impacts

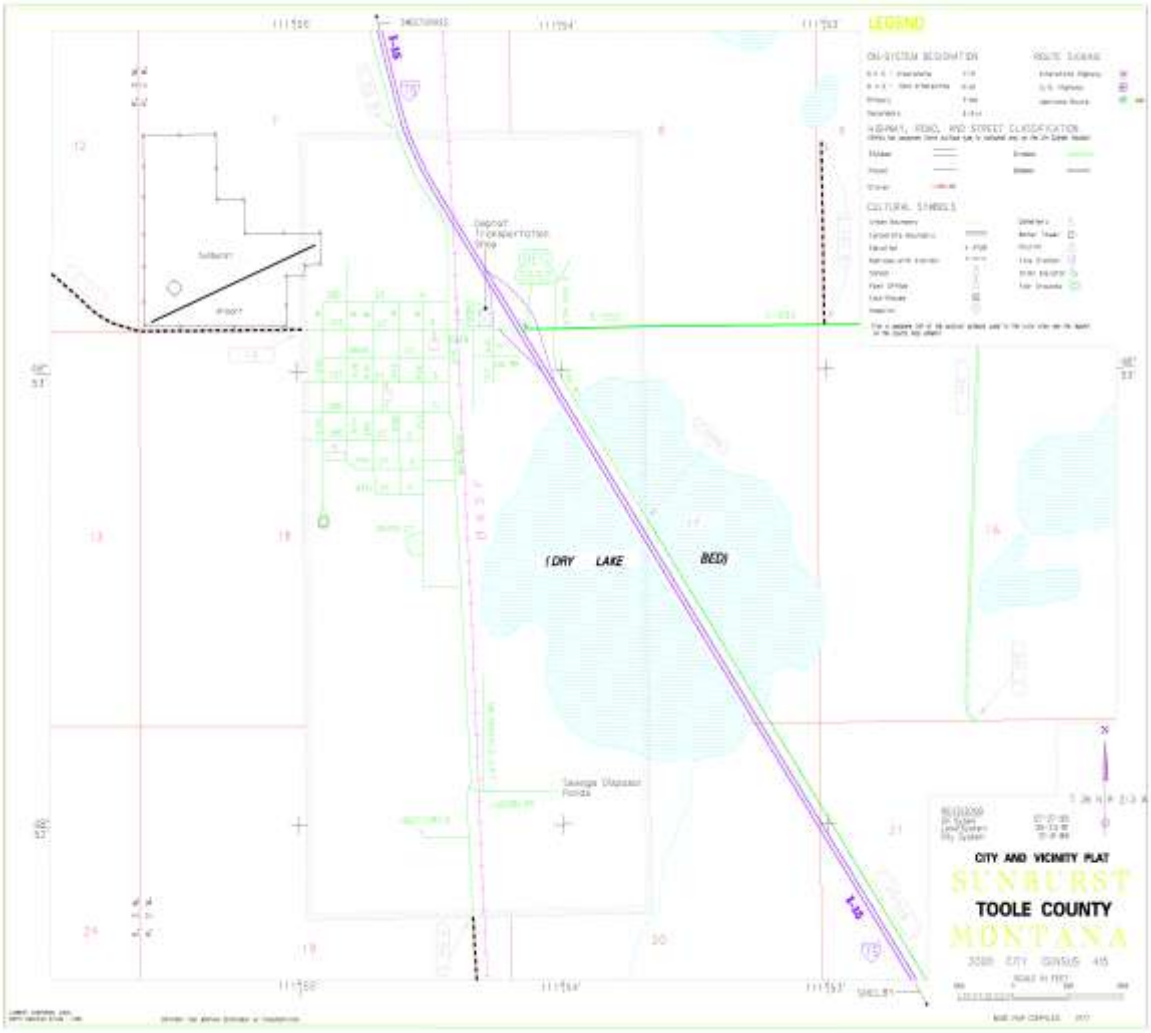
Impacts that could occur as a result of dust blowing across Interstate 15 include:

- Loss of life and injury
- Vehicle accidents and vehicle damage, freight loss or damage
- Hazardous material incidents as a result of vehicle accidents
- Interruption of transportation and commerce

Probability

Forecasting future events is difficult because lack of moisture must combine with high winds to create the hazardous conditions. The probability that there will be future blowing dust obscuring visibility is high. Past actions by the state to temporarily restrict or close traffic have decreased the likelihood, but not eliminated the potential for a serious accident during the blowing events.

Figure 3.2. Dry Lakebed Area South of Sunburst



Blowing Saline Dust Hazard Summary

Frequency: High
Potential Losses: Medium
Population Affected: Low

Drought Hazard

Hazard Description

"Drought is an extended period of below normal precipitation which causes damage to crops and other ground cover; diminishes natural stream flows; depletes soil and subsoil moisture; and because of these effects causes social, environmental, and economic impacts to Montana" (Montana Drought Response Plan, 1995). Year-round weather patterns contribute to drought conditions, but its effects are typically seen during the hot summer months and growing season.

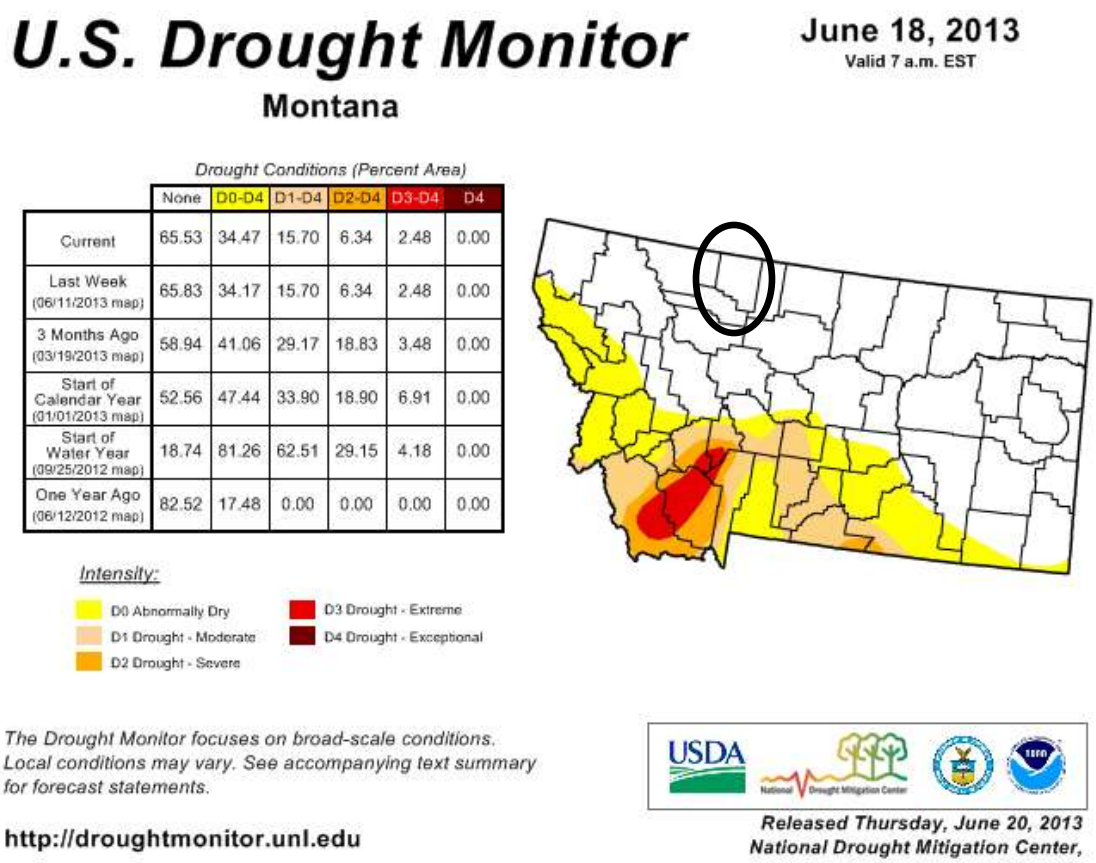
Droughts can range from minor to severe and short-term to long-term with a variety of determining factors such as precipitation, soil moisture, and river levels. A long-term severe drought can greatly impact the agricultural economy, natural resources and water supplies while a minor, short-term drought may have minimal impacts.

Drought occurs in four stages and is defined as a function of its magnitude (dryness), duration, and regional extent. Severity, the most commonly used term for measuring drought, is a combination of magnitude and duration.

The first stage of drought is known as a meteorological drought. The conditions at this stage include any precipitation shortfall of 75% of normal for three months or longer. The second stage is known as agricultural drought. Soil moisture is deficient to the point where plants are stressed and biomass (yield) is reduced. The third stage is the hydrological drought. Reduced stream flow (inflow) to reservoirs and lakes is the most obvious sign that a serious drought is in progress. The fourth stage is the socioeconomic drought. This final stage refers to the situation that occurs when physical water shortage affects people.

The National Integrated Drought Information System (NIDIS) monitors drought in the United States and prepares the U.S. Drought Monitor, an assessment that best represents current drought conditions by analyzing multiple indices, outlooks and local impacts. The Drought Monitor concept was developed in the 1990's by the National Oceanic and Atmospheric Administration's (NOAA) Climate Prediction Center, the National Drought Mitigation Center (NDMC), and the USDA's Joint Agricultural Weather Facility. Each Drought Monitor represents a consensus of Federal, State and academic scientists who are intimately familiar with the conditions in their respective regions. As shown in Figure 3.3, there are no drought conditions in Toole County as of June 18, 2013 and for most of the northern portion of the State. However, the southern and southwestern portions of Montana are experiencing abnormally dry to extreme drought conditions.

Figure 3.3. Current Toole County Drought Status



Source: http://droughtmonitor.unl.edu/DM_state.htm?MT,W

Historic Occurrences

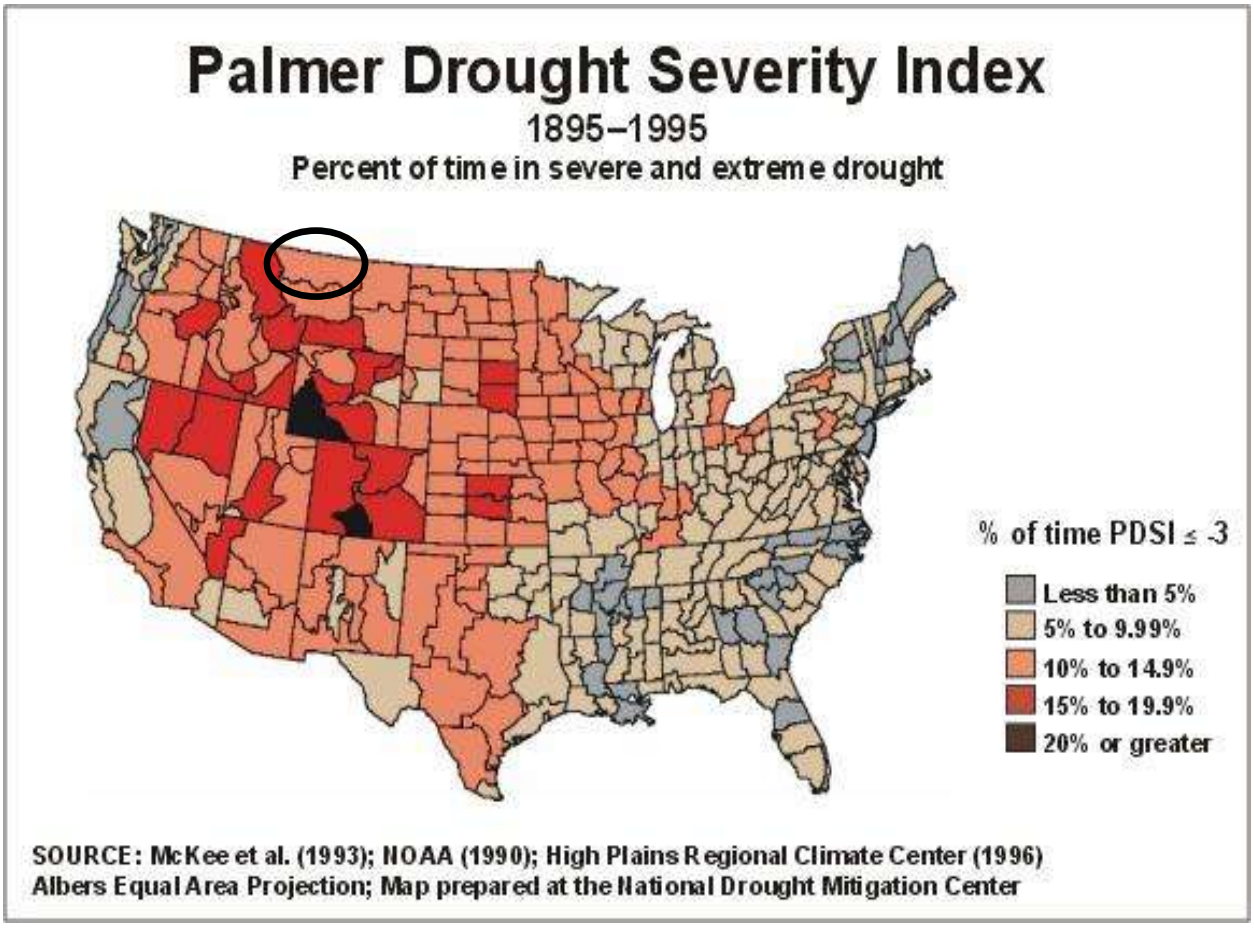
Anecdotal evidence of drought can be found in local histories from the region. For example, the Ole Ennenberg Story in Echoes From the Prairie recounted how the summer of 1914 was a hot dry one with no grass, 1917 and 1918 had no crop, and in 1919 "a good many of the cattle and horses on the prairie died." And, according to the Pictorial History of Toole County (neighboring county to the west), the driest years prior to 1940 were 1910, 1914, 1917, 1918, and 1919. In Flury Sullivan's Story (*Shelby Backgrounds*) the summer of 1918 was described as bone dry. "The homesteaders began leaving as rapidly as they came. The broad plain, so productive and progressive in 1916, was now a scene of utter devastation, with miles and miles of wire fence flattened, wind-blistered school houses boarded up, barns and sheds caved in, homes deserted and the little short-lived towns along the High Line wind-tossed and fast becoming empty." According to Gladys Torgerson, "1917 was the first of five years of drought. By 1919, cattle were dying of starvation and people abandoned their land by the hundreds." (*Toole County Background*).

Following the drought of the late teens, drought struck again in the 1930's and 1950's. Impacts of the 1930's drought which caused the Dust Bowl were severe across the entire Great Plains. This drought led to changes in farm practices which have lessened the impacts of subsequent droughts--such as the one in the 1950's--on agriculture. In 1956, 20 counties (presumably Toole included) applied for federal drought disaster aid (Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment, 2007).

Drought struck across the state again in 1966. The state plan also recounts how in July 1984, "many High Line cities were experiencing water shortage and rationing schedules were put into effect. In 1985 all 56 counties in the state received disaster declarations for drought. This year produced the smallest wheat crop in 45 years. In 2002 the USDA issued National Drought Determinations (NDD) for 2000-2002 for the entire state of Montana. Thirty-five counties in the state had NDDs again in 2003 (Montana Multi-Hazard Plan and Statewide Hazard Assessment, 2007) (see Table 3.3 below).

As shown in Figure 3.4, between 1895 and 1995, Toole County has been in severe or extreme drought 10 to 14.9% of the time. Figure 3.4 is based on the Palmer Drought Severity Index (PDSI), which quantifies drought in terms of moisture demand and moisture supply. The PDSI was developed in the 1960's and uses temperature and rainfall information in a formula to determine dryness. The PDSI is most effective in determining long-term drought. It uses 0 as normal, and drought is shown in terms of minus numbers. Minus 3 is severe drought, minus 4 is extreme drought. The PDSI is standardized to local climate.

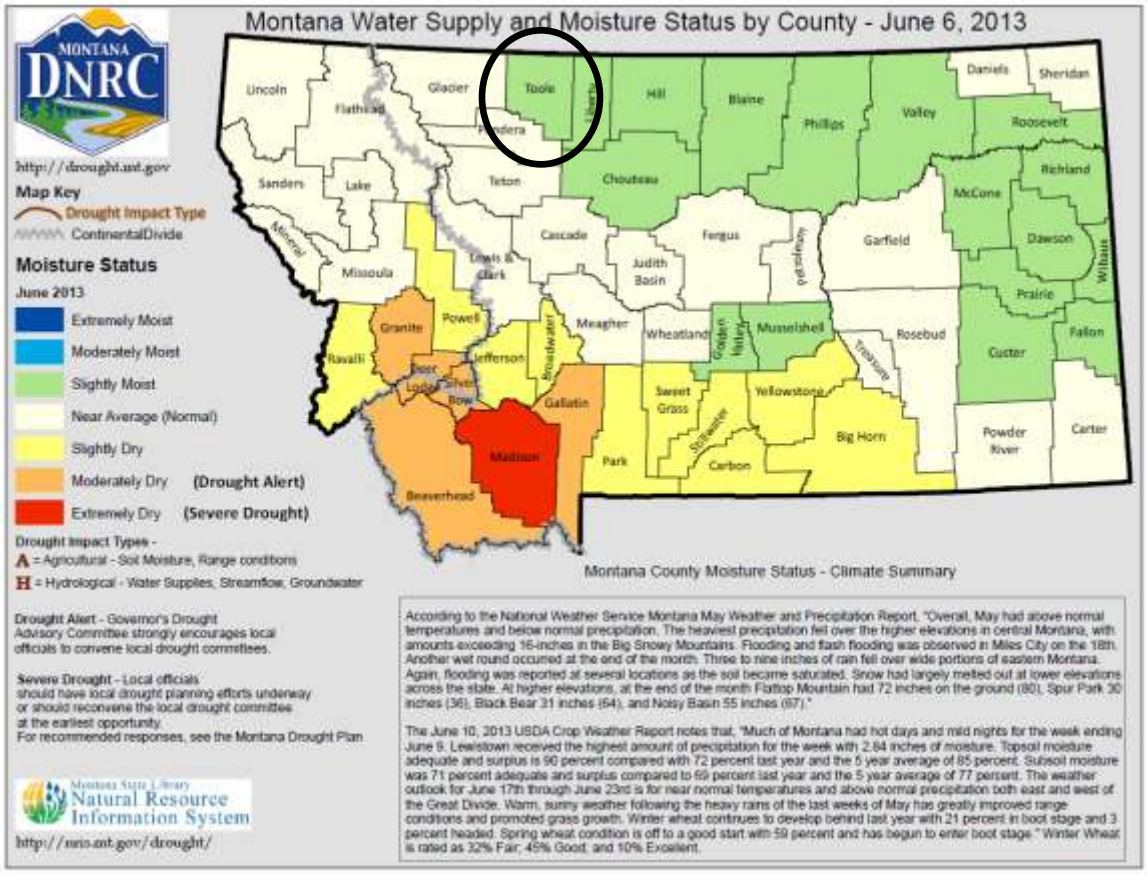
Figure 3.4. Palmer Drought Severity Index



Toole County, along with much of the State, had been in drought during much of the late 1980's. In response to this, and to assist with increasing awareness of and planning for drought in the future, the Governor's Drought Advisory Committee (Committee) was formed in 1991. The Committee, comprised

of state and federal water supply and moisture condition experts, meets monthly to evaluate conditions for each county in the state and also supports watershed groups and county drought committees by providing planning support and information. Water supply and moisture status maps are produced monthly from February to October by the Committee unless above average moisture conditions are prevalent. Figure 3.5 shows the water supply and moisture status conditions by county as of June 6, 2013, indicating that Toole County is designated as slightly moist.

Figure 3.5. Montana Water Supply and Moisture Status by County - June 6, 2013



Source: http://nris.mt.gov/Drought/status/default.asp

Additionally, each spring the Committee prepares a report for the Governor on the drought outlook for the upcoming growing and water use season. The Governor's Report on the Potential for Drought summarizes what can be expected regarding reservoir storage, streamflow, soil moisture, and agricultural production through mid-summer.

Since the last Toole County Mitigation Plan was completed in 2007, Montana was a couple years into recovery from one of the longest and most severe episodes of drought for the state since the 1930s, and has seen varying conditions since that time. That drought began in 1999 and continued into 2005, prompting an update to the Montana Drought Response Plan in 2007. Average to above average precipitation with normal or cool temperatures persisted in 2006, when no water supply shortages occurred. Beginning in 2007, the drought conditions began to rise again with record-breaking heat that summer followed by a dry winter on the plains. However, relief occurred soon thereafter with low to moderate drought conditions occurring in 2008 up to the fall of 2009. A strong El Nino event that began

in spring of 2009 and peaked in December of that year caused well below historic average streamflows, particularly in the western half of the state, and below-average mountain snowpack in 2010. Reservoir carryover storage from 2009 did help the situation. A moderate to strong La Nina event brought relief in 2011 with a record-breaking water year. As of May 2012, drought conditions were essentially absent statewide and the potential for drought impacts, specifically for dryland farming and livestock production, was predicted to be low to moderate into mid-July 2012 for the area including Toole County (Montana Drought Advisory Committee, 2006-2012).

However, beginning in July 2012 conditions began to deteriorate when most of the state experienced a hot and dry spell from July through mid-August. This was particularly evident in the southeastern portion of the state. In September, mostly hot, dry days persisted throughout most of the state. This caused Toole County to begin to be classified as slightly dry according to the Water Supply and Moisture Status map from September 19, 2012 and again on October 15, 2012 from the Montana Department of Natural Resources and Conservation. Toole County had been slightly moist in previous months in 2012 other than normal classifications in April, July and August. Moisture levels then steadily increased in November and December 2012.

Table 3.3 lists the recognized periods of drought in Toole County.

Table 3.3. Periods of Drought in Toole County since 1900

Time Period	Description
1905-1906	Annual precipitation dropped to 60% of normal.
1917-1922	Following a very rainy period, less than normal precipitation levels persisted for about five years with annual precipitation dropping to 60% of normal.
1930s	The “Dust Bowl”, as it is called, resulted in widespread drought conditions, soil erosion, and grasshopper infestations.
1950-1962	Many counties across the state applied for federal drought aid due to a lack of precipitation. Annual precipitation amounts persisted around 70% of normal.
1980s	Starting in 1979, periods of drought continued for a decade with very little precipitation relief. Toole County, along with the rest of the state, received a federal drought declaration in 1985. Across the state, cattle herds were reduced by a third.
1997-2005	The US Department of Agriculture issued Natural Disaster Determinations for drought for Toole County
2009	The US Department of Agriculture issued a Natural Disaster Determination for drought for Toole County (S2941)
2012	The U.S. Department of Agriculture issued a Natural Disaster Determination for drought for Toole County (S3416). Insurance claims for crop damage was $574,955.

Source: US Department of Agriculture Disaster Declaration data.

Insurance payments made from 2007 through 2012 due to drought conditions in Toole County are summarized in Table 3.4.

Table 3.4. Insurance Payments by Crop, Toole County, 2007-2012

Crop	Indemnity Amount
Barley	$1,472,868
Canola	$116,238
Dry Peas	$85,045
Forage Production	$175,888
Oats	$19,777
Wheat	$11,238,572
Total	**$13,108,388**

Source: USDA Risk Management Agency Indemnities Data 2007-2012

Vulnerability and Potential Losses

Of all the natural weather-related disasters, drought is by far the most costly to our society. It indirectly kills more people and animals than the combined effects of hurricanes, floods, tornadoes, blizzards, and wildfires. And, unlike other disasters that quickly come and go, drought's long-term impacts have been responsible in the past for mass migrations and lost civilizations. The 1980 and 1988 droughts in the US resulted in approximately 17,500 heat-related deaths and an economic cost of over $100 billion (Wyoming Multi-Hazard Mitigation Plan, 2005).

Based on past history, there is continued probability that drought will occur in the future in Toole County. Although there may be periods of higher than average precipitation, the PDSI long-term trend data indicate that Toole County is in severe or extreme drought up to nearly 15% of the time.

Drought produces a complex web of impacts that spans many sectors of the economy. Direct effects of drought include:

- reduced crop, livestock, and rangeland productivity
- increased fire hazard
- reduced water levels and potential for reduced drinking water supply
- damage to wildlife and fish habitat.

Indirect effects include those impacts that ripple out from the direct effect and include reduced business and income for local retailers, increased credit risk for financial institutions, capital shortfalls, loss of tax revenues and reduction in government services, unemployment, and out-migration.

There is no standardized method for tracking economic losses related to drought in Montana.

Drought can certainly have an effect on the regional economy. Low irrigation supplies may damage crops and reduce the amount of feed available for livestock. With annual agricultural sales of nearly $48 million, drought can severely diminish profits for the 428 farms in Toole County (USDA, 2007 Census). Wheat and barley used as grain are important aspects of the agricultural economy and losses from drought can have an effect locally.

Table 3.5 provides an estimate of potential crop losses associated with drought. Indirect cost effects, such as reduced business with local merchants, etc.), would be in addition to direct losses to agricultural producers.

The estimated economic loss is calculated using the 2012 insurance claim data for crop loss and extrapolating that data to assume losses on all insurable crops. For example, if 89% of insurable crops were insured and crop insurance payments total $100, an estimate of total economic loss can be reached by dividing $100 by 0.89 to get $112.36.

Table 3.5. One-Year Drought Loss Estimation for Key Crops in Toole County

Crop	2012 Indemnity Amount	Percent Insured	Estimated Economic Loss
Barley	$151,966	68%	$223,479
Canola	$87,056	71%	$122,614
Dry Peas	$47,893	81%	$59,127
Forage Production	$347	40%	$868
Oats	$0	18%	$0
Wheat	$287,693	90%	$319,659
Total	**$574,955**		**$725,747**

Sources: USDA Risk Management Agency Indemnities Data, 2012, Montana Crop Insurance Profile 2011

Since the county is not a major producer of beef or mutton, losses in livestock production would be considerably less than the crop losses during drought. The stock losses could include direct losses for cattle with less weight at shipping and also the indirect costs of herd reduction because forage is either not available or too expensive to purchase.

In summary, there is potential for drought occurrence in Toole County with accompanying economic losses in the millions of dollars annually. The estimates above indicate direct annual losses of over $725,000 for only a portion of crop types. Considering losses to other crops, the direct cost is likely many more millions of dollars during drought years. Insurance claims of almost $575,000 were paid out for crop loss due to the 2012 drought (USDA Risk Management Agency Indemnities data, 2012).

Impacts

As the four stages of drought discussed above evolve over time, the impacts to the economy, society, and environment can converge into an emergency situation. Without spring rains for dryland crops and prairie grasslands, wheat and barley yields and open range forage are reduced. Without groundwater for municipalities, drinking water supplies can fall short. Hardships to communities result in increases in mental and physical stress as well as conflicts over the use of whatever limited water is available. Without water, wetlands disappear. The quality of any remaining water decreases due to its higher salinity concentration. In Toole County in 2006, two of the Hutterite Colonies reported serious problems with algae in their reservoirs for stock watering. There is also an increased risk of fires, and air quality degrades as a result of increased soil erosion in strong winds (blowing dust).

Potential impacts identified by the public in Toole County could include:

- Financial impacts to individual producers, towns' economies
- Wildland fire potential
- Interruption of on-going activities such as road maintenance
- Loss of livestock forage and wildlife habitat
- Loss of hunting, fishing, recreation opportunities
- Ecosystem disruption
- Health issues from wells going dry, reservoirs drying up
- Access to water for fire suppression compromised
- Dust/air quality--accidents and road closures
- Cost of hauling water

Probability

Drought will occur again in the future. The most severe droughts are multi-year events. If, however, the past is any indication, Toole County can expect to be in severe or extreme drought between one and two years in every ten years. This is based upon the 100-year PDSI data.

Additionally, the National Oceanic and Atmospheric Administration Paleoclimatology Program studies drought by analyzing records from tree rings, lake and dune sediments, archaeological remains, historical documents, and other environmental indicators to obtain a broader picture of the frequency of droughts in the United States. According to their research, "…paleoclimatic data suggest that droughts as severe as the 1950's drought have occurred in central North America several times a century over the past 300-400 years, and thus we should expect (and plan for) similar droughts in the future. The paleoclimatic record also indicates that droughts of a much greater duration than any in the 20th century have occurred in parts of North America as recently as 500 years ago." Based on this research, the 1950's drought situation could be expected approximately once every 50 years or a 20% chance every ten years. An extreme drought, worse than the 1930's "Dust Bowl," has an approximate probability of occurring once every 500 years or a 2% chance of occurring each decade (National Oceanic and Atmospheric Administration, 2003).

Drought Hazard Summary

Frequency: High
Potential Losses: Very High
Population Affected: High

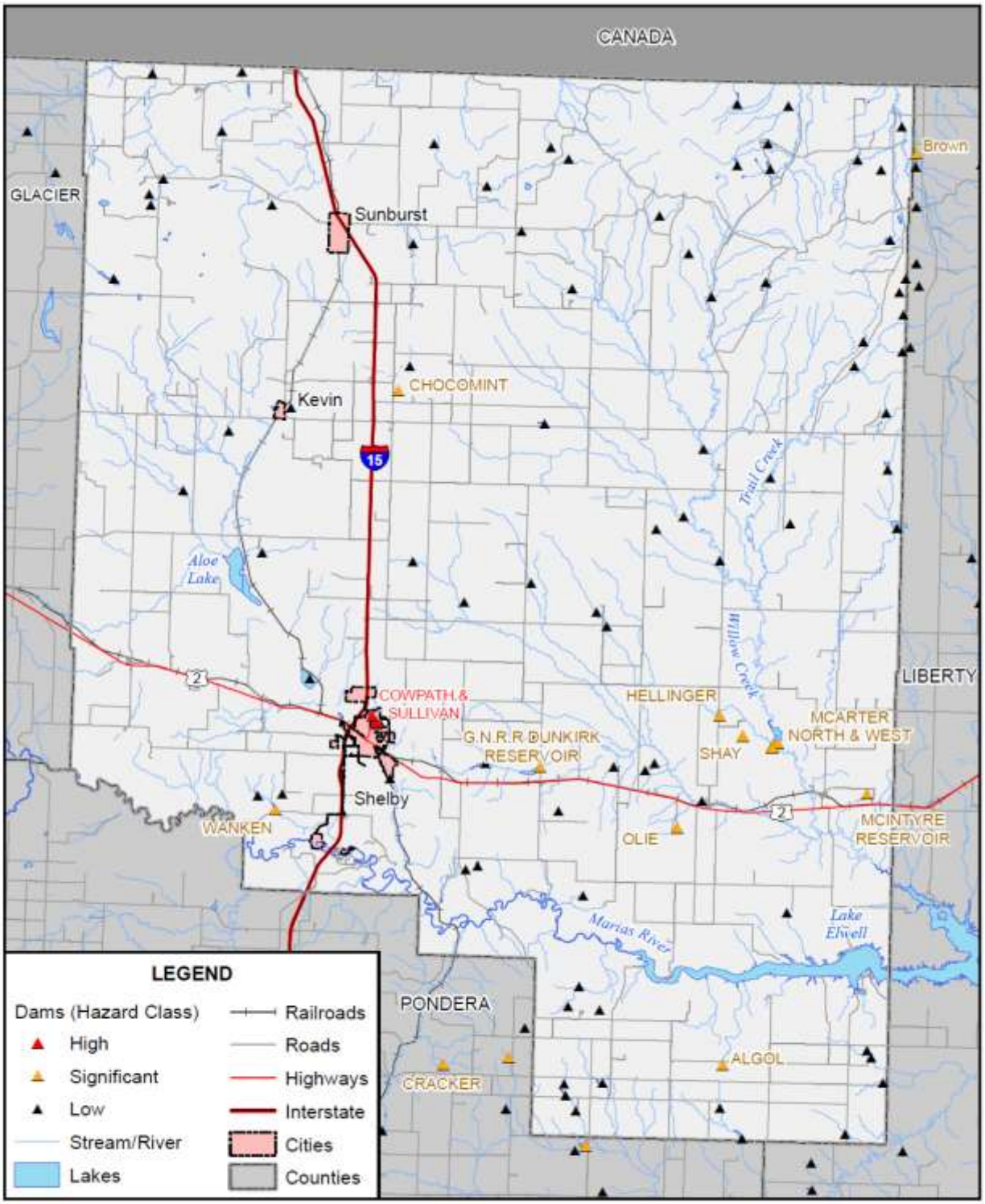
Flooding Hazard

Hazard Description

"Floods are the result of a multitude of naturally-occurring and human-induced factors, but they can be defined as the accumulation of too much water in too little time in a specific area." (2010 Update to the Montana Multi-Hazard Mitigation Plan) Floods that could potentially affect Toole County include regional floods, flash floods, ice-jam floods on the Marias, and dam-failure or levee-failure floods.

The county is home to two High Hazard dams, Sullivan and Cowpath, which impound Lake Shel-Oole, and have flood control as their primary purpose. The City of Shelby constructed these dams north and west of the city following the devastating 1964 floods. Response to the failure of the dams is covered in an emergency plan which is regularly updated. Due to recent dry years, the reservoir has almost empty. There is water in the reservoir in 2013. Goeddetz Dam (known locally as Bird Pond Dam) is designated a Significant Hazard dam and is owned by the City of Kevin, however, an Emergency Action Plan is not required. The primary purpose of this dam is flood control protection for Kevin. This dam generally impounds very little water. Figure 3.6 shows all the dams located in Toole County.

Figure 3.6. Dams in and near Toole County



The type of flooding most likely to cause damage in Toole County is flash flooding. Flash floods are local floods of great volume and short duration. This type of flood usually results from a torrential rain on a relatively small drainage area. Most flood-related deaths are due to flash floods because of the speed at which the flood waters move downstream--preventing escape, or when people attempt to drive across inundated roads.

According to the USACE Ice-jam database, there have been no recorded ice-jam floods in Toole County from 1920 to 2013, although county historical records do show one ice-jam flood in 1947.

Kevin, Shelby, and Toole County are all participants in the National Flood Insurance Program (NFIP). Sunburst, previously sanctioned, now participates in the NFIP as well. Toole County entered the NFIP May 21, 2009. No Special Flood Hazard Areas are mapped in the unincorporated portions of the County. Shelby entered the NFIP November 1, 1996. The initial Flood Hazard Boundary map is dated April 2, 1976 and its effective date is November 1, 1996.

As of March 31, 2013, there was one flood insurance policy in-force in the county or the communities for an insured value of $280,000. No loss claims have been paid from 1978 to March 31, 2013 (http://www.fema.gov/policy-claim-statistics-flood-insurance/policy-claim-statistics-flood-insurance/policy-claim-13). This situation was discussed at the second public meeting held during this plan's initial development and local participants speculated that this was the case for several reasons: river flooding problems are relatively rare in the county, many years have been dry, and flood insurance is expensive.

Historic Occurrences

Six federal disasters have been declared in Toole County due to flooding. The disasters were as follows:

- 1964 Presidential Disaster Declaration
- 1975 #FDAA-472-DR-MT
- 1986 #FEMA-761-DR-MT
- 1996 #FEMA-1113-DR-MT, and
- 2002 #FEMA1424-DR-MT
- 2011 #FEMA1996-DR-MT (County added after the initial designation)

Local histories recount numerous instances of flooding. The following flood history includes information from these local histories. National online hazard databases were also researched for this plan. The National Climatic Data Center's (NCDC) database contained five flood and flash flood records for Toole County for the period 1950 through May, 2013. The floods occurred in three locations, Galata and Shelby on July 4, 1998, county-wide and in Shelby on June 10, 2002 and Naismith on May 25, 2008. Flood history for the County is shown in Table 3.6.

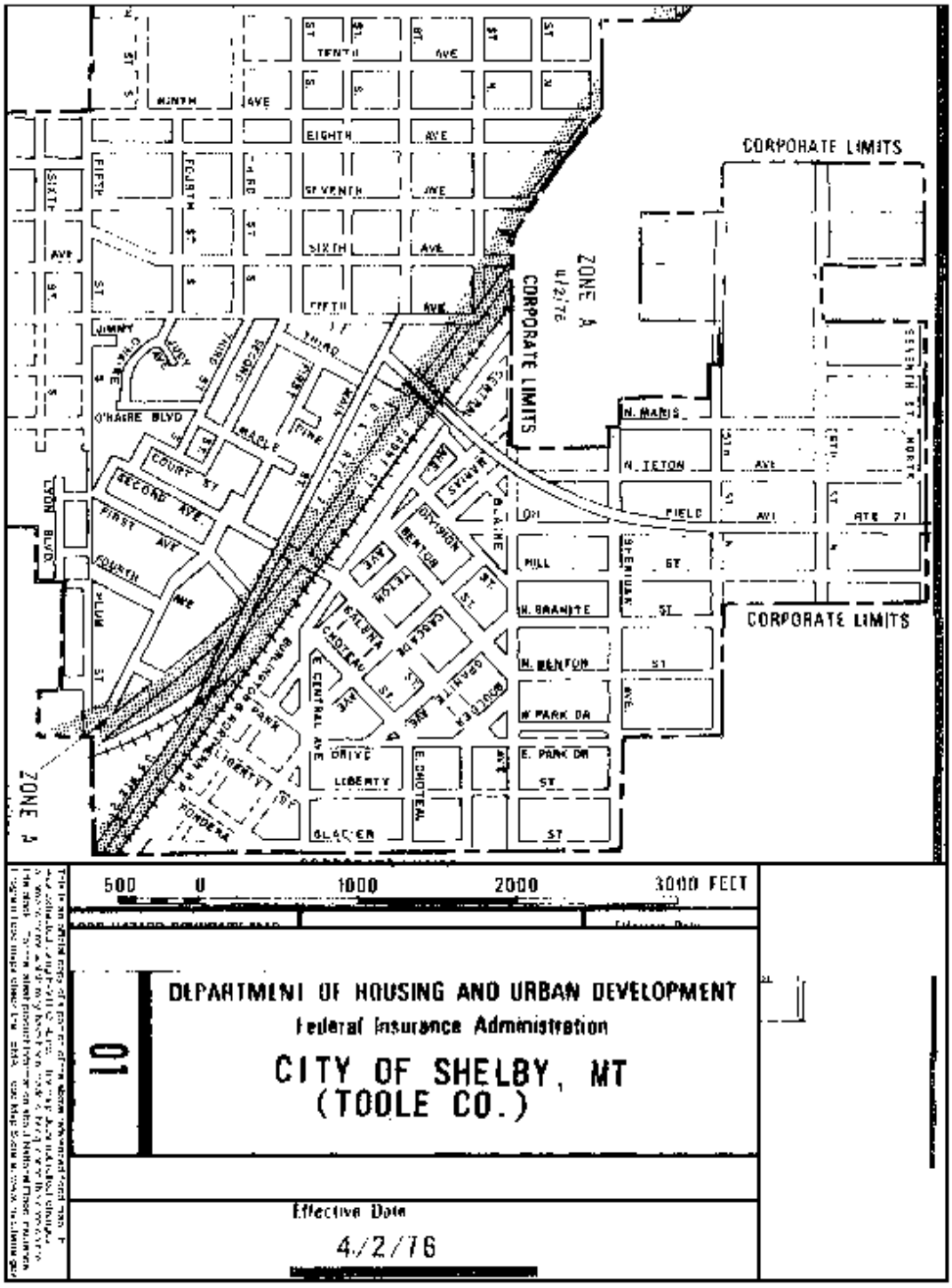
Table 3.6. Toole County Flood History

Year	Location	Description	Source
June 1907	Marias River	Water four feet deep in Malone family house, barn washed away, five people spent 26 hours in a tree, lost the house. Family lived in tents until late December.	Toole County Background
1908	Marias River	Marias rose higher than ever before. Flooded ranches, washed out bridge. "The floods from 7 days and nights took their toll as the ranch buildings were washed away." L.C.Marsh reported three feet of sediment deposited in the house and chickens were killed.	Shelby Backgrounds, Toole County Background
1902's	Kevin	Flood over the railroad tracks and Main Street	A Pictorial History of Toole County
1947	Dry Fork of the Marias River	Ice-jam flooding	A Pictorial History of Toole County
1948	Marias River	Cut off north-south transportation	County Commissioners, Shelby Backgrounds
1964	Marias River and beyond	Widespread flooding over a number of counties caused by heavy precipitation that washed out upstream dams resulted in many deaths, stock losses, and property damage.	Newspapers County Commissioners Local histories
1975			County Commissioners
1985	Marias River	Flooding destroyed 2 buildings, flooded Williamson Park, swept across golf course depositing boulder-sized ice	A Pictorial History of Toole County
1996	Marias River	Ice-jam flooding affected several farms	County Commissioners
1998	Shelby, Gallata	Flash flood caused $10,000 worth of property damage in Shelby	NCDC
2000	County	12 inches of moisture in 3 days in Sweetgrass Hills caused road damage and damage to Shelby's water well field	County Commissioners
2001	County	Heavy precipitation caused damage to county roads and Sweetgrass lagoon	County Commissioners

Year	Location	Description	Source
2002	County	Flash flooding county-wide 12” of rain/snow in the hills Marias River out of its banks and urban street flooding	County Commissioners and NCDC
2008	Naismith	Rainfall of 2-5 inches over the plains and valleys Rain amounts over 10 inches in the mountains Marias River south of Shelby came out of its banks and flooded nearby areas, including the golf course and adjacent low lands Debris flow of logs caused some river jamming	NCDC
2011	County	Flash flooding caused some road damage in the county	LEPC

Sources: Shown in far right column.

Figure 3.7. Shelby Delineated Flood Zone (Current Effective Date: November 1, 1996)



Potential Losses

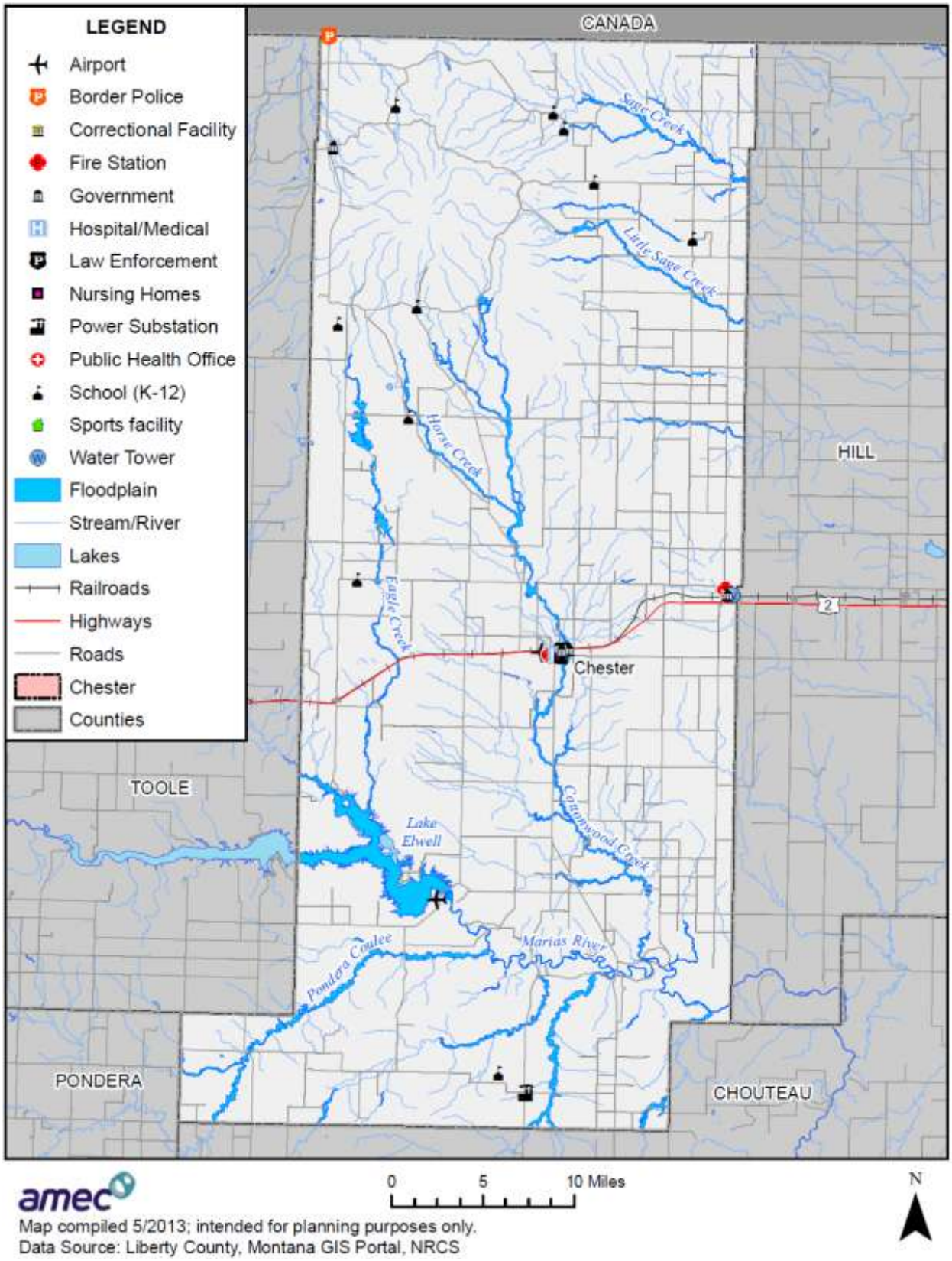
The only documented flood damage in the NCDC data occurred in 1998. The loss in Shelby was $10,000. The SHELDUS data contains reports of seven damaging flood incidents over the past 30 years, 1969, 1986, 1987, 1991, 1994, 1996 and 1998. Property damage totaled $220,877. By far, the greatest damage occurred in the March, 1996 flood. Property damage, not adjusted for inflation, exceeded $166,000. Crop damage reported by SHELDUS was $12,518.

Very little property in the county is at risk from river and ice-jam flooding, the property at risk is limited to isolated farm and ranch buildings along the Marias River. The unincorporated areas of the county have not been mapped for flood hazards.

Flash floods present a larger danger. The heaviest precipitation in the county occurs in the Sweetgrass Hills where the property values are less than in the towns. Flash floods could occur anywhere and an accumulation of water in the low spot which is Shelby could cause damage to basements and foundations.

Potential losses were calculated in 2013 using estimated floodplains and property value information for Toole County, Shelby, Kevin and Sunburst. Due to limited resources for floodplain mapping, Soil Data from the Natural Resources Conservation Service (NRCS) was used. Due to limited availability of floodplain mapping data (no Digital Flood Insurance Rater Maps or DFIRM available), Soil Data from the Natural Resources Conservation Service (NRCS) was used to estimate areas prone to flooding. Soil surveys provide users with information about soils including those associated with floodplains. Soil maps units 601A (rarely flooded) and 603A (occasionally flooded) are both found in the county and these soil types were used to create the estimated floodplains shown in Figures 3.8 through 3.11. It is noted that these maps are for risk assessment purposes only and not for regulation.

Figure 3.8. Unincorporated Toole County Floodplain



amec

Map compiled 5/2013; intended for planning purposes only.
Data Source: Liberty County, Montana GIS Portal, NRCS

Figure 3.9. Town of Kevin Floodplain

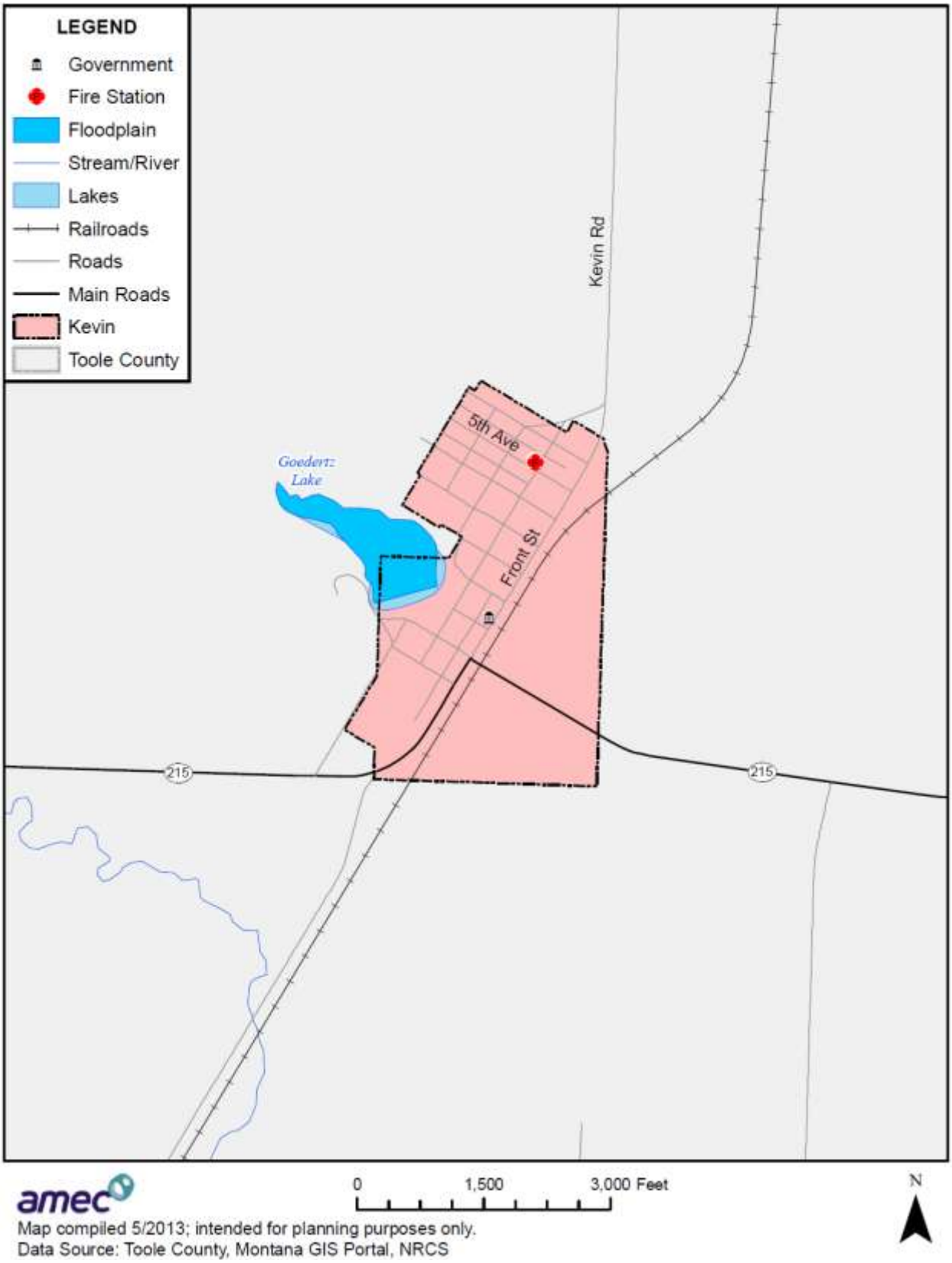
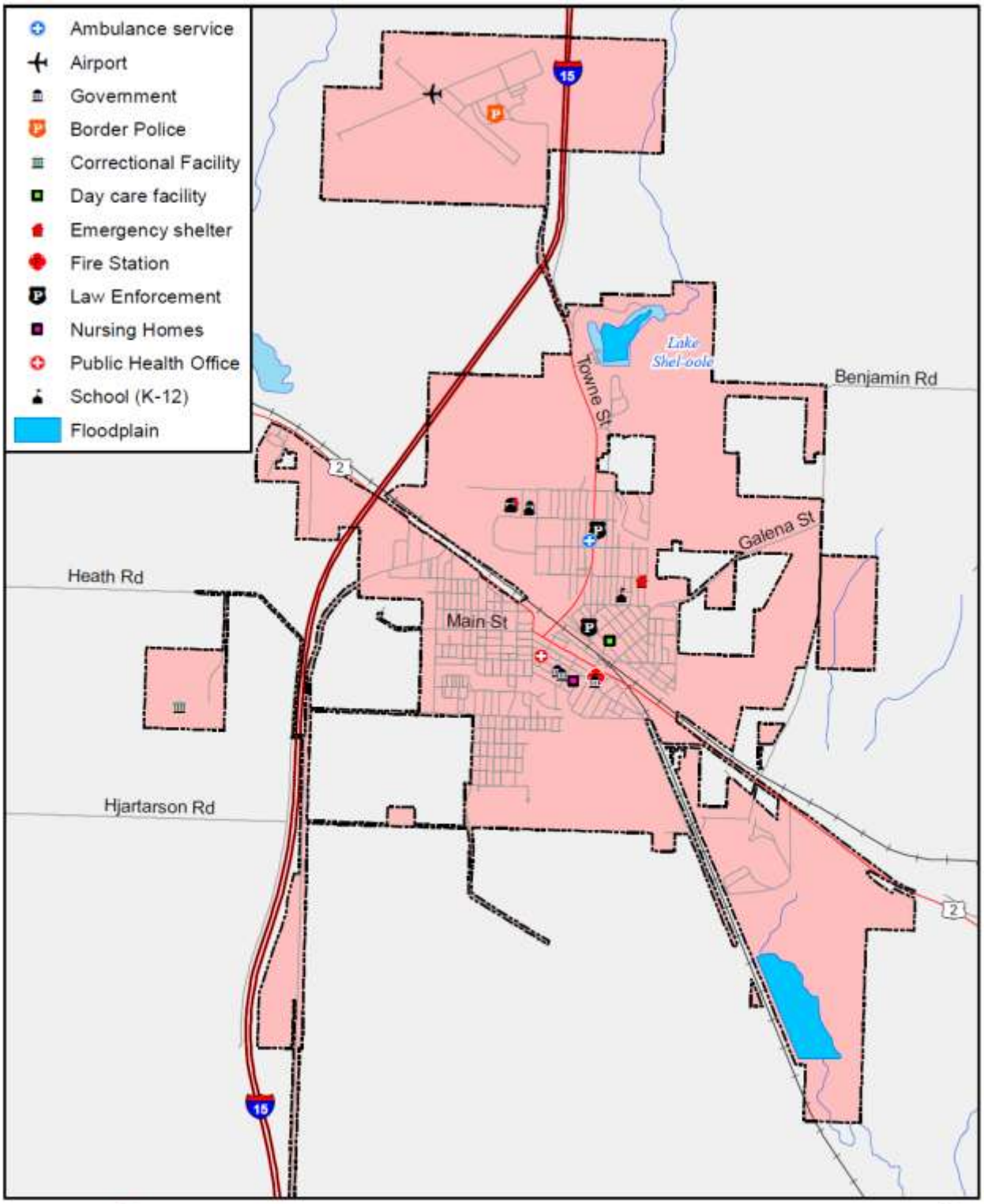
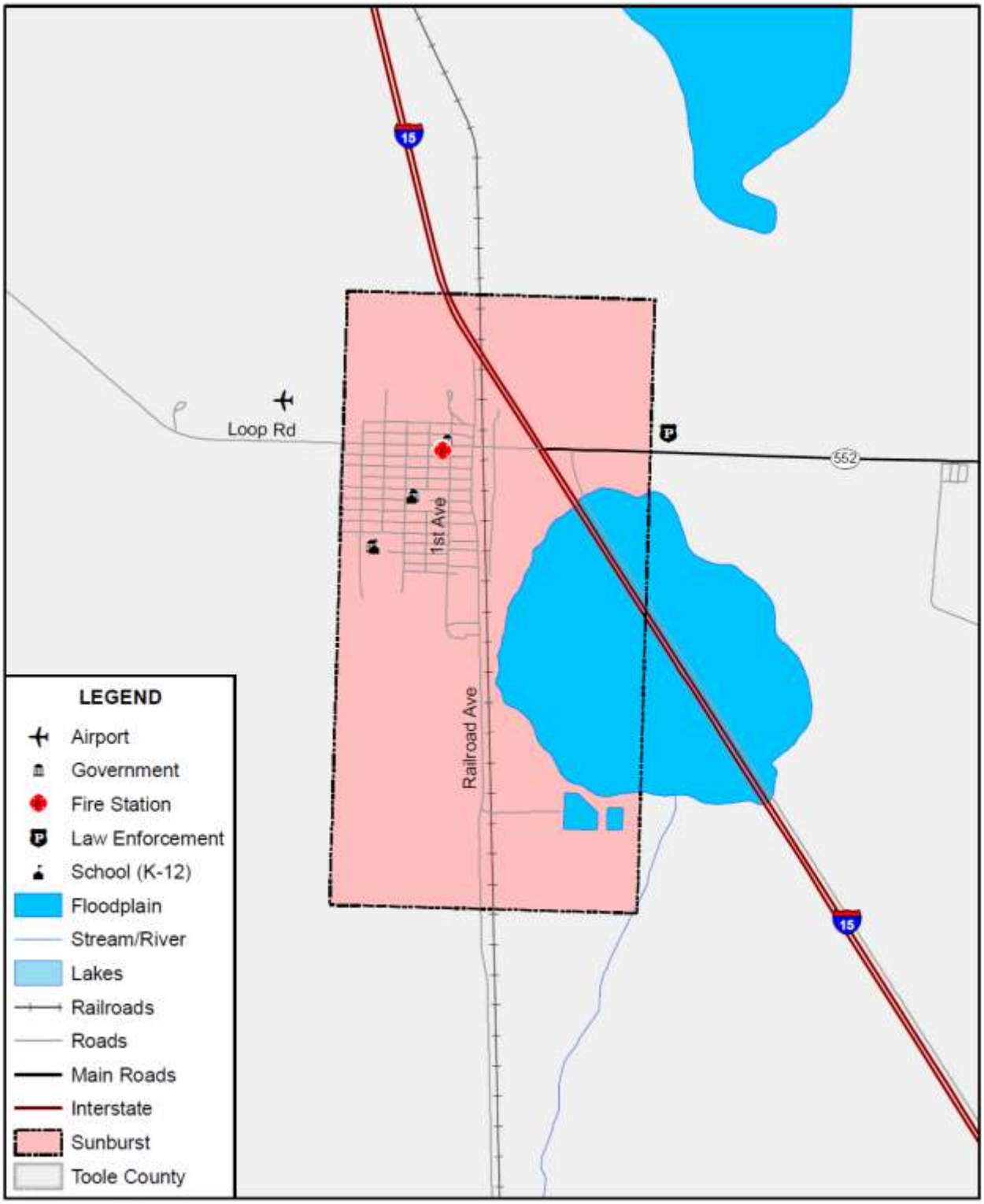


Figure 3.10. City of Shelby Floodplain



Map compiled 5/2013; intended for planning purposes only.
Data Source: Toole County, Montana GIS Portal, NRCS

Figure 3.11. Town of Sunburst Floodplain



amec

Map compiled 5/2013; intended for planning purposes only.
Data Source: Toole County, Montana GIS Portal, NRCS

GIS was used to create a centroid, or point, representing the center of each parcel polygon. Only parcels with improvement values greater than zero were used in the analysis, which assumes that improved parcels have a structure of some type. The estimated flood zones were overlaid in GIS on the parcel centroid data to identify structures that would likely be inundated. Building improvement values for those points were then extracted from the parcel/assessor's data from the Montana Department of Revenue and summed for the unincorporated county and for the Towns of Shelby, Kevin and Sunburst. Only the unincorporated County and the City of Shelby have properties that lie in the floodplain.

Results of the overlay analysis area shown in Tables 3.7 and 3.8, and are sorted by the parcel's occupancy type, and jurisdiction. Occupancy type refers to the land use of the parcel and includes residential, commercial, agricultural, industrial, vacant land, and exempt. Contents values were estimated as a percentage of building value based on their occupancy type, using FEMA/HAZUS estimated content replacement values. This includes 100% of the structure value for agricultural, commercial, and exempt structures, 50% for residential structures, 150% for industrial structures, and 0% for vacant land use classifications. Building and contents values were totaled, and a 25% loss factor was applied to the totals, also based on FEMA depth damage functions, assuming a 2 foot deep flood.

Table 3.7. Unincorporated Toole County Structures and Losses in the Floodplain

Property Type	Improved Parcel Count	Improved Value	Estimated Content	Total	Estimated Loss
AR - Agricultural Rural	4	$256,694	$256,694	$513,388	$128,347
FR - Farmstead Rural	2	$205,327	$102,664	$307,991	$76,998
RR - Residential Rural	4	$560,361	$280,181	$840,542	$210,135
Total	**10**	**$1,022,382**	**$639,538**	**$1,661,920**	**$415,480**

Source: Toole County Recap by Property Classification, Montana Department of Revenue, April 2013.

Table 3.8. City of Shelby Structures and Losses in the Floodplain

Property Type	Improved Parcel Count	Improved Value	Estimated Content	Total	Estimated Loss
EP - Exempt Property	1	$244,700	$244,700	$489,400	$122,350

Source: Toole County Recap by Property Classification, Montana Department of Revenue, April 2013.

There are 11 improved parcels in the estimated flood zone. The total building exposure (actual building value plus content value estimate) in the estimated flood zone is $2,151,320. Assuming a 2 foot deep flood, losses could be on the order of $537,830. The countywide loss ratio (the ratio of the building value at risk divided by the overall county building value) is 0.9%.

Based on this analysis, the greatest losses in terms of the number of improved parcels impacted from a flood would occur in the unincorporated county (10), followed by The Town of Shelby (1). County losses

could exceed $415,000. City of Shelby losses could exceed $122,000. The towns of Kevin and Sunburst have no improved parcels in the estimated flood zone.

The loss estimates for this vulnerability assessment are a planning level analysis suitable for flood risk mitigation, emergency preparedness, and response and recovery. The methodology and results should be considered 'reasonable'. Uncertainties are inherent in any loss estimation methodology, and losses will vary depending on the magnitude of the flood event. Other limitations may include incomplete or inaccurate inventories of the built environment and the approximate flood hazard areas based on NRCS soil survey data. This loss estimation assumes no mitigation and does not account for buildings that may have been elevated above the 1% annual chance event according to local floodplain management regulations. Another limitation to this analysis is that flooding does occur outside of mapped floodplains due to poor drainage, stormwater overflow, or in areas adjacent to streams that have not been mapped.

In addition to structure damage, economic impacts could occur from the interruption of business and transportation.

Impacts

The following potential impacts from flooding were identified by the public during the original planning process. The impacts have not changed.

- Loss of life and livestock
- Property loss and damage
- Damage to roads
- Damage to water well fields, associated health concerns
- Interruption of transportation/commerce
- Damage to railroad tracks
- Damage to golf course, recreation facilities

Probability

The possibility of river flooding along the Marias River remains, although the two dams that were washed out in the 1964 flood, Swift Dam and Two Medicine Dam, both located upstream in neighboring Glacier County, have been rebuilt. The Sweetgrass Hills area of the county remains especially vulnerable to periodic flash flooding because of the topography and precipitation patterns. Relatively lower-lying areas such as the Town of Kevin and Shelby could potentially flood given the right conditions (heavy precipitation on top of saturated soils or frozen ground), but this has been relatively rare in the past.

Information from local histories, elected officials and records from the NCDC indicates a damaging flood has occurred 13 times in the last 106 years. Based on this information, the frequency for a damaging flood in the county would be approximately once every 8 years. The flood frequency for Shelby has been reduced by construction of the Shel-Oole reservoir.

Flooding Hazard Summary

Frequency: Most of county is Medium, Sweet Grass Hills-High
Potential Losses: Medium
Population Affected: Low

Figure 3.12. June 11, 2002, County-wide flash flooding

Geological Event Hazards

Hazard Description

This hazard profile focuses on earthquakes, but also touches on volcanic and landslide hazards. The State of Montana 2010 Mitigation Plan defines an earthquake as 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. The released energy is transferred to the surrounding materials as vibratory motion known as seismic waves. As the seismic waves pass from one type of geological material to another, they may be amplified or dampened based on the composition of the new material and the energy will decrease with distance. Once the vibrations reach the ground surface they are transferred to man-made buildings, infrastructure or critical facilities. If the waves are strong enough and the structure is not designed or built to accommodate the shaking, the vibration can cause damage to or failure of the building, infrastructure or critical facility.

Magnitude and intensity are two ways earthquakes are measured. Magnitude measures the energy released at the source of the earthquake and is measured by a seismograph. Intensity is a measure of the shaking produced by an earthquake at a certain location and is based on felt affects. A comparison of magnitude and intensity is shown in Table 3.9.

Table 3.9. Richter and Modified Mercalli Scales for Measuring Earthquakes

Magnitude (Richter Scale)	Modified Mercalli Intensity
1.0 - 3.0	I
3.0 - 3.9	II, III
4.0 - 4.9	IV - V
5.0 - 5.9	VI - VII
6.0 - 6.0	VII - IX
7.0 and higher	VIII or higher

Source: USGS Earthquake Hazards Program

Intensity is gauged by how an earthquake affects people, structures and the natural environment. The Modified Mercalli Intensity Scale if the standard scale used in the United States to measure intensity. Table 3.10 provides the abbreviated descriptions for each intensity level.

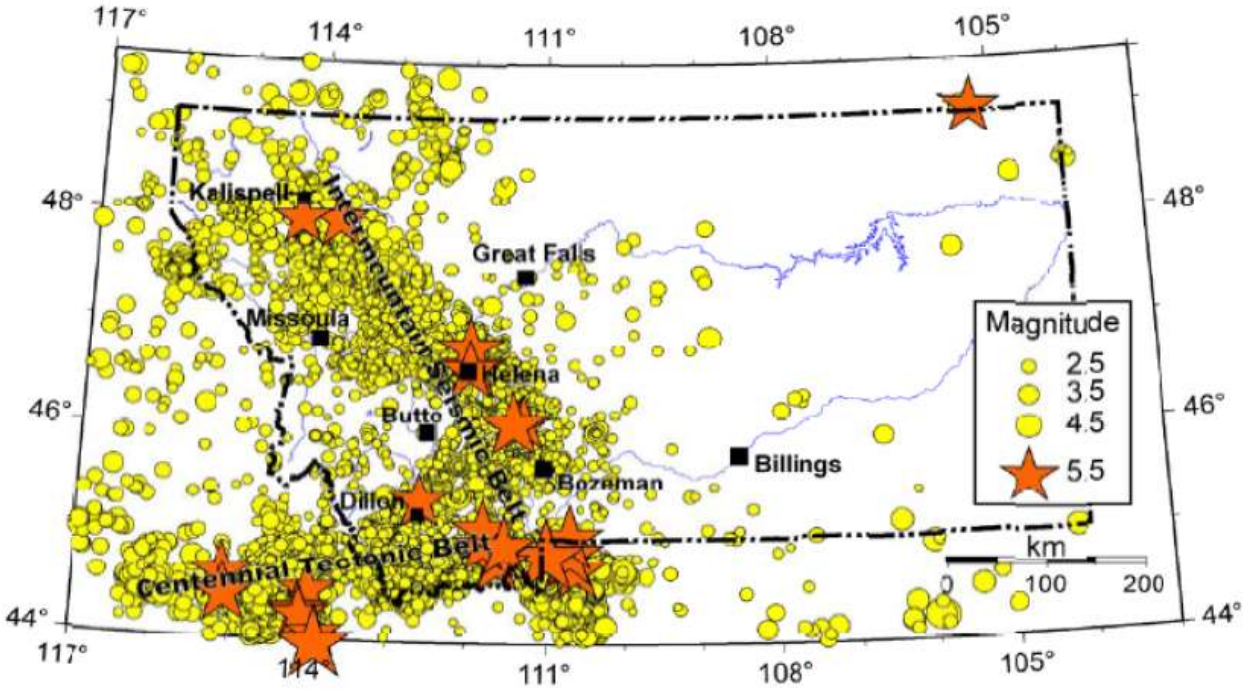
Table 3.10. Modified Mercalli Intensity (MMI) Scale

MMI	Felt Intensity
I	Not felt except by a very few people under special conditions. Detected mostly by instruments.
II	Felt by a few people, especially those on upper floors of buildings. Suspended objects may swing.
III	Felt noticeably indoors. Standing automobiles may rock slightly.
IV	Felt by many people indoors; by a few outdoors. At night, some people are awakened. Dishes, windows, and doors rattle.
V	Felt by nearly everyone. Many people are awakened. Some dishes and windows are broken. Unstable objects are overturned.
VI	Felt by everyone. Many people become frightened and run outdoors. Some heavy furniture is moved. Some plaster falls.
VII	Most people are alarmed and run outside. Damage is negligible in buildings of good construction, considerable in buildings of poor construction.
VIII	Damage is slight in specially designed structures, considerable in ordinary buildings, and great in poorly built structures. Heavy furniture is overturned.
IX	Damage is considerable in specially designed buildings. Buildings shift from their foundations and partly collapse. Underground pipes are broken.
X	Some well-built wooden structures are destroyed. Most masonry structures are destroyed. The ground is badly cracked. Considerable landslides occur on steep slopes.
XI	Few, if any, masonry structures remain standing. Rails are bent. Broad fissures appear in the ground.
XII	Virtually total destruction. Waves are seen on the ground surface. Objects are thrown in the air.

Source: USGS Earthquake Hazards Program

Montana is one of the most seismically active states in the country. Earthquake activity is concentrated mostly in the mountainous western third of the state (http://earthquake.usgs.gov). A belt of seismicity known as the Intermountain Seismic Belt (see Figure 3.13) extends through western Montana, from the Flathead Lake region in the northwest corner of the state to the Yellowstone National Park region where the borders of Montana, Idaho, and Wyoming meet. The Intermountain Seismic Belt continues southward through Yellowstone Park, along the Idaho-Wyoming border, through Utah, and into southern Nevada. In western Montana, the Intermountain Seismic Belt is up to 100 km wide. A branch of the Intermountain Seismic Belt extends west from the northwest corner of Yellowstone Park, through southwestern Montana, into central Idaho. This so called Centennial Tectonic Belt includes at least eight major active faults and has been the site of the two largest historic earthquakes in the northern Rocky Mountains, the August 18, 1959 Hebgen Lake, Montana, earthquake (M 7.5), and the October 28, 1983 Borah Peak, Idaho, earthquake (M 7.3). Although it has been over four decades since the last destructive earthquake in Montana, small earthquakes are common in the region, occurring at an average rate of 7-10 earthquakes per day (Montana Bureau of Mines and Geology).

Figure 3.13. Intermountain Seismic Belt



Source: 2010 update to the State of Montana Multi-Hazard Mitigation Plan

Historic Occurrences

According to the U.S. Geological Service, early earthquake history is incomplete. The first significant quake of the 20th century in Montana occurred in Helena in 1925. This quake was felt over a large area that likely included Toole County. Damaging quakes also occurred in Helena in the 1930's and at Flathead Lake in 1952. The largest earthquake in Montana history took place at Hebgen Lake in southwestern Montana in August of 1959. During that event, 26 people lost their lives and 80 million tons of rock was moved. None of the local histories reviewed mentioned feeling any earthquake activity

in the county, but meeting participants reported having infrequently felt minor shaking from quakes centered elsewhere.

Much of the northwestern United States experienced effects of the eruption of Mount St. Helens. A large area stretching east from the volcano along prevailing winds had heavy to light deposits of volcanic ash. Light ash fall extended to Toole County from this eruption. The next most recent eruption that would have deposited measurable amounts of ash in the Toole County area, Mt. Mazama, was approximately 4,000 years before present. Based on the long recurrence intervals the probability of future volcanic events is difficult to predict.

No records of earthquake, landslide, or volcanic activity in Toole County were found in NCDC, SHELDUS, or the 2010 State of Montana Multi-Hazard Mitigation Plan. Figure 3.14 shows the location of significant earthquakes in Montana between 1568 and 2009. None of these were in Toole County.

Figure 3.14. Significant Earthquakes in Montana: 1568-2009

Source: USGS

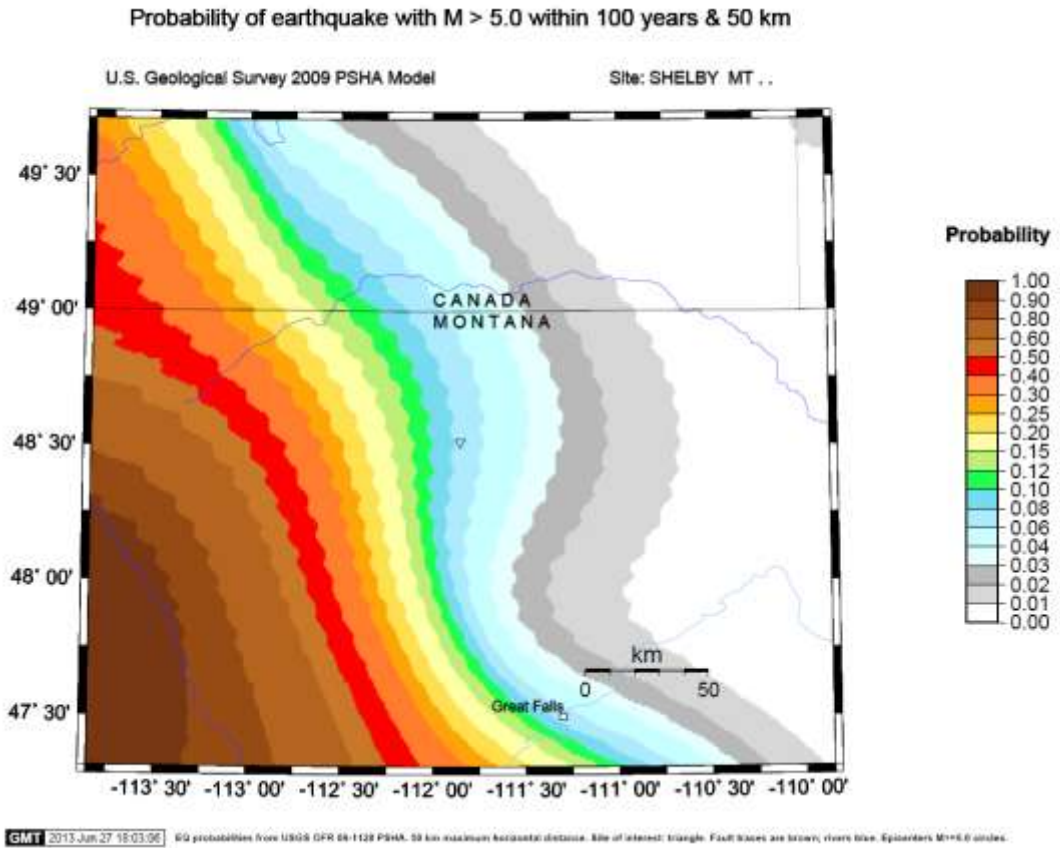
Potential Losses

Predicting the potential losses of a major geological event is difficult--in part because there have been no documented historical occurrences in the county as of 2013 and because the magnitude of the event could vary so significantly. In the case of Toole County, most of the losses from either a volcanic eruption or earthquake would be indirect rather than direct because the event would likely be centered elsewhere, probably to the west. Regional commerce and transportation of goods could be interrupted and medical facilities could be impacted.

Probability of Future Events

Figure 3.15 shows the probability of a magnitude 5.0 or greater earthquake within 100 years and 31 miles (50 kilometers). Toole County has an approximate probability of four to ten percent.

Figure 3.15. Probability of Earthquake with M>5.0 within 100 years and 50 km



Source: USGS

Impacts

Potential losses as a result of geologic events such as earthquakes and volcano eruptions were identified during development of the original plan. The potential impacts have not changed.

- Interruption of utilities and services
- Commerce and transportation interrupted
- Loss of life and injury are possible, but not likely in Toole County
- Panic and fear
- Dam failure and flooding
- Impacts to air quality from ash
- Influx of people fleeing harder hit nearby areas

Geological Events Hazard Summary

Frequency: Low
Potential Losses: Moderate (all jurisdictions)
Population Affected: High

Hazardous Material Incidents

Hazard Description

A hazardous material is any item or agent (biological, chemical, physical) which has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors. Hazardous materials can be present in any form; gas, solid, or liquid. Environmental or atmospheric conditions can influence hazardous materials if they are uncontained.

The U.S. Occupational Safety and Health Administration's (OSHA) definition of hazardous material includes any substance or chemical which is a "health hazard" or "physical hazard," including: chemicals which are carcinogens, toxic agents, irritants, corrosives, sensitizers; agents which act on the hematopoietic system; agents which damage the lungs, skin, eyes, or mucous membranes; chemicals which are combustible, explosive, flammable, oxidizers, pyrophorics, unstable-reactive or water-reactive; and chemicals which in the course of normal handling, use, or storage may produce or release dusts, gases, fumes, vapors, mists or smoke which may have any of the previously mentioned characteristics.

The Environmental Protection Agency (EPA) incorporates the OSHA definition, and adds any item or chemical which can cause harm to people, plants, or animals when released by spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment. The EPA maintains a list of 366 chemicals that are considered extremely hazardous substances (EHS). This list was developed under the Superfund Amendments and Reauthorization Act. The presence of EHSs in amounts in excess of a threshold planning quantity requires that certain emergency planning activities be conducted.

A release or spill of bulk hazardous materials could result in fire, explosion, toxic cloud or direct contamination of people and property. The effects may involve a local site or many square miles. Health problems may be immediate, such as corrosive effects on skin and lungs, or be gradual, such as the development of cancer from a carcinogen. Damage to property could range from immediate destruction by explosion to permanent contamination by a persistent hazardous material.

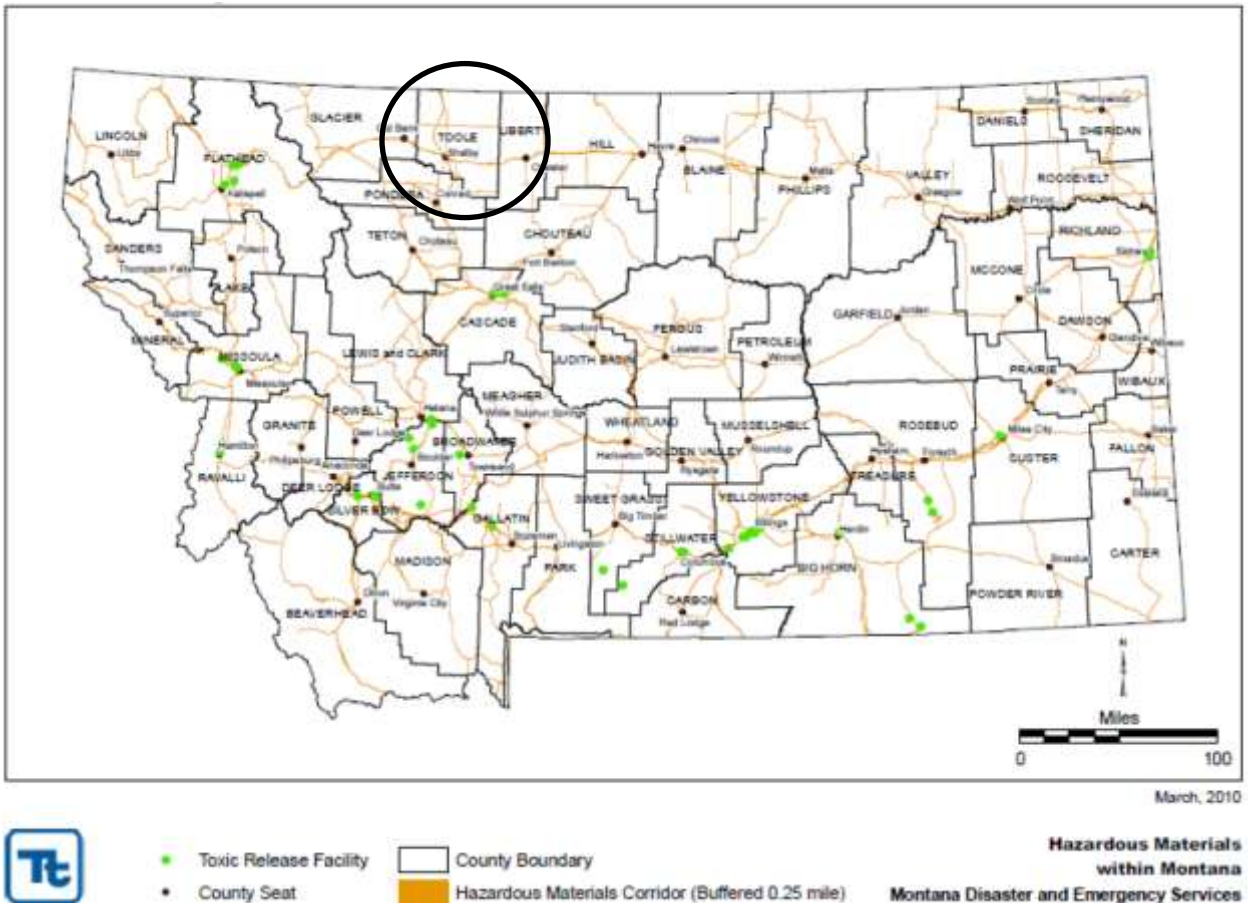
Accidents involving the transportation of hazardous materials could be just as catastrophic as accidents involving stored chemicals, possibly more so, since the location of a transportation accident is not predictable. The U.S. Department of Transportation divides hazardous materials into nine major hazard classes. A hazard class is a group of materials that share a common major hazardous property, i.e., radioactivity, flammability, etc. These hazard classes include:

- Class 1—Explosives
- Class 2—Compressed Gases
- Class 3—Flammable Liquids

- Class 4—Flammable Solids; Spontaneously Combustible Materials; Dangers When Wet Materials/Water-Reactive Substances
- Class 5—Oxidizing Substances and Organic Peroxides
- Class 6—Toxic Substances and Infectious Substances
- Class 7—Radioactive Materials
- Class 8—Corrosives
- Class 9—Miscellaneous Hazardous Materials/Products, Substances, or Organisms

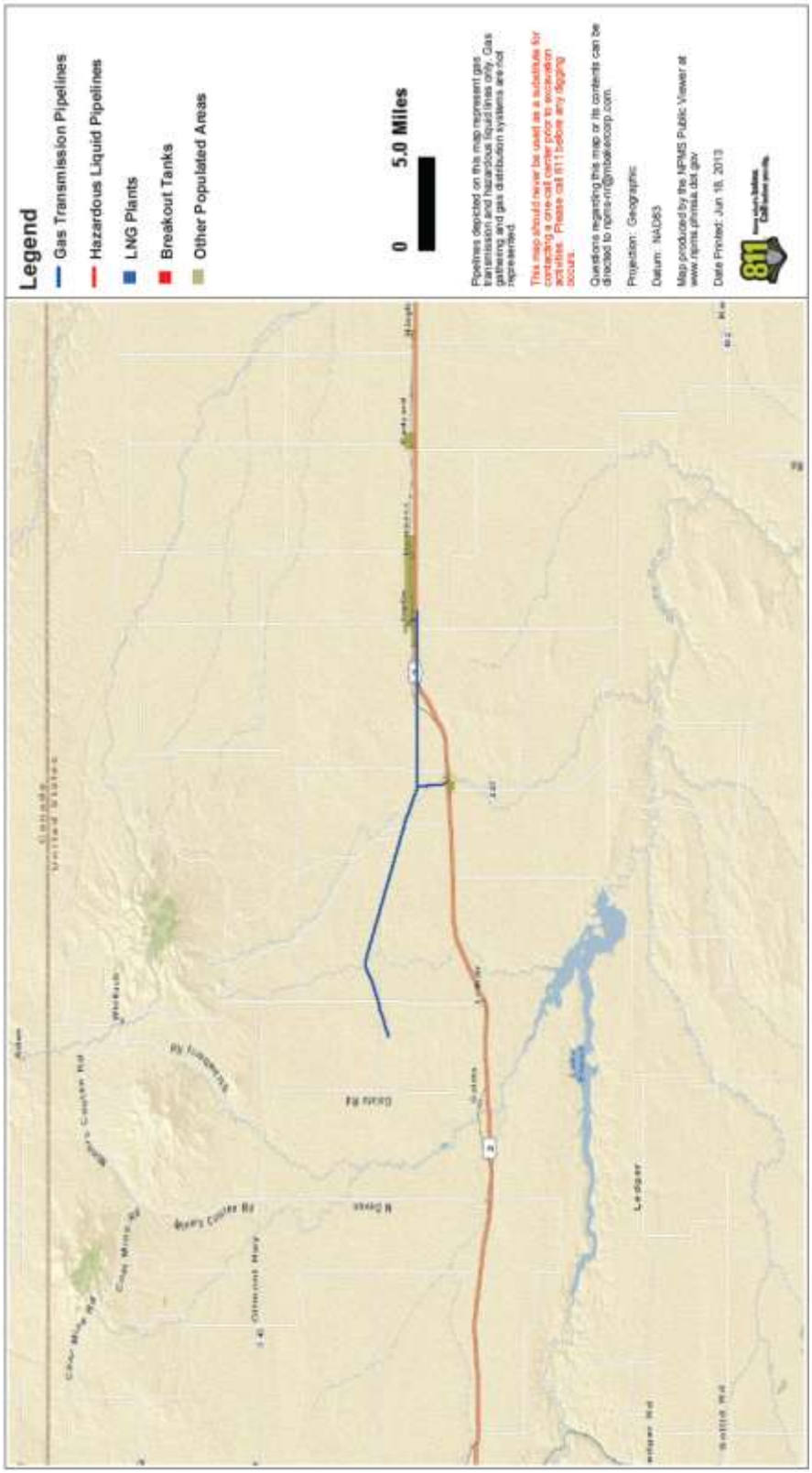
Hazardous materials are transported through Toole County on U.S. Highway 2, Interstate 15, and railroad tracks that run both east-west and north-south. The U.S. Customs Port of Entry at Sweetgrass is a major 24-hour border crossing between Canada and the United States through which hazardous materials regularly pass. A variety of hazardous materials are used or transported in the County. Among those materials used or generated locally are gasoline and oil, fertilizers, mine explosives, medical waste, and weed spraying chemicals. The county is also traversed by oil and gas pipelines. These pipelines access production areas, provide local service and provide long distance transport. Figure 3.1616 shows the hazardous materials facilities as well as the highway and railroad network through the state, while Figure 3.177 shows existing pipelines in the county.

Figure 3.16. Hazardous Materials Transportation Routes and Toxic Release Facilities



Source: 2010 Update to the State of Montana Multi-Hazard Mitigation Plan

Figure 3.17. Existing Pipelines in Toole County



Source: National Pipeline Mapping System

Historic Occurrences

As shown in Table 3.1111, the National Response Center has records on 29 spills for the period 7/1/91 through 6/1/2013. 22 records are associated with railroad incidents, 4 with fixed sources, 2 on pipelines, and 1 from a storage tank.

Table 3.11. National Response Center Hazardous Materials Incidents in Toole County

Type Of Incident	Incident Cause	Incident Date	Location	Nearest City	Medium Affected	Material Name
Railroad	Unknown	1/12/1990	Block 78a 28-50-02n 089-24-34w	Seagrass	Land	Bulk Sulfur
Fixed	Unknown	7/1/1991	Rural Shelby, Montana	Shelby	Land	Oil: Diesel
Railroad	Unknown	8/22/1991	Milepost 1065.4	Shelby	Rail Report (N/A)	
Railroad	Unknown	8/30/1991		Ledger	Rail Report (N/A)	
Railroad	Unknown	7/28/1992	Hub Center	Shelby	Land	Unknown Clear Material
Pipeline	Equipment Failure	8/11/1992	5th St South And 5th Ave	Shelby	Air	Natural Gas
Fixed	Operator Error	5/21/1994	Westchem Warehouse Hwy 2	Shelby	Land	Low Volatile Ester
Railroad	Unknown	3/20/1997	Milepost 1065.4 Main Track	Shelby	Rail Report (N/A)	
Railroad	Unknown	7/22/1997	Shelby Montana Intermodal Hub	Shelby	Land	Cyclohexylamine
Railroad	Unknown	6/13/1998	Sweetgrass Sub	Shelby	Rail Report (N/A)	
Railroad	Natural Phenomenon	7/10/1998		Shelby	Rail Report (N/A)	
Railroad	Equipment Failure	7/20/1998	Track No. 3 Railyard	Shelby	Air	Ammonia, Anhydrous
Railroad	Other	9/15/1998		Devon	Rail Report (N/A)	
Railroad	Unknown	3/17/1999		Naismith	Land	Oil: Diesel
Fixed	Equipment Failure	8/26/1999	NE QRT /SE QRT	Shelby	Land	Oil, Misc: Mineral

Type Of Incident	Incident Cause	Incident Date	Location	Nearest City	Medium Affected	Material Name
Railroad	Unknown	9/20/1999	Highway 2	West Shelby	Land	Hydraulic Oil
Railroad Non-Release	Equipment Failure	3/3/2001	Mile Post: 1046.2	Devon	Rail Report (N/A)	
Fixed	Unknown	6/17/2002	Marias River		WATER	Oil: Diesel
Railroad Non-Release	Unknown	9/14/2003	BNSF Railroad Mile Post 107.7	Shelby	Rail Report (N/A)	
Pipeline	Equipment Failure	2/29/2004	In A Remote Area	Shelby	Water	Oil: Crude
Railroad	Unknown	5/28/2004	Mile Post 100	Shelby	Land	Coal
Railroad Non-Release	Derailment	9/27/2004	Mile Post 93.5	Naysmith	Rail Report (N/A)	
Railroad	Derailment	1/17/2006	Milepost 1065.7	Shelby	Rail Report (N/A)	
Storage Tank	Operator Error	3/2/2008	Rim Rock Collony	Sun Burst	Unknown	Red Dye Diesel
Railroad Non-Release	Derailment	9/8/2008	Shelby Rail Yard, Milepost: 1067.1 230 West Central Ave.	Shelby	Rail Report (N/A)	
Railroad Non-Release	Other	12/18/2008	Mile Post 1042.8	Devon	Non-Release (N/A)	
Railroad Non-Release	Derailment	5/20/2010	BNSF Yard 230 W Central	Shelby	Non-Release (N/A)	
Railroad Non-Release	Trespasser	5/7/2011	Milepost 1065.5	Shelby	Rail Report (N/A)	
Railroad Non-Release	Derailment	11/24/2011	Milepost: 1080	Ethridge	Rail Report (N/A)	

Source: National Response Center

PDM planning participants recalled two past hazmat incidents. In one, a train hit the I-15 bridge abutment on the west end of Shelby in 1998. Fertilizer was spilled on the ground. 15 years ago, there was an anhydrous ammonia leak in Sunburst. One individual was injured.

Potential Losses

Hazardous material events can vary from relatively small spills and leaks to major events. Clean-up and damages are typically borne by the responsible party, but in some cases, effects can be widespread and far-reaching with public cost implications. A single incident can have serious effects. Economic costs could be in the many millions of dollars, disrupting transportation and local economies, requiring prolonged evacuation and sheltering, causing human health problems, and costly environmental clean-up, as illustrated by the Alberton, Montana, chlorine spill.

Table 3.12, from the previous plan, contains an estimate for the clean-up of a hazardous material incident where temporary evacuations are required, but the hazardous material does not reach surface water and contaminates only a small area of soil. Since costs have changed little since the previous plan, this table is reproduced here.

Table 3.12. Direct Loss Estimate for Hazmat Incident

Impact	Comments	Cost
Hazardous material cleanup	Hazmat Team for containment and clean-up Hazmat vehicle @ $150/hr x 48 hr 6-person Pod @ $300/hr x 48 hr Suits 6 x $1000 Fuel	$30,000
Security, evacuations, and traffic control	Fire Department, Sheriff, MHP are involved in Initial assessment, barricading and securing the area, diverting traffic, and conducting evacuations (10 employees for 48 hours @ $25/hr plus fuel)	$15,000
Medical	2 people treated for skin irritations, 4 people checked for respiratory exposure	$1,000
Sheltering	500 people for 24 hours	$18,000
	TOTAL COST	**$64,000**

Sources: Paul Gerber (Billings Hazmat Team), approximation from information provided by Linda Shicktanz (American Red Cross)

Impacts

Potential impacts of a hazardous material spill or release that were identified by local residents include the following:

- Fire or explosion
- Loss of life, livestock, fish and wildlife
- Human health issues
- Mental health issues and panic
- Surface and ground water contamination
- Soil contamination
- Impacts to air quality
- Economic shutdown--commerce and transportation

- Panic buying of food, water and supplies
- Evacuation and sheltering needs and costs
- Impacts on medical resources and emergency services
- Vehicle accidents
- Information shortage, confusion

Probability

On a scale of very low to very high, Toole County has a "moderate" vulnerability on the state's hazardous material composite index. The spill data base, locations of generator facilities and transportation routes were compiled by county to identify relative vulnerability. Each of these factors was rated and averaged to derive a composite index. (2010 State of Montana Multi-Hazard Mitigation Plan)

As shown in Table 3.11, the National Response Center has records on 29 spills in Toole County for the period 7/1/91 through 6/1/2013. Twenty-two records are associated with railroad incidents, four with fixed sources, two on pipelines, and one from a storage tank. All but four of the spills occurred in Shelby with two each in Devon and Naismith. Most of the spills have affected land only, but air and water have also been affected in a limited number of incidents. The material spilled or released has included diesel oil, hydraulic oil, miscellaneous oil, crude oil, natural gas, low volatile ester, cyclohexylamine, anhydrous ammonia, and coal.

The Billings Gazette cited statistics from the Association of American Railroads that 99.99% of hazardous materials that travel by rail make it safely. (February 28, 2005) Still the small percent can result in serious consequences. For example, an April 1996 rail crash in Alberton, Montana, resulted in the second largest chlorine spill in the history of the nation. One death and the evacuation of 1,000 people resulted. In February 1998, 48 rail cars rolled backward and downgrade into Helena. The crash caused an explosion that forced the evacuation of 2,000 people and cost $6 million (2010 State of Montana Multi-Hazard Mitigation Plan).

Hazardous materials transportation accidents can occur anywhere, but in Toole County are probably most likely to occur along I-15 and U.S. Highway 2 on which trucks regularly carry hazardous materials across the County. The County Commissioners report that the two bulk fuel plants (the primary potential fixed sources) that had been located immediately adjacent to the railroad tracks in Shelby have both been relocated away from the tracks and downwind of the population. Past experience indicates that very small scale hazardous spills, probably petroleum related will likely continue to occur in the County. Absent a serious truck or rail accident, a large hazardous material spill/release is unlikely.

Hazardous Material Hazard Summary

Frequency: Low to Medium
Potential Losses: High (all jurisdictions)
Population Affected: High

Figure 3.18. BNSF Track in Shelby Looking East

Wildland Fires

Hazard Description

Wildland fire is a naturally occurring disturbance across the landscape of the western United States and has a purpose in nature. However, following years of fire suppression, many areas have built up fuels that can lead to larger, more intense fires. In Toole County, open rolling grasslands dominate the landscape throughout, and the native vegetation is mainly comprised of range grasses and shrubs. These grasslands transition to the hills of Sweetgrass Hills to the north which contain small scattered forests intermingled with open grasslands. The human communities that abut these areas are at risk of suffering losses unless adequately protected through evacuation, mitigation, or suppression. The convergence of these two communities, the wildland-urban interface (WUI), is defined in the 2010 Toole County Community Wildfire Protection Plan (CWPP) as the area where wildland vegetation meets urban developments, or where forest or rangeland fuels meet urban fuels such as houses (CWPP, 2010).

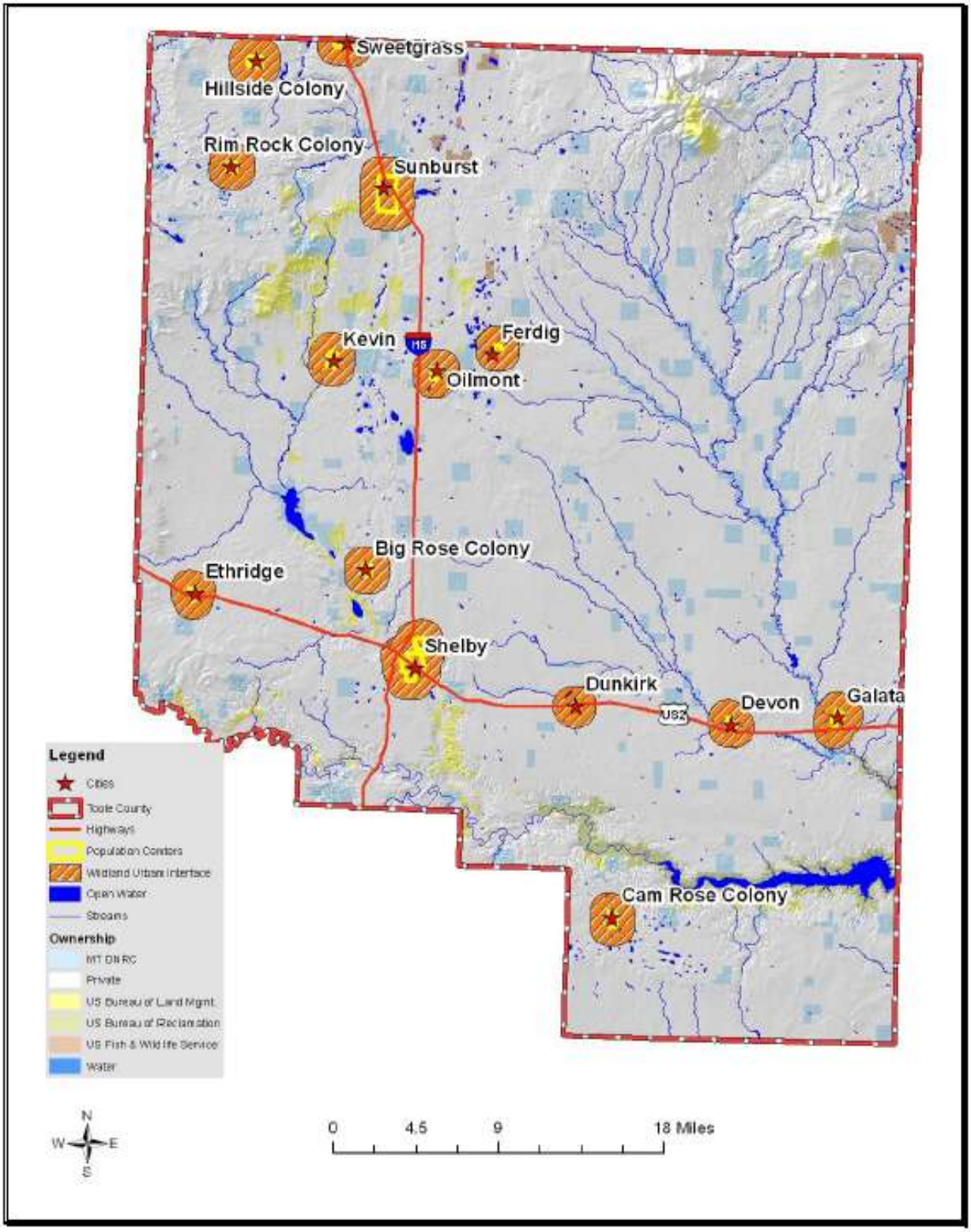
Figure 3.19 shows the WUI areas that the Toole County CWPP committee determined during plan development, and land ownership. The main WUI areas are located around Hillside Colony, Sweetgrass, Rim Rock Colony, Sunburst, Kevin, Oilmont, Ferdig, Ethridge, Big Rose Colony, Shelby, Dunkirk, Decon, Galata and Cam Rose Colony. The committee evaluated the WUI by using a population-based model

and three WUI interface conditions: interface condition, intermix condition and occluded condition; and the non-WUI condition. Descriptions of each from the 2010 CWPP are as follows:

- **Interface Condition** - a situation where structures abut wildland fuels. There is a clear line of demarcation between the structures and the wildland fuels along roads or back fences. The development density for an interface condition is usually 3+ structures per acre.
- **Intermix Condition** - a situation where structures are scattered throughout a wildlandarea. There is no clear line of demarcation, the wildland fuels are continuous outside of and within the developed area. The development density in the intermix ranges from structures very close together to one structure per 40 acres.
- **Occluded Condition** - a situation, normally within a city, where structures abut an island of wildland fuels (park or open space). There is a clear line of demarcation between the structures and the wildland fuels along roads and fences. The development density for an occluded condition is usually similar to that found in the interface condition and the occluded area is usually less than 1,000 acres in size.

Areas of higher risk WUI in Toole County were represented by using a one mile designation buffer around each population center. These buffer areas are comprised of interface, intermix and the rural WUI condition on the outskirts.

Figure 3.19. Toole County WUI and Land Ownership



Source: Toole County, Montana, Community Wildfire Protection Plan. Public Review Draft. December 2010.

The vegetative fuel hazard in the county consists primarily of a small amount of pine and fir at the higher elevations in the Sweetgrass Hills, Conservation Reserve Program (CRP) lands, native prairie grass and shrubland, and crops--wheat, barley, and fallow. Toole County had 154,474 acres enrolled in the CRP as of September 30, 2012 (USDA Farm Services Agency, 2012). The figure represents approximately 21% of the cropland in the County using 2007 Census of Agriculture data . The distribution of the CRP acres is such that there are large contiguous blocks which could be susceptible to wildland fire. CRP lands typically build up a heavy fuel load consistent with natural grasses and shrubs, oftentimes near communities and homes. This is problematic because this greater fuel load is more than is typically found on farmlands or that would normally be found with a natural fire return interval. To protect these areas and to mitigate wildfire, the CWPP states that existing CRP contracts in Toole County can be modified to include efforts to reduce fuels and/or hazard mitigation treatments such as construction of fuel breaks along road corridors or near structures.

Ignition risks come from natural (lightning) and human sources. Human sources include burning debris tossed from vehicles; vehicles themselves, machinery and equipment; the railroad; power lines; fireworks; and agricultural burning. Arson fires are not a problem in the county. Shelby Fire Chief, Dan Whitted estimates that only a small percent of the wildland fires his department responds to are lightning-caused while Sunburst Chief, Don McAlpine estimates the large majority of wildland fires his department responds to are lightning-caused. Both chiefs reported having a small number of apparatus staged out at individual homes and ranches across the county, and Hillside Colony west of Sunburst has a truck and trained volunteers. Sunburst averages 20 callouts for wildland fires per year, while Shelby averages 35 wildland callouts per year. The ability and willingness of the farmers to respond quickly with water and equipment is an invaluable resource and allows fires to be caught while they are small.

Figure 3.20. Wheat fallow fuels

Historic Occurrences

The U.S. Forest Service maintains a national database of federal wildfires from 1980 to 2012. In this Federal Wildland Fire Occurrence Database (http://wildfire.cr.usgs.gov), only four wildfires of measurable size are listed for Toole County, as shown in Table 3.13. All of these fires were less than 100 acres in size. Early family histories also recount prairie fires. "Prairie fires were a great worry during the homestead days as one had to fight them with sacks and barrels of water which had to be hauled by horse and wagons" (Gladys Dahlen, Echoes from the Prairie). Small fires are a constant concern during dry periods, drought, and crop harvest. Table 3.133 summarizes the wildfires that have occurred in Toole County.

Table 3.13. Wildland Fire History

Contained Date	Name	Size (acres)	Cause
September 22, 2002	Kicking Woman	0.1	Human
August 10, 1998	Kevin Rims	20	Natural
August 23, 1988	--	84	Natural
August 15, 1984	Gold Butte	100	Natural
Contained Date	Name	Size (acres)	Cause

Source: Federal Wildland Fire Occurrence Data: 1980 – 2012. Data reported by DOI (BIA, BLM, BOR, NPS), USFWS, and USFS. (http://wildfire.cr.usgs.gov)

In 2003, Toole County was included in a declaration from the Small Business Administration (#9W74) to provide assistance to businesses affected by forest fires. Businesses in the County were eligible to apply for Low interest Economic Injury Disaster Loans (2010 Update to the State of Montana's Multi-Hazard Mitigation Plan).

Potential Losses

According to the 2010 Update to the State of Montana's Multi-Hazard Mitigation Plan and Statewide Hazard Assessment which used the SHELDUS database, Toole County has suffered $25,341 in property loss and $1,267 in crop loss (adjusted to 2008 dollars) on a per event basis. Toole County is not in the top 20 Montana counties with wildfire losses from 1960 to 2009.

Outside of the rare structure loss, the most damaging wildland fires in Toole County would be those that consumed crops and/or forage. With the previous three-year average value in 2004 of $11.75 per acre for native pasture, a loss of 1,000 acres to fire would cost the producer $11,750. Loss of 1,000 acres of hard red wheat at $3.65/bushel and 30 bushels/acre would total $109,500 (FSA, Damage Assessment Report). In addition to the property and crop loss, there would be suppression costs.

During the preparation of this report, fires were burning to the east of Toole County. According to estimates for those fires provided by the BLM and published in the Billings Gazette, the Bundy Railroad Fire burned 92,000 acres and cost $2.7 million, the Majerus Fire burned 1,100 acres and cost $300,000, and the Flat Tire Complex at 18,725 acres had cost an estimated $400,000. (Billings Gazette, July 21, 2006)

Impacts

The following potential impacts of wildland fire were identified at the first public meeting during the initial development of this plan:

- Loss of lives, livestock, wildlife
- Injury
- Crop/forage, CRP, stubble damage and loss
- Smoke/air quality-health problems
- Economic impacts, loss of tourist income
- Traffic closures/interruption
- Vehicle, equipment loss or damage
- Road closures
- Evacuation and sheltering

During the 2013 update to this plan the WUI parcels shown in Figure 3.19 were obtained from the Montana Department of Natural Resources and Conservation. An analysis of the improved properties within those areas is shown in Table 3.14 below. Contents values were estimated as a percentage of building value based on their property type, using FEMA/HAZUS estimated content replacement values. This includes 100% of the structure value for agricultural, commercial, and exempt structures, 50% for residential structures, 150% for industrial structures, and 0% for vacant land use classifications. This table represents overall exposure to wildfire hazards for Kevin, Shelby, Sunburst and Unincorporated Toole County. Based on Table 3.145, the Town of Shelby has the greatest WUI exposure, followed by the unincorporated County.

Table 3.14. Exposure to Wildlife Hazards by Property Type

Property Type	Improved Parcel Count	Improved Value	Estimated Content	Total
Town of Kevin				
AR - Agricultural Rural	2	$17,461	$17,461	$34,922
CU - Commercial Urban	15	$551,835	$551,835	$1,103,670
EP - Exempt Property	1	$6,200	$6,200	$12,400
RU - Residential Urban	97	$2,820,018	$1,410,009	$4,230,027
VU - Vacant Land Urban	1	$16,872	$0	$16,872
Total	116	**$3,412,386**	**$1,985,505**	**$5,397,891**
City of Shelby				
AR - Agricultural Rural	1	$67,137	$67,137	$134,274
CR - Commercial Rural	9	$2,233,680	$2,233,680	$4,467,360
CU - Commercial Urban	183	$57,044,330	$57,044,330	$114,088,660
EP - Exempt Property	15	$1,846,058	$1,846,058	$3,692,116
FR - Farmstead Rural	1	$66,446	$33,223	$99,669

Property Type	Improved Parcel Count	Improved Value	Estimated Content	Total
RR - Residential Rural	15	$1,545,744	$772,872	$2,318,616
RU - Residential Urban	988	$59,603,059	$29,801,530	$89,404,589
VR - Vacant Land Rural	2	$40,034	$0	$40,034
VU - Vacant Land Urban	2	$291,391	$0	$291,391
Total	1,216	**$122,737,879**	**$91,798,830**	**$214,536,709**
Town of Sunburst				
AR - Agricultural Rural	1	$45,195	$45,195	$90,390
AU - Agricultural Urban	1	$130,200	$130,200	$260,400
CU - Commercial Urban	20	$671,181	$671,181	$1,342,362
EP - Exempt Property	4	$187,215	$187,215	$374,430
FR - Farmstead Rural	2	$168,909	$84,455	$253,364
IU - Industrial Urban	1	$142,600	$213,900	$356,500
RR - Residential Rural	2	$171,174	$85,587	$256,761
RU - Residential Urban	193	$10,681,460	$5,340,730	$16,022,190
VU - Vacant Land Urban	1	$891	$0	$891
Total	225	**$12,198,825**	**$6,758,463**	**$18,957,288**
Unincorporated County				
AR - Agricultural Rural	29	$1,052,403	$1,052,403	$2,104,806
AU - Agricultural Urban	4	$390,812	$390,812	$781,624
CN - Centrally Assessed Non-Valued Property	1	$46,300	$46,300	$92,600
CR - Commercial Rural	23	$2,937,812	$2,937,812	$5,875,624
CU - Commercial Urban	31	$9,314,308	$9,314,308	$18,628,616
EP - Exempt Property	1	$222,400	$222,400	$444,800
FR - Farmstead Rural	37	$17,988,379	$8,994,190	$26,982,569
IR - Industrial Rural	1	$1,135,100	$1,702,650	$2,837,750
IU - Industrial Urban	2	$6,017,600	$9,026,400	$15,044,000
RR - Residential Rural	39	$2,700,727	$1,350,364	$4,051,091
RU - Residential Urban	96	$4,280,611	$2,140,306	$6,420,917
VR - Vacant Land Rural	2	$220,033	$0	$220,033
VU - Vacant Land Urban	1	$5,763	$0	$5,763
Total	**267**	**$46,312,248**	**$37,177,944**	**$83,490,192**

Source: Montana Department of Natural Resources and Conservation

Table 3.15 summarizes the details by jurisdiction from Table 3.14

Table 3.15. Exposure to Wildlife Hazards by Property Type Summary Table

Jurisdiction	Improved Parcel Count	Improved Value	Estimated Content	Total
Kevin	116	$3,412,386	$1,985,505	$5,397,891
Shelby	1,216	$122,737,879	$91,798,830	$214,536,709
Sunburst	225	$12,198,825	$6,758,463	$18,957,288
Unincorporated	267	$46,312,248	$37,177,944	$83,490,192
Total	**1,824**	**$184,661,338**	**$137,720,741**	**$322,382,079**

Source: Montana Department of Natural Resources and Conservation

A summary of the wildlife exposure hazard for the Toole County WUI communities is shown in Table 3.166.

Table 3.16. Exposure to Wildlife Hazards by CWPP Community

Jurisdiction	Improved Parcel Count	Improved Value	Estimated Content	Total
Can Rose Colony	5	$6,627,481	$3,323,294	$9,950,775
Devon	16	$427,898	$221,160	$649,058
Dunkirk	13	$1,204,649	$740,210	$1,944,859
Ethridge	16	$1,575,674	$1,025,450	$2,601,124
Ferdig	4	$577,254	$555,268	$1,132,522
Galata	19	$862,003	$634,876	$1,496,879
Hillside Colony	4	$3,736,133	$1,870,334	$5,606,467
Kevin Town	127	$4,389,375	$2,551,400	$6,940,775
Oilmont	38	$2,357,235	$1,592,978	$3,950,213
Rim Rock Colony	1	$4,955,500	$2,477,750	$7,433,250
Shelby Town	1,255	$132,940,768	$103,913,736	$236,854,504
Sunburst Town	238	$18,285,707	$12,645,113	$30,930,820
Sweetgrass	88	$6,721,661	$6,169,175	$12,890,836
Total	**1,824**	**$184,661,338**	**$137,720,741**	**$322,382,079**

Source: Toole County CWPP

Probability

Based on past history, all areas of Toole County will continue to experience wildland fires. Wildland fires typically do not grow to a large size (greater than 100,000 acres) in the county. More than one wildland fire from natural and human causes can be expected each year.

Wildland Fire Hazard Summary

Frequency: High
Potential Losses: Low to Medium
Population Affected: Low

Figure 3.21. New Shelby/South Toole County Fire Department

Wind Event Hazards

Hazard Description

Wind events include high winds, thunderstorm winds and heavy precipitation, hail, tornadoes, and Chinook winds. Because lightning was not raised as a separate concern, it is addressed here.

Lightning

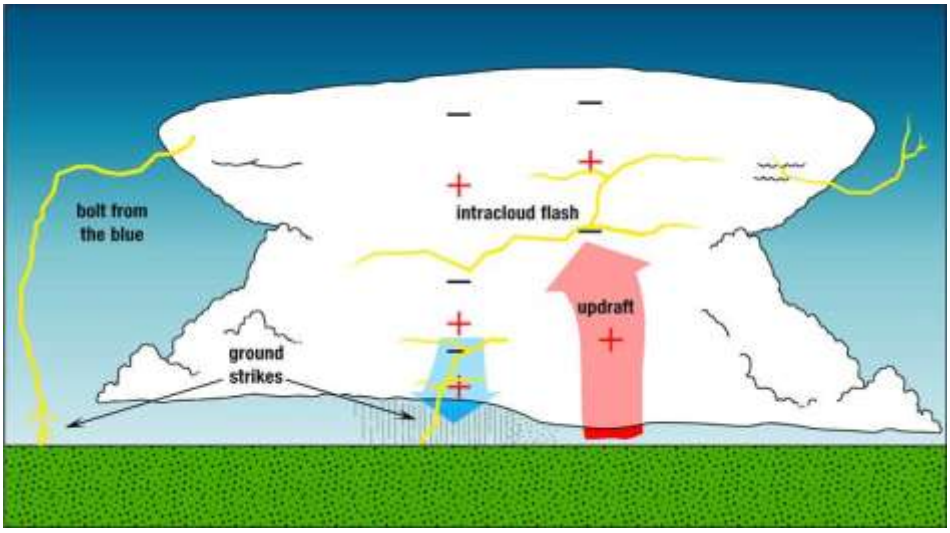
Lightning is an electrical discharge between positive and negative regions of a thunderstorm. A lightning flash is composed of a series of strokes with an average of about four. The length and duration of each lightning stroke vary, but typically average about 30 microseconds.

Lightning is one of the more dangerous weather hazards in the United States and in Montana. Each year, lightning is responsible for deaths, injuries, and millions of dollars in property damage, including damage to buildings, communications systems, power lines, and electrical systems. Lightning also causes forest and brush fires, and deaths and injuries to livestock and other animals. According to the National Lightning Safety Institute, lightning causes more than 26,000 fires in the United States each year. The institute estimates property damage, increased operating costs, production delays, and lost revenue from lightning and secondary effects to be in excess of $6 billion per year. Impacts can be direct or indirect. People or objects can be directly struck, or damage can occur indirectly when the current passes through or near it.

Intra-cloud lightning is the most common type of discharge. This occurs between oppositely charged centers within the same cloud. Usually it takes place inside the cloud and looks from the outside of the cloud like a diffuse brightening that flickers. However, the flash may exit the boundary of the cloud, and a bright channel, similar to a cloud-to-ground flash, can be visible for many miles.

Cloud-to-ground lightning is the most damaging and dangerous type of lightning, though it is also less common. Most flashes originate near the lower-negative charge center and deliver negative charge to earth. However, a large minority of flashes carry positive charge to earth. These positive flashes often occur during the dissipating stage of a thunderstorm's life. Positive flashes are also more common as a percentage of total ground strikes during the winter months. This type of lightning is particularly dangerous for several reasons. It frequently strikes away from the rain core, either ahead or behind the thunderstorm. It can strike as far as 5 or 10 miles from the storm in areas that most people do not consider to be a threat (see Figure 3.222). Positive lightning also has a longer duration, so fires are more easily ignited. And, when positive lightning strikes, it usually carries a high peak electrical current, potentially resulting in greater damage.

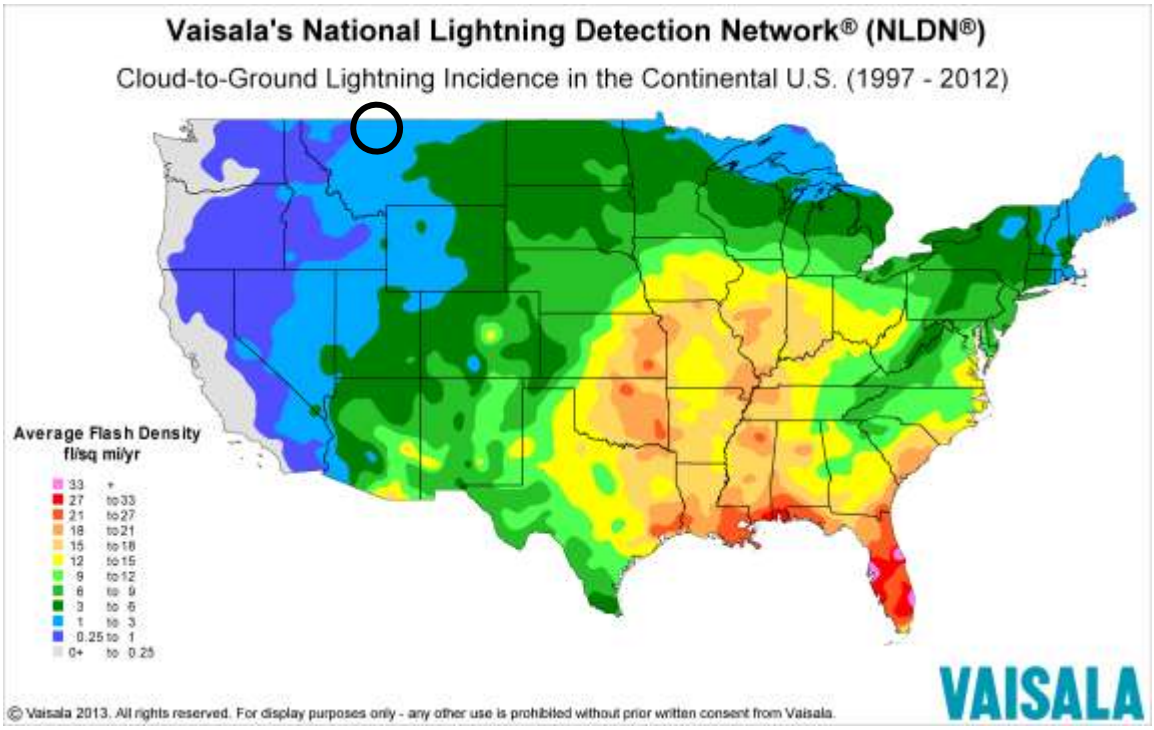
Figure 3.22. Cloud to Ground Lightning



Source: National Weather Service

The ratio of cloud-to-ground and intra-cloud lightning can vary significantly from storm to storm. Depending upon cloud height above ground and changes in electric field strength between cloud and earth, the discharge stays within the cloud or makes direct contact with the earth. If the field strength is highest in the lower regions of the cloud, a downward flash may occur from cloud to earth. Using a network of lightning detection systems, the United States monitors an average of 25 million strokes of lightning from the cloud-to-ground every year. Figure 3.233 depicts cloud to ground lightning flashes per square mile per year in the United States and the planning area (circled in black).

Figure 3.23. Lightning Flash Density Map: 1997-2012



Source: Vaisala's US National Lightning Detection Network

Hail

Hail is associated with thunderstorms that can also bring high winds and tornados. It forms when updrafts carry raindrops into extremely cold areas of the atmosphere where they freeze into ice. Hail falls when it becomes heavy enough to overcome the strength of the updraft and is pulled by gravity towards the earth. Hailstorms occur throughout the spring, summer, and fall in the region, but are more frequent in late spring and early summer. Hailstones are usually less than two inches in diameter and can fall at speeds of 120 mph. Hail causes nearly $1 billion in damage to crops and property each year in the United States. Hail is also one of the requirements which the National Weather Service uses to classify thunderstorms as 'severe.' If hail more than one inch is produced in a thunderstorm, it qualifies as severe.

The National Weather Service classifies hail by diameter size, and corresponding everyday objects to help relay scope and severity to the population. Table 3.177 indicates the hailstone measurements utilized by the National Weather Service.

Table 3.17. Hailstone Measurements

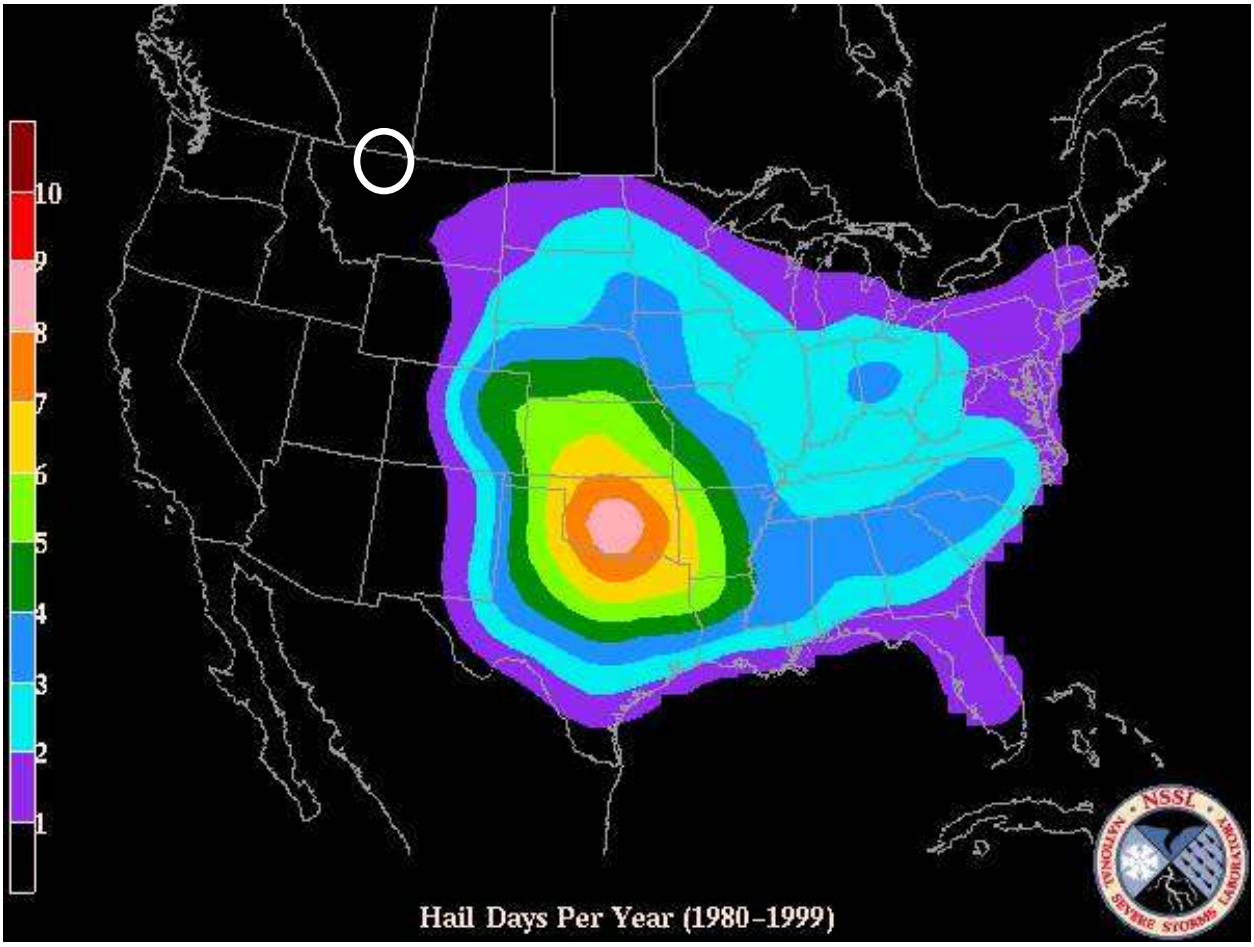
Average Diameter	Corresponding Household Object
.25 inch	Pea
.5 inch	Marble/Mothball
.75 inch	Dime/Penny
.875 inch	Nickel
1.0 inch	Quarter
1.5 inch	Ping-pong ball
1.75 inch	Golf-Ball
2.0 inch	Hen Egg
2.5 inch	Tennis Ball
2.75 inch	Baseball
3.00 inch	Teacup
4.00 inch	Grapefruit
4.5 inch	Softball

Source: National Weather Service

There is no clear distinction between storms that do and do not produce hailstones. Nearly all severe thunderstorms probably produce hail aloft, though it may melt before reaching the ground. Multi-cell thunderstorms produce many hailstones, but not usually the largest hailstones. In the life cycle of the multi-cell thunderstorm, the mature stage is relatively short so there is not much time for growth of the hailstone. Supercell thunderstorms have sustained updrafts that support large hail formation by repeatedly lifting the hailstones into the very cold air at the top of the thunderstorm cloud. In general, hail 2 inches (5 cm) or larger in diameter is associated with supercells (a little larger than golf ball size which the NWS considers to be 1.75 inch.). Non-supercell storms are capable of producing golf ball size hail.

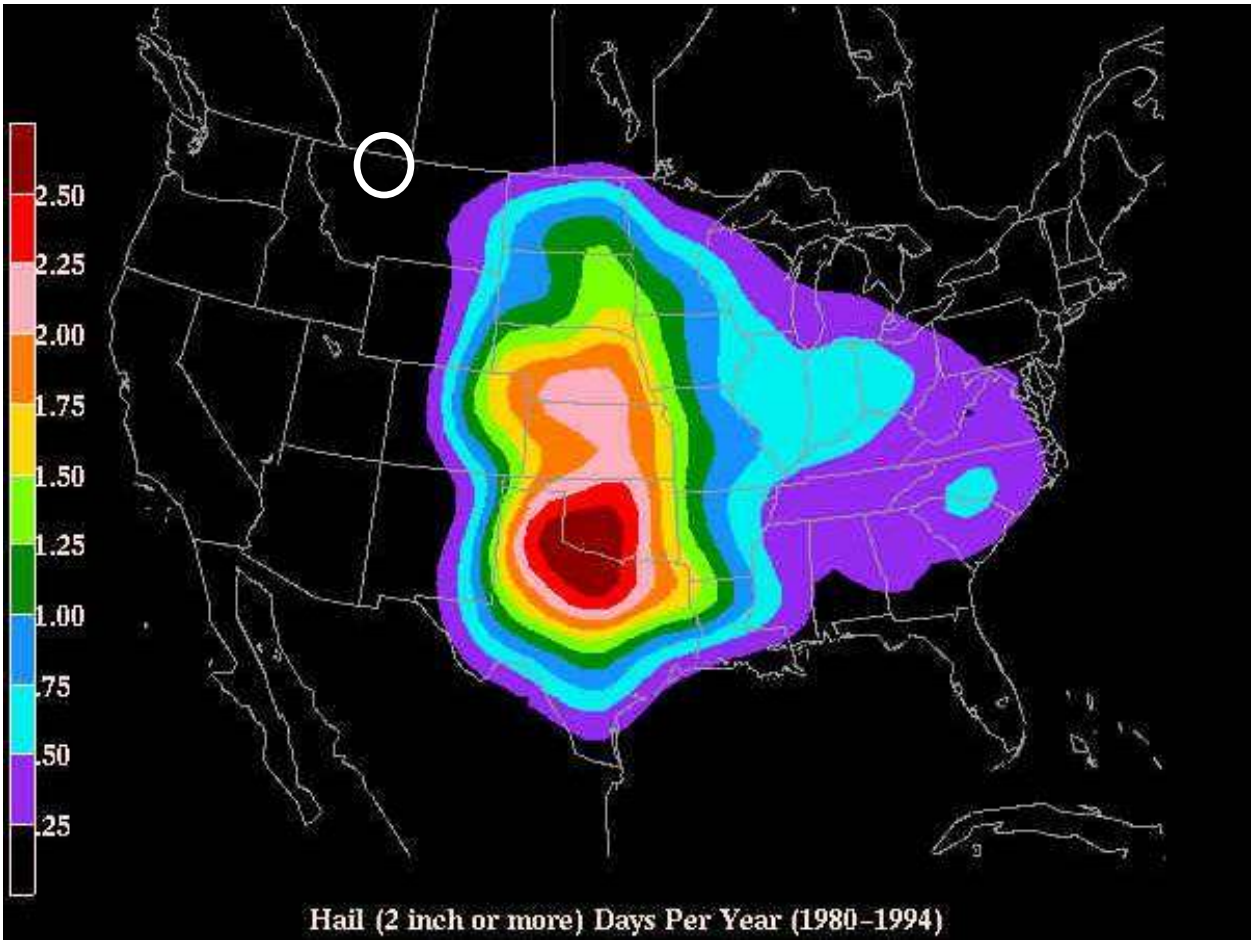
In all cases, the hail falls when the thunderstorm's updraft can no longer support the weight of the ice. The stronger the updraft the larger the hailstone can grow. When viewed from the air, it is evident that hail falls in paths known as hail swaths. They can range in size from a few acres to an area 10 miles wide and 100 miles long. Figure 3.2424 shows the average number of days of hail per year in the United States, with the planning area outlined in a white oval. Figure 3.24 is based on the older definition of severe hail; prior to 2010, hailstones of ¾" in diameter were considered severe. The definition has since changed to one inch in diameter. Figure 3.2525 shows the average number of days of severe hail (over two inches in diameter) per year in the United States, with the planning area outlined in a white oval. Based on these maps, Toole County experiences very few days with severe, damaging hailstorms.

Figure 3.24. Average Number of Days of Hail per Year



Source: NOAA National Severe Weather Laboratory

Figure 3.25. Average Days of Large Hail in the Planning Area



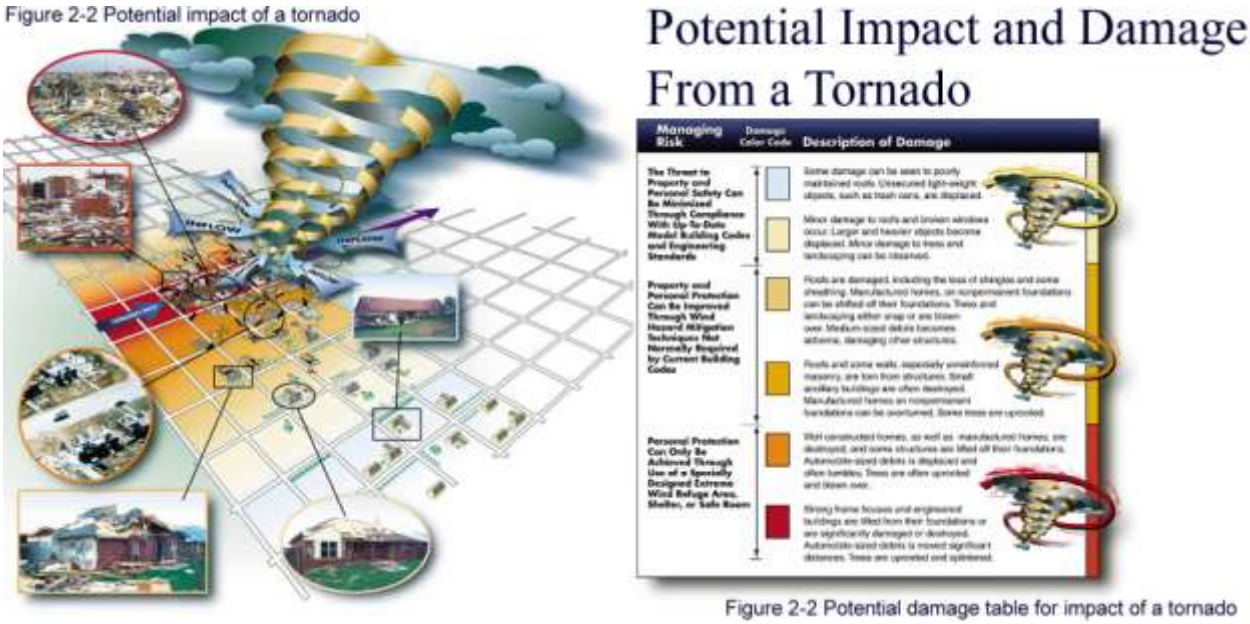
Source: NOAA National Severe Weather Laboratory

Depending on the size of the hail and the seasonal timing of the storm, hail can cause crop damage, property damage, vehicle accidents, and personal injury. Hail generally occurs from May through September.

Tornado

Tornadoes are infrequent, but not unheard-of events in the County. Tornadoes form when cool, dry air sits on top of warm, moist air. Tornadoes are rotating columns of air marked by a funnel-shaped downward extension of a cumulonimbus cloud whirling at destructive speeds of up to 300 mph, usually accompanying a thunderstorm. Tornadoes are the most powerful storms that exist. They can have the same pressure differential across a path only 300 yards wide or less as 300 mile wide hurricanes. Figure 3.26 illustrates the potential impact and damage from a tornado.

Figure 3.26. Potential Impact and Damage from a Tornado



Source: FEMA: Building Performance Assessment: Oklahoma and Kansas Tornadoes

Prior to February 1, 2007, tornado intensity was measured by the Fujita (F) scale. This scale was revised and is now the Enhanced Fujita scale. Both scales are sets of wind estimates (not measurements) based on damage. The new scale provides more damage indicators (28) and associated degrees of damage, allowing for more detailed analysis and better correlation between damage and wind speed. It is also more precise because it takes into account the materials affected and the construction of structures damaged by a tornado. Table 3.18 shows the wind speeds associated with the original Fujita scale ratings and the damage that could result at different levels of intensity. Table 3.199 shows the wind speeds associated with the Enhanced Fujita Scale ratings.

Table 3.18. Original Fujita Scale

Fujita (F) Scale	Fujita Scale Wind Estimate (mph)	Typical Damage
F0	< 73	Light damage. Some damage to chimneys; branches broken off trees; shallow-rooted trees pushed over; sign boards damaged.
F1	73-112	Moderate damage. Peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos blown off roads.
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.
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 the ground and thrown.

Fujita (F) Scale	Fujita Scale Wind Estimate (mph)	Typical Damage
F4	207-260	Devastating damage. Well-constructed houses leveled; structures with weak foundations blown away some distance; cars thrown and large missiles generated.
F5	261-318	Incredible damage. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 meters (109 yards); trees debarked; incredible phenomena will occur.

Source: National Oceanic and Atmospheric Administration Storm Prediction Center, www.spc.noaa.gov/faq/tornado/f-scale.html

Table 3.19. Enhanced Fujita Scale

Enhanced Fujita (EF) Scale	Enhanced Fujita Scale Wind Estimate (mph)
EF0	65-85
EF1	86-110
EF2	111-135
EF3	136-165
EF4	166-200
EF5	Over 200

Source: National Oceanic and Atmospheric Administration Storm Prediction Center, www.spc.noaa.gov/faq/tornado/ef-scale.html

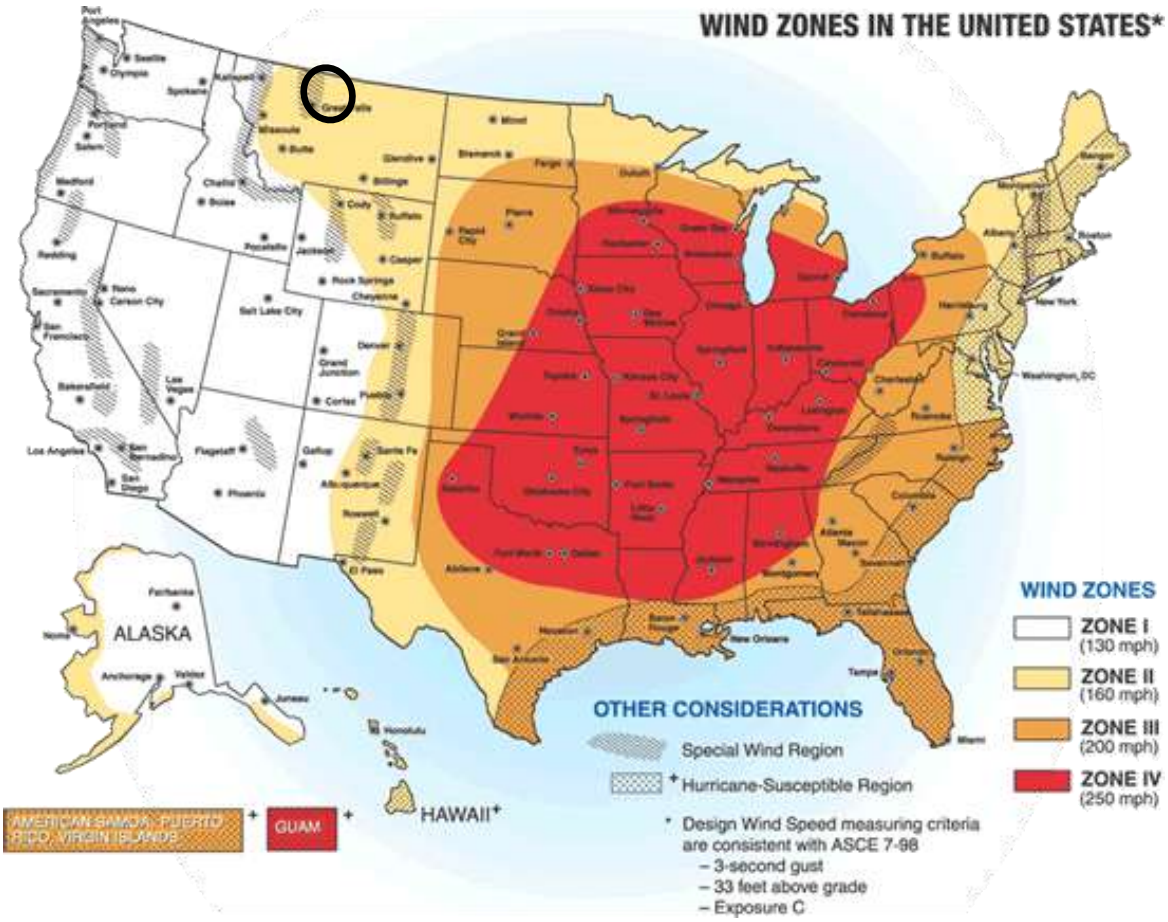
Tornadoes can cause damage to property and loss of life. While most tornado damage is caused by violent winds, the majority of injuries and deaths generally result from flying debris. Property damage can include damage to buildings, fallen trees and power lines, broken gas lines, broken sewer and water mains, and the outbreak of fires. Agricultural crops and industries may also be damaged or destroyed. Access roads and streets may be blocked by debris, delaying necessary emergency response.

High Winds

In addition to tornadoes, the county is subject to significant, non-tornadic (straight-line), winds. High winds, as defined by the NWS glossary, are "sustained wind speeds of 40 mph or greater lasting for 1 hour or longer, or winds of 58 mph or greater for any duration." These winds may occur as part of a seasonal climate pattern or in relation to other severe weather events such as thunderstorms. Straight-line winds may also exacerbate existing weather conditions, as in blizzards, by increasing the effect on temperature and decreasing visibility due to the movement of particulate matter through the air, as in dust and snow. The winds may also exacerbate fire conditions by drying out the ground cover, propelling fuel and burning embers, such as tumbleweeds, around the region and increasing the ferocity of existing fires. High winds may damage crops, push automobiles off roads, damage roofs and structures, and cause secondary damage due to flying debris.

Figure 3.2727 depicts wind zones for the United States. The map denotes that the County falls into Zone II, which is characterized by high winds of up to 160 mph.

Figure 3.27. Wind Zones in the United States



Source: Federal Emergency Management Agency

Table 3.2020 shows the Beaufort Wind Scale. The replication of the scale only reflects land-based effects.

Table 3.20. Beaufort Wind Scale

Beaufort Number	Description	Windspeed (MPH)	Land Conditions
0	Calm	<1	Calm. Smoke rises vertically.
1	Light air	1 - 3	Wind motion visible in smoke.
2	Light breeze	3 - 7	Wind felt on exposed skin. Leaves rustle.
3	Gentle breeze	8 - 12	Leaves and smaller twigs in constant motion.
4	Moderate breeze	13 - 17	Dust and loose paper raised. Small branches begin to move.
5	Fresh breeze	18 - 24	Branches of a moderate size move. Small trees begin to sway.

Beaufort Number	Description	Windspeed (MPH)	Land Conditions
6	Strong breeze	25 - 30	Large branches in motion. Whistling heard in overhead wires. Umbrella use becomes difficult. Empty plastic garbage cans tip over.
7	High wind, Moderate gale, Near gale	31 - 38	Whole trees in motion. Effort needed to walk against the wind. Swaying of skyscrapers may be felt, especially by people on upper floors.
8	Gale, Fresh gale	39 - 46	Some twigs broken from trees. Cars veer on road. Progress on foot is seriously impeded.
9	Strong gale	47 - 54	Some branches break off trees, and some small trees blow over. Construction/temporary signs and barricades blow over. Damage to circus tents and canopies.
10	Storm, Whole gale	55 - 63	Trees are broken off or uprooted, saplings bent and deformed. Poorly attached asphalt shingles and shingles in poor condition peel off roofs.
11	Violent storm	64 - 72	Widespread vegetation damage. Many roofing surfaces are damaged; asphalt tiles that have curled up and/or fractured due to age may break away completely.
12	Hurricane	73+	Very widespread damage to vegetation. Some windows may break; mobile homes and poorly constructed sheds and barns are damaged. Debris may be hurled about.

Source: National Oceanographic and Atmospheric Association, http://www.spc.noaa.gov/faq/tornado/beaufort.html

Historic Occurrences

The National Climate Data Center (NCDC) records events as far back as January 1, 1950. An NCDC search returned several wind and other summer storm events in Toole County between 1950 and March 31, 2013. NCDC did not record any heavy rain events in the county between 1950 and 2013.

NCDC recorded 43 hail events between 1950 and March 2013 in Toole County. Thirty of these events had hailstones with diameters of at least an inch, thus meeting the hail diameter criteria for severe thunderstorms. The 43 events caused $5,000 in property damages, $5,000 in crop damages, and no fatalities or injuries. Typical damages included broken windows in homes, damaged cars, broken utility poles and power lines, damaged trees, and damaged crops.

According to the story told by Maurice Kelleher, a severe hailstorm on July 23, 1915 completely blew over and destroyed a homestead shack with two people inside (*Echoes from the Prairie*). Further reports on the same storm from the *Pictorial History of Toole County* recount that a cyclone struck the district moving from south to north as far as Grassy Lake. Heavy rain accompanied the storm. The Danforth barn was blown down, the roof blew off the hotel in Grassy Lake and one serious injury (Danforth) occurred. In another early account, homesteaders used the hail stones from a storm to make ice cream.

High winds have been common occurrences throughout the history of Toole County. NCDC records information for both thunderstorm winds and high winds that occur separately from thunderstorms. It should be noted that because of the warm Chinook winds that come during the winter months, damaging high winds can occur in any month in Toole County. For the purposes of this plan, only the high wind events that occurred between May and September were included in the Wind Events profile. High wind events that occurred between October and April are included in the Winter Storms profile. All of the thunderstorm wind events that occurred in Toole County occurred between May and September according to NCDC. Based on these criteria, 5 high wind events and 28 thunderstorm wind events took place in Toole County between 1950 and March 2013. The high wind events caused 4 injuries, $7,000 in property damage, no fatalities, and no crop damage. The thunderstorm wind events caused a total of $28,000 in property damages, and no injuries, fatalities, or crop damages. Typical damages included downed power lines, power outages, damaged trees, damaged buildings, broken windows, and car accidents.

SHELDUS information shows 30 wind events between 1960 and 2011. These were not evenly distributed as some years had none and some had several wind events. These 30 events caused 4.96 injuries, 0.24 fatalities, $1,077,753 in property damages, and $3,993,346 in crop damages (damages inflated to 2012 dollars). A damaging wind event occurred in June 2006 during the time this plan was initially developed, hitting Shelby and taking down trees and tree branches. Elida Hannell reported in *Echoes from the Prairie* that hail devastated crops in 1922.

The NCDC records show a total of six tornadoes for the county for the period January 1, 1950 through March 31, 2013. These tornadoes occurred in August 1981 (2), May 1982 (2), and in June 1991 and June 1994. These tornadoes caused $5,030 in property damages and no fatalities, injuries, or crop damages. Five of the tornadoes were F0 and one was an F2. The Tornado Project records show one additional tornado occurring on June 21, 1993. This tornado was a F0 (www.tornadoproject.com). SHELDUS did not record any tornado events for Toole County.

No lightning events have been reported in NCDC for Toole County. SHELDUS recorded three lightning events in 1962, 1964, and 1969. These events resulted in 1 injury, no fatalities, $5.51 in adjusted property damage, and $1,542.95 in adjusted crop damage.

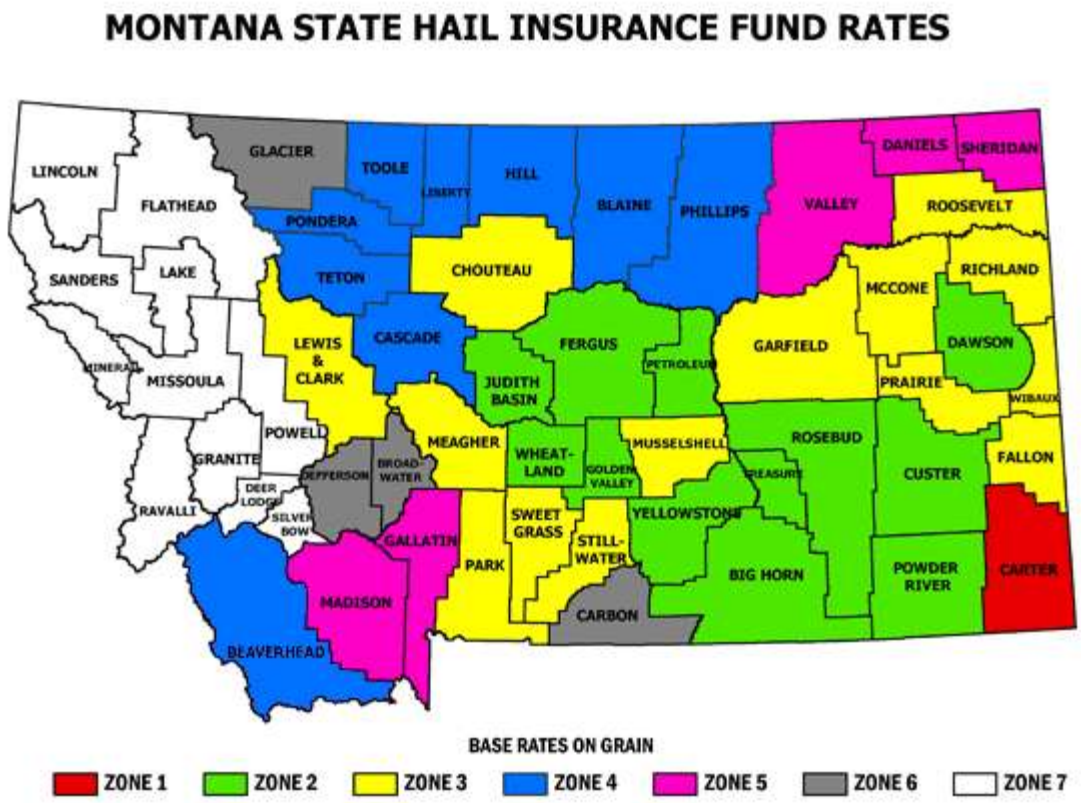
Potential Losses

According to the NCDC data, property damage losses from previously reported thunderstorm wind and high wind events total $35,000 for the 33 total events reported. Four injuries resulted from the high wind events. All losses from the wind events contained in the SHELDUS data total $5,071,098 in adjusted dollars. Of this total, $1,077,753 was property damage and $3,993,346 was crops.

Losses from the six reported tornadoes totaled $5,030 (NCDC). Damage from tornadoes is highly dependent not only on the strength of the tornado, but also on where it touches down. While a tornado in Toole County might cause no damage whatsoever, it could potentially cause many millions of dollars in damage and more than one human death if it touched down in one of the communities. As an example in 2005, a tornado caused five deaths and millions in property damage after touching down in the small town of Wright, Wyoming.

Combined, the damages from NCDC records for high winds, thunderstorm winds, tornadoes, and hail totaled $50,030. To calculate an average annualized loss estimate, the total damages are divided by the number of years in the database (2013-1950 = 63). Thus, Toole County could expect roughly $794 in damages from wind and summer storm events in any given year.

Figure 3.28. Hail Insurance Fund Rates



The Montana Hail Insurance Fund rates are based upon historic hail damages. Toole County is classified in Zone 4 of 7 zones (see Figure 3.28), with Zone 1 being the most likely to experience damaging hail and Zone 7, least likely. According to the Montana Agriculture Department, the total crop risk in the county in 2012 was $4,326,552. Ninety-one policies were in force through the state hail insurance program and the total premium was $348,652 that same year. Forty losses were reported for a total loss amount of $345,309. Producers also purchase insurance from private sources.

Overall, 30 wind and summer storm events were recorded in the SHELDUS database for Toole County between 1960 and 2011. SHELDUS reported 4.96 injuries and 0.24 fatalities for the 30 events. Total property damage, adjusted for inflation to 2012 dollars, from these events was $1,077,753. Total adjusted crop damage from these events was $3,993,346. The sum of property and crop damages was $5,071,099. Based on this information, Toole County could expect roughly $99,433 in damages from summer storm events each year ($5,071,099 divided by 51, the number of years in the data set.

Note that this average annualized loss estimate is significantly higher than the estimate based on NCDC data ($794). Both datasets have limitations, especially for estimating damages, injuries, and fatalities. NCDC's damage estimates are received from several sources and should be considered a broad estimate. Additionally, many events in the NCDC database affect several counties or zones at once. Damage estimates calculated for regional events may not accurately represent damages in the individual counties. SHELDUS data is often averaged from damage estimates for several counties. This is why the fatality and injury estimates sometimes have decimals. In reality the damages would not be divided evenly among the impacted counties.

Impacts

The following potential impacts were identified at the public meeting held on June 20, 2006.

- Loss of life
- Property damage (roofs, fences, grain bins, structures, power lines)
- Injuries from flying debris
- Vehicle accidents
- Crop and vegetation damage
- Loss of topsoil
- Interruption of utility service
- Impacts to medical care system
- Costs for repairs

Probability

Historical records of hail events in the NCDC database show that over a 63-year period (1950-2013) there have been 43 hail incidents reported. This works out to a frequency of one damaging hail event every 1.5 years. However, according to local residents, the USDA, and the state hail insurance program, damaging hail occurs every year in Toole County and can strike any location and all areas of the county. Since 2010, there may be fewer severe hail events reported than in the past due to the new criteria of one-inch diameter hailstones.

Six damaging tornadoes have been reported in the county since 1950. This puts the frequency of a damaging tornado at one every 10.5 years or approximately one per decade (NCDC).

Twenty-eight thunderstorm wind incidents over a 63-year period means that damaging high winds associated with thunderstorms would occur on average every 2.25 years in the county. Additional high wind events also occur absent thunderstorms, and there have been 5 of these events for an average interval of 12.6 years. However, historical records show that in some years there are no damaging high wind events while in other years there are several. There are a greater number of high wind events recorded for recent years. This could be due to increased reporting rather than an increase in the numbers of events.

Vulnerability to wind, hail and tornado events can be measured as a function of the frequency and potential for property damage. The Montana Multi-Hazard Mitigation Plan ranked all of the counties in the State according to event frequency, total losses, population density, and state facilities at risk to summer storms. Toole County was only ranked in the total losses table, coming in 15th overall (as of 2010).

Damaging lightning appears--based on the historical record--to be rare in Toole County. All jurisdictions in the planning area are equally exposed to wind and summer storm hazards. Refer to Table 3.2 for further details.

Wind Events Hazard Summary

Frequency: High
Potential Losses: Medium (all Jurisdictions)
Population Affected: Low

Winter Storms

Hazard Description

"Winter storm hazards present one of the greatest threats to life of any hazard in Montana." (Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment, 2010) A blizzard is defined as a storm that has sustained winds or frequent gusts of at least 35 mph with snow and blowing snow reducing visibility to near zero. Blizzards are common in Montana and winter weather conditions can change very rapidly. Avalanches are not a hazard present in Toole County. This section also includes high wind events that occurred between the months of October and April. High wind events that occurred between May and September are included in the Summer Storm Events profile.

Most Montana residents are readily prepared for snow storms each winter. Every community receives snow on an annual basis, so residents expect measurable snow several times each winter. Cold temperatures into the negative numbers are also common throughout the winter months. Major problems typically only occur during record snowfalls and extended periods of below zero temperatures. Rapid snowfall can overwhelm 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. 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.

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.

Historic Occurrences

There have been no state or federal disaster declarations for Toole County for severe winter weather. This is probably due to the low population density and resourcefulness of the county's residents rather than the lack of past severe winter weather events. Early histories contain many interesting stories about memorable blizzards, which are summarized below.

- Winter of 1886-87: "Snow was two feet on the level, cutting through ice and crusted snow, wondering if anyone or anything would survive. Many cattlemen did go broke and losses ran as high as 90%. Feed was hauled to the stock by sled. Only a small amount of ranches stored hay during the winter then, so pitifully few cattle survived." (John G. Fey, Toole County Background)
- October 1898: Dead cattle by the thousands along the Marias River breaks. (Chance Hoffman, Shelby Backgrounds)
- 1899: A big five-day snowstorm hit in October. A sheep herder was frozen to death, 2,400 sheep died." (Harry Gardner, Toole County Background)
- May 16-18, 1903: "Worst storm ever known to old inhabitants." Two feet of snow, cattle drifted from the Sweet Grass Hills in to Shelby. (Chance Hoffman, Shelby Backgrounds) "Cattle drifted in the storm and hundreds died, 50 mph winds." (Anne Malone Brownfield, Toole County Background)
- During the winter of 1906-07 thousands of cattle and sheep died of starvation, deep crusty snow, temperatures of minus 40 and 50, and blizzard after blizzard. (Chance Hoffman, Shelby Backgrounds)
- January 1910: Cold lasted for 60 days. Sheep drifted south to the Marias. Some sheep lived as long as ten days under snowbanks. Spotted them by air holes and dug them out. Lost 1,400 out of 2,000 head." (Eldora J. Coover, Toole County Background)
- " The winter of 1919-20 was especially bad, cold temperatures and lots of snow. Winter Chinook caused standing water which froze with the cold temperatures, then more snow. Cattle and horses died by the hundreds and thousands. (Earl Gillespie, Echoes from the Prairie)
- The winter of 1919 was "the winter that nearly broke every stockman in the hills (Sweetgrass Hills.)" (Elida Hannel, Echoes from the Prairie)
- "Winter of 1919, worst winter with a lot of snow and no feed. Many animals died." (Pictorial History of Toole County)
- "The worst blizzard I ever encountered was about 1932. Storm from the north. A band of 2,100 sheep got away from the herder. When the storm was over we had sheep that had scattered and drifted for 27 miles. This was one blizzard, we experienced several others, and with each one we suffered quite a loss of sheep." (The Sheep Story by Geraldine Austin, Echoes from the Prairie)
- "The roughest winter I can ever remember was in 1936. The thermometer hovered between 25 and 30 below zero, never was above that mark for at least three weeks or better." (The Sheep Story by Geraldine Austin, Echoes from the Prairie)
- County Commissioner Allan Underdal remembered a bad winter in 1978-79. There were two feet of snow on the level and it stayed all winter, unlike many winters when the Chinook winds come and melt the snow.
- In June of 2001 an unexpected winter storm hit the county closing highways. People had to be sheltered for a short period of time.

Table 3.21 summarizes significant winter storm events in the NCDC database.

Table 3.21. Historic Severe Winter Weather

Year	Location	Description	Source
12/15/2000	County	Blizzard	NCDC
12/17/2000	County	Blizzard	NCDC
4/2/2001	County	Heavy Snow	NCDC
2/23/2002	County	Winter Storm	NCDC

Year	Location	Description	Source
5/7/2002	County	Winter Storm	NCDC
5/22/2002	County	Winter Storm	NCDC
5/4/2003	County	Winter Storm	NCDC
10/29/2003	County	Winter Storm	NCDC
5/10/2004	County	Winter Storm	NCDC
1/12/2005	County	Blizzard	NCDC
3/17/2005	County	Winter Storm	NCDC
3/23/2005	County	Winter Storm	NCDC
4/2/2007	County	Heavy Snow	NCDC
1/28/2008	County	Extreme Cold/Wind Chill	NCDC
1/28/2008	County	Winter Storm	NCDC
3/29/2008	County	Winter Storm	NCDC
4/19/2008	County	Heavy Snow	NCDC
4/19/2008	County	Winter Weather	NCDC
12/13/2008	County	Blizzard	NCDC
1/2/2009	County	Blizzard	NCDC
3/28/2009	County	Winter Storm	NCDC
4/27/2009	County	Winter Storm	NCDC
4/28/2009	County	Blizzard	NCDC
12/4/2009	County	Winter Storm	NCDC
1/22/2010	County	Winter Storm	NCDC
4/13/2010	County	Winter Storm	NCDC
12/28/2010	County	Winter Storm	NCDC
3/19/2012	County	Winter Storm	NCDC
11/8/2012	County	Heavy Snow	NCDC
1/10/2013	County	Heavy Snow	NCDC

Sources: Shown in far right column.

Curiously, NCDC does not list any winter weather hazards prior to 2000, despite the fact that NCDC's winter storm records go back to 1996. This does not necessarily indicate that no severe winter weather events occurred in Toole County prior to 2000. As mentioned previously, this could be at least partially attributed to the fact that the county's residents are accustomed to dealing with severe winter weather. Nevertheless, 30 winter storm events were reported in NCDC between 1996 and 2013. SHELDUS data was used to supplement the NCDC record. SHELDUS recorded 33 winter weather events between 1960 and 2011. Incidentally, SHELDUS does not list any events after February 24, 1994.

This section also examines high wind events that occurred between October and April. These events are associated with the Chinook winds that can occur during any time of the year. For the purposes of this plan, high wind events that occurred between May and September are included in the summer storms

profile. High wind events during other months are included here. NCDC reported 87 such events between January 1, 1996 and March 31, 2013.

One extreme cold/wind chill event occurred in Toole County on January 28, 2008 according to NCDC records.

Potential Losses

Given the fact that NCDC's winter storm records only begin in 2000, there may have been more fatalities and injuries in earlier years. Winter storms are deceptive killers because most deaths are indirectly related to the storm. People die in traffic accidents, from hypothermia, and from heart attacks due to over-exertion. 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 (Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment, 2010).

NCDC does not show any dollar damages for crops or property for winter storm events in Toole County. However, the event narratives indicate that common damages include deaths of livestock, damaged trees and flowering plants, downed power lines and utility poles, power outages, motor vehicle accidents, train delays, and structural damage to buildings. There are several accounts in the NCDC event narratives of strong winds blowing down power lines and igniting fires which are then exacerbated by the high winds. One early homesteader's account mentioned a sheepherder death in 1899 and many early accounts detailed loss of livestock and injury to people (frozen noses, hands, and feet) caring for livestock. The high wind events can also stir up dust and snow, reducing visibility and making travel dangerous.

SHELDUS reported 33 winter weather, wind, and snow incidents between 1960 and 2011. Total property damage (inflated to 2012 dollars) for these incidents was $612,593. Inflated crop damage totaled $37,453. Injuries and fatalities totaled 0.37 and 3.04, respectively. In terms of average annualized loss, the county could expect roughly $12,265 in damages from severe winter weather events in any given year.

Both NCDC and SHELDUS have limitations, especially for estimating damages, injuries, and fatalities. NCDC's damage estimates are received from several sources and should be considered a broad estimate. NCDC's sources include 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. Many of these sources, especially at the local level, may be highly accustomed to dealing with severe winter weather and therefore less likely to report certain winter weather events. Additionally, many events in the NCDC database affect several counties or zones at once. Damage estimates calculated for regional events may not accurately represent damages in the individual counties. SHELDUS data is often averaged from damage estimates for several counties. This is why the fatality and injury estimates sometimes have decimals. In reality the damages would not be divided evenly among the impacted counties.

Impacts

The following potential impacts were identified at the first public meeting during this plan's initial development. These claims are supported by the research conducted for the 2013 plan update.

- Loss of life, livestock, wildlife

- Injury-hypothermia especially in elderly
- Structure damage (frozen pipes, etc.)
- Vehicle accidents
- Medical emergencies, run out of prescription medicines
- Panic buying of food, water, supplies
- Travel difficulties, transportation interruption
- Utility interruption
- Evacuation and sheltering people
- Demands on emergency service providers
- School closures
- Workplaces closed
- Isolation-associated mental health issues, domestic violence
- Financial impacts to low income for utilities

Probability

It is difficult to accurately estimate the probability of a severe winter storm occurring in Toole County due to the spotty historical record. Both NCDC and SHELDUS have relatively inconsistent data on winter weather in the county. For the purposes of this plan, the two datasets were combined to help generate a more accurate probability estimate. None of the event dates in the two sources overlap, so each event is counted only once. Based on combined NCDC and SHELDUS records, 151 winter weather and wind events occurred between 1960 and 2013. Thus, a severe winter storm or wind event occurs every year in Toole County.

All jurisdictions in the planning area are equally exposed to winter storm hazards. Refer to Table 3.2 for further details.

Winter Storm Hazard Summary

FREQUENCY: Medium to High
POTENTIAL LOSSES: Low to Medium (all jurisdictions)
POPULATION AFFECTED: Low

References

Billings Gazette, July 21, 2006

City of Shelby Finance Director, Terry Ruff, Property Values as of 7-1-06

Department of Military Affairs Disaster and Emergency Services. November.

FEMA, Building Performance Assessment: Oklahoma and Kansas Tornadoes National Weather Service Pueblo Office

FEMA DFIRM map depository https://msc.fema.gov/webapp/wcs/stores/servlet/CategoryDisplay?catalogId=10001&storeId=10001&categoryId=12001&langId=-1&userType=G&type=1 No maps for County or communities listed in database.

FEMA Disaster Declarations http://www.fema.gov/disasters

FEMA. Flood Insurance Program (www.fema.gov)

FEMA Policy and Claims Statistics database http://www.fema.gov/policy-claim-statistics-flood-insurance/policy-claim-statistics-flood-insurance/policy-claim-13

FEMA, State and Local Mitigation Planning "How-to Guide", 2003

FEMA, "Wind Zones in the United States" (http://www.fema.gov/safe-rooms/wind-zones-united-states)

FSA http://www.fsa.usda.gov/FSA/webapp?area=home&subject=diap&topic=landing

Gerber, Paul. Billings Fire Department, HAZMAT

Herbolich, Bill. Montana Department of Agriculture

Hermance, Robert. County Executive Director, Farm Services Agency

LEPC

McAlpine, Don. Fire Chief, Sunburst/North Toole County

Midboe, Jim. Toole County Road Foreman

Montana Bureau of Mines and Geology (http://mbmgquake.mtech.edu)

Montana Department of Environmental Quality

Montana Department of Transportation. Automatic Data Recorder

Montana Dept. of Agriculture, State Hail Insurance Program, 2005 Crop Year

Montana Dept. of Agriculture, State Hail Insurance Program, 2012 Crop Year

Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment, 2010

Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment, 2004

Montana Natural Resource Information System (http://nris.mt.gov)

Montana Office of Public Instruction (http://www.opi.mt.gov)

Montana State Library Natural Resource Information System (nris.mt.gov)

Moritz, Bill. Director of Public Works, Shelby

National Atlas (nationalatlas.gov/mapmaker)

National Climatic Data Center Storm Events Database (NCDC): http://www.ncdc.noaa.gov/stormevents/

National Oceanic and Atmospheric Administration Storm Prediction Center, www.spc.noaa.gov/faq/tornado/f-scale.html

National Oceanic and Atmospheric Administration, National Severe Storms Laboratory (http://www.nssl.noaa.gov/)

National Oceanic and Atmospheric Administration,National Climate Data Center Storm Events Database (www.ncdc.noaa.gov/stormevents)

National Oceanic and Atmospheric Administration. National Climate Data Center Storm Events Data Base (www4.ncdc.noaa.gov)

National Oceanographic and Atmospheric Association, http://www.spc.noaa.gov/faq/tornado/beaufort.html

National Performance of Dams Program Database http://ce-npdp-serv2.stanford.edu/npdphome/damdir.htm

National Response Center Online Reporting Tool. (http://nrc.uscg.mil/pls/apex/f?p=201:1:0:::::)

National Weather Service

Nelson, Norm. Toole County Fire Warden

Pederson, Tammy. City of Shelby

Prairie Homemakers Home Extension Club and the Jayhawker Ridge Extension Club, Echoes of the Prairie, History of North Toole County, 1976

Sangrey, Corey. Captain, Montana Highway Patrol, Havre

Shelby History Group. Shelby Backgrounds.

Shelby History Group. Tool County Background, 1958

Shelby Promoter. A Pictorial History of Toole County. 2005

SHELDUS Database http://webra.cas.sc.edu/hvri/products/sheldus.aspx

Shicktanz, Linda, American Red Cross (retired)

Spatial Hazard Events and Losses Database for the United States (http://webra.cas.sc.edu/hvri/products/sheldus.aspx)

Stafford, Darrell. Toole County DES Coordinator

TetraTech, 2010. 2010 Update to the State of Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment. Prepared for the State of Montana

Thennis, Tim. Montana DES

Tomayer, Faye. Toole County Drought Committee Chair

Toole County Clerk and Recorders Office, Deb Skartved

Toole County Emergency Operations Plan, DES

Toole County, Montana, Community Wildfire Protection Plan. Public Review Draft. December 2010.

Town of Kevin, Public Works Director, Joe Walls

Town of Kevin, Town Clerk, Annie Pickering,

Town of Kevin. Property Values as of 7-1-06

Town of Sunburst, Public Works Director, Brian Roark

Town of Sunburst, Town Clerk, Linda Burley

US Coast Guard, National Response Center (www.nrc.uscg.mil)

USACE, Cold Regions Research and Engineering Laboratory: ice jam records http://icejams.crrel.usace.army.mil/

USDA Census of Agriculture. 2007 Census, Toole County, Montana. http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/County_Profiles/Montana/cp30051.pdf

USDA Farm Services Agency, Damage Assessment Report, 2004

USDA Farm Services Agency. 2012. Conservation Reserve Program Report. December.

USDA Risk Management Agency Indemnities Data, 2012. http://www.rma.usda.gov/data/cause.html

USGS 2009 Earthquake Probability Mapping (https://geohazards.usgs.gov/eqprob/2009/)

USGS Earthquake Hazards Program (http://earthquake.usgs.gov/)

Vaisala's US National Lightning Detection Network

Vermulen, Misty. District Conservationist, Natural Resources Conservation Serv.

Whitted, Dan. Fire Chief, Shelby/South Toole County

Williams, Jack. Operations Research Analyst, Montana Dept. of Transportation

Wollan, David. Montana Department of Transportation, Shelby

IV. Mitigation

Introduction

This chapter contains hazard problem statements. It also lists the goals and projects to mitigate the hazards of most concern to residents of Toole County and the priority ranking assigned by the participants at the July 2013 LEPC public meeting.

Problem statements were developed during the 2006-7 planning process. They were revisited and updated by the LEPC in 2013. The problem statements were used as a basis for developing goal statements and identifying mitigation actions. Not all problem statements resulted in goals or projects because in some cases all available mitigating actions were already being taken (for example adjusting cropping practices to prevent loss of soil moisture during drought) or no reasonable mitigating action could be identified.

Goals statements and project ideas were developed based on the 2007 plan, input from the LEPC, input from the Shelby, Kevin, and Sunburst city and town councils, and information in the hazard profiles and risk assessment. Following the July LEPC meeting the contractor organized the material, clarified points, and eliminated the duplication. The contractor presented the refined goals at the public meeting held in the county commissioners' chambers on August 5, 2013.

The LEPC also prioritized the projects. Three criteria were used to prioritize the projects. The three criteria used were:

- The potential of the project to prevent loss of life.
- The potential of the project to prevent property damage.
- The potential of the project to prevent business interruption or economic loss.

2013 Problem Statements

Participants were asked to identify in a statement, problems or potential problems related to natural disasters. The following statements were developed.

- When the wind blows south of Sunburst during dry periods, saline dust can obscure visibility on I-15 increasing the potential for vehicle accidents. Many of the trucks traveling on I-15 are carrying hazardous materials.
- People no longer expect to experience severe winter weather and are unprepared for it.
- Blowing topsoil can obscure visibility in many locations in the county.
- Wells go dry, stock reservoirs are low or empty, and the vulnerability to wildfires increases during drought.
- Wet spring months produce heavy fuels that dry out later in the summer, including fuels on CRP lands.
- The fire department is doing controlled burning on CRP lands and reducing the potential hazard. Also, CRP contracts are being phased out. This will also reduce the hazard fuels over time.
- Lightning strikes during harvest time start fires that take crops and/or equipment causing economic losses.
- The railroad still causes fires, but less frequently than in the past.

- Smoke from local fires and fires burning elsewhere (to the north and west) present health dangers to Toole County residents.
- Ice jams can occur along the Marias River, at the I-15 bridge and in other locations with river bends depending on weather and temperatures.
- May and June are the most dangerous months for flash floods in the county because of snow melt, heavy precipitation on snow and saturated ground, high seasonal flows, and high temperatures causing rapid snowmelt.
- Even though there has not been a major hazardous material spill or release in Toole County, the potential exists. The potential for a railroad-related hazmat spill has increased because of the additional oil crude tanker traffic carrying oil from the Bakken. If there was a major hazmat incident, there is no method to quickly warn people and instruct them what to do.
- Shelby has a siren that can be heard across town. It is currently used for fire calls and curfew. People could be alerted by a continuous blast of the siren. Kevin and Sunburst also have sirens.
- Depending on season and weather conditions, the one siren in Shelby does not reach all residents.
- Megaloads moving equipment to the tar sands development in Canada are passing through the county. When the megaloads are on Highway 2, traffic is stopped.

Mitigation Goals

After considering the problems, the following goals and potential projects were developed. Projects from the 2007 plan that had not been completed and were still deemed important to carry forward are included in the following list of projects. The status of the 2007 plan projects is summarized in the table in Appendix C.

Mitigation Project Costs

Costs for mitigation actions will to fall within three ranges low, medium, or high.

Low Cost Projects: from $0 to $5000
Medium Cost Projects: from $5001 to $50,000
High Cost Projects: Over $50,000

Project Priorities

Each of the proposed projects has value however time, staff, and financial constraints do not permit all of the projects to be implemented right away. Some of the projects have already been initiated and are underway. For those new projects identified, prioritization serves as a guide for choosing and allocating staff time and funding.

Depending on the availability of funding from a variety of sources or changes in the urgency of a particular project, some priorities may be adjusted from the rankings in this PDM plan. These rankings are a guide to priorities appropriate during this planning process.

Priority rankings of High, Medium, or Low were assigned for each project. Generally, the jurisdictions will initiate and depending on the complexity, try to accomplish the High priority projects within two

years, the time frame for Medium priority projects will be three to four years, and Low priority projects will be accomplished by the five-year anniversary of this plan if feasible.

Completion of any and all projects is dependent on having available resources. All projects were ranked by the LEPC considering the following.

- Perceived cost effectiveness—ability to prevent loss of life and property/economic damage,
- Level of risk to life and property posed by hazard which project addresses,
- Reasonableness of project,
- Potential consequences of not implementing,
- Support from the public and elected officials, and
- Compatibility with other plans and policies.

Project Types

Each of the local jurisdictions has one goal with multiple projects under the goal. A range of types of mitigation actions or projects were identified by the participants in the planning process.

Table 4.1. Project Types

Goal	Project Types
Goal One—Shelby	Emergency Services, Infrastructure, Preparation, Prevention, Property Protection
Goal Two—Sunburst	Preparation, Property Protection
Goal Three--Kevin	Education, Infrastructure, Property Protection
Goal Two—Toole County	Education, Emergency Services, Preparation, Prevention, Property Protection, Natural Resources

The tables below provide the goal statements for each of the four jurisdictions. The tables also list the specific mitigation actions or projects. The first column identifies the hazard or hazards that the project will address. The project tables give the project priority rank, the cost range, sources for funding, and responsible agencies. The project's priority indicates the timeframe for accomplishing the project. Accomplishment of all projects is dependent on available resources.

Table 4.2. Goal One

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-Ards	Proposed Mitigation Project	Rank	Responsible Agency for Implementation	Estimated Cost	Source of Funding	Benefit/Comments
Hazmat	Get wellhead protection plans in place for the remaining 12 city wells	H	City of Shelby, MT DEQ	H	City, MT DES, DEQ FEMA	Protect city water supply from hazmat spills or contamination.
All	Enhance siren coverage for city	M	City of Shelby, Toole Co DES	M	City, Toole Co DES	Save lives by more effectively alerting.
Hazmat	Cooperate on hazmat planning under grant funds received	H	City of Shelby	N/A	N/A	Grant already received.
Flood	Continue participation in the NFIP	H	City of Shelby	L	Existing budget	Protect property and lives. Prove opportunity for flood insurance.
Flood	Continue implementation of the CIP, storm drain projects	H	City of Shelby	H	City, various grants	Storms drainage project will help prevent property damage from flooding.

Table 4.3. Goal Two

GOAL TWO: Mitigate natural hazards to reduce the potential for property loss or damage, injury and loss of life in the Town of Sunburst.

Hazards	Proposed Mitigation Project	Rank	Responsible Agency for Implementation	Estimated Cost	Source of Funding	Benefit/Comments
Hazmat	Locate and construct additional railroad track crossing for town residents	H	Town of Sunburst, Toole Co, Toole Co DES	M	Town, Toole County	Provide additional ingress and egress to town during RR incident (Hazmat or other)
Flooding	Continue participation in the NFIP	H	Town of Sunburst	L	Existing budget	Protect property and lives. Prove opportunity for flood insurance.

Kevin Town Council, July 11, 2013

Table 4.4. Goal Three

GOAL THREE: Mitigate natural hazards to reduce the potential for property loss or damage, injury and loss of life in the Town of Kevin.

Hazards	Proposed Mitigation Project	Rank	Responsible Agency for Implementation	Estimated Cost	Source of Funding	Benefit/Comments
Severe Weather	Use monthly town newsletter to provide safety message	M	Town of Kevin	L	Existing budgets	Citizens more aware and better prepared for weather disasters.
Hazmat	Provide education on what to do in event of railroad hazmat spill in town	H	Town of Kevin, Toole Co DES	L	Exiting budgets	Citizens prepared and know what to do.
Wildland Fire	Test fire hydrants, replace non-operational hydrants	M	Town of Kevin, Fire Dept. Toole Co DES	M	Toole Co DES, DNRC	Response more effective, able to save structures.
Flood	Address recurring flooding along Front St	M	Town of Kevin, MT DES, BNSF	H	MT DES, FEMA	Reduce property and infrastructure damage.
Flood	Check integrity of "Bird Pond Dike" following heavy precip. In 2013	H	Toole Co DES, MT DES, FEMA	M	Existing agency budgets	Protect property in town from flooding.
Flood	Continue participation in the NFIP	H	Town of Kevin	L	Existing budget	Protect property and lives. Prove opportunity for flood insurance.

Table 4.5. Goal Four

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.						
Hazards	Proposed Mitigation Project	Rank	Responsible Agency for Implementation	Estimated Cost	Source of Funding	Benefit/Comments
All	Activate E-911 notification capability to warn/alert through cell phones	H	Toole County	M	Existing budgets	More effective alerts. Potential to save lives.
Saline Dust	Continue to work with MDT and landowners to saline area through warning system and sprinkling (long-term)	H	Toole County, MT Dept of Transport., Bureau of Land Mgmt	H	MT DES, MDT	Save lives along Interstate.
Hazmat	Update hazardous materials flow study	H	Toole County	M	Existing budget, MT DES	Existing study is outdated. More effective response to spills.
Wildland Fire	Make bulk purchase of fire extinguishers and sell at cost for farm equipment	M	Toole Co DES, Fire Depts	L	Toole Co DES, DNRC	Reduce potential for wildland fires started by farm equipment.
Flood	Provide training for county floodplain manager	M	Toole Co DES	L	Toole Co DES, MT DES, FEMA	Protect property through more effective program administration.
Wildland Fire	Install one or more fire danger highway signs in county	L	Toole Co DES	L	DNRC, BLM	Raise awareness, reduce potential for wildland fire.
Flood	Continue participation in the NFIP	H	Toole County	L	Existing budgets	Protect property from flooding. Provide opportunity for flood insurance.

Implementation

The projects identified above are the means by which the residents of Toole County intend to realize their goal of becoming more disaster resistant. Accomplishing the projects will depend on funding, cooperation, staff, and technical expertise from a variety of sources including the town, county, state and federal levels of government, not-for-profit organizations, and business/industry.

In general, the higher priority projects will be undertaken first although this may not always be the case. External resources that may or may not be available could be needed for the higher priority projects while low priority projects may be within the ability of the local jurisdictions to implement immediately. Also, many of the projects that ranked low have the potential to save lives and the low ranking was assigned because there is less opportunity for the project to prevent property damage or economic disruption. However, the staff resources for implementing projects are limited for two reasons. First, the county has a small population, and second, those who would be charged with implementation already face heavy time commitments in service to their communities (as an example, the Disaster Emergency Coordinator works on the weed crew and then covers two counties as a part-time DES employee.)

Some of the projects identified above are already underway and on-going. The four jurisdictions will need to revisit and determine the priority of the identified mitigation actions for their jurisdictions on an annual basis in light of the available resources

Each spring beginning in 2015, prior to the annual budget setting, the Toole County Disaster and Emergency Services coordinator will contact the mayors of Shelby, Sunburst, and Kevin, and the chair of the Board of County Commissioners by letter or appearance at a regularly-scheduled meeting. The purpose of the contacts will be to update the elected officials on projects in the plan, request the local jurisdictions' project priorities for the coming year, and determine any support needed from Toole County DES and the LEPC. The DES can assist in applying for grant funds, obtaining information, training, and technical expertise. Projects will be undertaken and accomplished as resources are available. Resources include such things as funding, staff time, and technical expertise.

Responsibility for implementation of the plan will be shared by city, town, and county elected officials, the Toole County Disaster Emergency Services Coordinator, and the Local Emergency Planning Committee (LEPC.) The Montana DES may serve as an additional resource for accomplishing projects. Implementation can be furthered by incorporating elements of this plan into other planning projects although no other planning projects are currently underway. The DES Coordinator, the mayors, and the County Commissioners will be jointly responsible to see that future plans consider and incorporate elements of the PDM plan as appropriate.

The local jurisdictions understand that any grant funding requested for these projects through FEMA will need to undergo a cost/benefit analysis. The results of the analysis must show that to be considered for funding at least one dollar of benefit will be received for every dollar expended.

The participants to the process believe that the projects identified have the potential to save lives and damage to property thus creating value for the funds expended. A cost/benefit analysis will be done on projects as part of any grant submission process.

The City of Shelby, Towns of Kevin and Sunburst, and Toole County realize that while completion of this plan will make them eligible for additional funds, it is in the best interests of the residents to proceed with the majority of the identified projects that can be done within existing resources.

Reducing Effects of Hazards on Existing Buildings and Infrastructure

Continued participation in the NFIP by all four of the local jurisdictions covered under this plan will reduce the potential for flood damage to existing buildings and infrastructure. Addressing recurring flooding in the Town of Kevin will help reduce potential property and infrastructure (street and railroad tracks) damage in Kevin from flooding. Continuing to implement the Capital Improvements Plan for the City of Shelby will reduce the danger of flood damage association flash flooding and with storm drainage.

Testing and replacement of non-operational fire hydrants, installation of fire danger signs, and the bulk purchase of fire extinguishers for farm equipment will reduce the potential for loss of existing structures from wildland fire.

Reducing Effects of Hazards on New Buildings and Infrastructure

Continued participation in the NFIP and training for the floodplain administrator will reduce the potential effect of the flooding hazard on new buildings and infrastructure.

Use of Cost-Benefit Analysis

The DES Coordinator can make available information regarding the STAPLEE method for evaluating and prioritizing mitigation actions. The method looks at social, technical, administrative, political, legal, economic, and environmental aspects of projects to weigh pros and cons of implementing specific projects. Information on this analysis method can be found in FEMA's *Developing the Mitigation Plan* (FEMA 386-3). The jurisdictions will need to consider compatibility with goals and objectives in the state's plan, compatibility with goals in this plan, impacts of the project on other jurisdictions, costs and benefits, funding priorities, and compatibility with other plans and programs when selecting projects to implement.

V. Plan Monitoring, Maintenance, Revision, and Coordination

Responsible Parties

The Toole County Commissioners in cooperation with the mayors of Shelby, Kevin, and Sunburst are responsible for ensuring that the Pre-Disaster Mitigation Plan (PDM) is kept current. With adoption of the plan, the Commissioners designate the Toole County DES Coordinator--with the assistance of the Local Emergency Planning Committee (LEPC)--as the lead in accomplishing the on-going responsibility.

Plan Monitoring and Evaluation

There are two types of plan monitoring and evaluation; effectiveness and implementation. Effectiveness monitoring looks at whether the plan has addressed needed items. Implementation monitoring looks at whether projects in the plan are being undertaken and completed. The Toole County DES Coordinator with the help of the LEPC will ask the following questions to evaluate the effectiveness and implementation of the plan.

- Have any potential hazards developed that were not addressed in the plan?
- Have any natural disasters occurred that were not addressed in the plan?
- Has any unanticipated development occurred that is vulnerable to hazards?
- Are there any additional mitigation ideas that need to be incorporated?
- Have projects been initiated and/or completed?
- What are the barriers to completing projects identified in the plan?

Each summer starting in 2014 the LEPC will meet to ask and answer the questions listed above. The discussion will be documented so that when the plan is revised, the findings of the monitoring can be incorporated into the revision. The Toole County DES Coordinator will convene the LEPC for this purpose.

Plan Update Review Triggers

Any of the following three situations could trigger a review and update of the plan.

- Occurrence of a major natural disaster in or near the county,
- Passage of five years, or
- Change in state or federal regulations which must be complied with.

Revision Procedures

Should a major natural disaster occur in Toole County, the LEPC shall meet following the disaster to determine whether a review of the MHMP is warranted. In the absence of a major natural disaster, the five-year review will take place during the nine-month period preceding the FEMA approval anniversary date.

The Toole County DES Coordinator will publish a legal ad in the newspaper(s) of record notifying the public that an update is being initiated and providing information on how and where to get information

on the project and how to provide input. The coordinator will then convene the LEPC and with their assistance and/or the assistance of the Montana DES or a contractor as determined necessary, carry out the following tasks;

1. Review the comments on the Plan Review Tool offered by the State of Montana DES and FEMA during their most recent review of the plan.

2. Examine and revise the hazard profiles, risk assessment, and development trends as needed to ensure they are current.

3. Update the mitigation strategies to incorporate completion of actions and add any needed strategies or projects.

4. Identify problems that may be hindering or affecting implementation of the plan, and recommend actions for resolving those problems.

5. Recommend any necessary revisions to the PDM Plan.

6. Comply with all applicable regulations and statutes.

Forty-five days prior to the five-year anniversary date, a final draft of the revised plan will be submitted to the state. An annual review will be conducted by the Toole County DES Coordinator for the purpose of summarizing the status and effectiveness of the plan mitigation goals or strategies.

Incorporation into Other Plans

If and when Toole County or the incorporated communities of Shelby, Sunburst, or Kevin prepare new or update existing plan, the goals and projects in this PDM plan will be considered and incorporated by reference or as appropriate.

This plan information is provided to the state so that when the statewide hazard mitigation plan is updated, this information can be included. No other planning efforts are anticipated or underway.

Opportunity for Continued Public Involvement

To ensure the public will have the opportunity to remain involved in the implementation and annual updates of the plan, the following will take place.

1) The Toole County DES Coordinator will provide an annual summary presentation or report to the two governing bodies on what has been accomplished during the previous year and to receive guidance from the elected officials on their priorities for the coming year.

2) Each year following the summer LEPC meeting called for the purpose of reviewing the status of the plan, the county will provide information to the newspapers to notify the public of the accomplishments of the previous year and allow comment for any revisions.

APPENDIX A: Planning Process

Briefing Paper—March 2013
Toole County, Montana
Pre-Disaster Mitigation Plan Update

What is a pre-disaster mitigation plan (PDM plan)?
A PDM plan looks at natural hazards that the county, Kevin, Shelby, and Sunburst may be susceptible to and ways to lessen the potential disasters caused by those hazards. The county's existing plan is being updated to make sure the county and its communities are disaster-resistant and less vulnerable to property damage and loss of life from a natural disaster. To remain current, the state and the Federal Emergency Management Agency (FEMA) require that the plan be updated every five years. By getting the plan approved, the county and its local jurisdictions will continue to be eligible to compete for project funds. The county will also be eligible for post-disaster assistance from the state and/or FEMA, in the event of a major disaster. Adoption of the plan is voluntary, but each jurisdiction--the county, Kevin, Shelby, and Sunburst--will need to have at least one mitigation project in the plan and adopt the plan if they wish to qualify for funding and assistance.

What is in the plan?
The plan will contain profiles of natural hazards such as flooding and wildfires, vulnerability to each hazard, and a history of past disasters. Potential losses from future disasters will be estimated. Goals and projects identified by citizens and the towns, city, and county will be prioritized and included as appropriate. The plan will also have an explanation of how it was developed, a review of other related plans, and copies of news articles and notes from meetings held to discuss the plan.

How will the plan be revised?
Using FEMA funds passed through the state, the county has contracted for the plan update with Barb Beck, of Beck Consulting located in Red Lodge, Montana. Working with Toole County Disaster and Emergency Services (DES), the county, and the communities over the next eight months, Ms. Beck and subcontractor AMEC, Inc. will review other local plans for consistency with this plan, update the hazard profiles, and work with elected officials and the Local Emergency Planning Committee (LEPC) to gather input and identify needed goals and projects. A draft plan will be made available for public review in the summer and comments received will be incorporated. The county will submit the plan to the Montana DES and FEMA for technical review. Finally, Kevin, Shelby, Sunburst, and Toole County will have the opportunity to adopt and implement the plan. Plan implementation will be dependent on having resources to do so.

How do we offer input?
Input is encouraged any time until the plan is adopted. Adoption is targeted for fall 2013. Input from citizens will help make the plan the highest quality possible. Meetings will be designed to gather input and all meetings will be noticed and open to the public. The local newspaper will be provided with meeting information and periodic updates. For more information contact DES Coordinator, Darrell Stafford at swmprat@northerntel.net, 450-8972 or Barb Beck, 406 446-3628 barbbeck@bresnan.net. Information about the plan will be posted on the county's website at www.toolecountymt.gov.

Toole County PDM Revision Kick-off Meeting
March 12, 2013

Contract status

Schedule: review and validate or adjust

- When do commissioners meet?
- When do city councils meet?
- Locations for public meetings

Contacts

- LEPC
- Media
- Town/city planning, public works, clerks, etc.
- Website availability for posting draft information

Existing plans and documents—where to get these

- EOP
- Growth Policies
- Other

Key Stakeholders brainstorm

- Ag and other industry
- Railroad
- State and federal agencies
- Chamber
- Others

2006 Plan Projects

- Review project list to determine status (completed, ongoing, initiated, retain, or delete)

2006 List of hazards

- Discuss and revise

Invoicing procedure and schedule

Toole County PDM Revision
Project Kick-off Meeting
Shelby, March 12, 2013

Participants: DES Coordinator, Darrell Stafford, contractor, Barb Beck

Contract status

Expect to have signed contract March 13 at meeting with commissioners. Ask them tomorrow about agreements between the counties for project management and how and when to invoice. Barb abd Darrell will both track local match. Barb will provide quarterly progress reports for Darrell to forward on to the state DES.

Schedule

Commissioners meet Tuesdays and Thursdays, but are in the office on additional days
Shelby City council: 1st and 3rd Mondays at 7:30 p.m.
Kevin Town Council:
Sunburst Town Council:

Contacts

County Commissioners are Ben Ober, Allan Underdall, and Deb Brandon (also former planner)
LEPC: meets at 3 p.m. first Tuesday of April, July, October, and January at ambulance barn
Newspaper is the Shelby Promoter, ask for Jen
KSEN is the radio station, contact is Mark Daniels
County has a website where we can post project information, www.toolecountymt.gov
Tomorrow we will visit city of Shelby and the county to get additional local government contacts
Shelby Mayor is Larry Bonderud, www.shelbymt.com, 434-5222
Kevin Mayor is Gary Iverson, Clerk is Linda Burley, Maintenance is Dan Kolve, kevinmt@northerntel.net
http://sunburst.com, 937-2141

Existing plans

Toole County has a growth policy, Shelby has a growth policy, Kevin and Sunburst do not have GPs
Toole County's EOP was recently updated—Darrell will provide a hard copy
Toole County does not have a Community Wildfire Protection plan

Key Stakeholders

Agriculture (NRCS, FSA, Conservation District)
Railroad (BNSF)
State and Federal agencies 9BLM, BOR, FBI has a new complex Sunburst)
Chamber of Commerce
Superintendent of Schools is Boyd Jackson (he is also County Treasurer)
Prison (CCA) ask warden if they have an evac plan and if they would request any local resources

2007 Projects
Darrell and Barb went through the projects from 2007 to determine the status of each. This will be documented in an appendix. Existing projects where appropriate will be carried forward.

Developments since last plan

New Border Patrol station/complex constructed at Sunburst.
FBI has a new office in the county (Shelby?)
CCA prison population not more than 1000
NaturEner has constructed two wind farms: Glacier and Rimrock. Each of these wind farms are located partially in Toole County.
BNSF added a short spur during construction of the Rimrock windfarm.
Population in the county has been relatively stable.

County recently received an HMPG from Department of Homeland Security to provide training related to Hazmat. The training will focus on notification.

Toole County PDM Revision
County Commissioner Kick-off Meeting
Shelby, March 13, 2013

Participants: Ben Ober, chair, Allan Underdall, Deb Branson, Darrell Stafford (DES), Barb Beck consultant

Contract status and Administration

Commissioners will coordinate with Liberty and Teton Counties on administration. Contract will be signed next Monday. The commissioners said it would be OK to work directly with the newspaper on publicity for the project. Contractor could also ask for Deb's review and input on news releases. The commissioners are in office Mondays and Thursdays at 10:00 for scheduled meetings. Invoicing cutoff date is the 23rd of each month. The county website can be used to post information from the PDM revision. Deb is the contact for the website.

Overview

Contractor, Barb Beck provided a one-page briefing paper that explains the project and walked the commissioners through the information on the purpose, contents, and process for revising the plan. She explained the benefits of the plan as increasing the disaster resistance, being eligible to compete for project funds, and being eligible for post-disaster assistance in the event of a large disaster. The federal government expects counties to try and lessen the chances of a disaster by preparing these plans before they come in to assist following a natural disaster. The commissioners shared that they had previously received some FEMA funding to help with road damage caused by flooding.

Existing plans

Toole County has a growth policy, but it has not been updated since the original PDM was prepared. The county will be updating it, but there is nothing new to review at this time. The county does have a Capital Improvement Plan. The county planning function is handled by Dan Staley of Staley Engineering in Bozeman. The economic development director is Mallory Riphenberg. County Clerk is Treva Nelson, 424-8300, tnelson@toolecountymt.gov.

Obligations of the County

Barb briefly mentioned the roles of various entities in updating the plan, local jurisdictions, DES coordinator, consultant, state and FEMA. She explained that to participate in the plan, a jurisdiction must have at least one project. Completing the listed projects is dependent upon having adequate resources.

Validation of the hazard list

Barb explained that in the original plan the following hazards were profiled; drought, flood, earthquake, hazmat, wildlife fire, winter storms and summer storms. She asked the commissioners if there were any other natural hazards they were concerned about. All agreed that this was a comprehensive list for the revision.

Developments in the County

The commissioners talked about all of the activity that is currently occurring in the county.

- Toole County received a federal TIGR grant for $9.9 million. This will enable construction of a multi-modal facility at the Port of Shelby, railroad track upgrades at the industrial park, and finishing 13th Street to serve as a truck route between Interstate 15 and Highway 2. This infrastructure will allow semi-truck traffic carrying tobacco products from Mexico to come through Shelby for sale in Canada and capitalize on the fact that the "free trade zone" is being reactivated.
- CHS is constructing a fertilized distribution center in Shelby.
- The Comfort Inn in Shelby has been redone and has added 56 rooms. They are planning an RV park with 85 units.
- A new Best Western with 74 rooms has just opened. Best Western is planning to construct an RV Park with 35 units.
- The Border Patrol has built a new station/complex at Sunburst. Border Patrol still has offices in Shelby.
- The FBI has a new office in Shelby as of 18 months ago.
- The private prison (CCA) is stable and has a prison population at 650.
- NaturEner has constructed two wind farms--Glacier and Rimrock. Each of these wind farms is located partially in Toole County. The Rimrock windfarm has a planned expansion that will result in a third windfarm if/when built.
- Twelve units of low to moderate income apartment buildings are being constructed in Shelby.
- The former Bitterroot school is being converted into condominiums.
- The local oil and gas industry is experiencing a small amount of exploration—discovery phase. Old wells are still producing and some are being reworked to increase their production. The Kevin Field is the oldest producing field in Montana. Most of the wells are "stripper wells" producing less than 30 barrels per day.
- The agriculture sector is stable and prices for grain and cattle are currently strong.

Interview with Shelby Mayor, Larry Bonderud
March 14, 2013

Participants: Mayor Bonderud, DES Coordinator, Darrell Stafford, contractor, Barb Beck

Contractor Beck explained that the county was undertaking the revision of the PDM plan and that Shelby is included in that plan. The city does have a growth policy. A disk was provided by the city with the growth policy, the CIP, and the city's asset listing. The CIP identifies a needed storm water drainage project.

Barb asked Mayor Bonderud about development trends for the city of Shelby. There is a tremendous amount of development activity going on in Shelby.

- Shelby has $43 million in construction projects going on equating to approximately 500 jobs.
- The city has received a grant to construct a multi-modal transportation hub (110 acres.)
- Ryder Logistics will move tobacco products in and out of the transportation hub.
- CHS has just constructed a 42,000-ton bulk fertilizer plant.
- Comfort Inn has updated and doubled in size. There is a brand new Best Western.
- Comfort Inn/Town Pump is constructing an 85-unit RV park.
- Best Western is constructing a 35-unit RV park.
- Shelby has two new water booster stations. The new UV water plant has doubled capacity.
- The city is providing water to the community of Ethridge and the Wild Rose Hutterite Colony. They will be extending services to Vaughn and in two years to Cut Bank.
- The private prison operated by Corrections Corporation of America (CCA) has a stable population of 550 county inmates and another 100 federal prisoners. CCA has a total of 225 employees in Shelby, 160 of these are corrections officers. Dwayne Drogetas is the warden/contact.

The city council meets on the first Monday of each month. The clerk can put us on the agenda.

Contacts

City Planner: James Yeagley, 590-7121, office at city shop
City Finance Officer: Terri Ruff
Website posting: Rod Sterling, 424-2140. We are welcome to post information about the PDM update on the city of Shelby's website.

AGENDA

CITY COUNCIL MEETING

CITY OF SHELBY

April 1, 2013
7:30 P.M.

ROLL CALL OF MEMBERS

APPROVAL OF MINUTES
- Regular Meeting, 03/18/13

CLAIMS REPORT 3/31/13

APPEARANCE REQUESTS
- Agenda Items – Barb Beck re: Pre-Disaster Mitigation Plan
- Non Agenda Items

COMMITTEE REPORTS - none

COMMUNITY DEVELOPMENT DIRECTOR

CITY ATTORNEY
- Resolution No. 1861 – Giving preliminary approval to the proposed issuance of bond anticipation notes (Multi Modal Rail Project), series 2013A in an estimated original aggregate principal amount of $5,500,000 making certain findings with respect to the security therefor

CITY SUPERINTENDENT

CITY FINANCE OFFICER

OTHER MATTERS
- Bi-Weekly Payroll Report, March 2013
- CHS Inc Contract for Private Development
- Office Closure for Holidays

  For the Friday after Fourth of July Day (7/5/13) and for the Friday after Thanksgiving Day (11/29/13). This would allow all city offices to close on these days and give employees the option to take vacation days or work if they wish.
- MDOT – Oilfield Avenue Special Speed Zone

ADJOURN

-OVER FOR MEETINGS-

Toole County PDM Plan Revision
Shelby City Council—Briefing
Shelby City Hall
April 1, 2013

Participants: Mayor, six council members, City Clerk, City Superintendent, City Finance Director, two members of the public, contractor Barb Beck.

Handouts: One-page briefing paper, Types of projects (with examples)

Hazard mitigation contractor Barb Beck, introduced herself to the council and thanked them for the time on their agenda. Beck explained that the plan is now five years old and is being updated on behalf of the county and the three incorporated communities with a grant that the county has received. The county is providing the local match so there is no cost to the town and cities.

Beck provided the briefing paper and explained that the overall purpose of the plan was to reduce the chances for property damage or loss of life from a natural disaster.

Beck told the council that the following entities will be involved in updating the plan; Toole County, the LEPC, the public, the contractor, the three incorporated communities, Montana DES, and FEMA. She explained the role of each entity in the process. Specifically, the role of the communities is to provide information and access to staff, provide project ideas, review and comment on draft documents, and adopt the plan after it is approved by FEMA. Each jurisdiction that wants to adopt the plan must have at least one project in the plan.

The City of Shelby has already provided a copy of its Growth Policy and Capital Improvements Plan. Barb encouraged the city to include the water and storm drainage projects from the CIP in this PDM plan saying that the projects can compete for funds from FEMA and that showing the projects in multiple plans can increase the chances of obtaining funding from other sources. No funding is guaranteed from this PDM plan.

The natural hazards that will be profiled for Toole County include; drought, earthquake, flood, hazmat, summer storms (wind, hail, tornadoes), wildland fire, and winter storms. The contracting team will research the history of these events in Toole County to provide a factual basis for identifying projects.

Shelby will have one goal in the plan, to make the City of Shelby more disaster-resistant. Any projects the city identifies can fall under this goal. The city can put whatever projects it would like in the plan.

There are no requirements that certain types of projects be included.

Beck handed out a sheet showing the types of projects--along with examples--that can go into a PDM plan. A brief discussion yielded the following suggestions for projects:

- CIP projects including wellhead protection for 12 additional wells (Barb will follow-up with the city superintendent),
- Addressing the fact that the EOC is located next to the railroad tracks and that the most likely type of disaster will probably be associated with the railroad (hazmat spill or other),
- Addressing the potential for a vehicle accident on I-15 that would pollute the Marias River (source of water for the city of Shelby.) According to the mayor the city's wells are under the influence of surface water although there is some disagreement about this.

What is the Process to complete the plan?

- The contractor explained that these are the steps that will be taken.
- Update the hazard information
- Update and revise the goals and projects
- Prepare the draft plan and make it available for a 6-week comment period
- Incorporate comments and submit to the state and FEMA for review
- Then the local jurisdictions may adopt the plan, but this is not required.

The contractor's contact information is at the bottom of the briefing paper. She encouraged anyone with questions or input to contact her.

Toole County Pre-Disaster Mitigation Plan
LEPC Agenda, Shelby, MT.
April 2, 2013

Welcome and Introductions

Hand out (one-page briefing paper)

Multi-hazard Mitigation Planning—What is it?

Roles and Responsibilities

- Toole County
- Local governments of Kevin, Shelby, and Sunburst
- Contractor
- LEPC
- Public
- State of Montana
- FEMA

Natural Hazards in Toole County

- Blowing saline dust (2007)
- Drought
- Flood
- Geological events-earthquake
- Hazmat
- Wildland fire
- Wind and hail
- Winter storms

2007 Plan Problem Statements

- Hand out—review and discuss

2007 Goals and 2013 Goals

- Reorganized

Types of Projects

- Hand-out (project types with examples)

Next Steps

- Hazard profile updates
- Present info on hazards, project ideas to LEPC
- Meet with elected officials, public meeting(s)
- Write draft plan and make available for 6-week public comment period
- Review by state and FEMA
- Adopt plan (by next fall)

Toole County Pre-Disaster Mitigation Plan
LEPC Meeting Notes, Shelby, MT.
April 2, 2013

Upcoming exercise

County DES Coordinator, Darrell Stafford went over the schedule and expectations for the upcoming exercise. The exercise will be held in Chester. Forms training is the day before.

Welcome

Hand out (one-page briefing paper) and listing of types of projects

Multi-hazard Mitigation Planning—What is it?

Contractor, Barb Beck explained the purpose of the plan is to reduce the chance of property damage or loss of life from natural disasters. The city and county will also be eligible to compete for project funds and receive post-disaster assistance. She walked through the briefing paper information including the contents of the plan.

Roles and Responsibilities

Beck explained that each of the following has a role in revising the plan and explained what those roles are.

- Toole County
- Local governments of Shelby, Kevin, and Sunburst
- Contractor
- LEPC
- Public
- State of Montana
- FEMA

Natural Hazards in Toole County

Toole County is vulnerable to the following natural hazards. These hazards will be profiled in the plan.

- Blowing saline dust
- Drought
- Flood
- Geological events (earthquake)
- Hazmat
- Severe summer storms—wind, tornadoes, hail, lightning
- Wildland fire
- Winter storms

The LEPC concurred that this list covered the natural hazards in the county.

Problem Statements from 2007 plan

Barb provided a hand out with the problem statements from the 2007 plan and the LEPC discussed and updated them. The updated problem statements are as follows. Newly added statements are highlighted in blud.

- When the wind blows south of Sunburst during dry periods, saline dust can obscure visibility on I-15 increasing the potential for vehicle accidents. Many of the trucks traveling on I-15 are carrying hazardous materials.
- People no longer expect to experience severe winter weather and are unprepared for it.
- Blowing topsoil can obscure visibility in many locations in the county.
- Wells go dry, stock reservoirs are low or empty, and the vulnerability to wildfires increases during drought.
- Wet spring months produce heavy fuels that dry out later in the summer, including fuels on CRP lands.
- The fire department is doing controlled burning on CRP lands and reducing the potential hazard. Also, CRP contracts are being phased out. This will also reduce the hazard fuels over time.
- Lightning strikes during harvest time start fires that take crops and/or equipment causing economic losses.
- The railroad still causes fires, but less frequently than in the past.
- Smoke from local fires and fires burning elsewhere (to the north and west) present health dangers to Toole County residents.
- Ice jams can occur along the Marias River, at the I-15 bridge and in other locations with river bends depending on weather and temperatures.
- May and June are the most dangerous months for flash floods in the county because of snow melt, heavy precipitation on snow and saturated ground, high seasonal flows, and high temperatures causing rapid snowmelt.
- Even though there has not been a major hazardous material spill or release in Toole County, the potential exists. The potential for a railroad-related hazmat spill has increased because of the additional oil crude tanker traffic carrying oil from the Bakken. If there was a major hazmat incident, there is no method to quickly warn people and instruct them what to do.
- Shelby has a siren that can be heard across town. It is currently used for fire calls and curfew. People could be alerted by a continuous blast of the siren. Kevin and Sunburst also have sirens.
- Depending on season and weather conditions, the one siren in Shelby does not reach all residents.
- Megaloads moving equipment to the tar sands development in Canada are passing through the county. When the megaloads are on Highway 2, traffic is stopped.

Goals and Projects

The 2013 revision will have four goals. There will be one goal for each of the local jurisdictions and that will be to increase disaster resistance for that jurisdiction. All of the projects will fit under one of these goals depending on the location.

Types of Projects

Barb explained that there are a variety of types of projects that can be considered for the plan. She went through a handout with examples. Some of the project types are applicable to Toole County and others are not. She asked the LEPC members to think about ideas for projects for discussion at the July 9 LEPC meeting that she will plan to attend.

The LEPC had several preliminary ideas for projects. They included;

- The Sheriff's Office is undergoing a remodel of the dispatch center. Once that has been completed there is a need for developing better warning protocols.
- The county is unable to contact residents with cell phones through Reverse 911. Because so many people are giving up their landlines, the county believes that cell phones will need to be entered into the system in the future.
- The issue of proximity of the Sheriff's Office and dispatch center to the railroad tracks (and the potential for hazmat spill or release related to the railroad) raised by the mayor of Shelby is already being addressed by the sheriff so there is no need to make this a project in the plan.

Next Steps to get the plan done

- Hazard profile updates
- Present info on hazards, project ideas to LEPC
- Meet with elected officials, public meeting(s)
- Write draft plan and make available for 6-week public comment period
- Review by state and FEMA
- Adopt plan (by next fall)

Barb's contact information was provided on the briefing paper. Anyone with questions or input was encouraged to call her.

sfy 2013 empg grant - in kind match roster

Daily Checkin - Initial				Meeting/training:	Toole County LEPC				
				Location:	Shelby Ambulance Bldg			Date:	April 2, 2013
DAY 1 MORNING	DAY 1 AFTER NOON	DAY 2 MORNING	DAY 2 AFTER NOON	Time of meeting/training:	1500-1600	federal subsidized payroll	Actual salary or a volunteer rate of $21.79 per hour		80 miles of travel minimum round trip @ $.555/mile
				Name & Affiliation	optional - email and phone number	yes/no	Number of Hours	Salary per hour	Miles Traveled
	BB			Name Barb Beck Organization Beck Consulting	barbbeckc bresnan.net	NO		$21.79	
				Name DARRELL STAFFORD Organization LEPC CHAIR		YES		$21.79	
				Name Steve Osgood Organization Toole Co. Health Dept		YES		$21.79	
				Name Deb Brandon Organization Toole County Commission				$21.79	
				Name Donna Whitt Organization Toole County S.O.		No		$21.79	
				Name Organization				$21.79	
				Name Organization				$21.79	
				Name Organization				$21.79	
				Name Organization				$21.79	
				Name Organization				$21.79	
				Name Organization				$21.79	
							TOTALS		$0.00

TOOLE COUNTY PRE-DISASTER MITIGATION PLAN
Handout for Types of Mitigation Projects
April 2013

Toole County's hazard mitigation plan will contain goals and projects to mitigate the potential for property loss or loss of life from natural hazards. Potential mitigation projects fall into one or more of six categories. FEMA requires the county to consider a broad range of mitigation projects in the plan. Each incorporated community as well as the unincorporated area of the county will have a goal with one or more projects for that particular jurisdiction. In order for a jurisdiction to participate and adopt the plan, they must have at least one project. Some of the projects may qualify for grant funding.

Project Types and Examples

Public Education and Awareness

- How to prepare ahead of time for a disaster or emergency
- How to create defensible space around your home from wildland fire
- What to do in the event of a hazardous material spill

Emergency Services

- Warning sirens
- Hazmat response training, evacuation training
- Protection of critical emergency systems or facilities

Prevention

- Actions to influence land and building development such as planning
- Building codes
- Participation in the floodplain program
- Require geological hazard study prior to major pipeline construction

Property Protection

- Seismic structural retrofits
- Relocation of structures in hazard-prone areas
- Creation of defensible space around structures

Structural Projects

- Tornado shelter
- Installation or upgrades of drainage infrastructure (stormwater systems)
- Construction of levees or dikes
- Stream channel modification

Natural Resource Protection

- Slope stabilization
- Forest management
- Floodplain protection

Toole County LEPC Meeting Agenda
Shelby, Montana
July 9, 2013

Quick review of what a PDM plan is

Update on the planning process since we last met

- Completion of the hazard profiles
- Questions from the researchers

Quiz and discussion from the hazard profiles

- Blowing dust
- Dam failure
- Drought
- Earthquake (geological events)
- Flood
- Hazmat
- Summer storms (wind, hail, lightning, tornadoes)
- Wildland fire
- Severe winter storms

Project ideas

- Review problem statements for ideas
- Projects identified to date
- Additional project ideas--discussion

Wrap-up

What comes next?

Toole County LEPC Meeting Notes
Shelby, Montana
July 9, 2013

Quick review of what a PDM plan is

Contractor, Barb Beck, explained that the purpose of the PDM plan is to prevent loss of life and property damage from natural hazards. Preparing and adopting the plan will also ensure the local jurisdictions are eligible for post disaster relief if they suffer a major disaster. The one-page briefing paper is available with more details.

Update on the planning process since we last met

- Since the last LEPC meeting in April, the hazard profiles have been largely completed. Barb provided a hard copy to the county of the draft profiles. She will be getting the rest of the information to finalize these in the coming weeks.

Quiz and discussion from the hazard profiles

Barb handed out a quiz with facts and figures from the hazard profiles and talked the group through the answers. There were facts from each of the following hazards in the quiz. The county has experienced all of these types of incidents and dollar damages are extensive.

- Blowing dust
- Drought
- Flood
- Geological hazards (earthquake, volcanic activity)
- Hazmat
- Summer storms (wind, hail, lightning)
- Wildland fire
- Severe winter storms

The LEPC revisited the hazard ranking from the 2007 plan and made the following adjustments. The criterion for the ranking was based on the LEPC members' perceptions of the hazards potential to cause loss of life and/or property damage.

Hazard	2007 rank	2013 rank
Blowing dust	7	3
Drought	1	1
Flooding	2	7
Hazmat	3	2
Severe summer storms	4	6
Wildland fire	4	4
Winter storms	6	5

Project ideas

Project ideas for this plan are coming from a number of different sources including projects being carried over from the 2007 plan that either were not accomplished or are ongoing, projects identified at the LEPC meetings, projects that came from the problem statements, projects in the Community Wildfire Protection Plan (CWPP), and projects identified by the City of Shelby, the towns of Kevin and Sunburst, and Toole County.

The following is the agreed-upon project list with the LEPC's priority ranking of high, medium, or low. Additional projects from the communities--if there are any--will be added following the council meetings.

The LEPC agreed with the contractor's recommendation to include some, but not all of the wildland fire projects identified in the CWPP. The CWPP will be referenced in the PDM plan and all of the projects in the CWPP will be supported, however, only those high priority projects in the CWPP that are multi-hazard will be carried over into the PDM plan.

<u>High Priority Projects</u>

- Activate notification capability in E-911 system to have the ability to send alert/warning messages to cell phones.

- Address blowing dust hazard. MDT is installing sensors on either end of the problem area and installing signs for a detour around. Sprinkler installation to wet the dust needs to be designed and completed.
- Update the hazardous material flow study

Medium Priority Projects

- Purchase fire extinguishers in bulk and sell at cost for farm equipment
- Provide training for the county floodplain administrator

Low Priority Projects

- Install one or more fire danger signs in the county

The following project ideas have surfaced for the communities. Barb and Darrell will check with them about whether to include these or other projects.

Kevin: include a message about severe weather conditions in the town's monthly newsletter, address recurring flooding at Front and 1st Streets, Test all fire hydrants and replace those not operational, Hazmat incident planning.

Shelby: Wellhead protection for remaining 9 wells, storm drainage projects, other projects in the CIP that would protect property, enhance siren coverage.

Sunburst: Locate and sign an additional railroad crossing, design stormwater drainage into proposed housing development area, enhance siren coverage.

Wrap-up (what comes next?)

Barb will be meeting with the Kevin Town Council on July 11. Darrell will be meeting with the Sunburst Town Council on July 16. She will assemble the plan. Barb will come back to the county in early August to hold a public meeting and present the draft plan to the commissioners. The 6-week public comment period will begin then and hard copies of the draft will be made available at city and county buildings.

Following the public comment period, the plan will be finalized and sent to the state and FEMA for their review. After those reviews, Toole County, Shelby, Sunburst, and Kevin will be able to adopt the plan.

TOOLE COUNTY
HAZARD QUIZ, July 2013

Select which of the following hazards the statements below describe: blowing dust, dams, drought, earthquake, flooding, hail, hazardous material spills, lightning, wildland fire, or winter storms, and write the hazard in the blank.

1. __dams ___The county has two of these classified as “high hazard.”
2. __wildfire__The value of property at risk from this hazard is $300 mill.
3. __tornadoes_From 1950-2013 there have been six of these in the county.
4. wildfire, winter storm_On average, these two hazards occur every year in the county.
5. __drought__From 1895-1995, the county suffered this 15% of the time.
6. __hail _____The county has experienced 43 of these events since 1950.
7. __earthquake_ Toole County has a 4-10% chance of this in 100 years.
8. __wildfire____Large contiguous blocks of CRP contribute to this hazard.
9. hazmat spills_There were 29 of these events in the county from 1991-2013.
10. _drought____This is the most costly natural hazard for society.
11. __flash_____This type of flooding is the most likely to occur in Toole Co.
12. __drought__From 2007-12, more than $13 million in insurance payments were made due to this hazard.
13. _blowing dust_The county had one death from this hazard in 2013.
14. _hail_____The risk to crops from this hazard in 2012 was over $4 million.
15. _lightning__This hazard causes 26,000 fires in the U.S. every year.
16. _flooding __There have been 5 disaster declarations for this since 1964.

sfy 2013 empg grant - in kind match roster

Meeting/training:	Toole County LEPC					
Location:	Shelby Ambulance Bldg			Date:	July 9, 2013	
Time of meeting/training:	1500-1600	federal subsidized payroll	Actual salary or a volunteer rate of $22.14 per hour		[illegible] miles of travel [illegible]	
Name & Affiliation	[illegible] phone number	yes/no	Number of Hours	Salary per hour	Miles Traveled	Total
Name: Darrell Stafford Organization: LEPC Chair	406 460 8972	Yes	1	$22.14		
Name: [illegible] Organization: [illegible]		Yes	1	$21.36		
Name: Cindy [illegible] Organization: [illegible]		[illegible]		$21.36		
Name: [illegible] Organization: [illegible]	[illegible]	[illegible]		$21.36		
Name: [illegible] Organization: [illegible]	[illegible]	[illegible]		$21.36		
Name: [illegible] Organization: [illegible]	[illegible]	[illegible]		$21.36		
Name: Deb [illegible] Organization: [illegible]	[illegible]	[illegible]		$21.36		
Name: [illegible] Organization: [illegible]	[illegible]	[illegible]		$21.36		
Name Organization:				$21.36		
Name: Organization:				$21.36		
Name Organization:				$21.36		
	page ____ of ____		TOTALS		$0.00	$0.00
						$0.00

Town of Kevin

P.O. Box 137
Kevin, MT 59454

TOWN COUNCIL MEETING

July 11, 2013

1. **Call meeting to order**
2. **Minutes of previous meetings**
3. **Appearance by Barb Beck - Toole County Disaster Plan**
4. **Old Business:**
   a) Water Project:
      i. Progress Report
   b) Sewer
5. **Public Comment**
6. **Council Comments**
7. **New Business:**
   a) Pay Day Change
   b) Raise?
   c) Budget
      i. Permissive Levy
      ii. Health Insurance
8. **Department Reports**
   a. Clerk Reports
   b. Public Works Reports
9. **Statement of Cash**
10. **Delinquent List**
11. **Claims**
12. **Adjourn**

Toole County PDM Plan
Agenda for Kevin and Sunburst Council Briefings
July 11 and 16, 2013

1) Introduction of contractor and purpose of plan (hand out briefing paper)

2) Stakeholders and roles—Who is doing what? What is your role as elected officials?

3) Natural hazards in Toole County
    - Barb to present selected facts from the hazard profile research

4) Types of mitigation projects, examples of projects, preliminary ideas for projects

    - Emergency Services
    - Public Awareness and Education
    - Structural Projects
    - Natural Resource Protection
    - Prevention
    - Property Protection

5) Discussion with elected officials
    - What are you most concerned about for your community?
    - What might be done to mitigate these concerns?

6) Next steps and schedule for completion
    - How to stay involved and offer input
    - website

Kevin Town Council Briefing
Toole County PDM Planning
July 11, 2013

In attendance: Mayor Becky Gard, all four aldermen, the town clerk, four members of the public, contractor, Barb Beck.

Introduction

Contractor Beck explained that the purpose of updating the hazard mitigation plan is to protect life and property from natural disasters. Kevin signed on to the original plan completed in 2007. Additionally, by adopting the plan, the town's projects may be eligible to compete for matching funding, and FEMA will assist following a major disaster. She explained that in order to adopt the plan when it is finished, Kevin will have to have at least one project in the plan. Council members had received a copy of the briefing paper prior to their meeting.

Roles

Barb explained that the role of the elected officials in Kevin was to provide access to existing plans (she has received and reviewed both the Growth Policy and CIP for Kevin), to identify and suggest needed projects, to review the draft plan when it is available and make it available at town hall, and then to adopt the plan once the state and FEMA reviews are done. The county applied for and received the grant to prepare the plan, so non contribution is needed from the town of Kevin.

Project Types

Barb provided a handout with the various types of projects and--several examples of each project type--that can go into a PDM plan.

Hazard Profiles

The hazards profiled in Toole County are; blowing dust drought, flooding, geological events (primarily earthquake), hazmat spills or releases, summer storms, wildland fire, and winter storms. Beck explained that she and an engineering firm have researched past occurrences of these hazards to determine where they occur, how much damage they have done, and the probability of them happening in the future. She handed out the "quiz" to help familiarize the council with the costs of the natural disasters. Beck pointed out that natural disasters do happen in Toole County and they are costly in terms of crop and property damage and infrequently in terms of loss of life. The town clerk will put questions from the quiz into the town's monthly newsletter to raise awareness about these hazards.

Project Ideas

The following project ideas were briefly discussed:

- Use the monthly newsletter to provide information on hazards (Public education)
- Do some hazmat planning for a railroad spill (public education)
- Test fire hydrants to ensure operability, replace those not working (Property protection, prevention, emergency services) Need to check with Sunburst because they provide the fire protection for the Town of Kevin.
- Address flooding problems along Front Street (Property protection, prevention)—this project will require additional research and design work. The culverts intended to drain Front Street pass under the railroad tracks, but the area to receive the water is the same elevation as the area subject to pooling along Front Street. Pumping the water out of this area would require the town to install and operate a pump, including running power to the pump area. The town does not have funds to implement this solution.
- Check the integrity of the Bird Pond Dike following this year's heavy spring precipitation. The council reported that FEMA paid for work on this dam in recent years but there was some confusion about the integrity of the dike following this spring's heavy precipitation.

Next Steps

Barb will be assembling the draft plan. The town will receive a copy of the plan for the 6-week public comment period to begin sometime in the first half of August. Following the public comment period, the plan will go to the state and FEMA for review. After that the town can adopt the plan.

Toole County PDM Plan Update
Sunburst Town Council Briefing Notes
July 16, 2013

Participants: Mayor, all four council members, town clerk, public works director, County DES Coordinator and spouse, and 8 members of the public.

Toole County DES Coordinator, Darrell Stafford attended the council meeting and the PDM plan was placed on the agenda. Stafford provided the briefing paper and explained the purpose of the plan.

He also explained that the town had the opportunity to identify projects to go into the plan. During discussion the following project ideas were suggested;

- Mitigate the blowing dust hazard on I-15 just south of town that caused a recent fatality,
- Construct an additional railroad crossing, there is only one crossing in a five-mile radius and the town would be cut-off in the event of a railroad hazardous material spill, and
- Sidewalk repair (safety issue for a school evacuation).

APPENDIX B: Local Jurisdiction Assets, Essential Facilities

Essential and High Potential Loss Facilities

Figure B.1. Kevin City Hall and Siren

Source: Town of Kevin

The Marias Medical Center includes the hospital, clinic, and long-term care facility in Shelby, and a satellite clinic in Sunburst. The hospital is licensed for 20 beds and the long-term care facility for up to 68 patients.

Privately-owned utilities and businesses were also identified as critical in the event of a natural disaster. The utilities included Grass River Electric, Marias River Electric Cooperative, 3 Rivers, Bresnan, Qwest, and Northerntel. Additional businesses identified included filling stations, grocery stores (two located in Shelby), pharmacies (two located in Shelby), and local media, the Shelby Promoter and KSEN radio.

A number of high potential loss facilities of various ownerships were identified in the county. These include;

- the Shel-oole Dam and reservoir owned by the City of Shelby,
- the U.S.-Canada 24-hour port at Sweet Grass,
- the border patrol facilities at Sunburst and in Shelby,
- the Corrections Corporation of America's (CCA) private prison in Shelby,
- the missile silos owned by the U.S. Government, and
- the railroad overpass (owned by MDT) located in Shelby.

Figure B.2. Shelby City Hall

Figure B.3. Sunburst Fire Hall

Replacement cost for the Shel-oole Dam (and one other small city-owned dam) is estimated at $2,500,000. Since the original plan was prepared in 2007, an addition border processing facility has been constructed in Sunburst. In addition to this, there is the border station at the US-Canadian border on Interstate 15, plus a facility in Shelby. The facilities are is owned by the U.S. Department of Homeland Security and valued at many millions of dollars. The Correction s Corporation of America (CCA) prison located on the west edge of Shelby is privately owned and is also valued at several million dollars.

Figure B.4. Shel-oole Dam, West of Shelby

Vulnerable Populations

Vulnerable populations are groups or individuals that may need earlier or extra warning or assistance in the event of a natural disaster. The majority of vulnerable individuals reside in Shelby. The exceptions are some disabled and elderly individuals living independently, some low income, and some home-schooled children, and children at the schools outside of Shelby. The vulnerable populations identified include:

- Marias Manor residents
- Crossroads Housing residents
- Patients at the Marias Care Center and Hospice
- Heritage Center residents
- Marias Medical Center patients
- Homebound individuals, home health care patients
- Disabled individuals
- Oxygen patients
- Daycare children
- Low income individuals and families
- School children and home-schooled children

TOWN OF SUNBURST
PROPERTY VALUES AS OF 7/1/12

Site #	Bldg #	Member Name	Address	State	ZIP Code	Occupancy	Site Description	Bldg. $	Contents $	[illegible] $	Flood Zone	EQ Zone	Const Code	Construction	Sq Feet	# Stories	Year Built	% Sprinklered	Auto Sprink Mon	Alarms	Vehicles $	Contractor Equipment $	Fine Arts $	Total $	METHOD	DEDUCTIBLE	LOCATION NOTES	Latitude	Longitude	Spread of Assessment
100		Town of Sunburst	Blk 5, Lots 13-14	MT	59482	City Hall	City Hall	78,744	15,000	0	X		D	Brick building	750	1	1941	0.00%	n		0	0	0	$93,744	REPLACEMENT	$1,000	Partial building coverage	N 48 53.000	W 111 54.604	$110.98
100	A	Town of Sunburst	Blk 5, Lots 13-14	MT	59482	Data Processing Equipment & Software	Data Processing Equipment & Software	0	15,000	0	X		ZZ	EQUIP	N/A	N/A	2006	0.00%	n		0	0	0	$15,000	REPLACEMENT	$1,000				$19.05
101		Town of Sunburst	O'Hare Add- Blk 35 Lots 1-8	MT	59482	Shop	Shop	137,862	15,000	0	C		S	Steel	2,500	1	1960	0.00%	n		0	0	0	$152,862	REPLACEMENT	$1,000				$193.88
101	A	Town of Sunburst	O'Hare Add- Blk 35 Lots 1-8	MT	59482	Storage Bldg	Storage Bldg.	3,154	0	0	C		D	All Comb/Wood Frame	330	1	1936	0.00%	n		0	0	0	$3,154	REPLACEMENT	$1,000				$4.01
101	B	Town of Sunburst	O'Hare Add- Blk 35 Lots 1-8	MT	59482	Storage Bldg	Storage Bldg.	3,154	0	0	C		D	All Comb/Wood Frame	330	1	1950	0.00%	n		0	0	0	$3,154	REPLACEMENT	$1,000				$4.01
102		Town of Sunburst	Engel 2nd Add- Blk 102 Lot 2-3	MT	59482	Pool Changehouse	Pool Changehouse	154,100	0	0			D	All Comb/Wood Frame	2,500	1	1958	0.00%	n		0	0	0	$154,100	REPLACEMENT	$1,000				$195.70
102	A	Town of Sunburst	Engel 2nd Add- Blk 102 Lot 2-3	MT	59482	Pools	Pools	195,000	0	0			C B	Formed Concrete	2,125	1	1958	0.00%	n		0	0	0	$195,000	REPLACEMENT	$1,000				$252.60
105		Town of Sunburst	SW1/4, NE1/4, Sec19,T36N R4W	MT	59482	Well Building	Well Building	66,000	8,839	0			C B	Concrete Block	120	1	1949	0.00%	n		0	0	0	$73,839	REPLACEMENT	$1,000				$93.60
105	A	Town of Sunburst	SW1/4, NE1/4, Sec19,T36N R4W	MT	59482	Chlorinating Bldg	Chlorinating Bldg.	13,000	E	0			D	All Comb/Wood Frame	100	1	1967	0.00%	n		0	0	0	$13,000	REPLACEMENT	$1,000				$16.51
107		Town of Sunburst	Lift Station Road	MT	59482	Lagoon Liftstation & Generator	Lagoon Liftstation & Generator	16,423	50,230	0			B	All Steel	36	1	1962	0.00%	n		0	0	0	$66,423	REPLACEMENT	$1,000				$84.36
107	A	Town of Sunburst	Lift Station Road	MT	59482	Lagoon Ponds	Lagoon Ponds	650,000	E	0			ZZ	Earth Fill	30 acre	N/A	1962	0.00%	n		0	0	0	$650,000	REPLACEMENT	$1,000				$825.50
108		Town of Sunburst	4th Ave West	MT	59482	Softball Complex	Softball Complex	172,000	E	0			ZZ	Landscape	1.5 acre	n/a	2000	0.00%	n		0	0	0	$172,000	REPLACEMENT	$1,000				$218.44
108	A	Town of Sunburst	4th Ave West	MT	59482	Concession Stand	Concession Stand	17,971	E	0			D	All Comb/Wood Frame	576	1	2001	0.00%	n		0	0	0	$17,971	REPLACEMENT	$1,000				$22.82
109		Town of Sunburst	South Hill	MT	59482	Water Tank	Water Tank	430,750	0	0			S	All Steel	400k gal	1	2002	0.00%	a		0	0	0	$430,750	REPLACEMENT	$1,000	400k gal			$547.05
110		Town of Sunburst	1st Ave West	MT	59482	Park Gazebo	Park Gazebo	20,885	0	0			D	All Comb/Wood Frame	480	1	1996	0.00%	a		0	0	0	$20,885	REPLACEMENT	$1,000				$26.52
110	A	Town of Sunburst	1st Ave West	MT	59482	Playground Equipment	Playground Equipment	10,300	0	0			S	All Steel	N/A	1	1996	0.00%	a		0	0	0	$10,300	REPLACEMENT	$1,000				$13.08
111		Town of Sunburst	Engel 102 - 1st Ave West	MT	59482	Tennis Courts	Tennis Courts	57,000	0	0			ZZ	Asphalt	N/A	1	1996	0.00%	a		0	0	0	$57,000	REPLACEMENT	$1,000				$72.39
112		Town of Sunburst	Railroad Ave	MT	59482	Flag Display	Flag Display	5,150	0	0			ZZ	Monument	N/A	1	1996	0.00%	a		0	0	0	$5,150	REPLACEMENT	$1,000				$6.54
																							Sub-total	$2,129,942						$2,703.63
800		Town of Sunburst	Various	MT	59482	CONTRACTORS EQUIPMENT							E	EQUIP (CONTRACT)							$0	$101,726	0	$101,726	STATED AMOUNT	$1,000				$129.19
900		Town of Sunburst	Various	MT	59482	VEHICLES							V	VEHICLES							$77,830	$0		$77,830	STATED AMOUNT	$1,000				$262.40
		Totals																			$77,830	$101,726	0	$2,308,498						$3,066.22

CITY OF SHELBY
PROPERTY VALUES AS OF 7-1-12

Site #	Site Description	Bldg. $	Contents $	Construction Type	Replacement Total $
100	HISTORIC CITY HALL-VIS TOR INFO CEN TER/COMMUNITY DEVELOPMENT	134,659	26,188	ALL COMB (WOOD FRAME)	190,847
	WATER BOOSTER STATION	77,250	150,000	MASONRY CONST/WOOD ROOF	227,250
101	WATER TANK	750,000	0	CEMENT	750,000
102	NEW CITY HALL	736,281	157,125	NON COMB STEEL FRAME	893,406
103	SWIMMING POOL/NATATORIUM	970,719	41,639	CONCRETE BLOCK	1,012,358
	FIRE HALL	1,590,668	200,000	ALL STEEL	1,790,668
105	SEWER LIFT #2	81,900	0	ALL COMB (WOOD FRAME)	81,900
106	SEWER LIFT #3	61,900	0	ALL COMB (WOOD FRAME)	61,900
107	WATER DISPENSER	34,900	0	ALL COMB (WOOD FRAME)	34,900
108	SEWER LIFT #1	29,750	0	ALL COMB (WOOD FRAME)	29,750
	FUTURE LANDFILL EXPANSION AREA	10,300	5,000	ALL COMB (WOOD FRAME)	15,300
109	LANDFILL CAT SHED	12,836	0	ALL STEEL	12,836
109	SHOP/ KENNELS	280,220	453,452	ALL COMB (WOOD FRAME)	733,672
109	STORAGE UNIT	1,029	0	ALL COMB (WOOD FRAME)	1,029
109	OIL STORAGE TANKS	12,500	0	ALL STEEL	12,500
109	RADIO TELEMETRY SYSTEM	0	92,323	EQUIP	92,323
109	FIRE TRAINING BUILDING	32,440	0	ALL COMB (WOOD FRAME)	32,440
109	CARDINAL EPR TRUCK SCALE	40,000	0	ALL STEEL	40,000
109	STEEL TANK	1,046,250	0	ALL STEEL	1,046,250
109	EQUIPMENT BLDG. - LANDFILL	226,450	0	ALL STEEL	226,450
110	CIVIC CENTER	1,236,582	209,500	CONCRETE BLOCK	1,446,082
111	MOBILE HOME	12,400	0	ALL COMB (WOOD FRAME)	12,400
111	RESTROOMS	12,229	0	ALL COMB (WOOD FRAME)	12,229
111	PUMP HOUSE #1	9,500	16,350	CONCRETE BLOCK	25,850
111	PUMP HOUSE #2	9,500	141,704	CONCRETE BLOCK	151,204
111	PUMP HOUSE #3	9,500	16,350	ALL COMB (WOOD FRAME)	25,850
111	PUMP HOUSE #5	9,500	16,350	ALL COMB (WOOD FRAME)	25,850
111	PUMP HOUSE #6	0	16,350	ALL COMB (WOOD FRAME)	16,350
111	PUMP HOUSE #7	9,500	16,350	ALL STEEL	25,850
111	PUMP HOUSE #8	9,500	16,350	ALL STEEL	25,850
	PUMP #9	0	16,350	NONE	16,350
	PUMP #10	0	16,350	NONE	16,350

CITY OF SHELBY
PROPERTY VALUES AS OF 7-1-12

Site #	Site Description	Bldg. $	Contents $	Construction Type	Replacement Total $
	PUMP #11	0	16,350	NONE	16,350
	PUMP #11	0	16,350	NONE	16,350
	PUMP #12	0	16,350	NONE	16,350
	PUMP #13	9,500	16,350	CONCRETE BLOCK	26,850
	ULTRA VIOLET (UV) STATION	2,000,000	224,314	CONCRETE BLOCK	2,224,314
112	ULTRA VIOLET (UV) STATION	1,493,500	404,750	CONCRETE BLOCK	1,588,250
113	WATER TANK	444,000	0	ALL STEEL	444,000
115	INDUSTRIAL PARK SIGN	3,750	0	ALL COMB (WOOD FRAME)	3,750
115	RAILROAD CROSSING ARMS	6,000	0	MIXED NON-COMB/COMB	6,000
116	SOUTH TELECOMMUNICATING	55,792	0	ALL COMB (WOOD FRAME)	55,792
117	LAKE SHEL-COLE CAMPGROUND - RESTROOMS	8,153	0	ALL COMB (WOOD FRAME)	8,153
117	LAKE SHEL-COLE CAMPGROUND - CONCESSION STAND	4,283	0	ALL COMB (WOOD FRAME)	4,283
117	LAKE SHEL-COLE CAMPGROUND - COMFORT STATION	8,153	0	ALL COMB (WOOD FRAME)	8,153
117	LAKE SHEL-COLE PARK	1,300	14,000	ALL COMB (WOOD FRAME)	15,300
117	LAKE SHEL-COLE & DAM	0	0	NONE	0
118	MARIAS VALLEY GOLF & COUNTRY CLUB	192,650	2,897,269	MIXED NON-COMB/COMB	3,089,919
119	WATER TANK	1,194,000	0	ALL COMB (WOOD FRAME)	1,194,000
119	WATER BOOSTER STATION #1	203,200	0	STEEL	203,200
119	SEWER LIFT STATION #4	178,900	0	STEEL	178,900
120	CITY OF SHELBY ENTRANCE SIGNS	14,000	0	ALL STEEL	14,000
121	BUSINESS INCUBATOR	1,038,000	0	BRICK	1,038,000
122	FLAG SITE	0	281,675	NONE	281,675
123	BUSINESS INCUBATOR	1,030,000	0	ALL COMB (WOOD FRAME)	1,030,000
124	PARK	0	40,000	NONE	40,000
126	PARK	0	40,000	NONE	40,000
126	PARK	0	40,000	NONE	40,000
127	PARK	0	40,000	NONE	40,000
128	BUSINESS INCUBATOR	0	0	NONE	0

CITY OF SHELBY
PROPERTY VALUES AS OF 7-1-12

Site #	Site Description	Bldg. $	Contents $	Construction Type	Replacement Total $
128	SEWER LAGOONS	0	0	NONE	0
	BUSINESS INCUBATOR	250,000	0	MASONRY CONST	250,000
	BUSINESS INCUBATOR	250,000	0	MASONRY CONST	250,000
	VACANT LOTS	0	10,000	NONE	10,000
	RESICENTIAL INCUBATOR	1,092,200	0	BRICK	1,092,200
					22,313,084

Toole County
Insurance Detail by Type Class

Type Class	Building Description	Replacement Cost
100001	Courthouse	789,432
100002	Marias Medical Center	7,177,846
100003	Toole County Library	313,275
100004	Sunburst Library	193,564
100005	Law/Safety	1,317,585
100007	Marias Museum Storage Bldg	22,546
10008	Toole Co Road Shop	351,005
100009	Road Shop Outer Bldg	251,867
100010	Sunburst Shop	29,120
100012	Shelby Senior Center	522,669
100017	Airport Admin	1,190,546
100018	Small Hangar	404,859
100019	Large Hangar	2,540,037
100020	Watkins Hangar	58,187
100021-24	Horse Barns	61,229
100026	Grandstand	5,054,464
100027	Mercantile	190,999
100028	4-H Exhibit	39,201
100029	Beef Sale	18,644
100030	FFA Exhibit	16,276
100031	4-H Food	61,209
100032	Wildlife Bldg	24,960
100033-34	Weed Bldgs (2)	133,943
100036-37, 10039-52	Misc Barns	294,491
100038	Dunkirk School	215,885
100055-56	Sunburst Cemetery bldgs. (2)	14,9716
100057-58	Sweetgrass Cemetery bldgs. (2)	109,546
100059	Ambulance Garage	38,672
100060	Search and Rescue Shop	160,473
100061	WIC Bldg	148,471
100062	Marias Heritage Center	3,098,578
100076	Sunburst Firehall	42,600
100086	Airport Snowshed	126,777

Source: Toole County Clerk

APPENDIX C: Status of Projects from 2007 Plan

Goal One: Increase preparedness of citizens for all types of disasters.						
Project	A	B	C	Rk	$$	Project Status in 2013
1.1.1 Newspaper insert on preparation	2	1	1	M	L	Completed 2009.
1.1.2 Information resources	2	1	1	M	L	Ongoing
1.1.3 Support public health	2	1	1	M	L	Public Health is lead
1.1.4 Educate on need for plans	2	0	1	L	L	Completed, newspaper articles.
1.2.1 Community project with kits	3	0	1	M	L	Never initiated.
Goal Two: Establish a means to alert residents.						
2.1.1 Weather radios for key facilities	3	1	1	M	L	Not completed.
2.2.1 Policy and procedures for Kevin	3	1	1	M	L	Drop
2.2.2 Policy and procedures for Shelby	3	1	1	M	L	Drop
2.2.3 Policy and procedures for Sunburst	3	1	1	M	L	Drop
2.3.1 Sirens for Shelby	3	1	1	M	M	Not completed. Retain in revision.
2.4.1 Practice and exercise	2	0	0	L	L	Emergency alert system developed and exercised.
Goal Three: Reduce or eliminate the blowing dust hazard on I-15 near Sunburst.						
3.1.1 Convene discussion	1	1	0	L	L	Not completed. Retain. County as cooperator.
3.1.2 Obtain funding and implement	3	2	1	M	H	Not completed. Delete.
3.1.3 Monitor	1	1	1	L	L	Not completed. Delete.
Goal Four: Be prepared to respond to a hazardous material incident.						
4.1.1 Evacuation plan for Shelby	3	0	1	M	L	Received HMGP grant in 2013 to address.
4.2.1 Education on shelter-in-place	3	0	1	M	L	Completed using newspaper.
4.3.1 Complete SAR building	3	1	1	M	M	Delete. Project no longer needed.

Goal Five: Reduce the potential for loss of life and property as a result of wildland fire.						
5.1.1 Fire danger signs	1	2	1	M	L	Not completed. Retain in revision.
5.1.2 Fire prevention billboard	1	2	1	M	L	Delete. Adequate information available.
5.2.1 Fire hydrant installation	2	3	2	H	L	Delete. Will happen when North Central Water Project reaches area.
5.2.2 Bulk fire extinguisher purchase	2	3	3	H	L	Not completed. Retain in revision.
Goal Six: Reduce impacts of long-term drought.						
6.1.1 Hook up wells for Kevin	0	1	1	L	H	Drop
6.1.2 Increase storage for Galata	3	2	0	M	L	Not completed.
6.2.1 Livestock well for Camrose	0	1	3	M	L	Delete. Will happen when North Central Water Project reaches area.
6.2.2 Livestock well for Eagle Creek	0	1	3	M	L	Delete. Will happen when North Central Water Project reaches area.
Goal Seven: Continue participation in the National Flood Insurance Program.						
7.1.1 Resolve Sunburst NFIP issues	2	2	2	M	L	Completed.
7.2.1 Training for administrator	2	2	2	M	L	Not completed. Retain this project in revision.
Goal Eight: Plan Administration						
81.1. Obtain approvals				H	L	Completed.
8.2.1 Incorporate into other plans.				M	L	Growth Policy being updated now.
8.3.1 Incorporate into PDM plan.				M	L	Being completed with this revision.

APPENDIX D. Adoption Documentation

Resolution # _____

Resolution Adopting the Toole County Pre-Disaster Mitigation Plan

Whereas, the County of Toole, Montana, recognizes the threat that natural hazards pose to people and property within our county; and

Whereas, undertaking hazard mitigation actions will reduce the potential for harm to people and property from future hazard occurrences; and

Whereas, the U.S. Congress passed the Disaster Mitigation Act of 2000 ("Disaster Mitigation Act") emphasizing the need for pre-disaster mitigation of potential hazards; and

Whereas, the Disaster Mitigation Act made available hazard mitigation grants to state and local governments; and

Whereas, an adopted Pre-Disaster Mitigation Plan is required as a condition of future funding for mitigation projects under multiple FEMA pre- and post-disaster mitigation grant programs; and

Whereas, the County of Toole, Montana, fully participated in the FEMA-prescribed mitigation planning process to prepare this Pre-Disaster Mitigation Plan; and

Whereas, the Montana Office of Disaster and Emergency Services and the Federal Emergency Management Agency Region VIII officials have reviewed the Toole County Pre-Disaster Mitigation Plan, and approved it contingent upon this official adoption of the participating governing body; and

Whereas, the County of Toole, Montana, desires to comply with the requirements of the Disaster Mitigation Act and to augment its emergency planning efforts by formally adopting the Toole County Pre-Disaster Mitigation Plan; and

Whereas, adoption by the governing body for the County of Toole, Montana, demonstrates the jurisdiction's commitment to fulfilling the mitigation goals and objectives outlined in this Pre-Disaster Mitigation Plan; and

Whereas, adoption of this legitimizes the plan and authorizes responsible agencies to carry out their responsibilities under the plan.

Now, therefore, be it resolved, that the Board of County Commissioners of Toole County, Montana adopts the Toole County Pre-Disaster Mitigation Plan.

Passed: _____

_____

Certifying Official

Resolution # _____

Resolution Adopting the Toole County Pre-Disaster Mitigation Plan

Whereas, the City of Shelby, Montana, recognizes the threat that natural hazards pose to people and property within our city; and

Whereas, undertaking hazard mitigation actions will reduce the potential for harm to people and property from future hazard occurrences; and

Whereas, the U.S. Congress passed the Disaster Mitigation Act of 2000 ("Disaster Mitigation Act") emphasizing the need for pre-disaster mitigation of potential hazards; and

Whereas, the Disaster Mitigation Act made available hazard mitigation grants to state and local governments; and

Whereas, an adopted Pre-Disaster Mitigation Plan is required as a condition of future funding for mitigation projects under multiple FEMA pre- and post-disaster mitigation grant programs; and

Whereas, the City of Shelby, Montana, fully participated in the FEMA-prescribed mitigation planning process to prepare this Pre-Disaster Mitigation Plan; and

Whereas, the Montana Office of Disaster and Emergency Services and the Federal Emergency Management Agency Region VIII officials have reviewed the Toole County Pre-Disaster Mitigation Plan, and approved it contingent upon this official adoption of the participating governing body; and

Whereas, the City of Shelby, Montana, desires to comply with the requirements of the Disaster Mitigation Act and to augment its emergency planning efforts by formally adopting the Toole County Pre-Disaster Mitigation Plan; and

Whereas, adoption by the governing body for the City of Shelby, Montana, demonstrates the jurisdiction's commitment to fulfilling the mitigation goals and objectives outlined in this Pre-Disaster Mitigation Plan; and

Whereas, adoption of this legitimizes the plan and authorizes responsible agencies to carry out their responsibilities under the plan.

Now, therefore, be it resolved, that the Shelby City Council adopts the Toole County Pre-Disaster Mitigation Plan.

Passed: _____

_____

Certifying Official

Resolution # _____

Resolution Adopting the Toole County Pre-Disaster Mitigation Plan

Whereas, the Town of Sunburst, Montana, recognizes the threat that natural hazards pose to people and property within our town; and

Whereas, undertaking hazard mitigation actions will reduce the potential for harm to people and property from future hazard occurrences; and

Whereas, the U.S. Congress passed the Disaster Mitigation Act of 2000 ("Disaster Mitigation Act") emphasizing the need for pre-disaster mitigation of potential hazards; and

Whereas, the Disaster Mitigation Act made available hazard mitigation grants to state and local governments; and

Whereas, an adopted Pre-Disaster Mitigation Plan is required as a condition of future funding for mitigation projects under multiple FEMA pre- and post-disaster mitigation grant programs; and

Whereas, the Town of Sunburst, Montana, fully participated in the FEMA-prescribed mitigation planning process to prepare this Pre-Disaster Mitigation Plan; and

Whereas, the Montana Office of Disaster and Emergency Services and the Federal Emergency Management Agency Region VIII officials have reviewed the Toole County Pre-Disaster Mitigation Plan, and approved it contingent upon this official adoption of the participating governing body; and

Whereas, the Town of Sunburst, Montana, desires to comply with the requirements of the Disaster Mitigation Act and to augment its emergency planning efforts by formally adopting the Toole County Pre-Disaster Mitigation Plan; and

Whereas, adoption by the governing body for the Town of Sunburst, Montana, demonstrates the jurisdiction's commitment to fulfilling the mitigation goals and objectives outlined in this Pre-Disaster Mitigation Plan; and

Whereas, adoption of this legitimizes the plan and authorizes responsible agencies to carry out their responsibilities under the plan.

Now, therefore, be it resolved, that the Town Council of Sunburst adopts the Toole County Pre-Disaster Mitigation Plan.

Passed: _____

_____

Certifying Official

Resolution # _____

Resolution Adopting the Toole County Pre-Disaster Mitigation Plan

Whereas, the Town of Kevin, Montana, recognizes the threat that natural hazards pose to people and property within our city; and

Whereas, undertaking hazard mitigation actions will reduce the potential for harm to people and property from future hazard occurrences; and

Whereas, the U.S. Congress passed the Disaster Mitigation Act of 2000 ("Disaster Mitigation Act") emphasizing the need for pre-disaster mitigation of potential hazards; and

Whereas, the Disaster Mitigation Act made available hazard mitigation grants to state and local governments; and

Whereas, an adopted Pre-Disaster Mitigation Plan is required as a condition of future funding for mitigation projects under multiple FEMA pre- and post-disaster mitigation grant programs; and

Whereas, the Town of Kevin, Montana, fully participated in the FEMA-prescribed mitigation planning process to prepare this Pre-Disaster Mitigation Plan; and

Whereas, the Montana Office of Disaster and Emergency Services and the Federal Emergency Management Agency Region VIII officials have reviewed the Toole County Pre-Disaster Mitigation Plan, and approved it contingent upon this official adoption of the participating governing body; and

Whereas, the Town of Kevin, Montana, desires to comply with the requirements of the Disaster Mitigation Act and to augment its emergency planning efforts by formally adopting the Toole County Pre-Disaster Mitigation Plan; and

Whereas, adoption by the governing body for the Town of Kevin, Montana, demonstrates the jurisdiction's commitment to fulfilling the mitigation goals and objectives outlined in this Pre-Disaster Mitigation Plan; and

Whereas, adoption of this legitimizes the plan and authorizes responsible agencies to carry out their responsibilities under the plan.

Now, therefore, be it resolved, that the Town Council of Kevin adopts the Toole County Pre-Disaster Mitigation Plan.

Passed: _____

_____

Certifying Official